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Volume 2009/2

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Foreword

Financial Market Trends *provides regular updates of trends and prospects in the international and major domestic financial markets of the OECD area and beyond. It provides timely analysis of, and background information on, structural issues and developments in financial markets and the financial sector, focusing on areas where changes are most substantial.*

The current issue deals with policy challenges arising in various areas of financial markets in the aftermath of the financial crisis. It includes articles that:

- *look at what banks do and should do,* i.e. *possible reforms of rules and regulations for bank capital and banking structures;*
- *look at benefits, costs and exit issues related to expanded guarantees for banks;*
- *discuss regulatory issues related to financial innovation;*
- *analyse how insurance companies fared during the financial crisis;*
- *discuss how to ensure adequate retirement income from defined contribution pension plans;*
- *present an updated sovereign borrowing outlook 2010 for OECD governments and appraise debt managers' responses to the crisis in terms of issuance procedures, portfolio management and primary dealer systems;*
- *provide an overview of current and structural developments in the financial systems of OECD Enhanced Engagement countries; and*
- *introduce the Policy Framework for Effective and Efficient Financial Regulation. This Policy Framework, including the General Guidance and High-Level Checklist, is the product of work by the Committee on Financial Markets and the Insurance and Private Pensions Committee, and was the subject of broad public consultation. The work led to a recommendation adopted by OECD Council on 26 November 2009, which is also reprinted in this volume.*

An Index of Recent Features provides the reader with a list of articles published in Financial Market Trends *over the past few years.*

In between the biannual publication schedules of the entire volume and print version of Financial Market Trends, *individual articles are being released on line as soon as they are available* (www.oecd.org/daf/fmt), *and subscribers can order and download articles and full issues of the book at* www.sourceOECD.org/periodical/fmt.

We hope this issue of Financial Market Trends *will again serve our readers with timely information and analysis.*

Comments and questions should be addressed to the Financial Affairs Division of the OECD Directorate for Financial and Enterprise Affairs (e-mail: fmt@oecd.org).

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PART I

Current Issues in Financial Markets: Exit and Post-Financial Crisis Issues

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The Elephant in the Room: The Need to Deal with What Banks Do

by
Adrian Blundell-Wignall and Gert Wehinger and Patrick Slovik*

Contagion risk and counterparty failure have been the main hallmarks of the current crisis. While some large diversified banks that focused mainly on commercial banking survived very well, others suffered crippling losses. Sound corporate governance and strong risk-management culture should enable banks to avoid excessive leverage and risk taking. The question is whether there is a better way, via leverage rules or rules on the structures of large conglomerates, to ensure volatile investment banking functions do not dominate the future stability of the commercial banking and financial intermediation environment that is so critical for economic activity. While there is a main consensus on the need for reform of capital rules, dynamic provisioning, better co-operation for future crises, centralised trading of derivatives, etc., the question is whether such reforms will be sufficient if they do not address contagion and counterparty risk directly. The world outside of policy making is waiting for a fundamental reassessment of banks' business models: what banks are supposed to do and how they compete with each other. It is the "elephant in the room" on which some policy makers have not yet had the time or inclination to focus. This article emphasises not only the need for transparent and comparable accounting rules and for improvements in corporate governance, but also supports the imposition of a group leverage ratio to provide a binding capital constraint (that Basel risk-weighted rules have been unable to achieve) and proposes a Non-Operating Holding Company Structure (NOHC) – reforms that are essential to deal with contagion and counterparty risk that are so integral to the "too big to fail" issue.

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I. Introduction

Contagion and counterparty risk are the hallmarks of this crisis

Contagion risk and counterparty failure have been the main hallmarks of the current financial and economic crisis, making it very different and much more potent than those which preceded it. While some large diversified banks that focused mainly on commercial banking survived very well, financial conglomerates built on investment banking, the structuring of complex derivatives and proprietary trading as the main drivers of growth, as well as other smaller and less diversified banks, particularly those focused on mortgages, suffered crippling losses. In principle, sound corporate governance and a strong risk-management culture should enable banks to avoid excessive leverage and risk taking. But human nature being what it is, there are likely always to be some players eager to push complex products and trading beyond the sensible needs of industry and long-term investors in order to drive profits. Indeed, right now such activity is driving the rapid profit growth of some banks, with little having been learned from the past.

A fundamental reassessment of what banks are supposed to do and how they compete with each other is needed

As the system will always be hostage to the "gung-ho" few, the question is whether there is a better way, via leverage rules or rules on the structures of large conglomerates, to ensure volatile investment banking functions do not dominate the future stability of the commercial banking and financial intermediation environment that is so critical for economic activity. The world outside of policy making is waiting for a fundamental reassessment of what banks are supposed to do and how they compete with each other. It is the "elephant in the room" on which some policy makers have not yet had the time or inclination to focus.

Reforms have to address contagion and counterparty risk directly

The conclusions of the G20 Pittsburgh summit in October 2009 show the main consensus on the need for reform – capital rules, dynamic provisioning, better co-operation for future crises, centralised trading of derivatives and so forth (see Box I.1.1). These initiatives are important, and will help improve prudential supervision. The question is: will such reforms be sufficient if they do not address contagion and counterparty risk directly – the extent of which depends on what banks actually do in their business models.

More "lifeboats" are not enough

One illustration of the mood in the world of ordinary investors comes from one well-respected fund manager/commentator in a quarterly letter to clients:

> *I can imagine the company representatives on the Titanic II design committee repeatedly pointing out that the Titanic I tragedy was a black swan event: utterly unpredictable and completely, emphatically, not caused by any failures of the ship's construction, of the company's policy, or of the captain's*

Box I.1.1. **G20 Pittsburgh summary of financial reform proposals**

- The G20 summit in Pittsburgh concluded that the revision of capital rules (higher and better quality capital, with a leverage ratio and perhaps countercyclical buffer) would be finalised by end-2010 and implemented by end-2012.
- Better liquidity risk measurement and management will be encouraged, and institutional risk management standards will be strengthened.
- Disclosure will be enhanced, with off-balance sheet positions taken into account.
- Oversight of credit rating agencies has increased and accounting standards should be unified.
- Market practices and underwriting standards in particular have become better regulated.
- The centralised clearing of CDS contracts and the trading of standardised OTC derivatives on exchanges is to be completed by end-2012. OTC derivative contracts should be reported to trade repositories and non-centrally cleared contracts should be subject to higher capital requirements.
- Compensation standards aim to align compensation with long-term value creation (equity incentives and claw-backs being favoured and guaranteed bonuses discouraged). Transparency, independence of compensation committees and supervisory review with the possibility of penalty (via capital requirements).
- Supervisory colleges and contingency planning for co-ordination between supervisors and firms for crisis management involving major cross-border firms, a legal framework for crisis intervention and improved information sharing in times of stress.
- The hope was also expressed that: "*We should develop resolution tools and frameworks for the effective resolution of financial groups to help mitigate the disruption of financial institution failures and reduce moral hazard in the future. Our prudential standards for systemically important institutions should be commensurate with the costs of their failure. The FSB should propose by the end of October 2010 possible measures including more intensive supervision and specific additional capital, liquidity, and other prudential requirements.*"

Source: Leaders' statement, the Pittsburgh Summit, 25 September 2009, available at *www.g20.org*.

competence. "No one could have seen this coming" would have been their constant refrain. Their response would have been to spend their time pushing for more and improved lifeboats. In itself this is a good idea, and that is the trap: by working to mitigate the pain of the next catastrophe, we allow ourselves to downplay the real causes of the disaster and thereby invite another one. And so it is today with our efforts to redesign the financial system in order to reduce the number and severity of future crises.[1]

The structure of large financial conglomerates are the focus of this paper

This paper focuses on those large financial conglomerates without whose involvement this crisis may well have been avoided, at least in terms of the scale and force that that policy makers have had to address. It looks at some aspects of the "ship's" design, and explores the idea that the "equity culture" in banking came to dominate the "credit culture" in what firms actually do. Common regulatory structures permit very different business models with widely divergent risk and loss profiles. Banks that grew their balance sheets rapidly via derivatives-based products that must be valued at fair value through profit or loss are a distinctive feature of the current crisis. Indeed, they appear to be at the heart of the reason why banks can be "too big to fail". In looking at reform priorities, this paper emphasises the need for a binding group leverage ratio (which would

dominate Basel risk weighting) and a non-operating holding company conglomerate structure with legally separated (siloed) capital for subsidiaries, without which contagion risk cannot properly be addressed.

II. The "equity culture": Conglomerate growth through securities and derivatives

It may be helpful to look at institutions that did relatively well during the crisis…

One important clue to what a safer future financial system might look like can be found by looking at what large systemically important banks actually do. Some countries operating openly on the global financial system, like Australia, Canada, Chile and Brazil, avoided having to bail out their banks with capital injections. Within crisis countries, some banks did very well: for the purposes of this study, Santander is included as one example – amongst many others – of a bank that fully participates in commercial banking and the structuring of products, but so far has done so in a well-balanced and-risk controlled way. As was the case with countries affected by the crisis, countries (and banks) that avoided the crisis also had to deal with:

- the same global regulatory and capital rules;
- the same accounting firms and credit rating agencies;
- similar tax distortions;
- the same derivatives including OTC and structured products; and
- the same senior staff bonus mechanisms.

Furthermore, banks in these countries did not have more capital than their US counterparts had.

… to find out what factors helped them to perform better: what banks do is important

Poor incentives created by regulatory and tax loopholes and bonus systems certainly contributed to the crisis – being exploited by some though not all banks. So while increased capital and regulatory reform are important, something else seems to have been at work in many banks and even some financial systems that enabled them to survive the crisis without government capital injections and securities purchases. The same regulations, accounting standards and rating procedures appear to have been compatible with very different bank business models and performance. If what banks do, for given capital and other rules, is also important in explaining the crisis, then this, too, may need to be addressed – the *elephant in the room* so far put to one side.

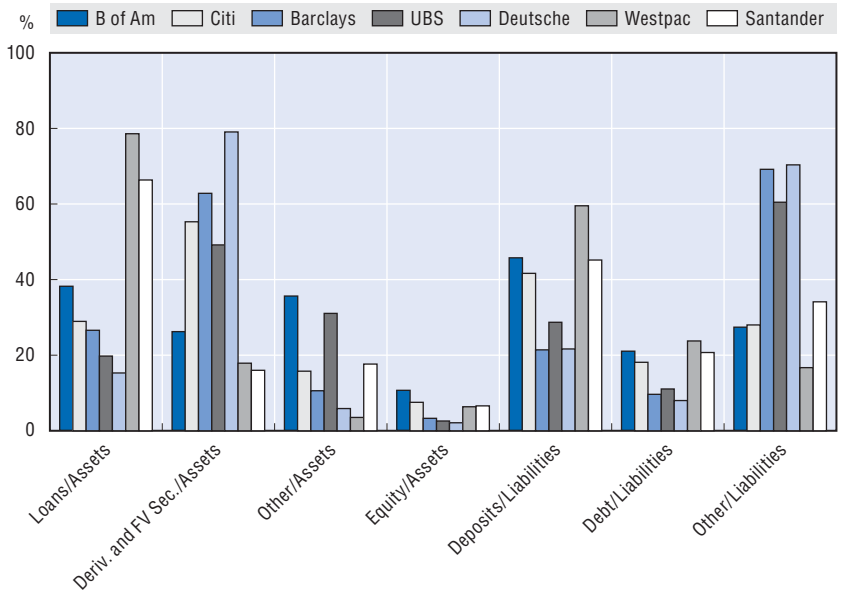
Contrasting banking conglomerate asset and liability composition

"Too big to fail" banks figured prominently in the crisis

Figure I.1.1 shows the main components of the balance sheets of seven banking conglomerates, all of which are very large in their own country. The contrasts are striking. Citigroup, Bank of America, UBS, Barclays and Deutsche Bank all belong to countries that have figured prominently in the crisis. Of around USD 1.1 trillion of bank losses and write-downs admitted to in this crisis, these five alone account for USD 333 billion, or 30% of the total.[2] They are all within a group of banks that are widely acknowledged as "too big to fail". The governments of the countries in which these banks

Figure I.1.1. **Consolidated balance sheet structure of conglomerates**

In per cent of assets



Note: For Citi and Bank of America, unconsolidated VIEs are included as balance sheet items for fair value through profit or loss. This adjustment is not made for the European banks, where getting the gross exposures of SPEs is more difficult. However, the maximum loss exposures reported suggest SPE off-balance sheet exposure is less. See note to Table I.1.1 for definitions of VIEs and SPEs.

Source: Company reports.

operate – the United States, Switzerland, the United Kingdom and Germany – have had to put together massive packages of aid, involving direct capital injections, asset purchases, loans and guarantees, on an unprecedented scale. These four countries (along with the Netherlands, Belgium and Luxembourg) also happen to be those dominant in the world of investment banking. The balance sheet components of these banks can be compared with those of countries where systemically important banks received no direct aid: Westpac in Australia and Santander in Spain – though the other large Australian banks and most Canadian banks have a similar structure. The salient features are as follows:

The investment banking component of banks in crisis countries is very large

Loans to businesses (for productive investments) and to households (for mortgages and consumption) are shown in the first set of bars. In the case of the five large banks in crisis countries this commercial banking component of their business is fairly small. Direct loans which generate more reliable cash flows (and to which amortised cost accounting applies), are very much larger in the institutions that received no direct aid: the Westpac and Santander examples (all of the other large Australian and Canadian banks have similar balance sheet structures). The "innovative banks" have built their balance sheets up quickly in recent years with securitised assets pools containing imbedded derivatives, as shown in the second set of bars referring to derivatives and securities at fair value through profit or loss.[3]

Deposit funding is more predominant in Australian, Spanish (and Canadian) banks

Activities on the asset side of the balance sheet are funded primarily out of deposits and longer-term borrowing on the liabilities side in the case of the Australian, Spanish (and Canadian) banks. Deposit funding is relatively stable, and long in duration with predictable cash flows. Wholesale bond funding often from global markets is also longer in duration and requires the maintenance of a strong credit rating to be cost effective – acting as a discipline on banks. This contrasts with the large European, UK and US banks where deposit and bond funding is relatively lower and liabilities at fair value through profit or loss are very large.

Some banks are like highly-leveraged hedge funds

More details for three of the banks are shown in Table I.1.1. If Westpac conforms to the structure of a "bank" as it is thought of by politicians and the public at large, *i.e.* an institution that funds itself mainly via deposits and longer-term borrowing and lends to households and to companies for investment and consumption, this is not the case of Citigroup or Deutsche Bank, whose balance sheet structure is similar to that of many large European and UK banks. On a consolidated basis these latter institutions look much more like large highly-leveraged hedge funds – though we can

Table I.1.1. **Key balance sheet and off-balance sheet ratios: Deutsche Bank, Citi, and Westpac**

	Deutsche Bank, in EUR million		Citi, in USD million		Westpac, in AUD million	
	June 30, 2009	Dec. 31, 2008	June 30, 2009	Dec. 31, 2008	Sep. 30, 2009	Sep. 30, 2008
Assets	1 732 873.0	2 202 423.0	1 848 533.0	1 938 470.0	589 587.0	439 676.0
Cash-like	108 315.0	118 854.0	423 593.0	427 995.0	21 581.0	26 154.0
Financial assets at fair value through profit or loss	1 140 525.0	1 623 811.0	591 794.0	633 655.0	71 029.0	76 891.0
Financial assets available for sale	19 960.0	24 835.0	0.0	0.0	1 630.0	1 613.0
Loans	264 485.0	269 281.0	605 750.0	664 600.0	463 459.0	313 545.0
Other	199 588.0	165 642.0	227 396.0	212 220.0	31 888.0	21 473.0
Liabilities	1 732 873.0	2 202 423.0	1 848 533.0	1 938 470.0	589 587.0	439 676.0
Cash-like	57 698.0	90 333.0	224 712.0	276 209.0	9 235.0	15 861.0
Deposits	368 532.0	395 553.0	804 736.0	774 185.0	329 456.0	233 730.0
Financial liabilities at fair value through profit or loss	875 115.0	1 333 765.0	119 312.0	167 478.0	47 326.0	41 659.0
Long-term debt	134 811.0	133 856.0	348 046.0	359 593.0	131 353.0	96 398.0
Other	261 277.0	217 002.0	197 559.0	216 983.0	35 646.0	32 557.0
Equity	35 440.0	31 914.0	154 168.0	144 022.0	36 571.0	19 471.0
Max. loss exposure to SPE's	23 900.0	26 400.0	83 756.0	106 405.0	0.0	0.0
Key ratios	%	%	%	%	%	%
Loans/Assets	15.3	12.2	32.8	34.3	78.6	71.3
Fin .assets at fair value through profit or loss/Assets	67.2	74.8	34.9	35.3	12.8	18.3
Deposits/Liabilities	21.7	18.2	47.5	43.1	59.6	55.6
Long-term debt/Liabilities	7.9	6.2	20.5	20.0	23.8	22.9
Other debt/Liabilities	3.2	2.3	6.0	7.1	2.3	3.0
Fin. liab. at fair value through profit or loss/Liabilities	51.6	61.4	7.0	9.3	8.6	9.9
Equity/Assets	2.0	1.4	8.3	7.4	6.2	4.4
Off-balance sheet VIE's/Assets	n.a.	n.a.	12.9	15.0	0.0	0.0
Off-balance sheet QSPE's/Assets	n.a.	n.a.	40.4	42.4	0.0	0.0
Max. loss unconsol. exp VIE/Equity	67.4	82.7	54.3	73.9	0.0	0.0
Max. loss unconsol. exp VIE/Assets	1.4	1.2	4.5	5.5	0.0	0.0

Note: VIEs (Variable Interest Entities) are special purpose entities (SPEs) which must be consolidated on the balance sheet if losses arise. QSPEs (Qualifying Special Purpose Entities) are entities where risks have been fully transferred to a third party.
Source: Company reports and OECD.

hardly imagine any hedge fund running these sorts of structured products would risk of having a leverage ratio of almost 50 (assets *versus* equity), as is the case of Deutsche Bank.[4]

In mid-2009, 67% of Deutsche Bank's balance sheet consisted of assets at fair value through profit or loss (44% in derivatives) – and this was much higher earlier in the crisis. In the last 6 months alone Deutsche Bank's overall balance sheet has fallen by an eye-catching 22%. Only 15% of the balance sheet was lent directly to businesses and households. Deutsche Bank raised only 21% of its funding through deposits and 8% through long-term loans.[5] About 50% of the balance sheet is liabilities at fair value through profit or loss.

US banks have larger off-balance sheet exposures

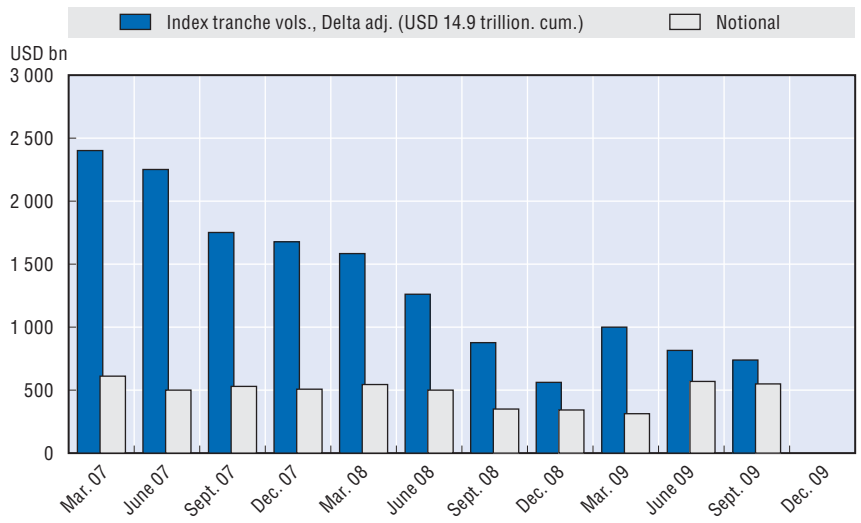
Citigroup has a greater percentage of commercial banking on its balance sheet than Deutsche Bank, but has larger off-balance sheet exposures in the variable interest entities (VIEs) for which it remains responsible. Citigroup's VIE exposure was the equivalent of 13% of balance sheet assets in mid-2009.[6] Deutsche Bank does not report its gross SPE exposures, but these might be around ¼ to ⅓ of that of Citigroup if the maximum loss exposure to these vehicles is any guide.[7] Deutsche Bank's report for mid-2009 shows a maximum loss exposure to unconsolidated SPEs of around 1.4% of their balance sheet, and a very high 67% of their equity. The equivalent figures for Citigroup's maximum loss exposures are 4.5% of assets and 54.3% of equity, in the middle of 2009. Citigroup of course holds more capital than the German bank.

Structured credit product issuance by conglomerates

Structured credit product issuance has picked up again in 2009

Figure I.1.2 shows issuance by major banks of standardised structured credit products (index tranche), notional and delta adjusted.[8] Just prior to the crisis, issuance was running at USD 500 billion notional

Figure I.1.2. **Issuance of CDO index tranche volumes**
Delta adjusted, quarterly



Source: Credit Flux, OECD.

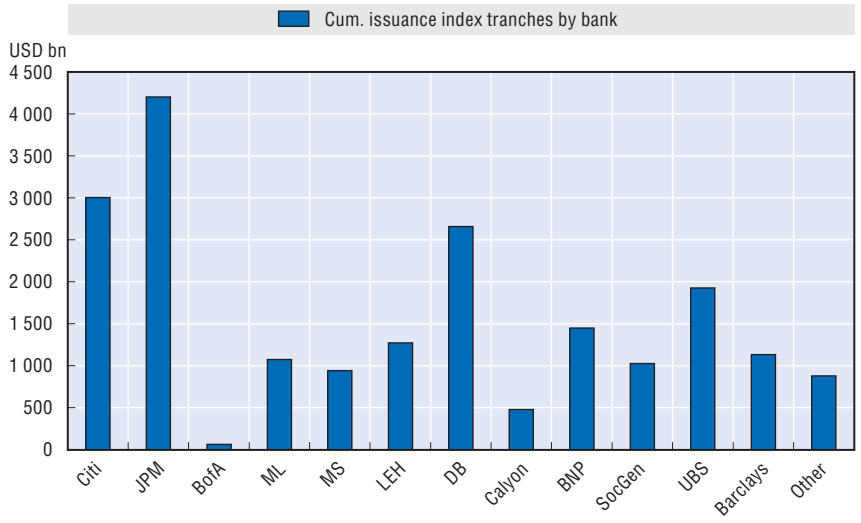
and USD 2.4 trillion a quarter when delta adjusted. It fell away sharply during the crisis in delta-adjusted terms – particularly in the last quarter of 2008. However, the policies to support recovery – including zero rates in some countries and massive liquidity support – have generated a pick-up in this activity again in 2009. As the market rallies and spreads narrow the delta-adjusted volumes rise. With fair value accounting this flows through to profits, just as the collapse led to large losses. Authorities may be happy to see this rally, but these products (that must be accounted for at fair value) also contributed to the losses and write-downs that made this crisis so different from others.

These products contributed to the crisis

Figure I.1.3 shows the cumulative issuance of standardised structured credit products since 2007 by the banks that issued them and accounting for almost 85 per cent of all issuance. Many of these banks needed to rely on government support of various forms.

Figure I.1.3. **Issuance of CDO index tranche volumes by issuer**

Delta adjusted, quarterly

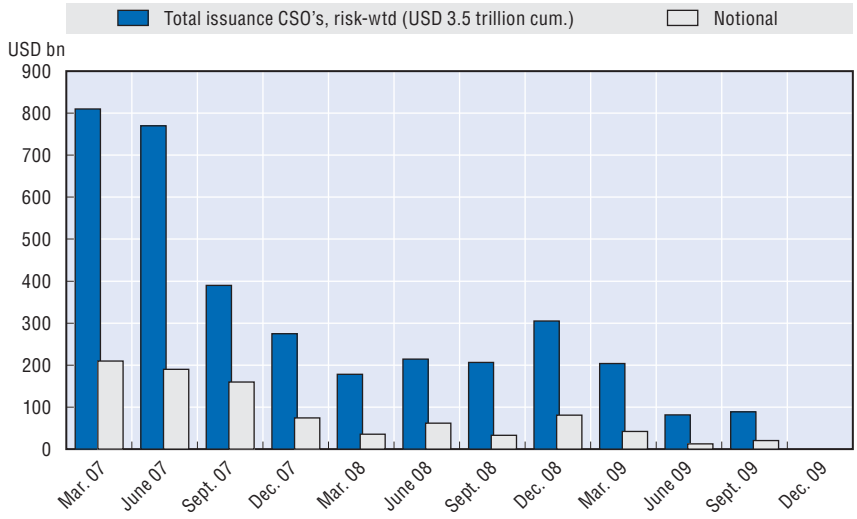


Source: Credit Flux, OECD.

Figure I.1.4 shows the same concept for synthetic collateralised obligations (CSOs). These less standardised products are based on derivatives, such as credit default swaps (CDS), rather than requiring the bank or its SPE vehicle to buy the underlying physical assets.[9] They are even more prone to valuation difficulties and major liquidity problems during times of financial crisis. These products are a major source of risk when insurance companies, hedge funds and others acting as counterparties in the writing of CDS contracts fail. The main issuers of these CDS based products are shown in Figure I.1.5.

Figure I.1.4. **Issuance of CSOs**

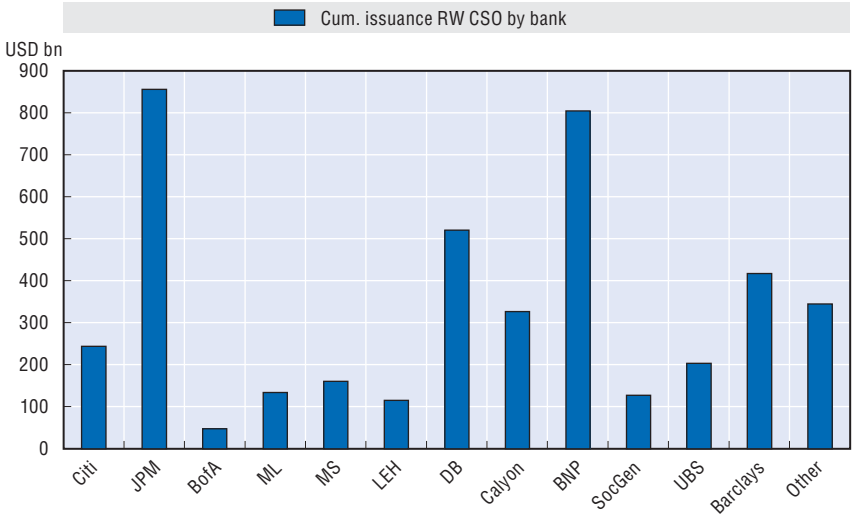
Delta adjusted, quarterly



Source: Credit Flux, OECD.

Figure I.1.5. **Issuance of CSOs by issuer**

Delta adjusted, quarterly



Source: Credit Flux, OECD.

The most active issuers incurred large losses

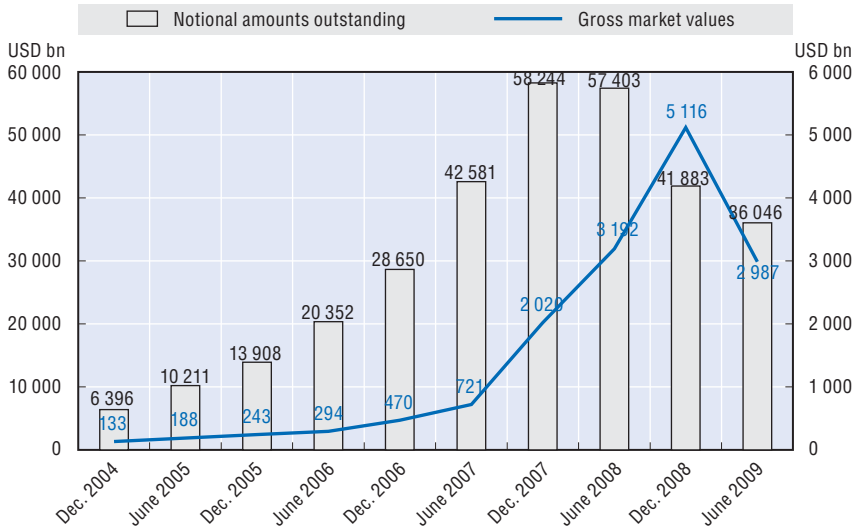
The banks shown in Figures I.1.2 to I.1.5 are responsible for USD 508 billion of the USD 1.1 trillion losses admitted to by banks, some 46% of the total. If the ultimate losses resulting from the total collapse of Lehman Brothers were included (rather than the write-downs before the collapse) the total would be much higher, and these banks would be responsible for ⅔ of the higher total losses. Similarly, losses of Bear Stearns absorbed by JP Morgan will not be apparent for up to another 10 years (collateral held by the Fed in exchange for a loan of USD 30 billion).

Regulatory factors are behind explosive CDS growth from 2004 to 2007

Figure I.1.6 shows CDS contracts in notional outstanding amounts and their net value. The truly explosive growth in CDS from 2004 to 2007 is explained by regulatory factors – notably SEC rule changes in 2004 allowing investment banks to be supervised on a consolidated entities basis, which permitted a leap in leverage, as well as the growing use of CDS (that reduce risk-weighted assets) for gaming Basel weighting procedures.

Figure I.1.6. **Credit default swaps outstanding**

Credit default swaps outstanding (l.h.s.) and positive replacement value (r.h.s.)



Note: Notional amounts are all the debt exposure covered. Gross market values on the right-hand side refer to how much money would actually change hands after netting if derivatives were sold on the reporting date at prevailing market prices.

Source: BIS, OECD.

CDS played a very large role in the losses incurred in this crisis

Netting allows counterparties to settle net positions in the event of a bankruptcy. But once volatility changes and liquidity dries up in a crisis these net positions can be enormous relative to the capital of a bank. CDS played a very large role in the losses incurred in this crisis. In practice there is no safe amount of capital that banks can reasonably hold to protect themselves from such events.

USD 1.6 trillion crisis related losses of financial institutions

Table I.1.2 shows losses of banks (most of which participated in the "equity culture" in banking), the insurance companies like AIG that wrote CDS contracts and Fannie and Freddie (that were the massive mill for mortgage securitisation in the process). Losses admitted to (and excluding the payouts to AIG counterparties and the losses of the Lehman balance sheet after it collapsed) sum to USD 1.6 trillion.

Table I.1.2. **Major financial institutions' write-downs and credit losses**

Total since 2007, in USD billion[1]

Writedown and loss			
Banks and brokers		Insurance companies	
Citigroup Inc.	112.2	American International Group	101.4
Wachovia Corporation	101.9	ING Groep N.V.	17.7
Bank of America Corp.	69.6	Ambac Financial Group Inc.	12.1
Merrill Lynch and Co.	55.9	Hartford Financial SVCS GRP	11.6
UBS A.G.	53.1	Metlife Inc.	10
HSBC Holdings Plc.	50.1	Prudential Financial Inc.	9.2
JPMorgan Chase and Co.	49.2	Aegon N.V.	8.7
Washington Mutual Inc.	45.3	Swiss Re	8.3
Wells Fargo and Company	32.8	Allstate Corp.	7.8
HBOS Plc.	29.5	Allianz SE	7.6
Royal Bank of Scotland Group Plc.	29.0	MBIA Inc.	5.8
National City Corp.	25.2	Genworth Financial Inc-CL A	5.4
Barclays Plc.	23.7	Other	58.8
Morgan Stanley	23.0	**Total**	**264.4**
Credit Suisse Group A.G.	19.2	**Government sponsored entities (US)**	
Deutsche Bank A.G.	18.7	Freddie Mac	119.6
BNP Paribas	17.0	Fannie Mae	118.3
Other	343.7	**Total**	**237.9**
Total	**1 099.1**	**Grand total**	**1 601.4**

1. As of 13 August 2009; write-downs and credit losses since January 2007. All the charges stem from the collapse of the US subprime-mortgage market and reflect credit losses or writedowns of mortgage assets that are not subprime, as well as charges taken on leveraged-loan commitments since the beginning of 2007. They are net of financial hedges the firms used to mitigate losses and pre-tax figures unless the firm only provided after-tax numbers. Credit losses include the increase in the provisions for bad loans, impacted by the rising defaults in mortgage payments. All numbers are in USD billion, converted at current exchange rate if reported in another currency.

Source: Bloomberg.

Large US payments to settle AIG obligations

Table I.1.3 shows the amounts US authorities paid out to settle bank exposures to the single counterparty AIG during the crisis. Had the US allowed AIG to fail, it is not at all clear how well any of the banks in the table would have withstood the additional losses (Goldman Sachs included), the drain on their capital, and the indirect effects of the turmoil that would have followed in the markets to which they were exposed. The issuers of products exposed to CDS in which AIG was involved would have had a further USD 70.6 billion of direct losses – and much more, potentially to the point of collapse, as the crisis would have deepened.

Table I.1.3. **US payments to settle AIG obligations after its failure**

In USD billion

Institution	Collateral postings for credit default swaps[1]	Payments to securities lending counterpaties[2]	Total	As a share of capital[3] at end-2008 (%)
Goldman Sachs	8.1	4.8	12.9	29.1
Société Générale	11	0.9	11.9	28.9
Deutsche Bank	5.4	6.4	11.9	37.4
Barclays	1.5	7	8.5	20.0
Merrill Lynch	4.9	1.9	6.8	77.4
Bank of America	0.7	4.5	5.2	9.1
UBS	3.3	1.7	5	25.2
BNP Paribas	…	4.9	4.9	8.3
HSBC	0.2	3.3	3.5	5.3
Memo: Bank of America after its merger with Merrill Lynch			*12*	*18.1*

1. Direct payments from AIG through end-2008 plus payments by Maiden Lane III, a financing entity established by AIG and the New York Federal Reserve Bank to purchase underlying securities.
2. 18 September to 12 December 2008.
3. Common equity net of goodwill; net of all intangible assets for Merrill Lynch and HSBC.

Source: AIG; company reports for capital data.

III. What is "*Too Big to Fail*": Size or structure?

"Too big to fail" is defined by systemic implications not size as such

A bank "too big to fail" might be defined as referring to a bank that has grown in a manner that its failure would have systemic implications:[10]

- for the country in which it operates, by interrupting commercial bank financial intermediation to such an extent that the economy and hence other financial firms would suffer significantly; or
- for the stability of other financial firms connected in counterparty transactions with the failing bank that would also impact the intermediation process.

In this case, creditors of and investors in the bank will consider the external cost of failure to be so large that policy makers would not permit it to happen, and this will be factored in to risk premiums in all financial transactions associated with the bank. But this is not so much a question of the size of the financial firm's balance sheet as one of its structure. Banks (*e.g.* those shown in Figure I.1.1) less driven by investment banking and structured products fared much better in terms of being able to absorb losses despite being very large in their domestic markets. Banks that were driven by investment banking were much more problematic in terms of contagion and counterparty risk regardless of their balance sheet size.

Contagion and counterparty risk

Securities business sharing capital with commercial banking creates contagion risk

The "too big to fail" problems peculiar to this crisis arose from the losses associated with excessive growth through derivatives and structured products. Banks carry relatively small amounts of capital. Assets valued at fair value for profit or loss on both sides of the balance sheet may be extremely volatile in a crisis, particularly where liquidity issues arise, and can wipe out the capital of the group. If the conglomerate includes a

commercial bank alongside other subsidiaries it will be wiped out (in the absence of a rescue) along with the rest: *i.e.* "contagion risk". This is because the (highly volatile) securities business "shares" capital with the less-volatile commercial bank where cost amortisation accounting applies.

Derivatives transactions create counterparty risk

The use of counterparties to structure securities and derivatives adds a second source of risk (other than the volatility of the assets held). The failure of a counterparty – which may be a bank (Lehman), insurance company (like AIG, MBIA, AMBAC, Radian, etc.) or a hedge fund – may impact many banks at the same time. No matter how well hedged a bank may be in a technical sense, a counterparty failure can be devastating, as the AIG example shows. In Figure 9, Société Générale, Goldman Sachs, Deutsche Bank, Barclays, Merrill Lynch and UBS would each have incurred losses in the range of 20% to 77% of their capital, and an indeterminate amount in the further chaos, had AIG not been rescued. Bank of America including Merrill Lynch would have been exposed to the tune of 18% of their capital.

Exposure limits may break down when they are most needed in a major crisis

In the case of Deutsche Bank, the failure of AIG resulted in a payout by the US Fed equal to 37% of the bank's capital at the time. Since regulatory rules do not allow such large exposures to single entities, the question arises as to how this could have happened. A sudden rise in volatility and collapse of liquidity in a crisis can result in levered derivatives exposures moving sharply and delta-hedging the portfolio to keep the exposure limited is not possible, as no-one will trade. Prior to the crisis, limits were no doubt respected. Exposure limits work well enough in normal periods, but may break down with speed when they are most needed in a major crisis.

Commercial versus *investment banking*

Commercial banking has experienced large losses in previous crises

Commercial banking has experienced large losses in previous crises. The fact that the unique feature of this crisis was business models based on securities and derivatives activities that are prone to contagion and counterparty risk does not mean that less volatile commercial banking is "safe" for all future states of the world:

- Commercial banks that are small and concentrated in assets in a particular region can have major problems if that region suffers idiosyncratic recessions and asset price falls.
- Excessive concentration in specific assets such as mortgages or commercial real estate can also lead to major problems (the S&L crisis; Australian banks in the early 1990s, etc.).
- Related-party transactions with industrial companies, as in Japan and Korea in the Asia crisis can be very problematic, as can such transactions in family-owned banks.
- Borrowing in foreign currency within countries that run current account deficits has been a major issue (Latin American debt crisis).

However, pricing issues are less problematic in commercial banking crises

In this crisis, hundreds of small regional banks focused on mortgages have failed and are being merged or closed.[11] More are likely to follow and this may well spread to regional banks excessively exposed to commercial real estate. Nevertheless, a credit culture combined with the right degree of concentration in banking has one great advantage over investment banking

securities businesses: the flows of incoming and outgoing cash are reasonably predictable and may be accounted for with amortised cost accounting. Securities prices, particularly those embedded with derivatives are accounted for at fair value, and losses may arise with volatility and/or the failure of counterparties. Furthermore, these losses can be very large and sudden: overwhelming the capital of a financial conglomerate and impacting on other financial firms with national and/or global systemic implications.

External cost of crises and resolution credibility

While large support for the financial sector has averted mayhem, it may lead to complacency

Some idea of the level of external support to stem the crisis can be found in Table I.1.4, which shows estimates of total capital injections and capital facilities in the first column (USD 1.5 trillion), asset purchases,

Table I.1.4. **The externalities of the unconstrained equity culture in banking**

	Capital injection and facilities USD billion, total	Asset purchases, guarantees and facilities USD billion, total	Debt guarantees and facilities USD billion, total
Australia	0	7	Amount not specified
Austria	22	0	15
Belgium	31	57	134
Brazil	0	0	1
Canada	0	119	Amount not specified
China	19	0	1
Denmark	20	0	119
Finland	6	0	74
France	40	6	474
Germany	119	711	667
Greece	7	0	22
Hong Kong, China	0	0	0
India	0	0	0
Ireland	15	114	Amount not specified
Italy	0	0	Amount not specified
Japan	144	299	1
Korea	17	0	100
Luxembourg	4	0	7
Mexico	0	0	1
Netherlands	62	86	296
New Zealand	0	0	Amount not specified
Norway	9	9	1
Portugal	6	0	30
Singapore	0	0	1
Spain	133	197	148
Sweden	10	0	216
Switzerland	6	39	Amount not specified
United Kingdom	81	243	36
United States	806	3 322	2 300
Total	**1 556**	**5 209**	**4 644**
Europe	571	1 463	2 239
United States	806	3 322	2 300
Other	180	425	105

Note: Estimates based on information available as of October 2009. The exchange rates used for conversion of non-USD figures are as of October 2009 (irrespective of the timing of the measures).
Source: OECD compilation.

guarantees and facilities in the second (USD 5.2 trillion), and debt guarantees and debt guarantees facilities in the third (USD 4.6 trillion).[12] No doubt these extremely large numbers were justified to forestall even more damaging financial disruption. But the risk now is that the respite from the crisis achieved through support may lead to complacency and a refusal to acknowledge how much damage the "equity culture" in banking may have done this time and – left unconstrained – may do again in the future.

"Too big to fail" problem requires thought about a number of interrelated issues

To deal with the "too big to fail" problem requires thought about a number of interrelated issues:

- Key institutions do need to be large enough to carry out intermediation without the excessive geographic and/or product concentration that can lead to solvency problems in small undiversified banks.
- But all banks also need to face sufficient competition to meet consumer needs at reasonable costs.
- There needs to be some separation in the structure of financial firms that ameliorates the problem of contagion and counterparty risk.
- A resolution regime needs to be in place that has some credibility – *i.e.* that the external costs of allowing a firm to fail are sufficiently small that it will not cause major systemic problems.[13]

Contagion and counterparty risk loom large

The capital and derivative markets are inherently volatile and interconnected globally, so contagion and counterparty risk loom large. Under present structures, if one aspect of a business fails, the repercussions can be extensive and damaging. The world should not have to suffer damage from such financial turmoil again. The rest of this paper focuses on priorities for reform that addresses contagion and counterparty risk.

IV. Assessing priorities to ameliorate contagion and counterparty risk

The accounting issues: IFRS 9

Changing rules is tempting, but…

One approach that may tempt policy makers is simply to change the accounting rules so that banks heavily focused on investment banking and structured products can ignore asset price volatility. This would make some sense if asset price volatility were mere "white noise" and not the result of excessive risk and leverage. However, the events of the past three years are entirely inconsistent with this view.

… financial reports need to be reliable, understandable and comparable

Accounting standards are set to ensure that investors and creditors of firms have clear information. Financial reports need to be reliable, understandable and comparable between companies and across jurisdictions. This includes both the inclusion of all off-balance sheet entities for which banks are exposed to loss, and the correct accounting for securities valued at fair value through profit or loss *versus* those to which amortised cost accounting might apply. These requirements are important to maintain the confidence of investors in public markets and to help reinforce shareholder discipline on management. This discipline helps to prevent crises in an *ex ante* sense. During the crisis, when illiquid markets cast doubt on market valuations, IASB reviewed the issue

extensively and made adjustments to interpretations of IFRS 9 that allow some greater flexibility:

- Debt instruments that are not held for trading purposes may be measured at amortised cost (even if listed).
- Equity instruments only have to be measured at fair value through profit or loss if they are to be traded. If they are not, the firm has a choice between the fair value approach and a method that does not require impairment charges to be taken to profit or loss.[14]

Accounting changes allow loan reclassification…

Similarly, FSP FAS 157-e applies since June 2009, allowing banks more judgment in determining whether a market is not active and a transaction is not distressed when discounting future cash flows of assets held to maturity (as opposed to the fair market price at the time).

… but allowing firms too much scope to switch accounting categories undermines transparency

The above changes allow banks within reasonable limits to reclassify some loans: essentially when the intrinsic value of assets is judged by management to exceed their estimated fair values, due to significantly reduced liquidity, and returns would be optimised by holding them as hold-to-maturity investments – essentially reclassifying them from financial assets at fair value through profit or loss to loans where amortised cost methods would apply. However, allowing firms too much scope to switch impaired fair value assets to amortised cost accounting categories – re-classifying a complex structured product with imbedded derivatives as a loan, for example – because it suits the bank in the short run is inconsistent with sound long-run objectives. Transparency is very important:

- mark-to-market and cost amortisation techniques should apply strictly according to the business' intentions with respect to the assets; and
- accounting standards should apply in a globally consistent and comparable way.

Aims should be to improve global consistency and comparability…

However, some banks and policy makers have suggested that the above changes do not go far enough.[15] As the accounting profession tries to bring about convergence between FASB and IFRS, and as countries in the Asian and Oceania regions have adopted IFRS in the expectation that this would occur, allowing further latitude in switching assets among accounting categories would be damaging to the aim of global consistency and comparability between listed companies.

… and to enhance corporate governance

In the longer run good corporate governance requires transparent and material information, so that the discipline of the market applies to management at all stages of the asset cycle.[16]

Corporate governance and compensation reform[17]

Reform of corporate governance should be given priority

Reform of corporate governance should be a high reform priority – given the role it played in some companies that weathered the crisis well – but the problem is that it will always require companies to embrace it voluntarily, so that good principles are translated into practice. Sound governance is to a large extent cultural – within banks where shareholder

rights are respected and good standards of governance are valued and reflected in long-run share price performance.

Asymmetry between stockholders' and creditors' interest is a problem

The fundamental problem is that bank shareholders/CEOs have a "put option" that is effectively written by depositors/creditors – and reinforced by CEO remuneration. The value of equity cannot fall below zero on the downside but can increase without limit on the upside. In essence, CEOs and stockholders are incentivised to reduce the risk-adjusted value of the creditor claim on the bank and thereby reallocate wealth from creditors to stockholders. It is in creditors' interest to prevent excess risk taking by stockholders (as is quite common in loan covenants in non-financial companies but rare in banking). An additional asymmetry is that remuneration and other short-term goals of management may drive a wedge between shareholders and their management agents.

Regulators need to encourage the fiduciary role of shareholders

Regulators need to encourage the fiduciary role of shareholders by supporting transparent accounts that reveal meaningful losses early and procedures that allow shareholders greater room to act:[18]

- appropriate accounting standards that reveal losses and management errors in strategy in a timely way;
- the removal of barriers to voting (*e.g.* share blocking; rules against acting in concert including alternative investors);
- the publication of voting records;
- a requirement for a majority of directors to be independent, with diversity of background and competence (and training requirements) in material aspects of the industry;
- the encouragement of independent committees and advisors for setting bonuses and pay that should be approved at shareholder meetings (with a focus on long-term and risk-adjusted performance).

Boards need to be accountable for risk in a more holistic manner

But none of these measures address the "creditor put" to bank shareholders and the incentive it gives for short-termism. Boards need to be accountable for risk in a more holistic manner, which includes bank creditors. This means focusing on risk as part of a longer-run corporate strategy – risk should certainly not be subordinated to profit centres. Risk officer reporting channels to the board that are independent of the CEO could help. But the problem with banking is its high degree of connectivity – can good governance be left to self regulation when contagion and counterparty risk can play such a large role? If some firms do not embrace sound governance voluntarily then excessive leverage and risk will emerge and may negatively impact those that do.

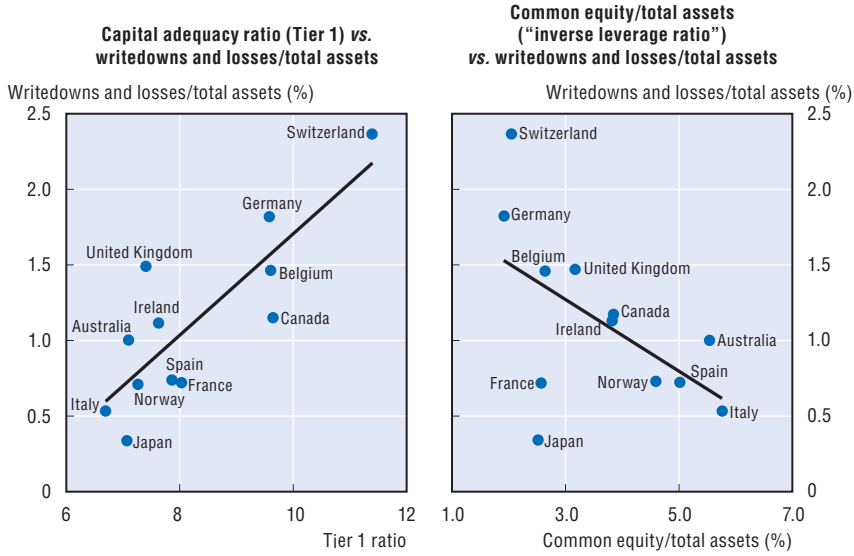
Capital regulation reforms

Substantial reform of capital adequacy rules has perhaps highest reform priority

Substantial and far-reaching reform of the Basel capital adequacy approach and the migrating of a leverage ratio on un-weighted assets is perhaps one of the strongest priorities for reform. Earlier publications have argued that Basel I and II to date have acted to exacerbate the crisis

by promoting capital arbitrage, increasing leverage and allowing CDS contracts misleadingly to conceal risk and reduce risk-weighted assets.[19] Figure I.1.7 shows the Tier 1 capital adequacy ratios (averages 2006-08) for the loss making banks of the country shown *versus* their cumulative losses from 2007 to mid-2009 as a percentage of total assets.[20] It is of no comfort to supporters of the Basel risk-weighting approach (as it has been formulated to date) that this relationship is a positive correlation. The un-weighted assets leverage ratio (negatively defined as equity over assets) has the expected negative association between capital held and losses.

Figure I.1.7. **Capital adequacy and leverage *vs.* losses**



Note: Calculations based on the sample of banks reporting write-downs and credit losses as reported by Bloomberg (see Table I.1.2), excluding US banks. Writedowns and losses are accumulated from January 2007 until mid-2009; Tier 1 ratios, total assets and common equity are averages of 2006-08 end-of-year data (2007-08 for Japan Tier 1 ratio).

Source: Bloomberg, Worldscope, Thomson Reuters Datastream, and OECD.

European banks' low capital levels are a hurdle to quick reform

European banks' low capital levels are a hurdle to the quick resolution of the capital standards via the addition of a leverage ratio. This would require significant capital raising in a short period, or deleveraging with its negative impact on the economy. It is to be hoped that the 2010 and 2012 deadlines set at the Pittsburgh G20 summit can be achieved without resort to inconsistent accounting methods. A two-track speed would be preferable to policies that might hamper the progress with other aspects of reform – and most notably the transparency needed for sound corporate governance and for less risk corporate.

NOHC structures for financial firms

Contagion risk due to the structure of financial firms

Adding a leverage ratio that applies at the group level will help constrain risk through excess leverage. But one further aspect of conglomerate structure needs to be addressed if the issue of composition – what banks do – is to be dealt with to reduce contagion and counterparty risk significantly in

the future. The problem is that for a given group leverage ratio banks can still allocate shared capital to higher risk/return activities so that contagion risk remains. Removing "too big to fail" problems will not be credible if it is clear to investors that contagion risk is present.

Leverage ratios need to be complemented by NOHC company structures

The following section illustrates why a leverage ratio needs to be complemented by non-operating holding company (NOHC) structures. This proposal does not require divestment of affiliates (as in Glass-Steagall) but does require legal separation of the capital pools for group subsidiaries with vastly different risk characteristics.

V. "Too Big to Fail": Leverage ratio and NOHC capital separation compared

Three alternative structures for illustration purposes

Table I.1.5 sets out three alternative structures to illustrate:

- the problem of lack of a leverage ratio constraint and the "too big to fail" implicit guarantee in structure (Case A);
- what imposing a leverage ratio does and does not do in Case B; and
- what legal separation of capital into siloes in a NOHC does in Case C.

Table I.1.5. **Alternative conglomerate structures A, B and C in descending order of risk**

Parent	(A) TBTF[1]		(B) TBTF and levg. restr.[2]		(C) NOHC (siloed cap.)	
Capital market activity	Equity 100		Equity 100		Equity 100	
	Comm. bank	Invest. bank	Comm. bank	Invest. bank	Comm. bank	Invest. bank
Subsidiaries						
Equity investment parent, USD bn	30	70	70	30	70	30
Debt, USD bn	480	3 500	1 120	780	1 120	570
Balance sheet total, USD bn	510	3 570	1 190	810	1 190	600
Debt/equity ratio	16	50	16	26	16	19
Leverage ratio (assets/equity)	17	51	17	27	17	20
Profit,[3] USD bn	5	36	12	24	12	6
Return on equity, %	17	51	17	81	17	20
Max. loss rate, in % assets	2.5	5	2.5	15	2.5	5
Max. loss, USD bn	13	178	30	121	30	30
Max. loss in % of equity	43	254	43	403	43	100
Group						
Balance sheet total, USD bn	4 080		2 000		1 790	
Leverage ratio (assets/equity)	41 times equity		20 times equity		18 times equity	
Unweighted capital ratio (common equity), %	2.5		5.0		5.6	
Max. loss in % of equity	191		151		60	
Return on equity, %	41		36		18	

1. A conglomerate "too big to fail" (TBTF), thus with implicit government guarantee; no restrictions on leverage ratio imposed.
2. A conglomerate "too big to fail" (TBTF), thus with implicit government guarantee; but assuming a group leverage restriction of 20 times equity is imposed.
3. Profits are assumed as 1% return on assets ("spread", ROA, on balance sheet total) for all Cases except for the IB in Case B, where profits are assumed to be 3% ROA (due to riskier IB activities compensating for the reduction in ROE caused by restrictions on leverage).

Source: OECD calculations.

Case A: Too big to fail, no leverage ratio constraint and excessive risk

The simplified example in Case A is not far off the situation in some conglomerates before the crisis. The group consisting of a commercial bank and an investment bank (IB) has a holding company parent or group executive that raises USD 100 billion in capital shown as equity in the example. It is assumed the bank is too big to fail and there is therefore an implicit guarantee from the taxpayer that causes the cost of leverage via derivatives to be too low (under priced):

- The bank allocates USD 70 billion capital to the IB and only USD 30 billion to the bank (constrained by deposit raising and long-term borrowing) in order to grow its business more rapidly.
- Assuming the debt/equity ratio for the bank is 16 and for the IB is 50 times, the bank has a balance sheet total of USD 510 billion and the IB USD 3 570 billion. The group balance sheet is USD 4 080 billion and the group leverage ratio is almost 41 times (a 2.5% unweighted capital ratio).
- The bank and the IB are both assumed to earn 1% on their balance sheet, and the higher return on equity employed in the IB of 51% derives purely from the greater leverage ratio. The maximum loss rate on IB activities is assumed to be 5%, double that of the bank due to counterparty and volatility risks in the derivative products it uses.
- The key point to note is that the combined loss exposure of the bank (USD 13 billion) and the IB (USD 178 billion) sum to USD 191 billion nearly double the capital of the group. Hence sudden sharp price movements or an AIG or Lehman-scale failure affecting the IB may wipe out the capital of the whole group, including the commercial bank and still leave a large bill for the taxpayer – a familiar story in the recent crisis. This is contagion risk writ large.
- The proportions of commercial banking *versus* investment banking are constructed to be like some of the "equity culture" banks discussed earlier. This banking group would indeed be "too big to fail": it has been allowed to grow very large with its volatile investment banking business and with the market lending in excess of what it could lose due to the implicit guarantee.

Case B: Imposing a group leverage ratio of 20 (un-weighted capital adequacy of 5%)

Imposing a group leverage ratio of 20 on large bank conglomerates would have management scrambling for a new strategy, and profitability would be hit badly, particularly if risk and return in the IB were not increased. This explains why such banks may be expected to resist calls to raise more capital and reduce leverage:

- In the example shown, the bank re-allocates capital to the commercial bank (USD 70 billion) with its assumed leverage ratio of 16 and halves the leverage ratio of the IB from 50 to 26 times its USD 20 billion capital. This achieves the group leverage ratio of 20.

- However, other things equal, this would essentially halve the rate of return on equity for the IB (if it were leveraging a 1% spread as in Case A). The group leverage ratio of 20 does not stop the IB from increasing its risk and return to make up for this. In the example shown the bank is assumed to lever 26 times a 3% spread (ROA) and triples the maximum loss risk for its balance sheet from 5% to 15%. (For example, it moves into lower-rated bonds, more emerging market debt, equity and commodity trades.)
- The policy of introducing a leverage ratio has greatly reduced the riskiness of the bank: the overall return on equity falls from 41% in Case A to 36% in Case B. But it does not eliminate contagion risk. If counterparties fail, the IB can lose USD 121 billion, 4 times the capital allocated to the IB. In a crisis this would spill losses over into the commercial bank "easily" absorbing all of its capital of USD 70 billion. This would lead to deleveraging and or taxpayer support if policy makers wanted to avoid this outcome. Counterparties would happily trade this degree of leverage in the IB as they potentially have access to USD 100 billion of capital for the group as a whole.
- Once again, it would not be credible that the structure in Case B would be allowed to fail in a crisis scenario. The group leverage ratio, while a good step in reducing risk, does not eliminate the contagion risk from which "too big to fail" is mostly derived.

Case C: The NOHC structure with silo capital pools

If the parent of the group was non-operating, and could only raise equity on the market and invest in its subsidiaries, which were legally separated – separate reporting and balance sheets with their own boards and governance – then an entirely new dynamic is introduced (Case C). Counterparties will be aware that they do not have access to group capital in a crisis but only to the separate capital of the subsidiary – in this example, to the USD 30 billion of the IB. The bank and the IB have capital in separate silos. Market discipline through margin requirements and leverage limits would restrain the activities of the IB. The market would enforce lower leverage and/or risk taking to ensure that the maximum loss did not more than exhaust the IB's capital:

- In the example shown, the IB is forced to cut the leverage ratio to 19 times (so that the assumed maximum loss would not exceed equity) and to reduce its risk/return exposure back to what it was in Case A (1% spread and 5% maximum loss).
- Note also that it is entirely credible that regulators could shut down the IB independently of the commercial bank in the event that it did lose all its capital. It is a separate legal entity, and its size is smaller due to the market disciplines of the structure.

The double gearing issue

In all of the above examples the parent may also use double gearing if regulations permit it. Double gearing would occur, for example, if the parent did not raise USD 100 billion on the stock market, but instead say raised half in various forms of debt or hybrids. Debt and equity would be invested as "equity" into the subsidiaries, to which they would apply their own debt/equity ratios as before. If in the above example USD 50 billion was raised as subordinated debt or hybrids, and USD 50 billion equity, then the rate of return on equity could be doubled and the group leverage ratio to true equity would rise sharply. It is imperative that the concept of capital to which any new leverage ratio rules apply should be for equity only.

VI. Advantages of an NOHC structure

The non-operating parent would have no legal basis to shift capital between affiliates in a crisis

Under the NOHC structure proposed, the parent would be non-operating, raising capital on the stock exchange and investing it transparently and without any double-gearing in its operating subsidiaries – the bank and the securities firm in the above example – that would be separate legal entities with their own governance. The subsidiaries would pay dividends through the parent to shareholders out of profits. The non-operating parent would have no legal basis to shift capital between affiliates in a crisis, and it would not be able to request "special dividends" in order to do so.

NOHC structures allow separation insofar as prudential risk and the use of capital is concerned while permitting synergies and economies of scale and scope

These structures allow separation insofar as prudential risk and the use of capital is concerned without the full divestment required under Glass-Steagall. In response to recently expressed concerns of Paul Volcker and Mervyn King,[21] such extreme solutions should remain the proper focus of competition authorities. With a NOHC structure, technology platforms and back-office functions would still be shared, permitting synergies and economies of scale and scope. Such a transparent structure would make it easier for regulators and market players to see potential weaknesses. Mark-to-market and fair value accounting would affect those affiliates most associated with securities businesses, while longer-term cost amortisation would dominate for commercial banking. It would create a tougher, non-subsidised environment for securities firms, but a safer one for investors.

Risk pricing would be improved

If a securities firm under this structure had access to limited "siloed" capital and could not share it with other subsidiaries, and this were clear to the market, this would be priced into the cost of capital and reflected in margins for derivative transactions. The result would likely be smaller securities firms that are more careful in risk taking than has been the case under the "double gearing" scenarios seen in mixed or universal bank groups.

Affiliates could fail without affecting its sister firms

Finally, if a securities affiliate were to fail under such a structure, the regulator could shut it down without affecting its commercial banking sister firm in a critical way – obviating the need for "living wills." Resolution mechanisms for smaller, legally separate entities would be

more credible than those needed in the recent past for large mixed conglomerates – helping to deal with the "too big to fail" issue. To protect consumers, deposit insurance and other guarantees could apply to the bank without being extended to the legally separate securities firm.

Exit strategies need to entail a reassessment of rules and a structure of conglomerates

Banks would resist this proposal because of its impact on their risk taking and potential short-term returns (as shown in the example). Until now, the implementation of regulatory standards and accounting rules has been eased. Fiscal policy has supported the economy and interest rates are being kept low to support the underlying earnings of banks and their ability to issue new equity in rising markets. This strategy may work in the short term. But it cannot go on forever. Sooner or later exit from the extraordinary support measures will be necessary. The world is still waiting for a full reassessment of rules and a structure of conglomerates that will change what banks do to reduce the chance of it ever happening again.

VII. Conclusions

Systemic failure is linked to what banks actually do

The main cause of systemic failure in the current global crisis was seen to be linked to what banks actually do within the broad global regulatory framework which failed adequately to restrain excessive leverage and risk taking.

Equity culture pushes leverage and risk taking

Improved corporate governance could in principle bring about safer conglomerates. However, the above examples on alternative structures show enormous differences in the potential returns that can be gained with different leverage and risk taking assumptions. Derivatives are powerful tools to transform and shift risks to avoid many regulatory constraints and to structure products to take advantage of tax loopholes for the benefit of financial firms and their clients. The scope for innovation under the equity culture – pushing leverage and risk taking for short-term gains – is virtually unlimited and may again prove too great a temptation for many firms.

Transparent and comparable accounting rules and improvements in corporate governance are not enough

This paper emphasised the need for transparent and comparable accounting rules and for improvements in corporate governance. But the interconnected nature of banking makes it quite different to industrial firms, and it is unlikely that voluntary improvement will be enough to change the potentially damaging things that banks do. Two aspects of the reform process are essential to deal with contagion and counterparty risk that are so integral to the "too big to fail" issue:

- The imposition of a group leverage ratio foreshadowed at the Pittsburgh Summit to provide the binding constraint that Basel risk-weighted rules have been unable to achieve.
- A NOHC structure to address contagion and counterparty risk directly.

A group leverage ratio applied to on and off-balance sheet structures…

The leverage ratio is effective if applied to on- and off-balance sheet structures, and provided it is based on the equity of the firm (and not a broader concept of capital which would leave scope for double gearing). However, on its own it does not prevent increased risk taking for a given leverage ratio, and nor does it exclude contagion risk.

… needs to be combined with an NOHC structure that, while legally separating capital within a conglomerate, would still allow benefits from synergies and economies of scale and scope

A NOHC structure addresses contagion and counterparty risk directly. It is also quite practical. Nearly all banks organise their internal allocation of capital in terms of profit centres with different risk/return characteristics that must meet internal hurdle rates or return in the group capital allocation process. They simply do not go the extra step required for legally separate ("siloed") capital pools for subsidiaries, so that the market can better determine the cost of capital for each business segment. Encouraging legal separation would be relatively simple. Banks would oppose it legitimately on the grounds that it would raise the cost of capital for high risk activities and likely shrink their securities businesses (as risk would be re-priced with the reduction in implicit public guarantees and internal cross-subsidisation). They could not, however, legitimately oppose the structure on the basis of arguments about economies of scale and scope – legal separation of capital and a non-operating parent still enables sharing of technology platforms, cross-selling and back-office synergies. Fair value mark-to-market accounting will affect securities businesses more than commercial banking, where cost amortisation will dominate, making accounts more transparent and ensuring that volatility is reflected clearly where it should be found.

Notes

1. Grantham (2009).
2. If banks with similar business models to these 5 are added: JP Morgan now absorbing Washington Mutual and Bear Stearns (with a 10 year guarantee of USD 30 billion by the Fed), Lehman Brothers, Merrill Lynch (within Bank of America), Well Fargo (Wachovia), Crédit Suisse, Crédit Agricole (Calyon), Royal Bank of Scotland (ABN Amro), Morgan Stanley, ING, BNP Paribas, Société Générale, and the 3 main non-bank loss makers in dealing with securitisation and CDS: AIG, Fannie Mae and Freddie Mac, then USD 1.05 trillion of the USD 1.61 trillion of losses and write-downs admitted to globally for banks and insurers is accounted for. A lot of the rest is made up of "copy cat" banks getting into the act, Fortis, Dexia, Hypo Real estate and so on. These figures do not include the full failure loss of Lehman Brothers, nor losses that have been essentially hidden with accounting rulings, regulatory forbearance and losses quietly absorbed by state-owned banks.
3. The trading assets are consolidated with other assets at fair value through profit or loss. The US banks include unconsolidated VIE's in this category.
4. A typical hedge fund has a leverage ratio of 4 or 5.
5. The Deutsche Bank balance sheet has been strengthened by a three-tranche deal to giving it access to equity held as deposits in Deutsche Postbank.
6. Citigroup's QSPEs are an order of magnitude higher than its VIEs, but Citi in theory has transferred the risk to third parties. QSPE's in June were USD 747 billion or 40.4% of the reported balance sheet.
7. Maximum loss exposure is the amount of money that would change hands in net term if all counterparties simultaneously failed.
8. This is a highly standardised single tranche CDO, with (say) iTraxx Europe or CDX NA IG as its reference portfolio. Besides using standard portfolios, the attachment and detachment points, maturity and documentation of index tranches are also standardised, ensuring that these products are much more liquid than bespoke synthetic CDOs. Structured equity products are not included.
9. Synthetic CDOs can either be single tranche CDOs or fully distributed CDOs.
10. Note that the Financial Stability Board (FSB) is currently looking into these issues, including definitions for systemic importance; see IMF-BIS-FSB (2009).

11. See *www.FDIC.gov*. By 23 December 2009, 166 banks have failed since 2008; almost all in the small specialised category (*www.fdic.gov/bank/individual/failed/banklist.html*). Local savings banks in Spain are also in trouble and the so-called dynamic provisioning (counter-cyclical) capital rules have not been able to prevent this.

12. OECD estimates of losses looking forward are provided in Blundell-Wignall and Atkinson (2009).

13. The Financial Stability Improvement Act that has just passed the House focuses on co-ordinated oversight, and gives strong powers for resolution to the Treasury, the Fed and the FDIC. It does not directly address the structure of financial firms.

14. If held to maturity, temporary impairment reverses on a fair value measurement and "fair value through other comprehensive income" allows dividend income only to be taken to profit or loss.

15. The European Commission has asked for more time to consider IFRS9. Jörgen Holmquist, Director General of Internal Markets at the European Commission, argued in a letter to the IASB that more assets might be marked to market under the new system than even under existing rules. He urged the IASB "urgently" to consider further changes.

16. In this respect, the reform proposal to migrate OTC derivatives to exchanges and the use of centralised clearing has strong advantages and should be encouraged in the reform agenda. *First*, it improves liquidity and transparent pricing – in particular, margin requirements based on historic volatility patterns are possible, which facilitates transparent netting arrangements. *Second*, netting and holding collateral with the clearer make settlement in the event of losses and/or counterparty failure safer and more rapid. *Third*, centralised counterparties may make things clearer for regulators in the event of unravelling trades in a crisis. This type of reform is important, but it is not a panacea. The problem is that many OTC derivatives are idiosyncratic and cannot easily be standardised for trading purposes. The sheer size of trades, too, means that losses may overwhelm exchanges which might remain small in size – never gaining the depth required for the bulk of the products used in securitisation.

17. See OECD (2009) for a more detailed discussion of these issues.

18. See also Kirkpatrick (2009).

19. See Blundell-Wignall and Atkinson (2008) and Blundell-Wignall *et al.* (2009).

20. The US is excluded from the scatter plot as most conglomerate losses occurred in off-balance sheet vehicles to which Basel capital adequacy did not even apply.

21. See, for example, the report to the G30 by the Working Group on Financial Reform led by Paul Volcker (Group of Thirty, 2009), and the speech by Mervin King (King, 2009).

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The Financial Industry and Challenges Related to Post-Crisis Exit Strategies

by
Gert Wehinger*

Financial markets have recovered substantially but vulnerabilities remain significant. Ample liquidity may lead to new bubbles, particularly in some emerging markets, and uncertainties about government exit strategies and regulatory changes threaten a fledgling upswing. Co-ordination and communication of exit policies will be important, and exit from policy stimulus should not be precipitated at the current juncture. While financial institutions have increasingly obtained market financing and paid back state aid, the sector remains fragile; thus, such voluntary pay-backs should meet preconditions aimed at ensuring the soundness and sustainability of the concerned institutions' balance sheets. At the same time, expectations of future writedowns and more stringent capital rules put pressure on bank lending more generally. Restarting securitisation to support lending would be important and could be fostered by government initiatives focussing on standardisation, transparency and due diligence to restore investor confidence. Regulatory reforms currently being proposed concern accounting rules, capital requirements and compensation issues. However, further reforms are required to address such systemic issues as moral hazard created by public support. Measures would include resolution mechanisms for large and systemically important banks as well as appropriately fire-walled business structures for the financial sector. Peer pressure via co-operation in international standard-setting and relevant bodies should help to keep the reform momentum, overcome political impediments to reform and maintain a level playing field.

* Gert Wehinger is Economist in the Financial Affairs Division of the OECD Directorate for Financial and Enterprise Affairs. The present article is based on a background note prepared for the OECD Financial Roundtable held with participants of the private financial sector and members of the OECD Committee on Financial Markets on 8 October 2009. The present version takes into account the discussions and comments made at that meeting and selected developments that have taken place since. The author is grateful for additional comments from Adrian Blundell-Wignall, André Laboul and Stephen Lumpkin, and editorial assistance from Laura McMahon and Edward Smiley. The author is solely responsible for any remaining errors. This work is published on the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or the governments of its member countries.

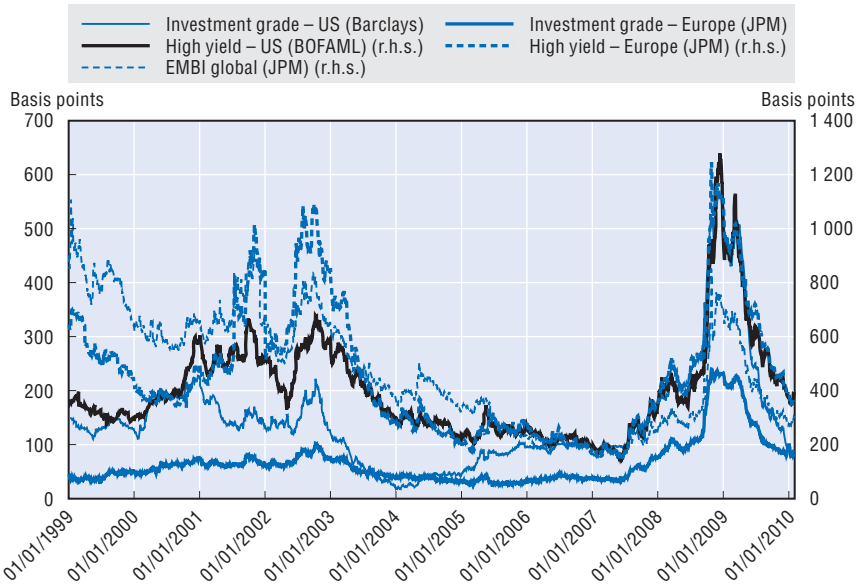
I. Current outlook and vulnerabilities

Financial markets have recovered substantially…

Financial markets have recovered substantially since March 2009 when the financial stress began to ease and market conditions started to improve. With easy monetary policy and large fiscal support to avert larger financial and economic shocks, liquidity and credit risk premiums have narrowed significantly (Figure I.2.1). Market value gains have now, globally, neutralised about 60% of the losses incurred since the onset of the downturn (Figure I.2.2).

Figure I.2.1. **Risk spreads have narrowed**

High-yield and emerging market bond spreads



Note: Daily data until 1 February 2010.

Source: Thomson Reuters Datastream.

… but vulnerabilities remain significant

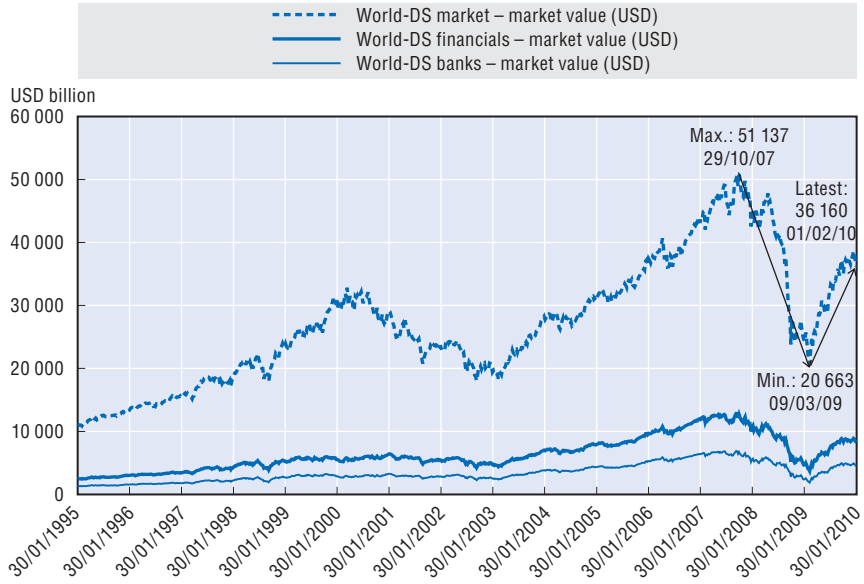
While financial markets have entered a period of relative tranquillity and the outlook for economies has improved,[1] the effects of the financial crisis linger and vulnerabilities remain, as some of the negative feedback loops are working their way back from the real sector (which was affected by a delay bby the first wave of the financial crisis). Should the various risks for the financial sector materialise in the current conjuncture, their impact could be relatively more significant than under more stable circumstances.

New bubbles may be forming…

While easy monetary and fiscal policies have been providing relief from the most severe effects of the crisis, they maintain global liquidity at a high level (Figure I.2.3). As investors' uncertainties and fears subside,

Figure I.2.2. **Equity valuations are recovering**

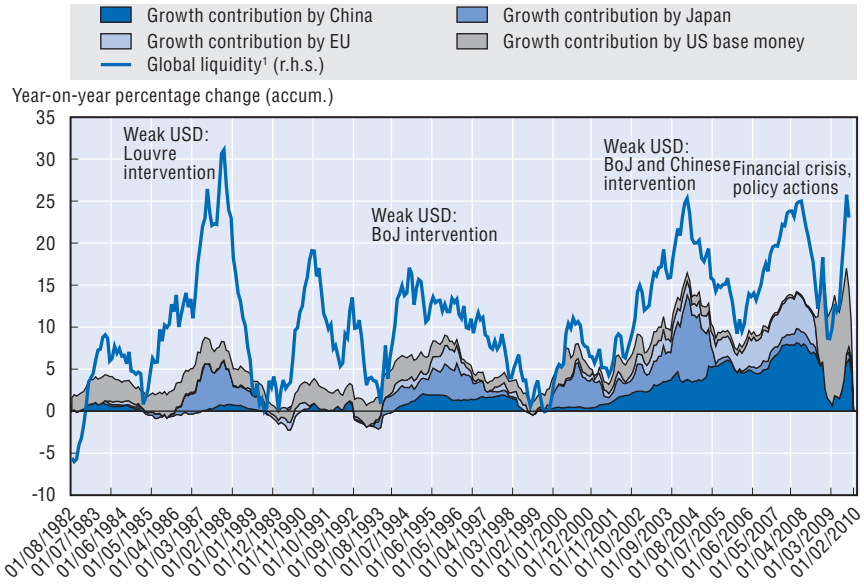
Datastream World indices, market valuations in USD billion



Note: Based on equity valuations of constituents contained in the respective Datastream World indices as shown.

Source: Thomson Reuters Datastream.

Figure I.2.3. **Global liquidity remains ample**



1. Annual growth of non-US international reserves and US monetary base.

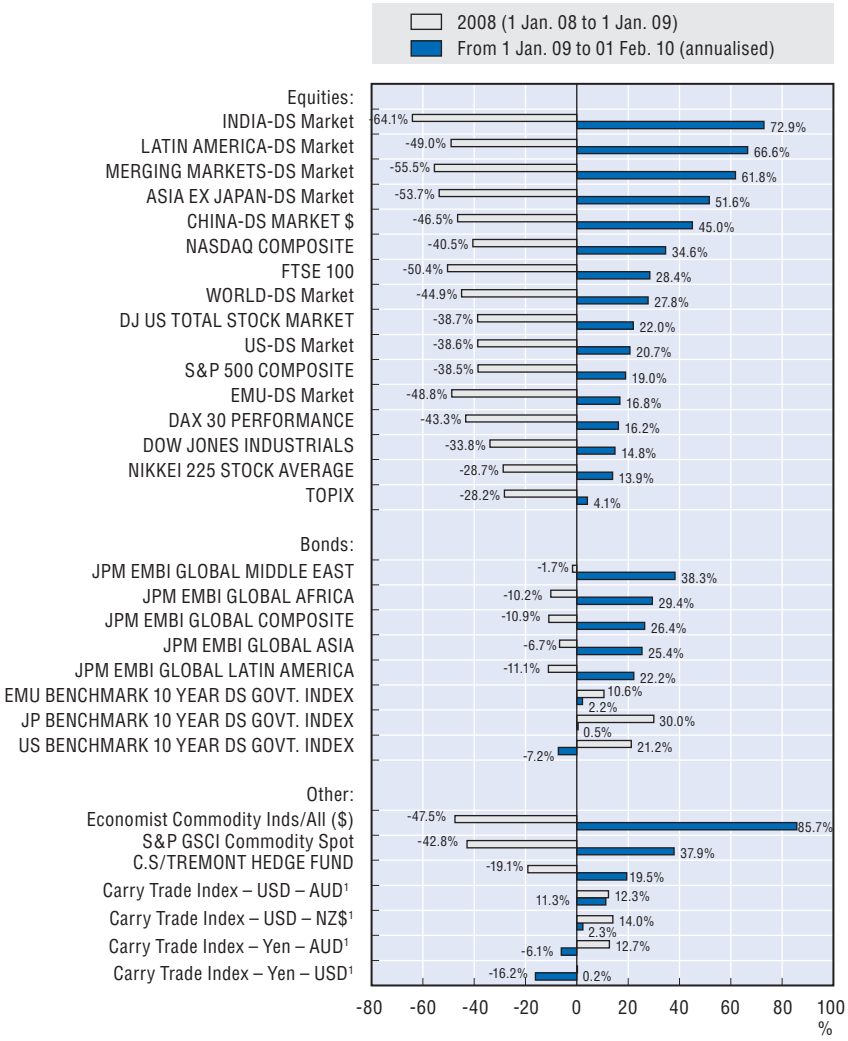
Note: Contributions to growth measured by the respective reserve or monetary components in the liquidity measure.

Source: Thomson Reuters Datastream and OECD.

this liquidity is searching for new, higher-yielding investments (Figure I.2.4). Upward price pressures on certain asset classes are emerging, and some signs of new bubbles are becoming apparent.

Figure I.2.4. **Returns have improved across a broad spectrum of asset classes**

Selected investment alternatives, percentage changes over period, annualised, in US dollar terms



1. The carry trade return index is calculated based on the assumption of one-month investments in the respective currencies, borrowing in yen, applying one-month euro-dollar interest rates and central exchange rates, without taking into account bid-ask spreads and transaction costs.

Source: Thomson Reuters Datastream and OECD.

... in emerging markets in particular

However, there is some agreement among market observers that despite the rallies in almost all asset classes, most of them have not reached bubble territory. Perhaps the high-yield bond segment, which has seen record levels of issuance in recent months (while declining spreads reflect investors' increasing risk appetite), bears watching. But market participants are becoming wary of some early signs of bubble formation that are beginning to show in Asian and other emerging markets. Ongoing adjustmentd to the global saving and investment imbalances are rendering many of these economies more vulnerable than investors may currently be aware. While carry trades are becoming profitable against the background

of low US interest rates and some fixed Asian exchange rates, the build-up of trades could create problems farther down the road. The rallies in these markets may create the fault lines for future disruptions.

Real estate markets remain a problem, and credit quality is deteriorating across a broad spectrum of lending categories

At the same time, house prices (their sharp drop was at the heart of the current crisis and some analysts believe they still need to undergo further downward adjustment) are beginning to rise, too early perhaps, in some parts of the world.[2] Commercial property may turn into a severe problem, especially in Europe where a vast amount of commercial property loans need to be restructured or refinanced, part of it in commercial mortgage-backed securities (CMBS) for which restructuring has proved especially difficult. In addition, credit quality across a broad spectrum of lending categories is further deteriorating, and default rates are expected to rise.

Recovery in money markets has been uneven, favouring the United States

Market participants have also pointed out that market recovery has not been even, in part due to unlevel playing fields that risk becoming more unbalanced. In particular, in security-backed short-term cash markets, divergences between the United States (and Asia-Pacific) on the one hand and Europe and the United Kingdom on the other are still significant. In the United States, where markets have benefitted from the Term Asset-Backed Securities Loan Facility (TALF) programme and where underlying securities are more homogenous, markets are more liquid, while in Europe the challenges to access short-term cash are much greater because collateral securities carry more idiosyncratic risks and maturities tend to be longer, exposing them to extension risk.

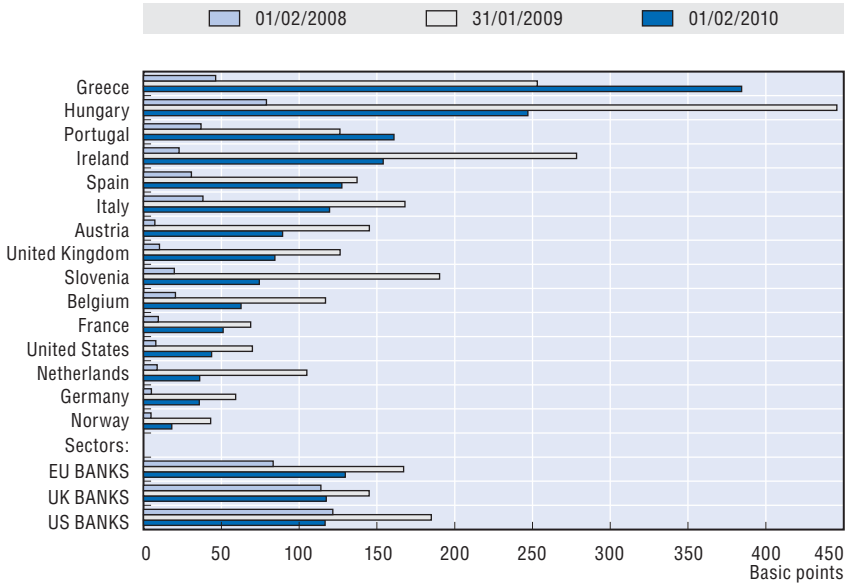
Risks also exist with respect to policy exit and sovereign debt

The necessary withdrawal from extraordinary policy support measures constitutes the basis for another set of risk factors. There is a danger that policy makers exit either too soon or too late. In the first case, stimulus withdrawals could throw the economy back into contracting mode, generating an often feared double-dip recession. In the second case, where withdrawal is too late, fiscal deficits would rise even more and inflation could surge, also because monetising the rising fiscal deficits would meet less political resistance than spending cuts or tax increases. New bubbles would easily build, and these imbalances would unnecessarily postpone adjustment and, in the end, require tighter stabilisation policies that might upset financial markets to a larger extent than an earlier adjustment would have. Some of the risks related to fiscal deficits have been foreshadowed in recent sovereign rating downgrades in Europe and rising credit default swap (CDS) spreads for sovereign debt (Figure I.2.5).

Co-ordination and communication of exit policies will be important

While the risks associated with such timing issues may be large, there are also risks that uncoordinated exit policies may create an uneven playing field across financial sectors and countries. There are further risks that inappropriate communication or lack of credibility of proposed exit policies could create uncertainties which could again destabilise markets. Unexpected policy withdrawals could render a transition to the new regime more difficult for financial institutions, and the sector as a whole.

Figure I.2.5. **Selected credit default swap (CDS) spreads**



Note: Senior five-year credit default swap premiums (mid) for sovereign bonds; senior five-year credit default swap premium index (mid) for banking sector.

Source: Thomson Reuters Datastream and OECD.

Exit from policy stimulus should not be precipitated

There seems to be a broad consensus in the official as well as the private sector that the recent upswing is not yet fully self-sustained and that policy stimulus is still necessary in many economies. At the current juncture, it seems better to err on the side of avoiding the downside risks, which include deflation and a double-dip recession. In the current cycle, the Reserve Bank of Australia was one of the first central banks to raise interest rates in October 2009 (with two further increases in November and December). Similarly, China tightened credit in early January 2010, and others may follow in due course.

The success of exit strategies will depend on proper co-ordination, timing and policy communication

Proper co-ordination between fiscal and monetary policies will be important. Also, given differences in economic stance and exchange rate pressures, the speed of exit will have to differ across economies and will thus need proper international co-ordination in order to avoid imbalances and unlevel playing fields. Timely and clear communication of these policies will be important so as to render policies predictable and credible, and to facilitate the transition to a new policy regime. As this crisis has shown, expectations are important and building confidence will be a prerequisite for a solid recovery.

II. Assessing the resilience of the banking sector

Financial sector soundness

Financial institutions have increasingly obtained market financing

As financial markets recovered, financial institutions have been able to raise capital on equity markets, especially in the United States. Share prices have improved; major G20 banks have on average recovered about two thirds of their 2008 losses (Table I.2.1). These improvements also reflect profit reports, some of which have become more positive after the

Table I.2.1. **Banks' market value losses and gains**

Change in market value of largest G20 banks, in USD billion[1]

	2009[2]	2008	2007	2006	2005	2004	*Memo:* MV (latest)[5]	*Memo:* recovery[6]
United States	250.6	–332.0	–290.4	173.7	–20.0	162.2	765.3	75.5
United Kingdom	173.5	–256.7	–72.8	109.0	–19.1	58.2	374.6	67.6
Italy	27.9	–177.9	73.2	61.4	47.1	21.4	158.9	15.7
France	86.8	–157.6	–31.6	108.6	13.4	26.9	191.3	55.1
China	101.1	–124.3	60.1	82.3	–	–	318.1	81.4
Australia	123.9	–110.9	43.7	38.9	18.2	19.2	247.1	111.6
Russian Federation	68.3	–110.1	24.7	47.1	17.9	4.7	97.6	62.1
Japan	–4.0	–107.7	–111.8	–48.6	204.0	96.3	292.7	–3.7
Canada	93.7	–97.4	12.2	31.1	37.2	24.7	226.3	96.2
Brazil	126.0	–86.4	59.6	38.6	29.9	12.5	224.2	145.8
Germany	22.3	–80.0	–3.7	34.1	14.8	1.2	62.6	27.9
Turkey	52.1	–69.1	40.9	–4.0	26.0	10.0	96.4	75.4
Korea	33.2	–63.8	–0.0	11.9	39.1	8.2	66.8	52.1
India	41.5	–59.3	56.5	16.7	11.6	7.9	93.9	70.0
South Africa	22.0	–22.1	–0.3	6.8	7.7	23.5	61.7	99.5
Indonesia	23.8	–16.2	7.6	14.1	–1.4	7.3	47.7	147.3
Mexico	7.0	–8.9	5.6	6.6	0.8	4.7	24.1	77.9
Argentina	3.7	–4.5	–0.4	2.7	0.6	0.6	7.1	81.3
G20 country total	1 253.4	–1 885.0	–126.8	730.9	427.7	489.4	3 356.3	66.5
Memo item: Euro area total[3]	228.6	–789.1	81.8	379.2	105.6	143.7	746.0	29.0
Memo item: G7 total[3]	650.8	–1 209.4	–424.8	469.3	277.4	390.8	2 071.6	53.8
Memo item: Global[4]	1 671.5	–2 784.9	–43.6	1 140.6	505.7	695.1	4 540.1	60.0

Sorted by 2008 losses.

1. Based on banks contained in respective countries' Datastream bank indices. Note that such data are not available for Saudi Arabia.
2. From 1 Jan. 2009 to 1 Feb. 2010.
3. Based on banks contained in respective countries' Datastream bank indices.
4. Based on banks in Datastream worldwide bank index.
5. *Memo item:* Market valuation as of 1 Feb. 2010.
6. Ratio of change in 2009(b) over the negative change in 2008, in per cent.

Source: Thomson Reuters and OECD.

heavy 2008 writedowns. Banks are now buying back securitised credit on the secondary market and are benefiting from the reduced spreads. These improvements have allowed several banks to repay state aid, and other financial institutions are considering exiting too.

The effects of liquidity support are now visible in the growing search for yield and appetite for risk

Liquidity interventions and terming out of public sector funding replaced private sector funding where there were shortening maturities, and the expansion of collateral has allowed banks to refinance in liquid assets. The money market guarantees in the United States have allowed, both directly and indirectly, about USD 4 trillion of assets to continue to circulate. However, the effects of this liquidity increase can now be seen in the increasing search for yield and appetite for risk. This shows up particularly in the fixed-income market through contraction of spreads in the secondary securitised credit market and in spreads of unsecuritised bank credit. Initially this took place at the highest credit quality, but lower-grade credit soon followed the spread contraction.

Banks' balance sheets are not yet on a sound footing

But, overall, the situation for the banking sector remains fragile. Writedowns have continued and have not yet been fully matched by private capital raised. While the situation seems to look relatively better

for European than for US banks, off-balance-sheet items and contingent liabilities may yet pose serious problems for European banks. Furthermore, the European group of banks reporting losses has a much higher leverage ratio than their US counterparts.[3]

Future bank losses are still expected to be significant

Due to accounting requirements,[4] US banks will need to bring USD 1.3 trillion in off-balance-sheet vehicles onto their balance sheets over the next year. Future losses are still expected to be significant. The IMF expects losses of USD 3.4 trillion over 2007-10, down from the previous USD 4 trillion;[5] JP Morgan has recently published a smaller loss estimate of USD 2.3 trillion.

Balance sheets are not comparable globally due to different accounting rules – a case that presses for harmonisation

A note of caution is required when comparing losses and writedown data internationally. Differences in accounting rules make for gaps in the range of perhaps a factor of two. Thus, if such a factor were applied, *i.e.* assuming European banks were to apply the US Generally Accepted Accounting Principles (GAAP) instead of International Financial Reporting Standards (IFRS), the recent IMF estimates for losses of European banks could be roughly halved. Nevertheless, losses would remain huge, but such calculations are a stark reminder of the importance of harmonising accounting rules, in particular as international policy co-ordination is of the essence to resolve the crisis.

Further official support will be needed for the banking sector

Further official support will be needed as there is not yet enough capital in the banking system, and many banks do not yet have access to wholesale funding. The market is not yet deep enough for the liquidity schemes, put in place in response to the crisis, to be removed. A sudden withdrawal of these schemes would seriously impede recovery. Also, the success of various government programmes to deal with toxic assets (*e.g.* Public-Private Investment Program for Legacy Assets (PPIP) in the United States, "bad banks" in the United Kingdom, Ireland and Germany) and their phasing out will be crucial for the financial sector to recover.

Banks are exposed to risks in commercial real estate and business loans

One of the major risks going forward is in the commercial real estate segment where prices are declining and delinquency rates are rising. In the United States, about 12% of the approximately 8 200 banks have a commercial real estate exposure of more than five times their tier-one capital, and it is estimated that up to a thousand banks will face major difficulties. A second area of banking sector worries is loans to business, in particular large syndicated loans. By end-2009, 118 US banks had failed, and the number is expected to rise substantially.[6]

Bank lending has not yet picked up as banks are increasing liquidity buffers…

These pending risks and the banking sector's fragility from previous losses are the reason that much of the liquidity support is currently resting in deposits by banks that need to improve their balance sheets. At end-2009, US banks held more than USD 1 trillion in excess reserves with the Federal Reserve. But these reserves not only serve as buffers against expected losses but also act as buffers for the unsecured parts of the interbank market. Banks claim that these reserves are also serving the function to prepare for potentially tighter regulatory requirements. In fact, due to such requirements, the industry expects banking to become

less profitable: some observers from within the banking industry expect that return on equity could drop by one third to one half, based on a five-year average measured from 2002 to 2007.

... but demand factors also play a role

But lower lending is also due to demand-side factors. Demand-side effects are relatively strong in countries with low saving rates. In the United States and United Kingdom, as well as some other continental European countries where households have to repair their balance sheets, credit demand has been slowing significantly.

As part of an exit strategy, reserves could eventually be replaced by government bonds

While the liquidity "hoarded" by banks fulfils useful buffer functions, going forward, and as part of an exit strategy, some industry representatives have proposed that banks could substitute these buffers with government bonds in synch with the withdrawal of liquidity, and in accordance with the expected higher liquidity and capital requirements. Given the future financing needs of governments, there should be no shortage of such bonds.[7]

Measures to re-establish lending and securitisation markets

The key missing link to restart lending is securitisation, which needs to be restored...

One of the key missing links to put bank liquidity to use for lending is securitisation.[8] In the US market, about USD 1.8 trillion (net amount of residential mortgage-backed securities [RMBS] issued by the banking sector in 2007[9]) of securitised assets need to be replaced. The decline in securitisation has left a gap that cannot be easily filled by traditional bank balance sheet lending alone. Securitisation is a way by which private investors fund household and business loans and is thus an important element in restoring economic growth. The two publicly distributed asset-backed securities (ABS) deals in Europe in late summer 2009, the first since July 2007, were seen by many market participants as an indication of the right way forward. It is thus in the interest of policy makers to help restore this market segment, and the current central bank lending programmes (widening of eligible collateral) are part of these efforts. It is noteworthy that the ECB's collateral framework had allowed the use of ABS as eligible instruments, even before the sudden appearance of the funding difficulties, which proved great support during the crisis.[10] As some central banks have become large securities buyers, policy makers need to think about how to make these markets sustainable once official demand is withdrawn. More structural measures will need to be put in place to support the market.

... with policy support that focuses on standardisation, transparency and due diligence

Policy makers have many possibilities to support securitisation markets and to restore investor confidence and secondary market liquidity, *e.g.* by enhancing standards, transparency (such as allowing access to loan-level data, already possible in the United States) and overview of investor due diligence. Institutional investors are currently avoiding these markets because many of them have lost confidence. And, due to single-name limits, many of the institutional investors would also not be allowed to invest large volumes directly in a few large banks (those that were the main RMBS issuers). As many of these investors were forced

to sell the toxic assets, they took the brunt of the price adjustment, while banks are now buying (back) many of the securities on the secondary market (while at the same time they are hardly issuing any new ones).

Loan funds could support lending

Further proposals for official measures to re-establish lending and securitisation markets could be put forward. One is that government compete with banks through asset management companies that would extend direct loans to the industry. Some so-called loan funds engaging in this type of business exist already.

Measures need to be initiated by government

Deriving lessons from the origins of the development of securities and derivatives markets could help. The securitisation model's original purpose (in the late 1980s) was transferring risk to investors who previously had unsecured (not asset-backed) exposure, and it had evolved into a well-established system with standards, enhanced infrastructures and built-in checks and balances. Likewise, swap markets developed through standardisation, netting agreements, etc. Thus, the securities market would also benefit from standardisation of products, better information, transparency and due diligence. Policy makers would need to provide the momentum (as was done in the case of the creation of swap markets) to develop these measures. For example, the Eurosystem has taken some steps to simplify the structures of ABS, which it accepts as collateral in order to create more transparent instruments.[11] Such transparency, with more timely and standardised information on the performance of underlying loans, would help investors' due diligence.

Exchange trading would enhance price transparency and attract more investors

Better price transparency is one of the elements needed to make the market more liquid. This could be achieved by transferring a large part of the business away from over-the-counter (OTC) trading onto exchanges, where government could initiate or support market-making activities if needed. Furthermore, the traditional buyers of securities credit used to be short-term, fixed-income and cash investors because of the floating-rate nature of these products. Turning them into more fixed-rate-like products could attract a different buyer base into the market.

Voluntary exit from government support by financial institutions

Some banks have started to pay back public support…

So far, a decline in borrowing from the various emergency liquidity facilities provided by central banks in response to the crisis has been observed, and banks have made efforts to pay back the government support they received in response to the crisis. US banks (large money centre banks) had by end 2009 paid back about USD 164 billion of public support[12] and raised capital beyond that amount. Similar paybacks have taken place in France (where all banks have reimbursed official money), the United Kingdom and elsewhere,[13] and many banks are considering such exit from state support.

… but such exit has to be carefully managed

But such exits have to be carefully designed and managed. While the improvements in financial markets have made it relatively easy for banks to repay state aid, an exit from government support may be premature for many institutions and not warranted with the still fragile situation. But,

again, many government programmes were designed in such a way as to make state aid unattractive as market conditions improve. Some of these built-in withdrawal incentives may have to be reassessed as aid programmes are being rescheduled. Perhaps governments should also establish conditions under which a recipient institution would be allowed to repay government support. Such rules would then need to be communicated in a proper and timely manner.

Market-driven exits should not create undue risk

More generally, exit from state support should happen without creating undue risk. For example, reimbursement of official funds could happen under the conditions that: i) paybacks are replaced by high-quality capital raised; ii) assets, especially risky assets, on the balance sheets of banks concerned are fairly valued; and iii) these banks have a viable long-term business strategy. To qualify for repayment of state aid, institutions should also credibly demonstrate to have market access and should be able to raise capital by issuing equity, and not by excessive deleveraging and tightening credit supply. Such conditions could also specify that capital ratios should remain comfortably above the regulatory minimum. Quality requirements for private capital that is used to replace public capital support could specify, *e.g.* that private capital should be at least of the same quality as the public capital that is being repaid.

III. Some issues for further regulatory reform

Governments' enhanced role and moral hazard problems

Public support creates moral hazard…

Public sector support for the financial sector during this crisis has been exceptional, ranging from capital injections, asset purchases and various forms of central bank support to guarantees. Guarantees constitute by far the most extensive support category, even though in principle no upfront financing is needed and the contingent liabilities may remain undrawn.[14] While this support has so far been successful in averting an even bigger financial crisis, there is broad agreement between policy makers and the private sector that direct involvement of governments in markets should not be extended over the long term. Such involvement sustains or even fosters moral hazard, as risky behaviour is favoured. In particular large, "too-big-to-fail" institutions benefit from large-scale financial support, and negative consequences of imprudent lending or other high-risk activities are not properly sanctioned. Risk is underpriced.

… and at times uncertainty, and it distorts competition

At the same time, a discretionary element in such support may lead to uncertainty that affects planning and creates inefficiencies in the financial sector (the financial market calamities after the Lehman default serve as a telling example of the effects of such uncertainty). Furthermore, uneven support creates an unlevel playing field (with smaller institutions at the lower end). The ongoing and selective official intervention in mainly large financial institutions during this crisis has the potential to distort competition to the detriment of smaller and perhaps more viable banks, running the risk of "subsidising failure" and creating moral hazard. Expectations of future bailout in case of failure may also be a problem for

(uninformed retail) investors who have the, perhaps wrong, perception of a risk-free trade in dealing with such banks.

Withdrawals should be properly managed

However, it is clear that certain elements of the safety net provided by governments and central banks will have to remain in place to safeguard financial stability (*e.g.* deposit guarantees to avoid bank runs), but other elements need to be withdrawn in order not to prolong and foster the negative effects mentioned above (moral hazard, distortion of competition, etc.). The crucial issue to be addressed is then how to obtain the benefits created by financial system stability while minimising the downside risks and losses for taxpayers.

Accounting rules and capital standards

Single global accounting standards help minimise distortions and regulatory arbitrage

With regard to accounting rules, where different rules and standards can create significant distortions, co-ordination is particularly relevant. For example, leverage ratios are defined differently under US GAAP and the International Accounting Standards (IAS) as applied in Europe and elsewhere. Some observers also see problems arising from recent regulatory initiatives regarding trading book rules. There are proposals that capital requirements should be increased for any illiquid asset in the trading book. But illiquid assets should not be in the trading book at all. That is due only to accounting rules that allow classifying even illiquid assets as available for sale, without regard to the actual time it would take to sell the asset in question. If accounting rules allow defining the holding period of assets over almost any time span, they create distortions between liquid and illiquid assets. Thus, treatment of these assets is another area that needs global standards.

Trading book rules need to be well balanced

However, the banking industry has pointed out that, given the importance of trading activities for secondary market liquidity and capital market intermediation more generally, trading book rules should be addressed by regulators in a balanced way – as is the case for banking book rules that balance the need for prudential requirements and the need to extend credit to the economy. Some of the current proposals are seen as imposing "onerous" liquidity and capital requirements on trading books.

Capital requirements also need common global standards; leverage ratios need a risk-based complement

Capital requirements are another area where common standards are needed, as there is a danger that in implementing standards, countries move at a different pace and towards different definitions, which could create major distortions. Regulators and industry representatives agree that capital requirements should move towards higher quality and more self-sufficiency. Many see the currently discussed leverage ratio requirements as useful, but there are some fears that if introduced without risk-based capital requirements they would create distortions with respect to firms' financial buffers. Because of its simplicity, Basel I is often seen as having driven much bank lending activity off their balance sheets and as having created a lot of regulatory arbitrage. Given the complexity of the banking business, many see simple capital rules as insufficient.

Higher liquidity and capital provisions will make the industry less profitable

As higher liquidity and capital provisions will make the industry less profitable, the question is also what rate of return do institutional investors expect from bank equity. If investors continue to expect high returns, this could put banks under pressure to engage in more risky business.

Compensation issues

Remuneration schemes need to be risk compatible

There is broad agreement between the industry and policy makers that there is a need for better, risk-compatible remuneration schemes in order to avoid excessive risk-taking. This is particularly relevant for big banks and financial conglomerates where risk-reward schemes are largely distorted by cheap funding paired with moral hazard.

Recommended remuneration standards are being implemented, but performance targets need to be lowered

Remuneration systems at many banks are being brought in line with recommended standards,[15] taking into account risk-compatibility and longer-term goals. But these measures will become truly effective only if they are implemented uniformly (given the mobility of the financial labour force) and if performance targets, which are still too high in many cases, are lowered accordingly. Perhaps bonus payments should not be linked to *beta* (the general market) but to the *alpha* effect (manager-specific performance). In banks, the risk-return relationship in remuneration tends to be distorted, as traders are risking "other people's money" with little personal downside risk (unlike, for example, hedge fund managers who often have personal money at stake).

Risk management has improved

In response to the crisis and in line with recommendations, risk management in most institutions has been improved by instilling a better risk culture in banks and their boards. For example, in many banks the role of the chief risk officer is being enhanced, as is the risk function performed by the CEO in defining and examining the risk profile of the institution.

But even risk-compatible remuneration policies cannot spare firms difficulties

It should be also be noted, however, that compensation policies are not a panacea. Remuneration policies of some institutions had already been aligned with the long-term interests of the firm, yet this did not help them much in avoiding a crisis. Notably Bear Stearns had paid its bonuses in shares with a vesting period of five years, one of the longest terms in the industry. Moreover, at the time the firm went bankrupt, Bear Sterns employees owned about one third of the firm, with senior executives – whose decisions were crucial for the performance and survival of the firm – having the largest share. Many financial sector employees lost out in the current crisis. Going forward, many banks will probably reduce the bonus part of employee compensation, thereby reducing risk taking.

Officials in regulatory and supervisory authorities may need to be better paid and closer to the market

The current crisis has revealed failures not only in the financial industry but also in the regulatory and supervisory system. To attract a capable – and, moreover, globally mobile – workforce required to deal with ever more complex issues and to increase the quality of supervision, it has been suggested that the compensation of officials in regulatory and supervisory authorities needs to increase. Furthermore, market

experience should be required of these officials, which should give them the insight and working knowledge required for due diligence exercises.

Systemic considerations, bank structure and resolution mechanisms

Systemic relevance needs to be defined in a dynamic way

Systemic relevance is defined by the size and/or interconnectedness of an institution, but clear measures and definitions are lacking. The Financial Stability Board (FSB), in which the OECD participates, is currently looking into these issues, including definitions of systemic importance.[16] But again, defining and then permitting the existence of "systemic" banks may create more moral hazard and competitive distortions if not counterbalanced by, for example, greater capital requirements. Perhaps a combination of effective micro- and macro-prudential supervision allowing a dynamic identification of the problem is needed.

Structural firewalls within financial firms could reduce systemic risk…

An additional approach is to devise principles and structures that would avoid financial institutions becoming too large and systemically important, *i.e.* avoid maintaining or creating too-big-to-fail institutions. The recent US initiative to separate banking business tries to address such problems.[17] Another proposal would envisage putting firewalls in large financial conglomerates, via a non-operating holding company (NOHC) structure.[18] Such a structure would enhance transparency (financial reporting for each entity), improve governance, level the playing field (group affiliates compete with stand-alone companies), allow separate resolution of affiliates and ease regulatory intervention. Such reforms would be essential to deal with the contagion and counterparty failure that have been the main hallmarks of the current crisis. This approach would also be somewhat more flexible than a stricter separation of banking business like the one under the Glass-Steagall Act.[19]

… and could make resolutions of large banks that are very complex easier

As past developments in the financial industry have shown, imposing one single business model would not be helpful, given the growing complexity and interconnectedness of financial markets and products. A firewalled NOHC structure could help to solve the complex issues that arise related to the resolution of large banks. Various advances with regard to resolution procedures have been made, and additional reforms are underway, like the Special Resolution Regime (SRR) in the United Kingdom (UK Banking Act 2009). But resolution issues also involve, for example, differences in the data architecture, and arise from the fact that legal and business forms do not overlap, but are intertwined in a complex matrix that makes resolutions, even of only single entities of the whole structure, complicated.

"Living wills" for systemic firms may be very costly

A so-called "living will" approach has been proposed under which (systemically important) financial companies (banks in the current UK proposal) would have to devise detailed plans that would enable them to stipulate in advance how they would raise funds in a crisis and how their operations could be dismantled after a collapse. Such plans could also improve cross-border litigation and help to mitigate uncertainties

and avoid panic reactions to the failure of a major, globally active financial institution. But implementing such living wills may involve heavy reporting requirements with the need to provide constantly updated information, in line with an evolving business structure, and may thus prove to be unduly costly. The current complexity of the banking industry would make such an exercise very difficult.

Some current regulatory reform proposals

OECD proposes a Policy Framework for Effective and Efficient Financial Regulation

The OECD has recently proposed a Policy Framework for Effective and Efficient Financial Regulation.[20] The Framework is a tool that can support ongoing efforts by policy makers, regulators and supervisors to achieve a stronger, more resilient financial system. As it is general in nature, it cannot be a substitute for more focused, micro-prudential principles and guidelines of international standard-setting bodies. But it can guide strategic thinking and promote governmental leadership and action so that the financial system can play its vital role in the functioning of the economy, both domestically and globally. While future crises can hardly be avoided, regulation and supervision in a "new financial landscape" should be based on guiding principles that allow striking the right balance between stability and growth, in supporting and maintaining financial sector resilience without stifling financial innovation.

G20 as a platform for regulatory reform discussion

Recently, the G20 has become a platform to discuss and help co-ordinate not only current financial sector support but also further regulatory reform in the financial sector. In their September 2009 Statement, G20 finance ministers and central bank governors emphasised, among many other necessary reforms, the need for revised accounting standards, new liquidity and capital requirements, as well as stronger oversight and better resolution procedures.[21] Most of the technical work is currently being undertaken by the FSB and its related bodies. Comprehensive consultative proposals to strengthen the resilience of the banking sector and to create an international framework for liquidity risk measurement, standards and monitoring have recently been put forward by the Basel Committee on Banking Supervision.[22]

The financial industry proposes reforms and seeks co-operation

The financial industry responded to the crisis early on with its own initiatives for self-regulation.[23] Co-ordination and communication efforts have been stepped up not only between policy makers, but also between the government and the private sectors. As the shape of a future financial landscape is not yet well defined, and with different and often country-specific support measures in place, there is a risk that new regulations are being introduced in an unco-ordinated fashion. Regulatory impact studies involving all stakeholders would be an important complement to new regulatory measures.

Peer pressure is important as political momentum for reform may wane

Co-ordination in the design of a new financial landscape remains important. There is a danger that the political momentum for financial reform may soon lose steam as an improving economic situation appears to obviate the need for more substantive reforms. If political pressures leading

to impediments in reform efforts are building up unevenly across countries, regulatory arbitrage may become a problem. International co-ordination, including peer pressure exerted through international (standard-setting and other) bodies, should help to keep the momentum for reforms.

Notes

1. OECD (2009b).
2. In the United States, the Case-Shiller house price index changed direction in May 2009, growing 3% in the second quarter, the first quarterly increase since 2006Q2. However, official statistics (from the Federal Housing Finance Agency – FHFA) still show a decline (in their latest values as of 2009Q3).
3. Blundell-Wignall *et al.* (2009a, b).
4. FASB's new rules FAS 166 and 167, which concern the accounting of securitisations and special-purpose entities, are scheduled to become effective at the start of a company's first fiscal year beginning 15 November 2009, or 1 January 2010 for companies reporting earnings on a calendar-year basis.
5. IMF (2009).
6. Research from CreditSights suggests that 600 to 1 100 of America's 8 200 banks may need help from, or winding down by, the Federal Deposit Insurance Corporation during this cycle.
7. Government borrowing needs are expected to surge: gross borrowing needs of OECD governments are expected to reach almost USD 16 trillion in 2009, up from an earlier estimate of around USD 12 trillion, and again around USD 16 trillion in 2010; see Blommestein and Gok (2009) in this issue of *Financial Market Trends*.
8. In this context, see also Lumpkin (2009) in this issue of *Financial Market Trends* for a more general discussion of financial innovation.
9. Fed data (gross figures) show that home mortgage debt in RMBS pools amounted to USD 2 168.61 billion at the end of 2007 and USD 1 848.02 billion end-2008.
10. González-Páramo (2009).
11. González-Páramo (2009).
12. US Treasury Department press release of 23 December 2009: "Treasury receives USD 45 billion in repayments from Wells Fargo and Citigroup – TARP repayments now total USD 164 billion." See also SIGTARP's reports to Congress, available at *www.sigtarp.gov/reports.shtml*.
13. Even the troubled, state-owned German Hypo Real Estate bank reimbursed, in December 2009, EUR 7 billion of the initial EUR 50 billion rescue package provided in 2008 by a consortium that included the federal government, the central bank and private institutions. The total amount of guarantees still at HRE's disposition fell from EUR 102 billion to EUR 95 billion.
14. Schich (2009b) in this issue of *Financial Market Trends*.
15. The industry itself has made proposals that are largely in line with official proposals by the FSB and other bodies. Generally, these recommendations suggest that employee remuneration should be in line with the employing institution's long-term goals and should not induce excessive risk-taking. Thus, upfront multi-year bonuses, for example, would not be in line with these recommendations. See IIF (2008).
16. See IMF-BIS-FSB (2009).
17. See also the OECD statement "US: Obama Plan for Banks Can Help to Avoid a New Financial Crisis" at *www.oecd.org/document/55/0,3343,en_2649_34487_44475383_1_1_1_1,00.html*.
18. For more details, see Blundell-Wignall *et al.* (2009b), in this issue of *Financial Market Trends*, and OECD (2009a).
19. The Glass-Steagall Act, devised during the Great Depression, separated investment banking from commercial banking, prohibiting a bank holding company from owning other financial companies and prohibiting a bank from offering investment banking and insurance services. This separation had already been abandoned, and the "pure" investment banking model softened in 1999 when the Glass-Steagall Act was repealed by the Gramm-Leach-Bliley Act, which allowed commercial and investment banks to consolidate. This made permanent a temporary waiver that was issued for Citibank's merger with the insurance company Travelers Group in 1993 (finalised in 1994; in 1998 they formed the financial conglomerate Citigroup).
20. See OECD (2009c) in this issue of *Financial Market Trends*.

21. See *www.g20.org* and Box I.1.1 in Blundell-Wignall *et al.* (2009b), in this issue of *Financial Market Trends*.

22. See Basel Committee (2009a, b), announced on 17 December 2009 at *www.bis.org/press/p091217.htm*. The reform programme has been endorsed by the Financial Stability Board and by the G20 leaders at their Pittsburgh Summit, and comments on the consultative documents are invited by 16 April 2010.

23. For example, IIF (2009).

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Expanded Guarantees for Banks: Benefits, Costs and Exit Issues

by
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This article argues that the expansion of existing and the introduction of new guarantees for financial institutions has been a key element of the policy response to the recent financial crisis. Essentially, the government expanded its role as the provider of the safety net for banks by adopting the function of a guarantor of last resort. Among the various policy response measures, the expansion of guarantees has the benefit of entailing lower upfront fiscal costs relative to other options. Guarantees are not without cost however. Even if they do not generate significant upfront fiscal costs, they create contingent fiscal liabilities. Other potential costs include those arising from distortions to competition and incentives (moral hazard). For example, there may be a perception that similar guarantees will always be made available at low costs. The fact that the expansion of guarantees has not been as closely co-ordinated across borders as might have been desired has resulted in additional costs. To avoid additional costs arising from inconsistencies in exit strategies, close communication and co-ordination regarding pricing and timing issues is required, especially as a more formal framework for the public provision of insurance would still need to be developed.

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Executive summary

Interest in safety spiked in financial markets in autumn 2008 and, as private market participants were unable to satisfy that demand, governments stepped in and provided safe investments and stable funding for banks through government-provided guarantees. The expansion of existing and introduction of new guarantees for financial institutions has been a key element of the policy response to the current crisis. The guarantees have targeted both sides of these institutions' balance sheets, applying to large parts of many banking systems' total liabilities as well as to considerable parts of individual banks' asset portfolios. Essentially, the government expanded its role as the provider of the safety net for financial institutions by adopting the role as a *guarantor of last resort*.

Among the various policy response measures, the expansion of guarantees has the benefit of entailing lower upfront fiscal costs relative to other options. Moreover, in the case of guarantees for unsecured bank bonds as well as for excess losses on asset portfolios and sometimes also for guarantees of retail deposits, some additional fee income was even generated.

Guarantees are not without costs however. Even if they do not generate significant upfront fiscal costs, they create contingent fiscal liabilities, along with other potential costs, such as distortions to competition and incentives (moral hazard). In part, the distortions reflect that the expansion of guarantees has not been as closely co-ordinated across borders as might have been desired. To avoid additional costs arising from inconsistencies in exit strategies within and across borders, close communication and co-ordination regarding pricing and timing issues is required, especially as a more formal framework for co-ordinating the public provision of insurance would still need to be developed.

While the role played by the government as guarantor of last resort has been helpful, in some cases, it may have gone beyond what might have been strictly necessary to avoid a complete breakdown of the system. Be that as it may, there is now a need to focus on how one should make the transition away from unusual support measures. As for the pace of this transition, there is little disagreement with the premise that the exit needs to be made as quickly as the economic and financial environment permits. That said, exit issues differ depending on the type of guarantee involved. For example, most wholesale guarantee programmes have been designed to be of limited duration. As it turns out, however, the initial termination dates have not always been binding and extensions of the duration of coverage have been the norm rather than the exception. Where no fixed dates were specified by which banks must issue debt in order to receive a government guarantee, issuance of government-guaranteed bonds has declined by less than it has in segments where clear deadlines have been set. In the case of deposit insurance schemes, such arrangements will continue to exist, even in normal times, although the levels of protection need to be brought back to more "normal" levels in several cases. Unlimited guarantees, especially where not accompanied by commensurate premium charges, need to be withdrawn quickly.

More fundamentally, there is the issue of whether such guarantees can ever be fully withdrawn. Once a government has ventured down the road of extending comprehensive guarantees for bank liabilities and assets during one specific crisis, there may be a general perception that similar guarantees will always be made available for such entities during crisis situations. If true, and/or if the government indeed stands ready as a guarantor-of-last-resort function for systemically important financial institutions, it will be necessary to strengthen other elements of the financial safety net, including the prudential and supervisory framework, so as to limit moral hazard. The question, however, is how?

I. Introduction[1]

Interest in safety spiked in financial markets in autumn 2008 and, as private market participants were unable to satisfy that demand (with those previously providing such types of services struggling for their own survival), governments stepped in and provided safe investments and stable funding for banks through government-provided guarantees. The expansion of existing and introduction of new guarantees for financial institutions has been a key element of the policy response to the current crisis. The guarantees have targeted both sides of these institutions' balance sheets, applying to large parts of many banking systems' total liabilities as well as to considerable parts of individual banks' asset portfolios. Essentially, the government expanded its role as the provider of the safety net for financial institutions by adopting the role as a guarantor of last resort.

This paper provides an overview of the guarantees that have been expanded and/or introduced as part of the policy packages implemented in response to the financial crisis (Section II). It also discusses the costs and benefits of the expansion of existing and the introduction of new guarantees (Section III) as well as issues related to the exit from "unusual" types or levels of guarantees (Section IV). The paper argues that guarantees have helped stabilise the financial system, but that they are not without costs, drawing particular attention to distortions to competition and incentives. Exit strategies should be designed so that they are consistent within and across countries so as to limit additional costs that would arise from inconsistencies. Section V discusses some of the implications arising from the adoption by the government of the role of the guarantor of last resort in this crisis. Section VI concludes.

It should be acknowledged at the outset that this paper does not attempt to conduct a fully-fledged cost-benefit analysis. Such an attempt is beyond the scope of the present paper, as it would not only require a comparison of the costs and benefits of the measures actually taken during the crisis but also of the *policy alternatives* that were available. Some of the latter are covered in more detail in Blundell-Wignall *et al.* (2009a) and OECD (2009), however.

II. Expansion of guarantee arrangements since autumn 2008

II.1. Government-provided guarantees: A key element of policy responses

Policy support measures directly targeting bank balance sheets

Central bank actions have focused on short-term funding…

Central banks have reacted quickly to the financial turmoil and the subsequent crisis, and in an internationally co-ordinated fashion, to alleviate the bank funding gaps that opened up as confidence in banks, including on the part of peers, fell dramatically. This lender-of-last-resort function has focused on ***short-term funding of liabilities***, with liquidity being made available for maturities ranging from overnight to six months in general and as long as one year in the case of the Bank of England and the ECB.[2]

… and central government actions on longer-term funding

By contrast, central government interventions have mostly targeted ***longer-term funding***, either directly or indirectly although (as will be argued further below) in a somewhat less tightly co-ordinated way when compared with central bank interventions. Many policy measures aimed at stabilising such funding of banks have directly targeted various parts of these entities' balance sheets, that is their assets, liabilities, and shareholders' equity. However, the various measures did not succeed, at least not initially, "to unlock longer-term liquidity" (ECB, 2009). Part of the liquidity that was injected either found its way into central banks' deposit facilities or was just being recycled in the overnight market.

The policy response to the accelerated "flight-to-safety" consisted of a widening of the safety net

But when the "flight-to-safety" accelerated in autumn 2008, and interest in guarantee arrangements and safety spiked and, as private market participants were unable to satisfy that demand (with those previously providing such types of services struggling for their own survival), policy makers abandoned their earlier approaches consisting mainly of case-by-case interventions in individual institutions. Instead, they responded by a ***systematic widening of some elements of the financial safety net***, in the process expanding existing and introducing new guarantees for financial institutions, so as to stabilise short- and long-term funding.

Table I.3.1 provides a stylised overview of the policy measures taken or prepared in selected OECD countries between autumn 2008 and spring 2009, focusing on those actions that directly target bank balance sheets.[3] Such measures have targeted assets, liabilities, and capital, and included:

i) guarantees; or

ii) purchases of impaired "legacy" assets in attempts to ring-fence such assets;

iii) strengthening retail deposit insurance arrangements to secure longer-term retail funding;

iv) facilitating wholesale funding though government-provided guarantees; and

v) capital injections.

Table I.3.1. **Measures directly targeting bank balance sheets adopted in selected OECD countries**

	Assets		Liabilities and capital		
	Asset guarantee	Purchase of assets	Introduce or expand retail deposit insurance	Guarantee wholesale borrowing	Bank capital injections
Australia			Introduced		
Canada				Announced, not in use	
France	Stand-alone action				
Germany	Announced, not in use	Announced, not in use	Expanded		
Italy				Announced, not in use	
Japan					
Netherlands	Stand-alone action		Expanded		
Spain			Expanded		Announced, not in use
Switzerland	UBS scheme is similar	Stand-alone action	Expanded		
United Kingdom			Expanded		
United States	Stand-alone action		Expanded		

Notes: Selected measures, not considering from traditional monetary instruments. Shaded cells indicate that measures have been announced and/or are in use. "Stand-alone" actions have targeted individual institutions and are distinguished here from system-wide measures. The assessment regarding the deposit insurance column follows Schich (2009) and for the remaining columns Panetta *et al.* (2009), except for the case of Switzerland: in the case of the latter, the arrangements related to the bank UBS are considered as including an element that is similar to an asset loss guarantee. A verbal commitment has also been made in Switzerland to provide a debt guarantee scheme, but no formal programme has been adopted yet (which, incidentally, is why that cell is not shaded).
Source: OECD Secretariat estimates.

These measures are shown as columns in Table I.3.1, with shaded cells indicating the cases where such measures have been chosen.

Among the most common measures, explicit retail deposit insurance coverage has been expanded

Among the most common measures, ***explicit retail deposit insurance*** has been introduced where it had not existed (among CMF members in Australia and – not shown in the table – New Zealand) and its coverage expanded in many cases where it had existed (*e.g.* Germany, the Netherlands, Spain, the United Kingdom, and the United States). As a matter of fact, looking beyond the countries shown in Table I.3.1, most CMF participating jurisdictions have increased their deposit coverage ceilings per person and per bank, *i.e.* 25 out of the 33 jurisdictions.[4]

Government-supported guarantees have also been extended to unsecured bank bond issues…

Government-supported guarantees have also been extended, among other things, to ***other types of bank liabilities such as unsecured bond issues*** (*e.g.* Australia, Austria, Belgium, Canada, Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands, New Zealand, Portugal, Spain, Sweden, the United Kingdom and the United States). In most of these countries the guarantees have been made available in the form of opt-in programmes (with the notable exception of the United States where banks were allowed to opt out) for newly issued bond debt, and banks have typically made considerable use of them to secure longer-term funding (with the exceptions of some countries such as Canada and Italy, for example, where facilities have not been used or not significantly so). Actually, even banks that were relatively unaffected by the crisis took advantage of such subsidised form of funding and issued considerable amounts of government-guaranteed bonds (including Australian banks, for example, that continue to carry double-A credit ratings). In at least one country, public authorities persuaded relatively stronger banks to issue government-guaranteed bonds so as to help avoid a stigma being

associated with issuing such bonds. In some countries, guarantee schemes covered not only new but also *existing* unsecured bank bond debt (*e.g.* Denmark and Ireland).

… other types of liabilities not covered in normal times by such guarantee arrangements…

While the focus of debt guarantee programmes has been mostly on newly issued senior unsecured debt, some also included other types of liabilities that have not traditionally been covered by guarantee arrangements (that is other than retail deposits), at least not in normal times. For example, interbank borrowings are in principle covered in some cases, including in Australia, Germany and the United States. In the latter, coverage has been expanded to non-interest-bearing transaction deposit accounts above USD 250 000, regardless of dollar amount, at depository institutions that elected to participate in the programme (initially to be in effect until 31 December 2009).[5] Under the FDIC's Transaction Account Guarantee Program (TAGP), funds held through the Bank Deposit Programs are eligible for unlimited FDIC insurance although the beneficiary bank needs to pay a supplemental FDIC insurance premium in order to insure these deposits for its clients.

… and governments have provided guarantees for assets held by banks

Governments have also provided ***guarantees for assets held on bank balance sheets***. Measures for guaranteeing (or removing) such bank assets have been adopted only in a few countries, however, including the United States, the Netherlands, and the United Kingdom (Table I.3.2). In most of these cases, the actions addressed problems at specific large and potentially systemically important individual institutions rather than taking a system-wide approach (BIS, 2009).[6] That said, some initiatives in the United States, Germany and Ireland proposed in 2009 have included comprehensive schemes for dealing with "bad" (or "legacy") assets although at least some of these schemes have not always been sufficiently attractive to banks. In Switzerland, a Swiss National Bank (SNB) facility, a special purpose vehicle (SPV) called StabFund, acquired assets from one of the two large banks, UBS. The SNB provides 90% of SPV's financing in the form of a loan, while UBS provides 10% of capital and takes the first loss. Thus, the arrangement has an element that is similar to an excess loss guarantee.

Table I.3.2. **Excess loss guarantees for bank assets**

	Citigroup	Bank of America	ING	RBS	Lloyds Banking Group
Date announced	23 Nov. 08	16 Jan. 09	26 Jan. 09	26 Feb. 09	07 Mar. 09
Insured portfolio	USD 301 bn	USD 118 bn	USD 35.1 bn	GBP 325 bn	GBP 260 bn
Portfolio as % of trading assets, investment and loans	23.2	8.4	2.3	14.8	24.2
Guarantee fee as % of portfolio	2.4	3.4	Not disclosed[1]	4.0-6.0[2]	6.0
Bank's first loss as % of portfolio	13.1	8.5	None	6.0	9.6
Bank's subsequent share in loss (%)	10	10	20	10	10
Government's subsequent share in loss (%)	90	90	80	90	90
Max. downside for government	USD 228 bn	USD 93 bn	USD 28 bn[3]	GBP 269 bn	GBP 196 bn

1. The fee for ING has not been disclosed, but it is reported to be 17.5% of the insured portfolio value.
2. Includes GBP 4.6 billion of deferred tax assets.
3. Less any income and fees received.

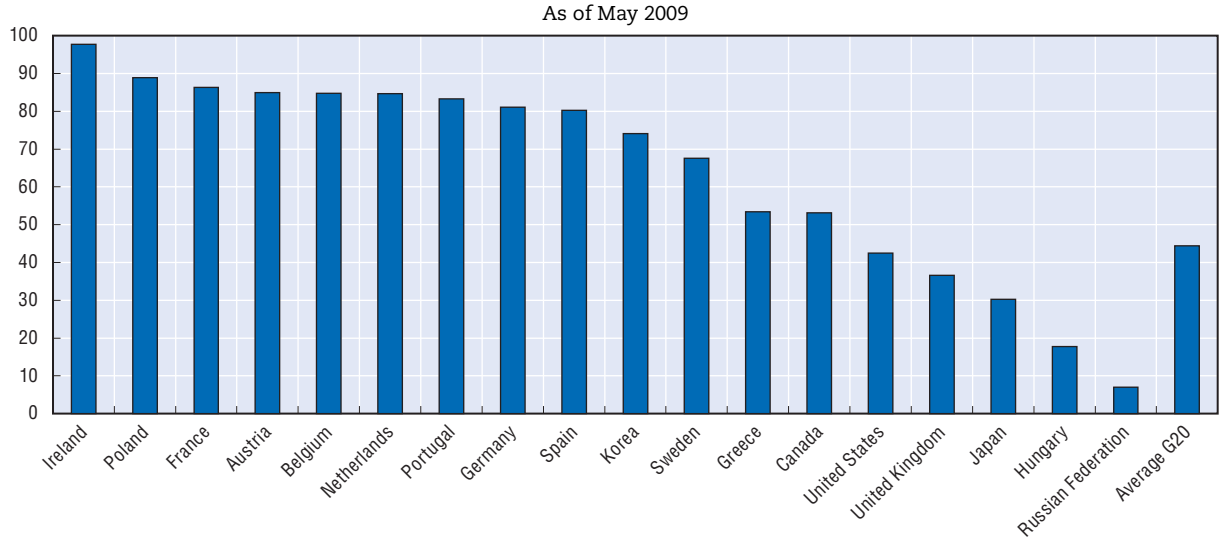
Source: Panetta *et al.* (2009).

Guarantees have been a key element of many policy packages

As highlighted by Table I.3.1, a large number of countries have chosen measures involving at least one of these three types of guarantees. Moreover, in many cases such guarantees have played a quantitatively important role (notwithstanding the conceptual difficulties involved in comparing guarantees with other support measures that involve upfront payments). For example, Figure I.3.1 shows guarantees as a percentage of the total headline support provided in selected G20 countries (not including deposit insurance provided by deposit insurance agencies, however). It illustrates that guarantees have accounted for a large share of the headline support provided in many cases, exceeding 50% in several countries. Also, guarantees provided in Ireland, the Netherlands, Sweden, the United Kingdom, and the United States are large relative to GDP, with the ratio ranging between around 30% of GDP (the Netherlands and the United States) to more than 250% (Ireland). For convenience, all the countries within the sample under consideration where guarantees amount to at least 10% of respective 2008 GDP are shown in bold in that figure.

Figure I.3.1. **Guarantees as a share of total headline support in selected G20 countries**

As of May 2009



Notes: Countries in which the share of guarantees as a percentage of 2008 GDP is greater or equal to 0.5 and where total support is greater than 3% of 2008 GDP. These estimates do not include deposit insurance provided by deposit insurance agencies however.

Source: OECD Secretariat estimates based on IMF (2009).

International communication and co-operation

As noted above, most of the measures introduced by various countries took the form of increases in the retail deposit insurance ceiling and/or comprehensive bank support packages involving wholesale funding guarantees or those related to (excess) losses on bank assets. The similarity in the form or nature of governments' responses to the crisis was in large part a reflection of the global nature of the crisis, given the high degree of interconnectedness across financial institutions and markets. Indeed, recognition among authorities of this fact fostered increased efforts at policy co-ordination, on a regional, if not broader,

basis. For example, a G7 meeting on 10 October 2008 established guidelines for assistance to systemically relevant institutions, and as a follow-up, on 12 October, euro area countries adopted an action plan that was subsequently extended to all EU countries (BIS, 2009). In September 2008, the ECB Governing Council issued recommendations on government guarantees for bank debt. These various agreements formed the basis for the design of national packages in many EU countries.

Policy measures taken have not been as closely co-ordinated as might have been desired

On the surface, these agreements on the basic form of the response to the crisis reveal, in principle, the extent to which policy makers endeavoured to avoid gaps or the introduction of competitive distortions by adopting a common front in addressing the problems. But the reality has proved to be somewhat less co-ordinated than would appear from the afore-mentioned high-profile announcements.

For example, as a general rule, the announcements regarding extensions of retail deposit insurance did not explicitly refer to any of the afore-mentioned international co-ordination efforts. Actually, some announcements even made explicit reference to other countries' actions, explaining their own efforts as attempts to ensure a level playing field for domestic banks. Co-ordination appears to have been limited even where countries have financial systems that are closely integrated and where the similar timing of announcements regarding guarantees might suggest the existence of close co-ordination (including for example, the case of Australia and New Zealand; see Figure I.3.2). For example, the Irish government took the very significant policy action of fully guaranteeing all bank deposits (as well as other liabilities) in the Republic of Ireland before any major international co-operative effort. This action created significant repercussions for other countries' banking sectors, heightening the need for co-operative efforts.

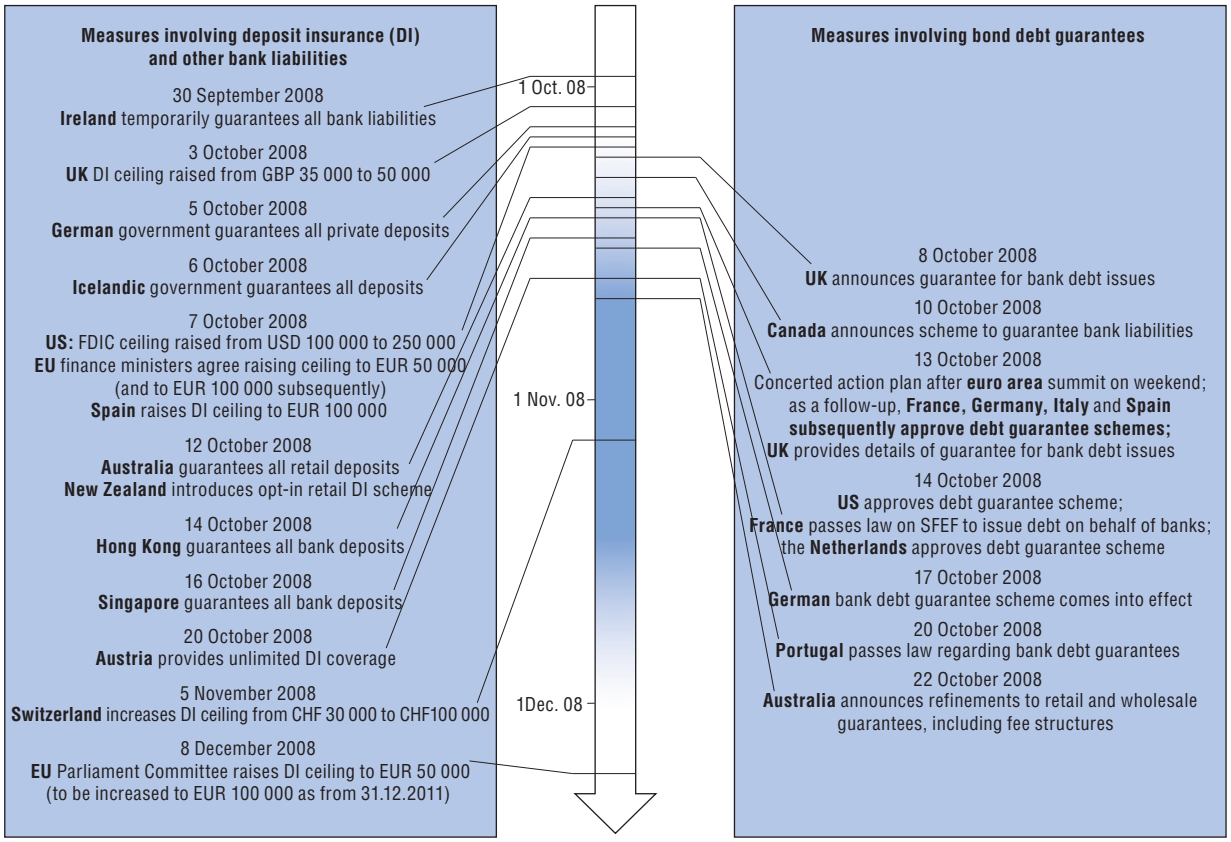
The observation (that co-ordination was not as close as might have been desired) applies in particular to announcements of expanded retail guarantee insurance, yet to a lesser extent for those related to wholesale funding arrangements, however. As regards the latter, significant co-ordination efforts have been undertaken within the euro area.

Moreover, liability guarantee schemes for financial institutions have been designed from scratch.[7] Against this observation, one might expect that the schemes put in place would be very similar. But in reality, despite similar aims and broadly similar designs, specific aspects of the structure, pricing and time horizons have differed, even within Europe. That said, the aim of close co-ordination does not need to be similarity but consistency among schemes (see also discussions below in Section III.3).

No blueprints for policy co-ordination in the case of an international financial crisis had been developed

One might argue that co-operation on a broad international basis – that is, between major OECD jurisdictions – was not as close as might have been desired because no blueprints for policy co-ordination in the case of an international financial crisis had been developed. It turns out that there is no proper framework available for the international co-ordination of the provision of public insurance for financial

Figure I.3.2. **Timeline of announcements of selected system-wide policy measures involving guarantees**



Source: Secretariat estimates based on press reports and governmental/central bank websites.

institutions. The home-host compensation issue arising after the collapse of the Icelandic banking system was yet another example that testifies to the relevance of that observation.

III. Costs and benefits of expanded guarantees

III.1. Benefits

Guarantees have been successful in avoiding a further accelerated loss of confidence

There is widespread agreement among policy makers that the expansion of guarantees has been helpful: these actions were certainly successful in avoiding a further accelerated loss of confidence. For example, a study based on a survey of 36 EU banks suggests that government measures, in particular the guarantees aimed at facilitating bank funding, were "*absolutely necessary and avoided a systemic crisis*" (ECB, 2009). Another study, which assesses the effects of government guarantees as well as capital injections and asset purchases, concludes that "*overall, it is fair to say that the rescue measures have contributed to an avoidance of 'worst case scenarios', in particular by reducing the default risk of major banks*". Similarly, previous discussions at the OECD's Committee on Financial Markets meeting in April 2009 concluded (Schich, 2009a): "*These [that is, the guarantees of bank liabilities] and the other actions have avoided a further*

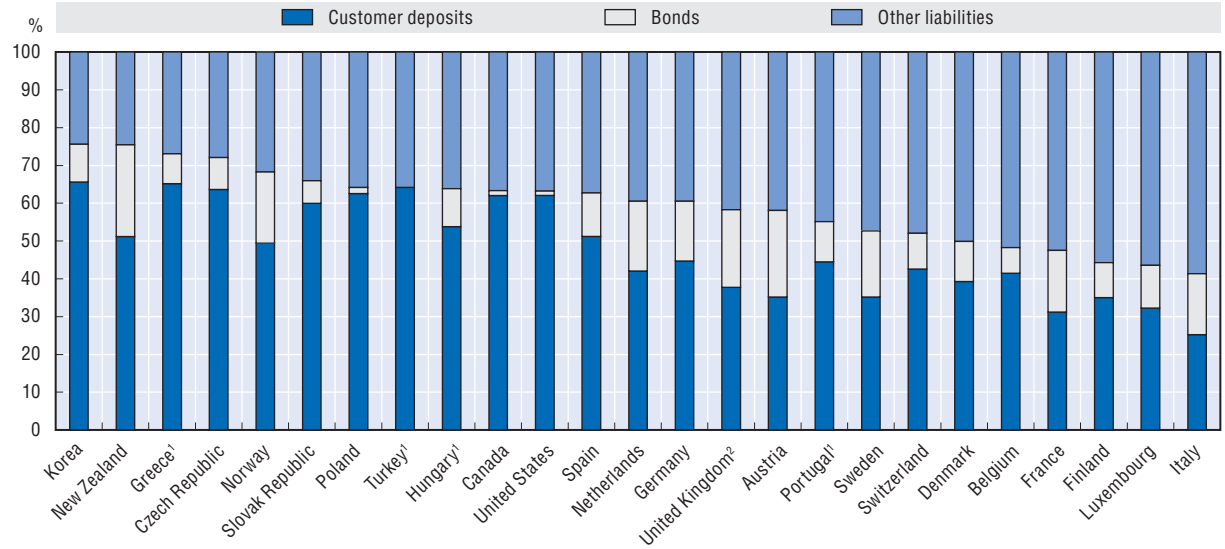
accelerated loss of confidence on the part of depositors and other market participants, essentially through two channels:

- *Guarantees of bank liabilities have reduced the likelihood of bank failures by raising the likelihood that depositors and creditors provide a stable source of funding for banks.*
- *Guarantees of newly issued bank liabilities have provided the kind of safe investment opportunities much sought after in the flight-to-safety episode.*"

Deposits are a key source of bank funding

As regards the first of the two effects above, ***dislocations in funding markets have been a defining feature of the current crisis***. Deposits are a key source of bank funding and interest in this (traditionally more stable) source of funding on the part of banks has increased during the crisis (see also discussion in Section III.2). Many banking systems in CMF-participating jurisdictions rely quite heavily on (customer) deposits, that is retail and wholesale deposits combined. Figure I.3.3 shows a measure of the relative importance (on an aggregate level) of that type of funding for banking systems in selected OECD countries. It also highlights that such customer deposits, together with bank bonds (the dark-shaded element), account for close to and often more than 50% of total funding in many OECD countries. Thus, the government-provided guarantees for retail deposits and bank bonds have affected large parts of bank liabilities. In addition, guarantees for assets at specific individual banks have also involved between 2 and approximately 25% of these entities' total assets.

Figure I.3.3. **Role of deposits and bonds in banking sector funding structures (pre-crisis)**



Note: Customer deposits and bonds as a percentage of aggregate liabilities of banking sectors ("all banks") for all countries except Greece, Hungary, Portugal, Turkey and the United Kingdom as of 2005.

1. Denotes "commercial banks" only.
2. Denotes "large commercial banks" only.

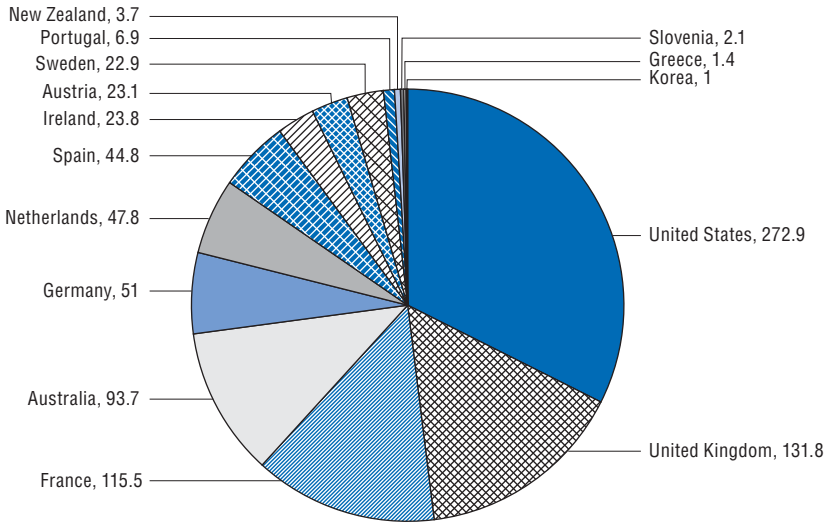
Source: Estimates based on *OECD Bank Profitability*.

Government-guaranteed bonds provided much sought after investments during the flight-to-safety episode

As regards the second of the two effects above, ***government-guaranteed bonds provided much sought after investments*** during the flight-to-safety episode. Since the first issuance of a government-guaranteed bond on 22 October 2008 by Barclays Bank in the United Kingdom, the (cumulative) issuance of such bonds has grown quickly in several countries, including the United States, the United Kingdom, France, and Australia (Figure I.3.4), even if it has levelled off in most of these countries since mid-2009. Demand for investment in government-guaranteed bonds was vigorous, including on the part of banks themselves.

Figure I.3.4. **Government-guaranteed bank bonds**

Issued between October 2008 and July 2009, in USD billion



Source: "Inquiry by the Senate Economics References Committee Into Bank Funding Guarantees" – Joint Submission from the RBA and APRA, available at *www.rba.gov.au/PublicationsAndResearch/SubmissionsToParliamentaryCommittees/inquiry-bank-funding-guarantees-24072009.pdf*.

The government took over the role of guarantor of last resort

Private actors were not capable of providing the safe financial instruments that were in such high demand. Those private financial institutions that had previously provided such functions, including banks and financial guarantee insurance companies, were struggling for their own survival. In that situation, the government took over the role of guarantor of last resort (see also discussion in Section V).

Guarantees entail lower upfront fiscal costs relative to other options

Among the various policy response measures, the expansion of guarantees has the benefit of entailing lower upfront fiscal costs relative to other options. As a general rule, guarantees have no immediate impact on the fiscal balance or debt unless there is a significant probability the guarantee will be called. Otherwise the fiscal balance would only be affected if and when the guarantee is actually drawn upon (IMF, 2001). The chance of such an event arising further down the road was deemed limited by policy makers and market participants given the political commitment to prevent any major institution from failing.

III.2. Costs

Guarantees are not without costs however. Even if guarantees do not generate significant upfront fiscal costs, they *i)* create contingent fiscal liabilities, along with other potential costs, such as distortions to *ii)* incentives and *iii)* competition:

i) ***Contingent fiscal liabilities*** can be very large.[8] There has been a significant widening of sovereign bond spreads in many EU area countries *versus* German Bunds and sovereign CDS spreads widened across the board between autumn 2008 and March 2009. It appears that country-specific fiscal (and external) positions and, in particular the outlook for them, have contributed to the observed widening of sovereign bond and CDS spreads. This development essentially reflects that part of the banking sector risk has been transformed into sovereign risk.

ii) Like any guarantee, insurance coverage for bank liabilities and (excess losses on) assets gives rise to ***moral hazard***. Moral hazard is an important and real (not just conceptual) issue that should not be ignored, even in the midst of a crisis. Granted, the immediate task in a crisis is to restore confidence, and guarantees have been helpful in that respect. But even in the midst of a financial crisis, authorities should not lose sight of the fundamental policy goal of supporting efficiently operating financial markets. In this context, market discipline needs to be supported, and, to allow for a greater role for market discipline and to limit moral hazard, a credible exit strategy needs to include the specification of a credible timetable for the withdrawal of unusual guarantees, as well as measures that help avoid the perception on the part of potential beneficiaries of guarantees that similar ones will always be available (see also discussion in Section V).

iii) Also, government-provided guarantees for some financial institutions create ***potential distortions to competition*** for financial institutions and instruments.[9] Several observations are singled out for special attention in this context:

Issuance of GGB has effects on the demand for and pricing of investment alternatives

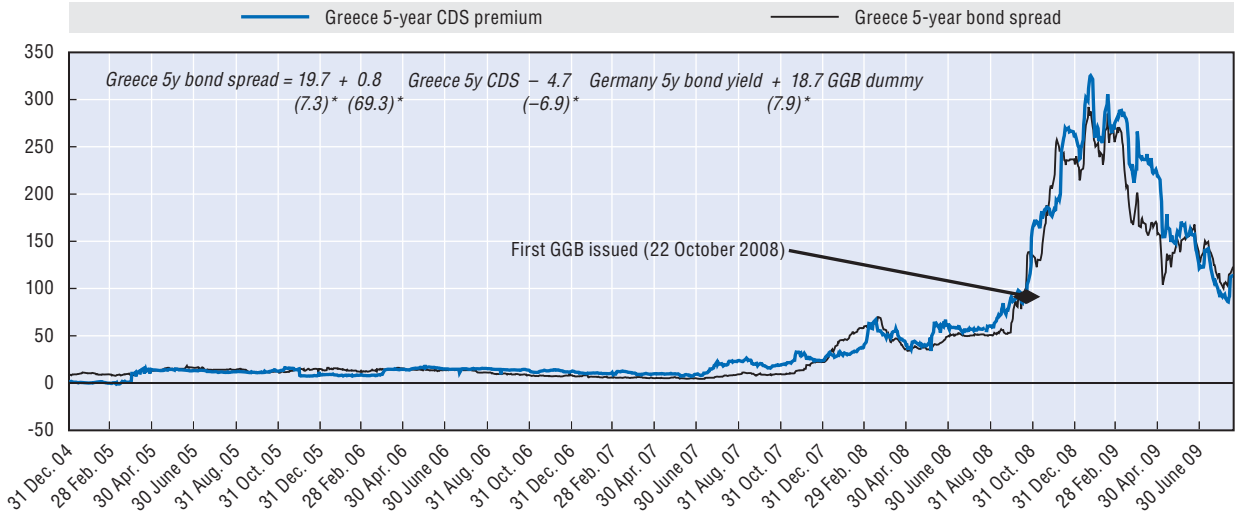
First, as discussed at the previous CMF meeting in April 2009, the issuance of bonds backed by guarantees from some highly-rated governments has also had profound effects on the ***demand for and pricing of investment alternatives***. That is, on the demand for other securities not benefitting from such guarantees, including in particular relatively close substitutes for those guaranteed bonds, such as bonds issued by some lower-rated sovereign or supra-nationals or other financial intermediaries (Figure I.3.5).

The support measures tended to primarily help large banks

Second, within the banking sector, the ***support measures were geared towards systemically important banks***, which tend to be, almost by definition, rather large banks (typically those considered as "too large to fail"). The latter tend to rely more heavily on funding through bond issuance than small banks do, thus they benefit disproportionally from the availability of government-provided bond guarantees.[10]

One might have speculated that larger banks – as they have tended to be weaker than smaller banks in this crisis (at least during the peak of it) – would have suffered a withdrawal of retail deposits in the absence of expanded retail deposit insurance. As it turns out, such outflows may not have been widespread. In the case of some countries, large banks may even have succeeded in increasing their reliance on (the relatively stable) retail funding during the crisis. The extension of guarantees may have undone part of the competitive advantage of banks with large retail bases, as the guarantees applied to *all* banks, essentially undoing the competitive advantage that more stably financed banks might have had in attracting retail depositors. For example, a recent survey of large and medium-sized European banks confirms that the increased interest on the part of some banks has tended to reduce the potential market share of other banks that were already reliant on retail deposits (ECB, 2009). In Australia, following the announcement of the guarantee scheme, there was a reversal in deposit outflows from a number of banks that had been evident in early October 2008, and there was a significant outflow from mortgage trusts. The interpretation of these various flows is complicated, however, by the difficulty in separating the effect of the guarantee from pre-existing trends and other factors.

Figure I.3.5. **Pricing of an investment alternative**



Notes: The text box shows the result of a simple OLS regression of the 5-year sovereign bond yield spread of Greece (calculated as the difference between the 5-year sovereign bond yield for Greece and the 5-year sovereign bond yield for Germany) on the 5-year credit default swap (CDS) premium for Greece, the 5-year sovereign bond yield for Germany, and a dummy variable that takes on the value of one from the 22 October 2008 onwards (GGB dummy). Incidentally, the results for the Greek CDS premium and the dummy change little if the German 5-year bond yield is excluded from the regression.

Source: Secretariat estimates based on data from *Thomson Financial Datastream*.

The level playing field between internationally competing banks from different countries is affected

Third, given that the extent and costs of insurance coverage provided under deposit insurance arrangements and (to a lesser extent) bond guarantee schemes have differed across borders, the ***level playing field between internationally competing large banks*** from different countries might be affected. In particular, there is a risk that some policy makers put in place

extensive support measures that are available at low costs to domestic institutions, thus providing them with a competitive advantage as compared to their international peers. The issue of pricing is discussed further below.

III.3. Pricing

Adjusting fees for risk

Charging risk-based premiums limits distortions

The basic premise here is that to limit distortions to competition and incentives (*i.e.* moral hazard), it is important to co-ordinate policy actions *and* specify risk-based premiums for government-provided guarantees.

The results in this regard have been mixed, however

Results in this regard have been mixed, however. As regards retail deposit insurance, it appears that some governments have not even attempted to levy fees for the extra government-supported insurance provided (including cases where unlimited retail deposit coverage was announced). There are, nonetheless, exceptions. They include Australia, where a fee is charged for the coverage of retail deposits beyond AUD 1 million per depositor and per bank. This fee is determined in a similar way to the fee charged for wholesale debt government-provided insurance.

Fees are also levied for the comprehensive guarantees (including coverage of retail deposits) extended in Ireland and Denmark and in the case of the bond debt guarantee programmes elsewhere. In Ireland, the banks that opted in the scheme paid fees for the government guarantee based on estimates of the additional costs to the government's own funding costs. Although this arrangement has been approved under the EU state aid regime, the resulting fees tend to be low and somewhat different from what a market-based insurance premium might be.

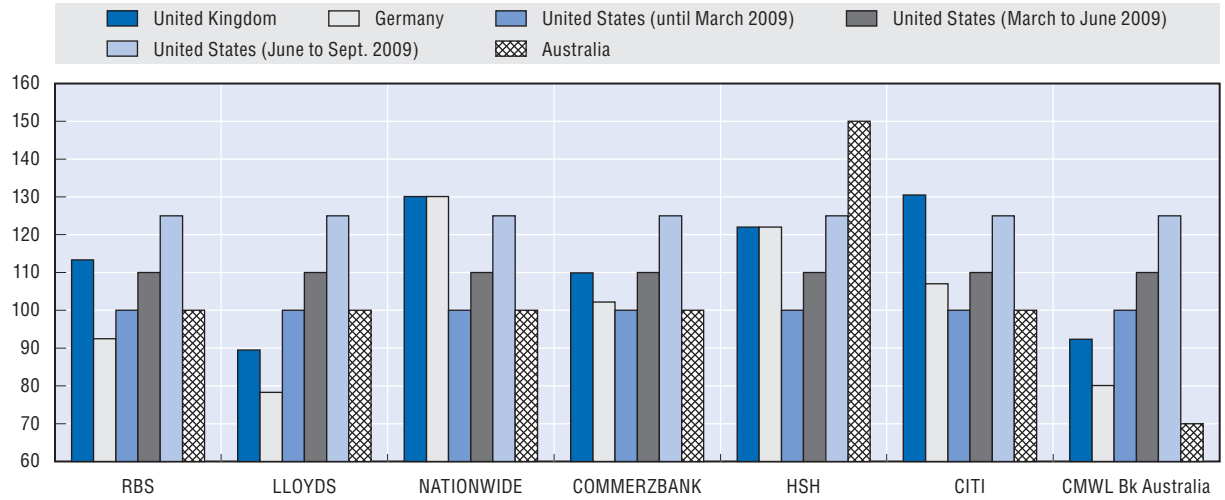
All in all, the pricing of guarantees of bank bonds has tended to be somewhat similar across borders and has been risk-based. Typically, the fees were specified as a function of some risk measure of the issuer, for example, the issuer's current credit rating in the case of Australia or its record of historical credit default swap premiums (CDS). In the EU, costs for the bank bond guarantee schemes have converged towards a flat fee of 50 basis points plus the issuer's median five year CDS spread between 1 January 2007 and 31 August 2008 for issues with more than one year maturity. The reference period was different in the United Kingdom, however. As for the United States, fees were charged as a function of the maturity of the instrument to be issued.

Differences in details of fee structures for government-provided bond guarantees

Differences in details of fee structures matter

The differences in the details of pricing schemes can imply considerable differences in the fees charged by different guarantors for a given "risk". Figure I.3.6 shows estimates of the fees for government protection under different country's guarantee schemes. Specifically, it uses the example of six banks that have benefitted from government guarantees in their jurisdictions and compares the (estimated) costs that these entities would have to pay for a government guarantees in their own

Figure I.3.6. **Estimated fees charged for government-provided insurance for selected issuers**



Notes: Cost of guarantee (annually in basis points) under different guarantee schemes, as of mid-2009. In Germany, in addition to the sum of 50 basis points and the median of five-year CDS rates from 1 January 2007 to 31 August 2008, there is also a 10 basis point commitment commission for the undrawn part of the guarantee (see ECB, 2009), which is not factored into the estimates shown above.

Source: Secretariat estimates based on data on CDS spreads and credit ratings from Thomson Financial Datastream and information on fee structures from public authorities' websites, Table I.4.1, in Schich (2009) and ECB (2009).

and selected other jurisdictions of a bond with maturity of 365 days. The figure shows that the implied charges can differ by up to almost 50 basis points for the *same* CDS history, as illustrated by the variation in fees that the same issuer would have to buy under different guarantor's schemes.

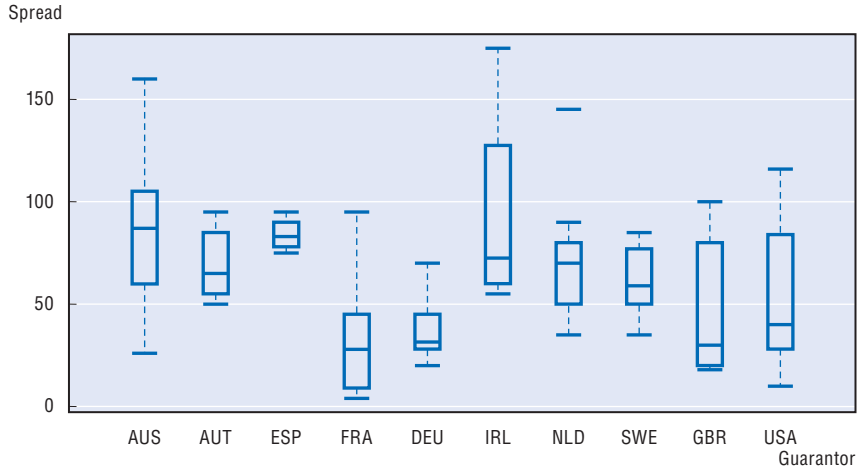
Fees need not be similar but need to be consistent

Convergence towards a common fee structure across countries would ensure a level playing field for internationally competing banks in situations where the quality of the sovereign guarantee was the same across countries (or where credible explicit or implicit cross-border sovereign bail-out arrangements existed). In practice, however, sovereign credit ratings differ between countries, including within the EU (and emergency funds for cross-border financial support are at best very limited, even at the EU level). Consequently, the quality of the (bank bond) guarantee differs depending on the credit quality of the sovereign guarantor. Thus, the aim of co-ordinated policies should not be to achieve *similarity* of fees across borders, but to achieve *consistency* among fees.

The nationality of the guarantor matters for the costs of bank borrowing through GGBs

The spreads at issue of government-guaranteed bonds reflect the nationality of the issuing banks. For example, the Portuguese bank Caixa Geral de Depósitos paid a spread at issue compared with the mid-swap rate of 85 basis points in early December 2008. The bank is rated A+ by S&P. The German Commerzbank paid a spread of only 30 basis points for an issue about one month later in the same currency (euro), even though that bank was rated a notch lower at A. Only some of that difference can be explained by the difficult market environment in December 2008. More generally, primary issuance spreads have exhibited considerable variation especially as a function of the sovereign guarantor (Figure I.3.7). By contrast, other features of the bond issue such as issue amount or identity of the issuers appear to have a very limited influence on the spread at issue (Panetta *et al.*, 2009).

Figure I.3.7. **Selected determinants of the primary issuance spread of GGB**



Notes: Boxplot showing, from top to bottom, maximum, upper quartile, median, lower quartile and minimum of the spread at issue of bank bonds with government guarantees from different guarantors, compared to the mid-swap rate in the respective issuing currency (here either US dollar, British pound or euro). The bonds are "major" issues, with a principal amount exceeding USD 1 million, and have maturities ranging from 2 to 5 years, but concentrated between 2 and 3 years. The mid-swap rate is an important reference value for refinancing on the capital market; it describes the fixed rate side of an interest rate swap between AA-rated banks. Only those guarantors for which the dataset considered here (containing altogether 185 issues) included at least four issues have been taken into consideration.

Source: Secretariat estimates based on data from Barclays Capital and additional information obtained through informal communications from CMF member country authorities.

The better the sovereign's rating, the more a sovereign guarantee is worth

A sovereign guarantee is worth more the better the credit rating of the sovereign is. Hence, to level the advantage provided by a guarantee from a highly-rated sovereign, lower-rated sovereigns need to charge lower fees for their guarantees. A guarantee from a lower-rated sovereign brings down the credit spread of a bank bond issue by less than a guarantee from a top-rated sovereign. Note, in this context, that the value of a sovereign guarantee changes over time, reflecting, among other things, variations in the sovereign's own credit risk. For example, the announcement of banking system rescue plans sparked a sharp rise in (developed) sovereign CDS premiums with greater discrimination between issuers. These developments are very visible evidence for part of the costs associated with bank support packages for the guarantor.

IV. Exit from expanded guarantees

IV.1. The need for exit from expanded government-provided guarantees

Governments have expanded their roles…

During the recent financial crisis, there has been a dramatic adjustment of the roles played in the financial sphere and the real economy by markets on the one hand, and governments on the other. Governments and public authorities have expanded their roles when addressing the problems that markets obviously were unable to solve (Mather, 2009). Among other things, the government became the

guarantor of last resort as market participants themselves were unable to generate safe assets and avoid bank runs, the freezing of core money markets and the collapse of financial intermediation more generally.

... and need to re-evaluate the balance between state and markets

That said, the expansion of public authorities roles' may in some cases have gone beyond what might have been strictly necessary to avoid a complete breakdown of the system. In any case, there is now a need to focus on the issue of what the balance between the state and markets should be in the medium- to long-term, as well as how one should make the transition to that balance from the current situation.[11]

It is noteworthy that the role of the former has not increased everywhere

The need for exit from unusual government-provided guarantees is obviously limited, however, where little, if any, additional support has been provided by central governments in response to the financial crisis. While the discussion in the present article places a sharp focus on the expansion of public insurance, it is also interesting to note that some countries have not (or only marginally) altered schemes involving government-provided guarantees during the financial crisis.

For example, there were no changes to deposit insurance ceilings in eight of the 33 CMF-participating jurisdictions. And while new facilities for guaranteeing bank liabilities and assets have been introduced in many CMF-participating jurisdictions, recourse to such facilities has not turned out to be necessary in some of them. For example, Japan, Mexico, Norway, and Turkey have neither expanded their deposit insurance coverage nor introduced a bank debt guarantee scheme.[12] These observations suggest that these aspects of the safety nets in place have been considered adequate to cope with the shocks facing them. Examples of CMF jurisdictions where the capacity for the expansion of government-provided guarantees for bank liabilities has been created but its use remains null or limited include Canada and Italy.

This situation may reflect the robustness and credibility of the arrangements already in place. If true, these experiences should be taken into account where exit strategies are being designed, as the latter involves addressing the question of what to exit to. That said, the limited need for change of safety nets in some countries may simply reflect the fact that the shocks facing these countries have been more limited than elsewhere. To the extent that the latter is true, it cannot be excluded that the country will be less "fortunate", going forward. In any case, the effects of existing guarantees need to be carefully analysed everywhere (even where they have not been altered recently), given the potential of such guarantees to create distortions to competition and incentives.

IV.2. The pace of exit

Exit needs to be made as quickly as the environment permits

As for the pace of the transition away from unusual support measures, there is little disagreement that exit from such measures needs to happen as quickly as the economic and financial environment permits (BCBS and IADI, 2009). The key trade-off is as follows: on the one hand, an early exit at a time when the financial system and the overall economy

are still fragile runs the risk of reviving concerns about the health of financial institutions and the system. Such a development would effectively undermine the effects of past support measures and could lead to a situation where governments would feel obliged to reinstate support measures, including government-provided guarantees. On the other hand, a rapid transition away from expanded guarantees is required to limit the costs arising from the distortions to incentives and competition discussed in Section IV.1.[13]

"Automatic exit" can be achieved by making the pricing of guarantees increasingly more realistic over time

Unfortunately, there are no tested financial market indicators available that would allow policy makers to pick a specific point in the spectrum of policy choices defined by these two opposing effects. To avoid the additional costs that would be incurred if one failed to pick the appropriate exit time, "automatic exit" can be achieved by making the pricing of guarantees increasingly more realistic over time, thus, making them less attractive. Such an approach has been used in the case of both exit from expanded wholesale funding guarantees (including in the United States, for example) and from retail deposit guarantees (*e.g.* New Zealand). In both cases, the duration of the guarantee schemes were prolonged, with higher premiums charged for coverage.

On a related issue, the improving situation in financial markets has allowed some banks to consider returning part of the government support,[14] and the question has arisen as to under what circumstances and conditions institutions benefitting from government support should be allowed to withdraw from such support. This question is particularly relevant in the case of support measures provided under specific conditions, such as restrictions on compensation policies and conditions on lending strategies. As a general rule, such conditions seem to have been more limited in the case of liability guarantees, when compared with other types of support measures, such as asset guarantees and capital injections. Nonetheless, some debt guarantee schemes have also included specific conditions. For example, the emergency guarantee facility provided by the FDIC after the expiry of TLGP on a case-by-case basis foresees the specification of conditions regarding compensation and dividend policies. On a conceptual level, these conditions are a form of additional charge levied for the guarantees, and governments should make sure that they are beneficiary institutions do "pay" (although it is notoriously difficult to define when such conditions have been effectively met).

IV.3. The need for consistency

Exit strategies need to ensure consistency among the different types of guarantees

Exit issues differ depending on the type of guarantee involved (although these issues need to be jointly addressed). For example, most wholesale guarantee programmes have been designed to be of limited duration although they have typically been effectively prolonged. In this context, it is important that the reasons for the extension are clearly explained and credible expiry dates for the extensions specified. More recently, banks that had made use of facilities such as government-provided guarantees for unsecured bank bonds have reduced their reliance on such funding and,

instead, started to issue non-guaranteed bonds again (see also Section IV.4), suggesting that an "automatic exit" might take place in at least some instances.

In the case of deposit insurance schemes, however, such arrangements will continue to exist, even in normal times although the levels of protection need to be brought back to more "normal" levels in some cases. Defining what is "normal" is difficult, however. Past CMF discussions suggest that the response may not be the same for every country, and that "normal" levels could be significantly higher in some countries compared with others.[15]

Table I.3.3. **Examples of timing of scheduled exit**

Selected countries	Scheduled termination date for "extra" retail deposit coverage	Scheduled end of validity of bank bond guarantees
Australia	**Oct. 2011** (Unlimited coverage)	**Unspecified** (67 months after "final application date" to be determined)
Austria	**Dec. 2009** (Unlimited coverage)	**Dec. 2014**, extended from Jun. 2014 (implied by 5y bonds to be issued)
Denmark	**Sep. 2010** (Unlimited coverage)	**Dec. 2013**, extended from Sep. 2010
Germany	**Unspecified** (unlimited coverage)	**Dec. 2014**, extended from Dec. 2012
Ireland	**Sep. 2010** (unlimited coverage)	**Sep. 2010**, to be extended to Sep. 2015 (pending EU approval)
New Zealand	**Dec. 2011**, extended from Oct. 2010 (coverage up to NZD 500 000)	**Unspecified**
United Kingdom	**Not temporary** (from 35 000 to GBP 50 000)	**Dec. 2014**, extended from Apr. 2012
United States	**Dec. 2013**, extended from Dec. 2009 (from 100 000 to USD 250 000)	**Dec. 2012**, extended from Jun. 2012

Notes: In ***Ireland***, the draft Credit Institutions (Eligible Liabilities Guarantee) Scheme 2009, expected to be enacted into legislation before the end of 2009, would cover bonds with maturities up to five years provided they are issued before 29 September 2010. The existing scheme, scheduled to expire in September 2009, covers all liabilities outstanding, irrespective of maturities although that guarantee is scheduled to end on 29 September 2010. In ***New Zealand***, the government announced an extension of the Retail Deposit Guarantee Scheme until 31 December 2011, with changes to some of its terms and conditions. The earlier scheme was scheduled to end on 12 October 2010. In the ***United Kingdom***, as part of the government's additional measures to encourage lending by financial institutions (announced on 19 January 2009), it extended the drawdown window of the Credit Guarantee Scheme (CGS) from 9 April 2009 to 31 December 2009, subject to state aid approval. All other aspects of the scheme were to remain the same, including the final maturity date of 9 April 2014. In the ***United States***, the Temporary Liquidity Guarantee Program ended in October 2009 (see information related to FDIC Board meeting 20 October 2009). There is, however, a six-month facility, which foresees that the FDIC can approve any firm requesting emergency funds on a case-by-case basis. This emergency window is scheduled to be open until the end of April 2010.
Source: Secretariat estimates based on information from websites and informal communications with public authorities.

IV.4. Exiting from "unusual" types of guarantees

Unsecured bank bonds

Guarantee schemes for unsecured bank bonds typically have specific termination dates

Politically, it is much easier to introduce guarantees than it is to withdraw them. The task of withdrawing guarantees is facilitated, however, when the initial programmes that establish the guarantees include specific dates for termination. And, in fact, most recent guarantee schemes for unsecured bank bonds have indeed specified dates by which banks must apply for guarantees and/or set limits on the duration of the validity of guarantees (Table I.3.3). Exceptions are Australia and New Zealand.

Typically, such schemes have been revised and effectively prolonged, however

As it turns out, however, these termination dates have not always been binding. Indeed, several bond debt guarantee schemes have had to be revised and effectively prolonged. Moreover, extensions of the duration of coverage have been the norm rather than the exception and have taken various forms, including postponing the final application dates and/or the expiration dates for the validity of the guarantee, and increasing the maximum length of bond maturities covered by the scheme. Countries where schemes have been prolonged in one or several ways include Austria, the United Kingdom, and the United States. In the latter, the TLGP ended in October 2009, although an emergency facility will continue to be available for another six months.[16] In Ireland, for instance, a new guarantee scheme proposed in September 2009 would allow liabilities with up to five years of maturity to be guaranteed under the scheme, with such liabilities to be incurred until September 2010.

One concern was to avoid a "bunching" of refinancing needs

One concern that led to prolongations of some of the schemes was the desire to avoid a "bunching" (or "cliff" effect) of refinancing needs. Such an effect was more likely to have occurred where bonds eligible for government guarantees had been restricted to those with a maturity between two and three years. To spread out over time the refinancing need created by the maturing of GGB, several governments have extended the range of maturities allowed (up to five years maximum), as well as postponed the final dates for guaranteed issuance. Where a maximum eligible maturity but no maximum maturity date has been specified (Australia and New Zealand), the issue of "bunching" of refinancing needs has been avoided, at least in theory.

To discourage further issuance, fees have been raised…

To discourage further issuance, public authorities have made the pricing of guarantees more prohibitive over time (*e.g.* in the United States). Implementing pricing schedules where prices gradually increase to make them more similar to market prices or real costs is helpful (and consistent with the OECD [2009] reform and exit strategy principles), as it provides for an "automatic exit".

… and unguaranteed funding alternatives made more attractive

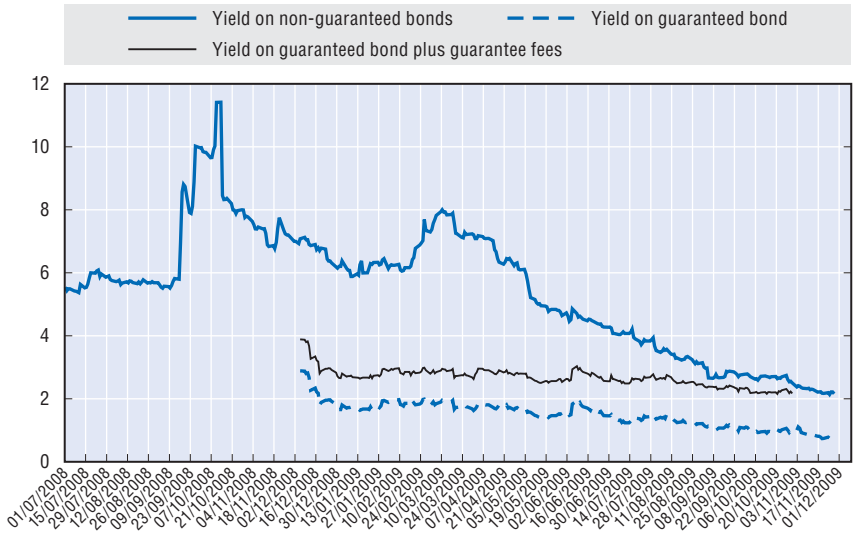
At the same time, public authorities have made efforts to increase the attractiveness of alternatives to guaranteed bonds. Among the measures having such an effect was the decision by the ECB to accept covered bonds (to some extent) as collateral in its refinancing operations. Subsequently, there was indeed an increase in the outstanding volumes of European covered bonds.

Many banks have ceased to rely on government-guaranteed bond issuance

During the course of 2009, in an environment of improving capital market conditions, the spread between guaranteed and non-guaranteed bank bonds has declined in several instances (see Figure I.3.8 for an example). To what extent this development reflects improvements in the credit fundamentals of the debtor, a generally heightened risk appetite or a perception that institutions with government-provided debt guarantees may benefit from an implicit government guarantee on their non-guaranteed debt is not clear. One delegation at the CMF meeting in October 2009 noted that the spreads on guaranteed debt continue to be markedly lower than those on non-guaranteed debt, suggesting that debt outside the guarantee programme is perceived as less than fully guaranteed.

Figure I.3.8. **Yields of guaranteed and non-guaranteed bank bonds**

Simple average of selected issues with similar but not identical maturities, in per cent



Notes: Simple average yield of four issues of non-guaranteed and guaranteed bank bonds, respectively. Issuers are JP Morgan, Morgan Stanley, Citi Group, and Wells Fargo. There is a maturity mismatch between the guaranteed and non-guaranteed bonds; in particular, the maturity dates of guaranteed bonds are either December 2010 or December 2011, while the maturity dates of non-guaranteed bonds range from August 2011 to September 2012. The average yields shown here are not adjusted for that maturity mismatch.

Source: OECD Secretariat estimates based on Thomson Financial Datastream.

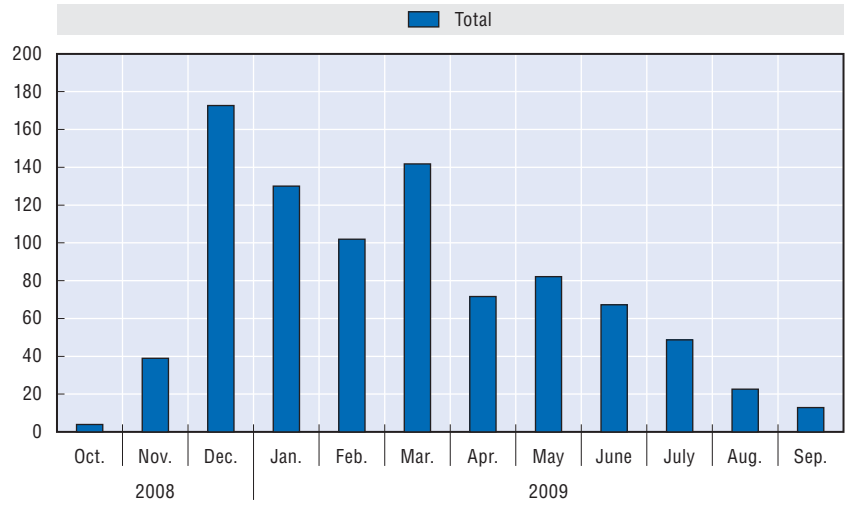
During 2009, several market participants have increasingly turned towards the issuance of senior unsecured debt. So much so that some analysts have suggested that there would be adverse "signalling effect" of any further reliance on GGB. The issuance of government-guaranteed debt instruments (GGB) declined noticeably in several market segments. Figure I.3.9 illustrates the trend decline. For example, in Australia, the proportion of banks' long-term issuance that is unguaranteed has been increasing: it rose from next to nothing at the end of 2008 to around 75% in October 2009 (Edey, 2009). That said, issuance in Australia did not fully match the extent of the trend decline in GGB issuance observed elsewhere, as reflected in the increase in the share of Australian GGBs over the last four months shown in Figure I.3.10.

In some instances, no specific termination dates were announced

In Australia and New Zealand, no fixed dates are specified by which banks must issue debt in order to receive a government guarantee, but any debt that receives a government guarantee needs to have a maximum maturity of five years (implying a sort of "five-year rolling window approach"). This approach has sought to avoid problems that other governments have confronted, *e.g.* having to extend key parameters such as eligible maximum maturity of debt or final date for guaranteed issuance (*e.g.* in order to avoid a bunching of refinancing needs). However, as long as the guarantee scheme is conceived as a temporary scheme and is subject to an eventual expiration date, the possibility of such bunching cannot be ruled out. Thus, the intent must be for the scheme to remain in place until funding conditions normalise, so that the issue of bunching at refinancing windows would not arise.

Figure I.3.9. **Issuance of government-guaranteed bank bonds by selected guarantors**

In USD billions, October 2008 to mid-September 2009

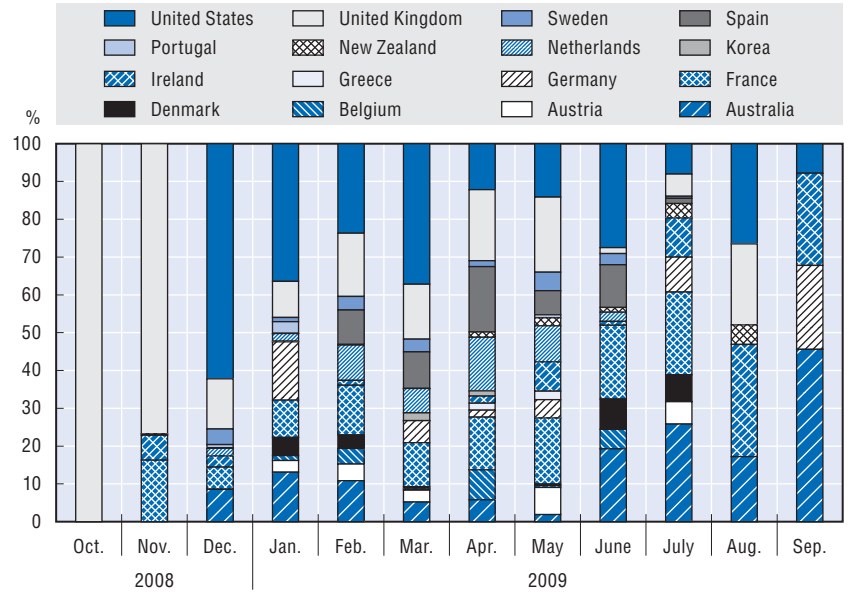


Note: Issues guaranteed by Austria, Australia, Belgium, Denmark, France, Germany, Greece, Ireland, Korea, the Netherlands, New Zealand, Portugal, Spain, Sweden, the United Kingdom, and the United States.

Source: OECD Secretariat estimates based on data from Barclays Capital, Thomson Financial Datastream and communications with participants at the CMF meeting.

Figure I.3.10. **Issuance by nationality of guarantor**

Selected major guarantors, in per cent of total



Source: OECD Secretariat estimates based on data from Barclays Capital, Thomson Financial Datastream and communications from participants at the CMF meeting.

In Australia, the Senate Economics Committee held an inquiry into bank funding guarantees, with several submissions focusing on pricing and exit issues. At least one AA-rated bank has argued that the guarantee should not be removed quickly and that the pricing has allowed it to continue lending.

Other submissions, including those from lower-rated banks, pointed out that the Australian fee structure has a relatively large differential between banks with different ratings (with AA-rated banks paying 70 basis points and lower-rated banks paying either 100 or 150 basis points, depending on their specific rating).[17] It was also noted that, over time, the pricing of the Australian guarantee has become somewhat out of line with pricing in other jurisdictions, at least in the case of the better-rated banks (which, as it turns out, have used the guarantee extensively). In particular, at the time the Australian scheme was introduced, the premium charges were similar to those in the United States, but the latter were revised upwards in the meantime. But given the changes that have taken place elsewhere, the pricing of the Australian guarantee for long-term debt now is relatively low in the case of AA-rated banks (see also the example of the Commonwealth Bank of Australia, an AA-rated bank, in Figure I.3.6). In any case, while mortgage originators argue that the scope of the guarantee should be extended to include securitised mortgages, some government officials have signalled that Australian banks need to be weaned off the guarantee.

IV.5. Exiting from "unusually" high levels of guarantees

Retail deposit insurance

Historically, choices made when transitioning from unlimited deposit insurance coverage have differed across countries

Similar to the context of exiting from "unusual" types of guarantees, the choice of pace of exiting from "unusually" high levels of deposit insurance coverage involves a trade-off between limiting moral hazard and other distortions on the one hand, and avoiding fuelling renewed concerns about the health of financial institutions on the other. The choices actually made in past episodes – for example, when transitioning from unlimited to more limited deposit insurance coverage – have differed from one country to another, reflecting the specific economic, political and financial system circumstances.

Experience shows that unlimited guarantees are typically not withdrawn after a couple of years

Even so, these experiences show that unlimited guarantees are typically not withdrawn after a couple of years, even in cases where withdrawal is considered as having been "fast" (see Appendix Table I.3.4). The viability of a quick exit depends crucially on the progress made regarding stability of and confidence in the banking sector, which requires policy makers to address the root causes of the crisis. It could be argued that the expansion of guarantees does not replace the need for policy actions to address financial system stress, but may actually heighten such need as it tends to increase distortions to incentives (moral hazard). In a sense, guarantees buy time, but that time needs to be effectively used to address the core problems.[18]

Exit needs to be faster where costs are greater and/or no extra fees were levied

It is argued here that a key parameter that should determine the pace of the transition to more limited and/or withdrawal of specific insurance arrangements is the net costs raised by the existence of such guarantees. In this context, it appears reasonable to suggest that the pace of exit from expanded government-provided guarantees be faster where the associated costs (in terms of distortions to incentives and competition) are greater

and/or where no extra fees were levied for the additional guarantees. Incidentally, the latter situation characterises some of the cases where policy maker statements essentially implied unlimited retail deposit protection (*e.g.* Germany). Consideration should be given to withdrawing such guarantees as soon as possible.

To what extent political commitments to provide unlimited coverage can be withdrawn is not clear, however

To what extent such political commitments can be fully withdrawn however is not so clear; unlike in the case of guarantee expansions that were accompanied by legal changes, the actual withdrawal could not be made by means of another legal change. Once a government has ventured down that road, there might be a perception that such guarantees would always be made available in similar situations. If true, and banks effectively enjoy an implicit guarantee, a premium needs to be charged in exchange for that contingent insurance.

Such a premium could consist of fees for funding deposit insurance arrangements *ex ante*. As it turns out, one aspect that has attracted increasing attention recently is that of the funding of guarantee arrangements for financial institutions: for some time already, there has been a trend towards a greater degree of advance funding and a push towards the charging of risk-based premiums for deposit insurance schemes. One might expect this trend to be reinforced by the recent experience of the financial crisis. The strengthening of the deposit insurance guarantee system currently under discussion in Switzerland, for example, involves the setting up of an insurance fund at the level of 3% of total insured deposits, with insurance fees to be specified as a function of the amount of covered deposits and the specific risk of the individual bank. The specific risk of the individual bank would be determined, among other factors, by its capital base and leverage ratio.

Unlimited guarantees for transaction accounts

Another type of "unusual" guarantee…

Another type of "unusual" guarantee is the blanket guarantee for non-interest bearing deposits (typically accounts that business customers use to pay their employees and other expenses) provided by the FDIC under the Transaction Account Guarantee Programme (TAGP). While accounts of business customers are included in several countries (including the United States), among those covered by deposit insurance, *unlimited* coverage is unusual. That said, this type of coverage resembles the practice Japan adopted in April 2005 (see below).

… is currently subjected to review

In the United States, the coverage provided by the TAGP has been popular and, as of May 2009, only about 1 100 institutions had opted out (note that banks have to opt out rather than opt in or apply for coverage). The FDIC proposed in mid-2009 to either let the programme expire at year-end or extend it for another six months until mid-2010 and raise the premium rates charged for the insurance (from 10 to 25 basis points). In the discussions about the pros and cons of such an extension, some commentators pit small banks against large banks, arguing that the former tend to favour an extension. Among other things, an extension would be

helpful for small banks as it would help offset the perception that large banks are safer because of their size. Other commentators favour an extension on the grounds that the current situation of many institutions and the economy is still fragile. On 26 August 2009, the FDIC decided to extend the Transaction Account Guarantee (TAG) portion of the Temporary Liquidity Guarantee Program for six months, until 30 June 2010.

This type of guarantee is not unprecedented, however

Incidentally, some commentators have suggested the programme be extended indefinitely. Such an approach would resemble the one taken in Japan. In that country, unlimited guarantee for many types of deposits was removed in April 2005, while a new category of deposits was introduced (so-called "transaction accounts") with the unlimited guarantee being maintained for deposits that match the defining criteria for that category.[19] The relative share, as of total insured deposits, of that type of deposit (*i.e.* transaction account deposits) is estimated to have risen from less than 5% in 2004 (that is before the change in coverage) to more than 10% in subsequent years. This development likely reflected the more extensive protection enjoyed by that type of deposit.

V. Expansion of the safety net to include the insurer-of-last-resort function

The expansion of guarantees was not always the result of a proper cost-benefit analysis

Was the expansion of guarantees in autumn 2008 going too far? Answering this question is beyond the scope of the present paper. But what is noted here is that the choice of policy measures taken was not always the result of a proper cost-benefit analysis. Such an analysis would have to involve not only an account of the costs and benefits of the measures taken (as is done here in an *ex post* and partial manner; see also for some preliminary lessons Box I.3.1) but also of the potential costs and benefits of alternatives. Actually, it appears that many policy makers, which had not experienced similar crises previously, have not even attempted to undertake such analyses given the immediacy of the need for policy decisions.[20]

Once the government reveals itself as an insurer of last resort, the beneficiaries need to pay a premium in exchange

As a general rule, once the government reveals itself as an insurer of last resort for banks, the latter need to pay a premium for this insurance. But in what form? Such a premium could consist of requiring banks to hold larger capital (or liquidity) buffers than they otherwise would choose to do. Indeed, a number of recent proposals revolve around the idea of the size of buffers, as well as their allocation between entities within financial conglomerates.[21]

Such buffers may not be sufficient, however, and banks may need to accept more intrusive regulation, which would specify limits to risk-taking and leverage, compensation structures and levels, and/or the range of activities allowed or prohibited. In this context, the idea of narrow banking – allowing deposit-taking institutions that benefit from specific guarantees only a limited range of activities such as investments in relatively safe instruments – has recently been reiterated by several commentators.[22]

Box I.3.1. **Preliminary lessons regarding the insurer-of-last-resort function**

A number of tentative preliminary lessons are emerging from recent experiences regarding the role of and exit from government-provided insurance of last resort, and some of them are suggested underneath:

- Policy makers should not lose sight of the fundamental policy goal of fostering efficiency of financial markets, even when the main concern in the midst of a crisis is to avoid a systemic breakdown.
- The public provision of insurance for financial institutions is helpful to avoid such a systemic breakdown, but it is not without costs. Costs include those arising from potential distortions to competition and incentives (moral hazard).
- The form in which the expanded government-provided insurance is provided (*e.g.* opt-in *versus* opt-out, fee structures, types of liabilities covered, etc.) determines the level and distribution of subsidies across beneficiary institutions.
- Politically, it is typically much easier to expand guarantees than it is to cut them back. Thus, withdrawing (unusual) guarantees is easier when their introduction is accompanied by a credible timeline for expiration.
- The design of exit strategies is influenced by the design of safety nets in place before the crisis occurred, and the changes deemed necessary to those safety nets to improve their functioning may differ from one country to another.
- Efforts need to be made to levy risk-adjusted charges for the provision of guarantees. Moreover, specifying a fee structure that makes government-provided guarantees increasingly costly as time progresses can help facilitate their withdrawal as it encourages potential users of the guarantees to search for alternatives.
- Measures to make funding alternatives to the issuance of government-guaranteed bonds more attractive can also be helpful (such as acceptance of some types of covered instruments as collateral in central bank refinancing operations).
- Even after explicit guarantees are withdrawn, there is the risk that implicit ones remain. Implicit guarantees are arguably more harmful for financial market efficiency since they are typically not accompanied by commensurate charges levied on the beneficiary.
- A more tentative suggestion, going beyond the discussion in the present article, is as follows: to reduce the likelihood that the perception of implicit guarantees gives rise to higher risk-taking by financial firms, government intervention may have to be more intrusive. This influence could take the form of specifying the range of allowed or prohibited activities and/or requiring higher capital charges or specifying other ratios that have to be respected. Also, to reduce the perception of the existence of implicit guarantees, *ultimately* firms need to be allowed to fail (in a way that does not jeopardise the system's stability).

Should the framework for public provision of insurance be improved and, if so, how?

One recent academic proposal presented at the Jackson Hole Symposium in August 2009 focuses directly on the public provision of insurance for (systemically important) financial institutions (which, as has been argued in this paper, is very much what policy makers have done in response to this crisis), arguing that such a course of action is an optimal policy response to a systemic crisis. The authors argue that a proper framework for the smooth functioning of such a mechanism still needs to be developed, however. One specific recommendation in that context is that public authorities should issue tradable options on public insurance provision (Caballero and Kurlat, 2009).

Several proposals have recently been made that could be useful complements to broader regulatory reform measures

Clearly, this and other similar proposals cannot act as a substitute for the broader reform of regulation including that of capital, but they could be useful complements.[23] Such contingent strategies could offer the system an extra degree of flexibility, without making the overall costs of capital regulation too burdensome (the alternative of simply imposing a higher capital non-contingent capital charge tends to be less efficient).

One advantage of the suggested issuing of tradable public insurance options is that the (contingent) government support is being priced in the markets and is not available for free. Without such pricing, the availability of insurance is likely to influence the behaviour of potential beneficiaries of the insurance in undesired ways.

However, the issue of moral hazard still needs to be carefully considered. To the extent that the scheme does not *de facto* increase the government-provided guarantees available to financial institutions (for example, as long as the scheme succeeds in converting an already existing implicit into an explicit guarantee without expanding its scope), it would not necessarily increase moral hazard. Arguably, it could be designed in ways to control the latter. As always, the devil of such a proposal lies in the detail; there was broad agreement that future work by this Committee could further explore the issue. For example, one difficulty is to agree on some kind of objective (or parametric) rules that would trigger the conversion of the insurance options on public insurance to actual insurance.

In addition, one has to deal with the boundary issue, *i.e.* where to set the outer limit of that aspect of the safety net. The current crisis has highlighted that financial institutions other than banks can become systemically important. Furthermore, it is worth recalling that segments other than the banking sector also tend to be subject to panic-driven runs and that the consequences of such runs could be severe as well. Indeed, runs in short-term funding markets have been a common feature of many financial crises, with the run in the Asset-Backed Commercial Paper Market during this crisis adding to the list of such examples (see also Covitz *et al.*). Even if there has been no suggestion of extending the safety net to include such segments, additional considerations might need to be given to the issue of destabilising runs outside of the banking sector. There is also the question of why the establishment of guarantees has not been considered necessary or desirable in other segments where such runs tend to occur.

VI. Concluding remarks

VI.1. *Exiting from expanded government-provided guarantees*

The public provision has been helpful and involved limited upfront fiscal costs

The systemic nature of the financial crisis has induced policy makers to expand (parts of) financial safety nets to an unprecedented extent. The broadening of existing and the introduction of new guarantees for financial institutions has been a key element of that policy response and it has helped avoid an accelerated loss of confidence in banks. The public provision of insurance, when compared with several other policy options,

also has the advantage of generating limited upfront fiscal costs. In fact, in the case of many types of guarantees, which is particularly the case for, but not limited to, the guarantees for unsecured bank bonds, some income was actually generated.

But it is not cost-free; costs include potential distortions to competition and incentives

But even so, the expansion of guarantees is not cost-free. While upfront fiscal costs may be limited, contingent fiscal liabilities are being created. That such liabilities are relevant is reflected by the fact that they seem to be factored into sovereign credit risk ratings and debt prices. Other costs of the provision of public insurance include those arising from potential distortions to competition and incentives, especially through the creation of moral hazard.

Moral hazard is not just an abstract theoretical notion, but a very real issue. It is particularly relevant when banks can borrow at very low interest rates (as they can do now) and deploy the funds against the background of explicit and implicit guarantees from the government.

These factors tend to impair the efficiency of financial markets and – even though the main policy concern in the midst of a crisis is avoid a systemic breakdown – one should not lose sight of the fundamental policy goal of fostering that efficiency when formulating policy responses to the crisis.

Termination dates should be similar, while pricing structures need not always be similar but consistent

Strategies to exit from expanded guarantees need to be designed and implemented in such a way so as to ensure consistency with the withdrawal of other support measures, both domestically as well as across borders. Domestically, different institutions are involved in the provision of guarantees and there is a need for close co-ordination between them. Internationally, exit strategies need to be more closely co-ordinated and consistent with respect to pricing and scheduled termination dates for the "extra" protection provided. Termination dates should be similar, while pricing structures need not always be similar but consistent, reflecting among other things the quality of the guarantee provided. Inconsistencies in these regards are likely to create additional costs.

Clearly, where no extra charges have been levied for the additional insurance, withdrawal of such "extra" insurance should be as fast as possible. Where charges have been levied, their level should be subjected to changes with the aim that the protection becomes increasingly "realistically" priced. In this context, where private market alternatives are becoming available again, the latter can provide a benchmark. At least some convergence between the costs of government-provided guarantees and those available in the market would be expected to occur as time progresses. To achieve an "automatic exit", increasingly penalising fees can be levied.

Credible timelines for the withdrawal can be helpful

A clear and credible timeline for the withdrawal can be helpful. Timelines had been set in many cases, even if in some cases they have already been extended. In those cases where timelines have not been specified (or where they have been specified as a function of future events or developments), there is a risk that market participants will not yet have

focused their minds on the situation after the end of the guarantees. For example, where the end of the guarantee for bank bonds is not known, issuance of such bonds has continued (*e.g* in Australia), while it has effectively come to an end elsewhere.

VI.2. *The difficulty of achieving "full exit"*

The expansion of guarantees was not always the result of a proper cost-benefit analysis

Answering the question of whether the expansion of guarantees in autumn 2008 was going too far is beyond the scope of the present paper. But what is noted here is that many policy makers have not even attempted to undertake a proper cost-benefit analysis given the immediacy of the need for policy decisions. In this context, what is sometimes less appreciated is that perhaps more important than the crisis itself is the policy response to it in influencing the future behaviour of financial market participants and the functioning of the markets.

There may be a perception that (implicit) guarantees are available

A key question remains: can expanded guarantees, including in particular unlimited retail deposit guarantees, effectively be withdrawn under all circumstances? It is argued here that once a government has ventured down the road of extending comprehensive guarantees for bank liabilities and assets during one specific crisis, there may be a general perception that similar guarantees will always be made available for such entities during crisis situations (at low costs). Such a perception constitutes another cost related to the expansion of government-provided guarantees. Clearly, this argument is not restricted to the case of expanded guarantees, but might apply to the massive financial sector rescue measures more generally (as well as the "too big to fail" problem).

Once the government reveals itself as an insurer of last resort, the beneficiaries need to pay a premium in exchange

In any case, once the government reveals itself as an insurer of last resort for banks, the latter need to pay a premium for this insurance. Such a premium could consist of requiring banks to hold larger capital (or liquidity) buffers than they otherwise would choose to do. Indeed, a number of recent proposals revolve around the idea of increasing the size of buffers, as well as their allocation between entities within financial conglomerates.

Banks may also need to accept more intrusive regulation, which would specify limits to risk-taking and leverage, compensation structures and levels, and/or the range of activities allowed or prohibited. In this context, the idea of some form of narrow banking – allowing deposit-taking institutions that benefit from specific guarantees only a limited range of activities such as investments in relatively safe instruments – has recently been reiterated by several commentators.

Introducing tradable options on public insurance?

Coming back to the issue of the expanded public provision of insurance for financial institutions, on a conceptual level at least, it might have constituted an optimal response to the recent systemic crisis. That said, a proper framework for the smooth functioning of such a mechanism still needs to be developed. In this context, one specific recommendation is that public authorities should issue tradable options on public insurance provision. Without substituting broader regulatory reform measures, such a strategy could be a useful complement for the

former. However, there are considerable difficulties in determining the practical details of such proposed frameworks, including how to specify trigger points for the conversion of public (insurance) options to actual insurance. And of course, the issue of moral hazard continues to be relevant and needs to be carefully considered.

Notes

1. At the meeting of the Committee on Financial Markets (CMF) on 9 and 10 April, the Committee discussed issues related to expanded government guarantees for bank liabilities, as part of its wider discussion on the OECD strategic response to the financial and economic crisis. In light of the extensive discussion of the topic by delegates, the Committee decided to pursue further work in this area, suggesting the Secretariat continues to monitor developments with respect to bank bond guarantees, including potential distortions arising from them, as well as related exist issues. The current article has been written pursuant to that suggestion.
2. The ECB held its first 12-month Long-Term Refinancing Operation on 29 September 2009.
3. An overview of a wider set of support measures, including those related to bank borrowers and investors in key credit markets, and the economy in general, is provided *e.g.* in Furceri and Mourougane (2009). The annex of BIS (June 2009) provides an overview of direct support programmes for such borrowers and investors.
4. This count includes Australia and New Zealand; more details are provided in Schich (2008).
5. On 26 August 2009, the FDIC extended the Transaction Account Guarantee (TAG) portion of the Temporary Liquidity Guarantee Program for six months, until 30 June 2010. For institutions that choose to remain in the program, the fee will be raised and adjusted to reflect the institution's risk.
6. In all five cases shown in Table I.3.2, the asset guarantee arrangement was accompanied by capital injections. In return, the beneficiary institution paid a fee (typically paid in the form of preferred shares) and accepted specific requirements with respect to its lending behaviour, compensation practices and dividend and share repurchase actions. In yet another example involving asset guarantees, France and Belgium extended a guarantee to cover a USD 16.98 billion asset portfolio of Financial Security Assurance (FSA), a US financial guarantee insurance company and a subsidiary of Dexia (actually, a subsidiary of Dexia Holdings Inc., which in turn is 90% owned by Dexia Credit Local S.A. and 10% owned by Dexia, with Dexia Credit Local S.A. being also a subsidiary of Dexia). Under the arrangement, Dexia bears the first loss up to USD 5.4 billion, France bears 37.6% of subsequent losses, and Belgium bears the remaining losses. The arrangement was effected in connection with the agreed purchase of FSA by Assured Guaranty from Dexia, and that purchase was completed in July 2009 (*www.assuredguaranty.com/Documents/Assured%20Closing%20Release%20vF.pdf*).
7. By contrast, deposit insurance schemes have been in place in many countries for some time now and have traditionally differed across them (and even within a country in some of the cases where schemes for different institutions exist), reflecting each country's specific historical developments in this area and those related to the structure of its financial and economic system. This situation tends to complicate the formulation of consistent policy responses in the area of deposit insurance across countries. The International Association of Deposit Insurers (IADI) facilitates co-ordination among deposit insurance schemes, however, and also provides recommendations regarding the design of such schemes (*e.g.* Core Principles for Effective Deposit Insurance Systems, June 2009). Its members include many but not all OECD jurisdictions.
8. For estimates see, for example, IMF (2009), FitchRatings (2009), and Deutsche Bank Research (2009).
9. The relevance of this issue is underscored by the conclusions of a study by the OECD's Competition Committee, stating that "government interventions during the current crisis give rise to competition issues. Competition authorities should play a part in the design and implementation of exit strategies" (OECD, 2009b).
10. The design of funding arrangements of existing guarantee schemes may also have had undesired effects in the context discussed above. Where *ex ante* funding of deposit insurance schemes turned out not to be adequate and where *ex post* funding involves the collection of fees that are not perfectly risk-based (but instead are at least partly based on size measures such as assets or deposit), the latter effectively involves an element of subsidisation of weaker by stronger entities. See, for a discussion of selected funding issues, Box I.4.1 in Schich (2009a).
11. One of the key questions to be addressed in this context is where to exit to. The OECD has proposed a set of reform and exit strategy principles for successful exit from unusual support measures and preconditions, and a summary of them is provided in OECD (2009a).

12. Note that the coverage per depositor and per bank in Norway (currently approximately the equivalent of USD 350 000) has already been high compared with other CMF jurisdictions before the crisis. See also the related discussion in Schich (2009a).

13. Note, in this context, that delays in rapidly resolving failing banks also tend to raise the overall costs to taxpayers and perhaps deposit insurance funds and depositors (Lumpkin, 2008).

14. Many measures of the financial health of institutions and the confidence in them had improved by October 2009. Credit default swaps had declined markedly from their peaks and equity prices risen, and financial institutions had been able to raise capital through the issuance of equity and unsecured (non-guaranteed) bonds. Furthermore, indicators of market sentiment, such as measures of implied equity market volatility that are sometimes referred to as fear-gauge indicators, have returned to levels close to those seen before the accelerated flight-to-safety in autumn 2008.

15. There is in fact not just one but many aspects that define the extent of deposit insurance coverage. Sometimes, deposits are only partially insured, although such (co-insurance) arrangements have in many cases been abolished in response to this crisis, and replaced by full coverage (up to a ceiling). Deposit insurance may or may not include coverage of foreign currency deposits; where it is included, the compensation is often paid in local currency. Interbank deposits are usually not protected. Typically, coverage applies equally regardless of whether depositors are residents or non-residents. In most countries, membership is compulsory. Finally, but perhaps most importantly, there are insurance coverage limits per person and per bank, the amount of which differs between countries.

16. See resolution regarding the Temporary Liquidity Guarantee Program Final Rule, FDIC Board Meeting 20 October 2009, available at *www.fdic.gov/news/board/Oct098.pdf*.

17. See, for example, "Inquiry by the Senate Economics References Committee Into Bank Funding Guarantees – Joint Submission from the RBA and APRA". This and other submissions, as well as the final report are available at the Committee's website: *www.aph.gov.au/Senate/committee/economics_ctte/bank_funding_guarantees_09/index.htm*.

18. See, for example, Schich, S. (2008), "Financial Crisis: Buying Time Through Expansion of Deposit Insurance Arrangements", in *India Economy Review*, Quarterly Issue: Mending the Meltdown: Engineering a Recovery, pp. 138-143, December.

19. As from April 2005 onwards, in Japan, full coverage only applied to deposits that met the following conditions: *i)* bearing no interest; *ii)* being redeemable on demand; and *iii)* providing normally required payment and settlement services. See also Schich (2009b).

20. Clearly, the results of such cost-benefit analysis should be taken with a pinch of salt; they are based on a large number of assumptions, most of which relate to the unobservable counterfactual.

21. In this context, some observers have identified the cross-subsidisation in financial institutions and the incentive problems arising in this context as a key issue explaining why such firms might engage in excessive risk taking. A number of regulatory responses have been suggested to eliminate such incentives. They range from a positive list of allowed activities, the disallowance of certain activities, the imposition of an extra capital charge for the group as a whole to the ring fencing of different parts of a group. One recent proposal, discussed in OECD (2009a), has been to require financial institutions to adopt specific corporate structures that ensure the separation of capital for the different types of uses. Specifically, it has been proposed to require financial institutions that pursue more than one type of financial activity to adopt the structure of a non-operating holding company. See also Blundell-Wignall *et al.* (2008).

22. Todd (2009) draws attention to a proposal for separation of commercial from investment banking operations made by Robert Litan in 1987. Under this proposal, the retail bank would resemble a regulated public utility company. It could operate without deposit insurance because all its assets would be marked to market daily and would be safe investments. As it turns out, under certain circumstances, a banking system thus designed could even do without deposit insurance as deposit-taking institutions would not take significant risks meaning deposits would be safer, anyway.

23. Several proposals have recently been made based on the idea of introducing options. As it turns out, the options suggested by Caballero and Kurlat (2009) would actually be (call) options on put options. Other recent proposals include those for capital insurance policies (or options) that would pay off in countries when the overall banking sector is in a sufficiently bad state. Triggers could be specified in the form of either aggregate losses or firm-specific developments (*e.g.* with banks issuing reverse convertible debentures, which convert to equity when a bank's share price falls below a threshold). See also Kashyap *et al.* (2008).

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APPENDIX A1

Table I.3.4. **Selected recent episodes of unlimited deposit insurance coverage regimes**

	Date announced or placed	Date of removal (estimated)	Duration in years (estimated)	Comments
Australia	Oct. 2008	Oct. 2011	3?	An unlimited guarantee was announced on 12 October 2008, to remain in place for a period of three years. Guarantee is not automatic and a fee is payable for deposits exceeding AUD 1 million per person and bank.
Austria[1]	Oct. 2008	Dec. 2009	~1?	The Austrian National Council put forward a bank rescue package on 20 October 2008, including the provision of unlimited deposit insurance for savers until end of 2009 (thereafter to be limited to EUR 100 000).
Denmark[1]	Oct. 2008	Sep. 2010	2?	In October 2008, the Danish government guaranteed all claims by depositors and senior debt (unsecured unsubordinated debt) for two years, requesting contribution from banks in exchange (with payments due monthly according to the size of the capital base in the individual bank).
Finland[1]	Feb. 1993	Dec. 1998	6	A deposit insurance system was in place before the introduction of an unlimited guarantee; that system was revised in 1998.
Germany[1]	Oct. 2008	Not specified	?	On 5 October 2008, Chancellor Merkel and Finance Minister Steinbrück publicly declared that all private savings were guaranteed by the German government.
Honduras	Sep. 1999	Sep. 2002	3	Removed after three years.
Hong Kong, China	Oct. 2008	Dec. 2010	2?	On 14 October 2008, the Government of Hong Kong, China, announced a guarantee of the repayment of all customer deposits held with all authorised institutions in Hong Kong (including licensed banks, restricted-licence banks and deposit-taking companies), which was to remain in force until the end of 2010.
Indonesia	Jan. 1998	Jan. 2007	8	The blanket guarantee scheme was replaced by an explicit and limited deposit insurance scheme operated by the Indonesian Deposit Insurance Corporation (DIC), as stipulated in the Indonesian Deposit Insurance Law (Act No. 24 of 2004). In October 2008, the limit was raised significantly.
Iceland[1]	Oct. 2008	Not specified	?	A blanket guarantee has been extended *de facto* covering all deposits in domestic, commercial and savings banks and their branches in Iceland, that is all retail and corporate deposits covered by the Deposit Division of the Depositors' and Investors' Guarantee Fund.
Ireland[1]	Sep. 2008	Oct. 2010	2?	On 17 October 2008, legislation was passed by the Irish Parliament that gives effect to the bank guarantee announced by the Irish government on 30 September 2008. The guarantee scheme covers almost all bank liabilities of specific banks for two years from October 2008 (with reviews every six months).
Jamaica	Jan. 1997	Aug. 1998	< 2	The full guarantee was removed at the time when limited explicit deposit insurance was introduced.
Japan	Jun. 1995	Mar. 2005	9	The unlimited guarantee was announced in June 1995, enacted into law in June 1996, and withdrawn for time deposits in March 2002 and for ordinary deposits in March 2005. One type of payment and settlement deposits continues to be fully covered.
Jordan	Oct. 2008	Dec. 2009	~1?	The Central Bank of Jordan announced a full guarantee of all bank deposits until the end of 2009.
Korea	Dec. 1997	Dec. 2000	3	Limited explicit deposit insurance, first introduced in 1996 (and then overridden by the unlimited guarantee), was reintroduced in 2001.
Malaysia	Jan. 1998	Sep. 2005	8	An explicit deposit insurance system was put in place, effective as of September 2005, specifying a limited coverage level.
Malaysia	Oct. 2008	Dec. 2010	2?	The limited guarantee was replaced again by an unlimited one, to be withdrawn by December 2010.
Mexico	1990	Jan. 2005	15	Starting around 1990, government-owned banks were privatised; the Banking Savings Protection Fund was put in place, and there was an understanding that the government would effectively provide unlimited coverage for deposits. An explicit deposit insurance system was put in place in 1999. Since January 2005, the coverage limit has been set to 400 000 UDIs.
Singapore	Oct. 2008	Dec. 2010	2?	The Singapore government has guaranteed all Singapore dollar and foreign currency deposits of individual and non-bank customers in banks, finance companies and merchant banks licensed by the Monetary Authority of Singapore (MAS); to remain in place until 31 December 2010.
Slovak Republic[1]	Oct. 2008	Not specified	?	The Slovak government announced on 8 October 2008 that it would expand insurance to the full amount of bank deposits to be effective as of 1 November 2009. On 24 October, Slovak lawmakers approved a government proposal to expand insurance to the full amount of bank deposits.
Sweden[1]	Jan. 1993	Jul. 1996	< 4	Explicit deposit insurance was introduced for the first time in 1996 to replace the unlimited guarantee.

Table I.3.4. **Selected recent episodes of unlimited deposit insurance coverage regimes** *(cont.)*

	Date announced or placed	Date of removal (estimated)	Duration in years (estimated)	Comments
Chinese Taipei	Jul. 2001	Jul. 2005	4	Unlimited deposit guarantee was extended once by one year.
Chinese Taipei	Oct. 2008	Dec. 2009	1?	The government of Taiwan announced, on 7 October 2008, a temporary guarantee of all deposits in full amount until 31 December 2009. A one-year extension is currently being considered.
Thailand	Aug. 1997	Aug. 2012	> 12	An explicit guarantee system was introduced in August 2008 with the formation of the Deposit Protection Agency. It was envisaged that the unlimited guarantee be phased out gradually between August 2009 and August 2012. A limit of THB 50 000 000 applied from August 2011, and then THB 1 000 000 from August 2012.
Turkey	May 1994	Jun. 2000.	6	Unlimited deposit insurance coverage between May 1994 and June 2000. Coverage limited to TRL 100 000 between June 2000 and December 2000. Blanket coverage, including all creditors of the bank, between December 2000 and July 2003 in response to the 2000-01 financial crisis. Between July 2003 and July 2004, unlimited insurance coverage only for depositors but not all creditors. Coverage further limited to TRL 50 000 from July 2004 onwards. In Turkey, deposit insurance covers only real and not legal persons.
United Arab Emirates	Oct. 2008	Oct. 2011	3?	All savings and checking accounts of local and foreign banks with significant presence operating in UAE will be guaranteed for the full amount for three years.

1. The European Commission has proposed a revision to EU rules on deposit guarantee schemes that puts into action the commitments made by EU Finance Ministers on 7 October 2008. The European Parliament has adopted amendments to the Commission proposal in its plenary meeting (first reading) of 18 December 2008. The Council has adopted these amendments on 26 February 2009, and the final text (Directive 2009/14/EC) reads as follows: "By 31 December 2010, coverage for the aggregate deposits of each depositor should be set at EUR 100 000, unless a Commission impact assessment, submitted to the European Parliament and the Council by 31 December 2009, concludes that such an increase and such harmonisation are inappropriate and are not financially viable for all Member States in order to ensure consumer protection and financial stability in the Community and to avoid distortions of competition between Member States." The Directive applies to EU and EFTA members.

Sources: IADI/Asia Regional Committee (2005), Schich (2009), "IMF Staff Report for the 2008 Article IV Consultation with the United Arab Emirates (December 2008) and Jordan (May 2009)", informal communications with experts from deposit insurance agencies, and comments from CMF participants.

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Regulatory Issues Related to Financial Innovation

by
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This note explores various regulatory issues related to financial innovation. It starts from a premise that financial innovations are neither always helpful (or benign) nor always threatening. Innovations have the potential to provide for a more efficient allocation of resources and thereby a higher level of capital productivity and economic growth. Many financial innovations have had this effect. But others have not. Examples of the latter include products that may have been misrepresented to end-users and resulted in delinquencies, bankruptcies or other problems among them, or products that have been inadequately managed with respect to the various credit or market risks they entail. Considerations of problems aside, innovation should be seen as a natural aspect of the workings of a competitive system. Thus, the ideal policy approach is to find an appropriate balance between preserving safety and soundness of the system, and allowing financial institutions and markets to perform their intended functions. That approach entails first ensuring that the necessary market-framing and market-perfecting rules are in place, and then establishing a proper structure for reviewing financial innovations. Seven steps needed to accomplish this task are outlined in the report.

* This note was prepared by Stephen A. Lumpkin, Principal Administrator in the Financial Affairs Division of the OECD Directorate for Financial and Enterprise Affairs. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or of the governments of its member countries. The article has benefited from discussions in sessions of the OECD Committee on Financial Markets and the Insurance and Private Pensions Committee as well as from specific written comments from delegates.

I. Introduction

Financial innovations are neither inherently good nor inherently bad

This note outlines components of a balanced regulatory approach to financial innovation, defined as one that gives proper weight to each of the three common core policy objectives featured in most regulatory frameworks: mitigating systemic risk, ensuring proper market conduct, and ensuring adequate protection for retail borrowers and investors and other end-users of financial services. It starts from a premise that financial innovations are a natural outcome of a competitive economy. They are neither inherently good nor inherently bad. Innovations have the potential to provide for a more efficient allocation of resources and thereby a higher level of capital productivity and economic growth. Many financial innovations have this effect and for that reason policy makers may wish to adopt a positive attitude towards innovative activities; that is, to start from a presumption of benefit until detriment is proven as opposed to the reverse construction.

Many innovations prove to be beneficial, on net, but some others result in adverse outcomes

But there is a need for caution. Innovations can affect financial intermediation and the effective working of the financial intermediation process is inherently a matter of public interest.[1] Moreover, while many innovations, perhaps even most, prove to be beneficial, on net, others can result in adverse outcomes, some of which may be quite severe. Examples of the latter include products that are misrepresented or simply inappropriate for end-users and result in delinquencies, bankruptcies or other problems among them, or products that are inadequately managed with respect to the various credit or market risks they entail and result in broader negative consequences for the financial system or the economy at large.

The potential for possibly severe adverse outcomes sounds a note of caution regarding innovative activities…

Most regulatory frameworks have a mandate to protect consumers and the private and social costs of major financial instability are sufficiently high that policy makers have a clear role as well in preserving financial stability in order to minimise the risks and costs of widespread financial distress. Under the circumstances, the tendency should naturally be to err on the side of caution. Doing so may require placing greater weight on up-front avoidance of systemic problems as opposed to *ex post* resolution of crises. And at the end of the day, the commercial success of financial intermediaries themselves rests squarely on the effectiveness with which their activities contribute to the macro goals of mobilising and allocating savings, which is arguably the core function of the financial system.

… and may argue against adopting a completely hands-off approach

These caveats argue against a completely hands-off approach to innovative activities in finance. The benefits to the system are not from innovation *per se* but, rather, from sustainable innovations, those that do

not result in undesirable distributional outcomes or other negative externalities. Failure to make this distinction can lead to the unhealthy premise that all innovations are necessary for the growth and development of financial systems over time, which past and recent experience suggests is not true.

That said, it is no easy task to move from expressions of concern about potential harm from innovations to a concrete financial innovation policy

The real question is, thus, what should be the appropriate policy response to financial innovations. The view expressed in this note is that authorities should seek ways to preserve the benefits of innovative activities, while ensuring that new products and services that prove *harmful* are appropriately contained. Admittedly, this task is not an easy one to achieve. For one, distinguishing "beneficial" from "harmful" innovations at an early stage is by no means a straightforward exercise for policy makers; indeed, some observers, prudential supervisors among them, question even the feasibility of doing so. Second, were potentially harmful innovations to be identified, different categories of authorities (*i.e.* micro-prudential, macro-prudential, consumer protection, tax) would likely have different views as to the appropriate degree of containment. For example, products that facilitate tax avoidance may raise no safety and soundness concerns. And, as with any regulatory policy, an attempt to subject innovative activities to stricter regulatory oversight would no doubt suffer from two sets of errors – false positives and false negatives.

At a minimum, authorities must ensure that the infrastructure needed to support innovative activities in finance is in place and functioning properly

To minimise the chances that such mistakes occur the note argues that relatively greater weight should be given to ensuring that the infrastructure needed to support innovative activities is in place and functioning properly. Measures addressed to physical, legal, and human components are cited. Other elements depend on the specificities of particular types of innovations. That is, rather than seeking to impose controls on innovative products per se, authorities should seek to ensure that all participants, ranging from service providers to end-users, have the necessary capacities to engage in said activities. Of course, where shortcomings are identified, authorities must be willing to act accordingly.

The paper is organised as follows. The next major section examines financial innovations over time in the context of their influence on the financial intermediation process. The noted developments include the increase of capital market activities in intermediation and the corresponding shift in the activities of banks and other intermediaries to broader risk transformation. The difficulties associated with this process are discussed afterwards. They include the increased exposure of banks to market risks and a more general tendency towards periodic bouts of marked illiquidity, insolvency, and market misconduct.

This discussion is followed by a suggestion of measures needed to make the financial system more *accommodative* to innovative activities, which include enhancements to regulation and supervision and improvements in governance and internal controls of financial intermediaries. The following section offers reasons why this task will not be easily accomplished.

If a general conclusion is to be drawn from the discussion it is perhaps that remedial measures should be designed to address specific problems. Looking at recent history, one finds that many of the innovations in product offerings have suffered from the same market defect – a tremendous information asymmetry between the creators of the products and services and the end-users. For such issues of a consumer protection nature, the regulatory approach tends naturally to be *ex ante*, in the sense of being more proactive or preventative. Preventive measures are also generally required to avoid potential systemic instability. Otherwise, the best direction for public policy may well be *ex post* corrective measures.

II. Policy concerns arising from financial innovations

Financial innovations and the intermediation process

Innovations in finance run the gamut in terms of policy issues

Innovations in finance have encompassed a vast range of products and services, processes and functions. They run the gamut in terms of policy issues, so it is generally not helpful to consider them *en masse* and attempt to treat "financial innovation" as a singular issue. In this sense there can be no "financial innovation policy" *per se*, but rather, various policies attuned to the nature and incidence of particular innovations.

The wide range argues for a case-by-case treatment of innovations

By this reasoning, an optimal approach to financial innovation would examine innovations on a case-by-case basis in the context of a standardised framework that considers the financial landscape in which the innovation is introduced, the policy objectives that have been elaborated for the financial system, and the system of institutions (policy instruments) that may be drawn upon to meet those objectives.[2]

History shows that many innovations, perhaps most, have been beneficial for the economy, but some innovations have had undesirable side-effects

An impartial review of financial innovations over time would find that many innovations have been beneficial, resulting in increased choice for consumers and greater flexibility on the part of other economic agents. And while no complete accounting has been done, a valid case can probably be made that the effect of innovations for the global economy has, on net, been positive over the longer term. That said, an impartial observer would also note that there have been unexpected and undesirable side-effects associated with some new products and services. The fact that episodes of financial instability have often occurred in the wake of a change in the structural regime that reflected some form of market innovation has not gone unnoticed by advocates of stricter oversight of innovative activities in financial services.

In addressing these concerns, authorities have sought ways to make the system more resilient

Numerous reforms in recent decades have been introduced in response to episodes of instability. Unfortunately, many of the measures adopted, in effect, looked backwards at previous problems, while the intended target had moved off in some other direction. Crises have elements in common, but rarely the same trigger. Obviously, what is needed is something more flexible, capable of looking forward a bit more. That such a framework has not been implemented is reflected in the system's periodic lack of resiliency.

A number of trends and developments in the financial services industry have increased the need for greater resilience

A number of structural developments have tended to affect the degree of resilience of the financial system, in part, by leading to increased potential for problems in individual institutions or markets to spread. Innovations in product design have blurred the distinctions between instruments and institutions, and several market segments, wholesale markets in particular, have trended towards international integration. Among other important structural changes have been the increased importance of capital markets in credit intermediation relative to banks and other traditional lenders, corresponding changes in the activities and risk profiles of financial institutions, and the related growth and development of products and markets for intermediating risks.

Some developments can be traced to efforts at liberalisation, which allowed for increased competition across sectors and borders

Some of these developments can be traced to efforts at liberalisation, which succeeded in boosting competition across sectors and borders. Many measures to liberalise entry and ownership restrictions and to facilitate international trade in financial services were introduced during the 1980s and 1990s. Along with changes in regulatory objectives and other aspects of the regulatory framework governing financial services, the reforms had the effect of enlarging the set of tactical and strategic manoeuvres institutions could employ in response to competitive impulses.[3] All told, the choices of various segments of the financial services industry have covered a range of options with regard to strategies, product mix, and organisational structures.

A natural consequence of these developments is a change in the nature of the intermediation process…

This ongoing change in the intermediation process is part of the normal development of financial systems over time. Banks and other loan originators specialise in lending to borrowers for which publicly available information about credit histories is lacking and in financing activities that contain a large measure of subjectivity and are difficult to assess. To survive in competitive markets, primary lenders must be able to distinguish better credit risks from poorer ones and set their loan terms accordingly. Banks, for example, are usually (though obviously not always) good at assessing credit quality in deciding whether or not to extend credit,[4] and in addition to higher interest charges and other fees levied on risky borrowers, banks also use non-price terms to reduce the risk of default and mitigate other agency costs.

These arrangements protect the bank's interests and also help to insulate its creditors from credit risk. In addition, regulators require depository institutions to maintain a buffer layer of capital that is subordinate to the claims of depositors and other providers of low cost funds and market forces compel banks to endeavour to maintain capital cushions above the regulatory minimum. Relatively speaking, this buffer layer of capital is expensive.[5]

… which generally entails the most creditworthy borrowers shifting to capital markets, while credits that require more direct monitoring are forced to rely on banks and other traditional lenders

A general conclusion of the academic research in this area is that borrowers whose credit risk is relatively easy to assess and for which indirect monitoring mechanisms are adequate will opt for capital market financing, while borrowers for which comparable information about credit histories is lacking will be forced to rely on banks, other intermediaries, or non-formal sources of credit. Banks, thus, tend to specialise in financing activities that require more direct monitoring mechanisms. Competition from lower cost sources of credit forces banks to operate more or less at the edge of illiquidity (as reflected in holdings of less marketable assets), typically in transactions where arm's length contracts are more difficult to specify.[6] Their ability to successfully provide such credit is one of the reasons why banks are special and why they are so important to the functioning of the financial system.

Banks typically respond to this "disintermediation" by altering their business models and product mix, often to include entirely new products and trading strategies

As competition for the "best" borrowers increases, banks respond by altering their activities and product mix, which for many institutions entails taking on more complicated risks. Larger banks in particular have shifted from traditional lending against deposit liabilities to trading and market-making in various market segments, in some cases reaching out to non-traditional customers or to traditional customers but with innovative products.[7] Larger institutions increasingly have focused on the creation of new products and services to satisfy myriad needs of their clients, by transforming liquidity and maturity risks and other dimensions of financial contracts, thanks to analytical breakthroughs in modelling contingent claims and other complex instruments, which have enabled them to adopt variable holding periods for their risk exposures and to implement corresponding rapid changes in trading strategies.

Large complex institutions have shifted from credit intermediation to risk intermediation…

For the largest institutions, especially globally active ones, intermediation has expanded from more straightforward credit intermediation to *risk intermediation*, in which institutions make use of advanced statistical techniques and quantitative models as the basis for risk measurement and pricing, sometimes as full scale substitutes for more traditional qualitative judgments. Securities firms have also been at the centre of this intermediation landscape.

… a strategy that relies heavily on the use of derivatives and complex models of risk

In this context, large commercial banking organisations, their securities arms, and independent investment banks have become fairly active users of credit derivatives and other such "hedging" instruments to off-load specific credit risk exposures to other investors. As a consequence, both the scale and complexity of their funding and trading interrelationships have grown, including with counterparties that operate outside regulated segments of the financial system.[8] Major market participants now maintain a variety of such relationships over numerous markets in different financial instruments, currencies, and time zones.

At the same time, banks will typically securitise a large portion of traditional credits, which may leave them holding more complicated risks

Thanks to advances in securitisation, banks can actually transfer off their balance sheets much of the risk associated with many of the "plain-vanilla" credits they do originate *(e.g.* residential mortgages and certain types of consumer loans), although when market discipline functions properly, they have to retain a portion, usually the first loss, to signal the quality of the risks to potential buyers. But while some risks may be transferred to other investors, banks' balance sheets may not necessarily be any safer than in the past, as they may well contain newer, perhaps even more complicated risks, including risks arising from the customisation of products for specific clients.

The implications of these developments for the system as a whole are ambiguous

What these developments mean for the system as a whole is ambiguous. Successful process innovations, such as new risk management techniques, and product innovations (the creation and introduction of new financial instruments) have the potential to facilitate a more efficient allocation of resources and, thereby, a higher level of capital productivity and economic growth. For example, new products and markets broaden the menu of financial services available to borrowers, lenders, issuers of securities, and other market participants. And improved risk measurement and risk management techniques can result in a more optimal distribution of risks throughout the system.

The result could be a more optimal distribution of risks throughout the system…

Certainly, the entry and broader participation of new entities in the financial system has allowed risks to be more widely spread throughout the economy, which brings some advantages. For example, compared with banks, some of the new participants have longer investment horizons and different risk management and investment objectives, which may facilitate less cyclical provision of credit. But the opposite may also be true and there are growing concerns that some new activities and participants may constitute sources of instability.

… to the extent that risks are shifted to parties with the wherewithal to bear them

Exposure to risk is inherent in economic activity. It is the coverage and proper management of such exposures that offers benefits to individuals, enterprises and the economy as a whole. Thus, the dispersal of risks throughout the system has benefits only to the extent that risks are shifted to parties that have the knowledge and wherewithal to bear them, and not just that risks exit the banking sector.

Banks' balance sheets have become more dynamic in the process…

For many banks, meanwhile, increased trading activity has significantly increased their exposure to market risk, and as *market risks* have grown in importance, the balance sheet has become more dynamic, in the sense that risk exposures can change rapidly and possibly with severe adverse consequences.

… and the degree of leverage in the system has increased

The risks and opportunities for failure tend to be exacerbated by the leverage associated with many new activities and by the larger numbers of players and greater degree of anonymity in today's financial markets.[9] For instance, some new products have involved substantially greater amounts of complexity than traditional products and proved eventually to be quite damaging.

Difficulties associated with the evolution of financial services

Usually, despite these changes, the system functions as intended, but there are periodic episodes of instability…

When functioning well, the financial system helps to produce fair, stable, and efficient market outcomes to support sustainable long-run growth of the economy. And quite often, financial markets do function properly, which means they achieve their core objective of ensuring that savings are allocated optimally among competing investment opportunities. But periodically, the financial services industry is subject to episodes of marked illiquidity, insolvency, fraud and other misconduct to the detriment of consumers and investors and the economy at large.

… which tend to occur in the wake of innovations

These outcomes are not so rare in practice. Experience shows that erosion in market discipline tends to occur periodically, as market participants shun prudence in pursuit of short-term profit opportunities. Problems develop during boom periods and either manifest themselves during busts or precipitate them. Innovations have often been implicated in these developments in the sense that episodes of marked financial instability have often been preceded by some form of market innovation that altered the nature of competition and gave rise to subsequent adverse consequences.

Various reasons account for these outcomes, including the behaviour of individuals and institutions…

The recent near meltdown in the global financial system and the emergence of numerous other episodes in the past couple of decades in which isolated financial sector problems developed and reached crisis proportions provide a compelling argument that markets left more or less to their own devices will not always generate socially optimal outcomes. For one, individual behaviour often runs counter to the assumptions of economic theory. And perhaps more important, the behaviour of individual agents or institutions in the pursuit of their own goals does not ensure collective rationality.

… and the fact that participants do not face market pressure to internalise external costs needed to protect the system

There is nothing necessarily insidious in this assertion. Economic agents may be expected to act in their own best interest, which for institutions means the pursuit of profits. Market participants may be expected to manage their affairs to balance revenues against costs, which would entail taking on risks up to the point where the cost of doing so makes sense from their own point of view of their balance sheets. From each individual institution's perspective, there may be little, if any, economic incentive to internalise costs that may be associated with the protection of third parties or the system as a whole.

Differences between private and social costs of financial activities are one of the major imperfections in financial markets

The existence of such differences between the private and social costs of financial activities, so-called spillover effects or negative externalities, has long been recognised (at least in some quarters) as one of the important imperfections in financial markets. Other potential market imperfections can include:

- market power imbalances, including the existence of market participants who cannot be expected to make appropriate choices for themselves and thus need protection;
- the existence of indivisibilities or pervasive economies of scale;

- the existence of public goods (*e.g.* market liquidity); and
- information asymmetries.

The existence of market failures interferes in the proper functioning of markets…

When market failures exist, markets may not allocate resources efficiently across space and time, may not effectively manage risk, and as a consequence, may become unstable or subject to other weaknesses. Importantly, in the presence of market failures, market discipline may not function effectively, among other things allowing risks to the system to become mispriced.

… which may include impeding market discipline, as in the recent crisis…

The recent crisis is a case in point. It shares with a number of previous crisis episodes a substantial build-up of leverage and accumulation of assets, in an environment characterised by very low risk spreads and high concentrations of risk, bred in this case by a long period of high growth, low real interest rates, and subdued volatility, and supported by evolutions in risk management processes and wider acceptance of instruments for credit risk transfer and various other structured products. The crisis erupted against the backdrop of a range of weaknesses, beginning with imbalances on the macroeconomic front and including flawed incentives across the range of market participants in the chain running from loan origination to distribution of securities backed by the loans.

… in which there were failures of discipline across all participants ranging from end-investors to service providers and third-parties

In particular, there was weak management of core risks on the part of major financial institutions, including poorly defined and weakly enforced lending limits, poor governance and internal controls, and inadequate control of operational risks.[10] Investors for their part performed little due diligence of their own and relied solely on credit ratings they failed to understand fully. Furthermore, without sufficient pressure from supervisors to adequately enforce proper underwriting and risk management criteria, excess leverage built up in structured investment vehicles (SIVs) and conduits. And most market participants grossly underestimated the liquidity required to support the market, part of a more general critical lack of appreciation of underlying risks, reflecting the use of complex products and off-balance sheet vehicles.

Insufficient concerns about credit risk were at the core of the problems, motivated in some cases by the desire to accommodate demands for risk

At the core of the problem was a mispricing of credit risk, or insufficient regard for it. Through the use of credit default swaps (CDS) and other risk transfer instruments and based on predictions of quantitative risk models, originators/sponsors were inclined toward the view that their exposures were sufficiently hedged. At the same time, the lack of any perceived concentrated risk exposures left them with too little incentive to monitor the performance of individual loans. Rather, underwriting criteria were relaxed, in part, to feed a growing demand for higher yielding securities on the part of investors and perhaps as well to facilitate tax arbitrage.[11] The underlying loans were then bundled, via the use of leveraged funds, and repackaged into various heterogeneous complex structures.

The tiered structures of risks that had been built up to feed the process collapsed once the degree of mispricing of risk became evident

Many of these structures of tiered risks began to collapse once the deterioration in the performance of subprime collateral began to surface and participants began to sense that many of the basic assumptions implicit in the underlying analysis of credit risk, such as those concerning default correlations, were inaccurate.[12] But securities structures had become so complex and heterogeneous that it was difficult for participants to disentangle the various layers to determine who bore what risks, at least not on the basis of standardised approaches. In that environment, market participants lacked confidence in the financial integrity of potential counterparties to the extent that credit extension and financial intermediation more generally ceased to function.

Though unusually severe, the crisis reflects a typical pattern

The financial crisis itself has been unusually severe by various measures. But in other respects, the recent developments actually match the historical pattern quite well. Indeed, looking backwards over time one finds many periods in which rapid growth has been spurred and supported by financial innovations, but in which the pace of growth masked key underlying risks, as innovation outpaced the capacity of managers, boards of directors, supervisors, and the market as a whole to adapt accordingly.

Importantly, liberalisation and innovation are important for financial development, but often have hidden flaws…

One official notes in this context that financial development depends on the liberalisation of financial markets and on innovations that improve the flow of information. Even sophisticated market participants must have sufficient information if they are to protect themselves from risks related to new products, markets, or market players. Unfortunately, liberalisation measures and financial innovations often have hidden flaws and do not solve information problems as well as markets may have assumed. When these flaws become evident, markets sometimes seize up, often with very negative consequences for the real economy.[13]

… which can prove problematic when they do emerge

The flaws associated with recent innovations derived mainly from excessive heterogeneity, complexity, and opacity, which obscured underlying risks, allowing them to build to levels grossly disproportionate to the perceived benefits.[14] It is important to note that the individual products themselves may not be intrinsically bad. When used appropriately, they can be useful instruments for hedging selected risk exposures. But their higher degree of complexity increases the chances for mistakes to be made, while the associated higher amounts of leverage to which they give rise act to magnify any problems that do emerge. And the risks of inappropriate use are not limited to end-investors. Financial intermediaries may also use them inappropriately, either through mistakes in risk management or as part of deliberate risk-taking strategies. Indeed, the bubble that preceded the crisis was fed by various participants shifting into asset classes seemingly irrespective of the risks, in some cases to mimic product offerings that had proved profitable for competitors.

Problems this time with new products included excessive complexity and opacity, which allowed risks to build to unsustainable levels

In the end, the complexity of product design and the sheer pace of market innovations exceeded the capacity of the entire system to measure and limit risk and to manage incentive problems in the securitisation process which was caused in large part by a general failure of many market participants, to understand fully the instruments that were created. A wide-spread lack of awareness about risk certainly increases the odds of participants making incorrect choices that precipitate problems, and in an integrated network of the sort that has come to characterise modern financial systems there is a non-trivial chance that those problems when they do emerge can become systemic.

Properly functioning markets for new products and services take time to develop

Looking back, it seems that new products and services can be introduced and markets for them can develop and even flourish for some time in the absence of formal enabling regulations, relying instead on the basic legal infrastructure or on the regulatory framework in place for other components of the financial system. But while new products may be introduced and gain acceptance among a broad audience, properly functioning markets for the products need some time to develop, which typically entails a less rapid process of learning and strategic adjustment.

For example, the validity of model assumptions becomes evident only after some time has passed

For example, market participants use models and various statistical techniques to project cash flows and estimate the risk exposures related to new financial instruments, but the true nature of these factors becomes evident only over time, through observations of behaviour under a variety of economic conditions, such as over the credit or business cycle. Problems with the infrastructure needed to support an innovation may also emerge with a delay, at which point they can threaten the health of individual institutions, markets or the system as a whole.

Measures needed to enable the system to accommodate innovation

The current institutional framework cannot manage innovative activities in an acceptable way

It seems, given the periodic breakdowns that have occurred, that the system does not seem especially robust to innovative activities. Authorities must find ways to protect the system against systemic risk, and must ensure proper market conduct on the part of financial service providers and adequate protection for consumers and investors, if they are to prevent problems at individual institutions and markets from propagating and to preserve public confidence in the integrity of the financial system.

In particular, it does not seem to provide for adequate protection of consumers and avoidance of systemic near-meltdowns

Financial activity depends to a considerable extent on notions of trust and fairness. In particular, end-users of financial products and services – especially unsophisticated consumers and investors – find it difficult to evaluate the quality of financial products and related information. There are limits to the ability of small retail consumers and investors to protect themselves in their dealings with the financial services industry, so they generally need some form of assurance that financial institutions and markets operate according to rules and procedures that are transparent and fair, in the sense of being free from manipulation, conflicts of interest, or other such shortcomings.[15]

To do so effectively would require a case-by-case assessment of innovations

The difficulty is that it does not seem possible within the current regulatory and institutional setup to accommodate innovative activities in a way that achieves the objectives of protecting consumers and the system on an ongoing basis, which means avoiding widespread delinquencies or periodic meltdowns. This note argues that two sets of measures are needed to accomplish these tasks and make the financial system more resilient. One set consists of required improvements in the infrastructure for financial services. Other measures target various types of innovations.

Measures needed to prepare the system for innovative activities

Step 1: Adopt an unbiased stance

Historically, periods of heightened innovation have often been followed by a much slower pace or even a reversal or retreat to previous norms, as subsequent failures or crises brought on, at least temporarily, strong anti-innovation sentiment among members of the general public and policy makers alike. But in time, tempers calm, memories fade, and the pace of innovation picks up anew.

Despite periodic problems, innovations have generally been positive, on net, for economic growth and development

This response is to be expected. Innovation is best viewed as a natural aspect of the workings of a competitive system. And despite the periodic upheavals, it is arguably the case that the effect of financial innovations has, as noted above, been positive, among other things by lowering the costs and broadening the menu of financial products and services available to ultimate savers, ultimate borrowers, and other market participants.[16] Moreover, customers who once were forced to remain outside the formal financial system have gained access to credit, via the availability of new lending products and distribution channels.

Thus, authorities should not be predisposed against innovations

Advances of this type are important if economies are to replenish themselves over time. And for that reason, authorities should refrain from adopting a negative bias against innovative activities. Of course, an unbiased stance does not mean that authorities/supervisors should not care at all about innovative activities and adopt a completely hands-off approach, whereby new financial instruments or activities are allowed to develop and spread without any official scrutiny whatsoever. The issue is where the proper line should be drawn.

Step 2: Ensure that the necessary framework conditions for markets to function properly are in place

There are a number of important pre-requisites for the financial system to perform its functions

At the broadest level, government intervention in the financial sector seeks to ensure that the financial system supports the smooth functioning of the real economy and a large component of the fundamental regulation of financial services is generic to all parts of the economy. Basic elements include measures to ensure that the legal system supports economic exchange by protecting property rights (through anti-fraud provisions and contract and commercial law[17]), establishing judicial and other enforcement mechanisms, and ensuring

proper market conduct.[18] These measures are among the core components of a well developed infrastructure for financial services, which also includes reliable accounting, auditing, and tax systems, as well as more specific requirements at the level of individual sectors (*i.e.* banking, insurance, securities).

But market-framing rules alone are not sufficient

All of these measures are necessary framework conditions for markets to work. But these *market-framing* rules alone are not sufficient to enable a market to function properly. They must be backed by sound fiscal and macroeconomic policies and appropriate monetary controls to support sustainable aggregate economic activity and constrain major internal and external imbalances,[19] and by a broader set of *market-perfecting* measures.

Rather, various market-perfecting measures are needed, which include various forms of regulation

Basic anti-fraud measures typically suffice for private, bilateral contractual agreements but more intrusive regulatory requirements are introduced as the complexity of financial arrangements increases and as balance sheets of service providers become more opaque. The main components of the regulatory framework for financial services in most OECD economies generally include the following activities: 1) licensing, registration, and prudential supervision of some categories of financial institutions; 2) disclosure requirements for public offerings of securities; 3) authorisation and oversight of securities markets; 4) regulatory and supervisory procedures governing the management of financial distress events and the restructuring or exit of insolvent financial institutions; 5) regulation of anti-competitive market structures and takeover activity; and 6) regulation of market conduct.

The challenge is to link the structure to innovative activities

The key is to link this structure to innovative activities, bearing in mind the ability of market participants to contract around regulatory hurdles. As market practices in financial services can evolve rapidly, overly detailed regulations may not be effective and may become counterproductive over the longer term. Broad regulatory principles will need to be applied in some circumstances.

Step 3: Acknowledge that there is no one policy measure that can be considered optimal in all circumstances

A balanced approach is required, which means regulation and supervision in combination with competition and market pressure

The next step in the design of a regulatory framework adapted to innovations in financial services is to accept that the issue for policy is not a choice between two polar cases of exclusive reliance on competition and market pressure (*i.e.* market discipline) on the one hand *versus* complete reliance on regulation and supervision on the other. Competition and market pressure are necessary for the attainment of sustainable market outcomes, but alone are rarely sufficient. But by the same token, though necessary for the attainment of stable and efficient market outcomes, regulation and supervision alone are also not sufficient.

Both sets of measures have their role to play

It is important for policy makers to appreciate the fact that both sets of instruments have their place in the policy repertoire. In economic parlance, they are not perfect substitutes; that is, it is not possible to make

wholesale substitutions between them and attain desired outcomes. Rather, government policy affects market outcomes in interaction with private sector behaviour and, as the *General Guidance* notes, the success of regulation as a policy instrument depends to a significant extent on encouraging proper behaviour, which requires aligning the incentives of participants with policy objectives.

Regulation is important, but if not properly designed, could result in unforeseen consequences that precipitate wider problems

Regulations are obviously important, but they are only one component of a full complement of measures that underpin the proper functioning of financial systems. It is important to recognise that regulation is not a panacea for problems and imperfections that arise in the financial system. For one, all official interventions in the workings of the economy have their own costs and can create distortions of market signals or have unforeseen consequences that precipitate wider problems down the road. The end result could well be efficiency losses that are at least as substantial in economic terms as the market imperfections the regulations are supposed to correct.

For example, poorly designed regulation can distort market signals and result in net economic costs rather than net benefits

Usually, it is improperly conceived and poorly designed regulation that results in net economic costs. This outcome sometimes results from direct effects on individual market participants or segments, but more often occurs indirectly through the distortion of market signals. And often as not, that outcome stems from ambiguous objectives. It is important to take a step back and ask again what is it that we are trying to achieve with financial policy. The answer should be a precise statement of the desired outcome, such as, improving standards of market conduct, changing the behaviour of all participants in a certain way, improving the capacity of consumers to understand the products on offer, etc. If the goal is not clear, it becomes difficult to design or implement efficient corrective measures.

Step 4: Ensure that the policy instruments needed to achieve incentive-compatible objectives are in the toolkit

a) Clarify what is meant by maintaining systemic stability

More regulation may or may not be the answer to emerging problems

When problems do occur, it may prove to be the case that the correct policy prescription entails tighter regulatory control. But it may not and policy makers should resist taking the false comfort that comes from the view that more regulation is always the solution to market failures. Instead, policy makers should seek the right balance among policy instruments. Financial policy instruments are complementary, which means that changing one measure alone could prove to be counterproductive. All components – market discipline and regulation/supervision – must work in concert to achieve desired outcomes.

Policy needs to start from a clear set of objectives

As most people would agree that a principal goal of financial regulation is to promote financial system stability, that's a good place to start. In most countries some authority, be it the central bank, another entity, or a committee has a broad objective of maintaining the stability of the financial system, owing to the simple fact that if the system is not safe and stable, then it is exceedingly difficult, if not impossible, to achieve any

of the other objectives. Surprisingly, considering the importance of this goal, what exactly is meant by this commitment has often not been clearly defined.[20] This ambiguity has historically not been constructive.

The place to begin is with a clear idea of what is meant by the goal of systemic stability

Occurrences of financial instability become systemic when an event (some type of shock[21]) triggers reactions that are sufficiently large or widespread to produce significant adverse effects for the financial system as a whole and thereby the broader economy. Accepting this description as valid suggests that the avoidance of systemic risk requires preventing disruptions at individual institutions and markets from propagating and spilling over to disinterested third parties and the broader economy. Technically speaking, failures of individual institutions need not be causes for concern. Failures are a normal outcome of the proper functioning of a competitive economy. The failure of individual projects and at times of entire firms (even financial institutions) is one means by which competitive markets weed out weaker performers. It is the ultimate market discipline. Indeed, sustained economic growth requires that resources are reallocated in this way, shifted from activities that are no longer profitable to more productive uses.

This goal should normally not be taken to imply zero failures

Thus, the goal of public policy towards the financial system has to be to make the system more resilient in the wake of failures by preventing problems at individual institutions and markets from propagating, and not by reducing the incidence of failure to zero.

b) Properly address exit problems for large institutions

The current approach seeks to prevent problems from occurring at institutions

The current approach to protecting the financial system from the propagation of disturbances is to try to prevent serious problems from developing at individual institutions, under the premise that maintaining the health of individual institutions is the best way to ensure the health of the system or at least to preserve confidence in it.

Special care is taken to avoid problems at large institutions…

Inasmuch as system-wide financial crises have often occurred in the wake of a widespread loss of confidence that in turn was prompted by the failure of a major financial institution, authorities in many jurisdictions have treated prospective failures of large institutions differently from failures of small institutions. And so, while a principle of allowing poorly managed institutions to fail is fine in theory, in practice, when confronted with the potential failure of large institutions, most authorities have been reluctant to take the chance that non-intervention will work out for the economy. The so-called "constructive ambiguity" regarding intervention tends to be ambiguous only with respect to small institutions, while very large institutions become perceived as "too big to fail", out of fear of the potential risk to the system and the threat to government safety nets.

… but such an approach can give rise to moral hazard

The problem with this approach is that accidents that are waiting to happen eventually do. Thus, institutions that are considered too-big-to-fail most certainly will; they will just cause big problems when they do, unless procedures are in place to facilitate their winding down in an orderly fashion. Orderly, equitable, and transparent exit procedures are the counterpart to minimal entry barriers to achieve an efficient

allocation of resources, from older, less productive entities to newer, more innovative ones.

In fact, the adoption of a too-big-to-fail doctrine may encourage excess risk taking that results in more serious problems once failures do occur

Failures of financial institutions can generate sizeable negative spillover effects if not properly managed, but it is abundantly clear that a too-big-to-fail approach gives rise to considerable moral hazard. The existence of government guarantees and other insurance mechanisms may reduce the incentives of private financial counterparties to manage the risk exposures they assume. For example, the moral hazard problem associated with explicit safety net guarantees such as deposit guarantees arises from the potential for the deposit-taking institution, the depositor, or both to be less "prudent" than might otherwise be the case, relying instead on the existence of the state-sponsored safety net to underwrite mistakes.

Similarly, the expectation of public sector intervention to ward off "systemic" losses in the event of financial difficulties of large institutions is a form of implicit safety net that may encourage some participants to hold more concentrated exposures with covered institutions than they likely would operating under an effective potential for failure.

The threat of failure can help to minimise tendencies towards excess risk taking

The threat of failure keeps institutions "honest" by inhibiting any tendency to trend towards excessive risk. The willingness of creditors to withdraw their funds on suspicion of improper behaviour or excessive risk taking is an important component of market discipline. This component is not active if prospective creditors and counterparties have sound reasons to believe that large financial institutions will not be allowed to fail abruptly.

It must be possible for institutions to fail, even large ones

The obvious policy conclusion is that if market discipline is to function properly, participants must believe that it will be possible for institutions to fail, regardless of their size or degree of interconnectedness, with obvious negative consequences for creditors and investors.[22] The pursuit of systemic stability should not entail adopting a too-big-to-fail approach for large institutions.

It has been argued many times that, even with failures of large institutions, market principles need to be applied. They include that managers of failed institutions receive the appropriate punishment, that shareholders are forced to bear their burden of loss, and that the financial community as a whole is involved in efforts to resolve the problem. The rationale is that adherence to these principles should help to lower moral hazard and instil more discipline in the market. But, of course, under current arrangements, once an institution's size and complexity, and its degree of interconnectedness pass certain thresholds the likelihood of an abrupt exit is perceived by many participants to decline considerably.

To make such a system operational requires a dedicated framework for the orderly unwinding of failed institutions

The need for a dedicated framework for facilitating the orderly unwinding of financial institutions, both for entities that take deposits and for other large integrated intermediaries that operate in scale across numerous markets, has been acknowledged for some time. But few such frameworks have been introduced. Special procedures may apply for banks, but similar measures may not be available for other forms of large,

complex financial organisations. There are discussions underway in a number of jurisdictions regarding measures to enable the system to cope with isolated failures of large, complex institutions (*e.g.* a rapid resolution plan). Ideally, these discussions should converge on an approach that can be made operational across jurisdictions, but the difficulties in doing so will not be easily resolved.

c) Establish a proper macro-prudential framework

Focussing on individual institutions is questionable

The second issue with current safety and soundness regulation is the mistaken premise that a focus on the behaviour of individual institutions is sufficient to ensure the health of the system as a whole. The current crisis has illustrated all too well that risks to the system can hide in the interactions between intermediaries, products, and markets, and not with particular institutions *per se*.

Oversight needs to be expanded to address macro-prudential concerns, including in securities markets

It is now a given that regulation needs to be enhanced in scope to address systemic risk. A particular concern in this context is the approach to securities market oversight, which in many jurisdictions has had a focus almost exclusively on protection of retail investors and largely through disclosure requirements. This focus is mostly the outcome of specific historical, political, and economic circumstances (especially the Great Depression). The problem with this approach is that it ignores other risks that can negatively affect the integrity of markets and the system as a whole.

A system-wide macro-prudential approach is needed to account for risks that hide in the interface between institutions and markets

In the run-up to the crisis, for example, many entities or products that either were exempt from regulation altogether or benefitted from a "light touch" contributed to the mispricing of assets, excess leverage, and ultimate instability. Even products directed at sophisticated parties must be subject to proper oversight as regards their market impact. And where sophisticated investors are institutional investors, there must be proper oversight to ensure that they themselves are aware of and capable of managing the risks to which they gain exposure, in order to ensure said risks do not harm their fiduciary mandates or have broader market impacts (*e.g.* from their need to make disorderly portfolio adjustments or to withdraw altogether as sources of liquidity).

All of these changes are needed to ensure that the institutional structure of regulation is sound for all components of the regulatory framework. All components of the regulatory framework must operate according to proper mandates if the financial system is to sustainably accommodate innovations and be resilient to failures. Properly construed and enforced regulation is part of the core infrastructure that supports financial stability and innovation.

d) Establish a proper framework to ensure adequate protection for consumers

And it is necessary to maintain adequate protection for retail consumers and investors…

The potential private costs of financial instability are large (*i.e.* losses to banks' clients and shareholders), but it is the large social costs that often induce authorities to act. They include losses on the part of small depositors and investors, reduced (if any) access to credit on the part of small- to medium-sized enterprises especially but borrowers in general, disruptions to payment and settlement systems, reductions in output, higher unemployment, and costs to taxpayers. As a consequence, authorities use various preventive mechanisms to ensure the stability of the system as a whole and to maintain the integrity of the payments system and public confidence in the system.

… if the financial system is to continue to attract capital and function efficiently

What about protecting consumers and investors? Maintaining consumer and investor confidence is necessary if the financial system is to attract capital and function efficiently. Market confidence is undermined if the financial system is not adequately protected from abuse, as trust and confidence once lost are difficult to restore. There are no obvious instruments for doing so, which explains why authorities have had few options to address the problems faced by unsophisticated consumers/investors other than various forms of bonding arrangements (*i.e.* guarantees), which are designed to provide partial or complete protection against undue losses. The word "undue" is extremely important. End-users of financial services should be protected against fraud, malpractice and other misconduct on the part of service providers. But this objective should not entail efforts to reverse errors of judgment that are committed knowingly.

Step 5: Ensure regulators and supervisors have the requisite skills and experience

Regulators and supervisors will need enhanced capabilities to effectively handle the complexities of today's financial markets

The core elements of high-quality regulation are not limited to the policies alone. Supervisors need to develop skills and expertise in the appropriate use of regulatory instruments in order to apply them in an effective manner, which may in some cases require taking a proactive approach. Hence, the next step in the design of a framework that is capable of effectively and efficiently responding to innovations is to ensure that staffs of experienced, well-trained supervisors exist in all inter-connected jurisdictions; otherwise, the weakest among them becomes the port of entry for subsequent problems.

This includes some mechanism to address cross-border issues

Moreover, there is an international character to many product developments, which requires that the level of cross-border supervisory communication and co-ordination is commensurate with the degree of interconnectedness of markets. The recent crisis makes it clear that a better co-ordination mechanism is needed for all areas of cross-jurisdictional oversight.

Supervisors must have an in-depth understanding of the activities of supervised institutions…

The crisis also serves as a reminder of the types of conflicts of interest, governance problems, and weaknesses in risk management that can arise in large integrated financial institutions. When present, these conditions hamper the functioning of market discipline. Self-discipline also becomes less effective as problems develop within an institution, which means that increasing regulatory intervention becomes necessary. Particular challenges brought on by recent market innovations have included among other failings an overly rapid pace, a lack of transparency, complexity, and a lack of understanding of core risks.

… which includes understanding the particulars of risk management models and internal control structures

The requirements for supervisors to effectively monitor and address these issues are far from trivial. Supervisors need to develop as much knowledge about an institution and its risk management models and control procedures as the individuals who build the quantitative models and the members of the management team who formulate the risk management strategy in which the model plays a role. Some activities may appear to be highly profitable, but often enough that outcome may reflect the fact that some risk is either being mispriced or not priced. Supervisors need to be able to identify these cases. And they must be capable of doing so relatively quickly and flexibly under potentially rapidly changing circumstances.

Step 6: Ensure a proper balance between regulation and governance

Need for proper governance and internal controls at financial institutions themselves

The improvement in the capabilities of supervisors must work in concert with institutions' own internal controls. The relationship between regulatory policy and broader governance is critical. The success of regulation as a policy instrument depends to a significant extent on influencing behaviour, which means that regulatory policies must be complementary to other aspects of a jurisdiction's corporate governance regime. This governance structure must function properly.

In the run-up to the crisis, the weak capacity of boards to exert proper oversight of their institutions' business operations and attendant risks was at the core of the problems. Crucial information perhaps never reached the board, or the members failed to understand the risks inherent in their institution's change in business model, or were powerless to do anything to stop it. None of these possibilities is acceptable.

Authorities need to ensure that institutions have the proper internal control mechanisms for the types of risks they assume

It must be acknowledged that it is not the purpose of policy makers to substitute for boards and senior management of financial intermediaries. Regulated institutions are still private companies and are responsible to their shareholders. However, it is the purpose of policy to ensure that institutions internalise all costs, including the social costs associated with their own operations, their market conduct, and their behaviour *vis-à-vis* clients and customers. Institutions should be free to pursue their chosen business strategies (subject to shareholder and board approval), provided they take into account *all* costs. To wit, some activities may need to be backed by higher levels of capital support, more stringent disclosure obligations, etc., as needed to ensure adequate protection for the system.

There are special requirements in the case of new products and services…

Authorities need to ensure that the governance framework for an institution is appropriate for the institution's risk profile and business model. For example, the requirements for sitting on the board of a small retail institution are obviously different from those for a globally active financial group. An institution's business mix and risk appetite places important demands on the management and control structure through which it operates. Proper risk management and control processes are especially important as regards innovative activities.

… which may be extremely complex and based on instruments that can make the balance sheet vulnerable in times of stress

Some new products seem to be complex, but actually can be decomposed into a few simple payment streams that are themselves combinations of even more basic components. But some other new products are extremely complex. They may be based on entirely new processes; sometimes new organisational structures are also involved (*e.g.* SIVs and conduits), all of which can result in substantially greater levels of complexity and opacity than for similar, more traditional products. New financial products that are tailored to specific clients are often based on complex derivatives and place considerable reliance on market liquidity, arrangements that can tend to make the balance sheet vulnerable in times of stress.

Dynamic risk exposures require an integrated approach to risk management

The types of dynamic risk exposures that can arise in the development and distribution of new products can affect both sides of an institution's balance sheet and cut across its constituent entities, such that aggregate risk for the entity as a whole can exceed the sum of the risk exposures of individual units. In such an environment, the application of standard risk management tools for the constituent entities on a stand-alone basis likely will not suffice. Rather, institutions must have an integrated approach to risk management at a sufficiently high level in the organisational structure to manage the risks associated with new product development.

Measures addressed to particular innovative activities

Even with these measures in place, failures of institutions will occur

All of the above-mentioned measures are intended to ensure that the financial system is capable of measuring and managing risk and able to withstand periodic dislocations, either of individual markets or of the system as a whole, without teetering on the edge of collapse. But mistakes and accidents are going to happen nonetheless. Risk is an inherent aspect of financial activity and a core function of banks and other intermediaries is to price, manage and allocate risk. There is some component of risk in the system that stems from commercial activity and cannot be eliminated. The end result of attempting to make the system safe by driving all risk from regulated sectors would be to push it toward less transparent, unregulated entities or onto households, which is even less beneficial from a social or systemic stability perspective.

The objective is not to prevent all failures; it is to attempt to moderate the amplitude of swings and prevent serious problems and harm to consumers

The implication, of course, is that failures will occur. There is no cost-effective way to prevent all failures. What we tend to learn from crisis events is how to avoid a repetition of the very same debacle, not how to prevent them altogether. Financial markets have historically been subject to periodic booms and subsequent crashes and most likely will continue to be. Thus, the objective is not to attempt to prevent crashes, which is probably unattainable. But it should be possible to moderate the amplitude of the swings and prevent egregious errors and to better insulate retail end-users from the vagaries of institutions' mistakes. To do so requires a more focussed attention on certain types of innovative activities.

Step 7: There should be appropriate monitoring of new products, markets, and processes

Authorities should develop a thorough understanding of financial innovations

Authorities need to develop a thorough understanding of financial innovations to avoid the potential for a given innovation to cause widespread harm to consumers or prove catastrophic for the system. One of the higher principles to be observed in this context is the need for *precaution*. The *General Guidance* highlights the need for oversight of the financial system to be risk-based, which partly entails guarding against outcomes that occur with low probability but at very high costs.

In short, new products and processes should be analysed over time to see if amendments to regulations are needed

The analysis of new products and processes over time should be seen as a critical tool to facilitate authorities' understanding of financial innovations. There need be no presumption that specific action is necessary, but a failure to adapt regulation and supervision to changed market circumstances can be problematic. There can be a considerable delay between the introduction of a new product and the emergence of problems. Thus, a determination that an existing policy approach is sufficient should be based on a sound analytical foundation.

The process of monitoring of new products and processes should entail consideration of a range of issues to ensure the system can remain resilient should problems emerge

All of the measures described above in Steps 1-5 have as their focus ensuring that the system remains resilient in the wake of problems. There is a wide range of potential issues to be considered, which may include:

- What appears to be the intended target of the innovation: *e.g.* individuals (retail, high-net-worth, sophisticated); institutions (a particular category or type, cross-border, cross-sector); a particular industry or sector; infrastructure (trading platforms, clearing and settlement systems, procedures, or processes)?
- What appears to be the core purpose of the innovation: *e.g.* risk mitigation, capital relief, regulatory or tax avoidance, revenue enhancement, hedging, arbitrage, client need?
- Does the innovation result in true value added or does it represent a transfer from one entity or sector to another?

Part of the analysis is to gain an understanding of the motivation behind the particular innovation

- What are the key assumptions underlying the innovation: *e.g.* existence of abundant liquidity; continued low or high interest rates, inflation, or volatility; benign macroeconomic environment?
- What is the timing of the innovation (*i.e.* in what part of the cycle is it being introduced; has it been tested under conditions of stress)?

- How does the product itself or the process used to produce it differ from traditional methods or products? Is the innovation revolutionary, or is it adaptive?[23]
- Is the innovation accompanied by a change in institutional structure or business models? New structures can serve multiple purposes. For example, by channelling risk positions through conduits or special purpose vehicles created solely for the purpose of unbundling and repackaging selected risks, banks were able to obtain favourable treatment: under applicable accounting standards; under corporate, tax, bankruptcy, and securities laws; and under numerous banking capital regulations.[24]

For banks, capital relief has been a common factor motivating innovative activities

Among particular developments, micro-prudential supervisors will want to be alert to innovations that seemingly are created solely to reduce capital requirements. There are various motivations to free up capital, including passing along the benefits to shareholders in the form of increased dividend payouts or share repurchases, or simply re-deploying the capital to other more highly remunerative activities. Freeing up capital allocated to the loan book first became an issue back in the late 1980s, as banks came under regulatory scrutiny for exposures to highly leveraged borrowers. These pressures, concomitant with demands from shareholders for higher returns on equity, gave impetus to the development of the secondary market for loans.

Securitisation is one technique by which institutions have traditionally sought a more effective use of capital. Initially, securitisation was used mainly for assets for which the costs of acquiring and distributing information to rating agencies and investors about loans and borrowers was low, reflecting the use of standardised loan underwriting criteria and advances in information technology, which made it easier to estimate default probabilities and payment patterns under a variety of economic conditions.

Securitisation has been an oft-used technique in this regard, especially for standardised loans

Assets such as mortgages and consumer receivables were sufficiently standardised that they could be "insured" at relatively low cost, such that most of the assurance of payment was inherent in the underlying collateral and the ability of mortgage insurers to successfully guarantee the ultimate payment of interest and principal, while issuers and servicers assured the timeliness of payments. That, at least, is how it was in the past. But financial innovations have since facilitated the use of the techniques even for very heterogeneous assets, albeit at a cost of considerable complexity and subsequent problems.

Step 8: Adapt the regulatory system as necessary to the market environment it is intended to regulate

Decisions about regulatory intervention should be based on a systematic analysis of all these issues

The decision to intervene, either to modify existing rules or to introduce new ones, should be based on a systematic analysis of these and various other issues. Where problems or concerns are found to exist, the analysis should identify whether its origins lie in the characteristics of

particular market participants (including consumers and investors), in the products and services offered, or in the structure of the market.

In principle, policy makers have a range of strategies for responding to any concerns about potential negative side effects associated with particular innovations. Which approach is chosen depends in part on what regulation seeks to achieve.

Measures are to be based in part on the incentives of market participants and end-users…

The measures adopted should take into account the nature of the incentives of market participants and end-users through which they have to work. Different thresholds may be involved for different policy objectives; that is, some objectives may call for *ex ante* preventive measures while *ex post* corrective measures may be better for others.

… and partly on the underlying objectives of policy, which can differ among them

Consider the recent crisis. The degree of heterogeneity and rapid pace of introduction of new products, and the complexity of product design overwhelmed the capacity of the system to measure and limit risk and to maintain proper incentives in the securitisation process. The traditional antidote for complexity is simplicity, accompanied by enhanced transparency and disclosure. But while disclosure and transparency are important for properly functioning markets, they are not panaceas.

Unsophisticated customers and investors have difficulty processing financial information, thus even the best disclosures alone are not adequate protection

End-users of financial products and services, especially unsophisticated customers and investors, have difficulty processing financial information to evaluate the quality and perhaps even the suitability of financial products and services. Thus, there are limits in their ability to protect themselves in their dealings with financial service providers. Even the best disclosures, alone, are not adequate. And it is highly unlikely that more, read lengthier and possibly more detailed, disclosures are going to resolve the problem. Some products are just not suitable for unsophisticated consumers and investors. To avoid situations in which retail investors become involved with unsuitable products institutions should be "encouraged" to develop sufficient measures for client protection as part of their product development activities.

Consequently, some authorities have taken more direct measures to ensure protection against innovations deemed unsuitable for a retail clientele…

Different jurisdictions sometimes draw different conclusions of the exact form such encouragement should take. For example, the central bank of the United Arab Emirates (UAE) issued a recent directive to local banks requiring them to obtain the central bank's permission before selling structured products to their retail customers. According to the directive, banks must first submit a written request to the central bank containing the relevant details and the rationale for asking for an exemption to the rule. The central bank expressed the view that it is not desirable for banks operating in the UAE to sell structured products to their retail customers, a category that in the central bank's view includes high net worth individuals.

… who may not fully appreciate the risks inherent in structured products

A somewhat different approach has been adopted by the Monetary Authority of Singapore (MAS) in response to the fallout from the presumed "mis-selling" of so-called Lehman Brothers "mini-bonds" to retail investors. Mini-bonds were not actually bonds in the traditional

sense, but instead were "capital protected" structured notes. One difficulty lies in the label – capital protected, which along with "principal protected", suggests for many investors a degree of protection that is not actually provided. An investor is ensured of getting back all of his or her invested funds at maturity only with "guaranteed" products, such as "capital guaranteed" products, which are backed by third-party (or affiliated) insurance.

But other authorities have opted to strengthen and enhance disclosures and introduce measures to better educate the public

The Monetary Authority of Singapore (MAS) has reviewed the regulatory regime governing the sale and marketing of unlisted investment products following the fallout from the presumed "mis-selling" of the Lehman Minibond Notes to retail investors. In March 2009, it proposed a series of measures to promote more effective disclosure, strengthen fair dealing in the sale and advisory process, educate the public and enhance MAS' powers to investigate and take regulatory action. Some of the main proposals are as follows:

a) Issuers will be required to prepare a short, user-friendly *Product Highlights Sheet* to promote more effective disclosure. In addition, requirements for ongoing disclosure and fair and balanced advertising will be strengthened.

b) Financial institutions will be required to undertake an enhanced product due diligence process before selling new investment products.

c) Representatives will be required to enhance the quality of information obtained from their customers. They will be required to provide customers with more details in their basis for recommendation and set out more clearly in a formal document why the products are suitable for them.

d) A new category of "complex investment products" will be introduced, and subject to enhanced regulatory requirements. Financial institutions will only be able to sell a complex investment product to customers when they give customers advice on whether it is suitable for them. The prospectus, *Product Highlights Sheet*, and all marketing and advertising materials of complex investment products will carry "health warnings" that serve to alert investors that they may not easily understand the risks and features of the product and should seek to do so when their financial adviser provides them advice. The "health warning" should further include that investors should not buy the product if they are unable to fully understand the product.

e) MAS' powers to investigate and take regulatory action will be strengthened.

The Singapore financial services industry has already put in place some of the proposals put forward by the MAS. The Association of Banks in Singapore (ABS) in July 2009 announced a series of measures that its member banks would be adopting to further protect the interests of consumers who buy investment products. The measures include a prohibition on bank tellers referring customers to representatives for the purchase of investment products, as well as enhanced due diligence for new products. Member banks of the ABS have also adopted a seven-day

cooling off period proposal for structured products with the exception of time-sensitive treasury or investment products.

Better financial education remains necessary

Measures such as the ones described above should help to ensure that consumers have the information they need to make appropriate choices. Of course, consumers must also have the education to understand the information that is provided, and available evidence suggests that much remains to be achieved on the financial education front. For example, surveys in OECD and other countries continue to show that consumers have low levels of financial literacy and often overestimate their skills, knowledge and awareness when it comes to credit products. The consequences of uninformed credit decisions can be disastrous, especially if the credit in question concerns a mortgage loan, which may be the single largest and perhaps the most important financial commitment an individual or household makes.

Difficulties to be encountered when mapping policy instruments to financial innovations

As mentioned early on in this report, regulatory frameworks in OECD countries generally endeavour to achieve three broad policy goals:

- mitigating systemic risk;
- ensuring proper market conduct; and
- ensuring adequate protection for retail borrowers and investors, and other end-users of financial services.

These broad goals will typically map into a broader range of objectives at the sector level, as different functions of the financial system give rise to different sets of "micro" policy issues.[25] Unfortunately, no systematic way has been found to link policy objectives with policy instruments, even in static environments, and financial innovations, which change the *status quo*, greatly complicate this task. Among the challenges innovative activities can pose for existing regulatory structures is that a given innovation can straddle multiple policy areas.

Functional equivalence makes it difficult to generalise among innovations…

Form and substance problems help explain why financial regulation has historically had difficulty adjusting to the innovation process. It can be challenging in some cases to determine what regulatory entity should have oversight over products that span institutional categories, or to decide what body of regulation should apply.

… and are especially challenging for formal rules

Jurisprudential scholars have long considered the existence of form and substance problems, that is, situations in which financial arrangements having the same intrinsic characteristics can be represented by myriad different formal instruments, to impede the use of "rules" to regulate behaviour. Rules tend to break down in the presence of such "functional equivalence".[26]

Formal definitions apply regulatory standards to institutions or products that fall within the prescribed category…

To understand the difficulties, it helps to consider an example, bearing in mind that it is but one of many that occur time and again in finance. Note, first, that many jurisdictions use either or both of two basic classification systems for linking financial institutions and products and services to regulatory structures: "formal" *versus* "functional" definitions. A formal definition creates a regulatory category and typically applies a regulatory standard on institutions or products that fall within the category. Typically, the category itself will be determined under the chartering statute for the institution involved. Rules may stipulate, for example, that only entities formally licensed as "insurers" may engage in the business of insurance. The advantage of formal definitions is that they are based for the most part on unambiguous legal requirements. The problem with formal definitions is that they are subject to a high degree of manipulation, the incentives for which are particularly acute when the definition is used as a prerequisite for imposing a regulatory burden.

… but functionally equivalent institutions or products will be exempt from the rule

There are numerous examples. Take the United States as a case in point. Back in the early 1980s, US regulations controlled the payment of interest on various deposits at "depository" institutions (*i.e.* banks and savings and loan associations). But the restrictions did not apply to stand-alone securities firms, as they were not *formally* licensed as depository institutions. By the same token, securities firms, not being banks or thrifts, could not *technically* offer checking accounts, but that proved not to matter. A number of securities firms took advantage of the loophole in the formal definition to create money market mutual funds with check-writing privileges, using contractual agreements with partner commercial banks to gain legal access to check clearing systems. The products were *functionally* equivalent to bank checking deposits, but were not subject to the same regulatory controls on payment of interest and proved to be extremely popular among retail investors, attracting a considerable outflow of deposits from banks and thrifts, which lacked equivalent products to offer.[27]

An alternative approach is the use of functional definitions to categorise financial activities

An alternative approach to establishing regulatory jurisdiction that avoids the limitations of formal definitions is to assign financial activities to regulatory structures by means of "functional" definitions. Functional definitions establish jurisdictional boundaries most often by identifying a set of "core" characteristics for the activity or institution in question. For example, the insurance business can be said to include various core activities (*e.g.* the issuance of contingent promises) and only entities licensed as insurance companies and that are subject to and comply with the regulatory provisions governing insurers can be allowed to conduct said activities.

Functional definitions overcome some of the shortcomings of formal definitions, but among other difficulties can be over-inclusive

Functional definitions, thus, overcome the difficulties formal definitions have with functional equivalence. On the minus side, however, they tend in practice themselves to be indeterminate and can be over-inclusive. It can be difficult to establish firm boundaries around activities to determine whether they belong principally within one category of business *versus* another. Using the example of insurance once again, a functional definition based primarily on the issuance and management of contingent promises would capture a wide range of activities that are probably not the intended targets of the regulatory provisions, such as credit default swaps (CDS) to name one example.

Consequently, functional definitions are typically bounded by a series of exceptions or exclusions

As a consequence, functional definitions of financial activities are typically bounded by a series of exceptions or exclusions, which include among other types, numerical exclusions, sophisticated investor exemptions, and institutional carve-outs. Binding regulatory constraints open up a range of interesting possibilities in this context. There is considerable incentive for private parties to avoid regulation by having their activities fall within one or another category of legal exemptions. Hedge funds, for example, historically avoided being subject to regulatory provisions governing private investment companies by requiring initial investments well above the regulatory minimum, marketing themselves only to wealthy investors, and limiting the overall number of investors.[28]

There are numerous reasons why classification schemes for financial innovations can be difficult

In sum, classification schemes for financial innovations can be problematic for various reasons. As illustrated by the example, lists based on traditional (*i.e.* legal or regulatory) labels are problematic, as innovations are often designed with the express intent of spanning different traditional labels or avoiding them.[29] Lists by name are equally unhelpful because names are often used to differentiate products that are otherwise quite similar. An alternative is to use a classification scheme based on product function, but even that is no panacea as no functional scheme would avoid the complication that any single innovation is likely to involve multiple functions.[30] Consider, for example, a mortgage combined with a unit-linked life insurance policy; this hybrid financial product embodies banking, securities, and insurance components.

Most efforts to resolve problems of functional equivalence rely on subjective assessments

Classifications based on product feature can result in a system that has too many dimensions to be definitive, as most products will almost always embody multiple aspects. As a consequence, most efforts to resolve issues of functional equivalence attempt to determine the "predominant" characteristic of the transaction in question and then classify it according to that subjective assessment. One way to proceed with such an approach is to base the determination on the perceived "principal motive" behind the product or service.

There are many possible motivations for financial innovations

In the review by Tufano,[31] the list of common motivations for financial innovations includes the following:

- innovation exists to complete inherently incomplete markets (*i.e.* unmet needs or preferences of clients);

- innovation exists to address inherent agency concerns and information asymmetries;
- innovation enables parties to minimise search, transactions, or marketing costs;
- innovation is a response to taxes and regulation (*e.g.* decoupling economic ownership or exposure from legal ownership – governance and tax implications);
- innovation is a response to globalisation and increasing risks; and
- innovation is the result of technological shocks.

But no one single explanation will typically apply

But there can be other motivations and in general no single explanation will typically suffice on its own, which makes it difficult to establish conclusively which factor is "most" important.

These difficulties aside, the proper choice for policy makers is not to walk away and admit defeat, as innovations touch on issues that are of considerable public interest

What should policy makers do? Walk away, throw up their hands and admit defeat, and hope the market gets it right this time? The obvious answer is no. Innovations can affect financial intermediation and the effective working of the financial intermediation process is inherently a matter of public interest.[32] And at the end of the day, the commercial success of financial intermediaries themselves rests squarely on the effectiveness with which their activities contribute to the macro goals of mobilising and allocating savings, which is arguably the core function of the financial system. Authorities, thus, need to finds ways to preserve the benefits of *positive* innovations, while curtailing the diffusion of *harmful* ones. Admittedly, this task is not an easy one to achieve and, as with any regulatory policy, a regulatory approach to financial innovation will no doubt experience two sets of errors – false positives and false negatives.

Not all innovations are necessary for growth and development of the economy

But authorities should not be swayed by worst-case scenarios of the "likely" adverse outcomes of subjecting financial innovations to some form of regulatory oversight. Failure to make a distinction between innovations leads to the unhealthy premise that all innovations are necessary for the growth and development of financial systems over time and, hence, to the conclusion that policy should be predisposed toward accepting all innovations as is. Past and recent experience suggests that this approach is fraught with danger.

The benefits to the system are from "positive" innovations and not from innovation per se

The benefits to the system are not from innovation *per se* but, rather, from positive innovations, those that do not result in undesirable distributional outcomes or other negative externalities. While numerous innovations over the years have contributed to economic welfare, some have contributed to consumer detriment, to institutional failures and to market or systemic crashes. Most regulatory frameworks have a mandate to protect consumers and the private and social costs of major financial instability are sufficiently high that the government has a clear role as well in preserving financial stability in order to minimise the risks and costs of widespread financial distress. Under the circumstances, the tendency should naturally be to err on the side of caution, which requires placing greater weight on up-front prevention of systemic problems as

opposed to *ex post* resolution of crises. The real question is, thus, not whether there should be regulation in this area, but rather what form should it take.

III. Concluding remarks

Financial markets today are characterised by rapid innovation and an evolving business environment, together with longer-term changes in customer needs and profiles. The result has been a greater array of participants, products, and distribution channels. In such an environment, regulatory measures that are overly detailed or too restrictive may induce distortions in the allocation and pricing of financial resources, and may limit the ability of financial institutions to respond to changes in the competitive environment, which may render them unprofitable or unsafe. The ideal approach is to find an appropriate balance between preserving safety and soundness of the system, and allowing financial institutions and markets to perform their intended risk management functions.

That approach entails first ensuring that the necessary market-framing and market-perfecting rules are in place and then establishing a proper structure for reviewing financial innovations. The first step in the process is surveillance, with a particular focus on certain red flag developments that have been linked to problems in the past. The next step involves careful analysis, which requires that regulators and supervisors have the necessary experience and skills to understand what may be complex instruments. That understanding should be considered a pre-condition for allowing a product to continue as is, without the need for official measures to ensure providers take on board all costs associated with the activity, including social costs of market or system failures. Different thresholds may be involved for different policy objectives. A given product or activity may not raise particular concerns for some objectives, but may be a serious issue for others. All objectives must be considered and some authority must take a system-wide view.

Notes

1. Corrigan (2004).
2. These criteria are the core components of OECD (2009).
3. Take banking, for example. In the 1970s, prior to the reforms, commercial banking in many economies was a protected industry – government regulation shielded the industry from geographic competition, from product competition and, at least in part of the business, from pricing competition. In the product dimension, banks were insulated from competition from investment banks, insurance companies, and brokerage firms. On the liability side, there were ceilings on deposit rates. Loan markets were segmented across financial institutions and within the banking industry itself.
4. But experience suggests banks are not always good at assessing credit risk, as they show a recurrent tendency to lend against collateral whose market values in the late stages of cycles are at historical highs.
5. A bank with market-rate funding would have to charge the borrower a sizable mark-up attributable to capital requirements in order to provide an adequate return on equity to its shareholders. In contrast, when a borrower obtains credit directly from the capital market, the investor who buys its bonds has knowingly and willingly

accepted the credit risk involved, so there is no need for that buffer layer of capital imposed on banks to protect the saver (*i.e.* depositor) on the other side of the transaction.

6. Rajan (2005).

7. To that end, financial institutions have engineered a host of sophisticated products, in some cases by unbundling and repackaging the risks embedded in existing products and selling them separately to customers, and in others by pooling risks from a number of products and creating new instruments based on the pool.

8. As margins on more traditional investments have been competed away, newer institutions like venture capital funds and hedge funds have successfully emerged to search for excess returns in more "exotic" ways.

9. See the speech by Thomas Hoenig (1996), Federal Reserve Bank of Kansas City, delivered at the World Economic Forum 1996 Annual Meeting, during the session on Rogue Traders, Risk and Regulation in the International Financial System, in Davos, Switzerland.

10. Other key factors that have contributed to previous crises include for many of them weak management of core risks on the part of major financial institutions, in particular: poorly designed and weakly enforced lending limits; poor governance and internal controls; and inadequate control of operational risks. At times, there have also been: problems with inadequate disclosure and lack of transparency (*e.g.* Enron); problems related to interdependencies across institutions and markets (*e.g.* LTCM), especially for institutions operating in or funding themselves across multiple jurisdictions (*e.g.* Continental Illinois); problems with risk management models and other innovations (*e.g.* LTCM); and runs on market liquidity (*e.g.* failure of the junk bond market). For a review, see Lumpkin (2008).

11. An arbitrage incentive is created by tax treatment of interest and credit default losses that is symmetric for financial institutions, while many taxable "buy and hold" investors face higher taxes on their interest income than they can recover in the event of losses. This means that insurance against default is worth more to the buy-and-hold investor than to the financial institution selling the insurance. The price of the insurance determines how the difference is shared between the buyer and seller. It appears that the financial institutions writing swaps were able typically to get most of the benefit. And since the derivatives contracts allow the credit risk to be separated from the time value of money component of the contractual interest rate on the security itself, a CDS is a very efficient instrument as it requires essentially no capital since there is no need to pay for the underlying security.

12. For a brief discussion, see Schich (2009).

13. Mishkin (2008).

14. See the discussion by White (1997).

15. Absent some form of assurance that clients or customers will not be unfairly exploited, savers and investors would limit the extent of their involvement in the market and the allocation of financial resources would become constrained in scale and subject to higher costs and lower investment volumes than economically optimal.

16. See, for example, Rajan (2005).

17. Even the most unregulated bilateral exchanges rely on contracts and their enforceability, rights to property, and anti-fraud measures.

18. Even the most unregulated bilateral exchanges rely on contracts and their enforceability, rights to property, and anti-fraud measures.

19. All of these measures are pre-requisites for markets to work and a key goal of financial policy is to ensure that the necessary market-framing conditions are in place and functioning properly.

20. See the discussion by Schinasi (2005).

21. Such shocks may originate outside the financial sector (*e.g.* natural disaster, macroeconomic imbalances, or political disturbances), but often enough stem from developments internal to it, which may include: the sudden failure of a major participant in the financial system; a technological breakdown at a critical stage of payments or settlements; asset price misalignments; or runs on market liquidity. Such events can disrupt the normal functioning of financial markets and institutions by destroying the mutual trust required for most financial transactions to be concluded.

22. See IIF (2009).

23. As in most industries, in financial services one finds elements of both "innovation" (in the Schumpeterian sense of entirely new products or services) and imitation/diffusion (whereby competitors engage in research to acquire the non-patentable information embodied in a rival's innovation, which they then imitate and follow up with the introduction of a broadly similar, if not identical, product). Imitative activities result in the broader "diffusion" of the product or service. But while products offered by a given type of institution may be simply a variation on a theme of products already offered by their competitors, even a slight change in features of a given financial product can significantly alter its risk characteristics. And a given risk can have entirely different effects when part of different balance sheets.

24. Banks seeking to boost their regulatory capital essentially had two approaches to follow: 1) increasing the measures of regulatory capital appearing in the numerator of their capital ratios; or 2) decreasing the regulatory measures of total risk appearing in the denominators of those expressions. Over time, banks opted increasingly for strategies that lowered measured risk and securitisation began to play an ever greater role. In practice, these strategies generally entailed: repackaging credit risk positions so as to concentrate the bulk of risks in assets having the smallest expected credit loss; structuring transactions so as to avoid recourse treatment; or converting credit risk positions into instruments having lower risk weights. Subsequently, the techniques used to securitise loans began to be applied to other assets, and thusly, collateralised bond obligations and collateralised debt obligations were created.

25. While the primary goal of regulation in each sector is to limit risk taking on the part of the particular intermediaries involved, or to ensure adequate oversight of the related products on offer, no systematic way has been found to link policy objectives to policy instruments and the regulatory tools used to control risk in each sector may differ considerably.

26. In practice, when principles fail, they are replaced with rules. Conversely, when rules break down they are replaced with more flexible principles.

27. The official response to the growth of money funds included passage of the Monetary Control Act of 1980 and the Garn-St. Germain Act of 1982, which along with other regulatory provisions, eliminated many of the interest rate and term restrictions on banks' and thrifts' retail deposits, effectively allowing both types of institutions to offer products with similar rate and liquidity provisions as money market funds.

28. See Schich (2007).

29. In fact, various derivatives contracts, including swaps, options and structured notes are often designed with the express purpose of creating unregulated transactions that are economically equivalent to their regulated counterparts or to fall under the purview of one regulatory regime *versus* another.

30. Among the functions financial products serve are: reallocating risk; increasing liquidity; reducing agency costs; reducing transactions costs; reducing taxes; circumventing regulatory constraints; moving funds across space and time; managing risks; extracting and disseminating information; and facilitating the sale or purchase of goods and services.

31. Tufano (2002).

32. Corrigan (2004).

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Insurance Companies and the Financial Crisis

by
Sebastian Schich*

The current financial crisis may primarily be a banking crisis, and the solvency of the insurance sector as a whole does not appear to be threatened. Nonetheless, insurance companies have been affected, and in mostly adverse ways. For many insurers, direct exposure to the epicentre of the crisis, the US mortgage market, and to related securities appears to have been limited. But the financial crisis has nonetheless had an increasingly visible impact on the insurance industry, primarily through their investment portfolios, as the crisis spread and financial market valuations and the outlook for real activity deteriorated significantly. Also, a number of concentrated exposures to credit and market risks have been revealed, including in US mortgage and financial guarantee insurance companies, as well as in parts of certain other insurance-dominated financial groups. Thus, while insurers as a group may have cushioned rather than amplified the downward pressures during the financial crisis, some clearly have added to downward pressures. Financial instruments that were at the core of difficulties served an insurance function and, thus, it is not so surprising that some institutions from that sector have been affected by the crisis on one or the other side of their balance sheets.

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Executive summary

For many insurers, the *direct* exposure to the epicentre of the crisis, the US mortgage market, and to related securities appears to have been limited. But the financial crisis has nonetheless had an increasingly visible impact on the insurance industry, primarily through their investment portfolios, as the crisis spread and financial market valuations and the outlook for real activity deteriorated significantly. The financial crisis may primarily be a banking crisis, and as insurance industry representatives have regularly emphasised, the solvency of the insurance sector as a whole does not appear to be threatened. Nonetheless, companies from that sector have been affected, and in mostly adverse ways. A number of concentrated exposures to credit and market risks have been revealed, including in US mortgage and financial guarantee insurance companies, as well as in certain other insurance-dominated financial groups. Beyond these immediate issues related to the financial health of insurance sectors and companies, the crisis has clearly demonstrated that protection against *systemic* risks should also include monitoring and mitigating risks in the insurance sectors and companies.

Even so, the evidence available so far suggests that the role of the insurance function in this financial crisis has had a stabilising rather than a destabilising influence on the system as a whole (notwithstanding that it may be too early to write a proper *post mortem*). Insurance companies are large investors and they (especially life insurers) typically have longer-term investment horizons than several other financial institutions such as banks. They thus have the capacity to hold a relatively large part of their investments to maturity, which helps the system withstand short-term shocks. In contrast, some other types of market participants have had to sell into falling markets as a result of leverage, liquidity, regulatory and other considerations.

That said, the picture is not as rosy if one zooms from the aggregate picture into specific segments of the insurance sector. In the case of a number of insurance companies, especially those involved in activities traditionally associated with investment banks, valuation and rating pressures have been very significant. These pressures, in turn, have had repercussions that have tended to amplify downward pressures in financial markets during the crisis. Perhaps the most egregious example is afforded by the financial guarantee insurance sector, where subsequent downgrading of the various entities operating in this sector led to waves of downward pressures on market valuations of the securities "wrapped" by these entities and present in the portfolios of many other financial institutions.

Such activities had also contributed to the build-up of imbalances before the crisis. Financial guarantors elevated the credit ratings of complex structured financial instruments, making these products attractive to more conservative investors (including some other insurance companies). Also, the participation of insurance companies as counterparties to investment and commercial banks in credit default swap transactions enabled the latter to hedge their credit risks, thus permitting them to continue to expand their securitisation activities, including in the form of collateralised debt obligations involving subprime mortgage-related debt.

What is often less noted is the fact that the financial instruments used in the massive credit risk transfer prior to the financial crisis have had at their core, in many cases, insurance-like innovative financial instruments, that is credit default swaps. Granted, insurers themselves may not have been frequent counterparties to these transactions, as the capacity of these companies to engage in such transactions is severely restricted by regulation. But the crisis has shown nonetheless that, despite such constraints, some types of insurance companies actually accumulated significant exposure to credit default derivatives on one or the other side of their balance sheets.

In part, the various caveats attached to the overall positive role that the insurance function may have played in this crisis are related to the expansion into investment-bank-like activities of financial companies that conduct insurance business. In the past, different types of financial activities have often been combined under one company's roof and such combinations have often been defended on the grounds of the scope economies associated with the more diversified revenue stream of the group as a whole. But the weight of the empirical evidence suggests that, in crisis situations, asset returns turn out to be more closely correlated than during normal times and more so than has been expected and built into risk management models. As a consequence, the adequacy of the buffer for the group as a whole, *e.g.* in terms of capital cushion, tends to disappoint as well.

Moreover, such structures can become very complex. An example is American International Group (AIG), which was viewed by some observers as the world's largest insurance company.[1] It was actually quite a complex large financial group, consisting of a global financial service holding company with about 70 US-based insurance companies and another more than 170 other financial service companies. Given the company's role in a wide range of financial markets, the volume of business written and in particular the complexity of interconnections created (especially through credit default swaps and securities lending), AIG appears to have become an important counterparty to systemically important banks, thus making the company itself systemically important. The opacity of its structure appears to have hindered the ability of supervisors and stakeholders to properly understand the risks facing the group. The example of AIG has added to the accumulating empirical evidence that specific incentive problems could arise in complex financial groups when different parts of the group pursuing different activities (and generating different risk profiles) either use the same capital base or when some parts of the groups either explicitly or implicitly benefit from capital raised via less risky members of the group.

I. Introduction

The purpose of the present paper is to discuss vulnerabilities in selected segments of the insurance sector as well as to identify specific issues related to the role of the insurance sector in the current financial crisis. The paper is part of a special report on the financial crisis and private pensions and insurance policies to be included as part of the "OECD Strategic Response to the Crisis" and it provides a framework for the analysis in that report.

At the outset, it should be noted that while financial guarantee insurance companies in the United States and the company AIG have attracted considerable attention in the press and are described in somewhat more detail in this paper, problems have not been limited to US-based entities. Other notable examples include insurance companies in Europe.

The financial crisis may be a banking crisis, as insurance industry representatives have regularly emphasised, and the solvency of the insurance sector as a whole does not appear to be threatened. Nonetheless, insurance companies have also been affected, and in mostly adverse ways. The exposure of most insurance companies to the significant deterioration in global financial markets has been primarily through their investment portfolios. This is not surprising as the assets are largely held in bonds and stocks, which simultaneously experienced episodes of significant valuation pressures during this crisis.

Further to these widespread (although mostly limited) pressures on asset portfolios of many life and non-life insurance companies, a number of *concentrated* exposures to credit and market risks have been revealed, however, including in mortgage and financial guarantee insurance companies, as well as in at least one insurance-dominated financial group and one large reinsurance company that took on significant amounts of credit risk.

The remainder of this note first discusses selected aspects of one type of financial instrument at the core of the risk transfers prior to the crisis (*i.e.* a credit default swap) in Section II, and developments in selected insurance sectors in Section III, before drawing some preliminary lessons regarding the role of insurance sectors in the current financial crisis (Section IV). Section V concludes.

II. An insurance-like product at the core of the risk transfers preceding the crisis

Different views exist regarding the role of the insurance sector

Different views exist regarding the role of the insurance sector in the context of this crisis, reflecting among other things differences in the interpretation given to some financial contracts that were at the heart of the recent financial crisis. One view, which is shared among at least several insurance industry representatives, is illustrated by the following statement:

> *There are no indications whatsoever that insurers have contributed to the systemic issues that many banks are facing today. Insurers have not originated and repackaged subprime mortgages. They did not act as major investors in mortgage-based financial instruments. To the contrary, the insurance industry displayed resilience in the face of adverse market conditions and was in a position to absorb market volatility as an institutional investor with a long-term perspective. In this sense, the insurance sector acted as a stabilising factor at a time of considerable stress in the global financial system.*[2]

Perhaps at the other end of the spectrum of views is that expressed by the Chief Executive of the US-based insurance company Allstate, as quoted with the following argumentation:

> *It was, after all, an insurance product that contributed to the risk that almost brought down the global economy. It should be no surprise that a big insurer like AIG would be a major issuer of credit default swap. What is surprising is the claim that insurance did not contribute to the recent market failures, and therefore insurers don't need to consider how to prevent them from happening again.*[3]

Banks' business models have changed fundamentally, increasingly shifting towards the originate-to-distribute mode

While the discussion about the causal factors for the crisis is ongoing, there is broad agreement that a number of different factors have been at play, not just a single one. Having said that, most commentators agree that the fundamental change in the bank business model that occurred during the last decade or two is *one* of the significant causal factors: banks, rather than holding loans until maturity on their own balance sheets, instead focused on originating and distributing risks such as credit risks. Such a change in business model was accompanied by the spreading of innovative financial instruments.

There has been a long-standing debate on the advantages and disadvantages of this new business model. It certainly permitted a wider spread of risk, away from bank balance sheets and towards portfolios of other entities, perhaps better able, but more likely just more willing, to bear the additional risk. In any case, with hindsight it is clear that too much additional risk has been created in that process, with indebtedness rising significantly in many sectors of the economy, including in particular in household sectors to levels that proved to be unsustainable.

The capacity of banks to change their business models depended on the availability of credit risk transfer instruments and on investors willing to add them to their portfolios

What is sometimes overlooked in this context is that the capacity of banks to change their business models as described depended on the availability of credit risk transfer instruments and on investors willing to add them to their portfolios. Some insurance companies, as large investors in international financial markets, have added credit risk to their portfolios, like many other investors, while other insurance companies have provided enhancements that made these instruments more attractive for many investors.

Indeed, the massive transfer of credit risk has at the core relied on an insurance-like financial instrument

Another aspect that is often overlooked is that the massive transfer of credit risk involving entities from various financial sectors has at the core relied on an insurance-like financial instrument: credit default swaps. A credit default swap (CDS) is a contract under which the protection seller agrees to make a payment to the protection buyer in the event that the referenced entity, typically a company issuing a bond, experiences one of several so-called "credit events", which are bankruptcy, reorganisation, or default. The protection seller receives a fee in exchange for this promise. Originally, CDS were used in the context of bond issues, essentially transferring part or all of the risk of the owner of the bond to the seller of credit protection. Literally, the protection buyer "swaps" the risk of default with the protection seller and, in the event of any number of the various credit events actually occurring, the owner of the bond suffers the associated loss on that position, while the swap contract provides full or partial recovery of that loss.

Some transactions involving CDS are similar to standard insurance contracts…

This type of transaction may be referred to as a covered credit default swap, to the extent that the buyer of credit protection through a CDS also owns a bond issued by the reference entity. It helps the owner of the bond to manage the risk associated with the bond investment. It is similar in this respect to a standard insurance contract.

… although others are different

But CDS transactions are not necessarily linked to specific bond positions on the part of the protection buyer. Actually, CDS can be sold or bought between counterparties independently from any specific bond or other asset positions on the part of either of the parties involved, and indeed, this aspect explains a large part of the rapid growth of the CDS market since its inception.

In this context, the New York State Insurance Department, in May 2008, began using the term "naked CDS" to describe swaps in which the protection buyer does not own the particular reference obligation. The motivation behind the use of the term "naked" as opposed to "covered" appears to have been an attempt to distinguish contracts depending on the motivation for writing them, that is in terms of the mix of either insurance *versus* speculation motives.[4] Clearly, in practice, distilling the motivations of partners to financial transactions is notoriously difficult. On 22 September 2008, the New York State Insurance Department announced that it planned to begin in 2009 regulating (covered) credit default swaps as a type of insurance contract.[5] In the meantime, the issue of regulation of CDS more generally has been intensively discussed

in various international forums and the proposals currently under discussion include establishing an exchange, a central counterparty and a clearing house for CDS.

On a conceptual level, an insurance function has been involved in the risk transfer prior to the crisis…

Whatever the specific outcome of these discussions, the main point that is relevant for the issue under consideration in the present paper is that CDS, at least some types of CDS, are similar to insurance contracts. Thus, it would seem that, the *insurance function* has been involved in the run-up to and evolution of the financial crisis, at least on a conceptual level.

… but institutional involvement is another issue

But these considerations regarding the insurance function broadly defined may or may not have implications for the role of insurance in an *institutional* sense, that is, for the question of the role of *insurance companies per se* in the current crisis. Actually, in practice, the capacity of insurers to engage in derivatives activities differs from one jurisdiction to another. For example, in some European countries, insurers are limited by existing regulation in their capacity to sell but not necessarily buy credit protection through credit default swaps.

III. Developments in selected insurance sectors

III.1. Overview of selected vulnerabilities on asset and liabilities sides

Insurance and reinsurance companies are major investors in capital markets

The conceptual considerations developed in Section II notwithstanding, exposure of most insurance companies to the financial crisis has been primarily through their investment portfolios. Insurance and reinsurance companies are major investors in capital markets, and their investment portfolios include exposures to subprime residential mortgage-backed and related securities, to shares and debt securities of financial service firms under stress, and other equity and debt securities. The valuation of many of these asset types has come under pressure at the same time as the financial crisis worsened and the outlook for real activity deteriorated rapidly. Conversely, the price gains in several markets over recent months have provided these investors with some relief in this respect.

Where mark-to-market valuations of securities are used, losses become apparent more quickly

Where mark-to-market valuations of securities are used, losses become apparent more quickly, although the existence of liquidity premia in stressed market conditions may exaggerate the extent of losses ultimately realised on those securities. Like banks, insurance companies are required by accounting rules to mark to market their securities. Banks tend to hold a relatively larger share than insurance companies in assets that are subject to full fair value principles, and this situation has implications for the speed with which asset impairments feed through to financial institutions' actual reported losses. In addition, the specific criteria used for the assessment of asset impairment differ across jurisdictions. To the extent that these various factors play an important role in explaining observed differences in the mark-to-market losses reported so far by the banking sector and by the various insurance sectors (an issue beyond the scope of the present note), it could be that insurers are actually holding future losses in their portfolios.

Expected losses on financial assets as a result of the financial crisis have spread well beyond the subprime mortgage universe

Insurance companies tend to have widely diversified portfolios and to focus on high-quality investments; thus they were relatively well protected initially during the period of financial turbulence, when asset value declines were concentrated in lower-quality and higher-risk assets. These companies became increasingly more affected, however, as the turbulence developed into a full-grown crisis in which even high-grade securities were significantly affected. At this point, it is clear that expected losses on financial assets as a result of the financial crisis have spread well beyond the subprime mortgage universe.

In some insurance market segments there is underwriting exposure to the epicentre of the financial crisis, however. Such exposure stems from the issuance of mortgage guarantee coverage for lenders, financial guarantee coverage for structured financial products (see for both types of activities examples above), and liability coverage for directors and officers (D&O) and for errors and omissions for various entities with liability exposures related to the problems in financial markets. Estimates of the potential losses associated with the latter type of activity suggest however that the exposure is somewhat limited. There is also exposure on the liability side of insurance-dominated financial groups that have been sellers of credit protection through financial instruments such as credit default swaps.

The outlook for underwriting is uncertain…

Looking ahead, the outlook for insurance underwriting is uncertain. One the one hand, the decline in real activity and in household wealth (reflecting in part the declines in housing values and financial asset prices) will have an adverse effect on the demand for some types of insurance products and insurance, thus perhaps reducing underwriting revenues. Also, insurance fraud is expected to increase under these circumstances.

… although the increased demand for safety associated with the financial crisis tends to be positive for the demand for various insurance products

On the other hand, a positive factor is that the loss of confidence and increased demand for safety associated with the financial crisis tends to be a positive for the demand for several insurance products, including those with some form of capital and/or return guarantee. Indeed, actual losses and declining confidence typically provide a potent mix for changes in behaviours and in demand for specific types of financial products. This development should be beneficial for those insurance companies offering those products. Moreover, to the extent that new capital would be slow to enter the market, this development should benefit existing companies in particular.

In this context, there is indeed empirical evidence that (natural or man-made) catastrophes are not necessarily "financial catastrophes" for insurance and in particular reinsurance companies, as their equity valuations often outperform the general market subsequent to such events. It is not so clear to what extent this argument can be applied to the current crisis, however. It is certainly too early to support such firm conclusions as have been launched in the trade press,[6] and it is not surprising that rating agencies tend to be somewhat sceptical as regards the outlook for many major insurance sectors.

III.2. Overview of selected concentrated exposures

Concentrated exposures to credit and market risks have been revealed in specific insurance sector segments and companies

The insurance sector as a whole does not appear to be threatened. Nonetheless, insurance companies have been affected, and in mostly adverse ways. In this context, a number of concentrated exposures to credit and market risks have been revealed, including the following ones:

- ***Mortgage insurers*** in the United States have been at the epicentre of the crisis and have been hard hit. Their financial health is largely determined by housing market and foreclosure developments, which are not expected to improve rapidly.
- ***Life insurance companies***, especially in the United States, have come under significant market valuation pressures, as investment losses rose, while the costs of hedging to limit the downside of equity-based contracts with guaranteed returns spiked.
- ***Financial guarantee insurance companies*** have been under rating and market pricing pressures and the large entities have lost their triple-A rating status, which was the core of their business model.
- Some ***large insurance-dominated financial groups***[7] were affected either through their institutional links to banks or their in-house units performing investment-bank-like activities. For example, the world's largest insurance group collapsed as a result of losses incurred through its financial product unit, which had been a major seller of credit protection. The government extended parts of its financial safety net to this financial group, as its role as a counterparty to systemically important banks appears to have made this company itself systemically important.

These various experiences are discussed in more detail in the following subsections.

III.3. US mortgage insurance companies

Mortgage insurance companies in the US have the most direct exposure of any insurance sector to mortgage credit risk

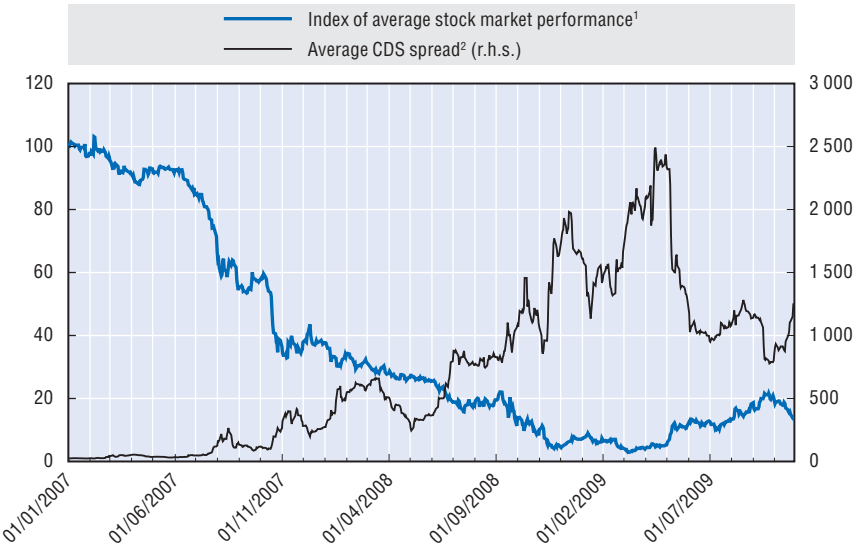
Looking at the problems at the epicentre of the crisis, the mortgage sector, one finds mortgage insurance companies in the United States having the most direct exposure of any insurance sector to mortgage credit risk and consequently being the institutions most rapidly hit in a significant manner. This outcome is not so surprising given that the crisis started in the United States residential mortgage market and that these entities' core business consists of guaranteeing to other financial service companies that either individual loans or a portfolio of mortgages will retain their value. Moreover, they insure relatively high-risk (*e.g.* where the loan-to-value ratios exceed a specific percentage, such as 80 per cent) or otherwise non-standard loans (*e.g.* the absolute amount of the loan exceeds specific limits).

As a result of mortgage market developments since the second half of 2006, there have been sizable losses on the part of several of these entities, which have depleted substantial amounts of the capital buffers that many of them had been able to build up beforehand. Already in April 2007, New Century Financial Corporation, a leading US subprime mortgage lender, filed for Chapter 11 bankruptcy protection. The largest

independent US mortgage insurers (MGIC Investment, PMI Group, and Radian) have posted significant quarterly as well as full-year losses. Rating agencies predict a return to profitability to be an unlikely event before 2010. At least one of the ten largest US mortgage insurers by 2008 sales has entered "run-off", continuing to pay claims and book profits or losses from previously sold policies, but not writing new policies.

Reflecting these developments, share prices fell significantly both for independent mortgage insurance companies and for those insurance companies that have significant mortgage insurance subsidiaries. At the same time, prices for protection against default of these companies rose significantly (Figure I.5.1).

Figure I.5.1. **Equity market performance and credit protection costs for selected mortgage insurance companies**



1. Average of share price indices (1/1/2007 = 100) relative to S&P 500 of Genworth Financial Inc., MGIC Investment Corp., PMI Group, and Triad.
2. Average of senior 5 yr CDS spreads of Genworth Financial Inc., MGIC Investment Corp., and PMI Group Inc.

Source: Thomson Reuters DataStream.

The outlook for that segment depends on US housing market and foreclosure rate developments

In reaction, mortgage insurance companies implemented several rounds of underwriting changes that should result in more conservative credit portfolios going forward. But the legacy portfolios remain large and their performance will only stabilise, as US housing markets stabilise and foreclosure rates fall, which is unlikely as long as real activity growth is weak and unemployment rising. That said, home prices in the United States have shown signs of stabilising as judged by developments in the Federal Housing Finance Agency's seasonally adjusted purchase-only house price index and the Shiller-Case composite index of the top 20 metropolitan statistical areas in the country.

III.4. Life insurance companies

Life insurance companies have come under valuation pressures, reflecting their investment exposures…

Life insurance companies came under market valuation pressures, reflecting to no small extent the losses on their own investments in stocks and in mortgage-backed securities. While these companies tend to have relatively limited exposure to lower quality residential mortgage backed securities (RMBS) and structured financial instruments (such as CDOs) involving such securities, they are nonetheless significant investors in many securities markets, including equity and corporate bond markets, where valuations declined almost simultaneously. On the liability side, the decline in government bond interest rates implied a substantial increase in actuarial liability levels.

… and the fact that they have made a significant amount of fixed payment promises to policyholders

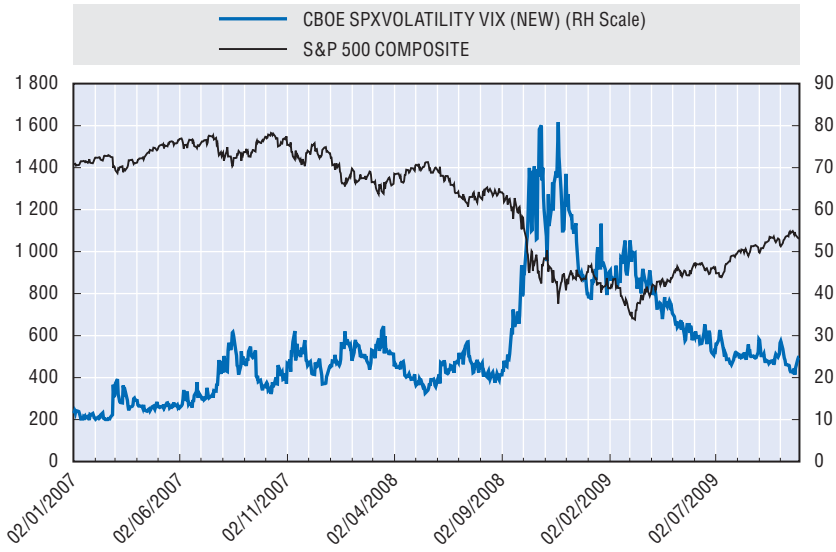
In addition, many of these companies have written variable annuities contracts, several of which have guaranteed minimum income streams or other guarantees that are costly to fulfil in deteriorating capital market valuations and environments of low (or moderate) government bond interest rates. While the increase in corporate spreads may provide some offset (as they promise higher nominal returns), this offset comes at the price of increased credit risk. Thus, valuation pressures reflected in many cases the combination of adverse developments affecting *both* the asset and the liability sides of the balance sheets of these entities, giving rise to important asset-liability management challenges.

Hedging strategies have become more costly…

Meanwhile, the costs of hedging strategies that many insurers adopted in recent years to limit their downside on variable annuities spiked as a result of heightened market volatility (Figure I.5.2), thus tending to reduce life insurance companies' profit margins from this type of activity.

Figure I.5.2. **Indicator of uncertainty of future equity market valuation**

Chicago Board Options Exchange Volatility Index, often referred to as "investor fear gauge"



Source: Thomson Reuters DataStream.

In reaction, many insurers have adjusted and are planning to adjust the pricing of variable annuities and/or their specific features so as to reduce their exposure to the risk of rising hedging costs. Such retrenching, even if limited in scale, may represent a strategic reversal in one important insurance business activity: in recent years, insurers have expanded their activity in the potentially lucrative baby boomer market by making more elaborate minimum return promises to ease the baby boomers concerns about the adequacy of their retirement incomes when life expectations are expanding and traditional defined benefit pensions are on the decline.

… and have not yet been tested under prolonged adverse market conditions

The recent financial crisis has put the spotlight on the observation that the hedge programmes designed to underpin the strategic move into this business area have not yet been tested under prolonged adverse market conditions.[8] These challenges have lessened somewhat as volatility has continued to decline (Figure I.5.2), but the issue continues to be relevant, especially if government bond yields do not remain at somewhat higher levels for sustained periods.

On the positive side, leverage is limited

On the positive side, life insurance companies do not employ much leverage and have long-term liabilities, which implies that their exposure to liquidity risk is generally much lower than in the case of banks and other more leveraged financial institutions.

One risk is, however, that the perception on the part of policyholders of the growing financial stress at life insurance companies may affect policyholder behaviour. In particular, it cannot be ruled out that policyholders concerned about the company's financial health exit more frequently from their contracts even if they have to accept termination fees and investment losses.

Credit rating downgrades can have a number of adverse consequences

Another risk is that credit ratings of insurance companies would be downgraded, and indeed, for example, the current rating outlook for insurance sectors by at least one rating agency implies that the number of downgrades is expected to exceed the number of upgrades. To the extent that insurance companies are counterparties to any derivatives trades, margin requirements may increase as a result of rating downgrades, in which case liquidity needs in that sector would increase.

The credit rating outlook for the US life insurance sector was revised to "negative" from "stable" during fall 2008 by at least one of the three major rating agencies, while the outlook is negative for many other jurisdictions, including in Europe. Forward-looking financial market indicators point in a similar direction: since the beginning of the financial crisis in mid-2007, (relative) stock market valuations of both US and EU life insurance sectors have declined strongly, actually much more strongly than non-life insurance sectors. More recently, life-insurance sector stock market valuations have risen again, however.

III.5. Financial guarantee insurance companies

Financial guarantee insurance companies have been under market pricing and rating pressures, as losses and write-offs mounted on mortgage-related structured securities for which they had provided credit

enhancements, especially when such protection was in the form of financial derivatives sold. Losses on these instruments, unlike on traditional insurance contracts, showed up rapidly in the profit and loss accounts of these entities.

The large financial guarantors have lost their triple-A rating status, which was the core of their business model

The large financial guarantors have now lost their triple-A rating status. This observation is remarkable, as the high rating was the core of their business model: essentially, their (traditional) business consisted of renting out their high rating to lower-rated debt issuers, guaranteeing the servicing of interest and principal payments on the debt issues of the latter as these payments become due.

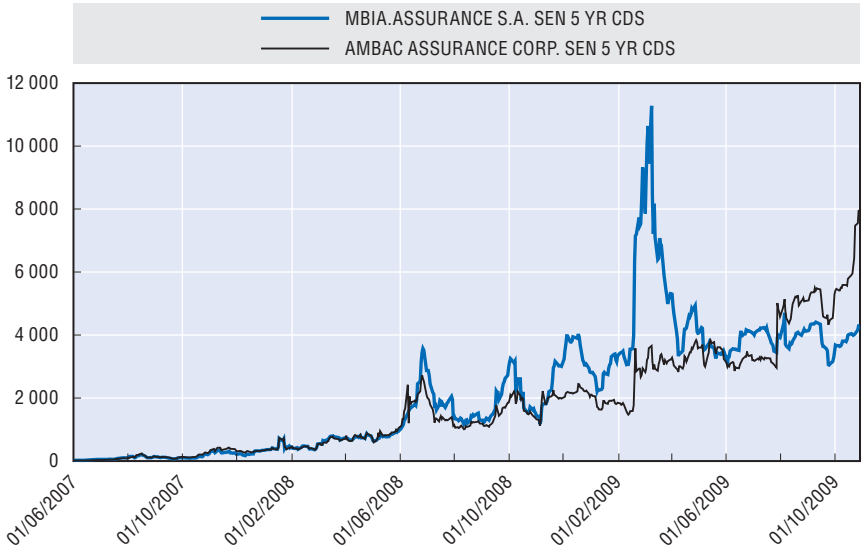
Financial guarantee insurance companies have thin capital layers and tend generally to be highly leveraged institutions. As a consequence, to the extent that they are forced to deleverage during times of stressed market liquidity, they tend to add to dislocations in credit markets and exacerbate systemic risks.[9]

The difficulties experienced by these entities amplified downward pressures in financial markets

As the ratings of these companies were lowered, their equity prices fell and premiums for insurance against credit default by these entities rose (Figure I.5.3). And the difficulties experienced by these companies fed back in to the value of the enhancements they provided, with negative effects on securities such as structured finance products and municipal bonds, and for banks and other entities and markets that rely on insurance provided by financial guarantors. Thus, the difficulties experienced by these entities have amplified downward pressures in financial markets through different channels.

In the United States, where responsibility for insurance regulation resides with the states, the New York state insurance regulator has been working with counterparties of financial guarantors on plans to close out

Figure I.5.3. **Credit default swap premiums for major US bond insurers**



Source: Thomson Reuters DataStream.

some of the contracts written and recapitalise and, perhaps, restructure some of these entities. In February, one large financial guarantor received regulatory approval to split into two, one municipal-guarantee unit and another one focusing on asset-backed structured products.

There is considerable public interest in financial guarantee insurance facilitating municipal bond issuance

At the same time, given the public interest in financial guarantee insurance facilitating municipal bond issuance (prior to the crisis, financial guarantors insured about half of the outstanding municipal bonds), regulators have generally facilitated the entry of new firms, and at least one significant new competitor has entered that market. Also, in May 2009, the National League of Cities has suggested that it would seek support from the US Treasury to establish a new financial guarantor, including by requesting an interest-free loan for capitalising the new entity it plans to establish. The new entity would conduct municipal bond business only. The entity would be the first publicly owned financial guarantor.

Effective and robust regulatory and supervisory frameworks for financial guarantee insurers are crucial

Whatever the outcome in the case of this specific proposal, developments in the financial guarantee insurance sector have put the spotlight on the regulatory and supervisory framework for this type of financial service. It is clear that an effective and robust regulatory and supervisory framework for financial guarantee insurers is crucial to allowing this type of financial service to play its role most usefully. In this context, questions have arisen however as to how to improve the frameworks in place. In the United States, where many large financial guarantors are based, this framework relies on supervision to be performed by the respective state insurance regulator, as financial guarantors are regulated by states under their respective insurance laws. One question is whether and how existing arrangements can be improved and, in this context, the New York State Insurance Department has undertaken to rewrite the regulations for bond insurance to prevent companies from taking an inappropriate risk in the future. One question arising in this context is whether consideration should be given to requiring separate capital bases for, and institutional separations of, the conduct of business related to structured financial products on the one hand and municipal bond business on the other hand.

III.6. (Complex) insurance-dominated financial groups[10]

AIG was a major seller of credit protection

American International Group (AIG) was viewed by some observers as the world's largest insurance company, consisting of a global financial service holding company with 71 US-based insurance companies and 176 other financial service companies. Although not the only insurance-dominated financial group to have sold credit default protection through derivatives, the company was special in that it was a major seller of such protection (including in the form of credit default swaps on collateralised debt obligations such as residential mortgage-backed securities) through its Financial Products Unit, which was managed at the level of the groups' holding company.

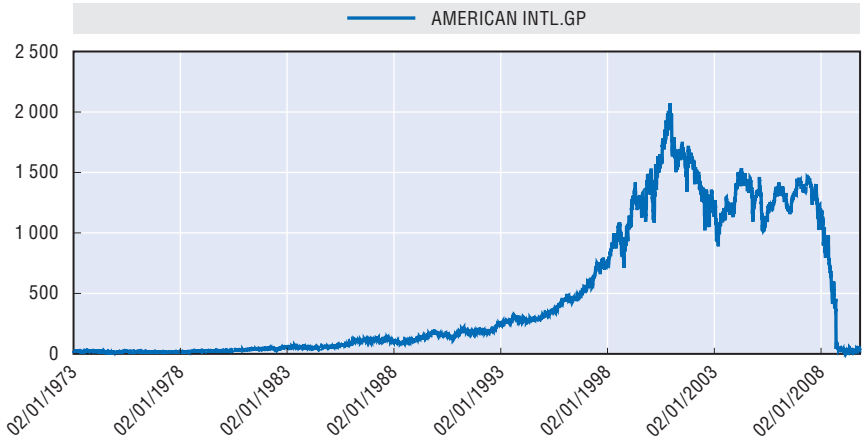
Unfortunately, the risk management arrangements of the Unit appeared to have been inadequate for this line of business. The risk management models initially used for this purpose did not measure the

risk of future collateral calls or write-downs and more sophisticated risk management models were reportedly not effectively applied until after 2006, by which time the company had already built up most of its exposure to derivatives.[11]

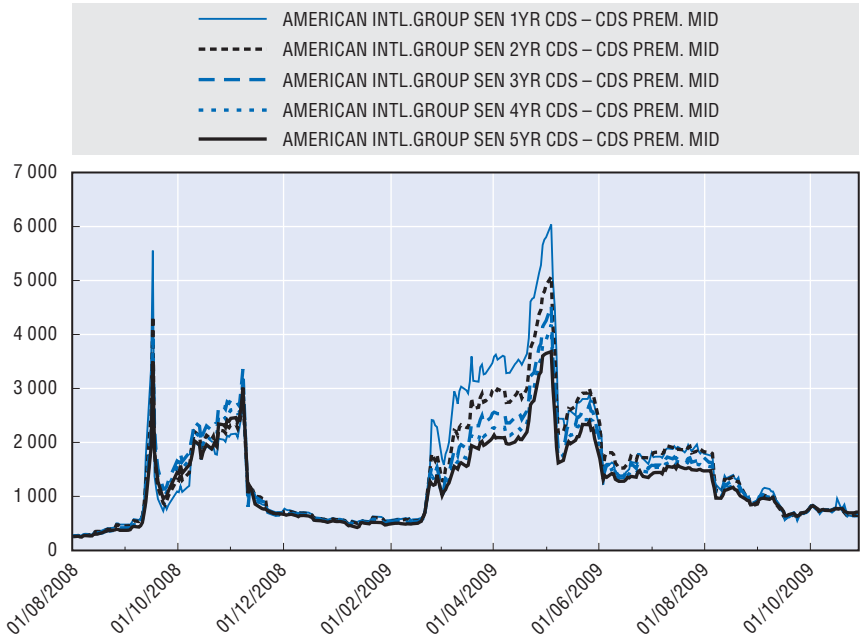
In 2008, the company's Financial Product Unit reported a spectacular loss of around USD 10 billion for the full year 2007 and, later, an even higher loss for the first half year of 2008. In March 2009, AIG reported, at USD 60 billion, the highest quarterly loss a US corporation has ever reported, marking also the fifth straight quarterly loss for that company. Financial market indicators of the parent company's health deteriorated especially during fall 2008 and spring 2009 (Figure I.5.4).

Figure I.5.4. **Financial market indicators for AIG**

Equity price development since 1975



Credit default swap premiums since August 2008



Source: Thomson Reuters DataStream.

As a result of the company's credit rating downgrade, the company had to post additional collateral, which it was unable to do without support

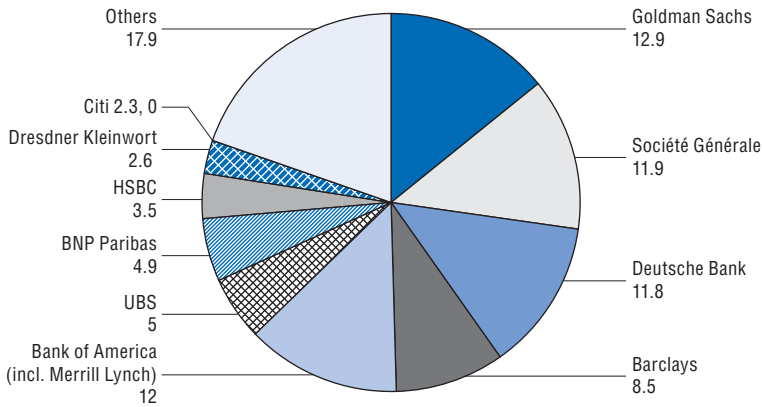
In mid-September 2008, AIG's credit rating was downgraded. As a result, the company was required to post a substantial amount of collateral to its counterparties. But given the adverse market environment the company had difficulties in liquidating significant amounts of assets quickly enough. Thus, shortly after the company's downgrade, the US government felt obliged on systemic grounds to provide a support package for AIG, agreeing to initially lend USD 85 billion in exchange for an equity stake of close to 80 per cent.[12] The rescue package was expanded to USD 150 billion in November 2008, partly to fund an entity designed to retire credit default swap contracts by purchasing the underlying assets from banks. In March 2009, the rescue package was restructured for a second time in four months.

AIG appears to have become an important counterparty to systemically important banks

Given the company's role in a wide range of financial markets, the volume of business written, and the complexity of interconnections created (especially through credit default swaps and securities lending), AIG appears to have become an important counterparty to systemically important banks (Figure I.5.5).[13]

Figure I.5.5. **Payments made by AIG in relation to CDS contracts and securities lending business**

Sum of both types of transactions in case of each counterparty (in USD billion) since September 2008



Source: Secretariat estimates based on data provided in the appendices to AIG Press release, "AIG Discloses Counterparties to CDS, GIA and Securities Lending Transactions", New York, 15 March 2009.

This situation has had the effect of making the company itself being considered systemically important.[14] Effectively, the capital injections and other liquidity-provision measures provided by public authorities for that company implied that this component of the financial safety net, which traditionally has had commercial banks as its prime focus, was extended to cover a wider set of financial institutions, including insurance companies.

IV. Selected lessons and policy issues

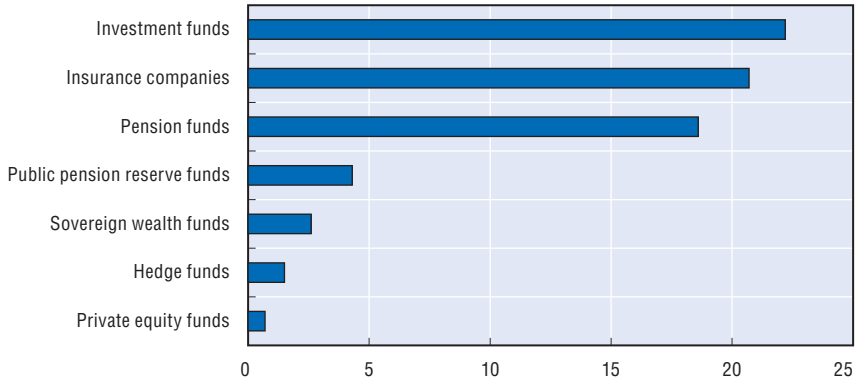
IV.1. The role of insurance companies as shock absorbers in this crisis

Insurance companies are major players in global financial markets

Insurance companies are major investors in financial markets. On aggregate, the largest investors worldwide are investment funds, followed by insurance companies and pension funds (Figure I.5.6). Moreover, a part of the assets under management of private equity and hedge funds are owned by insurance companies (and pension funds), making these investors major players in global financial markets. These aggregate numbers hide some differences across major markets in the relative importance of these different groups of financial entities. For example, insurance companies are particularly important players in relative terms in some European markets and in Japan.

Figure I.5.6. **Total assets under management within selected financial sectors, 2007**

In USD trillion



Notes: These types of estimates differ considerably depending on the timing of the data collection and the definitions used. To give but one example, a recent estimate of assets under management by sovereign wealth funds, using a broader definition, by International Financial Services London is that they have grown to USD 3.9 billion by the end of 2008 (as compared to USD 3.3 billion as of end 2007).

Source: OECD *Private Pension Outlook* 2008 (available at *http://dx.doi.org/10.1787/514780601273*UH).

Insurance companies have the capacity to adopt investment strategies with long-term horizons

Insurance companies, especially life insurance companies, are financial institutions with longer-term liabilities than commercial and investment banks, and thus they have the capacity to adopt investment strategies with longer-term horizons. To the extent that they adopt such strategies and do not sell into falling markets when many other types of investors do, they are a stabilising element of the financial system. Most parts of the insurance industry appear to have acted as a stabilising element in this sense during the current crisis.

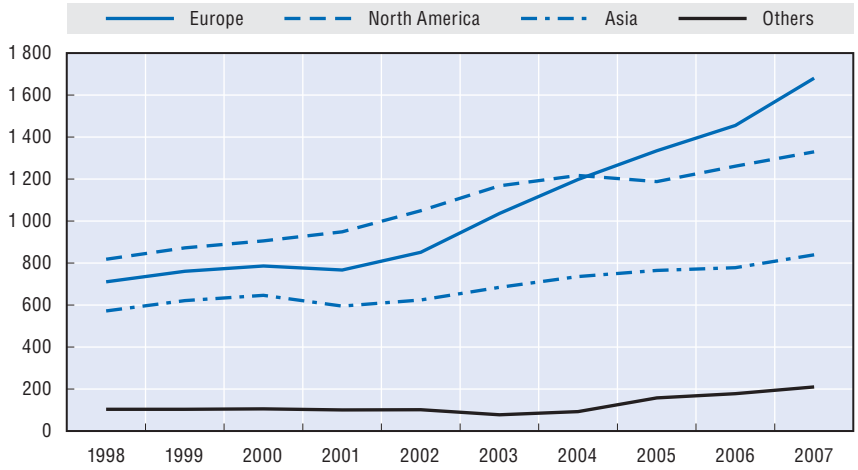
The insurance function has tended to have a stabilising effect during the current financial crisis

Moreover, many insurance companies continue to provide insurance coverage against a variety of hazards, and they have the ability to reinvest the proceeds in financial assets. Premium incomes have continued to increase until 2007 (Figure I.5.7), especially in life insurance business, although the situation has reportedly been less favourable in the latter sector during 2008.

Actually, according to some estimates, global insurance premium income may have fallen (in real terms) for the first time since 1980.

Figure I.5.7. **Global insurance premium volume by region**

In USD billion



Source: International Financial Services London, November 2008.

As a general rule, to the extent that insurance companies realise net profits from their insurance business activities, they could reinvest the profits in financial markets, which would tend to support prices. But even if they do not realise net profits on their insurance function but instead generate underwriting losses through rising claims from policyholders, this situation helps prevent the consequences of the financial crisis from being compounded. In particular, the claims paid by the insurance company reflect a compensation received by the policyholder, which should mitigate the consequences of its financial or other type of misfortune. Actually, the availability of such mechanisms is crucial for an economy; it encourages productive investment and innovation, and thus supports real activity growth, which in turn should be beneficial for the growth of financial markets.

IV.2. Issues related to the repartition of credit losses between banking and insurance sectors

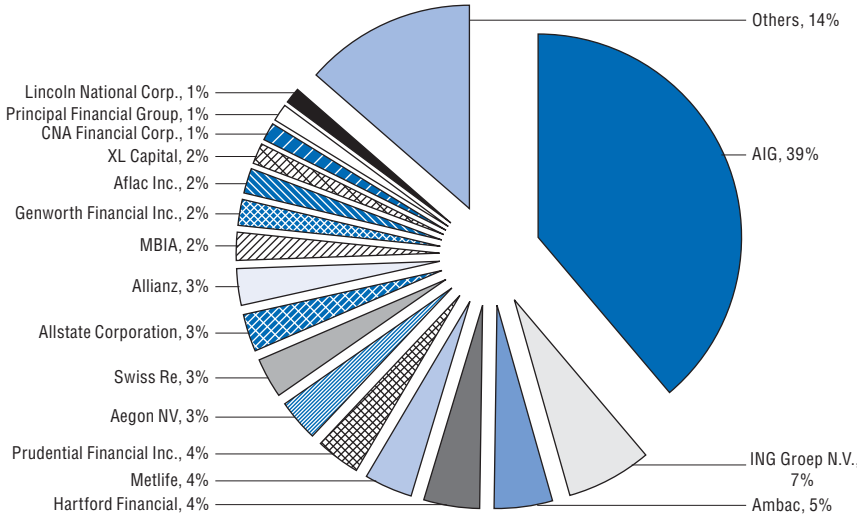
Most of the losses at insurance companies stem from their investments as opposed to their underwriting

While net earnings may have declined in many jurisdictions over the past few months, most of the losses at insurance companies stem from their investments, however, as opposed to their traditional underwriting activities.

Still, investment losses of insurance companies appear to be much more limited than those of banks. While it is difficult to estimate the ultimate repartition of (investment) losses associated with the financial crisis among different financial sectors, especially as placement data for the various types of securities including structured financial products are imprecise, some estimates are available. According to one such estimate published in August 2009 by the company Bloomberg (Figure I.5.8), the

Figure I.5.8. **Write-downs and losses at selected insurance companies**

Since beginning of 2007, total of USD 261.2 billion



Source: Bloomberg, 13 August 2009.

insurance industry may have absorbed about USD 261.2 billion of losses and write-downs from the crisis so far. This compares with an estimated USD 1 102.3 billion (more than one trillion) on the part of major banks and USD 237.9 billion on the part of US government-sponsored enterprises (Freddie Mac and Fannie Mae). The figure shows that the company AIG accounted for an estimated almost 40 per cent of total losses incurred by insurance companies since the beginning of 2007. Insurance companies have also raised capital, although with the exception of one insurance company, the capital raised fell short of the sum of write-downs and losses. The aggregate shortfall between write-downs and losses on the one hand, and capital raised on the other is estimated to amount to USD 103.6 billion for the selected insurance companies covered by Bloomberg.

The losses disclosed are largely mark-to-market losses on hard-to-value assets

The losses disclosed by affected financial institutions are, thus far, largely mark-to-market losses on hard-to-value assets. It remains to be seen whether the full extent of the implied credit losses will eventually be realised on the underlying loans. If the outturns ultimately prove less severe than currently feared, it cannot be ruled out that those financial firms still holding these assets will see some offsetting valuation gains on the asset-backed securities and structured credit products in their portfolios. At the same time, the losses currently disclosed by insurance companies are likely to underestimate the share of ultimate losses to be borne by these entities to the extent that rules regarding the reporting of asset impairments imply that the latter are only slowly feeding through to profit and loss accounts.

Both International Financial Reporting Standards (IFRS) and US Generally Accepted Accounting Principles (US GAAP) imply that an increasing share of assets and liabilities of banks and other financial

institutions are to be measured at fair value. Under these two sets of standards, the definition of fair value is not exactly the same but the basic framework is very similar. The objective of fair value accounting is to determine the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction. The approach implies that financial instruments are valued using market prices (if there is a market) or using the market of a similar instrument if there is no market for this specific instrument, or using model-based valuation techniques (with or without market data inputs depending on their availability).

The crisis has highlighted issues related to the valuation of securities in an environment of stressed market liquidity

The financial crisis has highlighted a number of critical issues related to the valuation of financial instruments in an environment of stressed market liquidity. They apply to both complex instruments but also to more traditional simpler ones both of which became illiquid. As liquidity quickly evaporated in the market for many complex structured and other products and primary and secondary transaction prices became unavailable, most banks and financial institutions switched from valuation methods based on observable prices – or deemed to be observable (indices) – to methods that relied more on model-based valuations. In some instances, such model-based valuations required the extensive use of unobservable inputs.[15] As a result of these various uncertainties, counterparties of financial institutions and market participants more generally have found it difficult to assess the health of many financial institutions, and this situation has added to the market pressures on the latter.

In this context, some observers have argued that fair value is not appropriate for valuing assets of all types of financial institutions, particularly not for long-term investors like some insurance companies. The question of how accounting rules need to be adopted in the case of different types of financial institutions to ensure transparency for investors and policyholders remains an important policy issue.

IV.3. Insurance companies considered too large and/or too interconnected to be allowed to fail

AIG has been an insurance-dominated financial groups deemed too big or too interconnected to fail

AIG was the first financial conglomerate with significant insurance operations to receive substantial US government aid before a broad-based programme to help financial institutions was established.[16] In the process, the financial safety net was subsequently expanded to support other insurance companies as well. For example, in the United States, under the US Treasury Department's Capital Purchase Program, six insurers were considered in May 2009 to have qualified for capital infusions because each had restructured itself as a bank holding company (not all applications by insurers were granted positively). Elsewhere, insurance organisations have also received government support, including in the Netherlands and Belgium.

The perception that these companies enjoy some benefits of the financial safety net has been a positive for these companies' ratings and the prices of their securities traded in financial markets.[17] That said,

given the limited number of insurance companies that benefited from the financial safety net, observers (including rating agencies) find it difficult to identify to what extent government support for the financial industry will generally be available going forward. There appears to be a growing perception however that such support has now become available for such entities to the extent that they are either considered big or interconnected enough to have a systemic importance.[18]

This situation raises the issue of how the systemic threat emanating from such an institution can be properly controlled and/or reduced, and as to whether and how the other elements of the financial safety net, including the regulatory and supervisory framework, need to be adapted to reduce the potential moral hazard that could arise under the new circumstances.

Incidentally, there have also been adverse indirect effects stemming from the expansion of the financial safety net. Specifically, governments have provided expanded coverage for bank liabilities. These developments raise "level playing field" issues between banks and other financial institutions such as insurers. For example, government guarantees have been provided in many countries for unsecured bank bond debt. Insurers are issuing debt that has to compete with government-guaranteed bank bonds for investments on the part of high-quality bond investors and, reportedly, some insurers have had difficulties placing their bonds or placing them at what they considered reasonable prices, given the presence of government-guaranteed bank bonds. The OECD is working, within the context of its "Strategic Response to the Crisis", on the "exit strategy" issue, among other things, with the aim of better understanding the costs and benefits of the safety net expansion and how additional costs could be limited in the process of exiting from unusual policy measures.

IV.4. The emergence of liquidity risk as an issue for insurance companies

Insurance companies typically have stable funding

A positive for insurance companies is that they are typically funded by a relatively stable flow of premiums, with very limited reliance on short-term market funding. As a result, they typically bear far less liquidity risk than commercial or investment banking firms.

They are not completely immune to liquidity risk however, as rating downgrades could trigger collateral calls

They are not completely immune to liquidity risk however, as rating downgrades could trigger collateral calls. Under these circumstances, liquidity risk management on the part of insurance companies is becoming an increasingly important task. The financial market environment during the crisis has made this task difficult, however, not least because banks have been reluctant to extend new credit lines. Also, there is the risk that market participants might consider any massive drawing by an insurance company on existing lines, at the current juncture, as a sign that the situation at the company in question is worse than its peers.

Central bank and other liquidity support, as a general rule, used to be not as readily available for insurance companies as it was for banks. The liquidity support provided to AIG was unusual in that respect, although

some other insurance companies have also recently received financial support from public authorities.

It is perhaps too soon to know whether these events mark an important watershed, and whether – going forward – liquidity support will be more readily available for insurance companies. In light of the stresses facing the financial system, and the desire to have arrangements in place to ensure that financial institutions could continue to have access to necessary liquidity, governments throughout the OECD have established special financial market stabilisation programmes. So far, most programmes to provide liquidity (outside of central bank lender-of-last-resort facilities) have largely been targeted to banks.

What is clear however is that liquidity risk has become a more relevant issue for some insurance companies as a result of the changes in the types of activities pursued and that, consequently, the risk management function of insurance companies (as well as the insurance regulator and supervisor) needs to pay greater attention to liquidity risks. That said, some delegates at the meeting of the OECD's Insurance and Private Pensions Committee (IPPC) emphasised that there continues to be a significant difference between banks and insurance companies with respect to liquidity, as liabilities differ considerably. On a conceptual level, the insurance function as such does not involve any liquidity risk, as fees are collected upfront.

IV.5. Insurance-dominated financial groups expanding their activities beyond core business

Negative spillovers from one part to another part of a financial group appear to have been significant enough to threaten the survival of the whole group

Although the experiences discussed in the previous chapter differ considerably from one another, several of them have in common that they add to a growing list of examples where the benefits to be had from revenue or risk diversification in large complex financial institutions have been called into question. Rather, negative spillovers from one part to another part of the same financial group appear to have been significant, significant enough indeed to threaten the survival of the whole financial group.

In many cases, the problems for the group stemmed from units that conducted investment-bank-like activities

In many cases, the problems for the insurance-dominated financial group as a whole stemmed from units that operated in capital markets and conducted either investment-bank-like activities or provided credit protection via derivatives or both. These activities were traditionally mostly associated with investment banks, although the situation in that respect has been changing for some time now. For example, commercial banks have also increasingly changed their business model to now include more elements that traditionally had characterised investment banks.[19]

Judging by results published so far, many insurance companies have not built up significant exposure in such a risky niche business area however. By and large, only those insurers that own banks or specialised credit insurance[20] and other financial product units involved in investment-bank-like activities have revealed substantial exposures to the "toxic" end of the credit spectrum.

For example, in the case of the company AIG, the losses from the holding company's financial products unit were so large that the benefits to be had from supposedly diversified revenue sources at the holding company level turned out to be insufficient to cover them. In the case of one large European reinsurer, losses from a unit that was involved in writing credit default swaps, providing credit protection and capital market trading outweighed the profits from (well-performing) core business to be had at the consolidated level of the group. Also, somewhat similarly, in the case of the financial guarantee insurance companies, the continuation of these companies' traditional business, which was to insure municipal bonds, was rendered impossible as these companies lost their main asset (their high ratings) as a result of the large losses incurred by these entities in the more recent business line of selling credit protection related to structured financial products.[21]

Clearly, these financial instruments are not *a priori* and in general harmful for insurance companies, but the writing of some of them and the investing in others on the part of insurance companies highlights the need for and importance of a well functioning internal control system, risk management and corporate governance in these companies. Incidentally, some of these activities were traditionally mostly associated with investment banks, but as discussed in Section II of this article, (at least some types of) CDS are similar to insurance contracts, so that the involvement of insurance companies in this type of activity may not be so surprising (at least on a conceptual level).

This situation has upped the ante for having a comprehensive regulatory and supervisory framework in place

This situation has also increased the need for having an adequate regulatory and supervisory framework in place. As contagion risk from unregulated or lightly regulated entities within a financial group can create risks and liquidity demands for the group as a whole, it is important to ensure that this framework is comprehensive.[22]

IV.6. A period of de-conglomeration of complex financial groups lying ahead?

When the result of parts of a group turned out to be very negative, the adequacy of buffers for the group as a whole also disappointed

In the past, different types of financial activities have often been combined under one roof and such combinations have often been defended on the grounds of the scope economies associated with the more diversified revenue stream of the group as a whole. But the weight of the empirical evidence suggests that, in crisis situations, returns in different business areas turn out to be more closely correlated than during normal times (or less negatively correlated) and, as it turns out, more so than has been expected and built into risk management models. As a consequence, the adequacy of the buffer for the group as a whole, *e.g.* in terms of capital cushion, tends to disappoint as well.

The financial crisis is forcing insurers (and bankers alike) to rethink the way they do business together

This observation again calls into question the benefits of insurance companies expanding to include commercial and/or investment banking or investment-bank-like insurance activities under one roof. Actually, the financial crisis is forcing insurers (and bankers alike) to rethink the way

they do business together and, since the fall 2008, some European bancassurance groups have either been broken up or restructured.[23]

Also, in the United States, one of the largest financial guarantors has entered into a fundamental restructuring, essentially separating the traditional municipal from the structured finance business. In this context, it is interesting to note that the company's press release emphasised that municipal business would be conducted by a separate operating and legal entity that "will have no exposure to structured finance business". In spring 2009, the rescue operation for AIG's holding company involved a planned break-up of the conglomerate into separate divisions.

Earlier work by the IPPC and the Committee on Financial Markets indicates that while some diversification benefits from combining banking and insurance activities in a single financial group exist, they may fall short of expectations exactly when they are needed most.[24] For example, during the difficult financial market environment between 2000 and 2003, the benefits derived from having diversified revenues from more than one type of financial service proved to be far more limited than many observers had presumably anticipated. The work in question, which was endorsed by both Committees, concluded that the profit experience during previous years offered only limited support for the "financial-group" business model, although it was acknowledged that many groups had been formed only a short time before the downturn and that, perhaps, more time might be needed before such benefits could be realised.

Could there be a period of "de-conglomeration" lying ahead?

More recently, related discussions in other forums seem to suggest that there may be a growing perception that a period of "de-conglomeration" or "ungrouping" may lie ahead, with an increasing separation of joint ownership of insurance, commercial and investment banking activities.[25] Such conclusions may be somewhat premature however, and they are not borne out by recent developments, *e.g.* in the United States, where struggling financial entities have been absorbed by and merged with other entities (often with public support), in some cases (although not in others) involving entities with traditionally different types of activities.

Going forward, there may be a premium for simplicity in institutional structures

There are some observations that might one lead to expect that institutional structures would evolve away from complex ones. In particular, the current crisis has put the spotlight on the issue of complexity, and it has underscored the difficulties that can arise in assessing and valuing complex structures. These complex securitised credit risk transfer instruments have been at the heart of the risk transfer that has occurred in the run-up to the current crisis and the accompanying build-up of debt and leverage positions that ultimately turned out to be unsustainable. The difficulties in valuing such complex, heterogeneous and opaque instruments especially in situations of market stress has turned out to be extremely difficult, if not impossible. As bank balance sheets are heavily burdened by these securities, the valuation problems associated with these securities directly translate into uncertainty about the valuation of banks themselves, which in turn has resulted in the severe impairment of the financial intermediation process

that has characterised the current financial crisis. Going forward, one might speculate that there may be a premium for simplicity in both financial *instruments* as well as *institutional* structures.

The example of AIG has put the spotlight on the observation that specific incentive problems could arise in complex financial groups when different parts of the group pursuing different activities (and generating different risk profiles) either use the same capital base or when some parts of the groups either explicitly or implicitly benefit from capital raised via less risky members of the group. Against the background of this observation, a number of regulatory responses have been suggested to eliminate the cross-subsidisation and to address the incentive problems arising in this context. They range from a positive list of allowed activities, the disallowance of certain activities, and the imposition of an extra capital charge for the group as a whole to the ring fencing of different parts of a group.

One recent proposal has been to require financial institutions to adopt specific corporate structures that ensure the separation of capital for the different types of uses. Specifically, it has been proposed to require financial institutions that pursue more than one type of financial activity to adopt the structure of a non-operating holding company.[26] Such a corporate structure has reportedly been adopted voluntarily by one large financial institution in Australia. Whether and how the government should foster the formation or break-up of complex group structures is another issue.

IV.7. Group supervision and supervisory co-operation

In light of the experiences of financial groups with insurance entities, regulatory and supervisory authorities have assessed whether and to what extent there is room for improvements in the current system of supervision of insurance groups and financial groups involving insurance activities. One of the key problems in the current crisis, as highlighted by the experiences of some large financial groups, was the lack of adequate group supervision.

There currently appears to be an emerging consensus that more extensive information-sharing and co-ordination activities among supervisors and closer scrutiny of the activities of all financial group entities are needed. As regards the latter, effective group supervision should capture all entities of a group and take into account intra-group relationships, governance and risk management procedures, capital requirements and allocation, transferability of funds, etc. As regards the former, efforts to enhance co-ordination and co-operation have already taken place at national level and, on an international level, considerable emphasis has been placed on co-operation between the supervisory authorities involved and on the establishment of new colleges of supervisors.[27]

V. Concluding remarks

V.1. *Selected vulnerabilities in the insurance sector*

The financial crisis has begun to have a more visible impact on the insurance industry, reflecting investment exposures

For many insurers, the direct exposure to the epicentre of the crisis, the US mortgage market, and to related securities appears to be limited. Nonetheless, the financial crisis was having a more visible impact on the insurance industry as losses on financial assets spread beyond mortgages and related securities, and as the outlook for real activity deteriorated, in large part reflecting exposures in insurance companies' investment portfolios.

The outlook for underwriting is uncertain, but not all negative

As regards insurance underwriting, declining real activity and household wealth will tend to reduce demand for many insurance products. At the same time, actual losses and declining confidence typically provide a potent mix for changes in behaviours and in demand for specific types of financial products. In particular, this development might be a positive for insurance companies that offer guaranteed products, such as life insurers offering guaranteed minimum returns.

On a specific issue, questions arise as to the effectiveness of life insurers' hedging programmes under prolonged adverse market conditions

Having said that, over the past couple of years, life insurers, especially in the United States, have made more elaborate minimum return promises to baby boomers, through a variety of products with embedded put options such as in variable annuity products. As it turns out, such guarantees can raise important asset-liability management issues and are costly to fulfil in periods of deteriorating capital market valuations. Questions arise as to the effectiveness of life insurers' asset-liability hedging programmes under prolonged adverse market conditions. These questions remain valid even if most recent gains in broad stock market indices may have reduced the sense of urgency on the part of these entities for providing responses to such questions.

Liquidity risk is becoming more of an issue for some insurance companies

Also, another caveat to the rather sanguine overall assessment of the insurance sector is the growing importance of liquidity considerations. It appears that at least some insurance-dominated financial institutions have become more exposed to liquidity risk than they traditionally had been and perhaps more than had been factored into the risk management models that they used.

V.2. *Considerations regarding the issue of the role of the insurance function in the current crisis*

The insurance function overall appears to have had a stabilising effect in the current crisis…

As regards the role of the insurance function in general as a shock absorber in the current crisis, it may be too early to write a proper *post mortem*. That said, the evidence so far suggests that there have been several stabilising factors. Insurance companies have generally not had to sell into falling markets as a result of leverage, liquidity, regulatory and other considerations. They also have continued to write insurance business in a variety of areas, thus not only supporting economic activity in this context, but also generating premium incomes that have at least partly been re-invested in financial assets, thus supporting their prices.

… although some segments and companies have amplified downward pressures in financial markets

Having said that, the picture is not as rosy if one zooms in on certain specific insurance sector segments. In the case of insurance segments and companies involved in investment-bank like activities, valuation and rating pressures have been very significant. These pressures, in turn, have tended to amplify downward pressures in financial markets. The most egregious example is afforded by the financial guarantee insurance sector, and by the deteriorating financial health of at least one large complex insurance-dominated financial group, which threatened to have systemic implications.

Negative spillovers from units conducting investment-bank-like activities have been significant enough to threaten the survival of the entire group

In large part, the various caveats attached to the overall positive role that the insurance function has played in this crisis are related to the expansion of insurance-dominated financial groups into financial activities other than typical insurance activities. For some, negative spillovers from one part (especially from the units conducting investment-bank-like activities) to another part of a financial group appear to have been significant enough to threaten the survival of the whole group.

In the past, different types of financial activities have often been combined under one roof and such combinations have often been defended on the grounds of the scope economies associated with the more diversified revenue stream of the group as a whole. But the weight of the empirical evidence suggests that, in crisis situations, asset prices and returns turn out to be more closely correlated than during normal times and, as it turns out, more so than has been expected and built into risk management models.

There may be a premium for simplicity in institutional structures, going forward

Moreover, such structures can become overly complex and opaque. These aspects hinder the ability of supervisors and stakeholders to properly understand the risks facing an insurer, and greatly complicate the swift and orderly resolution of failed institutions. Going forward, one might speculate, there may be a premium for simplicity in institutional structures. If true, insurance companies might want to sharpen the focus on their core business.

Notes

1. There is no generally accepted label for either AIG or other large financial institutions combining several types of activities. The current paper uses the term "financial group" and distinguishes between "bank-dominated" and "insurance-dominated" financial groups. For example, a financial group is defined as an "insurance-dominated financial group" if the group is dominated by an insurance entity or if it is a mix consisting of a variety of different entities, the majority of which conduct insurance activities. One delegation of the OECD's Insurance and Private Pensions Committee has suggested in its written comments however to use the term "financial group with insurance subsidiaries" instead of "insurance-dominated financial group" to label the company AIG.

2. See *The Credit Crisis and the Insurance Industry: 10 Frequently Asked Questions* (The Geneva Association, *Études et Dossiers*, No. 351), response to Question 1: Have insurers contributed to the subprime and subsequent financial crisis? A more recent assessment by the CEA is as follows: the specific characteristics of the insurance business model and the management of assets and liabilities by insurers have protected the insurance industry from the worst impacts of the financial turmoil. This model is entirely different from banking and, with very few exceptions, has shown resilience to the continuing shocks to the financial system. (CEA Letter to Rt. Hon. Gordon Brown MP ahead of G20 Summit Meeting in London.)

3. The *New York Times*, "Regulate Me, Please", 16 April 2009.

4. In a way, one might argue that "naked" swaps are not "swaps" properly speaking, as there is no transfer or swap or risks, but instead risk is created by that transaction. See for example, "Supervisory Lessons from the Current Financial Crisis: Initial Observations from the United States", *The Geneva Association PROGRES Report*, No. 48, December 2008.
5. See *New York State Insurance Department Circular Letter*, No. 19, dated 22 September 2008.
6. See for example, *World Insurance Report*, Issue 849, "Reinsurers Full of Hope", 3 November 2008.
7. As discussed at the outset, an alternative label suggested by one delegation for this financial institution is "financial conglomerate with significant insurance operations".
8. The example of the regulatory filing of (at least) one large US life insurance company testifies to the relevance of this issue: the company's regulatory filing for the third quarter said that its hedge programme left the company with a substantial realised capital loss as the guarantees' liability outpaced the hedging gains. Moreover, the filing cautioned that "continued equity market volatility could result in material losses in our hedging program". As a result, and despite regulatory change allowing the company to increase the statutory surplus it records for its life insurance operations as of December 2008, the company experienced very significant equity market valuation and credit default protection price pressures.
9. See also Schich (2008).
10. As discussed at the outset, an alternative label suggested by one delegation for this financial institution is "financial conglomerate with significant insurance operations".
11. "Faulty Computer Models Helped Sink Giant AIG", *The Wall Street Journal*, 3 November 2008.
12. Subsequently, on Wednesday, 8 October 2008, the Federal Reserve announced that it would lend AIG an additional USD 37.8 billion. On Monday, 10 November 2008, the Federal Reserve Board and the US Treasury announced the restructuring of the government's financial support to AIG. The US Treasury announced that it would purchase USD 40 billion of newly issued AIG preferred shares under the Troubled Asset Relief Program, so as to allow the Federal Reserve to reduce from USD 85 billion to USD 60 billion the total amount available under the credit facility established earlier. In addition, the interest rate on the facility will be reduced. Furthermore, it was announced that the Federal Reserve Board had authorised the New York Fed to establish two new lending facilities relating to AIG.
13. Additional results based on a similar analysis are contained in OECD (2009).
14. An AIG report highlights the various inter-linkages and interdependencies in the financial system arising from that company's own activities (see "AIG: Is the Risk Systemic?", Draft, 6 March 2009, available at *www.aig.com/aigweb/internet/en/files/AIG%20Systemic%20Risk2_tcm385-152209.pdf*).
15. Under accounting standards, there is no clear definition of what constitutes an "active" market and under which conditions financial institutions can switch from using market prices to using model-generated prices. Also, there is also no clear and widely agreed definition of what constitutes a "distressed" or "forced sale" as compared to a regular sale under "normal" conditions.
16. According to rating company FitchRatings, only three "stand-alone insurance organisations" have received government support as of early 2009. They include AIG in the United States, AEGON N.V. in the Netherlands, and Ethias, a small Belgian insurance company. In addition, four insurers that are part of bancassurance groups (for definition of that term, see Footnote 22 of the present article) – Fortis, ING Verzekeringen N.V., KBC Verzekeringen N.V and SNS REAAL – have received government financing as part of support also provided to the affiliated bank operation. See FitchRatings, "Insurance Ratings Criteria: Application in a Stressful Environment", 10 February 2009.
17. This view has been expressed already before the actual inclusion of life insurers in the US Treasury Department's Troubled Asset Relief Program (TARP). See for example, FitchRatings, "TARP for US Life Insurers Positive for Financial Strength", 9 April 2009.
18. See also FitchRatings, "Insurance Ratings Criteria: Application in a Stressful Environment", 10 February 2009. This rating company believes that government support would more likely be provided to the larger, brand name' insurance companies in a given country that local governments view as providing the highest degrees of systemic risks, and that governments view as viable.
19. See Blundell-Wignall, A., P. Atkinson and S.H. Lee (2008).
20. For example, in the case of the Belgian-French financial services company Dexia SA, a substantial part of the losses linked to the financial crisis stemmed from losses at Financial Security Assurance. See "Dexia to Sell Bond-Insurance Arm", *The Wall Street Journal*, 17 November 2008.
21. One delegation emphasised its view that the US-based insurance entities of that financial group remained viable. Moreover, even if an insurance company actually became insolvent in the United States, other companies would take over existing insurance policies. This course of action and the fact that there are guarantee arrangements in the United States ensures that policyholders are safe.

22. On a specific issue, establishing a robust regulatory and supervisory framework for financial guarantee insurers is necessary to ensure a continued role for this type of financial service. A question is whether consideration should be given to a structural separation into: *i)* financial market products, and *ii)* municipal debt. Another, related, issue is how to reconcile or harmonise the accounting treatment of different forms of credit insurance protection provided, be it in the form of traditional insurance contracts or in the form of credit default swaps.

23. The term bancassurance is typically used to characterise either one of two basic models. In one, which has been popular in the 1990s, banking and insurance business are combined under one roof by banks buying insurers or insurers buying banks, as well as by, for example, banks setting up insurance subsidiaries. In the other, which in a way is a less ambitious interpretation of the bancassurance model, institutions form partnerships and joint ventures in which one entity's network is used to sell another entity's products; in most cases, insurance products are sold and distributed through a bank's network. In the latter case, one entity may also acquire equity stakes in the other.

24. See "The Performance of Financial Groups in the Recent Difficult Environment", by S. Schich and A. Kikuchi, *OECD Financial Market Trends*, No. 86, March 2004, pp. 63-81.

25. See, for example, the report on a recent IAIS conference in "Supervisors and Rating Agencies Blamed for Crisis", in *World Insurance*, Issue 849, 3 November 2008.

26. See, for example, Blundell-Wignall, A., P. Atkinson and S.H. Lee (2008); and OECD (2009).

27. In this context, the de Larosière Group report on the future of European financial regulation and supervision, submitted to the European Commission in February 2009, proposed a number of structural measures to strengthen European co-ordination. See *http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf*.

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Private Pensions and the Financial Crisis: How to Ensure Adequate Retirement Income from DC Pension Plans

by
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The current economic and financial crisis has shaken confidence in funded pension systems in general and in defined contribution (DC) pension plans in particular. The crisis has highlighted the impact of market conditions on retirement savings accumulated in DC pension plans and the uncertainty as to whether those retirement savings may prove adequate to finance retirement – particularly for those close to retirement. The purpose of this paper is to provide recommendations on how to ensure adequate retirement income from DC pension plans. In this context, this paper addresses three main questions: 1) How much do people need to save? 2) How can the effects of market risk on DC pension plans be alleviated? 3) How can retirement income be protected during the payout phase? The analysis concludes that in order to deliver adequate retirement income from DC pension plans with a certain degree of certainty, there is a need for comprehensive measures which include: higher contributions; increasing the contribution period by postponing retirement; setting as default options relatively conservative investment policies including life-cycle strategies; and managing risk in the payout phase with inflation-indexed life annuities.

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I. Introduction

The financial crisis has highlighted the impact of market conditions…

The current economic and financial crisis has shaken confidence in funded pension systems in general, and in defined contribution (DC) pension plans in particular. The crisis has highlighted the impact of market conditions on retirement savings accumulated in DC pension plans, and the uncertainty as to whether those retirement savings may prove adequate to finance retirement – particularly for those close to retirement.

… on retirement income from DC pension plans

Assessing the adequacy of retirement income from DC pensions and the risks involved is far from straightforward. For one, the adequacy of income depends on the interaction among various pension parameters, some of which are beyond the control of individuals and policy makers. The final realisations of returns on investment, inflation, discount rates and life expectancy are key sources of this type of uncertainty. But risks to adequacy of retirement income can also arise from choices individuals, employers and policy makers make regarding parameters, such as the level of contributions, the length of the contribution and accumulation periods, the structure of the payout phase (that is, how assets accumulated at retirement are allocated), and on whether there are other sources of income to finance retirement, such as public pensions and defined benefit pension arrangements (Antolin, 2008).

This paper provides recommendations to ensure adequate retirement income

The purpose of this paper is to provide recommendations on how to ensure adequate retirement income from DC pension plans.[1] In this context, this paper is organised around three key policy questions:

1. How much do people need to save?

2. How can the effects of market risk on DC pension plans be alleviated?

3. How can retirement income be protected during the payout phase?

People need to increase contributions…

Section II addresses the first question. It assesses the amount of wages that would be needed to be put aside each period to finance a certain level of retirement income. It looks first at the level of retirement income relative to the final salary at the time of retirement (*i.e.* the replacement rate) for given values of the choice and risk variables. Second, it assesses the level of the choice variables – contribution rates and the length of the contribution period – needed to achieve a target replacement rate.

… increase the contribution period by postponing retirement…

Section III assesses the impact of market conditions at the time of retirement on retirement income from DC pension plans, while Section IV addresses the issue of the design of the payout phase and its impact on retirement income – looking at how to protect against both inflation and longevity risk.

... set relatively conservative default options; and manage risk in the payout phase

Section V concludes with some key recommendations. The message stemming from this report is that to deliver adequate retirement income from DC pension plans with some degree of certainty, there is a need for comprehensive measures, which include: higher contributions; increasing the contribution period by postponing retirement; setting as default options relatively conservative investment policies including life-cycle strategies; and managing risk in the payout phase with inflation-indexed life annuities.

II. How much do people need to save in DC pensions?

People need to put aside between 5% and 15% of wages during their working life to achieve an adequate level of retirement income

The replacement rate is the measure used to assess adequacy...

The first issue to address is what constitutes an adequate level of retirement income. The concept of replacement rate – retirement income relative to final salary at the time of retirement – is the most common measure used to assess the adequacy of retirement income. Though this measure is not without problems,[2] it is used in the analysis in this paper since it is widely accepted and understood. The target level of the replacement rate is also highly controversial. A general rule of thumb is a target replacement rate of 70%, based on assuming that mortgage costs amount to one third of income and that they are generally paid off just before retiring.[3]

... and its target level depends on the structure of the overall pension system

The second issue to address is how DC pension plans fit into the overall structure of the country's pension system. The adequacy of retirement income from DC pension plans depends, in part, on the proportion of retirement income coming from public pensions. Consequently, if an adequate retirement income is taken as a 70% replacement rate, and public pensions provide benefits that amount to, say, 45% of final salary,[4] DC pensions may need to provide benefits equal to only 25% of final salary. Alternatively, in countries where DC pensions are the main source of retirement income, they need to provide benefits equal to 70% of final salary.

The replacement rate increases with contributions...

The level of replacement rate varies according to different values of pension parameters (Table I.6.1). Obviously, replacement rates increase with contribution rates. There is a linear positive relationship between contribution rates and replacement rates. Contributions represent the flows into pension plans while retirement income (as measured by the replacement rate) corresponds to the flows out of pension plans. As one might expect, increases in the contribution rate, *ceteris paribus*, lead to increases in retirement income, as the individual will have accumulated more assets at retirement. Table I.6.1 shows this relationship: doubling the contribution rate from 5% to 10% doubles the replacement rate from 25.3% to 50.7%. Equivalently, a 1% increase in the contribution rate will raise the replacement rate 5 ppt (percentage points), *ceteris paribus*.

Table I.6.1. **Replacement rate outcomes for given values of several pension parameters**

Contribution rate	Base case[1]	Rate of return on investments (%)						Life expectancy at retirement (No. of years)				Interest rate (discount rate)	
		5	7	8	9	10	11	10	15	25	30	3.5	5.5
5	25.34	20.44	31.71	40.02	50.92	65.24	84.13	41.65	30.69	22.23	20.24	23.19	27.58
10	50.68	40.88	63.42	80.05	101.84	130.49	168.25	83.31	61.38	44.46	40.47	46.38	55.16
15	76.02	61.32	95.12	120.07	152.76	195.73	251.38	124.97	92.07	66.69	60.71	69.58	82.74

1. The base case corresponds to individuals entering the workforce at age 25, working steadily for 40 years and retiring at age 65. Wages grow annually according to productivity growth of 1.75% and 2% inflation. Returns on portfolio investment are assumed to be 6% annually in nominal terms. Finally, in order to calculate replacement rates, the exercise assumes that at retirement individuals buy an immediate life annuity. The annuity payment is determined by the value of assets accumulated at retirement, life expectancy set at 20 years, and a long-term riskless interest rate of 4.5% at the time of retirement.

Source: OECD calculations.

… at an accelerating rate with the rate of return on investment, and at a decreasing rate with life expectancy

Moreover, the replacement rate increases at an accelerating rate as the rate of return on investment increases. Therefore, for low rates of return on investment, say 6% (base case in Table I.6.1), a 1% increase lifts the replacement rate 6 ppt, while for high rates of return, say 10%, a 1% increase increases the replacement rate as much as 20 ppt (Table I.6.1). This must have been the justification for shifting from defined benefit (DB) to DC pension plans, while at the same time reducing contribution rates. Unfortunately, the idea of obtaining very high rates of return over a long period, such as 35-40 years, may be wishful thinking.[5] The relationship between replacement rates and life expectancy is such that the reduction in replacement rates resulting from higher life expectancy becomes smaller as life expectancy increases. Therefore, future increases in life expectancy will have smaller effects on replacement rates. Finally, an increase in the discount rate of 1 ppt raises replacement rates by 4 ppt, 9 ppt and 13 ppt, depending on the contribution rate.

The contribution needed depends on the number of years contributing, the number of years expected to be in retirement…

The final step in this subsection is to evaluate the amount of wages needed to save for retirement, *i.e.* the contribution rate, to achieve a certain retirement income given changes in the main parameters of pension systems. This contribution effort depends on the rate of return on investments, the number of years contributing, which in turn is determined by the age entering the labour market and the age retiring, and the number of years expected to be spent in retirement, which is determined by life expectancy. The relationship between the number of years contributing and the number of years in retirement is crucial to assess the adequacy of income.

… the return on investment, interest rates, and life expectancy

Varying the parameters of the pension system will change the level of contribution necessary to achieve a certain replacement rate. Table I.6.2 also shows the contribution rate necessary to achieve a target replacement rate of 25%, 50% or 70% at retirement for different rates of return on investment, interest rates, different life expectancy at retirement and different number of years contributing – either by joining the labour market earlier or by postponing retirement.

Table I.6.2. **Contribution rate needed to achieve a target replacement rate given different rates of return on investment, interest rates and life expectancy**

Target RR	Base case[1]	Rate of return on investments (%)					Interest rate – Discount rate				Life expectancy at retirement (No. of years)			
		5	7	8	9	10	2.5	3.5	5.5	6.5	10	15	25	30
25	5.2	6.4	4.1	3.3	2.6	2.0	6.1	5.6	4.8	4.5	3.1	4.3	5.9	6.5
50	10.3	12.8	8.2	6.5	5.1	4.0	12.1	11.2	9.6	8.9	6.3	8.5	11.8	12.9
70	14.4	17.9	11.5	9.1	7.2	5.6	17.0	15.6	13.4	12.5	8.8	11.9	16.5	18.1

1. The base case corresponds to individuals entering the workforce at age 25, working steadily for 40 years and retiring at age 65. Wages grow annually according to productivity growth of 1.75% and 2% inflation. Returns on portfolio investment are assumed to be 6% annually in nominal terms. Finally, in order to calculate replacement rates, the exercise assumes that at retirement individuals buy an immediate life annuity. The annuity payment is determined by the value of assets accumulated at retirement, life expectancy set at 20 years and a long-term riskless interest rate of 4.5% at the time of retirement.

Source: OECD calculations.

Contributions needed fall with higher rate of returns on investment…

The impact on required contributions of changes in the rate of return on investment is higher the lower the rate of return. In this context, for lower rates of return, say 5%, a 1 ppt increase in the rate of return decreases the contribution rate necessary to achieve a target replacement rate of 50% by almost 3 ppt. By contrast, for higher rates of return, say 9%, a 1 ppt increase in the rate of return decreases the contribution rate necessary to achieve a target replacement rate of 50% by 1.3 ppt. Table I.6.2 also shows that the impact on contribution rates is smaller the smaller the target replacement rate (*e.g.* 25%), and *vice versa* for higher target replacement rates (*e.g.* 70%).

… and with higher discount rates…

Higher discount rates reduce the contribution effort. As interest rates increase, the annuity conversion factor falls. As a result of lower annuity conversion factors, the amount of retirement income that an immediate life annuity bought at retirement will provide increases. Comparatively, the impact of a 1 ppt change in interest rates on the contribution effort is smaller than the impact of a 1 ppt change in rate of returns on investment.

… and higher life expectancy, but at a decreasing rate

Increases in life expectancy increase the contribution rate needed to achieve a certain level of retirement income. However, this increase is not linear as the increase in contribution rates needed is lower the higher the life expectancy. For example, looking at Table I.6.2 (second panel), the contribution rate almost doubles when life expectancy doubles from 10 to 20 years, yet it increases only by approximately one third when life expectancy doubles from 20 to 30 years. This is an interesting result because it implies that as life expectancy becomes higher, the contribution effort required to maintain the same target replacement rate falls.

There is a need to put aside 5% to 15% of wages

Thus, depending on the target replacement rate there is a need to put aside a meaningful amount of wages to finance retirement – somewhere between 5% and 15%. Additionally, as life expectancy increases, the contribution effort required to maintain the adequacy of retirement income becomes less taxing.

Lengthening the contribution period by postponing retirement is the more efficient approach to increase retirement income

Adequacy is linked to the relationship between years saving for retirement and years in retirement

A key relationship used to assess the adequacy of retirement income is the number of years savings for retirement relative to the number of years in retirement. The higher this ratio, the higher the contribution effort required to achieve a target replacement rate and *vice versa*. The impact of the length of the period contributing to DC plans or saving for retirement on the contribution rate is negative. The longer the contributing period, the smaller the contribution effort necessary to achieve the same target level of retirement income. Table I.6.3 shows that as people contribute for one or five years longer, the contribution rate needed to keep the same replacement rate – the contribution effort – falls.

Table I.6.3. **Contribution effort given different lengths of the period contributing**

Target RR	Base case[1]	Increase in the length of the period contributing by			
		Joining labour market earlier		By postponing retirement	
		1 year	5 years	1 year	5 years
25	5.2	5.0	4.3	4.8	3.6
50	10.3	9.9	8.6	9.6	7.1
70	14.4	13.9	12.1	13.5	10.0

1. The base case correspond s to individuals entering the workforce at age 25, working steadily for 40 years and retiring at age 65. Wages grow annually according to productivity growth of 1.75% and 2% inflation. Returns on portfolio investment are assumed to be 6% annually in nominal terms. Finally, in order to calculate replacement rates, the exercise assumes that at retirement individuals buy an immediate life annuity. The annuity payment is determined by the value of assets accumulated at retirement, life expectancy set at 20 years and a long-term riskless interest rate of 4.5% at the time of retirement.

Source: OECD calculations.

Years of saving increase by starting to save earlier or by postponing retirement

However, the magnitude of the change in the contribution rate depends on whether the change in the number of years contributing is due to joining the labour market earlier or to postponing retirement. Focusing on the relationship between the number of years contributing and the number of years in retirement, postponing retirement one year affects in the right direction both the numerator – by increasing the number of years saving for retirement – and the denominator – by decreasing the number of years in retirement – reinforcing the positive effect of saving for retirement for one more year. Joining the labour force a year earlier increases only the numerator. Therefore, increases in the number of years contributing for retirement by postponing retirement has a larger impact on contribution rates because the number of years in retirement decreases as well. Assuming 40 years of contributions to finance retirement and a target replacement rate of 50%, increasing the period contributing by one year by postponing retirement reduces the contribution effort by more than ½ ppt from 10.3% to 9.6% (Table I.6.3). Increasing the contribution period by joining the labour market one year earlier requires a contribution effort of 9.9% instead of 10.3%, less than ½ ppt.

III. How can the impact of negative market conditions at the time of retirement be alleviated?

Changing market conditions lead to volatile retirement income from DC plans

Depending on the market conditions at the time of retirement, retirement income from DC pension plans can be quite volatile. The current financial and economic crisis has highlighted the importance of market conditions at the time of retirement for the retirement income from DC pension plans. For example, two people with the same employment histories *i.e.* the same number of years contributing to a DC plan and the same contribution rate, wage growth profile and retirement age, would enjoy very different retirement incomes depending on whether they retired at the end of 2007 *versus* the end of 2008. This difference in retirement income is the result of different market conditions prevailing in these two years.[6]

Guarantees and investment default options may address this volatility

Policy has focused on whether guarantees and default investment options would reduce this volatility in retirement income. The volatility of retirement income due to the timing of retirement has led policy makers and regulators to consider changes in the design of DC pension plans. For example, they are revisiting the appropriateness of introducing guarantees in DC pension plans, in particular guaranteed minimum returns. Additionally, they are examining the benefits of requiring life-cycle strategies as default investment strategies.

Using hypothetical replacement rates from DC plans, this section assesses the magnitude of the market impact and the effectiveness of those measures

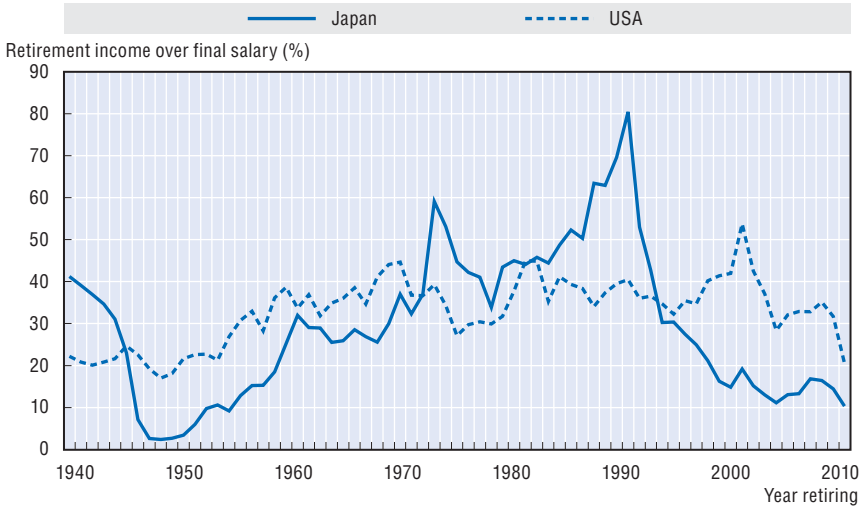
Consequently, this section examines the volatility of retirement income derived from DC pension plans and whether having minimum return guarantees and/or life-cycle investment strategies would have reduced such volatility. For this purpose, this section constructs hypothetical replacement rates for individuals with the same labour histories but retiring in different years from the 1940s until 2008 using historical data on equity and fixed income returns, as well as inflation for Japan and the United States.[7] The following policy issues are addressed: *i)* the magnitude of the impact of the timing of retirement on retirement income; *ii)* whether introducing minimum guaranteed returns and/or a life-cycle investment strategy as an alternative default option would smooth out fluctuations in retirement income; and *iii)* whether individuals would have been better off with a pension system that guarantees at least the growth of wages in nominal terms.[8]

Different market conditions at the time of retirement create a lot of volatility in retirement income from DC pensions

The impact of the time at which people retire on retirement income from DC plans can be quite large

The impact that the time at which people retire has on their retirement income can be quite large. Figure I.6.1 shows the hypothetical replacement rate in DC pension plans of individuals sharing the same work history but retiring in different years and thus being exposed to different market conditions.[9] The first cohort retires in 1940 and the last cohort retires at the end of 2008. As a result of being exposed to different market conditions, two individuals with the same labour histories but

Figure I.6.1. **Hypothetical replacement rates in DC pension plans for Japan and USA**



Notes: Hypothetical replacement rates correspond to cohorts retiring at the age of 65 between 1940 and 2008 after having contributed 5% of their wages steadily over 40 years. Their contributions were invested in a fixed portfolio of 40% in domestic government bonds and 60% in domestic equities. Inflation is actual inflation. People buy a life annuity at retirement priced on the basis of the prevailing long-term government bond yields at the time of retirement and a life expectancy of 20 years.

Source: OECD calculations.

retiring in two different years (*e.g.* 2007 and 2008) would have markedly different replacement rates (see the analysis in Figure I.6.1).

For example, the different market conditions prevailing in 2007 and 2008 could have meant a drop in replacement rates close to 10 ppt

The different market conditions prevailing in 2007 and 2008, *i.e.* the market crash of 2008, could have led to a drop in replacement rates of almost 10 ppt. For example, an individual in the United States lucky enough to have reached retirement age (65 years old) in 2007 would have enjoyed a replacement rate equal to 24%, while the unlucky individual reaching the age of 65 at the end of 2008 would have enjoyed a replace rate of only 15%. Hypothetical replacement rates in Japan would have also been lower in 2008 compared to 2007. In the United States, people retiring in 1999 would have enjoyed the highest replacement rate ever from DC plans, around 39%, while those who reached retirement age just a few years later in 2002 would have enjoyed a replacement rate of 22%, a drop of 17 ppt. It is interesting to note that the large drop in replacement rates in the early 2000s did not produce as much of a backlash against DC pension plans as the fall in 2008. In the early 2000s, replacement rates fell from quite high levels back to previous levels. The high replacement rates of the late 1990s could have been perceived as positive outliers. In comparison, the large drops in replacement rates in 2008 to very low (below average) levels could be seen as negative outliers. The case of Japan is quite noteworthy: hypothetical replacement rates could have fallen as much as 30 ppt back in the early 1990s. But, most importantly, the lost decade of market losses and negative inflation would have had a very negative impact on replacement rates from DC plans. The question that

comes to mind is whether the United States and Europe are heading for a lost decade like Japan in the 1990s, making saving in DC pension plans very unattractive, or whether a strong recovery in the markets will arrive sooner rather than later.

Such large drops and variations could make the difference between adequate retirement income and poverty

Such large drops and variations in replacement rates could make the difference between having an adequate retirement income and living in poverty. Consequently, in order to address this variability in replacement rates due to the timing of retirement, several proposals to redesign DC pension plans have been put forth. They include the introduction of minimum return guarantees and default investment options. An example of the latter is life-cycle investment in which the allocation in risky assets, in this case equities, falls as individuals get closer to retirement age.

Minimum return guarantees reduce the volatility in replacement rates but at a high cost

Volatility could be reduced by introducing minimum return guarantees

One approach to reduce the variability in replacement rates due to the timing of retirement could be to introduce minimum return guarantees. To explore this possibility, Figure I.6.2 shows the same hypothetical replacement rates as before, together with the hypothetical replacement rates for different cohorts retiring at age 65 from 1940 until 2008, when a minimum return guarantee of either 4% or 6% is assumed. Obviously, return guarantees are costly. Therefore, the hypothetical replacement rates incorporating minimum return guarantees also incorporate a "haircut" in good times.[10]

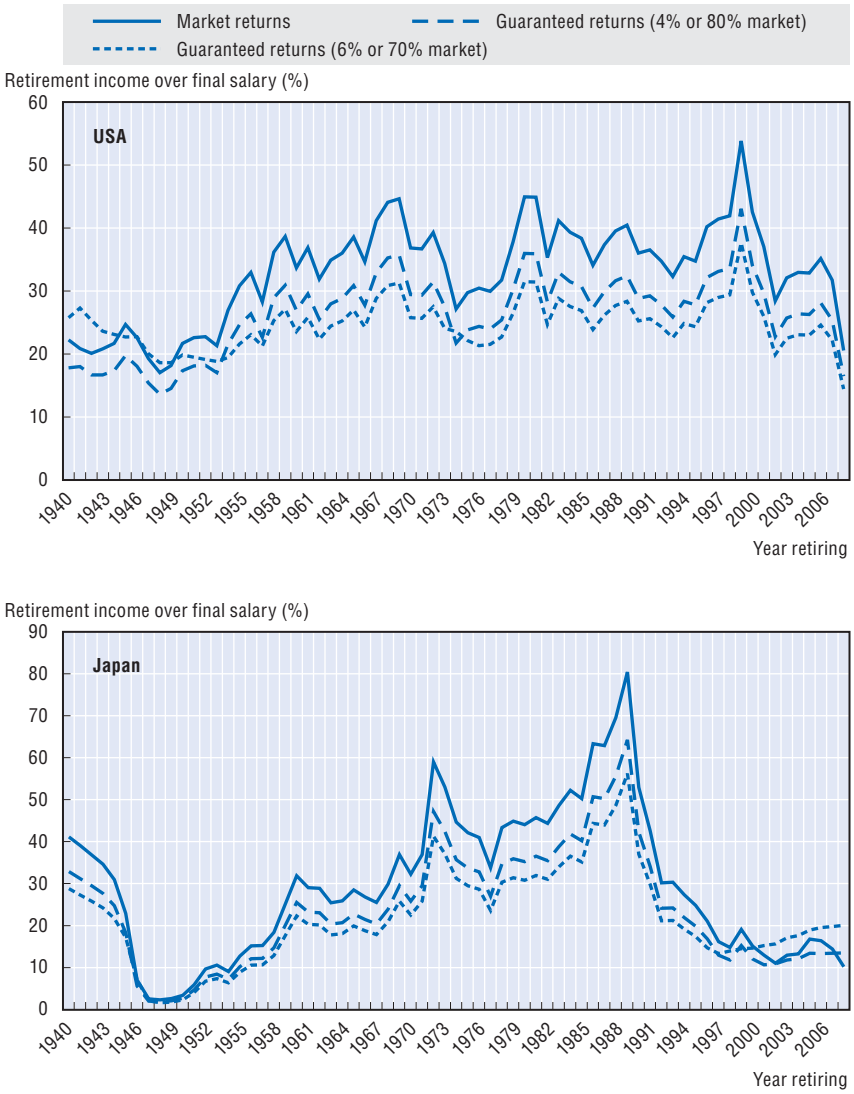
Minimum return guarantees do indeed reduce the volatility in replacement rates

Introducing minimum return guarantees does indeed reduce the volatility in replacement rates. Minimum return guarantees succeed in setting a floor on replacement rates, but this floor will not be binding unless the minimum guaranteed return is set quite high (*e.g.* 6% or higher). The results below show that guaranteed returns of less than 4% would have never yielded replacement rates over the sample period higher than those that could be obtained by a fixed portfolio with 60% invested in equities and 40% in bonds. Guaranteed returns equal to 4% would have provided higher retirement income than the fixed portfolio from 1940 until the early 1950s. Guaranteed returns equal to 6% would have provided a binding floor up to the early 1980s, but would have missed the big upturn in equities over the next 25 years. Replacement rates in 2008 would have been higher in the fixed portfolio allocation than with a guaranteed minimum return of 6% because of the upswing in equities over the previous 25 years.

Yet, only relatively high minimum return guarantees would work

Yet, only relatively high minimum return guarantees would reduce market fluctuations in replacement rates and, at the same time, provide replacement rates somewhat comparable to market replacement rates. Only minimum return guarantees well above the riskless rate of return would work. Unfortunately, only insurers willing to bear more risk than the average market aversion to risk (*i.e.* more than other investors) could

Figure I.6.2. **Hypothetical replacement rates in DC pension plans for Japan and USA with minimum return guarantees**



Notes: Hypothetical replacement rates correspond to cohorts retiring at the age of 65 between 1940 and 2008 after having contributed 5% of their wages steadily over 40 years. Their contributions were invested in a fixed portfolio of 40% in domestic government bonds and 60% in domestic equities. Inflation is actual inflation. People buy a life annuity at retirement priced on the basis of the prevailing long-term government bond yields at the time of retirement and a life expectancy of 20 years.

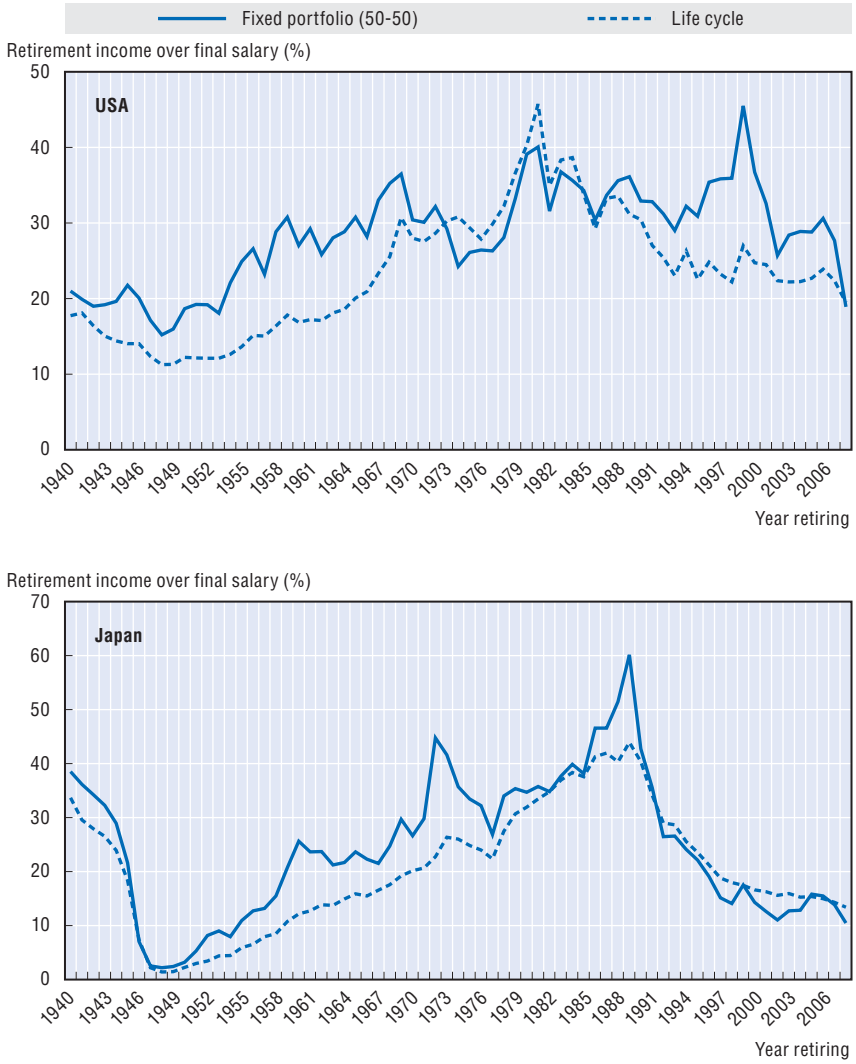
Source: OECD calculations.

guarantee such high guarantee returns, which raises the issue of counterparty risk (Munell, 2009).

An additional guarantee is to provide returns equal to nominal wage growth

An additional guarantee in DC pension plans worth examining is to provide returns equal to nominal wage growth. The theoretical internal rate of return of pay-as-you-go (PAYG) financed pension arrangements is nominal wage growth. However, due to political increases in benefit rights, the rate of return on PAYG plans may in practice be higher. Nevertheless, it is worth comparing the hypothetical replacement rates of

Figure I.6.3. **Replacement rates with life-cycle and fixed allocation investment strategies**



Notes: Replacement rates shown correspond to cohorts retiring at the age of 65 between 1940 and 2008 after having contributed 5% of their wages steadily over 40 years. Their contributions were invested in a fixed portfolio of 50% in domestic government bonds and 50% in domestic equities. Inflation is actual inflation. People buy a life annuity at retirement priced according to the prevailing long-term interest rates of government bonds at the time of retirement and a life expectancy of 20 years.

Source: OECD calculations.

DC plans based on market returns for a fixed portfolio with the hypothetical replacement rates of a DC plan based on returns equal to nominal wage growth (Figure I.6.3).

Theoretical replacement rates from DC plans returning nominal wage growth would have been lower except in periods of high wage inflation (1970s)

Hypothetical replacement rates from DC plans returning nominal wage growth on investments would have failed to match those of DC pension plans based on market rates. As a result of inflation and wage moderation since the mid 1980s, replacement rates actually would have been higher in DC plans yielding market returns than in DC plans yielding returns equal to nominal wage growth. Only in the era of high inflation and wage growth (the 1970s) would the theoretical replacement rates of

DC plans matching nominal wage growth have been higher than those of DC plans earning market returns. Therefore, unless market returns are dismal (*i.e.* a long-lasting depression, Japan 1990s style) or wage inflation is high (obviously not a policy to endorse), market conditions may deliver higher replacement rates than DC plans based on nominal wage growth.

Default options like life-cycle investment policies would have succeeded in reducing the magnitude of the impact of the timing of retirement

Life-cycle investment strategies would have reduced the impact of timing

Life-cycle investment strategies would have reduced the magnitude of the impact of the timing of retirement when compared to fixed portfolio strategies but would have failed to fully remove it (Figure I.6.3).[11] For example, when using life-cycle investment strategies, the replacement rate of persons in the United States who would have retired at the end of 2008 would have been 19% compared to 22% in 2007, just a 3 ppt drop. Conversely, the drop in replacement rate when assuming a fixed portfolio investment strategy would have been from 28% to 19%.[12]

However, they may have resulted in lower replacement rates during market upswings

However, life-cycle investment strategies may have resulted in lower replacement rates for those individuals who would have retired during the market upswing. Additionally, life-cycle investment strategies may tend to reduce the average replacement rate, increasing the contribution effort needed to achieve the same target replacement rate than with a fixed portfolio strategy.[13]

The threat posed by varying market conditions to retirement income can be alleviated by guarantees and life-cycle investment strategies

This section has shown that the threat posed by varying market conditions at the time of retirement to retirement income from DC pensions is not negligible. The difference in replacement rates can be quite large, for example, 10 ppt when comparing 2008 with 2007. Minimum return guarantees and life-cycle investment strategies succeed in smoothing the fluctuations in replacement rates but at a cost. The level of the minimum guarantee has to be relatively high, which implies high costs and raises questions as to who would be willing to offer those guarantees. The use of life-cycle investment strategies means losing out on market upswings. Finally, a hypothetical DC pension plan paying a return equal to the growth in nominal wages would have failed to perform better than a DC pension plan fully exposed to market returns with a portfolio 60% invested in equities and 40% in bonds, except in periods of high inflation. In conclusion, countries where the main source of retirement income comes from DC pensions could introduce life-cycle investing as the default investment option to smooth out the fluctuations in replacement rates. Even though life-cycle strategies may not be optimal from a purely investment return point of view, they may achieve the goal of keeping replacement rates from falling too much when market conditions worsen.

IV. How can retirement income be protected during the payout phase?

The lack of inflation indexation could reduce the purchasing power of retirement income by as much as one third in 20 years

Private pensions may not always be indexed to inflation

The purchasing power of pension benefits during retirement depends on whether they are indexed to inflation. In general, annuity products provide a constant periodic stream of income in nominal terms. This constant amount of pension benefits will buy less as prices increase. Consequently, with inflation, the purchasing power of fixed pension benefits falls during retirement.[14] Alternatively, public pension benefits are indexed to inflation in order to maintain the purchasing power of retirees. Fortunately, there are annuity products that provide inflation-indexed pension benefits such as inflation-indexed life annuities.[15]

The lack of inflation indexing leads to pension purchasing power losses of as much as a third in just 20 years

Assuming that pension benefits from DC plans are not indexed to inflation, the purchasing power of those benefits could fall by as much as one third in just 20 years.[16] Replacement rates measure retirement income relative to final salary. Therefore, for a constant periodic payment, the replacement rate will remain constant during retirement. However, this fixed amount of retirement income will not buy the same amount of goods because of inflation. As a result, a constant replacement rate hides a loss of purchasing power. Most central banks that target a specific inflation rate have a 2% target. But if actual inflation were at this level on average over a 20 year period, the purchasing power of a retirement income fixed in nominal terms (*i.e.* a constant nominal replacement rate during retirement) could fall by as much as one third (Table I.6.4). The drop could be as much as 50% over a 35 year period. If inflation were to be 1 ppt higher, *i.e.* 3%, the loss of purchasing power could be as much as 45% in 20 years (Table I.6.4).

Table I.6.4. **Purchasing power of retirement income during retirement**

	Age								
	65	70	75	80	85	90	95	100	105
Fixed retirement income (% final salary)	25	25	25	25	25	25	25	25	25
Purchasing power (inflation = 2%)	100.00	90.57	82.03	74.30	67.30	60.95	55.21	50.00	45.29
Fixed retirement income (% final salary)	25	25	25	25	25	25	25	25	25
Purchasing power (inflation = 3%)	100.0	86.26	74.41	64.19	55.37	47.76	41.20	35.54	30.66
Inflation-indexed retirement income (% final salary)	25.0	27.6	30.5	33.6	37.1	41.0	45.3	50.0	55.2
Purchasing power (inflation = 2%)	100.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: OECD calculations.

To avoid such a loss, pension benefits from DC plans need to be indexed to inflation

Therefore, to avoid having retirement income from DC pension plans lose purchasing power during retirement, it is advisable to index it to inflation. However, this recommendation depends on the country context (Antolin, 2008). In countries where retirement income from DC plans is the main source of income to finance retirement, the need to index to inflation is greater than in countries where most of retirement income comes from public pensions, which are already indexed to inflation.

However, indexing pension benefits to inflation requires a bigger saving effort

However, indexing pension benefits to inflation requires a bigger saving effort. The saving effort (*i.e.* the contribution rate needed) to maintain the same target replacement rate independently of whether pensions are indexed to inflation needs to be higher when indexing pension benefits to inflation (in order to keep purchasing power constant). Table I.6.5 shows that, as a result of indexing pension benefits to inflation, keeping the target replacement rate at 25% with an inflation rate of 2% requires the individual to contribute 1 ppt more every year. For target replacement rates of 50% and 70%, the contribution efforts are 1.9 ppt and 2.6 ppt higher, respectively.

Table I.6.5. **Increase in contribution rates when pension benefits are indexed to inflation**[1]

	Replacement rate		
	25	50	70
Increase in contribution rates (percentage points)	0.93	1.86	2.61

1. This is the increase in contribution rates necessary to maintain replacement rates during the first year in retirement equal, independently of whether pension benefits are indexed to inflation or not.

Source: OECD calculations.

Combining life annuities with programmed withdrawals allows for a balance between flexibility, liquidity and bequest motives and protection from longevity risk

There are different ways of allocating assets accumulated to finance retirement

There are different ways of allocating assets accumulated to finance retirement (Antolin, 2008). Whether assets accumulated at retirement are used to buy a life annuity (fixed or variable), to finance a programmed withdrawal (fixed or variable), or any combination of these options may affect retirement income. This section examines the impact on retirement income of five different payout options by looking at the retirement income relative to the final salary (*i.e.* the replacement rate) that retirees would receive at different ages (*i.e.* the age profile of replacement rates), as well as the accumulated retirement payments that would be received by retirees at each year in retirement (*i.e.* the age profile of accumulated payments).

Assets accumulated at retirement could be used to buy life annuities…

Assets accumulated at retirement could be used to buy life annuities. The results in the previous two sections are based, in part, on the assumption that assets accumulated in pension accounts at retirement are used to buy an immediate *fixed life annuity*. Consequently, retirement savings are transformed into a periodic constant stream of income to finance retirement. This stream of income can be expressed in terms of final salary, which constitutes the replacement rate. However, Section III showed that fixed life annuities suffer a major potential problem: the purchasing power of that constant periodic stream of income falls over time as long as there is positive inflation. To overcome this weakness and maintain constant purchasing power, the individual could use the assets accumulated at retirement to buy an *inflation-indexed life annuity*.

… and also to finance programmed withdrawals

Assets accumulated at retirement could also be used to finance programmed withdrawals, which can take several forms. A *fixed programmed withdrawal* pays a periodic constant stream of income for a certain period. It can be calculated by dividing the assets accumulated at retirement by an annuity factor corresponding to an annuity certain.[17] Alternatively, those assets could be used to finance a *variable programmed withdrawal* that pays a variable periodic stream of income. The periodic stream of income is variable because, every year, the amount of assets remaining, adjusted for portfolio gains the previous year, is divided by a changing life expectancy to obtain that year's payment. For example, one might assume the life expectancy at age 65 to be 20 years, that is, the person may live up to the age of 85. However, after reaching 85 the individual's life expectancy may be expected to be eight more years, bringing the age the person may be expected to live to 93. Both programmed withdrawals allow retirees to benefit from gains in portfolio investments. Moreover, as long as returns on investment are over and above inflation, both programmed withdrawals protect retirees from purchasing power losses resulting from inflation.

Life annuities provide protection from longevity risk, while programmed withdrawals allow for flexibility, liquidity and bequests

Life annuities provide protection from longevity risk, while programmed withdrawals allow for flexibility, liquidity and bequests. Buying a life annuity at retirement is an irreversible decision under which retirees lose ownership of their accumulated assets, but they offload longevity risk to the annuity provider. Joining a programmed withdrawal permits retirees to keep control of their accumulated assets so that if they were to pass away earlier than expected, the remaining balances go to their spouses or heirs. However, under a programmed withdrawal, retirees bear the longevity risk. Additionally, in the case of a fixed programmed withdrawal, the downside risk of market returns falls on the pension fund, whereas the retiree bears the downside risk in the case of a variable programmed withdrawal. Finally, all payout options provide relative protection from inflation, apart from fixed life annuities. However, only inflation-indexed life annuities provide full guaranteed protection against inflation.

An alternative approach is to combine a deferred life annuity and a programmed withdrawal…

An alternative approach to structure the payout phase of DC pension plans is to combine a deferred life annuity and a programmed withdrawal. The deferred life annuity is bought at retirement but starts paying pension benefits at a later stage (*e.g.*, age 85). The balance remaining after buying the deferred life annuity can be used to finance a programmed withdrawal for the intermediate period (*e.g.* from the age of 65 to 84). The goal is to have protection from longevity risk through the deferred annuity and to have flexibility, liquidity and the bequest option during the first years after retirement.[18]

… which allows striking a balance between protection from longevity risk on one side, and flexibility, liquidity and bequests on the other side

When choosing between different payout options, there is a balance to strike between protection from longevity risk on one side and flexibility, liquidity and bequests on the other. Assuming that the main criterion is protection from longevity risk, programmed withdrawals can be removed from the picture and only one of the other three payout options including a life annuity fits the criteria. However, when the bequest motive has an important weight in a person's decision-making process, then programmed withdrawals look attractive. Programmed withdrawals also look attractive when a time preference for up-front higher retirement payments is a factor under consideration.

Assessing each option…

What follows is the assessment of the choice to be made between different payout options based on an examination of the replacement rates at different ages and the accumulated pension payments at each year in retirement. This age profile of replacement rates and accumulated pension payments allows the assessment of the benefits and drawbacks of each of the payout options, highlighting the trade-off between protection from longevity risk and bequests. The paper looks at five payout options – fixed and variable life annuities, fixed and variable programmed withdrawals, and the combination of a deferred life annuity and programmed withdrawal – which are designed so that their pension wealth is the same. That is, the present value of future pension payments, weighted by the probability of being alive at each age, is the same for all five payout options.[19]

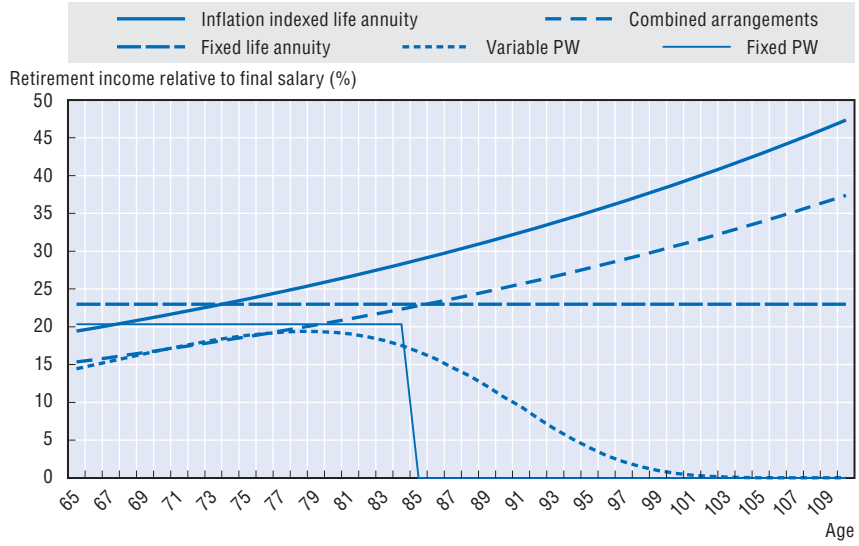
… retirees may be better off by buying life annuities if the focus is only on the replacement rate at different ages…

Retirees may be better off buying life annuities if the focus is only on the replacement rate at different ages. Figure I.6.4 shows retirement payments from each of the five payout options at different ages relative to final salary, that is, the age profile of replacement rates. Life annuities provide a better deal for pensioners than programmed withdrawals. Replacement rates from the inflation-indexed life annuities are larger than for any other payout option, except for the fixed life annuity during the first years in retirement.

… but few retirees buy a life annuity at retirement…

Despite the obvious benefits, few retirees buy a life annuity at retirement.[20] This "annuity puzzle" is easily explained considering that retirees also attach value to having more money during the early years of retirement to face contingencies (flexibility and liquidity) and that they value the possibility of leaving a bequest if they were to pass away early. Figure I.6.5 shows the amount of accumulated retirement payments that an individual would have received at each year in retirement were he or she to pass away that year. Under a programmed withdrawal, at the moment of death, the balances remaining in each person's account go to the spouse or other heirs. As a result, when passing away during the first 15 years of retirement, payout options with programmed withdrawal arrangements (*e.g.* fixed and variable programmed withdrawals and combined arrangements) are better value.[21] Yet, life annuities become better value thereafter.[22]

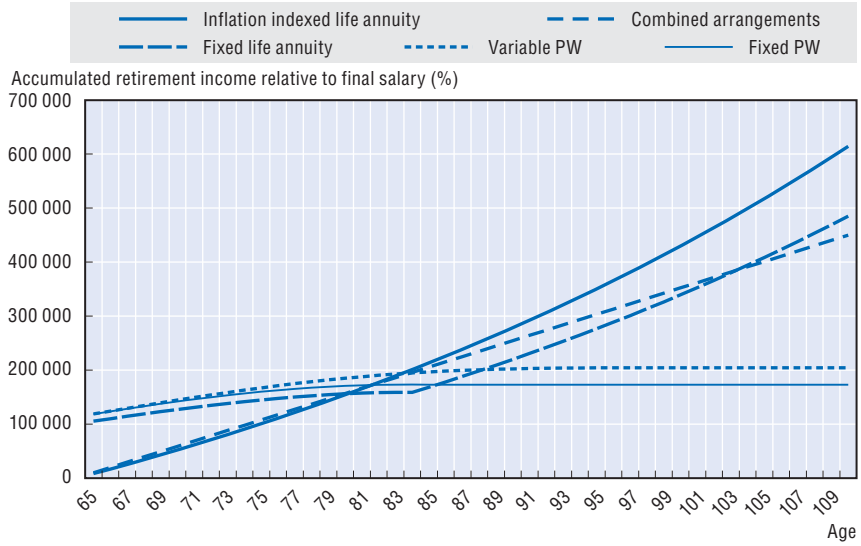
Figure I.6.4. **Retirement income relative to final salary for different payout options**



Notes: Calculations disregard any difference in costs between the different payout options. Assuming that the cost of providing life annuities is higher than joining a programmed withdrawal, the two life annuity curves would shift down to the right. This will increase the cut-off age below which programmed withdrawals are a better value than life annuities.

Source: OECD calculations.

Figure I.6.5. **Accumulated retirement income relative to final salary for different payout options**



Notes: Calculations disregard any difference in costs between the different payout options. Assuming that the cost of providing life annuities is higher than joining a programmed withdrawal, the two life annuity curves would shift down to the right. This will increase the cut-off age below which programmed withdrawals are a better value than life annuities.

Source: OECD calculations.

... because if people were to pass away before the average life expectancy, programmed withdrawals might be better value

There is a point in time during retirement before which bequests make programmed withdrawals better value if individuals were to pass away during that period. This cut-off age is just below the average life expectancy. As retirees get closer to the average life expectancy, the benefits brought about by having the option of leaving bequests dwindle away and the benefits of life annuities, a pension for life, become more relevant. Consequently, after that cut-off age, life annuities become better value. People whose life expectancy is below that cut-off age may therefore be worse off giving their money "away" to annuity providers and thus subsidising those people with a higher life expectancy. Using French life expectancy tables for 2006, the probabilities of surviving until the ages of 80 and 85 having reached the age of 65 are 64% and 44%, respectively.[23] Based on these percentages, somewhere between 50% of the people reaching retirement may be better off joining a programmed withdrawal.

Combining a deferred life annuity with a programmed withdrawal may be the best compromise as it provides protection from longevity risk, flexibility, liquidity and room for bequests

Combining a deferred life annuity with a programmed withdrawal may be the best compromise as it provides protection from longevity risk, flexibility, liquidity and room for bequests. When protection from longevity risk is the overriding concern, life annuities are superior (Figure I.6.5), in particular, inflation-indexed life annuities.[24] When the main goal is to leave bequests and have higher retirement income upfront, programmed withdrawals and combined arrangements seem to work better than life annuities alone. Combined arrangements may be the best compromise as they provide flexibility, liquidity and the ability to leave bequests during the first years thanks to the programmed withdrawal component, and protection from longevity risk thanks to the deferred annuity. Figure I.6.5 shows that they offer better value than life annuities during the first 15 years of retirement and better value than programmed withdrawals thereafter.

V. Main conclusions and policy recommendations

Having examined the impact of changes in key pension parameters on retirement income from DC pension plans...

This paper has examined the impact of changes in key pension parameters on retirement income from DC pension plans. It has looked at parameters such as contributions, length of the period contributing and the period in retirement, investment returns, inflation, interest rates and life expectancy. The paper has also assessed the risk associated with varying market conditions at the time of retirement. Two individuals with identical work histories could end up with markedly different retirement incomes just because they happen to retire in two different years with different market conditions. In this context, the report has also investigated whether different policy proposals *e.g.* minimum guarantees and life-cycle default strategies could be successful in smoothing out fluctuations in retirement income resulting from those risks. Finally, the report looked at how inflation and different arrangements during the payout phase may affect retirement income.

… the conclusion is that comprehensive measures are needed to deliver adequate and stable retirement incomes

The main conclusions suggest that in order to deliver adequate retirement income from DC pension plans with some degree of certainty there is a need for comprehensive measures, including:

1. Ensuring people save a meaningful amount of their wages every year for retirement. The contribution rate should be between 5% and 15%, depending of the target replacement rate, 25% or 70%, respectively.
2. Increasing the length of the contributing period by postponing retirement in order to raise replacement rates.
3. Having pension benefits indexed to inflation to avoid purchasing power losses during retirement.
4. Setting default life-cycle pension funds to smooth volatility in retirement income from DC pension plans caused by varying market conditions at the time of retirement.
5. Using assets accumulated to buy life annuities may be a better arrangement when longevity risk is the overriding concern, while programmed withdrawals are better when bequest is the driving goal. Combining a deferred life annuity bought at the time of retirement that starts paying at later ages (*e.g.* at the age of 85) with a programmed withdrawal during the intermediate period strikes a nice balance between protection from longevity risk on one hand and liquidity, flexibility and bequests on the other. These combined arrangements provide flexibility, liquidity and bequests during the first years of retirement and protection from longevity risk thereafter.

Notes

1. The analysis in this paper is based on a deterministic approach. Antolin (2010b) addresses the impact on retirement income and the risk of a shortfall when considering those parameters that fall outside the control of individuals, employers and policy makers: investment return, inflation, discount rate and life expectancy. It is important to assess the impact of this uncertainty using stochastic modelling, as that paper does.
2. For example, as replacement rates are calculated at the time of retirement, they fail to signal problems of declining purchasing power or poverty as people age.
3. This target replacement rate may have to be higher for low-income people, for example 100%.
4. This is approximately the un-weighted average replacement rate from public pensions in OECD countries (OECD, 2009).
5. The *Crédit Suisse Global Investment Returns Yearbook* 2009 (Dimson *et al.*, 2009) reports nominal equity, bond and bill returns of 9.2%, 5.2% and 4% in the United States for 1900-2008. The average rate of return for a hypothetical portfolio allocated 60% to equities, 25% to bonds and 15% to bills for all the 40-year periods from 1900 to 2009 would have been 8%.
6. The stock market crashed in 2008, greatly reducing returns on equities. Interest rates on long-term bonds were lower, thereby reducing returns on fixed income instruments and increasing annuity factors. Meanwhile inflation also fell. As a result, assets accumulated in DC plans lost value (how much depended on equity allocations) and could only afford lower annuity payments. Moreover, annuity payments also fell as a result of higher annuity factors resulting from lower long-term interest rates.
7. Results for France and the United Kingdom are available upon request (Antolin, 2010a). Additionally, we have data for several other countries (Australia, Belgium, Canada, Denmark, Germany, Ireland, Italy, South Africa, Spain, Sweden, Switzerland, Europe and "world"). Therefore, we could reproduce the same analysis for those countries.
8. PAYG-financed pension arrangements provide, in theory, a rate of return on contributions equal to the rate of growth in nominal wages (generally called internal rate of return). However, in practice, due to political meddling, the internal rate of return of a PAYG-financed pension system can be quite different from the growth rate of nominal

wages. This section examines only how much a guarantee equivalent to the theoretical internal rate of return of public pensions would have smoothed out the fluctuation in the retirement income from DC pension plans.

9. The impact of the timing of retirement on retirement income is measured by the ratio of retirement income to the last wage (*i.e.* replacement rate). The exercise assumes that individuals enter the workforce at age 25, work steadily for 40 years and retire at age 65. They contribute 5% of wages each year to a pension account investing 60% in equities and 40% in bonds. Additionally, the exercise assumes that wages grow 2% annually in real terms, and it uses equity return (which includes dividends) and government bonds return indices from *Crédit Suisse Global Investment Returns Yearbook* 2009 (Dimson *et al.*, 2009) to calculate returns on portfolio investment. Finally, in order to calculate replacement rates, the exercise assumes that at retirement individuals buy an annuity. The annuity payment is determined by the value of assets accumulated at retirement, life expectancy set at 20 years and the long-term riskless interest rate prevailing at the time of retirement, given by long-term government bonds yields.

10. The "haircut" is introduced as a percentage of actual market returns. For example, for the 4% guaranteed return, the haircut is assumed to be 20% of the actual market return. Consequently, 20% is the cost of the guarantee.

11. Under the actual life-cycle investment strategy, the allocation in equities decreases linearly with the age of the individual, reaching 0% at the time of retirement. The allocation in equities decreases from an initial portfolio of 100% in equities. Inversely, the allocation in government bonds increases from an initial allocation of 0% to 100%. This life-cycle allocation has the same average exposure to equities that the fixed portfolio 50% in equities and 50% in bonds used for comparison.

12. The same numbers for Japan are 14.3% to 13.4% for the life-cycle strategy and 13.8% to 10.4% for the fixed portfolio strategy.

13. The stochastic analysis of uncertainty about investment returns, interest rates, inflation and life expectancy examined in Antolin (2010b) would clearly show the costs in terms of contribution effort of life-cycle investment strategies.

14. An additional problem for retirees with low income is that they may fall below the poverty threshold as they age. The average national income increases following inflation plus the growth in productivity gains. Consequently, if retirement income is not adjusted for inflation and productivity growth, retirement income may fall below the relative income poverty threshold over time.

15. Inflation-indexed life annuities exist in the UK annuity market but they fail to attract much demand. Inflation-indexed life annuities are generally more costly than traditional life annuity products.

16. Replacement rates measure retirement income relative to final salary. Therefore, for a constant periodic payment, the replacement rate will remain constant during retirement. However, this fixed amount of retirement income will not buy the same amount of goods because of inflation. As a result, a constant replacement rate hides a loss of purchasing power.

17. An annuity certain is an annuity that pays a periodic constant stream of income for a fixed number of years (*e.g.* 20 years). After that period, it does not pay anything.

18. The combined deferred life annuity and programmed withdrawal is designed by calculating the annuity factor of an inflation-indexed life annuity using the discount weight factors from the age of 85 onwards but evaluated from the age of 65. This will determine the deferred annuity premium (11.2% of assets at retirement) and the annuity payments from the age of 65 onwards. The remainder of the assets are used to finance a variable inflation-adjusted programmed withdrawal so that after the last payment at the age of 84 there is no balance left. Moreover, the difference between the last programmed withdrawal payment (at the age of 84) and the first payment from the life annuity (at the age of 85) is the inflation adjustment.

19. The calculations for each payout option abstract from costs. This has implications for the analysis discussed later. When calculating the pension wealth of each payout option, programmed withdrawals are not weighted by the probability of surviving at each age because in the event of death the balance is left to heirs.

20. In Chile, as of 2008, only 56.5% of retirees opted for a life annuity instead of a programmed withdrawal.

21. The fixed programmed withdrawal is better only in the first year of retirement. Thereafter, it is always dominated by the variable programmed withdrawal.

22. The inflation-indexed life annuity provides a higher replacement rate than the fixed life annuity or the combined arrangements (Figure I.6.4). However, focusing on accumulated retirement payments at different ages (Figure I.6.5), the fixed life annuity is superior to the inflation-indexed life annuity during the first years of retirement, but it is dominated by the combined arrangements, and the inflation-indexed life annuity at later ages.

23. Average life expectancy for males is around 80-83 years after the age of 65.

24. Supply of inflation-indexed life annuities at reasonable prices may be a problem as these annuity products may be costly.

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PART II

Debt Management and Bond Markets

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The Surge in Borrowing Needs of OECD Governments: Revised Estimates for 2009 and 2010 Outlook

by
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OECD governments are facing ongoing, unprecedented challenges in raising smoothly large volumes of funds at lowest possible cost, while balancing refinancing-, repricing- and interest-rate risks. Amidst continued uncertainty about the pace of recovery as well as the timing and sequencing of the steps of the exit strategy, gross borrowing needs of OECD governments are expected to reach almost USD 16 trillion in 2009, up from an earlier estimate of around USD 12 trillion. The tentative outlook for 2010 shows a stabilising borrowing picture at around the level of USD 16 trillion.

A looming additional challenge is the risk that when the recovery gains traction, yields will start to rise. Although there are signs that issuance conditions are becoming tougher, most OECD debt managers have been successful in financing the surge in funding needs. Less successful auctions can therefore best be interpreted as "single market events" and not as unambiguous evidence of systemic market absorption problems.

The future could become more challenging though, given that rising issuance is occurring in tandem with increasing overall debt levels and debt service costs. In response, sovereign debt managers, with the essential support of the fiscal authorities, need to implement a timely and credible medium-term exit strategy to avoid future "crowding out" and systemic issuance problems, while reducing government borrowing costs.

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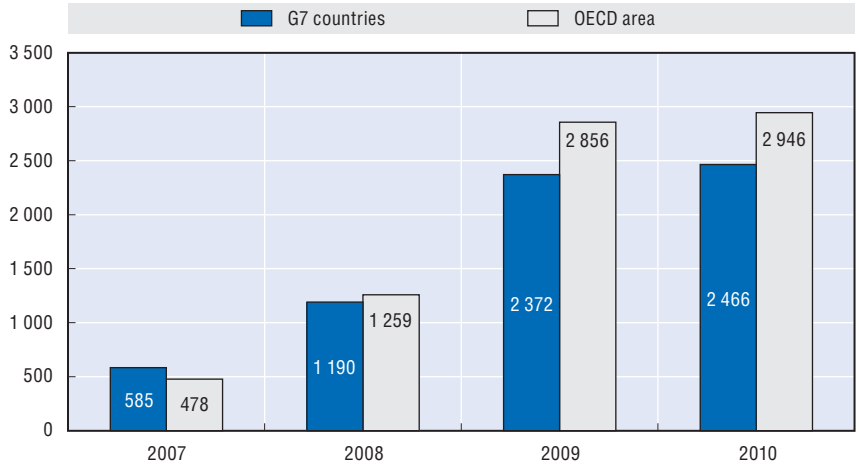
I. A Challenging issuance environment: A surge in budget deficits, borrowing needs and debt

Gross borrowing by governments is expected to reach almost USD 16 trillion in 2009

Amidst a still highly uncertain economic outlook with increasing budget deficits (Figure II.1.1), gross borrowing needs of OECD governments have increased explosively and are expected to reach almost USD 16 trillion in 2009, up from an earlier estimate of around USD 12 trillion. The tentative outlook for 2010 shows a stabilising borrowing picture, but at the level of USD 16 trillion as well. In this note we are making a policy distinction between funding strategy and borrowing needs. Gross borrowing requirements are calculated on the basis of budget deficits and redemptions, while the funding strategy entails decisions how requirements are going to be financed using different instruments (*e.g.* long-term, short-term, nominal, indexed, etc.) and distribution channels.[1] Calculating short-term gross borrowing requirements is not without complications. Using a new uniform method for measuring short-term gross borrowing needs across different OECD jurisdictions shows a similar development for 2009-10, though at lower levels.[2]

Figure II.1.1. **Fiscal deficits in G7 countries and the OECD area**

In USD billion



Source: *OECD Economic Outlook 86 Database*, November 2009.

Borrowing needs have increased rapidly in response to soaring costs of financial support schemes and other crisis-related expenditures as well as recession-induced falls in tax income. Many OECD governments are facing a significant increase in expected deficits this year due to the fiscal fall-out of a recession that is worse than first anticipated and the financial

consequences of resolving banking crises. In 2010, the OECD area-wide fiscal deficit is projected to peak at a post-war high of around 8.25% of GDP.[3]

For the time being, upward pressures on yields are tempered by several factors

Delegates from the OECD Working Party on Public Debt Management (WPDM) confirmed that many DMOs[4] are confronted with dramatically increased borrowing needs.[5] As a result, sovereign issuers need to address the consequences of increased competition in raising funds from markets, leading to higher expected borrowing costs. A looming additional challenge is the risk that when the recovery gains traction and risk aversion falls further, yields will start to rise. For the time being, several factors are offsetting the trend towards higher yield, in particular high unemployment and weak output, low official interest rates and many investors continuing to seek safe, liquid instruments.

Less successful auctions are no evidence of systemic market absorption problems

Issuance conditions have worsened in some markets with reports about weaker demand at auctions, leading to postponed, failed or cancelled auctions. Thus far, these less successful auctions can best be interpreted as "single market events" and not as unambiguous evidence of systemic market absorption problems.

However, the future trend could be more challenging, given that rising issuance is occurring hand in hand with increasing overall debt levels. In response, several DMOs have adopted changes in issuance procedures and techniques.[6] Although fund raising strategies have become more flexible and somewhat more opportunistic, OECD debt managers remain committed to maintaining a transparent debt management framework so as to minimise medium-term borrowing costs.

A credible medium-term exit strategy is needed to avoid future "crowding out" and issuance problems

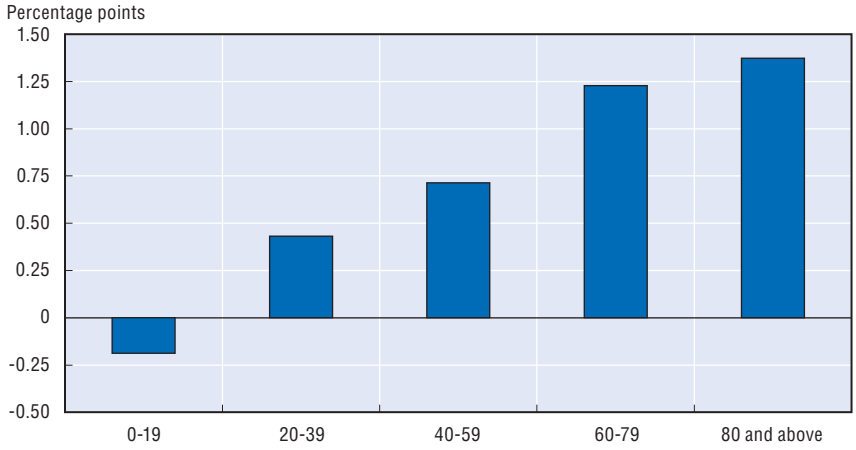
In addition, sovereign debt managers, with the essential support of fiscal consolidation policies, need to prepare and implement a timely and credible medium-term exit strategy to avoid future "crowding out" (Figure II.1.2) and systemic issuance problems.

The main objective of this second "OECD Sovereign Funding Outlook" is to provide an overview of the trends and recent developments associated with the strong increase in sovereign borrowing needs. To that end, the OECD has circulated a survey among members of the WPDM. The responses (reported in aggregate form below) have been used to calculate (estimates of) total gross and net borrowing requirements of OECD governments, and the share of short-term debt issuance in total gross issuance.

II. Overview funding outlook in the OECD area

Estimates of total gross funding (borrowing) requirements refer in this paper to Total Marketable Issuance by the central government. These estimates will be presented in aggregate form for the following groupings of OECD sovereign borrowers: *a)* euro area; *b)* other Europe; *c)* Asia-Pacific OECD; *d)* North America; and *e)* emerging (EM) OECD.

Figure II.1.2. **Spread between long-term and short-term interest rates *versus* gross government debt in % of GDP**



Note: Bars represent average across all OECD countries for which data are available over the period 1994 to 2008. Short-term interest rates are typically rates on 3-month Treasury bills and long-term interest rates those on 10-year government bonds.

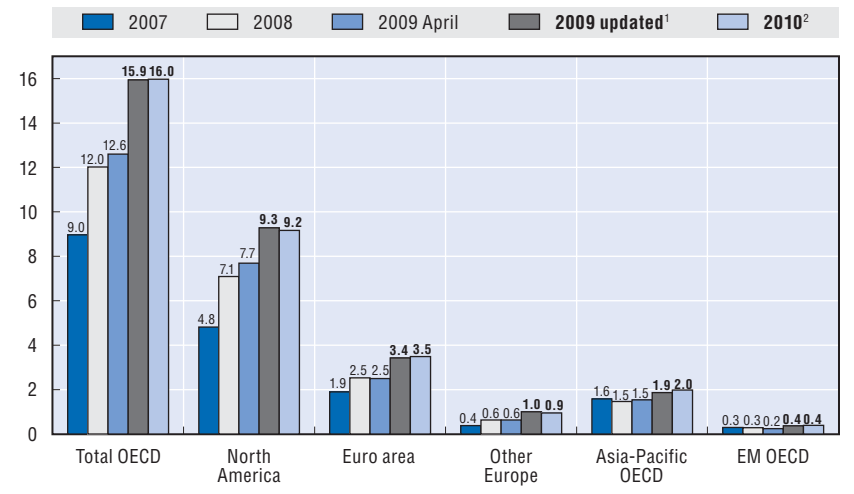
Source: *OECD Economic Outlook 86 Database*, November 2009.

Gross borrowing for 2009 and 2010 is estimated at around USD 16 trillion

Figure II.1.3a shows that gross borrowing needs for the OECD area increased from USD 9 trillion in 2007 to around USD 12 trillion in 2008, while a further increase to almost USD 16 trillion is expected for this year. The tentative outlook for 2010 shows a stabilising borrowing picture at around the same level. Net borrowing requirements have increased sharply from around USD 500 billion in 2007, to almost 2 trillion in 2008. This trend is expected to continue in 2009, where net funding requirements are estimated to be more than USD 3.5 trillion. The outlook for 2010 shows a slight decline (Figure II.1.3b).

Figure II.1.3a. **Gross marketable issuance in the OECD area**

In USD trillion

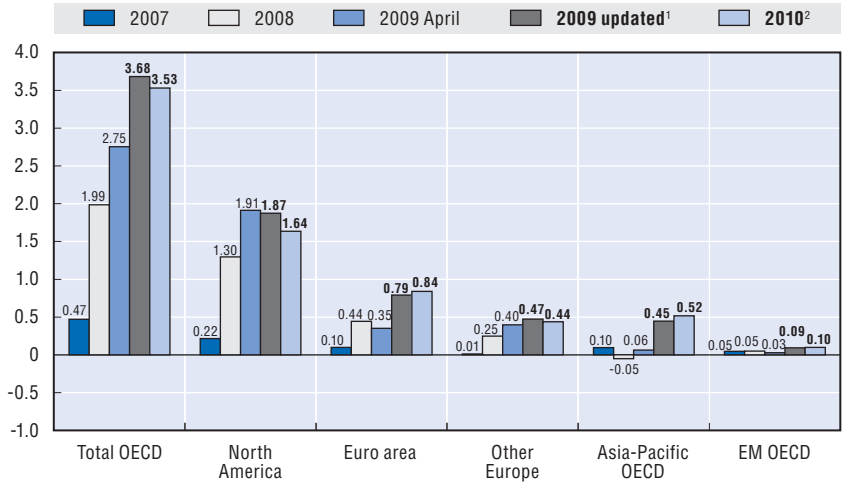


1. Projections updated as of end of November.
2. Projections and estimates.

Source: Survey by the OECD Working Party on Debt Management; OECD staff estimates.

Figure II.1.3b. **Net marketable issuance in the OECD area**

In USD trillion



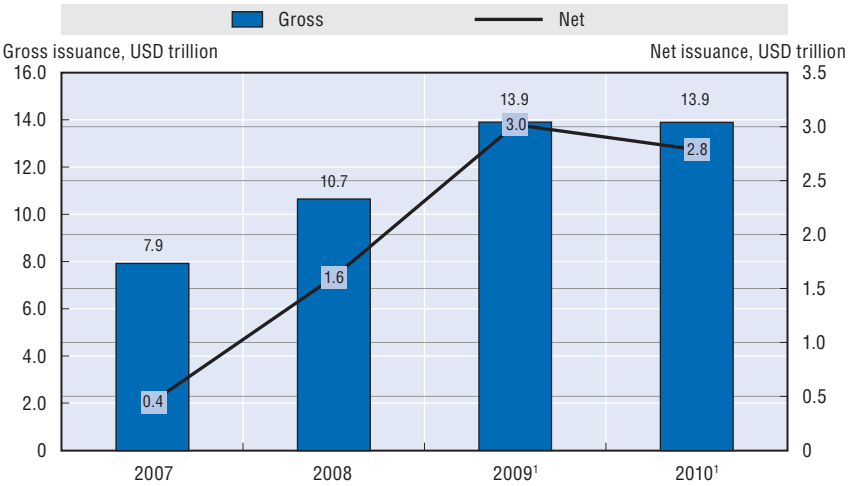
1. Projections updated as of end of November.
2. Projections and estimates.

Source: Survey by the OECD Working Party on Debt Management; OECD staff estimates.

The 2009-10 picture for the G7 countries mirrors broadly the developments for the OECD area as a whole, with gross borrowing estimated for 2010 to remain at about the same level as in 2009 and net borrowing projected to decrease slightly in 2010 (Figure II.1.3c). However, the 2010 funding outlook continues to be surrounded by a very high degree of uncertainty about the pace and strength of the recovery, the timing of the different exit measures and the ultimate budgetary costs of supporting the financial sector.

Figure II.1.3c. **Gross and net marketable issuance in G7 countries**

In USD trillion



1. Projections and estimates.

Source: Survey by the OECD Working Party on Debt Management; OECD staff estimates.

The share of the North American region in total gross borrowing increased from nearly 54% in 2007 to 59% in 2008; and is expected to reduce slightly to around 58% this year and 57% in 2010. The share of euro

area governments in total gross borrowing has remained more or less at the same level throughout the period 2007-09 and is expected to increase slightly to close to 22 % in 2010.

Like the North American region, the share of non-euro area European countries in total gross borrowing has increased from just over 4% in 2007 to 6.3% in 2009, and is expected to decrease to just below 6% in 2010. Interestingly, the share of Asia-Pacific governments has dropped from close to 18% in 2007 to nearly 12% in 2009. The share of emerging OECD in total borrowing has decreased as well by 1% in the period of 2007-09. For next year, the shares of both the Asia-Pacific and emerging regions are expected to increase (Figures II.1.4a and II.1.4b).

Figure II.1.4a. **Regional breakdown (2007, 2008)**

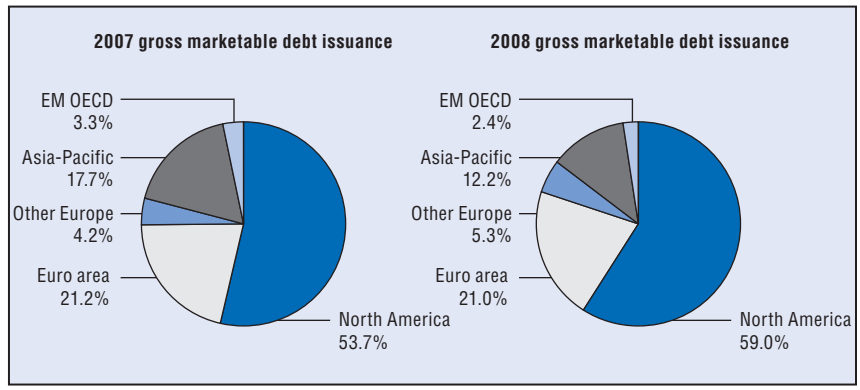
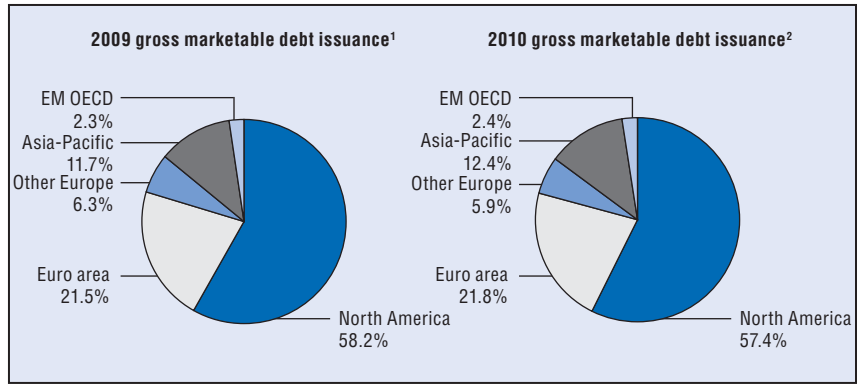


Figure II.1.4b. **Regional breakdown (2009, 2010)**



1. Projections.
2. Projections and estimates.

Source: Survey by the OECD Working Party on Debt Management; OECD staff estimates.

III. Implications of record issuance

Since many OECD governments will also undertake this and next year (near-) record debt issuance, competition among sovereign issuers is set to remain strong. Borrowing needs have increased in all regions. For 2009-10, this upward trend is expected to level off, but at a high level (Tables II.1.1a and II.1.1b).

Table II.1.1a. **Percentage change in funding: Total issuance**
Change in gross borrowing, per cent

	2007-08	2008-09	2009-10	2007-09
North America	47.5	30.8	–1.3	92.9
Euro area	33.1	35.4	1.9	80.2
Other Europe	67.5	58.0	–5.1	164.6
Asia-Pacific OECD	–7.2	27.1	6.3	18.0
EM OECD	–0.7	28.1	4.4	27.1
TOTAL OECD	34.1	32.7	0.2	77.8

Table II.1.1b. **Percentage change in funding: Net issuance**
Change in net borrowing, per cent

	2007-08	2008-09	2009-10
North America	498.7	44.7	–12.7
Euro area	341.7	78.7	6.4
Other Europe	1 929.9	91.1	–7.6
Asia-Pacific OECD	–152.2	1 000.6	15.6
EM OECD	3.4	91.6	4.3
TOTAL OECD	321.4	85.3	–4.1

Source: Survey by the OECD Working Party on Debt Management; OECD staff estimates.

Higher expected yields leading to higher debt-service costs…

Additional competition for funds has been coming from the issuance of government-guaranteed bank bonds. The rapid and massive increase in government issuance can be expected to push the prices of government debt down and yields up. Also higher debt levels can be expected to exert an upward pressure on rates (Figure II.1.5a).

Figure II.1.5a. **Long-term interest rates in selected OECD countries**
In per cent *per annum*

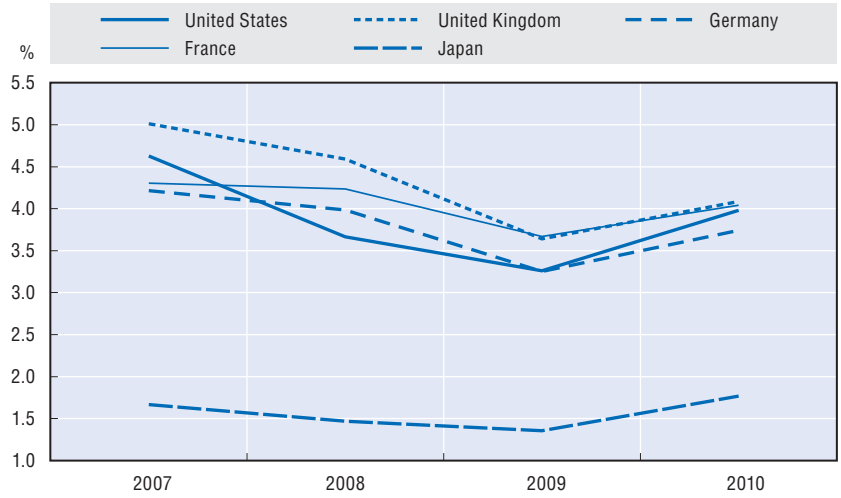
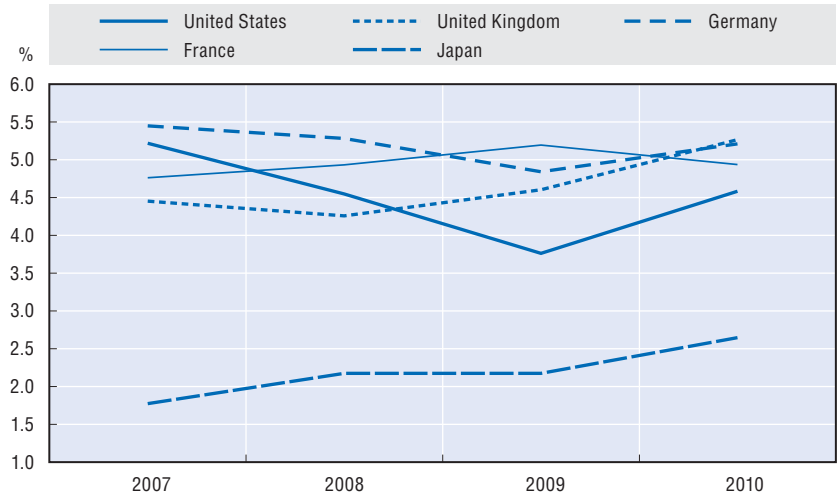


Figure II.1.5b. **General government net debt interest payments in selected OECD countries**

In per cent of total outlays



Source: Calculations based on *OECD Economic Outlook 86 Database*, November 2009.

… but impact on rates mitigated thus far by high unemployment, demand for safe assets, low official interest rates, and non-standard monetary policy measures

Higher yields, in turn, will increase government debt payments (Figure II.1.5b).[7] However, the following financial crisis/recession-related factors are mitigating or delaying this supply impact on prices and yields: *a)* high unemployment that is keeping expectations of future inflation in check; *b)* in spite of an increase in demand of some higher-yielding riskier assets, there is still a relatively high level of risk aversion that continues to encourage a strong demand by institutional investors for safe and liquid assets; *c)* low official interest rates; *d)* the impact on (longer-dated) government debt of quantitative easing policies pursued by some OECD central banks; and *e)* the high demand for government paper by banks for use as high-quality collateral.

The importance of a credible exit strategy…

But, clearly, when the recovery gains traction, monetary exit measures are going to be implemented and risk aversion will decrease, while sovereign issuance will need to retrench in an orderly way to avoid market stress and crowding-out the private sector. To that end, a timely and credible exit strategy is needed, with the essential support of sound fiscal consolidation policies. It is also important to avoid or mitigate possible market stress related to the higher real-interest rates associated with the central bank's (CB's) exit strategy. To that end, it is important that the (future) shift to a tighter monetary policy is carefully implemented as regards the timing and sequencing of the different exit measures to be taken by the monetary authorities. Since debt managers are financing historically high (and still increasing) budget deficits, it is important that DMOs and CBs keep each other informed about policy moves that can be expected to have significant market impacts.

… supported by fiscal policy…

… and information exchange between DMOs and central banks

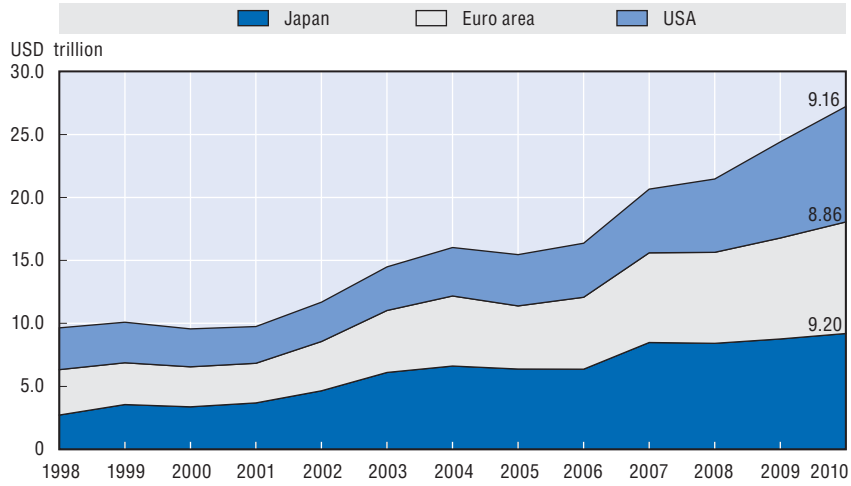
IV. Structural changes in borrowing strategies?

Issuance challenges compounded by increasing debt

Tight liquidity conditions, the rapid increase in borrowing requirements, the high demand for safe assets by many categories of investors, and the highly risk-averse behaviour of market participants, had been forcing debt managers to change or modify their borrowing strategies in terms of maturity (shorter), currency (an increase in foreign liabilities)[8] and type of instruments (more bills and notes). This response to crisis-related uncertainty has resulted in somewhat more opportunistic issuance programmes. The issuance challenges for many DMOs are compounded by increasing debt levels[9] – a trend already visible prior to the crisis (Figure II.1.6).

Figure II.1.6. **Central government marketable debt in selected OECD countries**

1998-2010



Source: 1998-2008: OECD Central Government Statistical Yearbook; 2009 and 2010: OECD WPDM, OECD staff estimates.

Thus far, much of the pressures to accommodate sharp increases in borrowing needs have been met by the issuance of short-term paper (short-term government paper – STGP); although more recently a shift to longer-term issuance can be detected (Table II.1.2). A recent OECD survey on "Changes in the Use of Short-Term Papers" as well as discussions within the OECD WPDM and the Global OECD Forum on Public Debt Management[10] covered two perspectives of the increased issuance of STGP, both prior and during the crisis: *a)* the debt manager's point-of-view; and *b)* the liquidity perspective.

The survey focused first on the changing role and use of short-term instruments issued by OECD DMOs in the period 1998-2007, while analysing their strategic role in debt and/or liquidity management. The survey shows that the use of STGP by emerging market economies had decreased significantly over the survey period. This is primarily the consequence of a structural trend whereby debt managers were able to

Table II.1.2. **Revised overview of short-term issuance in 2009 and 2010**

	ST issuance projection 2009 (USD bn)	Total issuance projection 2009 (USD bn)	% of short-term issuance	ST issuance projection 2010 (USD bn)	Total issuance projection 2010 (USD bn)	% of short-term issuance
North America	6 923	9 279	74.6	6 767	9 161	73.9
Euro area	2 061	3 424	60.2	2 063	3 489	59.1
Other Europe	461	998	46.2	446	947	47.1
Asia-Pacific OECD	475	1 869	25.4	526	1 986	26.5
EM OECD	192	372	51.7	193	388	49.8
TOTAL OECD[1]	10 113	15 942	63.4	9 996	15 971	62.6

1. Number of countries included: 26

Source: Surveys by the OECD Working Party on Debt Management, OECD staff estimates.

lengthen the maturity of their portfolio under favourable conditions, thereby decreasing the share of Treasury bills (T-Bills). T-Bills are the main instrument in the category of short-term government paper (STGP). Even before the crisis, countries with high borrowing requirements were using T-Bills for funding purposes more often than those with low budget deficits or budget surpluses.

Crisis (response) is having a major influence on issuance strategies and procedures

OECD debt managers underlined three important influences of the ongoing financial and economic crisis on borrowing strategies. *First*, the borrowing requirements in many OECD countries have increased significantly in response to financing bail-out operations and other crisis-induced expenditures. Borrowing needs also increased via additional knock-on effects of the recession on expenditures and lower tax income. *Second*, liquidity conditions tightened initially and market participants all over the world became much more risk averse. *Third*, policy responses by central banks (both via conventional and non-conventional measures) and governments (with DMOs playing an important supporting role) improved liquidity conditions significantly.

Almost 70 % of gross borrowing needs for 2008 covered by short-term debt

Debt managers confirmed that these three factors had a significant impact on their issuance strategies and procedures.[11] Auctions are held more frequently than before, with an extra supply of short-term debt, notably bills. Debt managers noted that in times of extreme risk-aversion and high uncertainty, STGP issuance is the major vehicle for governments to raise extra funds at short notice while providing liquid and secure instruments to the market. The share of short-term debt in the total borrowing had jumped from 65% in 2007 to nearly 70% in 2008. For the OECD area as a whole, it is estimated that around 63% of gross borrowing needs for 2009 and just over 62% for 2010 will be covered by issuing short-term debt (Table II.1.2). On the other hand, the share of short-term debt issuance in total gross issuance varies significantly across regions. For example, for 2009, this share drops to around 48% for the whole OECD area when North America is excluded.

Need to (further) reduce roll-over risk

The sharp increase in short-term paper issuance has resulted in lower average maturities of debt portfolios with more challenging repayment schedules. Roll-over risk has therefore increased. In response,

many sovereign issuers indicated that they are aiming to reduce (further) roll-over risk by incorporating more long-term instruments in issuance programmes. Several OECD countries have already made important progress in this direction.

V. Maintaining and expanding the investor base

Preferences of foreign and domestic investors…

Against the backdrop of concerns about (future) market absorption problems, it is crucial that DMOs maintain or even expand the investor base. In this context, it is essential that the preferences of foreign and domestic investors are taken into account when making decisions about the modalities of supply/issuance programmes, especially when broadening the investor base and when new (retail or wholesale) products are planned to be introduced. Since uncertainties related to the crisis can be expected to have an adverse impact on the investor base, several DMOs reported greater urgency for organising road shows for large (foreign) investors.

… with greater urgency for road shows…

… and importance of transparency and communication channels

Although issuance programmes have become somewhat more opportunistic, transparent debt management remains at the core of good relationships with the market. To that end, during crisis periods, direct contact with investors (including via road shows) is more important than before, in particular to explain changes in the overall situation and policy framework. All forms of communication are of importance, including high-quality websites. In this context, primary dealers' principal job is to sell debt, while the principal task of DMOs is to explain how they (and the government more generally) operate.

Pension funds and insurance firms important buyers of long paper

Debt managers expressed confidence that pension funds and insurance companies will continue to support demand at the long end of the yield curve as important buyers of long paper.

Diminishing risk appetite of foreign investors affecting emerging debt markets

The financial crisis has forced investors to reduce their exposure to riskier securities, thereby increasing the risk premium on emerging market instruments. DMOs from emerging debt markets expressed their concern that the diminishing risk appetite of foreign investors and associated out-flow of foreign capital are affecting especially the long end of the yield curve.[12]

VI. Policy conclusions

Since many OECD governments will also undertake record debt issuance this and next year, competition among sovereign issuers is set to remain strong. Additional competition for funds has come from the issuance of government-guaranteed bank bonds.

This second OECD-area funding outlook continues to be hampered by unusual uncertainties surrounding the general economic outlook, the calibration of macroeconomic stimulus plans, increasing debt and debt-service levels, as well as the timing and sequencing of the steps of the exit strategy. In addition, contingent debt is fairly high.

Issuance conditions have therefore worsened with reports of sometimes weak demand at auctions. In response, several DMOs have

adopted changes in issuance procedures including the use of new sales channels and more flexibility at auctions. But the risk is that when the recovery gains traction and risk aversion falls, yields will start to rise. There are already signs that issuance conditions are becoming more challenging as indicated by reports of weaker demand at some recent government bond auctions.

Thus far, however, most OECD debt managers have been very successful in financing the surge in funding needs. Less successful auctions can therefore best be interpreted as "single market events" and not as unambiguous evidence of systemic market absorption problems.

Although fund raising strategies have become more flexible and somewhat more opportunistic, OECD debt managers remain committed to maintaining a transparent debt management framework so as to minimise medium-term borrowing costs.

The future trend could be more challenging, given that rising issuance is occurring hand in hand with increasing overall debt levels. Sovereign debt managers need therefore to give high priority to the implementation of a timely and credible medium-term exit strategy. Addressing roll-over risk is a key element of rebalancing the profile of issuance programmes by incorporating more long-term instruments. A sound debt strategy needs to be supported by a credible medium-term fiscal strategy so as to avoid future "crowding out" as a result of higher interest rates and issuance problems. It is also important to avoid or mitigate possible market stress related to the higher real-interest rates associated with the central bank's (CB's) exit strategy. Since debt managers are financing historically high (and still increasing) budget deficits, it is important that DMOs and CBs keep each other informed about policy moves that can be expected to have significant market impacts.

The crisis is having an impact on the investor base of public debt markets. DMOs have noted that a broad and diverse investor base remains essential in maintaining a diversified and liquid domestic government bond market. Debt managers from emerging markets have pointed to the diminishing risk appetite of foreign investors and associated out-flow of foreign capital that is especially affecting the long end of the yield curve.

Notes

1. See, for example, Blommestein (2009a).
2. See for details Olofsson *et al.* (2010).
3. *OECD Economic Outlook 86* (preliminary edition), November 2009.
4. Debt Management Office (DMO).
5. The most recent policy information in this study is based on OECD surveys conducted among delegates of the WPDM, public information from official sources, *OECD Central Government Debt*, *Statistical Yearbook 1999-2008*, and *OECD Economic Outlook 86 Database*.
6. See for details Blommestein (2009b).

7. The data shown for Austria, Greece, Italy and Sweden are net of the impacts of swaps and forward rate transactions on interest payments, in accordance with national income accounts conventions. The data reported to Eurostat for the excessive deficit procedure includes such transactions and therefore may show lower interest payments in some years. For Belgium, the figures include interest payments on the debt of the railway company SNCB from 2005 onwards. For Germany, the figures include interest payments of the Inherited Debt Fund from 1995 onwards. In the case of Ireland and New Zealand, where net interest payments are not available, net property income is used as a proxy. For Japan, the figures include interest payments on the debt of the Japan Railway Settlement Corporation and the National Forest Special Account from 1998 onwards.
8. Although many DMOs are using currency swaps to eliminate the resulting foreign currency exposure.
9. Clearly, OECD governments with low debt levels and modest borrowing requirements (some of them were until recently even running fiscal surpluses) are in a much more comfortable situation.
10. Annual Meeting of the Working Party on Government Debt Management held on 14-15 October 2008; and the 18th Global OECD Forum on Public Debt Management, held on 3 and 4 December 2008.
11. See Blommestein (2009b).
12. As noted above, many debt managers (also from mature markets) were forced to rely more heavily on the issuance of short-term and floating rate instruments.

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Responding to the Crisis: Changes in OECD Primary Market Procedures and Portfolio Risk Management

by
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Tougher issuance conditions related to the surge in government borrowing needs are the reasons why issuance arrangements have not always been working as efficiently as before the crisis. This prompted debt management offices (DMOs) in the OECD area to review existing issuance policies and procedures. The crisis also had an impact on the use of indicators or guidelines relating to the key risks of the maturity structure of issuance or outstanding debt.

Although OECD issuance procedures are likely to differ considerably at the level of technical standards and detailed institutional arrangements, increased integration of global financial markets has encouraged the standardisation of financial instruments and convergence of general issuance procedures. As a result, OECD issuance policies and procedures are broadly similar with a high degree of transparency and predictability.

However, in response to tougher issuance conditions, DMOs have implemented changes in existing issuance procedures and policies that may have led to a somewhat greater diversity of primary market arrangements and procedures. The paper also reviews strategies and indicators for the management of the debt portfolio. Although issuance procedures and targets for portfolio management may have become somewhat more opportunistic in some jurisdictions, debt managers continue to emphasise the importance of transparency and predictability.

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I. Introduction

Existing issuance arrangements did not work always as efficiently as before the crisis

Before the crisis, increased integration of global financial markets had led to a situation where OECD issuance policies and procedures were broadly similar with a high degree of transparency and predictability. However, tougher issuance conditions related to the surge in government borrowing needs are the reasons why existing issuance arrangements and procedures have not always been working as efficiently as before the crisis. The crisis also had an impact on the use of indicators or guidelines relating to the key risks of the maturity structure of issuance or outstanding debt. These considerations, in turn, have put the spotlight on the adequacy of existing issuance policies, procedures and portfolio management strategies. The review in this paper shows that in response to the crisis, DMOs have implemented changes in existing issuance procedures and policies that may have led to a somewhat greater diversity of primary market arrangements and portfolio management procedures.

Changes in issuance policies, procedures and portfolio management strategies

Sections II and III provide an overview and update of issuance procedures in the OECD area based on a recent OECD survey. It is explained that, prior to the crisis, an increasingly integrated global financial landscape had encouraged the use of broadly similar issuance procedures and policies. Section IV shows how the explosion in borrowing needs has worsened the issuance environment and tested heavily the performance of existing issuance procedures. Tougher issuance conditions, in turn, have led to changes in issuance procedures (Section V). Changes in portfolio management strategies and procedures are discussed in Section VI. Section VII discusses the need to review primary dealer arrangements, while the final section concludes.

II. Increasingly similar issuance procedures and policies in the OECD area?

Differences in issuance procedures…

It is widely accepted that government debt issuance procedures and operations should be designed in such a way that they take into account the interests of both issuers and financial market participants.[1] Since policy judgements, economic and financial situations as well as market practices and conventions can be expected to differ, issuance procedures are also likely to differ among OECD jurisdictions. In particular at the technical level, standards, architecture and operations for selling securities, primary dealer systems and other primary market arrangements may differ significantly. These technical and institutional variations may reflect a response to specific structural conditions in markets, policies and differences in traditions and conventions.

… especially at technical level

However, an increasingly integrated global financial landscape, and the resulting increase in competitive conditions to achieve the cheapest funding, has encouraged the use of broadly similar issuance procedures and policies that facilitate or encourage liquid markets.

The convergence of OECD public debt policies

More generally, there is wide recognition that broad and deep primary and secondary markets are instrumental in lowering the cost of borrowing for the government.[2] This, in turn, has been a key driver in the growing convergence of OECD debt management policies.

DMOs use broadly similar issuance procedures with high degrees of transparency and predictability

It is therefore not surprising that Debt Management Offices (DMOs) have as stated objectives the development of government securities markets that are liquid and efficient, with market participants operating in a transparent debt policy environment. As a result, we can observe broadly similar issuance procedures and operations with a high degree of transparency and predictability in all OECD countries.[3] For example, the widespread use of auction calendars and electronic auction systems is evidence of the results of this transparency objective in primary markets.

The emergence of global benchmarks

Globalisation has also contributed to the emergence of a number of "standard" financial products centered on a few "global benchmarks" such as the 10-year German Bund and 10-year US Treasury Bonds, serving as liquid pricing vehicles for other markets.

Importance of electronic systems

Electronic systems are increasingly used in primary markets.[4] Automation of auction procedures increases their efficiency *vis-à-vis* the use of manual procedures as it enhances speed, reliability and cost-effectiveness. Improved electronic auction systems are therefore important for streamlining the process of submitting bids so that auction results can be processed and disseminated more quickly. More sophisticated systems are also needed to allow institutions to bid directly in auctions.

Auction most common method

Auctions are the issuing procedure most commonly used among the OECD countries. However, some (usually smaller) countries combine auctions with the syndication of benchmark bonds in order to provide a quick build-up of outstanding volume and greater certainty of issue. Regarding the introduction of new instruments, many issuers (also larger countries) conduct the first issue via a syndicated offering. Subsequent issuance is then undertaken via auctions.

OECD policies and market conventions function increasingly as global standards

In sum, OECD countries have seen an increase in the convergence of the composition of debt (maturity structure and instrument type), increased similarities in issuance procedures, and increased standardisation of market conventions. Integrated markets and the spread of OECD leading policy practices and market standards, in turn, have influenced developments in government debt issuance around the world. Consequently, the standards embedded in the issuance policies, procedures and portfolio strategies found in the surveys among OECD members (see Sections III, VI and VII) represent increasingly global standards. The Annual OECD Global Forum on Public Debt Management is serving as the principal vehicle for the world-wide dissemination of these standards, leading practices and related policies.

III. Results from a recent survey on OECD issuance procedures and policies

The principal issuing procedures are auction and tap

The principal issuing procedures are auction and tap. The responses show that almost all OECD countries use auctions for issuing new long-term debt, while 26 DMOs also use auctions for issuing short-term debt (Table II.2.1a). Interestingly, syndication is now also being used by a number of larger countries and not only by smaller countries for selling benchmark bonds. This procedure is usually credited with achieving very rapidly a high initial outstanding volume, thereby boosting liquidity and achieving greater placing certainty with lower borrowing costs. Syndication is often also used for the first-time issuance of new instruments such as linkers or ultra-long bonds. Table II.2.1a shows that 20 OECD countries are now using syndication for issuing debt. This is an increase compared to earlier surveys, including a previous OECD study[5] showing a considerable increase in the use of syndication among euro-area countries.

An increase in the use of syndication

Use of tap issues

Tap issues are less frequently used, with 7 OECD DMOs using taps for issuing short-term debt and 10 for long-term debt.

Multiple-price preferred auction type but almost half of DMOs uses both auction formats

The preferred auction type tends to be the multiple-price format.[6] However, in 17 countries single-price[7] auctions are used as well. Twelve countries employ both types of auctions. In the US, single-price auctions are used for all Treasury auctions. Nonetheless, although the main auction types in OECD are broadly similar, they often vary in terms of operational and technical details.

IV. The explosion in borrowing needs has worsened the issuance environment

Borrowing needs have increased significantly in response to the soaring costs of financial support schemes and other crisis-related expenditures as well as recession-induced falls in tax income and an increase in recession-related expenditures. Many OECD governments are therefore facing a further increase in expected deficits. As a result, it is estimated that the gross borrowing requirements of OECD governments for 2009 will be close to USD 16 trillion. The tentative outlook for 2010 shows a stabilising borrowing picture, at around the same level. The 2010 funding outlook is, however, surrounded by an unusually high degree of uncertainty.[8]

Strong supply has worsened issuance conditions

This dramatic increase in the supply of government paper has worsened issuance conditions, with some OECD debt managers reporting liquidity pressures in secondary markets and sometimes weak demand and distortions in primary markets. Delegates from the OECD Working Party on Public Debt Management (WPDM) confirmed the following trends and developments: *a)* dramatically increased borrowing requirements and concerns about possible market absorption problems;[9] *b)* changes in issuance methods, including more flexible auctions, introduction of auction fees, and the use of distribution methods other than auctions such as syndication, Dutch Direct Auction (DDA) procedures and private placement (see Section V); and *c)* changes in optimal sovereign portfolios (driven by new benchmarks with a greater emphasis on short-term paper and a reformulated cost-risk trade-off – see Section VI).

Table II.2.1a. **Overview of issuing procedures in the OECD area**

	Auctions		Auction type		Tap issues		Syndication
	Long-term	Short-term	Single-price	Multiple-price	Long-term	Short-term	
Australia	x	x	x	x			x
Austria	x	x		x			x
Belgium	x	x		x	x	x	x
Canada	x	x	x	x			
Czech Republic	x	x	x	x			x
Denmark	x		x		x		x
Finland	x		x		x	x	x
France	x	x		x			x
Germany	x	x		x	x		x
Greece		x	x				x
Hungary	x	x		x		x	x
Iceland	x	x	x	x			x
Ireland	x	x		x		x	x
Italy	x	x	x	x			x
Japan	x	x	x	x			
Korea	x			x			x
Mexico	x	x	x	x	x	x	
Netherlands	x	x	x	x	x		
New Zealand	x	x	x	x	x	x	
Norway	x	x	x				
Poland	x	x	x	x			x
Portugal	x	x		x			x
Slovak Republic	x	x	x	x	x	x	x
Spain	x	x		x			x
Sweden	x	x		x	x		x
Switzerland	x	x					
Turkey	x	x		x			
United Kingdom	x	x	x	x	x		x
United States	x	x	x				
Total	28	26	17	23	10	7	20

Notes: ***Australia:*** Recommenced issuance of linkers. First issue via syndicated offering. Subsequent offering via single-price auctions. Nominal debt is sold via multiple-price auctions. ***Austria:*** Syndication for portion of each issue. ***Belgium:*** Syndication used for benchmarks bonds. ***Canada:*** Syndication used for foreign currency debt issuance (for foreign exchange reserve funding purposes only). A single price auction format is used for issuance of inflation-linked bonds. ***Czech Republic:*** Syndication used for "Eurobonds", single-price for T-bills, multiple-price for bonds. ***Denmark:*** Long-term foreign issuance is primarily conducted via syndication. Commercial paper (CP) programmes are used for short-term foreign issuance. ***Finland:*** Issuance of T-bills via multiple-price auctions. ***France:*** Syndication is usually used once a year, essentially for the first issuance of a new line. ***Germany:*** Syndication for the first issuance of a linker, its first re-opening and its first tap. Syndication used for second USD bond. ***Greece:*** Syndication used for first issuance of medium- and long-term bonds and linkers. Public subscription for retail investors. Introduction of syndications for all types of bonds and re-openings. Switch to single-price auctions for T-bills. ***Hungary:*** Some T-bills are sold via tap sales or via subscription for retail investors. Syndications for forex debt issuance. ***Iceland:*** Syndication or private placement is used for bonds in foreign currency; Dutch Direct auction for long term bonds. ***Italy:*** Syndication for first tranche of long term bonds and for Global bonds. Private placement used for external debt. ***Korea:*** Syndication for first issuance of inflation-linked bonds and foreign exchange stabilisation bonds. Switch from single-price to multiple-price auctions. Also buy-back auctions in multiple-price format. ***Mexico:*** Foreign currency debt is issued via investment banks. ***Netherlands:*** Dutch Direct Auction (uniform price) is used for longer dated bonds. ***New Zealand:*** Tap sales are used for external debt (both long and short term). Auctions are primarily used for domestic borrowing operations. ***Poland:*** Syndication is used for external debt. Use of retail agents for domestic securities. Single-price auction is used in supplementary auctions. ***Portugal:*** Syndication is used for first issuance of bonds. Direct negotiations for MTN and ECP programmes. ***Slovak Republic:*** Syndication is used for tranch of each issue. ***Spain:*** Syndication for new long benchmarks and foreign currency debt. The auction format is a mixture of single- and multiple-price. ***Sweden:*** Syndication for foreign currency debt and occasionally for domestic currency bonds. ***Turkey:*** Direct sale to institutional investors and public offers to retail investors. Single-price auctions are used only for inflation-linked bonds. ***United Kingdom:*** Taps for market management are reserved for exceptional circumstances only. Introduction of syndication.

Source: Responses to the 2009 Survey of the OECD Working Party on Debt Management.

V. Tougher issuance conditions have led to changes in issuance procedures

Softening of demand has led to postponed or less successful auctions

These dramatically increased borrowing needs have, in turn, led to sharply increased competition in raising funds. Additional competition also came from the issuance of government-guaranteed bank bonds. Issuance conditions have therefore become tougher with reports about a softening of demand at some auctions, leading to postponed, failed or cancelled auctions. These developments, together with the decline in the number of primary dealers (Section VII), are raising important policy issues such as:[10]

- the risk to the success of auctions and greater auction tails;
- the risk to the liquidity of Treasuries in the secondary markets.

Future issuance could become more challenging

Less successful auctions have been ascribed to uncertainties about potential market absorption issues and volatile market conditions. All in all, DMOs have been very successful in raising funds. Difficulties surrounding auctions can therefore best be interpreted as "single market events" and not as unambiguous evidence of systemic market absorption problems. However, the future could become more challenging given that the still rising issuance trend is occurring hand in hand with increasing overall debt levels. For example, total marketable debt of central governments in Japan, the US and euro area stood at nearly USD 21 trillion, more than double the level a decade before. In 2009, it is projected to be over USD 27 trillion.[11]

DMOs have adopted changes in issuance procedures

In response, several DMOs have adopted changes in issuance procedures so as to address the consequences of increased competition in raising funds and (potential) market absorption problems. For example, many DMOs have introduced more flexible auction calendars and/or more flexibility in the amounts offered. Issuers have also introduced new distribution facilities.

Maintaining direct investor relations more important than before

Maintaining investor relations has become even more important than before with many DMOs reporting greater urgency for organising road shows for large (foreign) investors. To that end, during crisis periods direct contacts with investors (including via road shows) are essential, in particular to explain changes in the overall situation and policy framework. Moreover, especially in the current, challenging circumstances characterised by high government borrowing needs, many DMOs observed that a broad and diverse foreign investor base remains essential in maintaining a diversified and liquid domestic government bond market.

Preferences investors key consideration
Transparency at core of relations with market

This means taking into account both the preferences of foreign and domestic investors, including when making changes in issuance procedures and techniques. DMOs should also pay attention to (improving) all forms of communication, including the construction of high-quality websites. Although issuance programmes have become somewhat more opportunistic, a transparent debt management framework remains at the core of good relationships with the market. In this context, primary dealers' principal job is to sell debt, while the principal task of DMOs is to explain how they (and the government more generally) operate.

Table II.2.1b. **Recent changes in issuing procedures and instruments**

Australia	More flexible auction calendars. Issuance of inflation indexed bonds recommenced in H2 of 2009 in order to broaden investor base. First issuance of inflation-indexed bonds via a syndicated offering. Subsequent issuance of inflation indexed bonds is planned to be via single-price auctions. Auctions for all nominal debt are via the multiple-price format.
Austria	More emphasis on investor relations.
Belgium	Tap for long term debt. Increased placement of EMTN.
Canada	Re-introduction of 3-year maturity. Reduction in the regular buy-back programme but maintained switch operations in long-end to support market liquidity. Introduction of additional benchmarks for 2-year and 5-year sectors.
Denmark	Use of private placement in foreign markets in 2008. T-bill programme terminated in 2008. Greater use of auctions instead of tap sales.
Finland	Diversification of funding sources. More emphasis on investor relations. More co-ordination with PD's. Higher syndication fees. Active use of demand-supply windows.
France	Increased flexibility for better matching demand. On several occasions off-the-run bonds were issued since the 2nd half of 2007.
Germany	Tap for long-term debt. More frequent auctions.
Greece	Beginning 2009, auctions of T-bills changed to single price format. Syndication used for all types of bonds and re-openings.
Hungary	More flexible auction calendar (bi-weekly bond auctions with dates but without tenors in calendars). More flexibility in the amounts offered. Introduction of top-up auctions (non-competitive subscription) and auction fees. More frequent use of re-openings of off-the-run bonds and buy-back auctions. Planned introduction of exchange auctions. Introduction of direct, regular meetings with institutional investors.
Iceland	Single price auctions (for long term bonds) are used together with multiple price auctions.
Ireland	Syndication has been added as funding tool. Auctions also in use for short term debt.
Italy	More flexible procedures. The range of offered amounts for on-the-run bonds increased. Possibility to offer additional off-the-run bonds as response to highly volatile market conditions. Adjustment of auction pricing mechanism for nominal bonds, linkers and floaters (issuer sets discretionally the total allocated volume within the previously announced range). In BOT auctions participants are required to send their bids in terms of yield. Modification of method for calculating share in auctions. The range of the maturity of bonds sold to PDs at non-competitive prices is also extended. Introduction of re-openings of old bonds.
Korea	Since September 2009, single price format of auctions was changed to a multiple price format. Introduction of conversion offers.
Mexico	Tap issues of both short and long term bonds.
Netherlands	Increased frequency of bond auctions (of off-the-run bonds). Extended repo- and commercial paper facilities (longer maturity, extra foreign currency issuance). Extended T-bills programmes.
New Zealand	Introduction of new long term bond. Tap issues for short term debt. Monitoring foreign markets for finding attractive foreign borrowing opportunities. Introduction of a new facility of "reverse tap tender".
Norway	Instead of both auction types, only single price auctions are now being used.
Slovak Republic	Contemplation of following (future) operations: *a)* direct selling and buy backs in secondary market; *b)* underwriting auctions (single price based on price discovery via syndication); *c)* buy backs and exchange auctions.
Turkey	"Revenue indexed bonds" are introduced in order to broaden the investor base.
United Kingdom	Mini-tenders were introduced in October 2008 as a more flexible supplementary distribution method alongside with the core auctions programme. In 2009-10 the DMO is using syndicated offerings to supplement its auction programme (as of 1 October 2009, three syndicated offerings have been held). Introduction of a post-auction option facility.

Source: Responses to the 2009 Survey of the OECD Working Party on Public Debt Management.

Increasing interest in syndication

Table II.2.1b provides an overview of the major changes made in issuance procedures and/or the conditions for using existing systems and techniques in response to the crisis and tougher issuance conditions. For example, as noted, there are reports about an increasing interest in the use of syndication. As noted, this selling method is credited with the potential to rapidly achieve a very high initial outstanding volume of issues with better placing certainty than auctions. This may, in turn, lead to higher liquidity and lower borrowing costs. However, syndication also has potential downsides such as a more limited reach among potential buyers, more risk averse investors than dealers participating in auctions, and higher intermediation costs.

More frequent auctions with more flexible and opportunistic procedures

There are already signs that liquidity pressures, rising borrowing requirements and risk-averse behaviour of investors are forcing debt managers to modify their fund raising strategies. Regarding the operation of auction schemes, many DMOs are operating more frequent auctions with auction schedules having become more flexible and opportunistic. The maturity of debt is becoming shorter. There is growing use of foreign

liabilities, and debt managers are using a wider range of instruments, including bills and notes.

Transparency and predictability remain key

These changes, while understandable, create some risks. As debt managers become more opportunistic, issuance programmes are becoming less predictable. That may not be desirable in the long term. DMOs emphasise therefore that they will continue to operate a transparent debt management framework supported by a strong communication policy. Transparency and predictability are instrumental in reducing the type of market noise that can unnecessarily increase borrowing costs.

Some DMOs introduced auction fees and the UK mini-tenders

Some DMOs were considering introducing (or have introduced) auction fees. Others argue that fees are not effective and/or not consistent with the principle of open auctions. Mini-tenders were introduced by the UK DMO alongside the scheduled auction calendar in order to mitigate liquidity problems.[12]

Suggestions for studying joint issuance in euro area

On several occasions, suggestions have been made that euro-area issuers[13] should explore practical ways to issue government paper jointly. This debate seems to have gained some traction from recent issuance problems, with several European countries being forced to cancel bond issues due to lack of interest by investors. These problems have revived discussions about closer co-operation in the form of joint issuance policies, including the issuance of a joint European short-term debt instrument that would be able to attract additional investors due to its increased issuance size (and resulting liquidity).[14]

Increased retail issuance…

Another possible change in issuance strategies may be a stronger emphasis on retail issuance so as to broaden and stabilise the investor base. Increased use of electronic systems has made it easier to reach retail investors directly. However, a possible downside concerns a lack of cost-effectiveness (although the greater use of electronic means has improved the scope to reduce distribution costs). A new complication in some countries is the financial stability perspective. Although the introduction of additional retail funding instruments may lead to lower borrowing costs, this policy move may not be desirable in the current crisis situation in which banks try to strengthen their balance sheets by increasing retail deposits. Hence, in some markets, additional competition from retail instruments issued by DMOs may not, at the moment, be desirable on financial stability grounds.

… complicated by financial stability considerations

VI. Survey of the impact of the financial crisis on debt portfolio management strategies[15]

Why portfolio management?

Managing key risks associated with debt portfolios

This section reports the results of a survey conducted in October 2009 on the impact of the financial crisis on the portfolio management strategies of members of the OECD Working Party on Debt Management. Government debt managers need to monitor and manage the key risks associated with their debt portfolios in order to reduce the cost of debt for their respective governments, at least on average over the medium term. Portfolio management can also help manage the volatility in the government's balance sheet and its net worth. Most managers seek to

some degree to balance the cost and risk of their debt portfolios, where the risks include refinancing risks, repricing risks and interest rate risks.

Use of different strategies and indicators

Different debt managers may use different strategies and indicators to monitor portfolio risks and guide their portfolio management. Some use targets or limits for indicators such as average duration, modified duration, or the proportion of the portfolio subject to refinancing or price refixing within a specified period. Some use broader guidelines related to the maturity structure of their issuance or outstanding debt, and its distribution between different debt instruments.

The crisis complicates portfolio management with implications for the issuance task

Unusual volatility in markets, such as during the recent global financial crisis, and sharp changes in governments' borrowing requirements, can make it more difficult to maintain debt management strategies. This may have consequences for the ongoing cost of debt servicing and future gross borrowing requirements. For example, if the amount of short-term debt in the portfolio increases, the amount of debt maturing in the short term, and requiring to be refinanced, will be higher, adding to the future issuance task.

Focus of the OECD survey

What are the changes that have been made in the management of interest rate risk?

The survey aimed to identify what changes debt managers have made in the management of the interest rate risk of their portfolios in response to changes in their financing tasks following the financial crisis. The survey asked debt managers that have had a benchmark duration target in the recent past:

i) What was the target duration and how often was it reviewed?

ii) Is the target set on the gross debt portfolio or a net debt portfolio (gross debt less cash and other assets)?

iii) Has the funding task become more variable and/or more difficult to forecast in the last year?

iv) If so, has the variability in the funding task impacted upon your capacity to achieve the duration target?

- *a)* If the target has been achieved, has it been necessary to augment your existing approach with additional instruments or techniques? If the approach was changed, how did you decide upon the appropriate response?
- *b)* If the target has not been achieved, what has been the response? (For example, have you modified the target or discontinued duration targeting altogether?)

The survey also asked, more generally (whether or not agencies have duration targets), what changes had occurred in the duration and maturity structure of their portfolios over the last two years?

Summary and conclusions

Seventeen responses to the survey were received and some other countries provided additional information at the annual meeting of the

Working Party held on 20-21 October 2009. This summary includes information from both sources.

Half respondents use duration target

About one third of the respondents indicated that they currently have a duration target as a primary portfolio management tool. Two respondents target it indirectly and two use it as a secondary target. Half do not use it as a target.

	Is there a duration target?	
Yes	6	29%
No	11	52%
Secondary/indirect target	4	19%

Duration targets vary from two to seven years

Of those who had a duration target, about half measure it against a gross debt portfolio and half against some form of net debt portfolio. Targets and ranges for those countries targeting duration either as a primary measure or as a secondary measure, vary from two years to seven years.

	Benchmark duration target (Years)	Lower bound (Years)	Upper bound (Years)
Austria	5.85	5.10	6.6
Denmark	3.25	2.75	3.5
Finland	–	–	–
France[1]	7.00	–	–
Greece	4.00	3.50	4.5
Hungary	2.00	2.00	3.0
Poland	–	2.50	4.0
Slovak Republic[1]	4.00	–	–
Switzerland[1]	–	–	–

1. Duration is only used as a secondary/indirect target.

Countries that manage their portfolios using a benchmark duration target generally review the target at least annually, with some undertaking more frequent reviews following the increased variability in outcomes as a result of the crisis.

The funding task has become more variable and difficult

The majority of respondents considered that the funding task has become more variable and/or more difficult in the last year, with most noting a substantial increase in the amount of government debt issued over forecasts.

	For those with a duration target: Has the funding task become more variable and/or more difficult to forecast in the last year?		All respondants: Has the funding task become more variable and/or more difficult to forecast in the last year?	
Yes	7	70%	13	62%
No	2	20%	2	10%
No answer	1	10%	6	29%

Switzerland is an exception as it reduced its central government gross debt (from a peak of CHF 130 billion in 2005 to CHF 119 billion in 2009, which is expected to fall further) due to continuing budget surpluses and the sale of the government's stake in UBS. It reduced its bond issuance, allowing debt to mature whilst maintaining short-term borrowing. As a result, funding has become less difficult and less variable and previously announced issuance targets are being under-achieved. Its main challenge is deciding how far to let government debt outstanding decline without limiting the bond market's ability to function.

Increased variability in duration and other portfolio benchmark measures

Respondents generally reported increased variability in duration and other portfolio benchmark measures. However, of the ten respondents with some form of a duration target, only two did not achieve their targets and less than half reported that changes in the funding task had impacted upon their capacity to achieve their duration target. Of those that met the duration target, none had made changes to the target in the last year and none had introduced additional instruments or techniques in order to achieve targets.

Of the two countries that did not meet their duration targets, one has revoked the target and the other is reviewing its approach in the light of its experiences over the past year.

	For those with a duration target: Has the target been achieved?	
Yes	7	70%
No	2	20%
No answer	1	10%

	For those with a duration target: Has this variability in the funding task impacted on the capacity to achieve the duration target?	
Yes	4	40%
No	5	50%
No answer	1	10%

DMOs report falls in duration and maturity measures

Many respondents reported falls in duration and maturity measures for their debt portfolios. In some cases, this reflected increased government funding requirements and/or the fact that investor demand was focused towards the short end of the curve.

VII. How urgent is the need to review primary dealer arrangements?

Primary dealer arrangements differ

Primary dealer (PD) systems in the various OECD countries are quite different in terms of obligations/requirements, either in technical detail or even in broad terms. For example, market making (MM) rules in secondary markets are often part of the set of PD requirements, but not in all jurisdictions.[16] In addition, some OECD countries either do not possess PD systems or dealers are formally (or *de jure*) not recognised as such by the issuer. See Tables II.2.2a, II.2.2b and II.2.2c for an overview of requirements imposed on (candidate) primary dealers in the OECD area.

Table II.2.2a. **Primary market requirements for becoming a primary dealer**

	To participate regularly in auctions	Minimum participation in every auction	Minimum average annual/quarterly participation in auctions	To bid in each auction	To ensure placement of debt	To avoid distortion to auction prices	To allocate sufficient resources to support issuer
Austria	x	x				x	x
Belgium	x				x	x	x
Canada	x	x		x		x	
Czech Republic			x			x	
Denmark							
Finland	x				x		x
France	x		x	x			x
Greece	x		x		x	x	
Hungary	x		x		x	x	x
Iceland	x	x		x	x	x	
Ireland	x					x	x
Italy			x			x	
Japan	x	x		x		x	
Netherlands	x					x	x
Norway	x			x			
Poland							
Portugal	x		x		x		
Slovak Republic						x	
Spain	x	x		x	x	x	
Turkey	x		x		x		
United Kingdom	x		x	x	x	x	x
United States	x			x			
Total	17	5	8	8	9	14	8

Note: In Korea, only primary dealers can participate in auctions although there are no formal requirements.
Source: Updated survey prepared by the Italian Treasury, "Relations between OECD Sovereign Issuers and Financial Intermediaries", circulated at the WPDM meeting held on 2 and 3 October 2007. PD arrangements have not been working as efficiently as before the crisis.

PD arrangements have not been working as efficiently as before the crisis

Tough issuance conditions are the reasons why existing PD arrangements have not always been working as efficiently as before the crisis. This raises the question of whether requirements as summarised in Tables II.2.2a, II.2.2b and II.2.2c need to be revised, temporarily or on a more permanent basis.

Changes in model of co-operation?

Another primary market issue is whether the broader business model of co-operation with PDs needs to be changed. The business models in the US and Japan are based on the philosophy that DMOs have a hands-off relationship with PDs. For example, the US Treasury, through its issuing agent (the Fed of New York), has a hands-off approach with all its primary dealers; it sees its task ending with the conditions of primary issuance and is therefore only concerned with on-the-run securities. In both the US and Japan, market-making responsibilities in secondary markets are not imposed on primary dealers (Table II.2.2b). However, this hands-off relationship does not preclude a meaningful dialogue with the market. For example, in Japan, primary dealers are being consulted about important debt management policies such as the JGB issuance plan and buy-back programmes. In the case of Germany, banks are not formally designated as primary dealers. Instead, a selected international group of banks, called the Bund Issuance Auction Group,[17] bid in auctions.

Table II.2.2b. **Secondary market requirements for becoming a primary dealer**

	To be a market maker	To ensure adequate trading volumes and turnover	To quote a certain number of securities	To trade at tight bid/ask spreads
Austria	x	x		
Belgium	x	x		x
Canada	x		x	x
Czech Republic	x		x	
Denmark	x			
Finland	x			
France	x		x	
Greece	x	x	x	x
Hungary	x	x	x	
Iceland	x	x	x	
Ireland	x		x	x
Italy	x	x	x	
Japan				x
Korea	x	x		
Netherlands	x		x	
Norway	x			
Poland	x		x	
Portugal	x			
Slovak Republic				
Spain	x		x	
Turkey			x	x
United Kingdom	x	x	x	x
United States		x		x
Total	19	9	13	8

Source: Updated survey prepared by the Italian Treasury, "Relations between OECD Sovereign Issuers and Financial Intermediaries", circulated at the WPDM meeting held on 2 and 3 October 2007.

Debate about market-making obligations

In contrast to a more general hands-off approach, several DMOs played a more activist role by giving PDs direct incentives or privileges in return for market-making (MM) obligations. This approach may reflect the challenges faced in fragmented and/or smaller markets. In some jurisdictions, however, the effectiveness of MM-obligations is under discussion. This debate is in part fuelled by the ongoing financial crisis and may lead (or has led) to changes in the current market infrastructure, including via the introduction or presence of multiple electronic trading platforms.

Insolvent and fragile balance sheets of PDs may negatively affect their future operations

Primary and secondary market activities have been negatively affected by both insolvent and fragile balance sheets of primary dealers. Many DMOs expressed concerns about this development and its implications for future operations. In several countries, recent events are accelerating a longer-term trend of a reduction in the number of (active) primary dealers. For example, the number of primary dealers transacting in US Treasuries declined from its peak of 46 in 1988 to 21 in 2007 and to 17 active primary dealers as of September 2008. Consequently, this raises the following policy issues:[18]

Table II.2.2c. **Organisational requirements for becoming a primary dealer**

	Minimum net regulated capital	To be shareholder in secondary market trading company	Capacity to place securities to wide range of investors	Sufficient human resources and expertise	Capacity to add value regarding specific products	Geographical location	Guarantees for the settlement of bonds	Capacity to attract new investors	Ability to sell to a wide variety of retail clients
Austria	x		x	x	x			x	
Belgium	x	x	x	x	x			x	
Canada	x			x		x	x		
Czech Republic						x			
Denmark	x		x	x					
Finland			x	x		x		x	
France				x		x			
Greece	x		x	x		x		x	x
Hungary	x		x	x					
Iceland	x			x			x		
Ireland			x	x	x	x		x	x
Italy	x		x	x	x				
Japan									
Korea	x			x					
Netherlands	x		x	x	x			x	x
Norway			x	x					x
Poland	x		x	x			x	x	
Portugal		x	x				x		
Slovak Republic	x						x		
Spain	x		x	x			x	x	
Turkey	x								
United Kingdom	x		x	x			x	x	x
United States	x								
Total	16	2	14	17	5	6	7	9	5

Source: Updated survey prepared by the Italian Treasury, "Relations between OECD Sovereign Issuers and Financial Intermediaries", circulated at the WPDM meeting held on 2 and 3 October 2007.

Additional reasons to review PD obligations and privileges

- The risk of lower competition in the primary market, possibly weakening the price discovery process.
- The risk of dominance in the government securities market by a few large banks.
- The risk of overall higher funding costs to finance government operations.

These issues may be additional reasons to review existing PD requirements (obligations) and privileges.

VIII. Conclusions

Worsening issuance conditions and changes in issuing procedures

The worsening of issuance conditions manifests itself via greater risks: *a)* in primary markets in the form of less successful auctions and greater auction tails; and *b)* in secondary markets in the form of liquidity pressures and price distortions. These (potential) problems are encouraging changes in issuance methods, including the use of distribution methods other than auctions such as syndication, Dutch Direct Auction (DDA) procedures and private placement. Especially during crisis periods, direct contacts with large (foreign) investors (including via road shows) are more important than before, in particular to explain changes in the overall situation and policy

framework. All forms of communication are of importance, including high-quality websites. In this context, primary dealers' principal job is to sell debt, while the principal task of DMOs is to explain how they (and the government more generally) operate.

Many DMOs are using more flexible auctions with issuance programmes becoming less predictable and more opportunistic. That may not be desirable in the long term. DMOs emphasise therefore that they will continue to operate a transparent debt management framework supported by a strong communication policy. Some debt managers are considering introducing (or have introduced) auction fees. Others argue that fees are not effective and/or not consistent with the principle of open auctions. Mini-tenders were introduced by the UK DMO alongside the scheduled auction calendar in order to mitigate liquidity problems.

Challenges and changes in debt portfolio risk management

For most DMOs, the funding task has become more variable and/or more difficult, with most noting a substantial increase in the amount of government debt issued over forecasts.

Debt managers generally reported increased variability in duration and other portfolio benchmark measures.

Many DMOs reported falls in duration and maturity measures for their debt portfolios. In some cases, this reflected increased government funding requirements and/or the fact that investor demand was focused towards the short end of the curve.

How urgent is the need to review primary dealer arrangements?

Tough issuance conditions are the reasons why existing PD arrangements have not always been working as efficiently as before the crisis. This raises the question of whether current requirements need to be revised, temporarily or on a more permanent basis, including whether the broader business model of co-operation between DMOs and PDs needs to be changed. An assessment also needs to be made of the viability of market-making (MM) obligations in relation to possible changes in the current market infrastructure such as electronic platforms.

Primary and secondary market activities have been negatively affected by both insolvent and fragile balance sheets of primary dealers. Many DMOs expressed concerns about this development and its implications for future operations. In several countries, recent events are accelerating a longer-term trend of a reduction in the number of (active) primary dealers.

Notes

1. This includes the notion that financial market participants (in particular primary dealers or selected groups of banks) can also function as (*informal)* partners of governments when it comes to government debt issuance.
2. Supporting domestic capital markets is therefore an *indirect* debt management objective. It is an indirect one as it is a means to achieving the *direct* objective of minimising borrowing costs subject the preferred level of risk.
3. It is widely recognised that issuers, investors, dealers and tax payers have benefited from transparent, efficient, robust and reliable issuance procedures for government debt; see Blommestein (2002).

4. See Chapters 1 and 4 in Blommestein (2002).
5. Blommestein and Schich (2003).
6. At a multiple-price auction, bonds are sold at the actual bid price of successful bidders.
7. At a single-price (uniform-price or Dutch) auction, all bonds are sold at the same lowest accepted price.
8. Blommestein and Gok (2009).
9. This rapid and massive increase in government issuance can be expected to push prices of government debt down and yields up. However, the following financial crisis/recession-related factors are likely to mitigate or delay this supply impact on prices and yields: *a)* the (projected) fall in output that is likely to keep expectations of future inflation in check; *b)* high risk aversion (credit and liquidity) that is encouraging a flight to safe and liquid assets; *c)* low official interest rates; *d)* the impact on (longer-dated) government debt of quantitative easing policies pursued by some OECD central banks; and *e)* the high demand for government paper for use as high-quality collateral.
10. US Treasury (2008).
11. Blommestein and Gok (2009).
12. The UK DMO circulated last year a consultation document about supplementary distribution channels (including mini-tenders) (UK Debt Management Office, 2008).
13. Euro-area countries include: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal and Spain.
14. SIFMA/EPDA (2009).
15. Survey by Neil Hyden, AOFM, Australia.
16. Note that also MM rules may vary in terms of technical detail.
17. Hence, the members of this group of banks are not formally designated as primary dealers. As of 1 October 2009, the number of internationally operating banks stood at 27.
18. US Treasury (2008).

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PART III

Emerging Markets

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Current and Structural Developments in the Financial Systems of OECD Enhanced Engagement Countries

by
John K. Thompson*

This paper discusses the financial systems of OECD Enhanced Engagement Countries (EE5: Brazil, China, India, Indonesia, and South Africa). Rather than providing a comprehensive survey of each financial system, it is designed to highlight some of the salient features of EE5 financial systems, emphasising those aspects of the system that these countries have in common and those that are different from those in OECD countries. While there are significant differences among EE5 countries, this group shares some distinctive characteristics. EE5 have relatively lower financial assets/GDP ratios and their financial intermediation remains relatively bank dominated and less international. Equity markets have reached proportions comparable to those of OECD countries, but fixed income markets (especially private debt markets) remain relatively backward. At the same time, the financial systems of EE5 countries have been developing rapidly supported by steady reforms. Going forward, many institutions outside OECD countries are likely to become bigger players in financial markets, and the emergence of large asset holdings, rising shares of world equity and bond markets, and the emergence of powerful financial institutions in new regions of the world are likely to influence the contours of the world financial system in years to come.

* The main text of this paper was prepared by John K. Thompson, Consultant and former Counsellor in the OECD Directorate for Financial and Enterprise Affairs, with statistical assistance by Ting Yang, Consultant, and editorial input by Gert Wehinger, Economist, both in the Financial Affairs Division of the Directorate for Financial and Enterprise Affairs. The paper is a revised version of a background note prepared for a Policy Dialogue on Financial Markets that the OECD Committee on Financial Markets held with financial policy makers from Brazil, China, India and Indonesia (Enhanced Engagement countries). This Policy Dialogue was sponsored by the government of Japan whose grant for this project is gratefully acknowledged. The paper has benefitted from comments by participants of the Policy Dialogue and by OECD staff. All remaining errors are those of the author. This work is published on the responsibility of the Secretary- General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

I. Background

Policy dialogue with OECD Enhanced Engagement (EE5) countries has taken on a new urgency due to the world financial crisis

Under a programme of Enhanced Engagement, the OECD has been pursuing policy dialogue on a broad range of issues with a group of five key non-member countries, Brazil, China, India, Indonesia, and South Africa, hereafter the EE5. Interest in pursuing such policy dialogue has taken on a new urgency due to the world financial crisis of the past two years, which has vastly increased the importance of EE5 countries in world finance. With the loss of capital in major financial institutions since 2007, the weight of institutions from outside the OECD has grown as a share of world banking assets, while banks from non-OECD countries have become major participants in global financial markets. Moreover, the share of EE5 countries in capitalisation of equity markets has risen dramatically. As the crisis has continued, realisation has grown that the co-operation between OECD and non-OECD countries is essential not only for the management of the crisis but also for the design of a post-crisis financial architecture.

This note highlights some features of EE5 financial systems

In the context of Enhanced Engagement, the OECD Committee on Financial Markets (CMF) has held a Policy Dialogue with financial policy makers from the EE5 countries in October 2009. This article is based on a paper prepared for that meeting.

II. Current financial market developments and crisis-related issues

The most severe financial crisis in generations has led policy makers to provide unprecedented fiscal and monetary stimulus

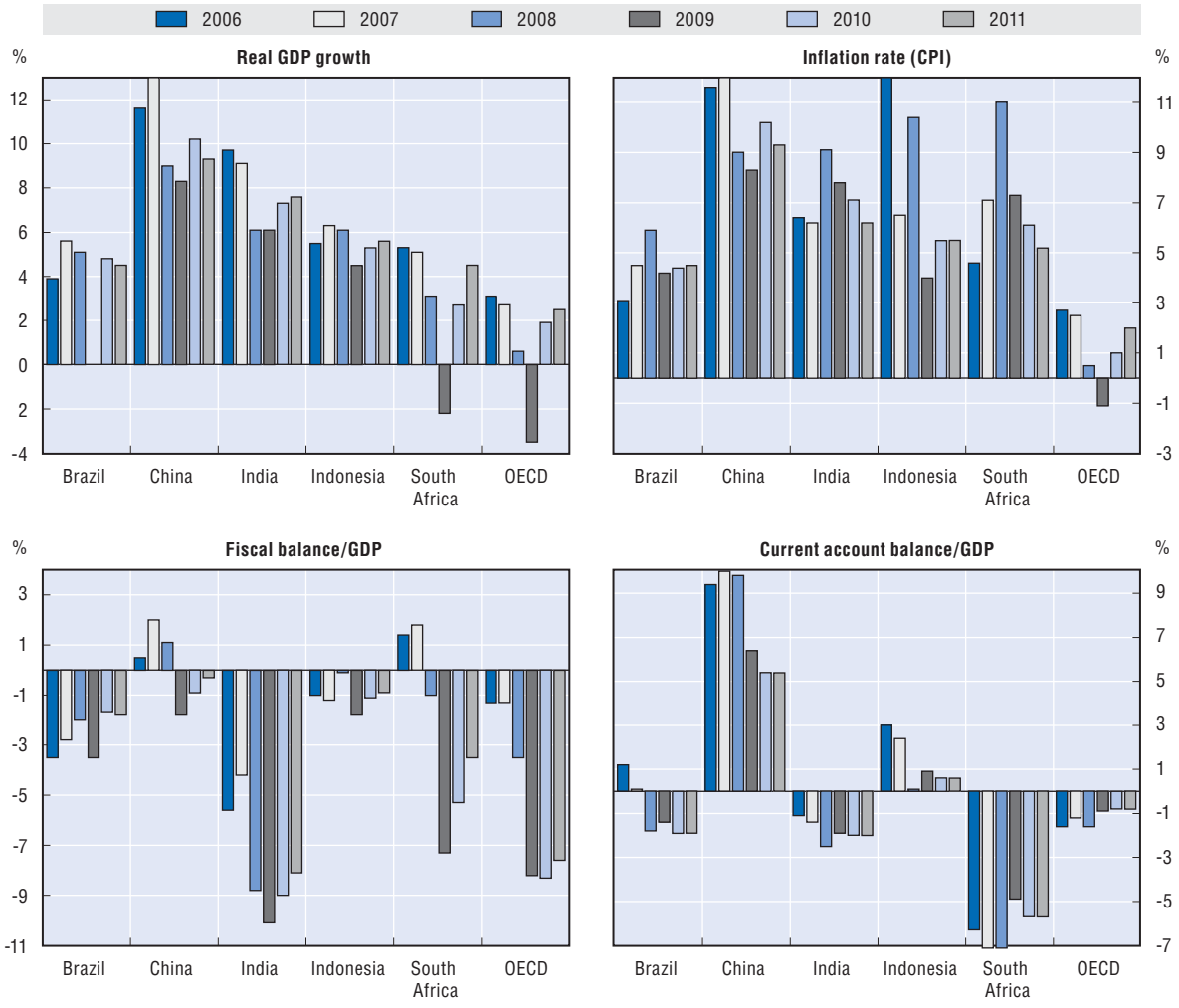
As a result of the sharp drops in asset prices and the illiquidity in major components of the world financial system since 2007, a substantial part of the accumulated wealth of OECD countries has been lost during the financial and economic crisis. Many of the world's largest financial institutions became insolvent and/or required expensive official rescues. The authorities in OECD countries have provided an unprecedented fiscal and monetary stimulus to prevent further contraction of income. Indeed, the shocks of the past two years are so severe that some analysts and policy makers have begun to question many aspects of the model of finance that had gained currency among OECD countries over the past few decades.

EE5 countries have weathered the crisis better than most OECD countries

Thus far the EE5 countries have weathered the crisis far better than most OECD countries. Most EE5 countries experienced a slowing of growth, and Brazil and South Africa are expected to see GDP fall in 2009, but the real economy has proven more resilient than those of OECD countries and growth is expected to recover more rapidly than in the OECD as a whole (Figure III.1.1). Equity markets have fared much better than those of OECD countries in the past three years (Figure III.1.2).

Figure III.1.1. **The macroeconomic situation in EE5 countries and the OECD**

Selected variables, including forecasts



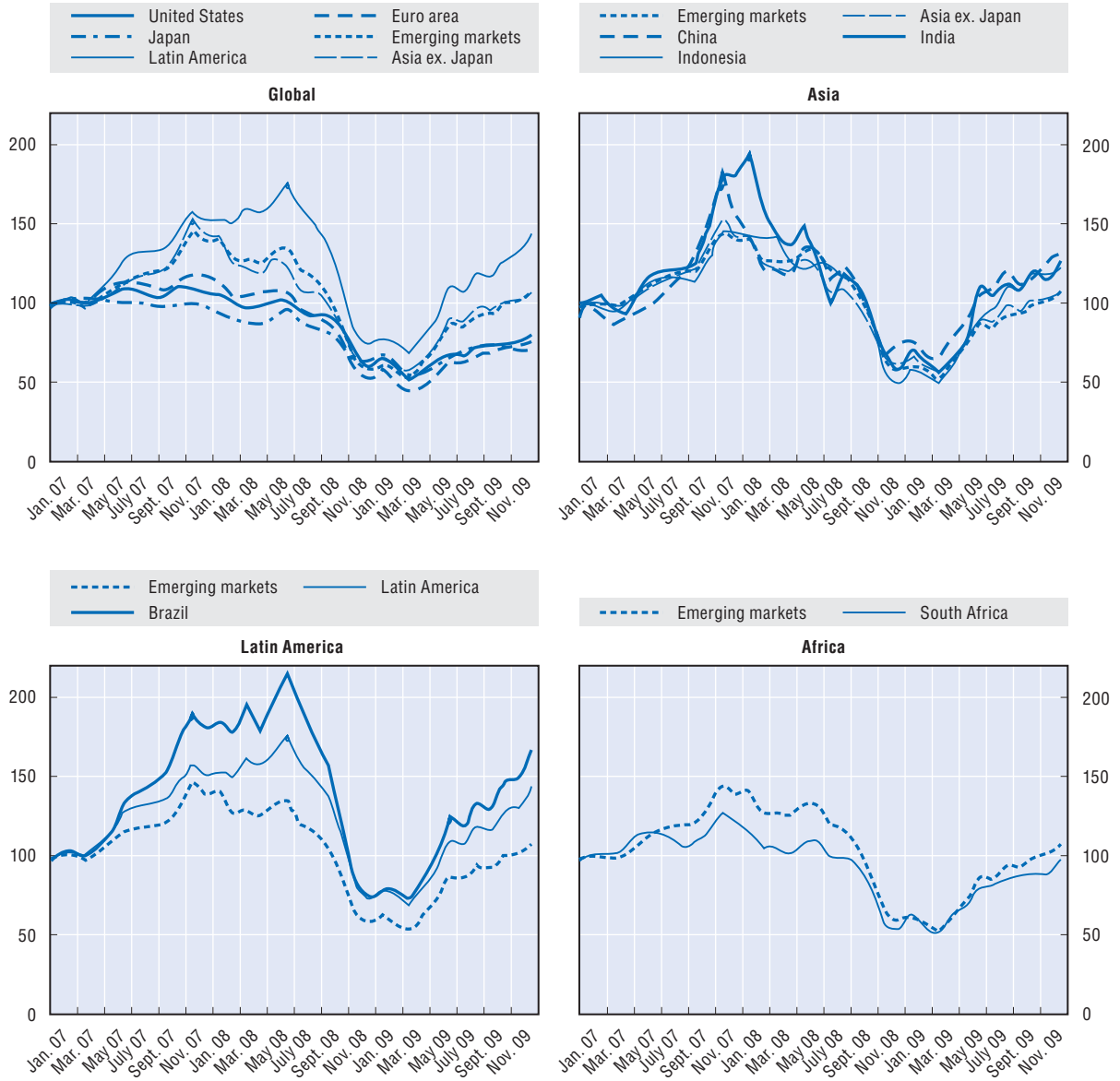
Source: *OECD Economic Outlook*, Vol. 2009/2, No. 86, November 2009.

Moreover, credit expansion has been maintained much better in EE5 countries than in OECD countries (Figure III.1.3). Bond prices in EE5 countries initially fell sharply in the wake of the crisis, but the subsequent narrowing of credit spreads underline an increased confidence by investors in the ,medium term prospects of these countries (Figure III.1.4).

Common interests between OECD and EE5 countries

The crisis has highlighted the common interests between OECD and EE5 countries in preserving an open and fair environment for trade, investment and finance. Mechanisms for international co-operation have been tested during the past three years and the results have generally been positive. By agreeing on the need for concerted fiscal and monetary action, and by resisting protectionist pressures, major countries have so far averted a retreat from an open trade and financial system that would have aggravated the downward spiral.

Figure III.1.2. **Selected equity market developments**



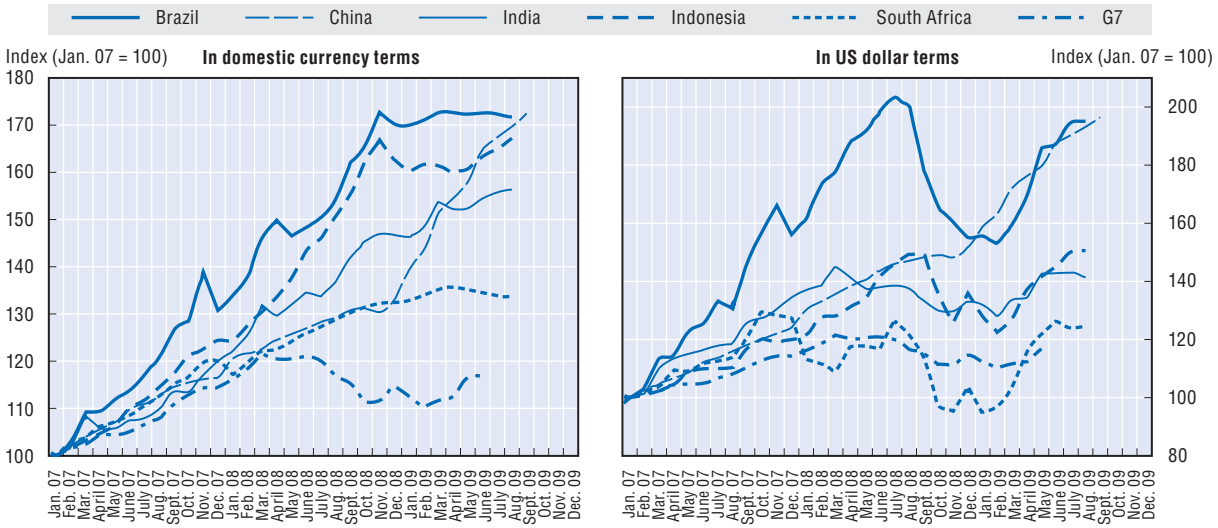
Note: Datastream total market indices (Jan. 2007 = 100), all in US dollar terms.
Source: Thomson Financial Datastream.

Need to co-ordinate policy responses among a broad group of countries

Recognition has grown of the need to co-ordinate policy responses among a broad group of countries and to engage a wide range of countries in the decision making process. Thus the G20 that includes key OECD countries, the EE5, as well as other countries,[1] has assumed a leading role in making sure that adequate resources are available for countries experiencing external financing strains and in enunciating broad principles for reform of the financial architecture.

Figure III.1.3. **Domestic credit: Claims on private sector**

Indices (Jan. 07 = 100), in US dollar terms



Note: G7 includes data from the United States, Japan, Germany, France, Italy, the United Kingdom and Canada, in USD terms.

Source: IMF International Financial Statistics; Thomson Financial Datastream; and OECD.

EE5 countries have a relatively lower financial intermediation and have taken a much more guarded approach to financial liberalisation and modernisation

To some degree, the relatively high resiliency of EE5 economies may reflect the fact that their financial intermediation is relatively lower as compared to the one of OECD countries, and that catch-up effects generate a relatively higher GDP growth. At the same time it appears true that the crisis erupted in the most sophisticated components of the financial system and the EE5 countries have taken a much more guarded approach to financial liberalisation and modernisation than the OECD countries. Banks in EE5 countries have continued to concentrate in traditional deposit taking and lending and became involved in capital markets to a much lesser extent than OECD countries. Domestic institutions in the EE5 had used fewer financial innovations such as structured products, derivatives and securitisation and engaged in less OTC activity. Moreover, the EE5 have had much lower levels of consumer and housing indebtedness than OECD countries.

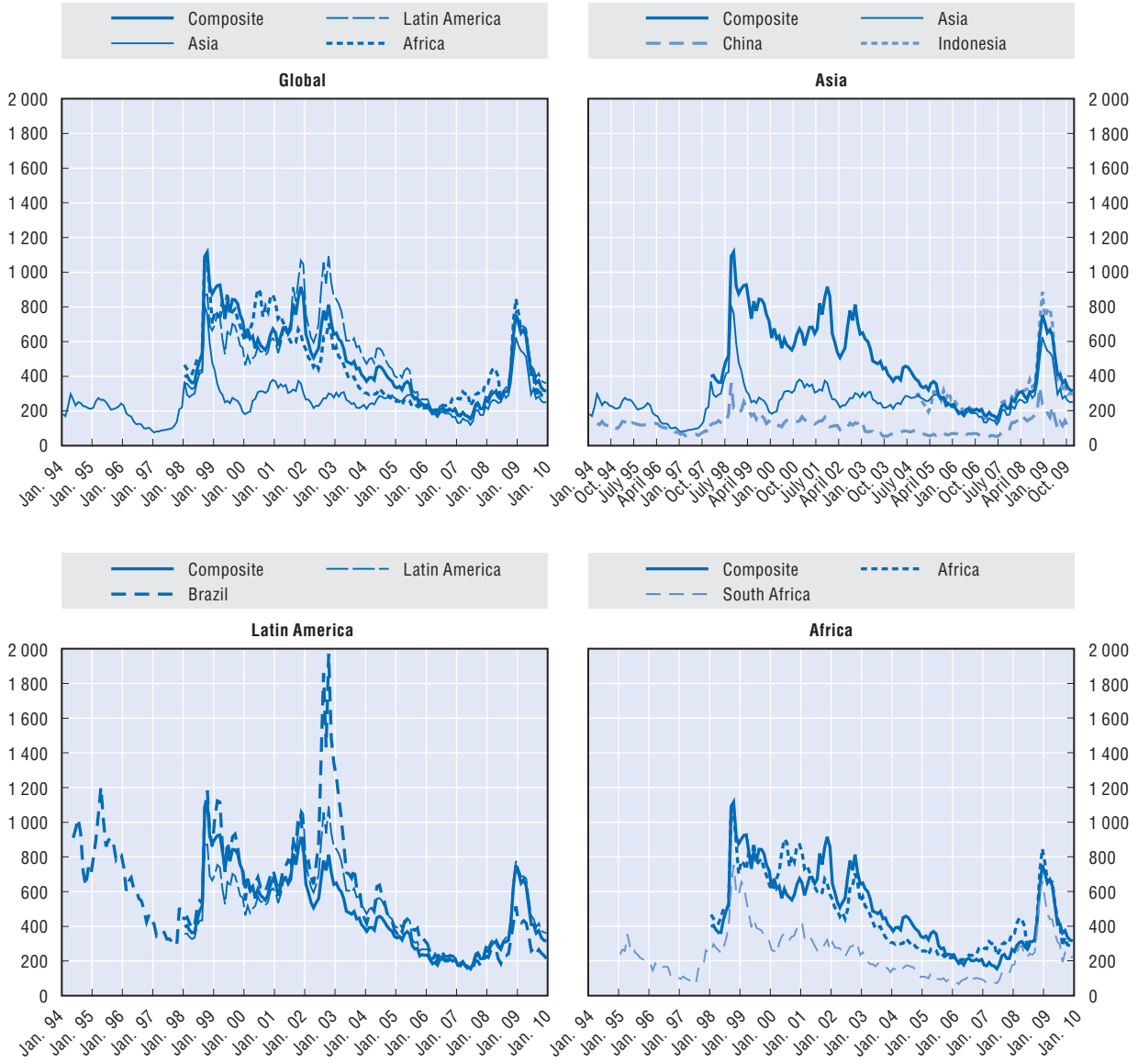
III. Basic characteristics of the financial systems of EE5 countries

1. *Overview*

Large differences in financial structures of EE5 countries against OECD but also within their peer group

While striking differences are found among the EE5 countries, this group of countries shares some distinctive characteristics. This section examines key indicators and compares the EE5 countries to OECD members. It is recognised that comparison to the average of OECD countries may give a misleading impression of the relative position of EE5 countries. Thus in cases where other comparisons are relevant and where the data are available, the EE5 countries are measured against: *a)* the G7 countries; *b)* OECD accession countries; and *c)* low income OECD countries (for definitions of these groups see footnote to Figure III.1.5).

Figure III.1.4. **Selected emerging market bond spreads**



Note: JPM EMBI Global – blended spreads.
Source: Thomson Financial Datastream.

The financial systems of the EE5 countries will be analysed using indicators covering six sets of criteria: 1) financial system depth and patterns of intermediation, 2) patterns of asset holding, 3) access to financial services, 4) internationalisation of finance, 5) stability and prudential soundness, and 6) institutional and regulatory structure.[2]

Major features and trends in the financial systems

Some of the major features and trends in the financial systems of the EE5 countries are:

- The financial systems of EE5 countries have been developing rapidly but are, broadly speaking, at earlier stages of development as compared to OECD countries on average, reflected in lower financial asset/GDP ratios.

- Financial intermediation in EE5 countries tends to take the form of bank lending rather than issues of securities in capital markets.
- The institutional investor sector is far less developed in the EE5 countries, except in South Africa and, to a lesser degree, Brazil.
- The corporate bond market in EE5 countries is much less developed than in OECD countries, but the equity markets of most EE5 countries are proportionately as large as those of OECD countries.
- Except in South Africa, state-owned banks account for rather large shares of total bank assets.
- Foreign presence in the banking market is small in China and India.
- Following years in which banks often had poor balance sheet quality, banking has been transformed with improved supervision, higher rates of profitability, better asset quality and stronger capital ratios.

While most EE5 countries have developed sophisticated instruments such as futures and options, they have been cautious about authorising new products such as OTC derivatives and structured products.

2. Market depth and patterns of intermediation

Financial systems of the EE5 countries tend to be not as deep as those of OECD members

Figure III.1.5 shows market depth and the relative size of major components of the financial system in the EE5 and OECD countries. Most indicators show that the financial systems of the EE5 tend to be not as deep as those of OECD members. For example, total financial assets (bank assets + capital market assets) represent a smaller share of GDP in the EE5 than in the OECD countries, but the financial systems of the EE5 countries have been growing rapidly. The equity markets of most EE5 countries are already on a par with those of OECD countries (at least in terms of the size of markets). By most measures, South Africa's financial system is as deep as those of OECD countries.

EE5 countries can be characterised as more "bank-dominated" than OECD countries

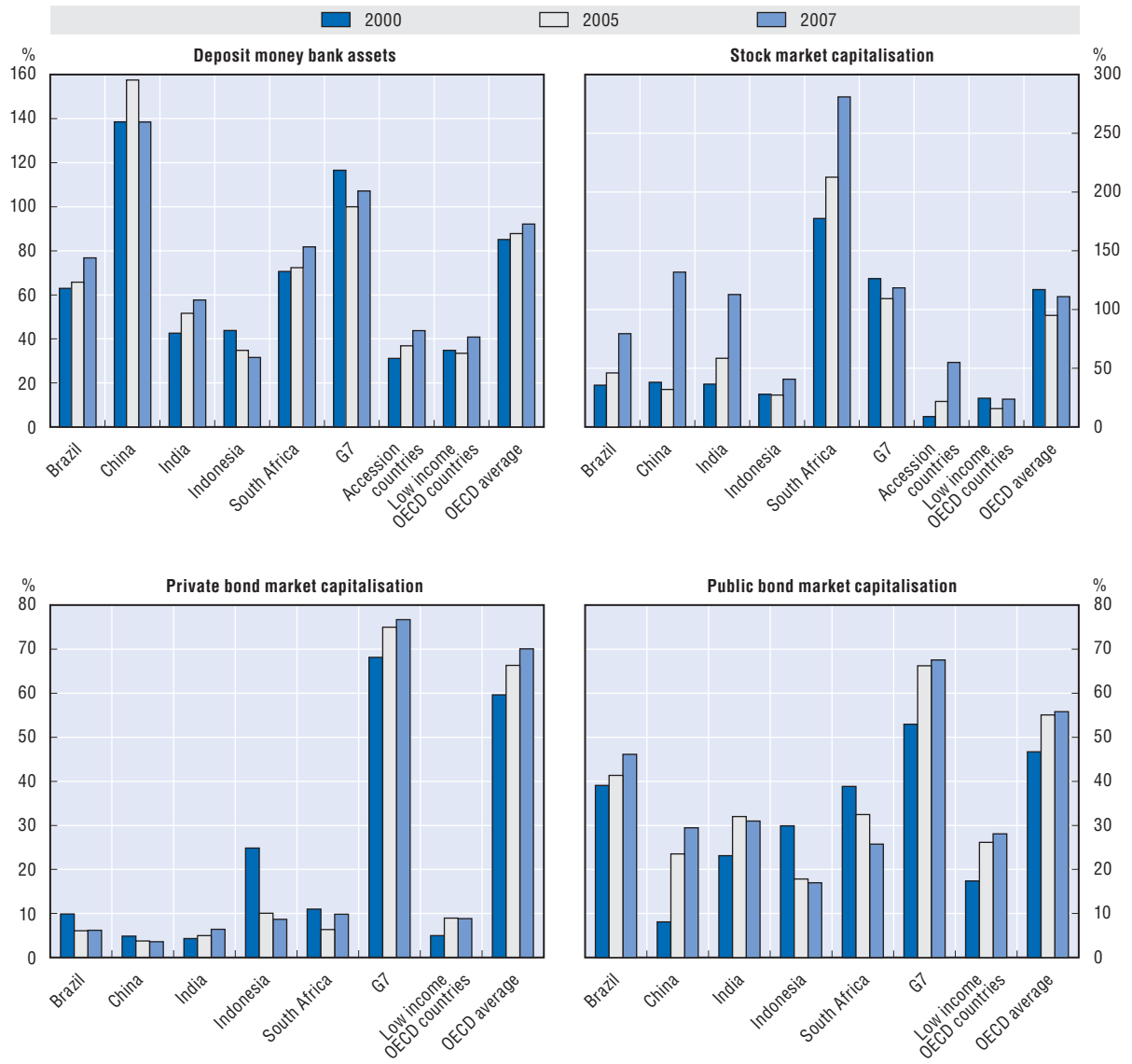
In general, the assets of the banking systems of the EE5 account for lower shares of GDP than those of the OECD countries. Nevertheless, financial intermediation in the EE5 countries can be characterised as more "bank-dominated" than OECD countries inasmuch as the predominant share of financial intermediation still occurs through on-balance sheet bank lending. Corporate debt markets are less developed and represent a smaller share of GDP than in OECD countries. OECD countries have been experiencing a process of disintermediation under which corporations have been relying less on bank borrowing and obtain external funding by issuing securities that are sold directly to investors. Similarly, markets in securitised assets, mortgage-backed securities (MBS) and asset-backed securities (ABS) in EE5 countries remain at an incipient stage.

Bond markets in EE5 countries are relatively smaller, as fiscal positions are stronger

In addition to the continued strong dominance of banks in corporate finance in EE5, the relatively low level of fixed income market development also reflects the stronger fiscal positions of the EE5 countries and consequently lower levels of government borrowing.

Figure III.1.5. **Financial intermediation in OECD and EE5 countries**

Selected variables, in per cent of GDP



Notes: Country groups show GDP-weighted averages of the respective variable. G7 countries are Canada, France, Germany, Italy, Japan, the United Kingdom and the United States. Accession countries (in accession to the OECD) are Chile, Estonia, Israel, the Russian Federation, and Slovenia. Low income OECD countries are those with a real GDP per capita of less than USD 15 000 in 2007 and comprise Mexico, Turkey, the Czech Republic, the Slovak Republic, Poland and Hungary. OECD averages are also GDP-weighted and are calculated over all 30 OECD member countries, except in Panel C where they do not include Luxembourg, New Zealand, Poland, the Slovak Republic and Turkey (2001-05); and Panel D where they do not include Luxembourg.

Source: World Bank, *Financial Development and Structure Database*; People's Bank of China; and OECD.

Thus, in all EE5 countries except South Africa, public debt-to-GDP ratios are lower than in the average of OECD countries.

Equity markets of EE5 compare favourably with those of OECD countries

The situation is rather different with respect to equity finance, where the markets of EE5 countries compare favourably with those of OECD countries. Despite a growing development of OECD equity markets over the past few decades, the capitalisation equity markets of EE5 countries had been growing more rapidly than those in OECD countries for several

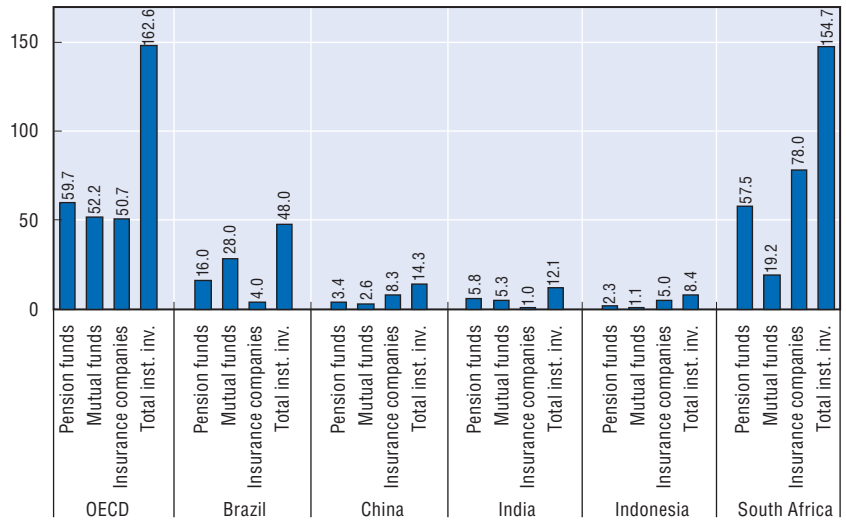
years. Moreover, in the current crisis the sharp correction of equity markets in OECD countries stands in contrast to the more resilient performance of in the EE5. In South Africa, where the equity market was already well developed, it has now advanced to the point that that market is comparatively larger than in any OECD country.[3] Brazil, China and India have all made significant strides in promoting the development of equity markets and their markets now rank among the largest in the world in absolute size. Indonesia has also made significant gains, but still lags behind other EE5 countries.

Institutional investment is far less developed in the EE5 countries, except in South Africa and, to a lesser degree, Brazil

One set of indicators that is closely related to the pattern on financial intermediation is the relatively simple pattern of holding of financial assets in EE5. As Figure III.1.6 shows, although bank deposits represent a lower share of GDP in the EE5 than in OECD, bank deposits are still the primary means by which the public holds financial assets. By contrast, one of the most striking features of the financial systems of the OECD countries has been the emergence of institutional investors, *i.e.* pension funds, insurance and collective investment schemes or (CIS), as the main form of wealth holding in OECD countries and as the major investors in securities. Among EE5 countries, only South Africa has a pattern of asset holding that is similar to those of OECD countries. In some countries some categories of institutional investors are comparatively well developed. Thus in Brazil CIS are well developed while pension funds have accumulated a moderate amount of assets. On balance, however, institutional investment is not well advanced in the EE5 at this time.

Figure III.1.6. **Patterns of holding of financial assets**

Assets of institutional investors in 2005, in per cent of GDP



Notes: OECD averages are GDP-weighted and comprise data from Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Japan, Luxembourg, the Netherlands, Norway, Spain, Turkey, the United Kingdom and the United States; these data are comparable across countries and in aggregate represent more than 90% of institutional investors' activity within all OECD countries.

Source: OECD Database on Institutional Investors Assets; Inter-American Development Bank; Asian Development Bank; and World Bank (2006).

With pension and other reforms, the pattern of asset holding in EE5 countries will change drastically

This situation is likely to change significantly as legal and regulatory frameworks are reformed and new funded pension schemes are introduced. In fact, major reforms are under consideration in several countries. Thus in 2007, India implemented a shift in the retirement scheme for civil servants to a new system of defined contribution accounts. An extension of this scheme to the general population is under active consideration. China and Indonesia are also considering major reforms. If these reforms are implemented on a substantial scale, the pattern of asset holding in EE5 countries will change drastically, a development with major implications for world financial markets.

Diversification of wealth holding away from bank deposits will foster competition and financial innovation

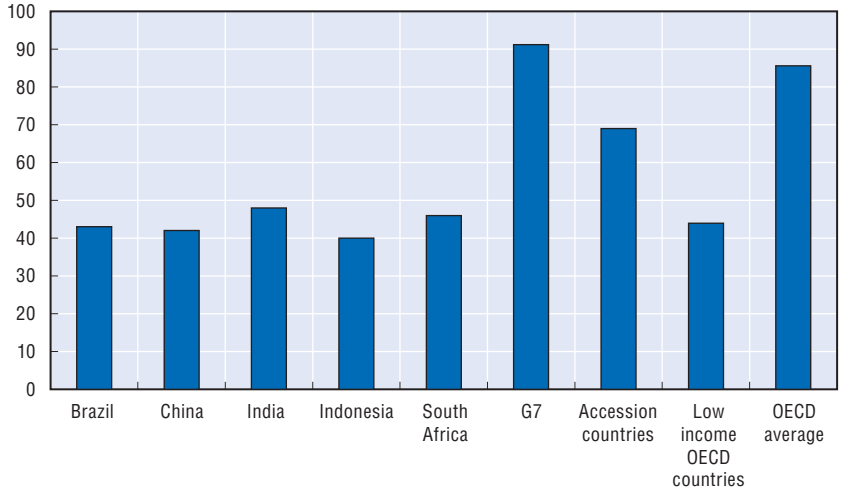
The present paucity of institutional investors in the EE5 is one of the explanations for the persistence of bank domination of finance, since there is a dearth of "natural buyers" for fixed income securities. The relative backwardness of institutional investment also means that one of the main pressures for financial innovation, *i.e.* competition among financial intermediaries to develop new products to satisfy the needs of investors, has been less pronounced in the EE5.

Less than half of the population of the EE5 countries has access to formal financial services

Another set of key indicators that helps to appreciate the situations of EE5 countries concerns the access of the population to finance. The World Bank has developed various indices of access to finance that's encompass both the access of small and medium enterprises (SMEs) to credit from formal institutions as well as the access of the general population to simple retail products such as accounts at depositary institutions, automatic teller machines, credit cards and consumer credit.[4] The composite indices of access for the EE5 are shown in Figure III.1.7. Reflecting their earlier stage of development, somewhat less than half of the population of the EE5 countries has access to formal financial services.

Figure III.1.7. **Access to financial services**

Index of access to financial services in 2007



Note: Country groups show GDP-weighted averages of the respective variable. OECD average: data are not available for Australia, Belgium, Iceland, Japan and New Zealand. For definitions of country groups, see footnote to Figure III.1.5.

Source: World Bank (2008b).

3. Financial policies: Deregulation, innovation and liberalisation in EE5 countries

Since 1980, OECD countries followed a process of deregulation…

This section considers the policies of the EE5 countries with respect to the optimal pattern of official regulation of finance. While generalisations about the policies of heterogeneous groups of countries can always be contentious, one of the defining characteristics of the global financial system between 1980 and the onset of the present crisis is that OECD countries have been willing to leave a growing number of decisions to the market. This process of deregulation was reflected in removal of controls on interest rates, mandatory credit allocations and restrictions on activities of financial institutions. In an environment of rising confidence in markets, officials and regulators have been willing to allow financial institutions substantial leeway in developing new products, entering new market segments and assuming risk.

… and internationalisation…

In the past few decades, a rising share of financial operations has taken place against the background of a growing internationalisation of markets. It was accepted that foreign financial institutions should be allowed to become established in domestic financial markets and should be accorded national treatment. The capability of corporate entities and financial institutions to move operations into offshore markets persuaded regulators and legislators to look favourably on requests by private institutions to engage in new kinds of activities.

… contrasting the developments in EE5 countries

The evolution in the thinking of the EE5 countries presents interesting contrasts with that of OECD countries. If one were to look back a few decades, most EE5 countries rejected many of the basic presumptions that underlay the liberalisation, deregulation and internationalisation that was occurring in OECD countries. The initial motivations for rejecting the free market model included ideological scepticism about the operations of the capitalist system and suspicions that the international market operated to the advantage of powerful high income countries. Furthermore, many of these countries wished to pursue active industrial policies inside closed economies. Finance was often seen as a sector in which the state should maintain control and where foreign participation should be carefully circumscribed, if not excluded altogether.

Some deregulation and market opening took place in EE5 countries

While the EE5 countries have not embraced the free market model to the same extent as the OECD countries, there has been an unmistakable movement toward greater reliance on market mechanisms. Virtually every EE5 has experienced at least one financial crisis in the past two decades that has necessitated large public outlays and set back economic and social progress. The EE5 countries concluded that these crises can be attributed in part to excessive government intervention that left financial markets rigid, vulnerable and unable to contribute to efficient allocation of real resources. Moreover the EE5 countries are aware that financial modernisation has brought considerable benefits, such as increased access by SMEs to financing, increased access by the general public to affordable housing finance and improved possibilities for the general public to invest.

As incomes rise and the burden of providing retirement income shifts from families and governments to individuals, more sophisticated forms of institutional investment and more flexible capital markets will be needed. Thus, virtually all EE5 countries have deregulated their financial systems to a significant degree and permitted the introduction of some innovative financial instruments. All have opened their markets to a higher degree of foreign participation.

On balance, the EE5 countries are likely persevere in their cautious and gradual pattern of modernisation and liberalisation.

Crises led EE5 countries to take a more cautious approach to deregulation and liberalisation

At the same time, one of the lessons that EE5 countries have drawn from the crises of the past few decades is that international financial markets can be unpredictable and destabilising, and that individual countries are well advised to take measures to insulate themselves from their potential adverse impact. For example, many observers concluded that among the major causes of the Asian crisis of 1997 were weaknesses, distortions and structural rigidities in the banking and corporate sectors of Asian countries and that part of the solution was to align practices in Asian countries with global standards. Asian countries essentially accepted this proposition but most also concluded that the crisis had exposed the risks of excess vulnerabilities to destabilising trends in the global financial system. As a result, most Asian counties have made it a point to build up their international reserves to the point that their vulnerability to instability in the world financial system is lessened significantly. They are also more likely to consider seriously the risks of easing controls on international capital flows or in allowing financial institutions to experiment with new instruments or techniques.

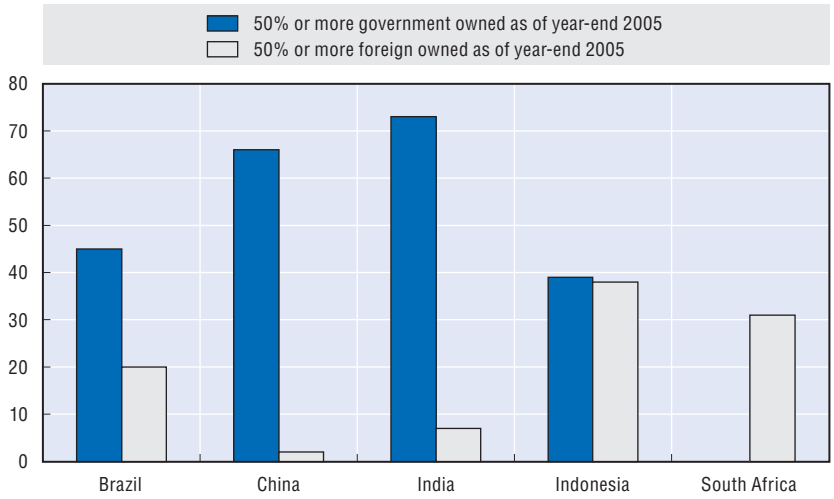
4. *Institutional structures*

The degree of government ownership of financial institutions remains considerably higher in EE5 than in OECD countries

Financial structures in almost all EE5 countries differ noticeably from those of OECD countries; the exception would be South Africa where structures are closer to those in OECD than to other EE5 countries. As can be seen in Figure III.1.8, the degree of government ownership of financial institutions remains considerably higher than in OECD countries. In most EE5 countries the state retains a strong hand in setting interest rates, allocating credit and otherwise guiding economic activity. Many EE5 countries believe that the presence of a large state owned banking sector with some official guidance over credit allocation helps the authorities in reaching industrial policy goals and in reaching underserved regions and communities. Some EE5 countries believe that the presence of state owned-banks attenuated the impact of the crisis on the domestic financial system during the present crisis. Foreign controlled institutions are also less prominent than in OECD countries. Furthermore, financial intermediation is considerably less international as can be seen from the relatively low share of foreign-affiliated banks in the domestic banking system and the low volume of cross border bank lending and bond issues in EE5 countries (see Figure III.1.9). At the same

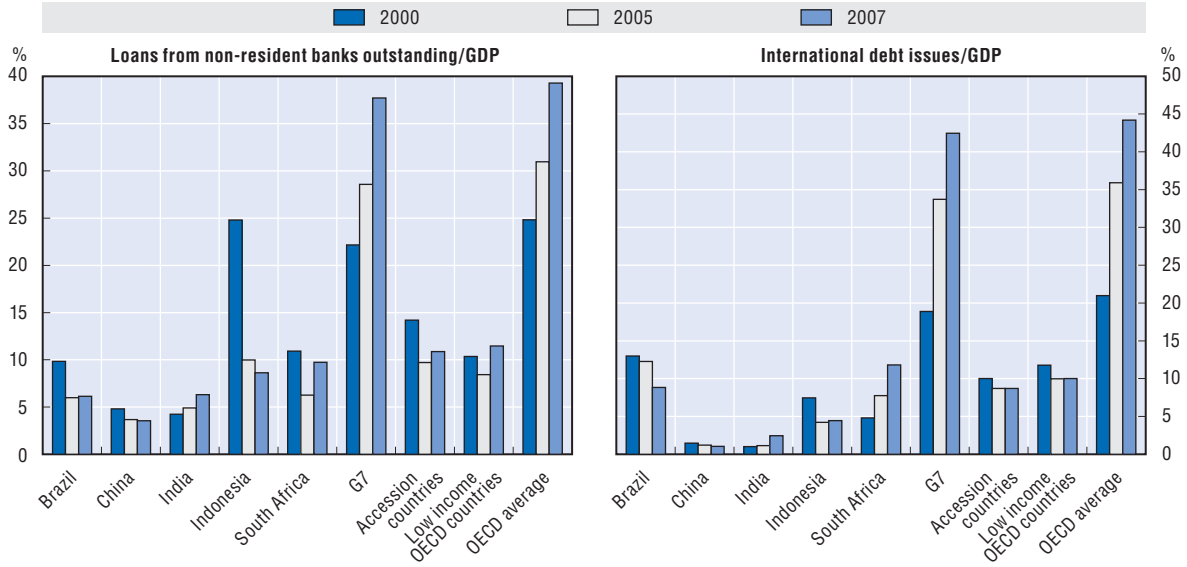
Figure III.1.8. **Bank ownership**

The fraction of the banking systems loans are in banks that are:



Source: World Bank, *Financial Development and Structure Database*.

Figure III.1.9. **Internationalisation of EE5 financial markets**



Note: Country groups show GDP-weighted averages of the respective variable. For definitions of country groups, see footnote to Figure III.1.5.

Source: World Bank, *Financial Development and Structure Database*; People's Bank of China; and OECD.

time EE5 countries have been reasonably flexible and have been trying to introduce elements of market competition even when banks remain under government ownership. In most EE5 countries, many public banks have been "corporatised" and often now accept private investors, including foreign investors, as minority shareholders.

The diverse institutional frameworks in OECD countries are converging

The institutional framework in which financial activity should be undertaken has often been an issue among OECD counties as well as non-members. In the past, some OECD countries such as Canada, Japan and

the United States imposed strict prohibitions on banks' capital markets activities, while most European countries, such as Germany, operated under a "universal banking" system. At present significant convergence is occurring within OECD countries where the dominant model is to allow banks to engage in a wide range of securities business but to operate through separate subsidiaries for each line of activity, and to build "firewalls" to minimise conflicts of interest and the risks of contagion. In more recent years, some OECD countries have experienced the growth of "financial conglomerates" which in addition to banking and capital markets activity engage in insurance and other financial services.

EE5 are more cautious than OECD countries regarding the formation of complex financial groups

The EE5 countries are generally more cautious than OECD countries regarding the formation of complex financial groups (see Table III.1.1). China and Indonesia have restrictions on banks' securities and insurance business. The other EE5 countries have a system that is similar to that to that of OECD countries, with banks allowed engaging in securities and insurance, but with requirements for such business to be conducted through separate subsidiaries, with requirements for additional prudential safeguards. China and South Africa do not have formal deposit insurance schemes, but the introduction of deposit insurance is under consideration in both countries.

Table III.1.1. **Deposit insurance in EE5 countries**

Is there an explicit deposit insurance protection system?

Brazil	Yes
China	No
India	Yes
Indonesia	Yes
South Africa	No

Source: World Bank, *Bank Regulation and Supervision Database*.

5. *Improved balance sheet quality and risk management*

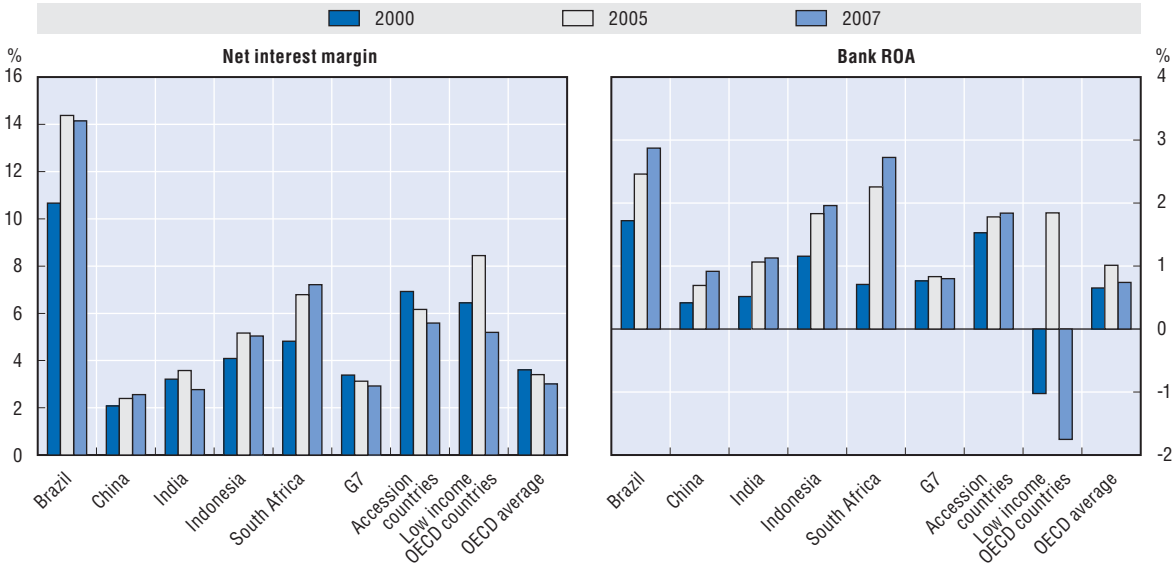
EE5 countries have made their financial systems more resilient

One area in which the EE5 countries have made considerable strides is in their determination to make their financial systems more prudentially sound. In the past, many EE5 countries had effectively reduced the role of banks to that of supporting national industrial policies (in the extreme case of pre-1980 China the banking system was merely a passive appendage of the central planning mechanism). As a result, the prudential soundness of domestic financial institutions often was not an especially large consideration for policy makers and several EE5 countries experienced systemic crises in their financial systems. Usually, these crises have forced governments to expend large sums on bank rehabilitation. Furthermore, the turbulence in international markets has persuaded most EE5 countries that the improvement of domestic supervisory practices should be a high priority. Once again, the supervisory practices of South Africa were closer to those of OECD countries than to other EE5 countries.

EE5 banks are now to observe more stringent standards of risk management than in the past

Awareness has grown of the need to require financial institutions, particularly banks, to observe more stringent standards of risk management and to improve prudential ratios. The capability of bank supervision has improved markedly and the political authorities now give much greater weight to considerations of systemic stability. Bank governance paradigms have been shifted so that bank management are expected to produce adequate earnings and to enforce credit discipline. These efforts are now reflected in higher profitability and significantly improved balance sheet quality in the EE5 counties, such as declining ratios of non-performing loans (NPLs) to total loans and higher capital adequacy ratios (see Figures III.1.10 and III.1.11).

Figure III.1.10. **Profitability of banks**



Note: Country groups show GDP-weighted averages of the respective variable. For definitions of country groups, see footnote to Figure III.1.5.

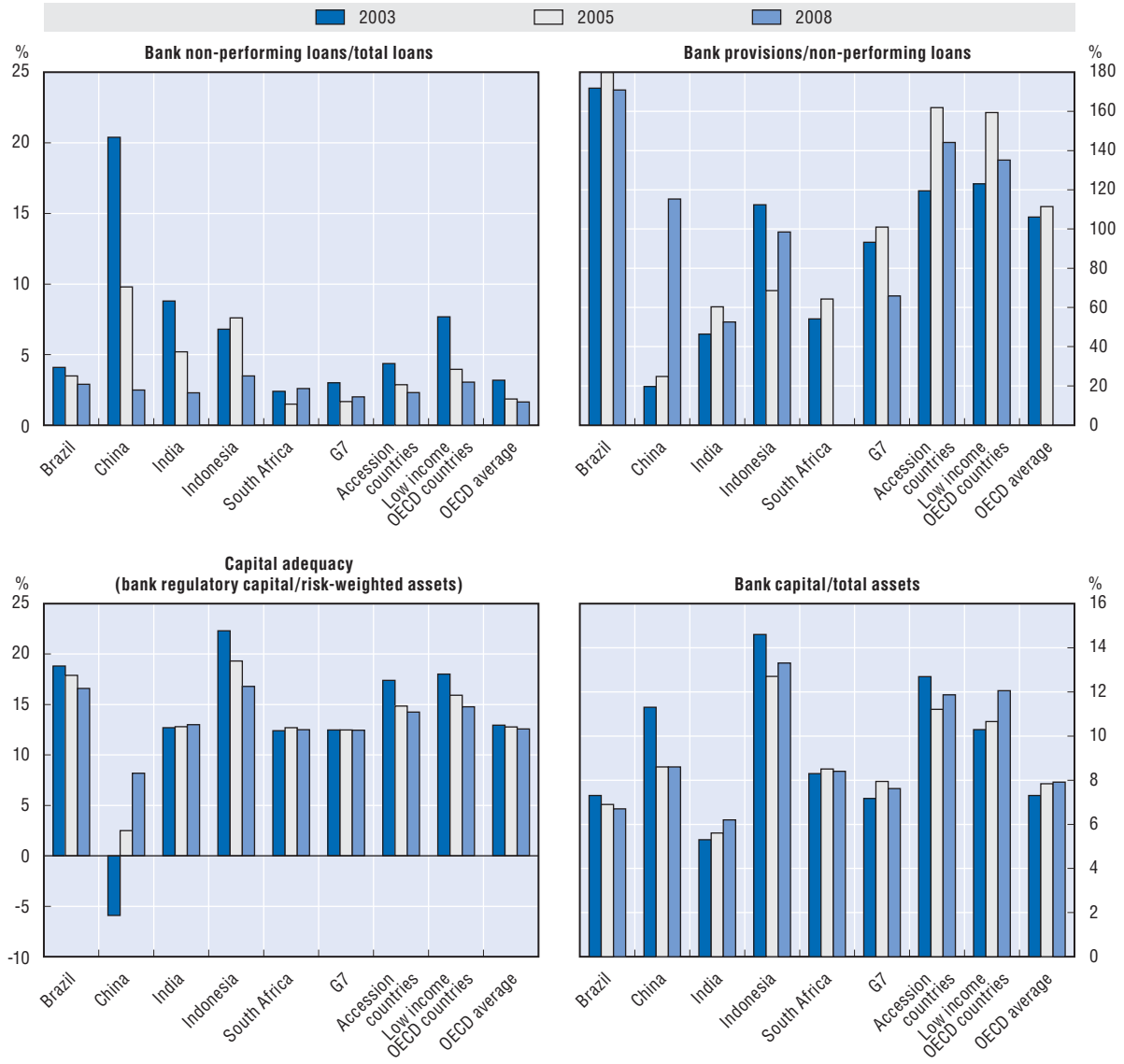
Source: World Bank, *Financial Development and Structure Database*; People's Bank of China; and OECD.

6. Financial supervision and systemic stability

In OECD countries, there has been a trend toward supervision by a single entity…

There is still a substantial divergence of opinion among OECD countries concerning the optimal institutional structure for financial supervision and on the role of the central bank in financial supervision. Most OECD countries that have engaged in systemic reassessments of their institutional structures have opted to consolidate responsibility for supervision of financial activity (banking, securities and insurance) inside a single entity. The trend toward consolidation reflects two basic considerations: *i*) private institutions now offer all of these activities within complex groups; and *ii*) due to financial innovation, many products have been developed that do not fit into the traditional categories of financial activity. In order to prevent contagion, ensure a level playing field and discourage regulatory arbitrage there has been a trend toward supervision by a single entity.

Figure III.1.11. **Key prudential ratios**



Note: Country groups show GDP-weighted averages of the respective variable. For definitions of country groups, see footnote to Figure III.1.5.

Source: IMF (2008).

... but despite this trend most OECD countries still have separate supervisors

Despite this trend, most OECD countries still have separate supervisors for each of these activities. The main argument for separation of these activities is that banking, securities and insurance business are fundamentally different and therefore require different supervisors. In most such cases the central bank retains the responsibility for the supervision of banks as well as a general responsibility for systemic stability. In these cases, communication and co-operation among supervisors rather than a unified supervisory institution is seen as the best response to changes in institutions and products. Finally, it should be mentioned that the Netherlands and Australia have settled on a "twin peaks" model where there are two supervisors with a mandate for the

oversight of all institutions, one with responsibility for prudential issues and the other for "conduct of business" oversight. Most countries, both OECD Members and non-Members, are likely to consider further their institutional structure for financial supervision in the light of their experiences during the post 2007 financial crisis.

No EE5 country has adopted the unified financial supervisor model

As Table III.1.2 shows, the situation is somewhat simpler among EE5 countries. No country has adopted the unified financial supervisor model, each having separate supervisors for banking, securities and insurance. Indonesia, however, is seriously considering adoption of the unified supervisor. In all EE5 countries except China, the central bank is responsible for banking supervision. In China, there is a specialised China Banking Regulatory Commission that is separate from the central bank.

Table III.1.2. **Institutional structure of financial supervision**

	Body/agency that supervises banks
Brazil	Central Bank
China	China Banking Regulatory Commission
India	Central Bank
Indonesia	Central Bank
South Africa	Central Bank

Source: World Bank, *Bank Regulation and Supervision Database*.

7. A new financial landscape emerging?

EE5 countries are gaining importance in world financial markets

As already visible in the leading role of the G20, the events of the past three years will in all probability enhance the role of EE5 countries in the global allocation of capital and in global decision-making. Non-traditional financial players, with the EE5 countries in the lead, were already gaining importance in world financial markets as a result of their high rates of growth and their rising shares of world trade and investment. Meanwhile, global payments imbalances have been leading to the accumulation of investible assets in certain non-OECD countries. The events of the past three years should accelerate this trend.

Financial powers are shifting to new "power brokers"

Some recent analyses have predicted the emergence of "new power brokers" consisting of central banks and sovereign wealth funds from Asian countries and oil exporters as well as hedge funds and private equity funds.[5] Since the report was published in 2007, the 2009 update shows the prospects for the latter two categories of investors have dimmed on balance but the position of sovereign wealth funds and central banks from non-OECD countries has become larger. In addition, the relative weight of financial institutions has shifted dramatically among geographic regions in the last three years. At this time the three largest banks in the world measured by capitalisation are domiciled in the Peoples' Republic of China. More generally, institutions outside OECD countries are likely to become bigger players in financial markets. The emergence of large asset holdings, rising shares of world equity and bond markets and the emergence of powerful financial institutions in new

regions of the world are likely to influence the contours of the world financial system in years to come.

IV. Brazil

Overview

Development of the Brazilian financial system has been heavily influenced by the period of inflation, indexation and directed credit that began in the 1960s. The Real plan of 1994 included disinflation as well as reform and partial deregulation of the financial system. A major transformation occurred in patterns of bank ownership with private and foreign banks gaining market share. However, official banks still account for about 45% of bank assets. Banking supervisors have been very cautious in authorising new financial instruments, especially for banks, and enforce rigorous prudential standards. Due to resolute restructuring programs and tightened supervision banks are profitable and well capitalised. The country has a thriving equity market, and the bond market is deeper than in any other EE5 country.

1. Banking

A long period of high inflation, indexing and directed credit had expanded and distorted the banking system…

From the late 1950s through the mid-1990s the economy experienced high inflation, indexing and directed credit. In this environment the banking system expanded considerably but also became rather distorted. Inflation enabled Brazilian banks to collect easy revenues by paying a negative or low real interest rate on the excess of demand deposits over reserve requirements. Real interest rates were often negative, meaning that for those borrowers able to obtain loans, the risk of default was low. Some analysts estimate that about half of Brazilian bank revenues were attributable to the ability to exploit the distortions of inflation.

… with public sector banks becoming more important…

Brazil has evolved a distinctive blend of public and private bank ownership. Public sector banks, which had existed for many decades, expanded more rapidly than private banks during the period of high inflation. On the eve of the "Real" economic stabilisation programme in December 1993, government banks were responsible for over 55% of lending and private institutions for about 45%. Almost all longer term lending came from government banks.

… also in financing government projects…

In spite of their importance in the financial system, government banks had been in constant conflict between maintaining their financial viability and their social and political goals. In many cases, states were able to use the state banks as a means of supporting employment in state entities and/or financing state-favoured infrastructure projects.

… but surviving, however, on public support

Despite recurrent crises from the 1970s through the 1990s, official banks survived due to substantial volume of low-cost financing from the public sector, inflation-driven earnings on float, periodic central bank restructuring efforts, and regulatory forbearance regarding their loans and investment portfolios.

Disinflation led to a sharp decline in banks' prudential strength…

The Real Plan of July 1994 was a clear success in reducing inflation, which fell from four digits in 1988-93 to low single digits by the late 1990s. With the removal of their ability to profit from the inflationary environment, Brazilian banks experienced a sharp decline in prudential strength.

… and soaring NPLs…

When the central bank tightened money and credit conditions in the second half of 1994, NPLs began to soar. Past due loans rose from 6% of total loans in 1994 to 16% in 1996. With the imminent insolvency of some big private banks, a bailout mechanism was put in place in November 1995.

… but a major bank restructuring and privatisations transformed the banking sector…

At that point the authorities launched a major bank restructuring that would eventually lead to a transformation of ownership structures and a realignment of banking practice. A large number of public banks were privatised with foreign interests eligible to participate in the equity of the privatised entity. With the reform, private domestic banks managed to keep their share of total banking assets while foreign controlled banks increased their share from 5% at the time of the Real Plan to 25% at present. The share of banks owned by Brazilian states declined sharply but the share of federally owned banks declined only marginally.

… and enhanced competition

The reforms in ownership introduced in the late 1990s led to heightened competition between various categories of banks. Due to exits and consolidation, the number of commercial banks has been declining since the Real Plan. By most measures the degree of concentration in banking remained rather low in this period, but concentration increased significantly in 2008 as a result of major mergers. At the end of the year, the top five banks in total accounted for 75% of assets.

Credit to the private sector contracted and its growth remained sluggish

After the introduction of the Real Plan, credit to the private sector contracted and credit growth remained sluggish for several years after 2000. In fact, the loan/deposit ratio and the ratio of domestic credit (and especially credit to the private sector) to GDP are still very low compared to other countries. Securities and credit to state entities constitute a comparatively large share of bank portfolios. Moreover, the central bank has maintained high reserve requirements on bank deposits, often receiving criticism for stalling credit expansion and growth.

Lending rates and net interest margins are very high by international comparison

One of the striking features of banking in Brazil is that rates charged to borrowers and net interest margin are much higher than in other EE5 countries and in other Latin American countries. Official and academic analysts have been seeking to explain the persistence of high credit spreads in the face of partial deregulation and increased competition, but no definitive explanation has been given. For example, it was suggested that poor information flows and difficulties of clients switching banks may be part of the explanation.[6] Costs and expense ratios appear to be in line with those in other countries. By other measures of profitability (*e.g.* ROA and ROE), Brazilian banks appear to be only slightly more profitable than other EE5 countries.

A distinctive mix of financial policies has enabled the country to weather the post-2007 financial crisis reasonably well

The Brazilian authorities believe that their distinctive mix of financial policies has enabled the country to weather the post-2007 financial crisis reasonably well. State-owned banks maintained a strong pace of credit growth, offsetting the slowdown in private-sector bank loans. Given high reserve requirements, the central bank was able to provide a stimulus by cutting its reserve requirements. The central bank also slashed local interest rates by 500 basis points to their lowest level in several decades and made credit lines directly available to the corporate sector.

Brazil has been making a determined effort to enforce sound supervisory practices

Due to earlier banking and balance of payments crises, Brazil has been making a determined effort to enforce sound supervisory practices. The central bank, which is responsible for banking supervision, has been very proactive in assuring that banks observe cautious risk management practices. The minimum capital ratio has been set at 11%, rather than the 8% suggested in the Basel Accord. In fact, Brazilian banks maintain risk-weighted CARs of about 17%. Brazil also has tough regulation limiting the inclusion of hybrid securities and subordinated debt in capital.

Limits and requirements are comprehensive…

All limits and requirements are applied in consolidated terms and are meant to capture off-balance sheet exposures. Banks face strict transparency requirements with respect to their operations involving OTC derivatives and other exotic instruments. Over-the-counter derivatives that have a supervised entity as counterparty have to be registered and monitored. Banks must perform sensitivity analyses of these instruments and must satisfy the central bank that risk is accurately assessed and provisioning is adequate.

… and forward looking, with careful evaluation of financial innovations and risk monitoring

Banks' loan classification practices must be forward looking, measuring not only delinquency but the risk of eventual delay in payment. Reserves must cover all debt payments past due 60 days. The central bank does not use credit rating agencies' evaluation of assets but adheres to its own rules regarding asset classification. The central bank conducts stress tests on each bank and issues ratings for the banks. The central bank also has the authority to monitor operations of investment firms that could have an impact on systemic liquidity.

NPLs have been reduced steadily

Due to strict supervisory norms NPLs have been reduced steadily since the banking crises of the 1990s, even though these ratios are still somewhat above the level of other EE5 countries. At the same time, banks' provisions against NPLs are almost twice the levels of NPLs.

2. Institutional investors

Institutional investors' assets represent a fairly large share of GDP

One of the underpinnings of the capital markets is a broad community of institutional investors. Institutional investors' assets represent a larger share of GDP in Brazil than in any other EE5 country except South Africa. As a result of pension reform, pension funds assets have been rising since the early 1990s and were equivalent to 16% of GDP at the end of 2005. Brazilian pension funds hold lower shares of their portfolios in government bonds than in most emerging markets and are major investors in equity. The CIS sector is very well developed, with

assets equal to some 28% of GDP. By contrast, the assets of insurance companies represent only some 4% of GDP (2005 figures for all).

3. Capital markets

Brazil has the largest bond market as a share of GDP among EE5 countries

Although the Brazilian bond market is smaller than that of most OECD countries, Brazil has the largest bond market as a share of GDP among EE5 countries and also the largest in Latin America. The market is dominated by government bonds. The Brazilian federal public debt market is one of the most liquid and sophisticated among emerging markets, with a wide range of debt instruments (fixed-rate, floating-rate and inflation-indexed bonds).

The indexed market is well developed, and the securities settlement system well advanced

During the period of prolonged high inflation, a market in indexed instruments developed. The market experienced periods of expansion and contraction, often related to changes in the government's policy on indexation. In 1979 the central bank initiated the SELIC settlement and custody system leading to a completely paperless treasury securities market that, with continued upgrading, is still in operation today.[7]

The Treasury market is modern and liquid

By the early 1990's, all the main treasury debt instruments currently available had been introduced and it began to take on many of the characteristics of a modern liquid market.[8] All Treasury instruments can be used as collateral in repo transactions with the central bank. The Treasury has established a regular auction calendar. Currently, there are 12 primary dealers and 10 secondary (specialist) dealers. Federal bonds can be traded over the counter by telephone or electronically through screens. All transactions are registered with SELIC. Most bonds are linked to the overnight SELIC interest rate but the central government started to increase the issues of non-indexed fixed interest rate bonds in 2005. Issues of state government debt have contracted after some local government bonds defaulted.

Dollar-linked and floating-rate securities have declined, with fixed rate securities rising and maturity lengthening

As the market has matured, issuance of dollar-linked bonds has declined drastically. At the same time, the National Treasury initiated a process of gradual replacement of floating-rate for fixed rate securities, and their volume has been rising significantly since 2003. There also has been a gradual extension of the maturity structure of government debt in local currency. This has been achieved in part through a shift from short-term to fixed rate bonds and through a lengthening of the maturity of fixed rate bonds. Average maturities of debt have also been rising, as reflected by its 20-year global bond issues. The average maturity of new central government debt in Brazil stood at 56 months at the end of 2006.

Global bonds in local currency have been issued increasingly during the past few years

During the last few years, Brazilian public and corporate entities have been issuing global bonds (*i.e.* bonds simultaneously issued to domestic and international investors) denominated in local currency, an innovation pioneered by the Inter-American Development Bank. In September 2005, the Brazilian government issued BRL 3.4 billion (USD 1.5 billion) of global bonds with a maturity of 10 years and a 12.5% coupon. The issue was oversubscribed several times and the distribution was purchased by

investors from Europe and the United States. The issue contributed to extend the maturity of the yield curve for real-denominated fixed rate government debt, which had hitherto been limited to seven years in the domestic market. In May 2007, Brazil issued 20-year real-denominated global bonds, securing the lowest-ever yield for real-denominated debt securities. These securities have long maturities, they are not indexed to inflation and offer a fixed interest rate. Both inflation and exchange rate risk are thus transferred to investors. While denominated in Brazilian currency, both interest and principal are settled in US dollars, freeing investors from any risks associated with exchange controls. Brazilian global bonds fall under the laws of the state of New York, enhancing their attractiveness to international investors.

Private bond market activity remains at a lower level

The development of the private bond markets paralleled that of the public bond market, but activity remains at a much lower level. A law passed in 1965 enabled the indexing of private bonds to inflation. In 1976 several structural reforms were implemented. The Securities Commission (CVM) was created as the agency responsible for capital markets regulation and several types of bonds were authorised including bonds with or without collateral, subordinated bonds, bonds with warrants and those in foreign currency etc. Although much of the infrastructure of a corporate bond market was put in place, due to the attractiveness and availability of subsidised financing as well as taxation issues, bond market finance was not an attractive source of finance for the corporate sector. After the Real Plan in 1994, the Brazilian corporate bond market entered its current phase. In 2003 the CVM issued new rules that further facilitated corporate bond issuance while a simplified standard bond indenture and tax law changes to improve liquidity in the secondary market are being discussed.

More private global bonds are being issued in local currency

Initially, most private sector bonds were issued in foreign currency. However, at the end of 2004, a few Brazilian private financial institutions began issuing external debt denominated in the local currency. In 2005, more major financial institutions issued global bonds in local currency. Besides private financial institutions, a few corporations, such as an electricity company (Eletropaulo) and a telecommunications company (Telemar) have also issued foreign bond in local currency.

Securitisation, activity began to take off after 2002, mainly in ABS, much less in MBS

Securitisation has made substantial progress in Brazil. Two special kinds of investments instrument are used for MBS and ABS.[9] Following reforms in the legal and regulatory framework for securitisation, activity began to take off after 2002. The volume of issuance rose from less than USD 1 billion equivalent in 2001 to more than USD 6 billion equivalent in 2006. Activity has centred mainly on the ABS sector, where securitisation has included a wide variety of collateral, such as leases and corporate receivables as well as more traditional assets such as credit cards and auto loans. The MBS sector has not been very dynamic, with securitisation of residential mortgages accounting for only about 2% of the total.

The Brazilian equities market is well developed

Brazil has an equities market that is huge by most measures, although smaller proportionally than those of China, India and South Africa. On 8 May 2008, the São Paulo Stock Exchange (Bovespa) and the Brazilian Mercantile and Futures Exchange (BM&F) merged, creating the new BM&F Bovespa, the main platform for equities trading.[10] Bovespa operates under the supervision of the CVM.[11] Since the 1960s, it has constantly evolved with the help of *technology* such as the introduction of computer-based systems, mobile phones and the internet. As a result of a 2008 stock swap, Chicago's *CME Group* owns an approximately 5% stake in BM&F Bovespa, and in turn, BM&F Bovespa owns a 1.7% stake in CME Group. Among its broad range of trading products, the new exchange offers equities, bonds, indices, interest rates and commodities as well as foreign exchange futures and spot contracts. The BM&F Bovespa is linked to all Brazilian stock exchanges, including *Rio de Janeiro's* BVRJ which trades in *government bonds* and *currencies*. Individual investors and institutions (pension funds and CIS) each account for about 20% of trading and foreign investors account for some 35%. A special board for smaller and newer companies was recently formed.

Macroeconomic stabilisation brought a wave of IPOs

The amount of listed equity stagnated for a prolonged period as the IPO's market was not attractive or available during the volatile macroeconomic situation and unstable interest rate environment of the inflationary period. Few companies chose the stock market to raise new capital. With the improvement of the macroeconomic scenario, increased global liquidity and reduction of interest rates as well as structural reforms in the market itself, a wave of IPOs has been occurring. Between 2004 and June 2008 there were 110 IPOs which raised USD 88.5 billion, compared to market capitalisation of USD 592 billion equivalents in 2008.

V. China

Overview

With a very high savings rate, China has one of the largest pools of assets in the world. The banking system is undergoing a profound change as a result of reforms that have transformed ownership of the four large state-owned banks through corporatisation, ownership diversification and public listing. Competition between state-owned banks and other banks has helped improve efficiency. Activities that hardly existed a decade ago, notably housing finance and consumer credit, are growing very rapidly. Banks have made considerable progress increasing profitability and improving balance sheet quality. Bank's risk management and prudential ratios have improved substantially over the past five years and banks are offering a much wider variety products and services than they have in the past.

Chinese equity markets are among the largest and most heavily traded in the world. The lack of strong institutional investors, dominance of listings by state-owned enterprises and small presence of foreign investors make the Chinese market unique. With very large banks and capital markets, China will be one of the world's largest financial markets in coming years.

1. Banking

Authorities have put in place a strategy to improve the banking system, but unresolved issues remain

Since the 1990s, the banks have been undergoing a rapid evolution from their traditional role of allocating credit in accordance with government directives. Competition within the banking sector has increased. The authorities have put in place a coherent and comprehensive strategy for further improvement of the banking system. However, further efforts will be needed before banks can adequately serve the needs of the increasingly important private businesses and the rural economy. A number of unresolved issues, notably the status of the state-owned commercial banks and the scope for private ownership in the banking system will also need to be addressed.

State-owned commercial banks (SOCBs) largely dominate the three other segments of the commercial banking system

The commercial banking system consists of the four segments: 1) four large state-owned commercial banks (SOCBs); 2) the twelve nationwide joint-stock banks (JSBs); 3) city commercial banks (CCBs); and 4) credit co-operatives. The share of the four SOCBs in total assets has been declining in recent years and now amounts to slightly more than half of total bank assets, with the share of all three other categories of banks rising. One distinguishing feature of China's banking landscape is pervasive state ownership and control. The SOCBs are majority-owned by the central government and, with some very few exceptions, JSBs and CCBs are majority-owned or controlled by local governments and/or SOEs. There are an extremely small number of purely private banks, and the market share of foreign banks is still quite small.

On balance the Chinese authorities believe that a continuing large government presence in the banking system has enhanced stability.

Nearly all bank credit went to state-owned enterprises

Reflecting the country's history as a centrally planned economy, banks traditionally had little autonomy in credit decisions and nearly all bank credit went to state-owned enterprises (SOEs). In addition to the central government, local governments have traditionally exercised considerable influence over the lending policies of banks in their areas.

The banking system has changed considerably and lending standards have improved

As the country had progressively sought to introduce elements of the market economy, China's banking system has changed considerably since the 1990s, with the pace of change accelerating after 2004. Since 1996, with the creation of the three policy banks and subsequent abolition of the credit plan, commercial banks have in principle been free to make loans purely on the basis of commercial criteria and it is generally agreed that lending standards have improved considerably. The authorities have taken a number of steps to reduce interference by local governments in operations of bank branches.[12]

Changing banks to become more businesslike has proven difficult

Despite the government's announced policy of requiring banks to act in more businesslike ways, it has proven difficult to change bank behaviour. Resolving the problems has been made all the more difficult by the weak condition of the banks' main borrowers, the state-owned enterprises (SOEs) which often depended upon bank credit for survival and which the authorities hesitated to close for fear of social unrest.

In 1998-99, a significant effort to strengthen weakened banks' balance sheets was undertaken…

By the late 1990s, much of China's banking sector was effectively insolvent. A very large share of the loans of the SOCBs had become non-performing (although they were not yet fully recognised as such at that time) and most city commercial banks, RCCs and joint-stock banks had high NPL ratios. Banks were inadequately capitalised and had low profitability ratios. In 1998-99, a significant effort to strengthen SOCB balance sheets was undertaken with the subsidised sale of a large portion of NPLs to government-owned asset management companies (AMCs). Bank management was made, at least theoretically, responsible for any new NPLs.

… however with mixed results

Despite expenditure on restructuring amounting to about 16% of GDP, the results were mixed. On the positive side, the financial conditions of the JSBs improved markedly, and the SOCBs and JSBs implemented a more rigorous loan classification system. Practices regarding transparency and disclosure, likewise, showed a marked improvement. However, NPLs remaining in the SOCBs turned out to exceed those that were carved out in 1999 and by official estimates were still 18% of total loans at the end of 2003. SOCBs could make very little headway in reducing the level of NPLs or in preventing new NPLs from emerging, due to the low level of their own profits and persistent problems in autonomy in credit allocation. A certain reduction in the ratio of NPLs to total loans at SOCBs was achieved between 1999 and 2004 but this was mainly due to increases in loans.[13]

Reforms in 2004 were based on upgrading supervision, ownership diversification, public listing and expanded foreign presence

In 2004, the authorities accelerated their effort to align practices in the banking system with best international practices. In addition to the expenditure of additional funds to strengthen bank balance sheets, this reform was based upon an upgrading of supervision, ownership diversification, public listing and expanded foreign presence. These measures were designed to subject all banks to higher standards of transparency and disclosure, with more intense scrutiny by banking counterparties, investment analysts, institutional investors and rating agencies. The change in ownership and governance practices was aimed at focusing bank management on profitability and prudential soundness.

Responsibility for bank supervision was transferred to CBRC

Measures to improve bank supervision were accelerated. Responsibility for bank supervision was transferred from the central bank to a newly formed agency, the China Banking Regulatory Commission (CBRC) and a series of laws and regulations to improve supervision, based on international practices and global standards, was enacted. In ensuing years, the CSRC imposed a stringent supervisory regime. Capital requirements were set above the international norm, with strict rules discouraging the use of Tier 2 capital. At present more than 80% of bank capital is Tier 1. The CSRC has also insisted that banks demonstrate an in-depth knowledge of any new instruments that are introduced.

Special entity (Huijin) to assume state's ownership interest in SOCBs

In December 2003 a special entity (Huijin) was set up to assume the state's ownership interest in the SOCBs. The SOCBs were first transformed into joint stock companies with the state as the sole owner and received cash injections to increase capital to adequate levels and build reserves against NPLs.

SOCBs were converted into corporations and ownership was diversified

The first step was to convert SOCBs into corporations. (The JSBs and CCBs had been legally incorporated since the 1990s.) In 2004, the Bank of China and China Construction Bank became the first of the SOCB to be transformed into corporate form, the other two SOCBs were subsequently transformed. The second step was to diversify the ownership of the banks, with new owners to include private interests, to be followed at least in the case of the larger banks, by listing on the stock markets. This second element is regarded as critical to ensuring that financial institutions remain focused on commercial objectives. The JSBs and many of the CCBs already have multiple investors, although they are for the most part still state controlled entities. The SOCBs have become much less specialised and more competitive with one another and with the JSBs.

Banks have expanded operations in housing finance, consumer finance and asset management. The CSRC generally requires banks to set up separate subsidiaries when engaging in activities not strictly related to commercial banking. Banks may also offer insurance through specialised subsidiaries.

Bank performance was to be improved by better governance structures and subjecting companies to market discipline

The strategy to improve the performance of banks was to change the ownership and endow them with governance structures (notably boards of directors and/or supervisory boards and the shareholder's general assembly) that align management incentives with owner's interest; and subject the companies to market discipline over their performance via a combination of stock market listing, bond issuance, and monitoring by lenders and shareholders. The authorities placed great hopes on the introduction of strategic investors, particularly foreign strategic investors, as a means of further strengthening the commercial orientation of the institutions as well as bringing in new business techniques and other expertise.

Many major international banks have become strategic investors in corporatised SOCBs

Although the problems of these banks were widely recognised, major international banks believe that China is likely to be a major player in international finance and thus it is important to have a presence in the market. Consequently many major banks have become strategic investors in the corporatised SOCBs. The SOCBs will select their own management, which will be accountable for meeting the most commonly used benchmarks for earnings and balance sheet quality as well as targets for improvement in internal governance. Public listing and a broad investor base will lead to improved monitoring to protect shareholder value. The SOCBs as well as JSBs have listed on both Chinese markets and international markets. These have been among the largest IPOs ever launched anywhere. This has enabled them to raise large volumes of capital and to include institutional investors from around the world into their capital structures.

Heightened competition was permitted between SOCBs and other domestic banks, with JSBs gaining market share

Heightened competition was permitted between the SOCBs and other kinds of domestic banks. The JSBs have already been gaining market share in recent years. To make further gains, the JSBs were able to raise capital by: *i)* domestic or international equity; *ii)* issues of subordinated debt; and/or *iii)* strategic investments by foreign banks. The CCBs were also opened to

strategic investments by foreign banks. Finally, an expanded foreign presence would be encouraged partly linked to Chinese WTO membership and partly linked to a desire to benefit from foreign competition.

Substantial progress was made in risk monitoring and management…

Substantial progress was made in modernising internal systems for credit assessment, loan monitoring, and risk management within the SOCBs, JSBs, and some CCBs. These include: the separation of loan origination and assessment; the introduction of objective criteria and procedures for assessing creditworthiness; and the adoption of a new loan classification system in line with international practices. At least in principle, new loans as well as loan extensions are granted only to borrowers with a good credit record and based on standard creditworthiness criteria such as cash flow and business prospects. The new system incorporates forward looking indicators relating to a borrower's ability to repay and requires reassessment in the event of a significant change in those conditions.

… but political considerations continue to play a role in lending decisions

Efforts have been made to reduce interference by local governments in lending decisions by moving the authority to grant large loans to higher levels. However, the extent to which lending decisions by the banks are driven by commercial criteria is uncertain. Improvements in lending decision frameworks have been made but there is evidence indicating that political considerations continue to play a significant role.

The prudential quality of banks has improved, and reforms help prepare the banking system for its next phase of modernisation

Overall, efforts to improve the prudential quality of banks have been reflected in improving ratios. Profitability has improved. Banks' ROA are still somewhat low in comparison to other EE5 countries, but net interest margin and ROE are in line with other EE5 countries. NPL ratios have declined substantially while provisions now exceed NPLs. CARs, which had been as low as 4% in 2004, are now approaching international norms. There is virtually no one who believes that the measures to date are sufficient to cure the problems of the Chinese banking system. At the same time the measures taken are bold and leave the country positioned to move on to the next phase in the modernisation of its banking system.

2. Institutional investors

The institutional investor sector is still rather small in China…

The institutional investor sector is still rather small in China. The assets of all institutional investors were equal to only 14% of GDP in 2005, the second lowest ratio among EE5 after Indonesia. CIS and pension funds accounted for only about 3% (each) of GDP in 2005. Nevertheless, institutional investors are becoming significant holders of certain categories of securities. Thus, the China Securities Regulatory Commission (CSRC) estimates that institutions now own half of all tradable "A shares." The assets of insurance companies were slightly larger, representing over 8% of GDP in 2005.

… but government has been seeking to better promote it

The government has been seeking to promote institutional investors, recognising that these investors tend to be able to engage in more disciplined and professional analysis of issuers thereby encouraging a rise in standards of disclosure and performance while reducing volatility.

The introduction of a comprehensive pension reform…

The development of institutional investors is also closely related to another major policy goal, the introduction of funded pension schemes. At the end of 2007, only a small proportion of the total Chinese labour force (25.6%) participates in any government pension scheme, fundamentally a pay as you go (PAYG) system. Moves toward pension reform have been hesitant. Rural workers have barely any coverage, but urban workers currently participate in a PAYG public pension scheme. This system is partially backed by a reserve fund (the National Social Security Fund), with some foreign investments outsourced and managed by professional asset managers. The government has introduced a pilot scheme for rural pensions and migrant workers that will eventually raise coverage, but it has only just started.

… would open immense investment possibilities for domestic and foreign asset managers

In addition, a layer of individual DC accounts has been added to the public pension system, but these accounts are yet to be properly funded. The assets so far accumulated are still run by the government, but there is debate as to whether they should be managed by professional investors in future. The government is also encouraging the development of private, occupational pensions, known as Enterprise Annuities, which are still mainly confined to large companies, with the assets required to be managed by specially licensed institutional investors. If China actually launches a comprehensive pension reform, it would in the long run open an immense amount for domestic and foreign asset managers to invest.

3. Capital markets

China has made impressive strides in building a dynamic equity market in the past two decades

China has made impressive strides in building a dynamic equity market in the past two decades. As of today the ratio of market capitalisation to GDP is comparable to that of OECD countries, even though the market is still backward in many ways. Chinese residents have very high aggregate savings rates, but still do not have a wide array of investment options. Small investors hold large amounts in bank accounts and modest amounts in government bonds, but other capital market instruments and institutional savings products are not well developed. As a result stock market investment has captured the interest of the public. Retail investors have tended to trade on technical factors, rumours and real or supposed insider information, with the emphasis on short-term trading profits. Chinese investors trade very frequently by comparison to those in other markets.

Retail investors have been dominating the market, but investment funds are gaining share

Retail investors have been dominating the market, but the institutional investor share of the A-share market's tradable shares is now just over 50 per cent. There has also been a history of investment fund operations operating in a "grey market". These funds range from small community-based funds in which funds are invested by informal networks of friends, work colleagues and relatives to much larger and more professional operations involving solicitation from the public.

State-owned securities companies are the main intermediaries in the capital market…

Given the regulations separating banking and securities business in China, the main intermediaries in the capital market (other than the government debt market where banks predominate) are the securities companies. Chinese securities companies differ considerably from securities companies and investment banks in the major world markets. All of China's securities companies are state-owned, either directly or through SOEs. Chinese securities companies still depend heavily on trading commissions as well as income from IPOs for revenue. Given the pace of technological advance, there is likely to be consolidation in the Chinese industry as there has been in most countries.

… with little pressures to produce high quality, independent research

Given the lack of depth in the investor community, pressures to produce high quality research have not been strong. The securities companies are widely suspected of collaborating with investment funds and other market participants to manipulate stock prices. In-house systems for risk management and compliance are not well developed. Until recently enforcement of market conduct rules had been sporadic.

The vast majority of listed companies are state-owned enterprises (SOEs)

The vast majority of listed companies are state-owned enterprises (SOEs). Listed companies usually belong to SOE groups that select some of their stronger members for public listing. In practice, the separation between the listed company and its unlisted affiliates remains incomplete. Given that SOEs have been able to obtain large sums on capital markets and while requiring only very limited behavioural changes on the part of listed companies, public listing has been a very attractive proposition. Chinese companies had extremely high valuation ratios by global comparison.

Many shares are non-tradable

Through the middle of 2001, a listed company typically offered only about 25-30 per cent of its total equity to public investors of all kinds (*i.e.* employees of the company or retail or institutional investors).[14] The remainder was held by the state or "legal persons" and were not traded. As a result of these non-tradable shares, the assertion that equity market capitalisation represents a high share of GDP must be interpreted with some caution.

Reform in 2005 aimed at eliminating the difference between tradable and non-tradable shares

In April 2005 the authorities launched a reform aimed at eliminating the difference between tradable and non-tradable shares while, at the same time minimising market disturbance due to the huge amount of "new" supply coming to the market. Appropriate compensation was therefore a core element of the reform and usually holders of non-tradable shares compensated those of tradable shares by giving out a portion of their shares at mutually agreed prices. By the end of 2007, listed companies accounting for 98% of total market capitalisation had at least started the reform process. During the transition mechanisms were introduced to compensate owners of non-tradable shares for expected price declines while formerly non-tradable shares were subject to a "lock-up period" when they could not be traded. In addition, the authorities imposed a ban on new IPOs to cushion the expected downward pressure on equity prices that would result from the expansion of tradable equity.

Stellar rise of Shanghai and Shenzhen stock exchanges, their combined 2007 market cap being Asia's second-largest

China operates two stock exchanges, in Shanghai and in Shenzhen. Instruments traded on both exchanges include shares (A-shares and B-shares[15]), convertible bonds, warrants, mutual funds, ETFs, corporate and government bonds, and repos. Aside from B-shares, all instruments are only denominated in local currency. China's stock market experienced a first period of strong growth between the mid- and late 1990s with the Shanghai Composite Index almost quadrupling within five years. However, over the following five years, the index lost half of its value. Starting in 2006, China's stock markets witnessed a stellar rise and the Shanghai Composite Index doubled in both 2006 and 2007. In 2007, the combined market capitalisation of both exchanges in Shanghai and Shenzhen became the second-largest in Asia after Japan's. Average daily trading volume reached USD 26 billion, making it one of the most actively traded markets worldwide. The stock market started to correct in October 2007, market capitalisation declined from 140% of GDP to around 50% as of end-2008.

Chinese stock markets rebounded at record pace in 2009, and IPO activity has been strong

In 2009, Chinese stock markets have rebounded strongly, rising over 100% since the beginning of the year – the strongest performance in the world. The sharp rises and falls of the stock market have been reflected in IPO activity. Domestic IPOs were suspended for after the non-tradable shares were phased out in 2005. Both the amounts raised as well as the number of IPOs rose sharply between 2005 and 2007. By November 2008, they had fallen below their 2005 levels. At the same time Chinese companies (led by banks) have been making huge overseas IPOs. In 2009, Chinese IPOs were among the highest in the world and the combined IPOs of China and Hong Kong, China (most of which are China related) were almost twice as high as in the United States.

The bond market is still relatively small although total annual issuance has risen eightfold since 2000

The bond market is still relatively small although total annual issuance has risen eightfold since 2000, reaching CNY 8 trillion at end-2007. Bonds issued in 2008 amounted to CNY 6.9 trillion, a decline of 12.7% from the level in 2007, mainly attributable to a lower issuance of national debt.[16] People's Bank of China (PBC) and treasury bonds accounted for about 65% of outstanding at the end of 2008 while financial bonds (*i.e.* those issued by financial institutions account for about 25%). Policy bank bonds constitute more than 90% of total outstanding financial bonds while commercial bank bonds make up only roughly 10%. Corporate bonds (of which those from state-owned enterprises account for more than 70% of the total) represent only 5% of outstanding bonds. All other categories of bonds accounted for 3-4% of the total.

The OTC market accounts for more than 97% of total transaction value

The secondary bond market can be divided into two main sections: the OTC section – which can be further subdivided into an interbank and the commercial banks' OTC market – and so-called exchange-based trading. The OTC market accounts for more than 97% of total transaction value, with the overwhelming majority in interbank activity. In addition, the "bank counter market", which targets individual investors, is very small. The varieties of

bond instruments available are very limited, mainly government bonds in the form of certificate bonds and electronic savings bonds.

Domestic commercial banks are the major bond holders

Domestic commercial banks now hold close to 60% of the total amount outstanding, but their share has been declining from around 65% in 2006, while the share of insurance companies, CIS and other institutional investors has risen. This trend reflects the explicit policy of broadening the investor base and making the bond market an alternative for institutional investors. Ongoing reform of the social security system coupled with growing sophistication and awareness on the part of market participants will help to increase the share of institutional investors.

4. Internationalisation of the Chinese market

Capital inflows have increased, but integration with international securities markets is only at an early stage

As China has liberalised rules for foreign portfolio investment, it has benefited from rising capital inflows. On average, foreign portfolio investments have increased by 50% annually over the past 5 years, reflected in the strong desire of foreign investors for exposure in this dynamic market. Despite growth in recent years, China's integration with international securities markets is only in an embryonic stage. Price differentials of Chinese bonds compared to other debt securities traded on international markets are one indicator of the relatively low level of integration.

The international integration of the Chinese stock markets has been hampered by its segmentation into categories of shares

The international integration of the Chinese stock markets has been hampered by its segmentation into categories of shares, with different degrees of restrictions of access for foreign investors.[17] Thus, the vast majority of companies are listed in so-called A-shares, which are listed on the Shanghai and Shenzhen exchanges, and could traditionally only be purchased by domestic investors. Foreign institutional investors authorised under the Qualified Foreign Institutional Investor (QFII) scheme are now allowed to buy and sell A-shares. An aggregate ceiling of USD 10 billion that all QFIIs may purchase was imposed in 2002 when the scheme was introduced. This ceiling was raised to USD 30 billion at the end of 2007. Each QFII has a limit on the amount of Chinese securities that may be purchased. At end-2008, 76 foreign financial services providers were licensed as QFIIs. B-shares – which are denominated in USD or HKD – were originally designed for foreign investors only, but since March 2001 domestic retail investors are also allowed to trade them as well. A-shares are by far the most important instrument in China's stock market and, since the early 2000s, the amount raised via B-shares has been very meagre indeed. Liquidity has been scarce over the past few years, and rumours of a possible merger of A- and B-shares also add to lacklustre performance of the latter.

Possibilities for foreigners to invest have grown

With the listing of Chinese equities on foreign stock exchanges, possibilities for foreigners to invest in the markets have grown. On balance, foreign participation remains narrow but it is likely to expand substantially.

5. *China as a global financial player*

China is likely to further increase its weight in global financial markets…

The combination of large and growing markets that are now highly restricted but are expected to open gradually implies that China is likely to further increase its weight in global financial markets dramatically. The country has already created banking giants that are the five largest banks in the world in terms of capitalisation. China has the world's largest pool of savings. At present, the funds tend to be held in bank deposits or in government bonds of OECD countries, but as Chinese patterns of holding financial assets and Chinese investment patterns change, the impact on world finance promises to be enormous.

… but potential growth scenarios differ widely

Potential growth scenarios differ widely depending on the assumptions the pattern of development. According to sensitivity analysis performed by Deutsche Bank Research, a continuation of growth rates as observed in the years 2003 through 2008 – even taking account of corrections in the wake of the financial crisis – suggests a further vigorous expansion that should make China one of the dominant financial markets in the world by 2018, after the US and the EU.[18] The exact position of China in the global financial system will vary upon growth rates of income of financial markets and of policies related to opening markets. However, even in a scenario of modest expansion by the year 2018, China to would attain market shares of 5%, 16% and 13% in the global bond, equity stock and banking markets, respectively.

VI. India

Overview

Between independence in the late 1940s and 1990, Indian economic policy operated under the assumption that the state should maintain a strong hand in making economic decisions. This policy implied high levels of government ownership and official direction of activity as well as limitation of foreign presence in the domestic markets. In the financial sphere, this policy was reflected in high government ownership of banks, widespread controls on interest rates, mandatory credit allocations and limits on foreign bank presence. By 1990, state-owned banks controlled 90% of bank deposits. All banks, public or private, were required to channel an extremely high proportion of funds to the government or government targeted sectors. Interest rates were determined administratively; credit was allocated on the basis of government policy and approval of the Reserve Bank was required for individual loans above a certain threshold.

In 1991, partly in response to a balance of payments crisis as well as a systemic problem of bank solvency, a major reform of the financial system was launched. Since the early 1990s, the financial sector has become much more diversified. Competition has increased within the banking sector and also between different financial sectors. However, even with the reform India has a much higher degree of government ownership and control than OECD countries and rules restrict foreign participation.

The Indian equity market ranks among the world's largest. The government bond market is well developed, but the corporate bond market has not yet shown much dynamism.

1. *Banking*

Post-1991 deregulation reform

The post-1991 reform included recapitalisation of public sector banks and measures to spur greater competition. Fundamental changes included the elimination of interest rate controls, reductions in reserve and liquidity requirements, and a reduced priority sector lending.

The Reserve Bank functions include banking supervision, but go well beyond those of central banks of other countries

Banking supervision was considerably strengthened in 1994 with the introduction of a Board of Financial Supervision within the Reserve Bank of India (RBI). In addition to being the central bank and the banking supervisor, the RBI's functions go well beyond those of central banks of other countries. For example, the Reserve Bank has lent directly to the government. It is the owner of several financial institutions, including State Bank of India (the largest commercial bank in the country) as well as the National Agricultural Bank and the National Housing Bank. (A proposal has been made that would transfer the RBI's majority holding in the State Bank of India to the Ministry of Finance.) The Reserve Bank is responsible for management of government debt. Another proposal has been made to create a new debt management agency that would be located in the Ministry of Finance. The RBI continues to be responsible for foreign exchange controls, for approving independent directors for both public and private banks, and it is the manager and regulator of the government securities market. The RBI is the government's investment banker, arranging sales of government debt and the banker for state governments.

Entry of new and foreign banks fostered competition in the banking sector, as did deregulation of interest rates

Competition was injected into the banking system through two channels. First, new banks were allowed to enter the market. A dozen private Indian banks were created, some by the transformation of existing institutions, others started from scratch. Foreign establishment was also allowed in the market. Second, once prudential reforms were undertaken, bank interest rates were deregulated. By 2009, controls remained in only four areas – saving deposit accounts, small loans in priority areas, export credits and non-resident transferable rupee deposits. Government control over credit allocation was relaxed somewhat.

The system is still dominated by state-owned banks…

Commercial banks traditionally provided short-term credit. Since deregulation, however, many of the larger nationalised commercial banks have begun to target the medium- to long-term requirements of the corporate sector and the growing infrastructure debt market. Recently, banks have been targeting the retail sector as well. The system is still dominated by state-owned banks, which account for nearly 74% of deposits and assets, but state banks have accepted private and foreign investors as minority shareholders. Proposals have been made to further enhance the efficiency of the banking system by including one to reducing government ownership of public banks below its current minimum of 51%, but reduction in that share is currently not contemplated.

... characterised by their large branch networks and broad geographic coverage

The public-sector banks are characterised by their large branch networks and broad geographic coverage. At end-March 2008, about 45% of commercial bank branches were located in rural regions, a further 20% in semi urban areas, and the rest were mainly in metropolitan areas. Although they are significant in terms of deposit gathering, rural branches tend to be unprofitable, while urban and metropolitan branches are profitable. The Indian authorities note that the state owned banks have fared better than private banks during the post-2007 crisis. Among public-sector banks, the State Bank of India (SBI) group, with over 13 600 branches and 54 overseas offices, is the largest bank in the country.

Competition has increased with the opening of the market

Despite continued domination of public sector banks, the years since liberalisation have seen the emergence of new private sector banks as well as the entry of several new foreign banks. Within a decade of its formation a private bank, the ICICI Bank, has become the second largest bank in India. Competition has clearly increased with the opening of the market. Concentration is lower in India than in other emerging economies with the Herfindahl index (a frequently-used measure of concentration) for advances and assets dropping by over 28% and about 20% respectively between 1991-92 and 2000-01.

Foreign participation has risen

The reform has expanded the range of opportunities for foreign banks. A foreign acquisition of domestic banks is now allowed up to 74% under the "Automatic Route".[19] In fact India has been rather liberal in allowing entry of foreign banks. While India accepted a WTO commitment to permit twelve foreign bank branches per year, it has actually permitted up to 18. In mid-2009, 32 foreign banks with 393 branches were operating.

Banks must lend 40% of their total to priority sectors...

All banks, whether public or private, are subject to government control over their lending portfolios. The objective of India's priority lending programmes is to ensure adequate lending to sectors in society or the economy that have a major impact on large or weaker sections of the population and which are employment intensive. A large portion of bank lending is targeted to agriculture, which the authorities believe, fosters financial inclusion and supports rural demand. In fact, financial inclusion is one of the main goals against which most policy measures are measured. The scope of mandatory credit allocation has been reduced somewhat with the reform, but it is still very large in comparison with other countries. Banks must lend 40% of their total to priority sectors such as agriculture, certain small businesses and clients from scheduled castes and tribes. With reform, banks have been allowed greater leeway in branch rationalisation, credit delivery recruitment and the creation of posts.

... and keep 25% of their liabilities in specific public sector securities

In addition to priority lending requirements, banks are subject both to a cash reserve ratio (6.5% of assets since May 2007) and a statutory liquidity ratio (SLR) that requires 25% of their liabilities to be kept in specified public sector securities. SLRs were as high as 50% in the early 1990s.

Mandated allocation of bank assets are constraining

Overall, the state mandates the sectoral allocation of 59% of bank assets. In earlier periods, the statutory liquidity ratio was not a serious burden on banks inasmuch as public sector banks actually held a higher-than-required proportion of their assets in targeted assets. As patterns of expansion change this ratio will be a medium-term constraint on bank portfolios. In January 2007, a new law empowered the Reserve Bank to lower the SLR below its current level. Some analysts believe that despite the government's role in the credit allocation process Indian banks have learned to work effectively with these allocation guidelines and make credit decisions, including those for directed credit segments, on commercial grounds.

Rules for corporate governance of banks are distinctive

Indian rules concerning the corporate governance of banks are distinctive. The Bank Regulation Act overrides any provisions made for stock market listing or by the Companies Act. Specifically, shareholders owning more than 10% of the equity of a bank have their voting rights capped at 10%. Foreign shareholders are still limited to 20% ownership of public banks. They can own up to 74% of private banks but their voting rights remain capped at 10%. Even in the case of private banks, there is still a limit on the shareholding of any one entity. The Reserve Bank no longer appoints directors to the boards of public banks but is responsible for undertaking due diligence process prior to their nomination by the government. There have been recent amendments to the Banking Companies (Acquisition and Transfer of Undertakings) Act to improve corporate governance by increasing the number of full-time directors and shareholder directors, and a tightening of criteria for the selection of directors.

Deposit insurance exists since 1962

Deposit insurance has been operational in India since 1962. The Deposit Insurance and Credit Guarantee Corp. (DICGC), a government-owned corporate entity, administers deposit insurance in India. DICGC insures deposits of up to Indian rupees (INR) 100 000 (USD 2 350) per depositor per branch.

Reforms introduced in 2002 strengthened credit discipline, regulatory standards and supervision

Before the reform, the lack of credit discipline and credit information as well as poor protection of credit rights were serious problems. Since 2002, the authorities have implemented several measures to strengthen the processes for the resolution of nonperforming assets, for improving flows of information regarding credit and for streamlining the corporate debt restructuring process. Measures include: 1) the setting up of Debt Recovery Tribunals across the country; 2) the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act of 2002; and 3) registration of asset reconstruction companies (which engage in the business of resolution of non-performing loans acquired from banks and financial institutions).

Regulatory standards have moved towards international best practices

Regulatory standards have been progressively moved towards international best practices. Rules governing the recognition of bad loans were substantially tightened. A forward-looking system of supervision, similar to Prompt Corrective Action systems in other countries, was introduced under which banks are required to promptly undertake

specified changes to their portfolios and management when specified trigger points are breached. Banks are also required to maintain high quality asset and liability and risk management systems to be used in conjunction with Basel II banking supervisory systems.

Indian banks are profitable, adequately capitalised and are demonstrating good capability to manage risk

Indian banks are profitable, adequately capitalised and are demonstrating good capability to manage risk. Despite considerable deregulation, net interest income margin for Indian banks has remained high and stable. The contribution of treasury income has been falling, pushing banks to focus more on fee income. The growth in fee income should be helped by the distribution of third-party products such as CIS, insurance, securities and commodities. Indian banks have reasonably high earnings although somewhat lower than the average for EE5 countries. The ROA averages about 100 basis points for domestic banks and about 200 basis points for foreign banks. ROE for most banks is in the range of 15%. Improvement in credit quality has been evident in the past few years. The NPL ratio declined from 11.4% in 2001 to 2.3% in 2008.

Capitalisation remains adequate as Basel II is being introduced

The Indian banking system's capitalisation remains adequate. Increases in capital ratios have been supported by Indian banks' healthy retained earnings as well as new equity and hybrid capital issuance. From 2003 onwards, a pilot project was launched to operate a risk-based supervision approach in preparation for the introduction of the new Basel II risk-based capital framework. Internationally active banks were required to be compliant with Basel II as of March 2008, while banks having only domestic operations may delay implementation until 2009 in order to raise the necessary capital.

Co-ordination of financial supervision

In order to deal with issues of systemic risk that transcend the concerns of individual regulatory bodies, a high level co-ordination committee on financial markets has been established. The members of this committee include the RBI, the Securities and investment Board of India which supervises capital markets and the Pension Fund Regulatory and Development Authority (PFRDA).

Need for capital infusions to support balance sheet growth

Indian banks are expected to need capital infusions to support their projected balance sheet growth and to implement RBI's new capital adequacy framework. Hybrid capital instruments (Tier I and Upper Tier II) are expected to comprise a significant proportion of the new capital.

2. Institutional investors

While investment controls for institutional investors inhibit the development of dynamic financial markets, pension reform could foster a transformation

Although institutional investors represent a slightly larger share of national income than in China and Indonesia, controls on the investment of institutional investors inhibit development of dynamic financial markets. Prior to the reform institutional investors were mainly government controlled. In fact, the insurance sector is still dominated by the state-owned Life Insurance Company of India, which invests most of its assets in public sector liabilities. The largest pension scheme in the country is part of the government, private pension schemes are allowed to invest only 5 per cent of their new inflows in shares and 10 per cent in

equity-linked mutual funds. There is a possibility for major changes in this situation. Thus in 2007, India implemented a shift in the retirement scheme for civil servants to a new system of defined contribution accounts. An extension of this scheme to the general population is under active consideration. If this pension reform is properly implemented it could pave the way for the accumulation of assets in private retirement accounts over time with the potential to transform the country's financial system.

Domestic private CIS have played a key role in resource mobilisation…

Domestic private CIS have played a key role in resource mobilisation. Previously, only publicly owned CIS were authorised and a public sector fund manager (Unit Trust of India) held a commanding position. The Unit Trust of India had to be completely restructured in 2002, for the second time, due to failure of its investment portfolio to meet the returns that it had promised to investors. With the deregulation of the capital market, privately owned mutual fund management companies were allowed into the market. These funds have been preferred by investors and now have a market share in excess of 90%.

… but mutual funds' penetration remains limited

Despite a significant growth in the number of schemes and assets under management of mutual funds in recent years, their level of penetration remains limited in comparison with other countries. Assets of CIS in amount to less than 5% of GDP as against 70 per cent in the US and 28% in Brazil. The share of equity CIS has increased significantly in recent years, but still account for less than 25% of assets. Most of the growth has occurred in money market schemes, which are used by corporates and large institutional investors for short term liquidity management. There is considerable potential to develop household investments in CIS.

3. Capital markets

Equity and government bond markets are large and dynamic, but private debt markets are much less advanced

Before the reform, overregulation discouraged the modernisation of Indian capital markets. In 1992 a breakthrough was achieved when a new regulatory authority for capital markets – the Securities and Exchange Board of India (SEBI) – was established and a substantial degree of deregulation was undertaken. In the intervening period capital markets have grown considerably but unevenly. While the equity and government bond components are large and dynamic, the private debt markets are much less advanced.

The number of India's stock exchanges has grown to 23, and BSE was by far the largest

The number of India's stock exchanges has grown from four at Independence (1947) to 23 at present. Of these "traditional exchanges" the largest by far was the Mumbai-based Bombay Stock Exchange (BSE). At one point the BSE boasted the largest number of listed companies in the world – well over 10 000 – but a high proportion was illiquid. At present about 4 900 companies are listed. As recently as the early 1980s the ratio of market capitalisation to GDP was only 3%. Until that time, Indian capital markets were a closed club of brokers, with few primary market offerings and little trade and marginal participation of the general public.

This partly reflected the lack of transparency in Indian businesses and limited protection afforded to minority shareholders.

The creation of NSE, competitor to BSE, in 1994 was a major turning point in the development of the equity market

One major turning point in the development of the equity market came with the establishment of the National Stock Exchange (NSE) in 1994, a fully automated competitor to the Bombay Stock Exchange (BSE.) The NSE was created in response to the stagnant performance of the existing stock exchanges. Its founding shareholders were a number of public development banks (including one that founded the largest new private bank), government financial institutions and a private bank. The computerised trading system made it easier for investors from across the country to trade in a transparent market. The NSE was one of the first stock exchanges in the world to have a corporate structure, as opposed to a mutual ownership dominated by intermediaries. It rapidly became the third largest exchange in the world, measured by the number of transactions. It now has foreign shareholders (New York Stock Exchange and various banks) up to the maximum (26%) allowed by foreign direct investment regulations. Since its inception in 1994, the NSE has challenged the BSE in terms of capitalisation and surpassed it in turnover. The Bombay Stock Exchange was 10th largest in the world in terms of capitalisation in 2008. The NSE has a much higher turnover in equities and derivates than the BSE.

Equity market infrastructure has been upgraded

Reforms have also been implemented in equity market infrastructure. In 1995/96 mandatory electronic trading was introduced. The Depositories Act of 1996 gave a legal basis to electronic reports and paved the way for paperless trading. Exchange-based derivatives trading began in 2000. The establishment of the Clearing Corporation of India Ltd. (CCIL) in April 2001 provided for real-time risk management and the removal of counterparty risk.

Competition between trading platforms proved beneficial to all participants

Competition between trading platforms proved beneficial to all participants. The BSE has automated its trading systems considerably. Both exchanges have attracted a considerable amount of new listings as well as enlarged trading volume. There has been a strong growth in equity issuance with IPOs averaging slightly about 1% of GDP annually in recent years.

The ratio of India's market capitalisation to GDP (comprising both BSE and NSE) rose from 30% at the time of the reform in 1992 to over 200% in the year ending March 2008, before falling to about 100% a year later. These ratios are high, even compared to the OECD countries. An integral part of the new architecture was the creation of a centralised counterparty for transactions, which greatly reduced the incidence of settlement risk. At the same time, a law passed in 1996 allowed the creation of a new depository institution for holding all stocks in dematerialised form.

4. Fixed income market

India's debt markets are divided into two segments: *a)* the government bond segment is the larger and more active of the two, with

issuers comprising the central government (90% of the total) and state governments; and *b)* the corporate bond market with Public Sector Undertakings (PSU), corporates, financial institutions and banks being the primary players.

a) Government bond market

The government bond segment is the dominant component of the debt market

The government bond segment is the oldest and largest component of the debt market. Its size has taken off exponentially over the past decades, with the total stock of debt outstanding at roughly 35% of GDP, comparable to other large emerging Asian economies but significantly lower than the OECD average. With growing demand from institutional investors such as insurance companies and pension funds, bonds with maturity extending to 30 years are now available.

While various reforms have helped, its driving growth factor was the high public sector borrowing requirement

The broad outlines of the government bond market began taking form around 1992 as a result of the government's broad-based attempts to move away from reliance on overseas borrowing toward market based systems of domestic debt management. Reforms included a move toward an auction-based sale of government securities, appointment of primary dealers, and the implementation of delivery-*versus*-payment (DVP), mitigating the risks associated with trading and settlement. In 1997, foreign institutions were permitted to invest in government securities. Subsequent innovations, such as zero-coupon bonds and index bonds, have so far received only tepid response from investors. One factor driving growth of the government debt market has been high fiscal deficits and the resulting high public sector borrowing requirement. Although the total public deficit has been declining since 2003, government debt outstanding has averaged 85% of GDP over the past 5 years.

Restrictions on issuers and investors have created a semi-captive market

Restrictions on issuers and investors have created a semi-captive market for government paper. Banks are required to invest 25% of their net demand and time deposits in government bonds or other approved government securities, the so-called statutory liquidity reserve (SLR). In fact banks and insurance companies tend to hold an even greater share percentage of government bonds in their portfolios than prescribed by regulations.

Control of institutional investments is significant

Official regulations governing investment by institutional investors are significant. Life insurance companies must lend 50% of their assets to the government and place a further 15% in infrastructure lending. Traditional pension funds must place 90% of their assets in government securities and postal savings deposits are invested totally in government securities. Presumably, the newly created investment accounts will have more flexibility in asset allocation.

b) Corporate bond market

The corporate bond market remains at less than 2% of GDP

In contrast to the government bond market, the corporate bond market remains very shallow amounting less than 2% of GDP. State-owned public sector undertakings (PSUs) have persistently

exceeded private corporate issuances. PSUs and private companies can raise debt capital either by private placement or public issue, with the private placement by far the preferred method. Companies continue to borrow from banks to meet financing needs. Bank credit accounts for 90% of corporate funding, with state-owned banks supplying 70% of the total.

Documentation requirements have resulted in the almost complete absence of traded corporate bonds

Public issues are subject to documentation requirements that have resulted in the almost complete absence of traded corporate bonds and the domination of the market by private placements. Private placements, which can be made to a maximum of 50 "qualified institutional buyers", require much less documentation. Given the small number of investors, private debt placements can more easily be customised in accordance with issuers' and investors needs. For example, a change in market interest rates will lead to a renegotiation of the coupon rate.

Private placements mostly at three to five years maturity

There is a preference to raise funds with maturities between three to five years, which suggests that companies remain cautious of borrowing over the medium-term segment, and also reflects investors' limited demand for longer tenors.

Credit rating agencies CRAs) are regulated

India was also one of the first countries (in 1999) to register and regulate credit rating agencies (CRAs) as proposed by IOSCO. CRAs have to comply with IOSCO's code of conduct essentially regarding conflicts of interest.[20]

Trades are usually done over the counter

Trades are usually done over the counter. When brokers intermediate, they are required to report the transaction to the exchanges. Corporate debt can also be traded via an electronic order book system, but this has largely been unpopular in the absence of wide retail interest in such securities. At the same time, the pension fund system is moving toward a defined contribution mechanism which should provide impetus to the demand for corporate bonds.

Rules restrict foreign purchases of Indian bonds

There are restrictions on foreign purchases of domestic bonds. Foreign investors are required to register with the SEBI, and that there are quantitative limits on foreign purchases of private as well as government bonds.

Rules governing issues by private companies have been eased

The SEBI has been working to facilitate the development of the publicly traded private debt market. In 2008, SEBI substantially rationalised disclosure requirements for bond issuers, especially for companies already listed in the equity segment of exchanges which now face minimal additional disclosure rules. There is no pre-vetting of prospectuses for corporate debt, and only ratings and terms sheets are required. Such reforms have resulted in a large number of public bond issues.

In part, tight regulations in the domestic markets spurred Indian corporates' overseas borrowing

Partly due to tight regulations in the domestic markets, Indian corporates have been stepping up overseas borrowing, spurred by easier and fewer listing requirements, lower cost of funding and better liquidity in the secondary markets. The rise in overseas investment in Indian corporate debt coincided with the improving perception by foreign investors of the quality of Indian companies. Several Indian companies have issued rupee-denominated bonds in Singapore and Hong Kong, China.

Securitisation is still in its nascent stages, but demand for infrastructure financing and future flow securitisations could lead to rapid expansion

The market in asset-backed securities (ABS) and mortgage backed is still in its nascent stages. India began securitisation in the early 1990s. Growth accelerated after 2000, reaching INR 580 billion (USD 12.5 billion) in fiscal year 2007/08, but has apparently levelled off. Volumes still tend to be low and asset types limited. The market is also subject to regulatory, legal, and tax uncertainties. Auto loans were the first component of the market to show expansion in the 1990s. Since 2000, residential mortgage backed securities (RMBS) have also contributed to market growth, but still account for less than 1% of total securitised debt. Growth in credit card securitisation has been limited, partly because of stamp duty costs, but also because the credit card market in India remains small. There have also been limited future flow securitisations, such as toll receipts, and some infrastructure financing. Demand for infrastructure financing in India is now projected to grow rapidly and securitisation of receivables from those projects has the potential to expand rapidly.

MBS is a segment with the potential to rise quickly

The growth of commercial bank credit for housing, averaging approximately 90% since 2002, suggests that MBS is a segment that has the potential to rise quickly as soon as the necessary market infrastructure and regulatory adjustments are enacted.

VII. Indonesia

Overview

The Indonesian financial system is at a relatively early stage of development in comparison with other EE5 countries. While the banking sector is small as measured by most indicators such as the ratio bank deposits and bank credit to GDP, it is by far the dominant component of the financial system. Bank deposits account for some 80% of all financial assets. The banking system, which was devastated by the 1997 Asian crisis, is now emerging in a more dynamic and prudentially sound form that is capable of playing a more active role in economic development. The non-bank financial institution (NBFI) sector, including capital markets and institutional investors, is expected to gain in importance in the future as the public begins to channel savings into institutional investors and as the capital market gains a larger role in intermediation.

1. *Banking sector*

The central bank is also responsible for banking supervision

Bank Indonesia, which is both the central bank and the body responsible for banking supervision, also plays a leading role in addressing systemic stability and macro-prudential issues. Bank Indonesia has been working intensively to build a financial safety net to prevent recurrences of the kind of problems that made the post-1997 crisis particularly severe in Indonesia.

The relatively open domestic banking system proved highly vulnerable during the 1997 Asian crisis

Prior to the 1997 Asian crisis, the banking system was comprised of state-owned banks as well as private domestic banks. The latter were often linked to family-owned industrial conglomerates. Policies toward foreign bank establishment were relatively open and foreign banks gained a significant foothold in the market. Due to practices such as related party

lending and borrowing in dollars for lending in local currency, the domestic banking system proved highly vulnerable during the crisis when the evaporation of foreign credit and the sharp fall in the currency drove many corporate entities and banks into bankruptcy. The major banks became insolvent and outstanding credit contracted sharply, aggravating the decline in real income.

Post-crisis bank recapitalisations entailed expenditures of 50% of GDP

The recapitalisation of the banks entailed expenditures of USD 45 billion (about 50% of 1997 GDP) and incapacitated the financial system for much of the ensuing decade. The restructuring was led by the Indonesia Bank Restructuring Authority (IBRA) which removed impaired assets from bank balance sheets, recapitalised banks and attempted to recover value from impaired loans.

Restructuring was led by a special entity (IBRA), and the government became the majority owner of insolvent banks, sold on to foreign strategic investors

Working closely with international financial institutions, the authorities, led by IBRA and Bank Indonesia, engineered a recovery in the banking system. In the case of banks that had become insolvent, the government became the majority owner while acquiring large portfolios of non-performing loans (NPLs). In the phase of rehabilitation, the insolvent banks acquired by the government were sold, mainly to foreign strategic investors. While investors from Europe, North America and Australia made sizeable strategic investments, other Asian countries (*e.g.* China, Malaysia, Singapore, India and Korea) took even bigger stakes. The government also sold minority stakes in the major state-owned banks. With stronger ownership and governance structures, bank managements are under considerable pressure to adhere to strict norms of internal risk management and earnings.

State banks control some 39% of assets, and the system is moderately concentrated

There are over 130 national commercial banks in the country, a reduction from 220 at the time of the 1997 crisis. State banks control some 39% of assets. Although there are many small credit institutions, the system is moderately concentrated. The four largest banks, of which three are state-owned,[21] control nearly half of total bank assets. There are eight regional development banks which account for some 11% of loans. There are also thousands of small regional banks and credit co-operatives.

NPL ratios are relatively low and the major banks are very profitable; following the banking reform, loan growth has been accelerating rapidly

NPL ratios had approached 50% at the time of the crisis, but due to sales of impaired assets and stricter risk management procedures, NPL ratios are now only about 3.5% of total loans on average, and provisions for NPLs are almost 100% of NPLs. The major banks are very profitable as measured by net interest margin, ROA and ROE. Following the crisis, lending contracted sharply and banks portfolios contained heavy weightings of government bonds. The loan to deposit (LTD) ratio declined to as low as 25%. With the reform of the banking system loan growth has been accelerating rapidly in the past few years, despite the global crisis of 2007, and now stands at about 68%. Indonesian banks have comparatively high net interest margins and return on assets. ROE is somewhat lower than in other EE5 countries.

The 2004 Banking Architecture Plan aimed at developing a core of prudentially sound market-oriented banks

As the recovery from the 1997 banking crisis gained traction, Bank Indonesia in 2004 unveiled its Banking Architecture Plan, a sweeping strategy aimed at developing a core of prudentially sound market-oriented banks capable of providing a broader range of financial services with more competition and reduced systemic risk. The Plan aims to consolidate the industry into 58 national banks through mergers and acquisitions over a period of 10-15 years. Bank Indonesia envisages that banks will be stratified by size into categories such as international-class banks, national banks and specialised or rural banks.

More consumer and SME lending is expected from banks

As part of the transformation of the banking landscape, banks will be expected to move from their earlier business model which stressed lending to large corporate entities (often in affiliated groups) to lending to consumers and SMEs, while larger corporate entities are expected to rely more heavily on capital markets.

2. Capital markets

The Indonesian equity market has relatively advanced infrastructures…

The Indonesian equity market has relatively advanced physical and technological infrastructures with an automated stock trading platform as well as custody and clearing and settlement systems that are in line with international norms. In 2007, the exchanges in Jakarta and Surabaya were merged to form the Indonesian Stock Exchange. Several derivative products are traded on the exchange.

… but makes a relatively small contribution to raising capital for business

The equity market makes a relatively small contribution to raising capital for business. Total market capitalisation as a share of GDP (41% in 2007) is the lowest among EE5 countries. The exchange has not attracted a large number of new listings in recent years. There were 335 companies listed in 2005 compared to 288 ten years earlier and volumes of IPOs have not been high. The market has very high rates of concentration, with the ten largest firms accounting for more than half of market capitalisation. Most listed companies are family-owned conglomerates in which the inside group maintains control. The "free float" is generally about 35-40% of the total.

Trading has been dominated by foreigners, which increases volatility risk, but domestic investors become more active

Domestic institutional investors do not invest heavily in equity and retail investors have also been largely absent. This can be contrasted with some other Asian countries with strong equity cultures where the general population invests heavily in stock markets. As a result, trading has been dominated by foreign institutions. While the presence of foreign investors is basically positive, excessive reliance on foreign investors plainly increases the risk of volatility. In this context, it is a positive sign that domestic investors have been increasing their activity in recent years.

Bank recapitalisation bonds were issued after the 1997 crisis

Prior to the 1997 Asian crisis, the government had been legally prohibited from issuing domestic debt, but with the banking crisis a large volume of bank recapitalisation bonds were issued. The sharp rise in the outstanding stock of debt enabled the authorities to engage in large scale operations to restructure banks balance sheets.

Substantial strides have been made in modernising the government bond sector

Substantial strides have been made in modernising the government bond sector by issuing paper with longer maturities and by introducing regular issuance calendars. A system of primary dealers with access to special central bank facilities has helped add liquidity. Banks are the largest holders of government debt, but much of the trading is conducted by foreign institutions. Still, trading remains very thin. The market expansion is constrained by the scarcity of institutional investors who are normally the natural buyers of longer-term fixed income assets.

Outside of the government debt sector, the fixed income market is rather shallow

Outside of the government debt sector, the fixed income market is rather shallow. Outstanding corporate bonds amount to some 6% of GDP, which is comparable to other EE5 countries. Domestic institutional investors are the main holders of corporate bonds. An attempt was made to launch a market in local government debt in 2001, but few issues have actually taken place.

There is no market in housing-related debt, but there are efforts to build one

There is no market in housing-related debt. Outstanding housing loans amount to 2% of GDP (28% in Malaysia). One institution, Bank Tabungan Negara (BTN), is mandated to extend credit to middle and low income families. BTN depends upon deposits and government funds for its operation and its business remains limited. The government created a specialised institution (*Sarana Multigriya Finansial*) to purchase mortgages from banks in order to build a secondary market in housing related assets.

3. Institutional investors

92% of the labour force is not covered by any pension plan; and Jamsostek as a comprehensive social security scheme seems not to be very efficient…

It is estimated that 92% of the labour force is not covered by any pension plan and thus depend upon their personal savings or upon their families. At present there are unfunded pension plans for civilian government employees and for the armed forces. Both of these schemes represent a growing drain on the public finances. Private companies are required by law to provide coverage to their employees through Jamsostek, a scheme that provides pensions as well as health, accident and life insurance. The employer contributes to funds for all purposes but the worker contributes only to the retirement portion of Jamsostek. Jamsostek makes lump sum payments at retirement or upon earlier termination of employment. Jamsostek has very high administrative expenses, and more than 40% of its assets are in bank deposits.

… and coverage is very narrow

Despite the fact that the law mandates coverage for all private sector employees, only an estimated 21% of formal sector employees are actually covered. Since most workers are outside the formal sector, coverage is very narrow indeed.

Some employers voluntarily offer additional funded pension plans

In addition to the mandatory plans offered by employers through Jamsostek, some employers voluntarily offer funded pension plans to their employees through special plans, which can be defined benefit or defined contribution. One final category of pensions is Financial Institution Pension Funds (FIPFs) which are offered by banks and insurance companies. These plans can be purchased by employers or individuals can provide for their own retirement through voluntary

subscription. Over half of all pension fund assets are in these two categories of private plans, although the number of individuals covered is much smaller than in Jamsostek. Private plans also have a better investment record.

The reform of the pension regime will take many years

The reform of the pension regime will take many years of concerted efforts, a task complicated by the wide number of interests involved. In 2005, BAPEPAM&LK (see below) produced a "Road Map" for the comprehensive reform of the pension sector. A number of objectives were set forth, but no rigorous timeframe was adopted.

The insurance coverage is very low…

The insurance coverage of the Indonesian population is very low by international comparison. In addition to the low level of participation, low net earnings on investment by insurance companies have meant that the insurance industry has not generated a pool of long-term savings suitable for purchasing long-term assets.

… and insurance companies are not very profitable

Despite the small market, there are 162 companies offering insurance, many of the companies being too small to be economically viable. There apparently are a number of companies that are insolvent, but no action has been taken to close or consolidate marginal companies.

The CIS industry is very small but expanding; however, valuation procedures and disclosure practices are still inadequate

The CIS industry is very small in Indonesia, although it has expanded since its inception in 1995. Even in its current embryonic form, however, the industry has already experienced substantial problems. With the resolution of the banking crisis after 2000, the government began to issue special bonds to recapitalise banks. CIS managers bought heavily for their portfolios. As a result, the assets of fixed income funds surged from IDR 4.6 trillion in 2001 to 37 trillion one year later. The domestic CIS industry was ill-equipped to absorb this sharp rise in inflows. Valuation procedures were inappropriate. Many of the funds were marketed without adequate explanation of the risks in fixed income investments. Disclosure practices were inadequate.

Large bond price corrections led to a major loss in confidence in the CIS industry

The highly publicised surge in investment in 2000-05 was followed by a collapse which led to a major loss in confidence in the CIS industry. In 2003 and again in 2005, price corrections in the bond market induced a panic among investors which led to a wave of redemptions and widespread allegations that improper methods of valuations were used. Net liquidations were especially high during 2005, when assets in fixed income funds fell from RPH 88 trillion at the end of 2004 to only 14 trillion a year later. It is widely agreed that much improvement is needed if the industry is to expand its role in finance.

4. *Multi-finance companies*

Multi-finance companies that engage in a range of near banking activities are a significant category of NBFIs

One significant category of NBFIs is "multi-finance" companies that engage in a range of "near banking activities," such as credit cards, leasing, consumer finance and factoring. There are about 130 multi-finance companies. Originally multi-finance companies were engaged in leasing but in 2005 nearly 70% of their activity was in consumer finance, with leasing accounting for most of the remainder. Automobile and

motorcycle credits and leases, often to low income segments of the population, are the most common operation. Multi-finance companies receive a considerable amount of their funds from commercial banks; the largest multi-finance companies are bank affiliated. It should be noted that finance companies of this kind have encountered serious problems in a number of Asian countries such as Thailand and Korea.

5. *Islamic finance*

The past decade has witnessed a sizeable expansion of Islamic financial products

The past decade has witnessed a sizeable expansion of Islamic financial products, *i.e.* instruments that are structured so as to conform to restrictions in the Koran, especially concerning the payment of interest. As of August 2007, only 1.3% of bank assets were in Shariah-compliant products but Bank Indonesia projected the proportion to grow to 5% by end-2008. In 2008, a special law on Islamic finance was enacted. There are three pure Shariah banks, while 24 conventional banks have opened Shariah units. The government recently issued its first Shariah-compliant bond-like product (sukok) in the domestic market and further issues are planned. Sukok have also been issued in foreign currency for placement with foreign investors. Islamic financial products are also found in the mutual fund and insurance sectors.

6. *Institutional arrangements for financial supervision*

Bank Indonesia is responsible for banking supervision, NBFIs are supervised by BAPEPAM&LK

As mentioned above, Bank Indonesia is responsible for banking supervision. NBFIs are supervised by BAPEPAM&LK. This agency was created by merging BAPEPAM, the existing regulatory authority for capital markets with bodies responsible for other NBFI. BAPEPAM (Capital Market and Financial Institution Supervisory Agency), which has a long history as the capital markets regulator, is undoubtedly the strongest official institution in the NBFI sector. BAPEPAM, which focuses on market conduct and investor protection issues, has the basic organisational structure that is common to all capital market supervisors with departments responsible for intermediary's market conduct and investment management.

In order to deal with issues that do not fall completely within the competence of one supervisory agency the Financial System Stability Forum (FSSF) was established on 30 December 2005[22] with three levels of co-ordination: 1) at the ministerial level, 2) the management level, and 3) the operational level. The institutions represented on the FSSF are which all involve the ministry of finance, the central bank (Bank Indonesia – BI), the Deposit Insurance Corporation (DIC)[23] and BAPEPAM&LK.

There are plans to consolidate supervision in a unified financial supervisor by 2010

In 2003 it was agreed in theory that all financial supervision (*i.e.* supervision by Bank Indonesia and BAPEPAM&LK) would be merged into Otoritas Jasa Keuangan (OJK), a unified financial supervisor. Bank Indonesia would retain responsibility for systemic stability and monetary policy. The proposed merger has been postponed several times.

VIII. South Africa

Overview

By many measures South Africa has the most sophisticated financial system of any EE5 country. Institutional investors are well developed, and for the most part on a par with OECD countries. The banking system is deep compared to those in other emerging economies. Both banks and capital markets have been functioning as competitive institutions for extended periods. Local capital markets, including derivatives markets, are well developed and securitisation is growing rapidly. Following the end of the Apartheid era in 1994, the financial system has become increasingly internationalised, with South Africa a major provider of financial services for other African countries. The country continues to have a solid record of financial stability and good supervision.

1. *Banking system*

Foreign banks have a relatively strong presence

Currently, there are 38 registered banks in South Africa, consisting of 15 domestically controlled banks, 6 non-resident bank subsidiaries, 15 branches of foreign banks, and two mutual banks. In addition, 44 foreign banks have representative offices in South Africa. The acquisition in 2005 of one of the country's four largest banks by a UK bank increased foreign presence substantially. Foreign banks have traditionally been mostly active in corporate banking but the foreign acquisition of a large domestic bank will surely change that business model.

Banks are universal; the commercial banking sector has no government ownership

The banks are universal, offering a wide range of services to both individual and corporate customers. Conglomerates have been formed that combine banking, securities trading, and insurance within single organisations and also have extensive cross-border operations. Meanwhile, several banks, especially small local and foreign banks, service niche markets where they hold some competitive advantage. In contrast to other EE5 countries, the South African commercial banking sector has no government ownership.

The banking system is rather concentrated, as many small and medium banks disappeared as a consequence of a crisis in 1999

The banking system has become rather concentrated. The number of medium to small local banks increased steadily in the 1990s, but in 1999, the a crisis erupted when Saambou Bank, a medium-sized bank with a strong deposit base and wide branch network, experienced a liquidity crisis, emanating from declining balance sheet quality and negative market perceptions. A withdrawal from both larger and smaller banks ensued. The South African Reserve Bank entered into consultations with the National Treasury, which ultimately issued a guarantee to all depositors that the government would fund their withdrawals. Subsequently, however, many small and medium banks faced liquidity pressures and were forced to exit or were acquired by larger institutions. Overall, by the end of March 2003, some 22 banks had exited. At present five major groups continue to dominate the banking sector, controlling some 85-90% of total assets.[24] Small local banks constitute only 3% of the total banking sector assets, in comparison to 22% cent in 1994.

Micro-loans are equivalent to 1% of GDP

The banking system also includes development and postal banks (which do not fall under the Banks Act) as well as microfinance institutions, which have had some success in reaching low income segments of the population. Micro-loans are equivalent to 1% of GDP.

"Four-pillar" policy to maintain minimum levels of competition

Noting the rising level of concentration in the banking system in 2004 the Minister of Finance articulated a "four-pillar" policy that sets the objective under of having a minimum number of substantial domestically banks (so called "pillars") on which the domestic banking industry relies and to discourage the merger between any of those four banks. The objective of this policy was the maintenance of minimum levels of competition, in the interests of prudential and systemic stability. Additionally, any foreign bid to acquire one of the major banks would be examined in the light of the potential impact on competition and systemic stability.

Lending to the household sector has increased

Banks have increasingly been stressing lending to the household sector in recent years. At the end of 2008 mortgage loans and instalment debt accounted for about 33% recent and 11% of total loans and advances, respectively, while credit card debt accounted for another 3%. In contrast, loans and overdrafts amount to about 25% as corporates are increasingly turning to capital markets.

The banks are profitable and prudentially sound

The banks are profitable and prudentially sound. As a result of problems in the smaller and medium-sized banks around the year 2000, profitability measures showed some decline. In the ensuing years there has been a trend toward improvement. The net interest margin of banks at over 700 basis points is second only to Brazil among the EE5. ROA has been improving and in 2008 was estimated at 270 basis points and ROE at 23%. Credit quality has tended to be good, with NPL ratios declining from 2.4% in 2003 to 1.1 per cent in 2008. There are some concentrations on the lending side in households and the property market as mortgages account for 45 per cent of total private sector credit. Also, the funding structure shows some concentration in short-term wholesale deposits.

Banks are well capitalised and have improved risk modelling following Basel II

In 2002 the official CAR was set at 10% (against the minimum global norm of 8%). At the end of 2008 South African banks held capital equivalent to 12.5% of risk weighted assets with a Tier 1 ratio of over 10%. The larger banks have implemented the advanced internal ratings based (IRB) approach under Basel II, which has led them to develop sophisticated risk monitoring and modelling capabilities.

A substantial internationalisation of banking activity has occurred

A substantial internationalisation of banking activity has occurred. Due to the political isolation of South Africa in the mid-1980s, international banks had curtailed their operations in the country considerably. With the advent of the democratically elected government in 1994, however, amendments to the Banks Act allowed representative offices, subsidiaries and branches of international banks to be established in South Africa. At the same time most controls on non-residents' lending and investment in South Africa were lifted. At the same time some

controls on residents operations remain. The authorities plan further liberalisation of rules for residents.

The arrival of foreign banks increased competition and made domestic banks more efficient

Following the opening of South Africa's financial system in 1994, international participation in the local market has expanded considerably. Besides adding further depth and sophistication to the South African market, these foreign banks could utilise the highs skill of South African labour force. Consequently, the arrival of these predominantly resourceful and experienced banks posed formidable challenges to local banks. Facing intensified competition, South African banks have become more efficient.

Domestic banking groups are rapidly expanding into the rest of the continent…

South Africa's large domestic banking groups are rapidly expanding their banking operations into the rest of the continent. The democratisation of South Africa coincided with the relaxation of controls in the foreign exchange and capital markets in neighbouring countries, thus permitting the increased regional and international participation in local financial systems. Within the broad framework of liberalisation, factors such as privatisation, the seeking of joint ventures and technical partnerships with larger firms and the need for assistance in recapitalisation have provided opportunities for outward investment by South African banks. These banks have attained dominant market shares in many of the host countries.

… mostly through deals with existing banks in the host countries

Rather than establishing a *de novo* presence, South African banks have chosen to enter other markets by acquisitions of existing banks, purchase of stakes in privatisation deals of state banks and buy-outs of other international banks. The trend has been to establish subsidiaries rather than branches. In most countries the corporate structures of the subsidiaries are simple with no additional subsidiaries and few affiliate companies. However, in countries with burgeoning capital markets (*e.g.* Botswana, Namibia and Swaziland), corporate structures are showing signs of increasing complexity, with banks establishing separate additional subsidiaries for capital markets and money market operations.

Banks operate mostly in the wholesale side of the market

South African banks operate mostly in the wholesale side of the market while funding has been secured from increased deposit mobilisation in domestic markets. In addition, the high interest rates on government securities have provided profitable and low-risk investment opportunities. While there are signs of a shift towards large branch networks, retail lending is yet to develop and the credit card market remains largely untapped.

Expansions have occurred in major trading partners

These expansions have occurred in South Africa's major trading partners, many of which are in Southern Africa. Most lending is to support South African firms expanding into the region. While South African banks have rapidly expanded into the region, financial institutions from other parts of Africa have a very modest profile in South Africa. There are currently only three African financial institutions operating in South Africa, of which two are Nigerian banks.

Banking operations are sound and profitable

The banking operations in Africa are basically reported to be sound and profitable. The operations continue to trade profitably, driven by steady growth in low cost and stable retail deposits, commercial assets and improved operational efficiency. The banking subsidiaries are usually also well capitalised with capital adequacy ratios exceeding the statutory required levels.

2. Institutional investors

Institutional investors are well developed, with a comprehensive system of funded pensions

The institutional investor community is rather deep. Virtually all categories of institutional investors are well developed. According to SARB data, the assets of pension funds are equal to 57% of GDP and the assets of all institutional investors equal 155%, a figure exceeded only in a handful of OECD countries. The country has a well developed system of funded pensions for both public and private workers.

Insurance and CIS are also important

The insurance sector has one of the highest penetration ratios in the world. The CIS sector is fairly advanced, but less so than in Brazil in the OECD countries.

Regulation of institutional investors is relatively flexible

Regulation of institutional investors is more flexible than in many countries. Domestic institutions have reasonable freedom in their investment policy and are among the major investors in the domestic bonds and equity markets. Pension funds are major investors in equity and in all components of the fixed income market.

3. Capital market

JSE is not only the largest exchange in Africa, but also one of largest in the world

The Johannesburg Securities Exchange (JSE), previously the Johannesburg Stock Exchange was founded in 1887 to raise funds for the fledgling mining industry. While mining related stocks still are significant, the majority of the companies listed today are non-mining organisations. JSE Limited is by far the largest exchange in Africa and one of largest in the world in terms of market capitalisation.

A number of initiatives improved the exchange's efficient functioning

A number of initiatives were introduced beginning in the mid 1990s to improve the efficient functioning of the exchange. The first major change occurred in November 1995, when the Stock Exchanges Control Act changed the way in which stocks were traded in South Africa, opening the door to non-South Africans as intermediaries, and allowing brokers to buy and sell stock for their own account. The trading system was automated through an electronic clearing and settlement system in 1999. The bond market was separated from the JSE to the Bond Exchange of South Africa (see next section). In 2001, the JSE merged with the South African Futures Exchange (SAFEX), thereby becoming the leader in both equities and futures and options trading in South Africa.

Decline in listings as companies moved their primary listings to London

Despite technical innovations the number of listed companies on the JSE declined from 732 in 1990 to 403 in 2004, as a large number of South Africa's biggest companies moved their primary listings to London to be more attractive to international investors. This loss caused concern in the

South African securities industry market and resulted in a decline in trading volume on the JSE.

SETS, a London-based securities exchange trading system, allows JSE securities to be displayed globally

In 2005 the JSE replaced the existing Johannesburg Equities Trading system with the Securities Exchange Trading System (SETS), a London-based securities exchange trading system. SETS is an electronic limit order book trading service used to trade "blue-chip" shares as well as other securities. In addition to improving accuracy of information, SETS enables the JSE's securities to be displayed on more than 100 000 trader screens worldwide, thus potentially attracting interest from fund managers and brokers around the globe.

South African companies can now issue shares on JSE and LSE

Through this alignment of the London Stock Exchange (LSE) and the JSE, South African companies can now issue shares on both exchanges, without changing residence. In addition to SETS, the Securities Exchange News Service (SENS) was introduced to issue price-sensitive information to all market-watchers simultaneously. The trading engine and information dissemination feed-handler is hosted in London and connected remotely to the JSE. More than 1 500 traders and information users access the system. The JSE also aligned their equities trading model with that of Europe, and reclassified their instruments in line with the FTSE Global Classification system. The exchange was demutualised in July 2005.

Equity prices fared well during this crisis and appear reasonably valued

The ratio of equity market capitalisation to GDP is one of the highest in the world. About 20% of total turnover is done by non-residents. Prices have been sustained comparatively well during the world financial crisis. Despite these rises, the market appears reasonably valued. According to IMF estimates, the dividend yield was 4.3%, the price to book value ratio was 3.75 and the P/E ratio was 17.

AltX for small and medium sized high growth companies

The exchange has been developing special products to service specific market segments. The Alternative Exchange (AltX) is a stock exchange that was founded as a division of the JSE in order to accommodate small and medium sized high growth companies.

JSE is planning to create a pan-African exchange

The JSE is taking steps to bring the stock exchanges of Africa closer together and to improve the tradability of stocks in African companies. JSE is planning to create a pan-African exchange by initially enabling investors to trade in shares from Ghana, Namibia, Zimbabwe and Zambia. Later it will expand this across the rest of Africa. In October 2008, the JSE launched the "FTSE/JSE All Africa 40 Index" and the "FTSE/JSE All Africa ex-South Africa 30 Index". The first index shows the top 40 largest eligible companies listed on qualifying African stock exchanges (which include South Africa as well as Botswana, Egypt, Ivory Coast, Kenya, Mauritius, Morocco, Nigeria and Tunisia). The second index excludes South African companies. In February 2009, the JSE launched its JSE's Africa Board, a regulated trading platform that provides investors access to the African market. Non-South African companies on the Africa Board retain their local listing and take a secondary listing on JSE's Africa Board. The JSE shares its trading revenue with the local exchanges. South African stock

brokers have been encouraged to enter into brokerage sharing agreements with brokers on the rest of the continent.

Bond Exchange of South Africa Limited (BESA) acts both as an exchange and as a self-regulatory organisation; OTC trades are reported through the BESA system, increasing transparency

The Bond Exchange of South Africa (BESA), which was originally part of the JSE, was established in 1996 as an independent, mutually owned exchange. In 2007 the BESA was demutualised. The BESA acts both as an exchange and as the self-regulatory organisation (SRO) for the bond market. Essentially, most of the trading takes place in the OTC market, but is reported through the BESA system, which provides increased transparency. BESA brings together: *i)* a trade capture and matching service that is locally developed while using international best practices; *ii)* comprehensive market data and reports, which include mark-to-market prices, bond indices, yield curves and market-turnover statistics; and *iii)* a price-discovery system displaying live-for-trading prices. In June 2009, BESA became a wholly-owned subsidiary of the Johannesburg Stock Exchange. With this acquisition there was some consolidation of the derivatives that were traded on the two systems.

The infrastructure is highly sophisticated, and the bond market is one of the largest in EMEs…

The market infrastructure is highly sophisticated, with T + 3 settlement, a central clearing counterparty, and guarantee funds. The South African bond market is one of the largest in proportion to the economy in emerging-market economies. In December 2008 BESA had listed some 1 102 debt securities, issued by 100 sovereign and corporate borrowers, with a total market capitalisation of ZAR 935 billion. The market is very liquid with trading volume equal to 23 times capitalisation.

… including a full range of products

BESA lists over 375 bonds issued by central and local government, public sector corporations and major companies, and regulates their trading, clearing and settlement. About ⅓ of trading is by foreigners. Bonds include a full range of products such as strips, inflation indexed bonds, zero coupon as well as bond derivatives.

MBS and ABS issuance has been strong since 2001, also providing an alternative for government bonds

Issuance of mortgage backed securities (MBS) and asset-backed securities (ABS) has been strong since 2001 when changes in the legal infrastructure were implemented to facilitate development of this product. While changes in the regulatory environment are partly responsible, decreased supply of government bonds also left investors base looking for alternatives. As retail assets on bank balance sheets grew, banks turned to securitisation as another source of funding. Issuance has been equally divided between residential MBS and ABS collateralised mostly with vehicle loans and credit card receivables. Securitised notes found a good market among the country's asset managers and pension funds. At the same time, asset-backed commercial paper has become a funding vehicle for the corporate sector.

55% of listings are government bonds

About 55% of listed bonds are central and state government issues with state-owned companies accounting for another 10%. The shares of corporate bonds, MBS and ABS, have all been rising in recent years.

4. Financial supervision

The Reserve Bank supervises the banks, and consolidated supervision is applied to all banking groups

The Banking Supervision Department (BSD) in the Reserve Bank (SARB) supervises the banks. Consolidated supervision is applied to all banking groups, which must demonstrate that they are adequately capitalised in order to sustain both their banking and nonbanking operations. The entities subject to consolidated supervision are the bank controlling company, its subsidiaries, joint ventures, and companies in which the bank controlling company has subsidiaries or its subsidiaries has a participation. The BSD conducts both off-site and on-site supervision, although the latter relies heavily on external auditors. Supervision initially focused on off-site analysis of statistical information contained in the statutory returns. However, the approach has been broadened to include a larger component of on-site supervision. This includes, *inter alia*, ongoing interaction and regular prudential meetings with the executive management and risk managers of banks, annual presentations to banks' boards of directors and trilateral discussions with the management, including the audit committee, and the external auditors of banks.

FSB supervises non-banks

The Financial Services Board (FSB) supervises non-banks, including insurance companies, pension funds and exchanges.

After certain reforms in financial supervision, the 2008 FSAP drew positive conclusions

In 2000, South Africa agreed to have an FSAP in order to review its systems for financial supervision. The assessment was basically positive but some recommendations for improvements were made. On the basis of these recommendations, certain reforms were implemented Another FSAP was performed in 2008. One major conclusion was that a system of formal deposit insurance should be introduced. This recommendation is now under consideration. At that time it was concluded that the financial system was fundamentally sound, and that the regulatory framework for the financial sector is modern and efficient.

Notes

1. The G20 was created as a response both to the financial crises of the late 1990s and to a growing recognition that key emerging-market countries were not adequately included in the core of global economic discussion and governance. The Group has regained importance in response to the current financial and economic crisis. The G20 is made up of the finance ministers and central bank governors of 19 countries: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, the Russian Federation, Saudi Arabia, South Africa, Turkey, United Kingdom, United States of America. See *www.G-20.org*.
2. In order to have a comparable set of data, this paper uses data and information provided by the IMF (2008) and the World Bank (2008a, 2009).
3. In fact, the share of listed equity is higher in Luxembourg than in South Africa, but this is due to the large number of foreign companies listed in Luxembourg.
4. World Bank (2008b).
5. McKinsey Global Institute (2007, 2009).
6. Salviano (2008).
7. The *Sistema Especial de Liquidação e de Custódia* (SELIC – Special System for Settlement and Custody) is the settlement system for most – around 96% – of central government's domestic securities. SELIC is the resulting of a joint effort of BCB and market participants represented by the National Association of Financial Market Institutions (Andima).

Since then, all of the relevant government securities in Brazil were dematerialised and kept in custody in SELIC. With the restructuring of the Brazilian payments system in 2002, SELIC was reformed to follow international recommendations for securities settlement systems, providing from then on immediate, simultaneous and final transfer of securities and, through a direct link with STR (Central Bank Money Transfers System), bank reserves (genuine DVP-1).

8. In 1987 the government introduced what is now the main instrument for Brazil's federal debt, the LFT (*Letra Financeira do Tesouro*).

9. For mortgage backed securities (MBS): CRI (*certificado de recebíveis imobiliários*); and for asset-backed securities (ABS): FIDC (*fundos de investimentos em direitos creditórios* – receivables investment funds).

10. *Bolsa de Valores, Mercadorias & Futuros de São Paulo*.

11. *Comissão de Valores Mobiliários*.

12. These steps include the reorganisation of the People's Bank of China into regional branches in the late 1990s, which was partly intended to strengthen its control over local branches and the shift of lending authority to higher level branches by the SOCBs at about the same time.

13. The steps also created some adverse incentives. Banks responded to the tighter individual accountability for bad loan outcomes by virtually shutting out smaller and medium sized state and non-state SME who were no longer officially backed by central and local governments. At the same time, the targets for reduction in the NPL ratio encouraged banks to continue to expand loans rapidly, but toward outlets that were perceived to be state backed (lending to larger SOEs and state infrastructure projects) or to housing and consumer credit, where delinquencies were expected to be lower than in business lending.

14. The remaining about ⅔ of their equity was held as: *i)* state shares representing the state's investment in the company and theoretically owned by the State Council; the state shares are not tradable; *ii)* "legal person" shares are held by SOE, institutions, authorised social groups or other entities that have been granted "legal person" status.

15. Companies incorporated in mainland China can be traded in the mainland A-share markets, quoted in renminbi, and currently open only to mainlanders and selected foreign institutional investors, or in the mainland B-share markets (Shanghai and Shenzhen), quoted in foreign currencies (USD or HKD). In the past, only foreigners were allowed to trade B-shares. Starting from March 2001, mainlanders can trade B-shares as well. However, they must trade with legal foreign currency accounts.

16. Issuance in 2008 has been reported as follows: national debt: CNY 708.5 billion; financial bonds: CNY 1.2 trillion; corporate bonds: CNY 249.3 billion; central bank bills: CNY 4.3 trillion.

17. See also endnote 15.

18. Deutsche Bank Research (2009).

19. Foreign direct investment does not require approval, *i.e.* it is under the "Automatic Route" of the Reserve Bank of India, if the investment is in a company engaged in a given sector is less than a specified percentage (74% in the case of banking) – and meets specified prudential conditions.

20. The debate of whether and how the rating methodologies of CRAs should be subjected to regulation is still ongoing at the IOSCO level, but once decided there, India is ready to adopt such policies.

21. Mandiri, Negara and BRI.

22. According to official information, the FSSF "is a venue for co-ordination, cooperation and information exchange among the authorities responsible for safeguarding financial system stability in Indonesia. This forum has a crucial role, particularly in addressing systemic risk that can only be resolved through joint policies and decisions followed by co-ordinated, effective actions. […] The key functions of the FSSF are: *i)* to discuss the various issues confronting government stakeholders in the financial system with potential systemic impact, as informed by the financial institution supervisory authority; *ii)* to co-ordinate and exchange information for synchronisation of laws and regulations concerning the banking system, non-bank financial institutions and the capital market; *iii)* to co-ordinate the implementation or preparation of specific initiatives in the financial sector". See *www.bi.go.id/web/en/Perbankan/ Stabilitas+Sistem+Keuangan/Forum+SSK*.

23. According to official information, the "the FSSF is divided into three levels: 1) the Steering Forum, which is responsible for providing general guidance to the Executive Forum on the key FSSF functions. This forum has 7 members, 3 at the level of Director-General in the Ministry of Finance, 3 members of the BI (Bank Indonesia) Board of Governors and the Chief Executive Officer of LPS (= DIC – Indonesia Deposit Insurance Corporation); 2) the Executive Forum, which carries out the key functions of the FSSF according to the instructions of the Steering Forum. This forum has 14 members: 6 second-level officials from the Ministry of Finance, 6 BI Directors and 2 LPS Directors; 3) the Working Team, which supports the work of the Steering Forum and Executive Forum. Team members are officials appointed from the Ministry of Finance, BI and LPS by decision of the Steering Forum after

nomination by the respective institutions". See *www.bi.go.id/web/en/Perbankan/Stabilitas+Sistem+Keuangan/Forum+SSK*.

24. The Absa Group, the Standard Bank Group, the FirstRand Bank Group, Investec and Nedcor.

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APPENDIX

Policy Framework for Effective and Efficient Financial Regulation

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Policy Framework for Effective and Efficient Financial Regulation: General Guidance and High-Level Checklist

The structure and operation of the financial system have undergone marked changes in the past couple of decades, driven by dramatic improvements in technology, rapid product innovation, integration of financial systems, competition in financial services, and policy, regulatory and trade reforms.

These developments have led to a dynamic, sophisticated and global financial services arena which fostered economic growth. Yet, the financial and economic crisis has brought to the fore many inappropriate or ill-adapted elements of our approach to financial regulation.

The crisis has forced us to think hard about the financial system: how it works, the objectives it should fulfil, and the tools and policies to help shape it. The Policy Framework for Effective and Efficient Financial Regulation, *supported by* General Guidance *and a* High-Level Checklist, *is a tool that can support ongoing efforts by policy makers, regulators, and supervisors to achieve a stronger, more resilient financial system. It is not meant to substitute for the more focused, microprudential principles and guidelines of international standard-setting bodies. But it can guide our strategic thinking and promote governmental leadership and action so that the financial system can play its vital role in the functioning of the economy, both domestically as well as globally.*

The Policy Framework, *including the* General Guidance *and* High-Level Checklist, *is the product of work by the Committee on Financial Markets and the Insurance and Private Pensions Committee, and was the subject of a broad public consultation.*

The Policy Framework *challenges policy makers to think about the fundamentals of financial regulation in a globalised financial system. It also invites them to improve their understanding of the financial system and work in close co-operation with other countries to develop proper tools and instruments so that public policy objectives are met. I hope that policy makers will use the* Policy Framework *in setting national policy and in working with international partners.*

General Guidance on a Policy Framework for Effective and Efficient Financial Regulation

Introduction

The structure and operation of the financial system have undergone marked changes in the past couple of decades, encouraged by dramatic improvements in technology, rapid product innovation, ongoing global financial system integration, competition in financial services, and policy, regulatory and trade reforms. These developments have led to a dynamic, sophisticated, and global financial services arena, and fostered economic growth; at the same time, however, problems of confidence and trust have beset the financial system, with sometimes severe consequences, as demonstrated by the recent crisis. Given ongoing questions about the effectiveness and efficiency of financial regulation, and its use as a potential instrument for reform, governments have continued to assess, and reassess, the policy and regulatory framework for the financial system, with a view to ensuring public confidence in the system and its safety and soundness, but also retaining its flexibility and innovative character.

In this context, the Committee on Financial Markets (CMF) and the Insurance and Private Pensions Committee (IPPC) had, in recent years, a number of discussions on the effectiveness and efficiency of financial regulation. The CMF had discussions on a broad range of topics, including mergers and acquisitions, and other structural developments, competition in financial services, prospects for exchanges and national financial centres, consolidation and other changes in the structure of supervisory and regulatory agencies, and arrangements to ensure regulatory effectiveness and efficiency. Input from CMF delegates has contributed to the discussions. The IPPC had, for its part, discussions on the effectiveness and efficiency of regulation, particularly in the insurance sector, and conducted a stocktaking of country initiatives to improve regulatory effectiveness and efficiency, based on delegate input.

The CMF and IPPC decided to conclude this work by developing general guidance for the development of a sound policy framework for effective and efficient financial regulation that would incorporate "good" regulatory approaches and practices synthesised from their respective stocktaking efforts and discussions. This general guidance is aimed at legislators, policy makers, regulators, supervisors, as well as relevant stakeholders, including industry and consumers. The general guidance incorporates the existing *OECD Reference Checklist for Regulatory Decision making* and adopts a number of the principles and themes of the *OECD Guiding Principles for Regulatory Quality and Performance*.

While the general guidance is based largely on regulatory initiatives and discussions that preceded the current financial crisis, and thus may not offer specific solutions, it may nonetheless have relevance to current efforts to reconsider, from a longer-term perspective, the framework for financial sector intervention and regulation. The guidance contains a checklist of principles that should be adopted or considered as a general means of furthering the attainment of an effective and efficient framework for government intervention and regulation in the financial system. The

guidance is neither sector specific nor focussed exclusively on financial regulation. In this respect, the general guidance is not meant to substitute for the more focussed, microprudential principles and guidelines of international standard-setting bodies or codes of international financial institutions (though there may be some overlap), but is rather intended to operate at a higher level and address the policy framework as well as financial regulation at a general level.

The general guidance proposes that a sound ***policy framework*** provides the basis for effective and efficient financial regulation. Financial regulation cannot be understood in isolation, but must be comprehended in the context of the financial landscape, the policy objectives that have been elaborated for the financial system, and the policy instruments and system of institutions that are in place to meet these objectives. This policy framework should reflect the key features of the financial system (some of which are becoming increasingly prominent), including:

- the primary role played by the financial system in financial intermediation in the economy and in the pooling, management and transfer of risks;
- the close interlinkages between the financial system and the macroeconomy, and the global and integrated nature of financial and economic systems; and
- the complex and rapidly evolving nature of the financial system, the continued convergence of products, institutions and markets, and the growth of globally active financial conglomerates.

Before financial regulation is developed, there must first be a good ***understanding of the features of the financial system***, both in terms of how it ought to operate, and of how it does operate in practice, including any problems that may affect its operations or its participants, including consumers. Establishing adequate transparency in the financial system is essential for developing this critical understanding.

As elaborated in the general guidance, the framework for government intervention and financial regulation is based on the ***elaboration of policy objectives***, which define the outcomes to be expected from addressing identified problems or specified needs in the financial system and possibly more broadly. Government intervention and regulation should strive to achieve these objectives, and their ***effectiveness*** is measured by the extent to which these efforts are successful. At the same time, intervention and regulation in the financial system carries costs, so that it should be done as ***efficiently*** as possible without sacrificing the achievement of policy objectives – unless indeed the overall costs of intervention exceed the benefits.

Financial regulation is among a number of ***policy instruments*** at the disposal of governments, and its potential uses, features and effects should be examined alongside these other instruments. At the same time, financial regulation has its own specificities as a policy instrument, with the result that the general guidance offers some insight as to what might be good principles for financial regulation specifically. Finally, policy instruments depend on an ***institutional system*** for their implementation, another question addressed by the general guidance. Finally, the framework for intervention and financial regulation should, given rapid innovation in the sector, be subject to ***review*** on a periodic basis in order to ensure the continued effectiveness and efficiency of the policy and regulatory framework for the financial system, and financial regulation in particular.

The general guidance is structured in line with this sequencing of considerations, which should be taken into account in the development of the policy framework. An important cross-cutting element addressed throughout the general guidance is the need for enhanced international collaboration, co-operation, and co-ordination, essential in a world with, on the one hand, highly integrated and sophisticated financial systems and interconnected economies, and, on the other, nation-based systems of intervention and regulation with potentially different and conflicting objectives.

The general guidance is addressed to OECD member countries. Non-member economies are invited to take due account of these good practices. The general guidance should help to promote the fundamental objectives of the OECD, which are to achieve the highest sustainable economic growth and employment, and a rising standard of living while maintaining financial stability, contribute to sound economic expansion in member and non-member countries, and contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

I. Financial landscape

Understanding the operation and functioning of the financial system is an essential step in the development of a sound policy and regulatory framework. This should involve an understanding of the essential attributes of a well-functioning financial system so that its role in the economic system is well understood and the boundaries of the financial system are clear. Financial system transparency is essential for this understanding, as it makes the operations of the system more visible and supports the identification of risks; in addition, it facilitates the identification of possible problems and needs. Market failure analysis can be an instrument in this respect. International collaboration and co-operation is needed for the establishment of transparency and for the effective monitoring and analysis of the financial system.

I.1. Define attributes of a well-functioning financial system

Identifying the attributes of a well-functioning financial system provides the foundation for the development of financial regulation. Whether it reflects generalised empirical observation or economic theory, the conceptualisation of an "ideal" financial system establishes a normative reference point, defined in terms of outcomes. These "ideal" outcomes serve to anchor expectations regarding the operation of the financial system and its outputs, and thus provide a benchmark for analysis and evaluation.

This process involves identifying: *i)* the scope and functions of the financial system; *ii)* interlinkages with the economy and the broader international financial and economic system; *iii)* expected outcomes; and *iv)* the underlying foundations of the system, without which the system could not function.

Scope and functions: The role and functions of the financial system within the broader economy must be properly defined. A key function of the financial system is *financial intermediation*, by which savings and investments, public or private, are transformed into productive investments. This intermediation function may take place through financial institutions such as banks or may take place directly between parties through capital markets. Another key function of the financial system is the *pooling, management and transfer of risks*. The financial system also *facilitates private and public transactions* by supporting the existence and circulation of money (*e.g.* demand deposits), providing related payment mechanisms, offering financial advisory services, and purchasing and trading securities. In addition, the financial system plays a key role in the promotion of financial disclosures and the general *pricing of risk*. The rapid evolution of the financial system and its growing complexity may make the precise identification of the scope and functions of the system difficult and quickly outdated.

Linkages: The macroeconomic and international linkages of the financial system should be defined and highlighted. The financial system plays a critical role in supporting the operation of the monetary system and ensuring an effective and efficient transmission of monetary policy; the linkages between the financial and monetary system should therefore be elaborated. Linkages

with the real economy also deserve attention as the financial system has a significant and direct economic impact through its central role in the allocation of credit and capital, and in the pooling and management of risks. With free movement of capital among OECD economies, recognition must, furthermore, be made of the footloose nature of financial institutions, markets and capital, and the high level of global financial integration.

Expected outcomes: The expected outcomes of a well-functioning financial system should be specified. As outcomes, one might expect, under ideal conditions, the following: an efficient allocation of liquidity and capital; efficient pooling, management and transfer of risks; market liquidity; correct pricing of risk; the ability of the system, through its risk management capabilities, to withstand shocks and self-correct; the facilitation of monetary policy; competitive market functioning, both domestically and internationally, and innovation; consumer choice and confidence in the system; and, more generally, a general confidence in the functioning of the financial system and trust in its players and institutions. These outcomes provide an important benchmark for analysis and evaluation.

Foundations: Finally, the foundations of a well-functioning system should be carefully identified. These might include: a sound macroeconomic environment; a competitive market structure in the financial sector and, more broadly, a competitive market economy; high-quality information flows and disclosures; a sound legal infrastructure and regulatory and supervisory framework; sound corporate governance practices; a well-aligned tax system; and ethical and prudent risk-taking behaviour.

These attributes should have sufficient precision to permit an understanding of the nature of the financial system and to distinguish clearly its activities from other economic activities. Moreover, these attributes should take into consideration potential country-level factors that may alter the anticipated scope and functions of the financial system, affect perceived macroeconomic and international linkages, influence expected outcomes, and affect the foundational elements of the financial system.

The attributes of a well-functioning financial system are often described in OECD countries, be it in government policy papers, central banker speeches and press communiqués. Such public communication provides an opportunity for the authorities to articulate their conception of the financial system and elaborate expected outcomes, and thereby establish a benchmark for discussion, analysis, and reform. In general, governments should communicate a "benchmark definition" of the financial system when and as appropriate. It is particularly recommended in the context of any proposed comprehensive policy or regulatory reform intended to affect the structure and operation of the financial system. More specific benchmark definitions could be developed for segments of the financial system given potentially different audiences and the possible need for tailored messages.

I.1. **Financial system: Benchmark definition**

a) The attributes of a well-functioning financial system should be identified, taking into consideration the stage of development of the economy and other relevant country-specific factors. In this respect, there should be specification of:

i) the functions and scope of activities of a well-functioning financial system;

ii) anticipated macroeconomic and international linkages;

iii) expected outcomes; and

iv) supporting foundations.

These attributes should have sufficient precision to permit an understanding of the nature of the financial system and to distinguish clearly its activities from other economic activities.

b) This benchmark definition should be communicated publicly, in a manner, form and frequency appropriate to the context and target audience. It should be updated as appropriate in light of the evolution of the financial system.

I.2. Establish transparency to elucidate the actual functioning of the financial system

The operations of the financial system and its participants should be sufficiently transparent, both to facilitate a proper empirical understanding of the functioning of the system, its features, and evolution, and to promote the efficiency of the system, given the value of high-quality and accurate information for its functioning. In this context, it is desirable to promote the availability of general information on: *i)* products, services, processes, transactions; *ii)* institutions; *iii)* markets; *iv)* supporting infrastructures; *v)* participants; and *vi)* interlinkages (*e.g.* macroeconomic, international).

This information could be made available through statistics, indicators, and descriptive information, and should, to the extent possible, be timely, relevant, comprehensive (across sectors, institutions, and transactions), high-quality, and internationally comparable. Given the rapid evolution of the financial sector, and the development of new products across industry and market lines, timeliness, comprehensiveness, and consistency of data and information are critically important; moreover, there may be a need for information to be obtained, and possibly disseminated, on private vehicles, institutions, and transactions, as often these represent the first steps in financial innovation and need to be understood. Data and information that is disseminated should, to the extent possible, be freely available or available at low cost. Governmental authorities should have the legal powers to compel, if necessary, the collection and, if appropriate, dissemination of data and information to ensure that proper transparency is achieved.

The collection and, where appropriate, dissemination of information on the financial system should have benefits for the financial industry and markets, consumers, academics and public authorities. For instance, the availability of such information can facilitate the development of sound modelling and risk management systems at financial institutions. Some considerations should, however, be kept in mind:

- *Costs* versus *expected benefits:* The costs of data and information collection must be carefully considered, and weighted against expected benefits. The availability of low-cost information and communication technologies should lessen the cost burden of data and information collection. A challenging problem, however, is achieving appropriate comparability and harmonisation of collected data and information, as these affect the benefits to be gained from such information and the costs for financial products and institutions offered or operating across jurisdictions.

- *Confidentiality:* Some information may be confidential and commercially sensitive in nature. There may be, in this context, some specific types of information that require protection against disclosure. However, there may be public interest considerations that warrant making such information available (at least to public authorities, with appropriate safeguards).
- *Stability:* The public dissemination of certain types of information may affect confidence in financial institutions and markets, and thus threaten financial stability. This information should be kept confidential unless there is an overriding public interest to release it.
- *Security*: Some information may relate to the physical security and operational activities of institutions, markets and infrastructures. Disclosure of such information is likely unnecessary for the general public, though it may be needed by public authorities.

Industry groups and private-sector data providers may provide useful support in the collection and dissemination of financial data and information, in addition to governmental authorities. Collaboration between the public and private sectors may facilitate data collection and dissemination. International organisations such as the BIS, OECD, ECB and IMF have an important role to play in ensuring the transparency of financial systems, and should co-ordinate their efforts in this respect.

I.2. **Transparency**

a) The operations of the financial system should be transparent, permitting the identification and delineation of its features, its operations and their evolution over time.

b) Micro- and macro-level data and information on the financial system should be available to promote transparency. In this respect:

i) comprehensive, relevant, up-to-date and internationally comparable sets of statistics and indicators for the entire financial system should be collected and disseminated; and

ii) comprehensive and timely information on products, services, transactions, institutions, systems and markets connected with the financial system (including private and off-balance sheet vehicles), should be collected and, to the extent possible, disseminated.

c) The collection and, where appropriate, dissemination of information on the financial system should have benefits for relevant stakeholders. Due consideration should be given to costs, confidentiality, financial stability and security as relevant in the collection or dissemination of data and information.

d) Governmental authorities should have the legal powers to compel, if necessary, the collection and, if appropriate, dissemination of data and information to ensure that proper transparency is achieved.

e) Industry groups should be encouraged to promote a high level of transparency in the financial system, possibly in collaboration with government.

f) International organisations should work to ensure transparency in the financial system, domestically and internationally, and co-ordinate their efforts in this respect.

I.3. Understand the financial system

Both theoretical considerations, as well as empirical data and findings, can enrich one's understanding of the financial system and its workings. In particular, they may help in understanding the processes of financial intermediation and the pooling, management and transfer of risks in the financial system, as well as elucidate other features of the system. They may also help to clarify and understand the linkages between the financial system and the broader macroeconomy,

and the international economic and financial system. Especially important is the development of an understanding of the dynamics of the financial system and of possible market failures, and the risks that these can engender. Understanding the financial system, and how it deviates from the "ideal" state, are of critical importance for policy making.

In this respect, there are two key steps for enhancing understanding:

Surveillance: The development of surveillance mechanisms and capacity is a necessary condition for gaining a full understanding of the financial system. Surveillance should involve the monitoring of products, services, transactions, institutions, systems, markets and participants (including consumers) and of their interrelationships, and the development of analytical methods and tools to interpret observed phenomena. For instance, early warning systems can be developed to highlight heightened risks to the financial system. Surveillance should also involve the monitoring of macroeconomic developments and developments in other financial systems, including the monitoring of possible macroeconomic impacts of financial regulation, such as pro-cyclicality, and possible cross-border impacts of domestic and foreign regulatory measures. Surveillance may involve the establishment of consultative channels with industry and other stakeholders, and the development of other systems for the solicitation of views on the operation of the financial system. Surveillance should be distinguished from possible *ex ante* supervisory reviews of products or transactions.

The conduct of surveillance depends on the existence of timely, comprehensive, high-quality data and information on the financial system. There must also be the requisite expertise and resources to monitor and interpret this information, and draw conclusions for policy and regulation. In addition, the outputs generated by surveillance should be timely, have relevance and be conveyed in a format that is intelligible, so that it is understood and actionable by policy makers and regulators.

Analysis: The undertaking of analysis is obviously a critical element to the understanding of the financial system. This analysis should be focussed not only on the operation of the financial system and its broader macroeconomic and international linkages, but also on the outcomes of the system, both from the perspective of efficiency and equity. A number of analytical methods may be employed for understanding the financial system and its outcomes; however, as demonstrated in a number of OECD countries, market failure analysis is a central analytical tool as it helps to identify problems in systematic fashion and possible policy and regulatory responses.

Market failure analysis starts with the consideration of possible market failures that may upset the efficient operation of financial systems. These failures may include:

- *Asymmetric information*: Asymmetric information arises from imbalances in information that make it very costly if not impossible to monitor perfectly the behaviour or situation of others, or to have one's own behaviour or situation perfectly monitored. Asymmetries of information exist between buyers and sellers of financial services and products; indeed, the complexity of financial information, of financial products, services and transactions, and of the operations of financial institution, accentuates information asymmetries that can bedevil economic transactions.

  Asymmetric information explains some of the key risks in the financial intermediation process (*e.g.* credit risk) and accounts for the role of financial institutions in intermediation. It can also provide the basis for undesirable incentive effects, such as moral hazard and adverse selection (*e.g.* possible excessive risk taking by borrowers in the case of the former; possible decision to not pool risks in insurance markets in the case of the latter, which may lead to incomplete markets), which are observable in the financial system. Finally, it provides scope for conflicts of interest, another key risk in the financial system given the nature of the financial intermediation process

– the entrusting of one's savings and investments to financial institutions, brokers and capital market vehicles. In light of these considerations, financial systems could be considered to be intrinsically imperfect given the prevalence and extent of information asymmetries.

- *Negative spillovers:* Negative spillovers arise when the costs of individual actions do not incorporate potential broader social costs that may be imposed on others from those actions. These spillovers may cause affected parties to initiate their own actions which could cause, in turn, further spillovers and thus aggravate the problem and lead to a sub-optimal outcome. In a world of information asymmetries, negative spillovers may be informational in nature, with negative information on one person or institution potentially casting doubt on other persons or institutions, in possibly indiscriminate fashion. Negative spillovers are particularly important in the financial sector as they help to explain the potential instability of financial systems and markets, whereby confidence in financial products and institutions can quickly evaporate and lead to a panic and a rush for the exits, amplifying costs for all concerned.
- *Market power imbalances:* As with other economic sectors, excessive concentration in the financial system may lead to market power abuses and sub-optimal economic outcomes, with excessive pricing for financial services and products, and a possible inefficient allocation of capital. Market power may be accentuated in the financial system due to network effects caused by the use of common financial infrastructures (*e.g.* payment and clearing systems), which may make it difficult for alternative infrastructures to emerge and for those outside the system to create competing products. It may also be accentuated due to information asymmetries, which may place financial institutions at an informational advantage compared to the customers, which could lead to inappropriate products being sold, excessive pricing, or agreement on unfair contractual terms.
- *Market abuse:* The financial sector, like other sectors, may be characterised by market abuse, whereby individuals may be taken advantage of and deprived of savings and investments or find themselves with grossly unfair and abusive contractual terms and pricing. This could occur, for instance, through deceptive marketing practices, inappropriate use of funds in segregated accounts at brokerage firms, and market manipulation of share prices. Market abuse creates particular problems for the financial sector since the financial system relies fundamentally on trust and confidence; if, due to market abuses, trust and confidence are lost, they are difficult to rebuild. In this way, market abuse can, if sufficiently problematic, cause widespread and long-term reputational damage, and thus undermine the functioning of the financial system.

Market failure analysis then examines the risks and negative effects resulting from these failures; these may include credit and liquidity risks, moral hazard, adverse selection, conflicts of interest, crises of confidence, mispricing and abuse of a dominant position. Incentive effects deserve close attention given their potential for the generation and build-up of risks. Factors that may be aggravating market failures also need to be considered (*e.g.* weak supervision, poor corporate governance practices, inappropriate tax rules, poorly designed insolvency rules). Empirical substantiation is then pursued to help validate (or not) any identified problems, through such tools as market data, studies and surveys, and comparisons with other countries. The global and dynamic nature of the risks and problems must also be assessed. For instance, might identified problems have an international as well as domestic origin? Might problems be self-correcting? Finally, there should be ongoing risk analysis to ensure a continued understanding of market failures and their evolution.

Given the challenges of effective surveillance and analysis, the considerable amount of expertise and resources needed for them to be done properly, the similarity of problems across countries, and an international dimension to some market failure problems through contagion

I.3. **Surveillance and analysis**

a) The functioning of the financial system and its broader macroeconomic and global linkages should be well understood, as should the products, services, institutions, systems and markets connected with the financial system.

b) Surveillance tools and mechanisms should be established to ensure a comprehensive, ongoing monitoring of domestic and international financial system developments, macroeconomic trends and emerging risks.

c) Market failure analysis should be conducted to assess the efficiency of the financial system and, in particular, understand the risks to which the financial system and related participants may be susceptible. The potentially global and dynamic nature of these risks should be considered as part of this analysis.

d) Governmental authorities should have the requisite expertise and resources to conduct appropriate surveillance and analysis on a timely basis and formulate sound policy and regulation.

e) Given the complexity and rapid evolution of the financial system, the international nature of the financial system and global macroeconomic linkages, and the related challenges associated with effective surveillance and analysis, there should be continuous:

i) information sharing within and across jurisdictions, through formal and informal channels, subject to professional secrecy standards applicable to governmental authorities in the context of any exchange of confidential information;

ii) collaborative analysis and discussion of the financial system and related developments, risks and possible contagion channels, domestically and internationally;

iii) research and analysis, conducted at the domestic and international level, and effective mechanisms to promote such collaboration and information sharing.

channels, collaboration and information sharing, both domestically and internationally, should be strongly encouraged, subject to professional secrecy standards applicable to governmental authorities in the context of any exchange of confidential information.

II. Policy objectives

The articulation of government policy objectives is of paramount importance in the establishment of a policy framework and in the elaboration of financial regulation, as these objectives define the beneficial outcomes that government intervention is expected to achieve, identify the trade-offs (if any) that may have to be made in policy and regulatory decisions, and anchor the expectations of regulated institutions and other stakeholders. These objectives also have an important role in establishing an accountability framework for governments, regulators and supervisors.

II.1. Identify problems and establish the case for intervention

The elaboration of policy objectives must be based on a global identification and analysis of the range of actual or potential market failures and, if relevant, broader economic and social needs. Government intervention is intended to address actual or potential market failures and possibly broader needs, and therefore should be properly oriented toward achieving these goals; if successful, the intervention should yield the benefits to be expected from correcting these problems or satisfying these needs.

This analysis should primarily involve a broad market failure analysis, but may also incorporate other forms of economic and social analysis given potentially broader public interest considerations. Broader economic analysis could, for instance, incorporate elements of development policy, industrial policy and competition policy. For instance, to the extent that a country considers that being a financial centre reflects an important economic need, possibly due to expected knowledge spillovers and high-quality employment growth, then such needs will be factored into the broader analysis surrounding government intervention. Similarly, social analysis may be considered and suggest that attention be paid to considerations of access, equity, social solidarity, health and income protection, and the promotion of long-term savings.

While there may be a large number of economic and social reasons for government intervention, the case for intervention needs to be firmly established. In general, the operation of the financial system suffers from a sufficient number of material problems – such as asymmetric information and spillovers – so as to warrant government intervention. Although the case for intervention may be compelling *prima facie*, there should nonetheless be a considered analysis of the nature of the problems, the potential benefits and costs of intervention (based on a realistic assessment of effectiveness), the international dimension to the problems (if any) and whether a co-ordinated international response might be more effective in addressing them, whether the identified problems might be self-correcting, and whether there might be alternatives to intervention. The possible problems, complications, unintended consequences or unexpected costs of government intervention should be carefully considered, including the possibility that certain policies or approaches may be unsustainable or lead to a build-up of risks (*i.e.* conduct of regulatory failure analysis).

The combined general analysis of market failures and broader economic and social needs, on the one hand, and the case for intervention, on the other hand, permits the ranking of problems in terms of gravity and impact on welfare, and the identification of problems that can in fact be addressed by intervention and of expected outcomes. This ranking and triage exercise permits the targets and outcomes of government intervention to be clearly defined, and thus provides a basis for the elaboration and prioritisation of policy objectives.

II.1. **Identification of problems and the case for intervention**

a) Actual and potential market failures and broader economic and social needs in the financial system should be clearly identified and analysed, and these problems and needs ranked in terms of gravity and impact on welfare.

b) The case for government intervention in the financial system should be established, including an assessment of potential benefits *versus* costs, the international dimension, and possible alternatives to intervention, and the targets of intervention and related expected outcomes should be clearly identified.

II.2. Articulate policy objectives

Policy objectives for the financial system should be clearly defined, and should correspond to the beneficial outcomes anticipated from government intervention. Policy objectives provide the anchor for the policy and regulatory framework, as they define the goals of government intervention and provide a roadmap for the more specific elaboration and implementation of intervention measures, including financial regulation.

Policy objectives should be elaborated at a general level, applicable to the entire financial system and defining the broad policy framework. That said, they may also be elaborated at a more micro level if there is a strong case for differentiation according to particular sectors, institutions, and products. General policy objectives for the financial system may include the following:

- *Confidence in the financial system:* Public confidence in the financial system is maintained, so that the key functions of the financial system can operate, such as financial intermediation.
- *Systemic stability:* The financial system as a whole is resilient against external shocks and is not susceptible to a systemic breakdown, for instance where the failure of one or more financial institutions causes the collapse of other, otherwise safe, financial institutions.
- *Safety and soundness of financial institutions:* Financial institutions involved in the intermediation process and in the management, pooling and transfer of risks are managed prudently, with the scope for failure of poorly managed and weak institutions.
- *Market integrity and transparency:* The financial system operates in a fair and transparent manner, with the absence of fraud and market abuse, and fair, accurate and timely disclosures.
- *Market conduct and consumer protection:* The providers of financial products and services in the financial system interact with their customers in a fair, transparent and professional manner, and the interests of consumers are adequately safeguarded and their needs addressed.
- *Efficiency:* The financial system generates efficient outcomes, with capital allocated efficiently to the most productive uses, the pricing of financial services reflecting costs, and the expected return on financial securities, products and instruments appropriately reflecting risks.

A clear hierarchy should be established for the policy objectives; they should be prioritised and weighted, reflecting the scope and scale of the underlying problems. In this respect, top priority should be given to maintaining confidence in the financial system and systemic stability. In addition, there should be consideration of the extent to which the policy objectives may conflict with one another, or be mutually reinforcing. This may require a specific analysis of how policy instruments might interact with one another (see below). Developing a sense of priorities in selected policy objectives and understanding their possible interaction should help in identifying trade-offs that may have to be made in government decision making and intervention, and highlight the risks associated with failure to achieve these objectives.

More specific – and potentially different – policy objectives for particular sectors, institutions and products may need to be elaborated if there are material differences in market conditions, practices and participants in different parts of the financial system. Such differences in policy objectives should be based on market failure analysis and possible broader economic and social considerations. If micro-level policy objectives are adopted, these should be clearly linked to the broader hierarchy of policy objectives governing the financial system as a whole.

II.2.1. **Policy objectives: Framework for financial regulation**

a) Clear policy objectives should be elaborated to govern the framework for government intervention and financial regulation.

b) Policy objectives should be based on sound policy analysis and correspond to the beneficial outcomes to be expected from addressing identified market failures and other identified broader economic or social needs.

c) Policy objectives should be directed at the financial system as a whole, going beyond particular sectors, institutions, and products.

d) Policy objectives should be appropriately prioritised; given the importance of the stability of the financial system, top priority should be given to promoting confidence in the financial system and addressing systemic risks.

e) Any trade-offs or mutual reinforcement among policy objectives should be carefully analysed.

II.2.2. **Policy objectives: Micro-level**

a) More specific – and potentially different – policy objectives for particular sectors, institutions, and products may need to be elaborated given differences in market conditions, practices, and participants in different parts of the financial system.

b) To the extent that there are differences in policy objectives at the micro-level, these should be:

i) linked to conclusions from market failure analysis and potentially broader economic and social analysis; and

ii) linked to the broader hierarchy of policy objectives established at the macro-level (as per II.2.1 above).

II.3. Ensure an accountability framework

Policy objectives provide a yardstick for measuring the effectiveness of government intervention and financial regulation and, as such, provide a framework for accountability. By specifying the expected outcomes of intervention, they help to measure the extent to which government and its administrative institutions have been successful in addressing identified market failures and identified broader economic and social needs. They may thus facilitate the identification of any failures of understanding regarding the financial system or of deficiencies in policy approaches and regulation (including any deficiencies at the international level in terms of co-ordination), and contribute to more effective policy and regulation.

Public disclosure of clearly articulated policy objectives ensures an appropriate level of transparency for the policy framework and reinforces accountability, as governments will be expected to explain any significant failure in meeting stated policy objectives. Policy objectives should, where and as appropriate, be explicitly incorporated into the mandated objectives of governmental authorities and bodies having a role in government intervention. Even non-governmental bodies indirectly involved in the regulation of the financial system or its participants (*e.g.* due to mandated membership) should have clearly defined objectives. Disclosure of objectives should also help to guide the expectations of industry and consumer stakeholders.

Mechanisms should be established to promote public articulation of policy objectives and accountability. For instance, relevant governmental authorities and bodies should publish annual reports in which they outline their objectives, describe the general framework for intervention and regulation and (if relevant) supervisory methods and tools, identify risks, and review progress in

meeting these objective. In this context, relevant governmental authorities (including supervisory authorities) should describe the application of the regulatory framework and any related methods and tools, and provide aggregate statistical data on key aspects of such implementation so that the priorities and activities of the governmental authority can be better understood. These annual reports should also provide an overview of relevant developments in the financial system.

In addition, internal governance mechanisms within government should be established to ensure ongoing review and reporting by relevant administrative bodies. These mechanisms may facilitate disclosure and discussion of sensitive issues (*e.g.* failure resolution efforts and interventions) that, if released publicly, might undermine confidence and potentially destabilise the financial system. In addition, indicators should be developed that could help measure progress toward the achievement of policy objectives. Finally, remedies should be available within government to address any serious failure of governmental authorities to meet mandated objectives. These remedies may be positive in nature (*e.g.* mandating an increase in resources and expertise) or negative (*e.g.* in the extreme, removal of appointed authorities for cause), but should be applied judiciously so as to ensure proper independence of regulatory or supervisory functions.

II.3. **Accountability**

a) Policy objectives should be publicly disclosed.

b) Mechanisms to promote accountability should be in place, such as:

i) annual reports by governmental authorities to the public, including:

– *a description of objectives, an overview of the regulatory framework and relevant developments in the financial system, an identification of key risks, and information on how the regulatory framework is addressing these risks and achieving stated objectives*;

– *aggregate statistical data on key aspects of such implementation so that the priorities and activities of the governmental authority can be better understood*;

ii) internal governmental mechanisms for reporting and review;

iii) development of indicators measuring progress toward the achievement of policy objectives; and

iv) remedies within government to address any serious failure of governmental authorities to meet mandated objectives.

III. Policy instruments

Identifying appropriate policy instruments for achieving policy objectives is a key task for government, and is particularly challenging in the financial sector given the complexity of the financial system, the rapid-moving and global nature of capital, the linkages between the financial system and monetary policy, and linkages between the domestic and international economic and financial systems, and the related potential for policy spillovers among countries. Understanding the nature of each of policy instruments, and their expected effects, both on the domestic and international financial and economic system and on other domestic policy instruments (and, in particular, financial regulation) and other countries' policies, can help in designing effective intervention measures and sound financial regulation.

III.1. Identification of financial sector policy instruments

Governments should identify the range of policy instruments and methods at their disposal that are capable of affecting the operation of the financial system, the conduct of its participants,

or its outcomes. Briefly stated, a policy instrument is a tool used by government to achieve its goals, and thus can be broadly conceived. A number of policy instruments are available to government, namely:

- *Surveillance:* The surveillance of the financial system is a critical instrument of policy as it ensures continued awareness and understanding of the financial system and its evolution, and permits a precise and measured response to identified problems. Moreover, active and ongoing surveillance of the financial system by government may influence, positively, the behaviour and perceptions of participants in the system, and deter misconduct and abuse.
- *Moral suasion with market-based solutions:* The government may play the role of facilitator and engage in moral suasion to guide market-based solutions and help ensure that desired outcomes are achieved. Market-based solutions in this context can take on a wide range of forms, depending on the nature of the problem, extent of private-sector co-ordination, and degree of moral suasion exercised by the government. These solutions can be industry-wide in nature, involving, for instance, self-regulatory organisations actively overseen by government and industry codes of conduct driven, in part, by governmental expectations. These solutions can be also participant-based such as sound corporate governance and risk management practices. This policy instrument should be distinguished from pure market-based solutions where there is no government involvement or signalling of such potential involvement.
- *Regulation:* Financial regulation is a powerful instrument and has traditionally been a key instrument of policy in the financial sector. Financial regulation can set out, in clear, pre-determined fashion, certain outcomes for participants in the financial system (*e.g.* special rights for policyholders in an insolvency), or can seek to influence the behaviour and actions of participants through compulsion, the alignment of risks and incentives, and the establishment of governmental expectations (*e.g.* prudential regulation).
- *Guarantees:* The provision of guarantees by government, or an imposed requirement on industry to provide guarantees, can be a potent instrument of policy. Deposit insurance schemes, policyholder protection funds, and reinsurance guarantees for industry losses in the context of large-scale insurance risks are examples of guarantees.
- *Lending:* The provision of liquidity (*i.e.* very short-term funding) and possibly longer-term lending support to participants in the financial system is another important instrument of government.
- *Subsidies, grants and programmes:* The government may seek to achieve policy objectives through direct subsidies, grants, and programs to targeted individuals and firms. These may include subsidies provided through the tax system, such as income tax deductions for insurance company provisions or for insurance premiums paid by individuals and firms.
- *Government ownership and control:* Governments may establish, with public funds as capital, special government enterprises that participate in the financial system or may, in the context of a financial failure, take control of an existing financial institution.

These policy instruments, by their nature, differ markedly in terms of their operation, transparency, flexibility, costs, and effects. In practice, their features are likely to be affected by the precise design and implementation of the policy instruments.

In selecting policy instruments, the direct, or primary, impact on the financial system, its participants, or outcomes needs to be understood and evaluated. This evaluation needs to consider the extent to which the identified market failures or possible broader economic and social problems will be directly addressed or guarded against by the proposed instruments, and thus yield benefits; the related costs also need to be evaluated. In addition, secondary impacts need to

be analysed as they may reduce the effectiveness of the chosen policy instrument(s) and affect the need for, and impact of, other policy instruments as well as the need for international co-ordination; these impacts include incentive effects and policy spillover effects.

The implementation of some policy instruments may, for instance, create negative incentive effects, such as moral hazard, if the activities of participants cannot be fully monitored. For instance, the provision of deposit insurance may, while promoting confidence in the banking system, create incentives for banks to increase the riskiness of their activities and reduce the incentive of depositors to monitor banks. These impacts may reduce the overall impact of the guarantee and require a strengthening of financial regulation (and related to supervision) to help counter such possible negative incentive effects on bank management. The adoption of special measures in the context of a financial crisis may provide necessary financial stability but may create large adverse incentive effects. Proper exit strategies should therefore be devised as part of the implementation of policy instruments linked to special crisis measures.

Given the strong financial and economic interlinkages among countries, the international spillover effects of policy instruments also need to be taken into account. The adoption of policy instruments may have positive or negative financial or economic effects on other countries, which may lead to a policy response in these other countries; the resulting combined set of country policies may be positive or negative for the global financial and economic system as a whole. Such policy spillovers may lead to policy conflicts among countries, but may also provide the basis for co-ordinated, welfare-improving international responses. For instance, it is understood that international agreement on a common capital framework for banks is necessary in order to avoid the prospect of unco-ordinated domestic rules that may tend to focus on national competitiveness, heightening risks for the global financial system. In light of possible spillovers, the need, and scope for, international co-operation and co-ordination should be identified in respect of each of the policy instruments.

III.1. **Identification of policy instruments and their impact**

a) The range of policy instruments capable of affecting the operation of the financial system, the conduct of its participants, or its outcomes, and at the disposal of government, should be identified; in this respect, financial regulation should be considered as a key policy instrument, but by no means the only one.

b) The features and possible impacts of each policy instrument should be identified and understood, particularly in terms of costs, incentives, and international spillover effects.

c) Consideration should be given to assessing how any negative incentive or spillover effects could be addressed, for instance by varying the use of other instruments or through international co-ordination. These effects should be addressed *ex ante* through appropriate policy actions. In particular:

  i) any negative incentive effects arising from the use of policy instruments – such as moral hazard – should, to the extent possible, be controlled *ex ante* with appropriate risk mitigation measures;

  ii) the need and scope for international co-operation and co-ordination should be specified in advance with respect to each policy instrument.

III.2. Matching policy instruments to policy objectives

Based on expected direct impacts, and in consideration of possible secondary effects such as incentive and spillover effects, the identification of the proper policy instruments, and their appropriate combination (if any), for each policy objective should be carefully considered and explored by governments. There are a number of considerations in this respect:

- A combination of policy instruments is generally required to produce effective government intervention and thus achieve the desired outcomes defined by policy objectives. It is unlikely, given the likely breadth of policy objectives, the potentially large number of areas in the financial system (including its underlying foundations and possibly the broader economic system) where intervention may be needed to address each policy objective, the possible contributions of several policy instruments, and possible secondary effects that may cut across policy instruments, that a simple one-to-one mapping will exist between a policy instrument and a policy objective.
- The chosen combination of instruments should be designed to address as precisely as possible the identified market failure(s) or broader economic and social need(s) underlying each policy objective; moreover, this combination should be the least-cost approach – that is, without sacrificing effectiveness, it is the approach that imposes the lowest costs.
- The selected combination of instruments, and their design, should reflect the priority attached to the particular objective and the related risk tolerance for policy failure. For instance, the achievement of systemic stability is likely to rely, to a great degree, on policy instruments whose outcomes are more certain – for instance, strong surveillance, prescriptive regulation, and the provision of emergency liquidity – and less emphasis on instruments whose outcomes may be less certain, thus minimising the extreme and costly downside risk of systemic failure.
- As policy instruments may be used to support more than one objective, the potential conflicts among policy objectives also need to be considered in selecting and designing the combination of policy instruments.
- The design and combination of instruments should be adjusted to take into consideration possible incentive effects that may affect, and cut across, policy instruments. This may require the establishment of offsetting risk controls (*e.g.* risk mitigation techniques) in the instrument causing the effects and an adjustment to other policy instruments. The provision of lending and guarantees are policy instruments where special consideration needs to be given to incentive effects and designing appropriate *ex ante* risk mitigation techniques and controls. For instance, controls are normally placed on the provision of central bank liquidity in order to ensure that lending is provided only to solvent, but illiquid, financial institutions, thus helping to minimise inappropriate use of lending facilities and minimise the government's fiscal exposure. This consideration suggests that the instrument of regulation may often need to be combined with other policy instruments as it provides a framework for the establishment of appropriate risk controls.
- It may be desirable for the design and combination of instruments chosen for each policy objective to vary according specific factors, such as the nature of the product, service, institution, sector, system, market, or participant. For instance, distinctions could be made on the basis of industry sector, quality of an institution's risk management, and type of consumer (*e.g.* retail *versus* institutional). Caution must be exercised in deciding on specificity *versus* uniformity in the application of a policy instrument since identified market failures and other problems may be left inadequately addressed or unattended, giving rise to a potentially damaging policy failure.

- The choice, design and implementation of instruments needs to consider, in light of the globalised financial and economic system, policy spillovers among countries. International co-ordination should take place in those areas where spillovers are the greatest, with due recognition to the limits to co-ordination in nation-based systems of government.

The choice and design of policy instruments, and their mapping to policy objectives, should be transparent to the public and be publicly justified. This level of transparency should foster an understanding of the policy framework for the financial sector and provide appropriate context to government interventions. It may also help to support public confidence in the financial system; for instance, public awareness and knowledge of deposit insurance is essential for stability. Transparency should include information on the nature, amount, and costs of any government intervention to rescue a financial institution or, in a crisis context, safeguard the financial system (*e.g.* guarantees, lending, capital injections). Transparency is especially necessary in the context of any major policy or regulatory reforms, where the rationale for reforms should be presented.

The use of policy instruments should be made transparent where possible. However, it is recognised that, in some specific contexts, such disclosure may be inappropriate or counterproductive, and possibly endanger the stability of the financial system. There may be merit, for instance, in maintaining constructive ambiguity in respect of certain specific policies, in order to ensure the proper alignment of incentives in the financial system. In some circumstances, there may also be a need to maintain confidentiality, in order to prevent any panic behaviour; however, there should be appropriate accountability mechanisms in place within government in place to ensure proper oversight of actions.

Finally, given the commonality of problems in financial systems across countries, the extensive linkages and spillovers across countries, and the possible need for international co-ordination, international policy analysis and discussion should be reinforced. Such collaboration should be focussed in nature, identifying areas that require particularly close international policy co-ordination and implementation. It should involve the monitoring of relevant risks as well as policy analysis and development. Appropriate governance and reporting mechanisms should be in place to ensure sustained collaboration. The Financial Stability Board and the OECD provide platforms for possible enhanced collaboration on financial sector policy.

III.2. **Matching policy instruments to policy objectives**

a) Based on expected impacts, and in consideration of possible incentive and spillover effects, the identification of the proper policy instruments, and their appropriate combination, for each policy objective should be carefully considered and explored by governments. In this respect:

i) the chosen combination of instruments should address as precisely as possible the identified market failures or broader economic and social needs underlying each policy objective;

ii) the selected combination of instruments, and their design, for each objective should reflect the priority attached to the particular objective and the related risk tolerance for policy failure;

iii) as an instrument may be used to support more than one policy objective, potential conflicts among policy objectives should be identified and addressed accordingly;

iv) the choice and design of instruments should be adjusted to take into consideration possible incentive effects that may affect, and cut across, policy instruments. This may require the establishment of proper *ex ante* risk controls in the instrument causing the effects and an adjustment to other policy instruments;

III.2. **Matching policy instruments to policy objectives** *(cont.)*

v) specific factors, such as industry sector, type of institution, and type of consumer should, in some circumstances, may be considered in the choice and design of instruments for each policy objective. Such specificity should be well justified and not inadvertently increase the risk of policy failure;

vi) while priority should be given to ensuring effectiveness, due attention should be given to the costs of adopting instruments; in this respect, the least-cost approach should be adopted.

b) The choice of instruments, and their mapping to policy objectives, should be made transparent and publicly justified, particularly in the context of any significant policy or regulatory reforms or any special crisis intervention measures. The use of instruments should, in addition, be made transparent; however, in some specific contexts or under certain circumstances, there may be a need for:

i) constructive ambiguity, in order to ensure the proper alignment of incentives; and

ii) confidentiality, in order to ensure continued public confidence; however, there should be appropriate accountability mechanisms in place within government to ensure proper oversight of actions.

c) The choice, design, and implementation of instruments should consider, in light of the globalised financial and economic system, policy spillovers among countries. International collaboration and discussion of financial sector policy should be reinforced and be appropriately focussed on those areas requiring close international co-ordination.

III.3. Specification and principles of financial regulation

Financial regulation is one of the key policy instruments available to governments. As with any other policy instrument, financial regulation should, if adopted, be designed to address identified problems as effectively as possible and in the least costly manner as possible. There should also be recognition of its potential adverse incentive effects, and any international spillovers should be considered; both should, if possible, be addressed, as well as any other possible secondary effects.

Financial regulation is, however, a distinct policy instrument. The operation and features of financial regulation therefore need to be carefully considered; in this respect, it is important to define and properly understand "regulation". Strictly speaking, regulation is an instrument or mechanism by which the state (or a state agency) or legislature compels an entity or individual to comply with specified requirements. Regulation can be elaborated through policies, legislation, decrees and other types of instruments of the state or legislature. Regulation should, however, be viewed broadly and can be considered to include:

- any rules or principles imposed on, or directed to, entities or individuals that require them to undertake an action or prohibits them from undertaking an action;
- any rules or principles that are intended to affect the behaviour – not just actions – of entities or individuals, including rules or principles that establish expectations regarding their conduct or that affect the risks or incentives facing these entities and individuals;
- any rules that directly specify rights or outcomes for entities or individuals, such as the priorities of creditors in insolvency regimes or access to public goods; and
- the mechanisms and systems that are used or relied upon for the implementation and enforcement of rules or principles or for the achievement of expected behaviours and outcomes

– this can include systems of co-operation and oversight among governmental bodies, systems of corporate monitoring mandated by legislation (*e.g.* auditors), and self-regulatory bodies to the extent that membership is mandatory and these bodies are subject to government oversight.

Regulation, in short, involves the establishment of rules or principles and associated mechanisms and systems that: *i*) seek, through various means of influence, to affect or control the behaviour and actions of entities and individuals, with the overall objective of achieving desired outcomes; or *ii*) directly specify rights or outcomes for entities and individuals. This definition is very broad and serves to capture all of the key elements and specificities of financial regulation.

With this concept of regulation in mind, the key elements of financial regulation that differentiate it from other financial sector policy instruments can be identified, namely:

- *Directive:* Financial regulation seeks to dictate outcomes in the financial system, or control or guide the behaviour and actions of its participants in order to achieve desired outcomes. Moreover, financial regulation contains, within itself (as a policy, legislation, regulation, decree), the directive order it seeks to impose on the financial system and its participants; this feature, indeed, provides financial regulation with a level of inherent transparency.

  Unlike regulation in many other economic sectors, financial regulation is particularly concerned with influencing or controlling the *behaviour* of certain classes of participants in the financial system in order to ensure prudence, safety, integrity and transparency of the core actors, institutions, systems and markets of the financial system. For instance, capital regulation of financial institutions and broader financial groups not only impose minimal solvency buffers but can affect the behaviour of these institutions and groups by affecting the cost of capital for different types of financial activities.

- *Compulsion:* Financial regulation will, in most cases, have the force of law or be backed up by the threat of state sanction and, in respect of regulation aimed at affecting behaviour, have penalties for non-compliance. Administrative penalties and sanctions may be complemented by civil law provisions in legislation as well as by criminal code provisions. At a minimum, there is an expectation that there will be legal or reputational consequences from non-compliance.

- *Supervision:* Where financial regulation is specifically directed toward behaviour and actions as opposed to dictating specific fixed outcomes, there is typically a level of supervision to ensure compliance. Therefore, financial regulation tends to imply state monitoring (thus, for the purposes of this *Guidance*, regulation is deemed to include supervisory measures and actions). In this respect, it is very important that the system of supervision is capable of promoting effective compliance; for instance, supervisors should have the proper legal authorities, have a strong level of expertise and level of staffing, and have effective techniques of supervision. Moreover, accountability mechanisms should be place to help ensure that supervisors meet their objectives.

These differentiating elements provide an indication of some of the specific design and implementation issues for financial regulation, which can have a bearing on its effectiveness and efficiency. Choices have to be made about the nature and content of the directive order(s), the nature and degree of compulsion needed to encourage desired behaviours or specify outcomes and, if relevant, the nature and extent of supervision required for affected participants.

Given the importance of behaviour in financial regulation, a key issue in financial regulation relates to the orientation, and degree of precision, in the directive order for affected participants – that is, the choice of principles *versus* rules. A principles-based approach to financial regulation sets out general, high-level expectations of behaviour, leaving it to affected participants to decide on the means by which they are to achieve these standards of behaviour. By contrast, prescriptive rules require the adoption of specific behaviours or actions or impose prohibitions on specific behaviours or actions.

By being focussed on high-level behavioural outcomes – which find expression in the principles themselves and essentially reflect policy objectives – a principles-based approach provides a flexible framework of regulation capable of adapting to structural and institutional changes in the financial system, as the desired behavioural outcomes are likely to remain stable over time insofar as the underlying policy objectives remain the same. Such an approach also seeks to align incentives with desired behaviours in order to promote adherence; amongst other means, it does so by: *a)* providing transparency on expected behaviours and thus making it potentially risky for those subject to the principles to initiate actions that will result in outcomes that deviate from these norms; *b)* providing those subject to the principles with the opportunity to seek the most effective and efficient ways to adhere to the principles; and *c)* relying on market forces and related reputational pressures as disciplinary mechanisms. These incentive effects may become so powerful that firms establish excessively detailed rules to ensure compliance with the principles and become overly risk averse. A principle-based regulatory approach would appear to be better suited for such areas as governance, risk management and internal controls where behavioural outcomes are largely expected and a qualitative or judgemental approach is needed to assess compliance. A key risk with principles-based regulation is that there may be scope for differing interpretations of the principles, which may lead to a wide range of regulatory outcomes.

By contrast, a rules-based approach seeks to achieve desired outcomes through more concrete measures, either by directly specifying the specific actions or behaviours to be undertaken (or avoided) or specifying the means (direct or indirect) by which actions or behaviours are to be achieved (or avoided). An example of the former are solvency rules that establish minimum levels of capital, which provide a buffer against unexpected loss events and thus enhance the safety and soundness of a financial institution; an example of the latter are governance rules that specify a minimum number of independent directors on a board, and which are intended to promote better Decision making and risk management practices, and thus contribute to enhanced safety and soundness. Rules have greater certainty in their application, and thus may be usefully applied where rule-based actions can be expected to lead directly to the achievement of policy objectives and where the tolerance for policy failure is low. As a rule-based approach facilitates compliance assessments by supervisors and regulated institutions and markets, and facilitates quantitative comparisons, it would appear to be better suited for such areas as capital rules where level playing field considerations are particularly relevant. However, rules may be applied inconsistently, lack comprehensiveness, become outdated in the face of rapid innovation, and encourage "ticking-boxes" exercises. At the extreme, there may be rule-avoidance and regulatory arbitrage across sectors and markets.

Given the high-level nature of principles, a principles-based approach tends to rely on supervision to ensure proper compliance instead of compulsion, since penalties can apply only when there is clear evidence of a breach in principle. An active and sophisticated level of supervision is needed in order to monitor behaviour properly, identify breaches of principle, and be credible if sanctions need to be applied. By contrast, a rules-based approach can rely more easily on compulsion, as transgressions are clearer-cut, while at the same time rely on supervision. While a rules-based approach may make compliance reviews more straightforward for regulated institutions and markets and for supervisors, it could be very costly if there is a large body of rules, and could lead to unnecessary conflict or burden if there are multiple, overlapping sets of rules within a country or internationally. Overall, each approach has its advantages and disadvantages, and the precise mixture of principles and rules will depend on the specific context, policy objectives, and risk tolerance for policy failure, as well as on the level of development of the financial system in a country and other possible country-specific factors.

In formulating financial regulation, the experiences of OECD countries suggest that a number of general principles should be respected – ten key principles for effective and efficient financial regulation are set forth below. These principles relate to the proper orientation of financial regulation, the process by which financial regulation should be developed and implemented, and the international dimension. These general principles are as follows:

Nature of regulation

1. **Precaution:** Theory and experience suggest that the operation of the financial system suffers from a number of significant problems, some carrying potentially very high costs. Accordingly, a pre-cautionary approach is warranted in financial regulation, reflecting the importance of maintaining confidence in the financial system and systemic stability (see Section II.2), without which other policy objectives cannot be sought. Policy makers should pro-actively anticipate and address emerging risks and problems (including through active monitoring of the financial system and macroeconomic developments) and not initiate reforms solely in response to the onset of a crisis.* This approach suggests that the benefits of financial regulation – often hard to define quantitatively absent a crisis – should be given proper weight and consideration in any cost-benefit analysis. Moreover, it suggests that costs should, to a large extent, be borne upfront in the form of *ex ante* risk mitigation measures instead of *ex post* responses, the latter likely involving costlier governmental intervention. A precautionary stance could include, for instance, counter-cyclical measures in regulation governing bank provisioning and solvency, or requirements for proper risk margins in the determination of technical provisions at insurers. The importance of these *ex ante* measures increases with the priority attached to the related policy objective(s). Finally, it suggests that intervention and failure resolution frameworks should be in place *ex ante* to provide governmental authorities with the proper legal authorities to deal swiftly with problems.
2. **Risk-based:** Among the policy instruments available to government, financial regulation is arguably the instrument most able to manage and control risks in the financial system in a comprehensive and systematic way. These risks are linked to the actual or potential occurrence of market failures (see Section I.3) and are thus capable of compromising the achievement of policy objectives. Financial regulation (and its related supervisory component) should be properly oriented to these risks and give priority to those risks that, due to their nature or impact, have the greatest potential of compromising the achievement of policy objectives (*e.g.* public confidence, systemic stability, safety and soundness, appropriate market conduct and consumer protection).

   A risk-based approach requires an assessment of the nature, scope, and scale of the different types of risks to which financial system participants (including consumers) are exposed and of the capacity of participants to absorb and manage these risks, be it on an individual, institutional, sectoral, market, or system-wide level. Risk-based regulation seeks to establish a coherent, consistent approach to underlying system risks and risk capacities. This approach may lead to differentiated regulation and supervision of products, services, institutions, systems and markets in light of differing types of risks, probabilities of their occurring, and scope and scale of their impacts, and differing capacities of system participants to absorb or manage these risks. A risk-based approach does not impose a uniform system of regulation where differences in risks and risk capacities are material.

* This principle should not be equated with the "precautionary principle" found in law and regulation in other policy fields.

A risk-based approach does not necessarily seek to eliminate all risk from the financial system (though, for some risks, full risk-control may be an appropriate objective), but recognises that risk-taking is a core feature of the financial system, and seeks to manage and reduce those risks that truly threaten the achievement of policy objectives. Risk-based regulation, while prioritised, does not ignore lower probability, lower impact, or certain types of risk as these risks may be material from perspective of some system participants, be cumulative in nature, or be newly emerging, and lead to regulatory failure.

Risk-based regulation and related supervision should be aligned with, and promote, sound risk management in the financial system and strengthen incentives for prudent and proper behaviour. Since risk-based regulation may, due to potential linkages with broader macroeconomic variables, lead to pro-cyclical outcomes and thus inadvertently lead to a build-up of risks, a forward-looking, pre-cautionary element may need to be embedded in such regulation.

The extent to which a risk-based approach can be adopted depends on the level of development of the country's financial system, the sophistication of its products, institutions, systems and markets, and supervisory capacities. Where financial regulation is developed to address broader economic or social objectives, and not only market failures, the impact of such regulation on risks in the financial system should be properly taken into account and addressed to the extent possible.

3. **Sound incentives:** Unlike regulation in many other economic sectors, financial regulation is particularly concerned with influencing or controlling the behaviour of participants in the financial system. Directly controlling behaviour may in practice be difficult to achieve, however, placing limits on the ability of financial regulation to achieve desired outcomes; moreover, regulation, along with other policy instruments, may create adverse incentive effects (*e.g.* moral hazard), which need to be addressed. Financial regulation should therefore seek, directly or indirectly, to align the *incentives* of participants with policy objectives by carefully adjusting the nature, form, and strength of directive authority, compulsion and supervision as appropriate, and using other policy instruments where necessary and justified as reinforcement. For instance, the promotion of proper policies on compensation in financial institutions may establish a basis for sound incentives, and provide a complementary means to promote prudent risk-taking. Incentives should be aligned *ex ante* since incentive problems, once installed, may be difficult to overcome. Effective enforcement of financial regulation and appropriate deterrence through properly tailored penalties for breaches of regulation provide an important basis for sound incentives.

   A powerful means to promote aligned incentives is to ensure that financial institutions and other relevant market participants are aware of the possibility of their failure and therefore of the need to manage risks properly. Such recognition of failure can serve to reinforce market discipline. It is important, in this respect, for the regulatory and supervisory framework to indicate that the board of directors of financial institutions, along with senior management, are responsible for the proper management of their business operations and for the effective management of risks. The goal of regulation is not to seek the prevention of the failure of an entity at all costs, but to focus on failure prevention while facilitating orderly failure resolution and ensuring the protection of retail customers should failure occur. If the number of customers affected by the potential failure of an institution or a participant is large and the potential losses severe, the behaviour of the entity and its customers may become distorted; these potential effects merit explicit *ex ante* attention in the regulatory and supervisory system and failure resolution framework.

   Financial regulation may, in addition, seek to harness market forces to promote sound incentives. Competitive markets, coupled with adequate disclosure and transparency, may help to ensure a proper alignment of incentives and thus may be explicitly factored into the design of financial

regulation. These pressures may operate through one or more channels, including: the actions of competitors in terms of pricing, supply and innovation; the pressures placed by customers, both retail and institutional, who may have the option of switching to a competitor; the demands of investors who may, if dissatisfied, punish the equity value of the financial business; and the possible role played by third parties, such as rating agencies and intermediaries, who may have an influential role and some sanctioning power. That said, any reliance placed on market forces in financial regulation needs to be carefully assessed, as it is possible that market forces may yield the same negative outcomes that the regulatory intervention sought to address. Market failure analysis should be conducted to determine the appropriate role for market forces in regulation.

4. **Comprehensiveness:** Financial regulation should be comprehensive in nature, in terms of ensuring that all identified problems (market failures and broader economic and social needs) are properly addressed, both at a domestic and global level, and that all necessary regulatory and supervisory tools and mechanisms are being used to achieve policy objectives, including through the combination of regulation with other policy instruments. Comprehensiveness means that all financial system participants and related products, services, institutions, systems and markets are subject to appropriate regulatory and supervisory frameworks and oversight. Comprehensiveness also means that interconnected components of the financial system, be it in terms of financial groups, sectors, systems or markets, as well as broader macroeconomic conditions, are appropriately subject an integrated, global view so that interrelated risks and contagion channels can be appropriately identified and, as necessary, addressed, at both a micro and macro level. Comprehensiveness requires that all appropriate policy tools and mechanisms be used to ensure a global, integrated approach to the regulation and supervision of relevant participants, institutions, systems and markets in the financial system.

5. **Consistency and competitive neutrality:** Financial regulation should be applied in a consistent, "functionally equivalent" manner (*i.e.* neutral from a product, institutional, sectoral, and market perspective, so that similar underlying risk factors and problems are treated equivalently and in a co-ordinated and integrated fashion bv regulation); otherwise, there may be competitive inequalities and scope for regulatory arbitrage, and regulatory gaps may be created. Market failure problems do not respect – but indeed may be accentuated by – boundaries of regulation and supervision, and thus should be addressed in a consistent manner.

   This principle is taking on increased importance as boundaries between products, services, institutions and markets disappear, and financial conglomerates grow. Indeed, the growth of financial groups and conglomerates, and the convergence of financial sectors (particularly banking and insurance) in terms of products offered and risk management practices, suggest that more co-ordinated and consistent forms of legislation, regulation, and supervision should be adopted across financial sectors and markets. Consideration should be given to developing a well co-ordinated, integrated and consistent view of risks across a financial institution or group engaged in different financial activities, developing consistent rules and guidelines on corporate governance, risk management and internal controls across financial sectors, developing consistent market conduct rules for products with similar characteristics, and encouraging the convergence of solvency rules within and across sectors. A similarly co-ordinated, integrated and consistent approach should be adopted across financial markets and related systems and infrastructures. In this respect, the principles of consistency and comprehensiveness are complementary.

Regulatory process and enforcement

6. **High-quality, transparent decision making and enforcement:** Regulatory quality depends on a sound process for the formulation and implementation of financial regulation. In this respect, the 1995 *OECD Reference Checklist for Regulatory Decision making* (see Annex A) provides a useful guide for regulation making in the financial sector in OECD countries. The *Reference Checklist* provides a basis for the formulation and implementation of financial regulation; it sets out ten elements, both procedural and substantive: 1) proper definition of the problem; 2) justification of government intervention; 3) assessment of use of regulation in comparison with other policy instruments; 4) determination of the legal basis for regulation; 5) assessment of the appropriate level of government; 6) weighing of benefits *versus* costs; 7) provision of transparency regarding distributional effects of a regulation across society; 8) clarity, consistency, comprehensibleness and accessibility of regulation to users; 9) open and transparent regulation making involving adequate consultation; and 10) effective compliance mechanisms.

   The multi-layered nature of financial regulation should be given due attention in any application of the *Reference Checklist*. The development and implementation of financial regulation often evolve in stages, starting with a legislative framework that may outline broad principles of regulation, to be followed by more detailed implementation regulation and then specific rules and possible guidance. The *Reference Checklist* may apply at any stage, depending on where the substance of the regulation lies. However, as regulation moves from development to implementation, some elements of the *Reference Checklist* may no longer be applicable, while others continue to be. The principle of consultation (Element 9) should, especially, continue to apply at every level of implementation.

   While the *1995 Reference Checklist* is relevant and applicable to financial regulation, variation in some of its elements may need to be considered by governments. In particular:

   - *Justification for government action (Element 2):* As noted above, financial regulation should, in general, adopt a pre-cautionary approach. Financial regulation may not always be based on precise and clear evidence of a problem, but may need to rely on theoretical considerations and hypotheses about potential damaging problems in the financial system, including possible intangible impacts on public confidence.
   - *Cost-benefit analysis (Element 6):* Given the breadth and depth of financial regulation, and the difficulty in measuring benefits in many instances, it may not necessarily be appropriate or possible to conduct a full cost-benefit analysis of every regulation. The use of cost-benefit analysis should be proportionate to the regulation under consideration and its impact.
   - *Consultation (Element 9):* In special, very limited circumstances, advance consultation may not be possible or appropriate. Some regulatory decisions may have to be made quickly, confidentially and without full consultation, for instance in the context of a financial crisis, or in response to a rapidly escalating risk that may have potentially important consequences. Public disclosure of, and consultation on, proposed regulatory interventions may, in some cases, hamper rapid, efficient and effective responses, and undermine public confidence in the financial system or its products, services and institutions.

   In addition, consultations should take into consideration that financial regulation is, to a considerable extent, being conducted at the international level within international standard-setting bodies. There should be appropriate scope for public consultation on the principles and rules developed by these international bodies, whether through consultation mechanisms developed by these bodies or through domestic consultation mechanisms, or both.

As part of the regulatory process, governments should consider the use of cross-governmental quality reviews of proposed regulations (where they exist) to strengthen regulatory quality and allow those involved in financial regulation to learn best practices from other policy sectors.

As recommended by the *Reference Checklist*, financial regulation should be complemented by effective compliance and enforcement mechanisms in order to ensure adherence. These mechanisms may include soft tools (inducing appropriate behaviour and actions through persuasion, deterrence, market forces and other means) or hard tools (enforcing desired behaviour and actions through compulsion), or some combination of both (*e.g.* supervision). Enforcement is ultimately obtained through compulsion by means of administrative directives and penalties, proceedings under civil law (*e.g.* civil liability), or prosecutions under criminal law. Enforcement by administrative bodies should be timely in nature, transparent, and consistently and effectively applied.

7. **Systematic review:** The quality, implementation, and impact of regulation should be assessed after a sufficient length of time has passed since its adoption. This assessment should evaluate whether the regulation achieved its specific objective(s), whether it did so in a cost-efficient manner, and whether the Decision making process could be improved. This assessment should be conducted at least internally within government. Regulatory impact assessment is a critical element of the regulatory process, both *ex ante* and *ex post*, and provides an opportunity to make any necessary adjustments to financial regulation that has been implemented. This process of follow-up complements and reinforces the review of the framework for government intervention and regulation that should be undertaken on a continuous basis, as outlined in Section V.

International dimension

8. **International co-ordination, convergence and implementation in policy and regulation:** International financial regulation is becoming increasingly the norm, as witnessed by the activities of international standard-setting bodies. As with other policy instruments (see Section III.1), countries should decide on the need and exact scope for international co-operation and co-ordination in the development and implementation of financial regulation and related supervision. This specification is particularly important for financial regulation given the potential for policy spillovers among countries and related risk of policy and regulatory conflicts, and the impact of domestic regulation on cross-border trade.

   The principles of comprehensiveness and consistency should extend to the international level where possible. The global nature of the financial system, and the activities of internationally active financial institutions, groups and intermediaries, suggest that national regulation and supervision across countries should, to the extent possible, be comprehensive and consistent, with effective co-ordination where relevant and gradual convergence over time insofar as policy objectives and their relative ranking are broadly shared.

   Enhanced co-ordination in policy and rule making requires further developing, among governmental authorities, shared understandings of the nature and scale of market failures, and of appropriate regulatory approaches to address them. It requires that consideration be given to the timing and content of policy and regulatory initiatives on similar issues in different countries in order to avoid unnecessary duplication, burden or conflicts, and promote convergence.

   Where financial regulation is developed internationally, co-ordination in implementation is important since compliance mechanisms and supervisory functions are largely organised at a national level. Any material inconsistencies in implementation could further aggravate the potential problems of regulatory duplication, burden, conflict and barriers, and create opportunities for regulatory arbitrage between countries.

9. **International co-ordination in the regulation of internationally active financial firms and groups:** The growth and size of internationally active financial firms, which straddle national borders and engage in a broad range of financial activities, and the special challenges they pose for nation-based systems of regulation and supervision and insolvency, suggest that close international co-ordination and co-operation is required in relation to their regulation and supervision, cross-border crisis management and failure resolution. Such international co-ordination requires that the legal and regulatory framework provide governmental authorities with the necessary tools and mechanisms to achieve a comprehensive and consistent approach to oversight and control of these firms and groups; it also requires integrated supervisory mechanisms to ensure a consolidated view of activities, for instance through supervisory colleges or common reporting forms and processes across jurisdictions.
10. **Promotion of open, competitive, and safe markets through the establishment of a level playing field and removal of unnecessary duplication, burdens, conflicts, and barriers across countries:** Given the potential for international policy spillovers, the risk of countries seeking to promote the competitiveness of their financial institutions and financial systems without due regard to the effects on other jurisdictions, and the possible ramifications for the stability and integrity of the international financial system, countries should seek to ensure a level playing for products, services, institutions, systems and markets that are sold or operate internationally. Establishing a level playing field requires the international adoption of the principles of *competitive neutrality* and *international co-ordination, convergence and implementation in policy and rule making*, with a particular focus on those aspects of regulation that have an important impact on the competitive position of institutions and systems (*e.g.* solvency). In addition, efforts should be made to eliminate unnecessary regulatory duplication, burden, conflict or barriers, and thereby promote the efficiency of the international financial system and domestic markets. Strengthened international co-ordination in policy and regulation making should help to identify unnecessary duplication, burdens and barriers. Mutual recognition may be a means to promote open and competitive markets.

III.3. **Principles of financial regulation**

Nature of regulation

a) **Precaution:** A pre-cautionary approach is warranted in financial regulation; policy makers should pro-actively anticipate and address emerging risks and problems, and not initiate reforms solely in response to the onset of a crisis.

b) **Risk-based:** Financial regulation should be oriented to the risks in the financial system and give priority to those risks that, due to their nature or impact, have the greatest potential of compromising the achievement of policy objectives. Risk-based regulation should be aligned with, and promote, sound risk management in the financial system, and strengthen incentives for prudent and proper behaviour.

c) **Sound incentives:** Financial regulation should seek to align the incentives of participants with policy objectives by adjusting the nature, form and strength of directive authority, compulsion and supervision as appropriate, and using other policy instruments where necessary and appropriate. Effective enforcement and appropriate deterrence provide a basis for sound incentives. Financial regulation should clarify that financial institutions may fail and should specify orderly failure resolution procedures. As appropriate, financial regulation may make use of market forces to promote the alignment of incentives.

III.3. **Principles of financial regulation** *(cont.)*

d) **Comprehensiveness:** Financial regulation should ensure that all identified market failures and broader economic and social needs are properly addressed, at a domestic and global level, and involve the full use of all regulatory tools and mechanisms to achieve policy objectives, including through the combination of regulation with other policy instruments. Comprehensiveness means that:

i) all financial system participants and related products, services, institutions, systems and markets are subject to appropriate regulatory and supervisory frameworks and oversight;

ii) interconnected components of the financial system, be it in terms of financial groups, sectors, systems or markets, as well as broader macroeconomic conditions, are appropriately subject to an integrated, global view so that interrelated risks and contagion channels can be appropriately identified and, as necessary, addressed, at both a micro and macro level; and

iii) all appropriate tools and mechanisms are used to ensure a global, integrated approach to the regulation and supervision of relevant participants, products, services, institutions, systems and markets.

e) **Consistency and competitive neutrality:** Financial regulation should be applied in a consistent, "functionally equivalent" manner (*i.e.* neutral from a product, institutional, sectoral and market perspective so that similar risks are treated equivalently by regulation). With the growth of financial groups, and convergence of financial sectors and markets, more consistent, co-ordinated and integrated forms of regulation should be adopted across: *i)* products, services, sectors, systems and markets; and *ii)* financial firms and groups.

Regulatory process and enforcement

f) **High-quality, transparent decision making and enforcement:** A high-quality and transparent Decision making process for regulation making should be established, with effective mechanisms for enforcement. The 1995 "*OECD Reference Checklist for Regulatory Decision Making*" provides a useful guide; however, due recognition should be given to the specificities and exigencies of financial regulation.

g) **Systematic review:** The quality, implementation and impact of financial regulation should be assessed in due course following its adoption. This assessment should evaluate whether the regulation achieved its specific objective(s) and did so in a cost-efficient manner, and whether the Decision making process could be improved.

International dimension

h) **International co-ordination, convergence and implementation in policy and rule making:** Financial regulation should, to the extent possible, be comprehensive and consistent internationally, with effective co-ordination where relevant and gradual convergence over time insofar as policy objectives are shared. Where financial regulation is developed internationally, co-ordination in implementation should be encouraged to ensure consistency in application and prevent regulatory arbitrage.

i) **International co-ordination in the regulation of internationally active financial firms and groups:** The growth and size of internationally active financial firms, and the special challenges they pose for nation-based systems of regulation and supervision and insolvency, suggest that close international co-ordination and co-operation is required in relation to their regulation and supervision and failure resolution.

j) **Promotion of open, competitive and safe markets through the establishment of a level playing field and removal of unnecessary duplication, burdens, conflicts and barriers across countries:** Financial regulation should ensure a level playing field and not lead to unnecessary duplication, burden, conflict or barriers across countries, and thereby promote open, competitive and safe markets.

IV. System design and implementation

Government intervention is particularly challenging in the financial sector: there are multiple policy objectives, some of which may be conflicting; there are multiple policy instruments, whose effects may cause them to work at cross-purposes and which may require some level of international co-ordination for their optimisation; and there may be multiple institutions in government implementing the policy instruments (*e.g.* treasury, supervisors, central banks, deposit insurers), and possibly at different levels of government within a jurisdiction, which may raise issues of co-ordination in the use of policy instruments. Moreover, some policy and regulatory functions may, explicitly or implicitly, be delegated to designated self-regulatory organisations, which, while providing possible benefits to the regulatory system, may raise an additional layer of complexity for its governance.

The organisation and design of the institutional system involved in the development and implementation of government intervention and regulation are key considerations in the effectiveness and efficiency of financial regulation. How institutions responsible for the development and administration of policy and regulation are constituted, what their functions and responsibilities are, and how they are co-ordinated, have an important impact on government intervention and regulation. There are two key decisions in institutional design: *a)* matching policy objectives and instruments to administrative institutions; and *b)* devising appropriate system(s) for co-ordination, oversight, and control of instruments and institutions.

IV.1. Matching policy objectives and instruments to institutions

Designing the institutional framework for government oversight and regulation of the financial system is a key challenge. Decisions need to made on the number of institutions involved in the system, the assignment of objectives, the roles and responsibilities to institutions, the interrelationships among institutions and the accountability framework. These decisions need to take into account the possible role of other levels of government in financial system oversight and regulation.

There are special challenges in the financial sector that are highly relevant for institutional design, and which should be taken into account in the institutional setup:

- *Close linkages with macroeconomic policy:* Although the purpose of monetary policy is to manage the supply of money with a view to controlling macroeconomic variables, and in particular inflation, and thus promoting sound and sustainable economic growth, the financial system supports the operation of the monetary system and provides the transmission mechanism through which monetary policy operates. The establishment of institutions, and assignment of policy objectives and instruments to these institutions, for monetary policy and financial sector policy therefore need to be done in a co-ordinated and integrated fashion. For instance, the institutional setup for the conduct of monetary policy may, due to synergies (*i.e.* mutual reinforcement) in policy objectives, may provide a platform for the pursuit of specific policy objectives in the financial system.
- *Implicit and explicit financial exposure of the government:* Unlike other areas of economic policy (through sharing similarities with social policy), the government has a potentially very large fiscal exposure to the operation of the financial system, be it explicitly through the use of specific policy instruments such as the provision of lending facilities (*e.g.* liquidity) and guarantees, or implicitly due the damage a financial crisis might impose on the real economy, whose costs may in large part – perhaps unavoidably – have to be covered by the government.

- *Rapid evolution of the financial system and convergence of institutions and products:* The complex and rapidly evolving nature of the financial system, and the continued convergence of financial institutions, markets and products, mean that pressures will continuously be placed on the institutional framework for it to evolve and reflect emerging realities in the financial system. Yet there is often a lag, creating a mismatch between the operational reality of the financial system and the framework for intervention and regulation, and potentially leading to new risks. The institutional framework should be consistent with the financial system and expected trends.
- *Global linkages:* The integrated nature of financial systems in OECD countries, and the existence of policy spillovers, suggest that consideration should be given, in terms of institutional design, to international co-operation and co-ordination, and possible related international institutional frameworks. For instance, the legal mandates of national supervisors could be broadened to take into account the international dimension in light of potential negative policy spillovers among countries and the need for effective and efficient oversight and regulation of internationally active financial institutions and of international financial markets. Nation-based legal frameworks and systems of accountability, in addition to potential country-specific circumstances, are important considerations that need to be taken into account in assessing the feasibility of developing integrated regulatory, supervisory and intervention systems at the international level; however, in an area characterised by a high degree of financial integration, some regulatory and supervisory functions may need to be attached to a centralised, supranational structure.

The first step in developing a sound institutional system for government intervention and regulation – assigning policy objectives and policy instruments to institutions – is no simple task, as the debates regarding optimal regulatory structure attest. Questions abound in this respect: should the regulatory structure be institution-focussed, *i.e.* on the main types of financial institutions, systems, and markets? Should the structure instead reflect core financial activities, and thus be purely functional in approach? Alternatively, should the regulatory structure be based on policy objectives, with each institution focussing on one key policy objective? Or should it be based on some mixture of the above?

A proper analysis and discussion of designing an appropriate institutional system for government intervention and regulation in the financial system likely warrants a separate paper. However, a number of key principles are offered regarding appropriate institutional design, namely:

- *Maximise synergies:* Synergies should be exploited to the extent possible and with due consideration given to other system design factors (see Section III.2). These synergies might operate at a number of levels, including:
  - *Policy objectives:* Any strong mutual reinforcement among policy objectives should be exploited in institutional design. Such reinforcement exists where beneficial outcomes achieved in the pursuit of one policy objective support the achievement of one or more other objectives. For instance, it can be expected that the successful pursuit of systemic stability will lead to conditions favourable to the safety and soundness of financial institutions. These synergies might be explicitly considered *ex ante*, such as in macroprudential supervision.
  - *Policy instruments:* The use of two or more instruments together may have positive, reinforcing effects that exceed the contribution of each instrument. Given the informational benefits of surveillance for the sound development and use of any policy instrument, the assignment of a surveillance function to each institution, in combination with other assigned instruments, should be a minimum requirement for all institutions.
  - *Information:* Specific information may be generated that could have use beyond its immediate application and purpose, and thus support the use of other policy instruments or serve in the

achievement of a broader array of policy objectives. Institutional design should take into consideration such information flows if they are significant. For instance, business conduct problems linked to a financial institution may throw up red flags regarding the corporate governance practices of the institution, and thus raise questions about its safety and soundness, given the importance of corporate governance in assuring sound prudential management. Similarly, information obtained in the pursuit of systemic stability may support the supervision of financial institutions, and *vice versa*; in addition, the promotion of market integrity and consumer protection in securities markets may yield information that is valuable for efforts to minimise systemic risks.

- *Expertise:* Expertise acquired in the development and implementation of policies and regulation may have a broader use than its original purpose. For instance, supervisory expertise in asset-liability management in the banking sector may be applicable to the insurance sector. The institutional framework can facilitate or impede such synergies.
- *Administration:* Administrative synergies may be realised by combining administrative functions.

- *Ensure consistency and coherence in the use of policy instruments:* As with financial regulation, policy instruments equivalent in nature and sharing the same policy objective(s) should be used in similar manner across institutions, and be applied in a consistent and comprehensive fashion across the financial system. Unnecessary overlap and duplication should be avoided, unless justified by broader institutional design reasons (see Section IV.2 below). Achieving co-ordinated or integrated financial sector supervision may take the form of a single, fully integrated supervisory institution; alternatively, it may take the form of close regulatory and supervisory co-operation and co-ordination arrangements among relevant institutions (see Section IV.2).
- *Align incentives and minimise potential conflicts:* The incentives of institutions charged with developing and implementing measures should be aligned with the policy objectives assigned to them. However, information asymmetries may cause incentives to become misaligned and conflicts of interest to arise, leading to the possible misuse of a policy instrument (*e.g.* regulatory forbearance) if the institution does not fully bear the costs of its mistakes.

These incentive issues become important to consider in the context of policy instruments involving large direct or contingent financial exposures – namely, lending facilities and the provision of guarantees – that may be assigned to an institution but whose costs may not be fully absorbed by that institution. Tight *ex ante* controls may need to be imposed on the use of these instruments, and on mandates of the relevant institution(s), in order to ensure proper risk management. These considerations suggest that a degree of *specialisation* may desirable in respect of financial tools, and in respect of the institutions that have been assigned these tools, particularly if such tools are intended to address high-priority policy objectives.

There may also be external influences (*e.g.* political interference) that could affect incentives and cause actions to deviate from the objectives established for the institution. If the risk of interference is high, and if the impact on the achievement of policy objectives is significantly important, then the institution in question may need a degree of *independence*. Such independence needs to be balanced against the need for proper accountability.

- *Promote accountability:* Given the importance of promoting the effectiveness of government intervention and regulation, and aligning incentives, each institution established within the institutional framework should have clear objectives that are linked to the overarching policy objectives for the financial system, and should be assigned policy instruments that permit each institution to meet these objectives. These objectives provide a framework for accountability, and thus permit not only an assessment of the performance of each institution, but also allow

for a recognition of the need for adjustments in policy approaches, policy instruments and possibly even the institutional framework.

- *Minimise risks for the taxpayer:* Given the potentially large implicit and explicit financial risks to governments in intervening in the financial system, the institutional setup should seek to minimise these risks for governments (and ultimately for taxpayers), unless the public interest dictates otherwise. Minimising taxpayer exposures should serve to ensure that costs are properly absorbed and managed *ex ante* by the financial system, and prevent the "socialisation" of risk. This principle may affect the extent to which, and the way in which, policy instruments, particularly those financial in nature, are delegated to separate institutions. It may also affect systems of co-ordination, conflict, oversight, and control in the institutional setup, as described in Section IV.2 (*e.g.* assigning oversight and challenge functions to some institutions).

The operationalisation of these principles will depend on country contexts and preferences, and will be influenced by the current design of the institutional system. Trade-offs will have to be made in the design of the institutional framework, and decisions on the appropriate structure will ultimately reflect: *a)* the structure and operation of the financial system and expected trends over the medium to longer term; *b)* the overarching policy objectives for the financial system and the prioritisation of these objectives; and *c)* considerations of efficiency and the proper alignment of incentives. At a minimum, in order to promote the sound development and use of policy instruments, and an effective and responsive set of institutions, instruments and objectives, a strong surveillance function should be assigned to each institution in order to monitor developments, identify risks, and consider implications for policy and regulation. The contours of the surveillance function of each institution should be carefully drawn to avoid gaps and ensure a comprehensive governmental view.

IV.1. **Matching policy objectives and instruments to institutions**

a) Institutions connected to the framework for government intervention and regulation (*e.g.* treasury, financial supervisors, central banks, deposit insurers) should be established with a clear set of objectives and instruments in order to permit them to meet their objectives in an effective and efficient manner.

b) The objectives of these institutions should, in part or whole, correspond to the policy objectives for the financial system and provide a basis for the accountability framework for these institutions.

c) The assignment of policy objectives and policy instruments to these institutions should:

- *i)* maximise available synergies;
- *ii)* ensure consistency and coherence in the use of policy instruments;
- *iii)* align incentives and minimise potential conflicts of interest;
- *iv)* promote accountability; and
- *v)* minimise risks for taxpayers.

d) As a minimum requirement, a surveillance function should be attached to each of the institutions with responsibilities for the intervention framework. The contours of the surveillance function of each institution should be carefully drawn to avoid gaps and ensure a comprehensive governmental view.

IV.2. Systems for co-ordination, oversight and control

A second layer of considerations regarding institutional design relates to internal governmental systems for the co-ordination, oversight and control of institutions. Ultimately, institutions

responsible for intervention and regulation are part of a broader framework of government oversight and intervention, and must be integrated and co-ordinated through a stable pattern of interrelationships and information flows so as to promote the achievement of policy objectives.

Co-ordination and integration: The activities and functions of each of the institutions should be co-ordinated and properly integrated in order to ensure adequate information flows, encourage collaborative analysis, discussion and policy development, and effective and consistent and co-ordinated implementation of policy instruments. Co-ordination and integration should take place through regular meetings among the concerned institutions, which should be given appropriate legal foundations in order to ensure adequate information flows and protect the confidentiality of information and discussions. Institutions from different levels of government should be included where relevant in these co-ordination mechanisms. The degree of co-ordination and integration may vary according the situation, with greater co-ordination, for instance, taking place under emergency conditions.

Oversight: Some degree of oversight should be established among the institutions implicated in intervention and regulation in order to provide a challenge function and strengthen accountability. This oversight should include reviewing the actions of institutions in the aftermath of a financial failure or crisis as the details of any intervention may never, for confidentiality reasons, be made public. This oversight can be mutual and informal in nature, with each of the institutions permitted to oversee, and potentially challenge, the behaviour and actions of other institutions. Alternatively, oversight could be entrusted with certain institutions with overarching responsibilities, such as the treasury, or with specific emergency duties in the event of a crisis, such as deposit insurers.

To gain effective force, the challenge function may need to have legislative backing (*e.g.* giving the deposit insurer closure powers over deposit-taking institutions). Formalising the challenge function could create conflicts but may help to align incentives and promote discussion of alternative approaches to intervention and regulation. Downside risks include unproductive inter-institutional conflict that may hamstring efficient responses to rapidly evolving problems, and a potential clouding of responsibilities and accountability that may be disincentivising and lead to untimely or inappropriate decisions and actions.

Control: The ultimate sources of authority and control should be clearly established, both to ensure efficient functioning of each institution, but also to ensure effective co-ordination and

IV.2. **Co-ordination, oversight and control of institutions**

a) The activities and functions of each of the institutions should be co-ordinated and properly integrated in order to ensure adequate information flows, encourage collaborative analysis, discussion and policy development, and ensure effective and consistent implementation of policy instruments. In this respect:

  i) formal committees and other mechanisms should be established to ensure proper co-ordination, and should include institutions from different levels of government if relevant; and

  ii) legal foundations for these mechanisms should be established in order to ensure adequate information flows and protect the confidentiality of information and discussions.

b) Some degree of oversight should be established among the institutions implicated in intervention and regulation in order to provide a challenge function and strengthen accountability.

c) The allocation of responsibilities and authorities for final decision making under different circumstances, including crisis management, should be clearly established to ensure effective co-ordination and accountability for the system.

accountability for the system as a whole. In effect, this involves determining which institution gets a final say, and when, in respect of interventions and regulatory measures. This determination should be outlined for a gradation of scenarios, ranging from ordinary circumstances to emergency conditions necessitating crisis management.

V. Review

The framework for government intervention and regulation in the financial system should be consistent with and responsive to the rapid evolution of the financial system and its integration with the international economic and financial system. This framework should, moreover, be adjusted to ensure: *a)* the continued relevance and appropriateness of stated policy objectives and the weightings attached to them; and *b)* the effectiveness and efficiency of the policy instruments and system of institutions used to achieve them.

Accordingly, the framework for government intervention and regulation in the financial sector should reviewed and evaluated on a continuous basis and amended as necessary. At a minimum, a comprehensive review of the framework should be conducted on a periodic basis (*e.g.* every 5-8 years). Such a comprehensive review should attempt to review of the evolution of the financial system in synthetic fashion and draw conclusions for government policy and regulation, including any implications for policy objectives, the use and design of policy instruments, and the institutional setup. Lessons learned from the actions (or inactions) of governmental authorities, and possible implications for the design of the institutional setup, should be included in this review if relevant. This review could advance proposals for reform as well as respond to policy proposals put forward by governmental agencies as well as those advanced by stakeholders, including industry and consumers. The review could include cross-country consultations in order to identify issues for policy consideration. The comprehensive review therefore does not need to involve a painstaking line-by-line review of the entire corpus of financial regulation, or a re-evaluation of every policy instrument or institution. The key is to identify pressure points and ways to improve the effectiveness and efficiency of government intervention and regulation.

In addition, international review and peer pressure, such of the IMF and World Bank Financial Sector Assessment Program and related *Reports on the Observance of Standards and Codes*, can help in the review of a government's policy and regulatory framework, and promote accountability.

V. **Review**

a) The framework for government intervention and regulation should be consistent with and responsive to the rapid evolution of the financial system and its integration with the international economic and financial system, and should be adjusted and amended as necessary to ensure: *i)* the continued relevance and appropriateness of stated policy objectives and the weightings attached to them; and *ii)* the effectiveness and efficiency of the policy instruments and system of institutions used to achieve them.

b) At a minimum, the framework for government intervention and regulation should be subject to a comprehensive review on a periodic basis (*e.g.* every 5 to 8 years).

c) Domestic reviews of the policy and regulatory framework should be supplemented by international review and peer pressure.

ANNEX A

OECD Reference Checklist for Regulatory Decision Making

1. Is the problem correctly defined?

The problem to be solved should be precisely stated, giving clear evidence of its nature and magnitude, and explaining why it has arisen (identifying the incentives of affected entities).

2. Is government action justified?

Government intervention should be based on clear evidence that government action is justified, given the nature of the problem, the likely benefits and costs of action (based on a realistic assessment of government effectiveness), and alternative mechanisms for addressing the problem.

3. Is regulation the best form of government action?

Regulators should carry out, early in the regulatory process, an informed comparison of a variety of regulatory and non-regulatory policy instruments, considering relevant issues such as costs, benefits, distributional effects and administrative requirements.

4. Is there a legal basis for regulation?

Regulatory processes should be structured so that all regulatory decisions rigorously respect the "rule of law"; that is, responsibility should be explicit for ensuring that all regulations are authorised by higher level regulations and consistent with treaty obligations, and comply with relevant legal principles such as certainty, proportionality and applicable procedural requirements.

5. What is the appropriate level (or levels) of government for this action?

Regulators should choose the most appropriate level of government to take action, or, if multiple levels are involved, should design effective systems of co-ordination between levels of government.

6. Do the benefits of regulation justify the costs?

Regulators should estimate the total expected costs and benefits of each regulatory proposal and of feasible alternatives, and should make the estimates available in accessible format to decision makers. The costs of government action should be justified by its benefits before action is taken.

7. Is the distribution of effects across society transparent?

To the extent that distributive and equity values are affected by government intervention, regulators should make transparent the distribution of regulatory costs and benefits across social groups.

8. Is the regulation clear, consistent, comprehensible and accessible to users?

Regulators should assess whether rules will be understood by likely users, and to that end should take steps to ensure that the text and structure of rules are as clear as possible.

9. Have all interested parties had the opportunity to present their views?

Regulations should be developed in an open and transparent fashion, with appropriate procedures for effective and timely input from interested parties such as affected businesses and trade unions, other interest groups or other levels of government.

10. How will compliance be achieved?

Regulators should assess the incentives and institutions through which the regulation will take effect, and should design responsive implementation strategies that make the best use of them.

ANNEX B

High-Level OECD Checklist

I. Financial landscape

1. *Benchmark reference*

Have the attributes of a well-functioning system been identified?

- Have the principal functions of the financial system been identified? Have the features of these functions been properly identified?
- Have the boundaries of the system been defined? Have the expected linkages been the financial system and the broader economy been identified?
- Has the relationship between the financial system and the monetary system, including the conduct of monetary policy, been clarified?
- Have the anticipated linkages between the domestic financial system and the international financial system been identified?
- Have the expected outcomes of a well-functioning financial system been identified?
- Have the essential foundations (*e.g.* legal, behavioural, institutional) of a well-functioning financial system been identified?
- Have possible country-specific features regarding the operations of the financial system been identified?
- Has this vision of a well-functioning financial system been communicated to the public? If so, how and when? Has this vision been updated to reflect changes in the financial system?

2. *Transparency*

Is the functioning of the financial system, its features and evolution transparent?

- Is comprehensive, relevant, and timely information currently being collected and, to the extent possible, disseminated on:
  - *i)* Products, services, processes and transactions in the financial system?
  - *ii)* Institutions?
  - *iii)* Private and off-balance sheet vehicles?
  - *iv)* Markets?
  - *v)* Systems and supporting infrastructures?
  - *vi)* Participants (including consumers)?
  - *vii)* Interlinkages (*e.g.* macroeconomic, international)?

- What are the expected benefits of collecting and disseminating such information? Has the relevance of this information been assessed? Who will be the users of this information?
- Are comprehensive, relevant, up-to-date and internationally comparable sets of statistics and indicators for the entire financial system being collected and disseminated? What are the expected benefits of collecting and disseminating these statistics, and of producing related indicators? Who will be the users of these statistics and indicators?
- Have considerations of cost, confidentiality, financial stability, and security been properly assessed in determining the appropriate level of transparency?
- Do governmental authorities have the legal powers to compel, if necessary, the collection and, if appropriate, dissemination of data and information?
- Are timely, relevant, comparable, international data and information available to permit comparisons and foster an understanding of the international financial system?
- Is there scope for the private sector, possibly in collaboration with government, to improve further the relevance, quality, timeliness, comprehensiveness and comparability of data and information?
- Are relevant international organisations supporting domestic and global efforts to promote greater transparency of the financial system?

3. *Surveillance and analysis*

Are domestic and international financial system developments and macroeconomic trends being properly surveyed? Are emerging risks consistently being identified and monitored closely?

- Have effective surveillance tools and mechanisms been established? Is there adequate monitoring of financial products, services, transactions, institutions, systems, markets and participants (including consumers) and of their interrelationships?
- Is there adequate expertise to properly understand risks, conduct analyses, identify policy options and formulate a policy response?

Has market failure analysis been conducted to better understand the operations and efficiency of the financial system and define the key problems?

- In this respect:
  - *i)* Have relevant markets and participants been identified?
  - *ii)* Has the source of the market failure been identified (*e.g.* asymmetric information, spillovers, market power, market abuse)?
  - *iii)* Has the materiality of the market failure been assessed?
  - *iv)* Have the risks and effects of the failure been identified?
  - *v)* Has the market failure been substantiated empirically?
  - *vi)* Have the possible global and dynamic nature of the market failure been assessed, including whether the failure might be self-correcting?

Is there collaborative information sharing, discussion and analysis among relevant governmental authorities, both domestically and internationally?

- In this respect:
  - *i)* Are professional secrecy standards applicable to governmental authories in relation to the exchange of confidential information?
  - *ii)* Are there discussions and analysis of the financial system and related developments, risks and possible contagion channels, domestically and internationally?
  - *iii)* Are there effective mechanisms to promote continued collaboration and information sharing?

II. Policy objectives

1. *Identification of problem and case for intervention*

Has the case for intervention been established?

- Have the expected benefits of the government intervention to address these problems and needs been identified?
- Have the direct and indirect costs of intervention been assessed? Have the unexpected possible problems, complications, intended consequences or unexpected costs of government intervention been carefully considered, including the possibility that certain policies or approaches may be unsustainable or lead to a build-up of risks (*i.e.* regulatory failure analysis)? Has consideration been given to whether identified problems might worsen in the absence of intervention?
- Has the international dimension been considered, in particular whether the identified problem(s) might be more effectively addressed by a co-ordinated international response?
- Have the alternatives to government intervention been assessed (including non-intervention)?
- Overall, does the intervention appear to be justified?

2. *Policy objectives*

If government intervention in the financial system appears to be justified: have clear policy objectives been elaborated?

- *Do the objectives correspond to the anticipated beneficial outcomes of intervention?*
- *Are they sufficiently general to be applicable to the entire financial system?*
- *Have they been prioritised? Do they give top priority to promoting confidence in the financial system and addressing systemic risks?*
- *Have the trade-offs or mutual reinforcement among policy objectives been identified and carefully analysed? Has consideration been given to the extent to which policy objectives may be conflicting?*
- *Do more specific objectives need to be elaborated for particular sectors, institutions, or products? Why? How are they linked to the general objectives?*

3. *Accountability*

Have policy objectives been publicly articulated?

- Are they sufficiently transparent to assess the effectiveness of intervention?

- Have they been explicitly incorporated, in part or whole, into the mandated objectives of governmental authorities involved in intervention?

Have accountability mechanisms been established?

- Do relevant governmental authorities publish annual reports in which they outline their objectives, provide an overview of the regulatory framework and relevant developments in the financial system, identify key risks, and provide information information on how the regulatory framework is addressing these risks and achieving stated objectives? Are aggregate statistical data provided on key aspects of such implementation so that the priorities and activities of these governmental authorities can be better understood?
- Have internal governance mechanisms been established within government to ensure ongoing review of, and reporting by, relevant authorities?
- Have indicators been developed to help monitor progress toward the achievement of policy objectives?
- Are remedies available within government to address any serious failure by governmental authorities to meet mandated objectives?

III. Policy instruments

1. *Identification of financial sector policy instruments*

Have the range and features of policy instruments available to address the problem been identified and are they well understood?

- Policy instruments include:
  - *i)* surveillance;
  - *ii)* moral suasion with market-based solutions;
  - *iii)* regulation;
  - *iv)* guarantees;
  - *v)* lending and liquidity support;
  - *vi)* subsidies, grants and programmes; and
  - *vii)* state ownership and control.
- Have the impacts of each policy instrument been identified, particularly in respect of costs, incentives of affected parties and international spillovers?
- Has consideration been given, in particular, to addressing how any expected negative incentive effects or international spillover effects can be reduced?
  - *i)* Have *ex ante* risk mitigation measures been adopted to help control the effects of negative incentives? Has consideration been given to adjusting the use of other policy instruments to reduce these risks?
  - *ii)* Has the need and scope for international co-operation and co-ordination been specified to optimise the impact of policy instruments?
- In the case of the use of regulation as a policy instrument, has its proper nature and form been considered? To what extent does it meet the ten principles of financial regulation (see Section III.3 below)?

2. *Matching policy instruments to policy objectives*

Are the selected combinations of policy instruments appropriate for the identified problems or needs in the financial system? Are they the least-cost approach?

- Has the mix of policy instruments been carefully considered? What is the role, if any, of financial regulation in this mix?
- Do the instruments, taken together, address the identified market failures or broader economic and social needs underlying each policy objective?
- Have potential conflicts in policy objectives been taken into account in the choice of policy instruments?
- Has the choice and design of policy instruments taken into consideration possible negative incentive effects that may affect, and cut across, policy instruments? Have possible international policy spillovers also been considered?
- Have specific factors, such as industry sector, type of institution and type of consumer, been explicitly considered in the choice and design of instruments for each policy objective? Has such such specificity been well justified?
- Has the possibility of international policy spillovers been considered in the choice, design and implementation of policy instruments?
- Do the selected combinations of instruments represent a cost-efficient approach to addressing the policy objectives?
- Has the choice of policy instruments, and their mapping to policy objectives, been made transparent and publicly justified?
- Once made operational, has the use of policy instruments been made transparent to the extent possible and appropriate?
- Has international co-ordination been established, where necessary and possible, to maximise the impact of domestic policy instruments?

Has the choice and design of policy instruments been made transparent and publicly justified?

- Is the level of transparency sufficient to foster an understanding of the policy framework for the financial sector and provide appropriate context to government intervention?
- Has transparency been provided on the nature, amount and costs of any government intervention to rescue a financial institution or, in a crisis situation, to safeguard the financial system (*e.g.* guarantees, lending, capital injection)?

3. Specification and principles of financial regulation

Financial regulation is a policy instrument designed to induce certain behaviours and actions or specify certain fixed outcomes – in this context, has consideration been given to the nature and content of the "directive order" in question, the degree of compulsion and (if relevant) the extent of supervision?

- Regarding the nature and content of the directive order in regulation, has careful thought been given to the appropriate mix of principles and rules?
- Is the system of compulsion appropriate?
  - *i)* Adequacy of administrative penalties and sanctions?
  - *ii)* Extent of civil law provisions?
  - *iii)* Relevance and extent of criminal law provisions?
- Is the system of supervision (if relevant) adequate?
  - *i)* Proper legal authorities?
  - *ii)* Adequate expertise and level of staffing?
  - *iii)* Effective techniques of supervision?
  - *iv)* Accountability mechanisms in place?
  - *v)* Complementary role of criminal law prosecution?

To what extent have the following ten principles for effective and efficient financial regulation been met?

- A ***pre-cautionary*** approach has been adopted in financial regulation; policy makers pro-actively anticipate and address emerging risks and problems (including through active monitoring of the financial system and macroeconomic developments) and do not initiate reforms solely in response to the onset of crises.
- Financial regulation is ***risk-based*** and is thus oriented to the risks in the financial system and gives priority to those risks that, due to their nature or impact, have the greatest potential of compromising the achievement of policy objectives. Regulation is aligned with, and promotes, sound risk management in the financial system and strengthens incentives for prudent and proper behaviour.
- Financial regulation promotes ***sound incentives*** (*i.e.* incentives that are aligned with policy objectives) and, to do so, includes effective enforcement of financial regulation and appropriate deterrence, clarifies that financial institutions may fail and specifies orderly failure resolution procedures for them, and may harness market forces as appropriate.
- Financial regulation is ***comprehensive*** and ensures that all identified problems (market failures and broader economic and social needs) are properly addressed, at a domestic and global level, and involve the full use of all regulatory tools and mechanisms to achieve policy objectives, including through the combination of regulation with other policy instruments. In this context:
  - *i)* all financial system participants and related products, services, institutions, systems and markets are subject to appropriate regulatory and supervisory frameworks and oversight;
  - *ii)* interconnected components of the financial system, be it in terms of financial groups, sectors, systems or markets, as well as broader macroeconomic conditions, are appropriately subject to an

integrated, global view so that interrelated risks and contagion channels can be appropriately identified and, as necessary, addressed, at both a micro and macro level; and

iii) all appropriate tools and mechanisms are being used to ensure a global, integrated approach to the regulation and supervision of relevant participants, products, services, institutions, systems and markets.

- Financial regulation is ***consistent and competitively neutral*** and is applied in a consistent, "functionally equivalent" manner (*i.e.* neutral from a product, institutional, sectoral and market perspective so that similar risks are treated equivalently by regulation). Consistent, co-ordinated and integrated forms of regulation and supervision have been adopted across: *i)* products, services, sectors, systems and markets; and *ii)* financial firms and groups.
- A ***high-quality and transparent Decision making process*** for regulation making is in place, including ***consultations*** with relevant stakeholders and ***effective mechanisms for enforcement*** (see below for further questions regarding the regulatory process and enforcement, from the *OECD Reference Checklist for Regulatory Decision Making*).
- Financial regulation is subject to ***systematic review*** and is assessed with respect to quality, implementation and impact in due course folllowing its adoption. This assessment evaluates whether the regulation achieved its specific objective(s) and did so in a cost-efficient manner, and whether the Decision making process could be improved.
- Finanical regulation is involving ***international co-ordination, convergence and implementation in policy and rule making***: Financial regulation is, to the extent possible, comprehensive and consistent internationally, with effective co-ordination where relevant and gradual convergence over time insofar as policy objectives are shared. Where financial regulation is developed internationally, efforts are made to co-ordinate implementation to ensure consistency in application and prevent regulatory arbitrage.
- There is ***international co-ordination in the regulation and supervision of internationally active financial firms and groups***: The growth and size of internationally active financial firms, and the special challenges they pose for nation-based systems of regulation and supervision and insolvency, suggest that close international co-ordination and co-operation is required in relation to their regulation and supervision, cross-border crisis management and failure resolution.
- ***Open, competitive and safe markets*** are being promoted through the establishment of ***a level international playing field*** and the ***removal of unnecessary duplication, burdens, conflicts and barriers***.

In the context of the development of specific financial regulations, has a sound, open, transparent, process been followed?

- Have the following steps been taken, as outlined in the *OECD Reference Checklist for Regulatory Decision Making*?
  - *i)* define the specific problem in question;
  - *ii)* assess whether government action is justified (see also Section II.1), whether regulation is the most appropriate policy instrument (see also Sections III.1 and III.2), and whether there is a legal basis for regulation;
  - *iii)* assess the appropriate level of government for implementation and establishing effective co-ordination if there are multiple levels;
  - *iv)* assess the costs and benefits of regulation in a manner proportionate to the importance of the regulation and its impact;
  - *v)* ensure that any distributional impacts are transparent;
  - *vi)* conduct consultations with interested parties in an open and transparent manner, and ensure adequate time for responses; and
  - *vii)* assess and ensure effective implementation and compliance mechanisms.
- Has consideration been given to possible, limited circumstances (*e.g.* supervisory interventions, emergency and crisis management) where an open, transparent process may not be possible or appropriate? On what criteria would such a decision be based?
- Has consideration been given to the international dimension of regulation making? Are appropriate domestic or international consultation mechanisms in place, involving all relevant stakeholders?
- If applicable, has the regulation been reviewed by central governmental agencies charged with reviewing governmental regulations?

IV. System design and implementation

1. *Appropriate institutional setup*

Is the institutional setup for government intervention and financial regulation effective and efficient?

- Does the institutional setup reflect realities in the domestic and global financial system?
- Do the government institutions ("administrative institutions") responsible for intervention and regulation have clear, mandated objectives? Do they have sufficient authorities and adequate tools for implementation? Does each institution have a surveillance function to ensure that it can properly monitor relevant developments and meet its mandated objectives? Does the government as a whole, through its administrative institutions, have a proper, comprehensive view of developments in the financial system?
- Have available synergies been maximised in terms of the assignment of policy objectives and instruments to these institutions? Synergies include:
  - *i)* policy objectives;
  - *ii)* policy instruments;

iii) information and expertise; and

iv) administration.

- If more than one administrative institution is involved in the use of a policy instrument and policy objectives are shared, have effective co-ordination mechanisms been established to ensure consistency and coherence?
- Are the interests and incentives of relevant administrative institutions aligned with their objectives? What external pressures exist? Has the institutional setup accounted for these factors?
- Are appropriate accountability mechanisms in place for these institutions?
- Have the linkages with macroeconomic policy – specifically monetary policy – been properly taken into account in the design of the institutional setup?
- Have the financial exposures of government been properly considered in the institutional setup?
- Have global linkages been considered in the design of the institutional setup? In this respect, has consideration been given to the establishment of enhanced international co-ordination and institutional mechanisms, as appropriate?
- Where self-regulatory organisations (SRO) are directly or indirectly involved in government intervention and regulation, is this setup appropriate? Is the public interest being served in an effective and efficient way? Is government oversight over the SROs clearly established and adequate?

2. Systems for co-ordination, oversight and control

Is there an effective system of co-ordination, oversight and control in the institutional setup?

Co-ordination

- Have mechanisms been established to ensure adequate information flows, collaborative analysis, discussion and policy development, and effective and co-ordinated implementation of policy instruments?
- Do these mechanisms include other relevant levels of government?
- Do these mechanisms have a legal foundation to ensure their effectiveness and continuity?

Oversight

- Have elements of oversight (informal or formal) been integrated into this system to ensure a degree of checks and balances?

Control

- Is it clear which institution gets a final say, and when, in respect of interventions and regulatory measures? Has this allocation of responsibilities and decision making been determined for different

types of scenarios, ranging from ordinary circumstances to emergency conditions involving crisis management?

V. Review

Has the framework for government intervention and financial regulation been reviewed and evaluated on a regular basis?

- Is the framework for intervention and regulation keeping pace with the evolution of the domestic and international financial system?
- Is the policy framework reviewed periodically (*e.g.* every 5 to 8 years) to:
  - *i)* Reassess previously identified problems and needs?
  - *ii)* Identify new problems and needs?
  - *iii)* Adjust policy objectives and their weightings?
  - *iv)* Assess the effectiveness and efficiency of policy instruments, and the institutional setup for implementation?
  - *v)* Assess the processes for regulation making and implementation?
- Have mechanisms for international peer review been fully exploited? Has use been made of the IMF and World Bank Financial Sector Assessment Program and of a related *Report on the Observance of Standards and Codes?*

ANNEX C

Recommendation of the Council on a Policy Framework for Effective and Efficient Financial Regulation

THE COUNCIL,

Having regard to Articles 1(a), 2(c) and 5(b) of the Convention on the Organisation for Economic Co-operation and Development of 14 December 1960;

Considering the primary role played by the financial system in financial intermediation in the economy and in the pooling, management and transfer of risks;

Considering the close interlinkages between the financial system and the macroeconomy, and the global and integrated nature of financial and economic systems;

Considering the complex and rapidly evolving nature of the financial system, the convergence of products, institutions and markets, and the growth of globally active financial conglomerates;

Considering the potentially devastating economic and social consequences of financial crises, and the length of time that may be needed to restore public confidence in the financial system;

Considering the importance of establishing a sound policy and regulatory framework for the financial sector that addresses market failures and any broader economic or social needs;

Considering that governments in OECD member and non-member countries may benefit from high-level international guidance on financial sector policy and regulation;

Recognising previous work of the OECD in promoting effective and efficient regulatory systems through instruments such as the *OECD Reference Checklist for Regulatory Decision making* and *OECD Guiding Principles for Regulatory Quality and Performance*;

Recognising the role of other international organisations in developing regulatory standards for sound financial systems and supporting peer reviews of national financial systems;

Noting the *General Guidance on a Policy Framework for Effective and Efficient Financial Regulation* and the related *High-Level Checklist* developed by the Committee on Financial Markets and the Insurance and Private Pensions Committee;

Noting that the principles set out in the present Recommendation are drawn from the above-mentioned *General Guidance on a Policy Framework for Effective and Efficient Financial Regulation*;

On the proposal of the Committee on Financial Markets and the Insurance and Private Pensions Committee;

RECOMMENDS that members develop a policy framework for effective and efficient financial regulation and, for this purpose, take due account of and implement the principles for a Policy

Framework for Effective and Efficient Financial Regulation that are set out in the Annex D to this Recommendation, of which they form an integral part.

RECOMMENDS that members also take account of the *General Guidance on a Policy Framework for Effective and Efficient Financial Regulation* and related *High-level Checklist*, as they may be modified from time to time.

INVITES non-members to adhere to this Recommendation.

INSTRUCTS the Committee on Financial Markets and the Insurance and Private Pensions Committee to exchange information on progress and experiences with respect to the implementation of this Recommendation, review that information and report to the Council within three years from its adoption.

ANNEX D

Principles for a Policy Framework for Effective and Efficient Financial Regulation

I. Financial landscape

1. Financial system: Benchmark definition

a) The attributes of a well-functioning financial system should be identified, taking into consideration the stage of development of the economy and other relevant country-specific factors. In this respect, there should be specification of:

i) the functions and scope of activities of a well-functioning financial system;

ii) anticipated macroeconomic and international linkages;

iii) expected outcomes; and

iv) supporting foundations.

These attributes should have sufficient precision to permit an understanding of the nature of the financial system and to distinguish clearly its activities from other economic activities.

b) This benchmark definition should be communicated publicly, in a manner, form and frequency appropriate to the context and target audience. It should be updated as appropriate in light of the evolution of the financial system.

2. Transparency

a) The operations of the financial system should be transparent, permitting the identification and delineation of its features, its operations, and their evolution over time.

b) Micro- and macro-level data and information on the financial system should be available to promote transparency. In this respect:

i) comprehensive, relevant, up-to-date and internationally comparable sets of statistics and indicators for the entire financial system should be collected and disseminated; and

ii) comprehensive and timely information on products, services, transactions, institutions, systems and markets connected with the financial system (including private and off-balance sheet vehicles), should be collected and, to the extent possible, disseminated.

c) The collection and, where appropriate, dissemination of information on the financial system should have benefits for relevant stakeholders. Due consideration should be given to costs, confidentiality, financial stability and security as relevant in the collection or dissemination of data and information.

d) Governmental authorities should have the legal powers to compel, if necessary, the collection and, if appropriate, dissemination of data and information to ensure that proper transparency is achieved.

e) Industry groups should be encouraged to promote a high level of transparency in the financial system, possibly in collaboration with government.

f) International organisations should work to ensure transparency in the financial system, domestically and internationally, and co-ordinate their efforts in this respect.

3. Surveillance and analysis

a) The functioning of the financial system and its broader macroeconomic and global linkages should be well understood, as should the products, services, institutions, systems and markets connected with the financial system.

b) Surveillance tools and mechanisms should be established to ensure a comprehensive, ongoing monitoring of domestic and international financial system developments, macroeconomic trends and emerging risks.

c) Market failure analysis should be conducted to assess the efficiency of the financial system and, in particular, understand the risks to which the financial system and related participants may be susceptible. The potentially global and dynamic nature of these risks should be considered as part of this analysis.

d) Governmental authorities should have the requisite expertise and resources to conduct appropriate surveillance and analysis on a timely basis, and formulate sound policy and regulation.

e) Given the complexity and rapid evolution of the financial system, the international nature of the financial system and global macroeconomic linkages, and the related challenges associated with effective surveillance and analysis, there should be continuous:

i) information sharing within and across jurisdictions, through formal and informal channels, subject to professional secrecy standards applicable to governmental authorities in the context of any exchange of confidential information;

ii) collaborative analysis and discussion of the financial system and related developments, risks and possible contagion channels, domestically and internationally;

iii) research and analysis, conducted at the domestic and international level; and

iv) effective mechanisms to promote such collaboration and information sharing.

II. Policy objectives

1. Identification of problems and the case for intervention

- Actual and potential market failures and broader economic and social needs in the financial system should be clearly identified and analysed, and these problems and needs ranked in terms of gravity and impact on welfare.
- The case for government intervention in the financial system should be established, including an assessment of potential benefits *versus* costs, the international dimension and possible alternatives to intervention, and the targets of intervention and related expected outcomes should be clearly identified.

2.1. Policy objectives: Framework for financial regulation

a) Clear policy objectives should be elaborated to govern the framework for government intervention and financial regulation.

b) Policy objectives should be based on sound policy analysis and correspond to the beneficial outcomes to be expected from addressing identified market failures and other identified broader economic or social needs.

c) Policy objectives should be directed at the financial system as a whole, going beyond particular sectors, institutions and products.

d) Policy objectives should be appropriately prioritised; given the importance of the stability of the financial system, top priority should be given to promoting confidence in the financial system and addressing systemic risks.

e) Any trade-offs or mutual reinforcement among policy objectives should be carefully analysed.

2.2. Policy objectives: Micro-level

a) More specific – and potentially different – policy objectives for particular sectors, institutions and products may need to be elaborated given differences in market conditions, practices, and participants in different parts of the financial system.

b) To the extent that there are differences in policy objectives at the micro-level, these should be:

i) linked to conclusions from market failure analysis and potentially broader economic and social analysis; and

ii) linked to the broader hierarchy of policy objectives established at the macro-level (as per Section B.2. above).

3. Accountability

a) Policy objectives should be publicly disclosed.

b) Mechanisms to promote accountability should be in place, such as:

i) annual reports by governmental authorities to the public, including:

– a description of objectives, an overview of the regulatory framework and relevant developments in the financial system, an identification of key risks and information on how the regulatory framework is addressing these risks and achieving stated objectives; and

– aggregate statistical data on key aspects of such implementation so that the priorities and activities of the governmental authority can be better understood;

ii) internal governmental mechanisms for reporting and review;

iii) development of indicators measuring progress toward the achievement of policy objectives; and

iv) remedies within government to address any serious failure of governmental authorities to meet mandated objectives.

III. Policy instruments

1. Identification of policy instruments and their impact

a) The range of policy instruments capable of affecting the operation of the financial system, the conduct of its participants or its outcomes, and at the disposal of government, should be

identified; in this respect, financial regulation should be considered as a key policy instrument, but by no means the only one.

b) The features and possible impacts of each policy instrument should be identified and understood, particularly in terms of costs, incentives and international spillover effects.

c) Consideration should be given to assessing how any negative incentive or spillover effects could be addressed, for instance by varying the use of other instruments or through international co-ordination. These effects should be addressed *ex ante* through appropriate policy actions. In particular:

i) any negative incentive effects arising from the use of policy instruments – such as moral hazard – should, to the extent possible, be controlled *ex ante* with appropriate risk mitigation measures; and

ii) the need and scope for international co-operation and co-ordination should be specified in advance with respect to each policy instrument.

2. Matching policy instruments to policy objectives

a) Based on expected impacts and in consideration of possible incentive and spillover effects, the identification of the proper policy instruments, and their appropriate combination, for each policy objective should be carefully considered and explored by governments. In this respect:

i) The chosen combination of instruments should address as precisely as possible the identified market failures or broader economic and social needs underlying each policy objective.

ii) The selected combination of instruments, and their design, for each objective should reflect the priority attached to the particular objective and the related risk tolerance for policy failure.

iii) As an instrument may be used to support more than one policy objective, potential conflicts among policy objectives should be identified and addressed accordingly.

iv) The choice and design of instruments should be adjusted to take into consideration possible incentive effects that may affect, and cut across, policy instruments. This may require the establishment of proper *ex ante* risk controls in the instrument causing the effects and an adjustment to other policy instruments.

v) Specific factors, such as industry sector, type of institution and type of consumer should, in some circumstances, may be considered in the choice and design of instruments for each policy objective. Such specificity should be well justified and not inadvertently increase the risk of policy failure.

vi) While priority should be given to ensuring effectiveness, due attention should be given to the costs of adopting instruments; in this respect, the least-cost approach should be adopted.

b) The choice of instruments, and their mapping to policy objectives, should be made transparent and publicly justified, particularly in the context of any significant policy or regulatory reforms or any special crisis intervention measures. The use of instruments should, in addition, be made transparent; however, in some specific contexts or under certain circumstances, there may be a need for:

i) constructive ambiguity, in order to ensure the proper alignment of incentives; and

ii) confidentiality, in order to ensure continued public confidence; however, there should be appropriate accountability mechanisms in place within government to ensure proper oversight of actions.

c) The choice, design and implementation of instruments should consider, in light of the globalised financial and economic system, policy spillovers among countries. International collaboration and discussion of financial sector policy should be reinforced and be appropriately focussed on those areas requiring close international co-ordination.

3. Principles of financial regulation

Nature of regulation

a) ***Precaution:*** A pre-cautionary approach is warranted in financial regulation; policy makers should pro-actively anticipate and address emerging risks and problems, and not initiate reforms solely in response to the onset of a crisis.

b) ***Risk-based:*** Financial regulation should be oriented to the risks in the financial system and give priority to those risks that, due to their nature or impact, have the greatest potential of compromising the achievement of policy objectives. Risk-based regulation should be aligned with, and promote, sound risk management in the financial system and strengthen incentives for prudent and proper behaviour.

c) ***Sound incentives:*** Financial regulation should seek to align the incentives of participants with policy objectives by adjusting the nature, form and strength of directive authority, compulsion and supervision as appropriate, and using other policy instruments where necessary and appropriate. Effective enforcement and appropriate deterrence provide a basis for sound incentives. Financial regulation should clarify that financial institutions may fail and should specify orderly failure resolution procedures. As appropriate, financial regulation may make use of market forces to promote the alignment of incentives.

d) ***Comprehensiveness:*** Financial regulation should ensure that all identified market failures and broader economic and social needs are properly addressed, at a domestic and global level, and involve the full use of all regulatory tools and mechanisms to achieve policy objectives, including through the combination of regulation with other policy instruments. Comprehensiveness means that:

i) all financial system participants and related products, services, institutions, systems and markets are subject to appropriate regulatory and supervisory frameworks and oversight;

ii) interconnected components of the financial system, be it in terms of financial groups, sectors, systems or markets, as well as broader macroeconomic conditions, are appropriately subject to an integrated, global view so that interrelated risks and contagion channels can be appropriately identified and, as necessary, addressed, at both a micro and macro level; and

iii) all appropriate tools and mechanisms are used to ensure a global, integrated approach to the regulation and supervision of relevant participants, products, services, institutions, systems and markets.

e) ***Consistency and competitive neutrality:*** Financial regulation should be applied in a consistent, "functionally equivalent" manner (*i.e.* neutral from a product, institutional, sectoral and market perspective so that similar risks are treated equivalently by regulation). With the growth of financial groups, and convergence of financial sectors and markets, more consistent, co-ordinated and integrated forms of regulation should be adopted across: *i)* products, services, sectors, systems and markets; and *ii)* financial firms and groups.

Regulatory process and enforcement

f) ***High-quality, transparent decision making and enforcement:*** A high-quality and transparent Decision making process for regulation making should be established, with effective mechanisms for enforcement. The 1995 *OECD Reference Checklist for Regulatory Decision Making* provides a useful guide; however, due recognition should be given to the specificities and exigencies of financial regulation.

g) ***Systematic review:*** The quality, implementation, and impact of financial regulation should be assessed in due course following its adoption. This assessment should evaluate whether the regulation achieved its specific objective(s) and did so in a cost-efficient manner, and whether the Decision making process could be improved.

International dimension

h) ***International co-ordination, convergence and implementation in policy and rule making:*** Financial regulation should, to the extent possible, be comprehensive and consistent internationally, with effective co-ordination where relevant and gradual convergence over time insofar as policy objectives are shared. Where financial regulation is developed internationally, co-ordination in implementation should be encouraged to ensure consistency in application and prevent regulatory arbitrage.

i) ***International co-ordination in the regulation of internationally active financial firms and groups:*** The growth and size of internationally active financial firms, and the special challenges they pose for nation-based systems of regulation and supervision and insolvency, suggest that close international co-ordination and co-operation is required in relation to their regulation and supervision and failure resolution.

j) ***Promotion of open, competitive and safe markets through the establishment of a level playing field, and removal of unnecessary duplication, burdens, conflicts and barriers across countries:*** Financial regulation should ensure a level playing field and not lead to unnecessary duplication, burden, conflict or barriers across countries, and thereby promote open, competitive and safe markets.

IV. System design and implementation

1. *Matching policy objectives and instruments to institutions*

a) Institutions connected to the framework for government intervention and regulation (*e.g.* treasury, financial supervisors, central banks, deposit insurers) should be established with a clear set of objectives and instruments in order to permit them to meet their objectives in an effective and efficient manner.

b) The objectives of these institutions should, in part or whole, correspond to the policy objectives for the financial system and provide a basis for the accountability framework for these institutions.

c) The assignment of policy objectives and policy instruments to these institutions should:

i) maximise available synergies;

ii) ensure consistency and coherence in the use of policy instruments;

iii) align incentives and minimise potential conflicts of interest;

iv) promote accountability; and

v) minimise risks for taxpayers.

d) As a minimum requirement, a surveillance function should be attached to each of the institutions with responsibilities for the intervention framework. The contours of the surveillance function of each institution should be carefully drawn to avoid gaps and ensure a comprehensive governmental view.

2. Co-ordination, oversight and control of institutions

a) The activities and functions of each of the institutions should be co-ordinated and properly integrated in order to ensure adequate information flows, encourage collaborative analysis, discussion, and policy development, and ensure effective and consistent implementation of policy instruments. In this respect:

i) formal committees and other mechanisms should be established to ensure proper co-ordination and should include institutions from different levels of government if relevant; and

ii) legal foundations for these mechanisms should be established in order to ensure adequate information flows and protect the confidentiality of information and discussions.

b) Some degree of oversight should be established among the institutions implicated in intervention and regulation in order to provide a challenge function and strengthen accountability.

c) The allocation of responsibilities and authorities for final decision making under different circumstances, including crisis management, should be clearly established to ensure effective co-ordination and accountability for the system.

V. Review

a) The framework for government intervention and regulation should be consistent with, and responsive to, the rapid evolution of the financial system and its integration with the international economic and financial system, and should be adjusted and amended as necessary to ensure: *i)* the continued relevance and appropriateness of stated policy objectives and the weightings attached to them; and *ii)* the effectiveness and efficiency of the policy instruments and system of institutions used to achieve them.

b) At a minimum, the framework for government intervention and regulation should be subject to a comprehensive review on a periodic basis (*e.g.* every 5 to 8 years).

c) Domestic reviews of the policy and regulatory framework should be supplemented by international review and peer pressure.

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