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Sovereign Debt Challenges for Banking Systems and Bond Markets

by

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Discussions at the October 2010 OECD Financial Roundtable conveyed a rather sombre view regarding the current outlook and risks, heightened by financial sector weaknesses, ongoing deleveraging and sovereign debt. Policy makers should be prepared for downside risks to materialise along the way to recovery. Low interest rates and low returns pose specific challenges for institutional investors. While sovereign risk is currently a major concern, its measurement is rather complex and markets do not always provide proper guidance. Sovereign ratings can serve as a useful point of reference but should be made more forward-looking and less procyclical. Should default or debt restructuring become necessary, strong political backing can minimise its costs. The European Financial Stability Facility (EFSF) was seen as helpful in providing a backstop. Some optimism was expressed as to the current fiscal adjustments underway to bring public finances back onto a sustainable path. Banking sectors remain fragile, especially in Europe, where, however, the transparency provided by recent stress tests has calmed some fears. Reactivating the wholesale markets for bank funding will be essential going forward. Capitalisation of the US banking sector has improved, but pockets of risk remain in exposures to commercial property by regional and small banks. Contingent convertible (bail-in) bonds could become a useful instrument for sharing the costs of crises, but they need to be made attractive for investors.

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I. Background and summary

This dialogue with the private sector focused on issues related to sovereign risk challenges for banking systems and bond markets

The OECD Committee on Financial Markets held a dialogue with selected representatives of the financial-services sector (the "Financial Roundtable") on 7 October 2010, to discuss issues related to the sovereign debt challenges faced by banking systems and bond markets. Three rounds of discussions covered *(i)* the current outlook and risks, including capital flows and global rebalancing; *(ii)* sovereign risks: measurement, rating and policy responses; and *(iii)* challenges for the banking sector. The following sections summarise the issues raised, and the conclusions that emerged, from the meeting. The summary is complemented by charts, boxes and a table to illustrate some of the arguments presented and to update information where appropriate. Following is an overview of the main points.

The current outlook is rather bleak

Roundtable participants conveyed a rather sombre view of the current outlook and risks. The recovery in the financial markets and economies of most OECD countries remains fragile, and the risks are heightened by the interconnectedness between the real and the financial sectors, which are both still weak. Getting back to normal is expected to take a long time, and policy makers should be prepared for additional downside to materialise and more challenges to appear along the way to recovery. While some individual banks are coping well, the sector as a whole may not. Deleveraging still has some way to go, and while the financial sector has made strides in the right direction, sovereign debt has now become a major concern. Investors – pension funds were mentioned in particular – will have to, and are starting to, accept lower returns as profitability has diminished more broadly. But the low interest rate environment poses a challenge for many institutional investors since their investments in alternative, riskier (and potentially higher-yielding) asset classes has been restricted.

Sovereign risk poses challenges for debt managers

As reported at the Financial Roundtable, government debt managers did not perceive a systemic weakness in the government bond markets, but they felt that there was no more "business as usual" in this new market landscape. The gross borrowing needs of OECD governments are expected to rise. A great challenge for several sovereigns is how to raise large volumes of funds at the lowest possible cost while maintaining manageable levels of roll-over risk; most OECD debt managers continue to rebalance their debt portfolios toward longer-term instruments.

However, the measurement of sovereign risk remains complex and markets provide unsatisfactory guidance

There was widespread agreement that the measurement of sovereign risk is a rather broad undertaking and several aspects and interrelated risks (sovereign, political, institutional, transfer, and counterparty risks) need to be taken into account in its assessment. CDS spreads have shortcomings (the relatively low liquidity and high volatility of the CDS markets) and should not be used as an absolute measure of sovereign risk, but rather as a directional measure of market sentiment. While markets attach a positive probability to a default by Greece, it was felt that a restructuring could be manageable and its negative effects could be attenuated by political and financial backing (similar to the Brady bond arrangements put in place to resolve the 1990s Latin American debt crisis). The new European Financial Stability Facility (EFSF)

and also the IMF could play a role in this. But it was also pointed out that fiscal adjustments in many of the affected countries are well underway and above-forecast, and structural reforms could help them grow out of indebtedness and get back on a sustainable path. The recently observed flight to quality could soon be reversed as positive signals become more apparent.

Sovereign ratings can serve as a useful point of reference but should be made more forward-looking and less procyclical

Rating agencies were in the difficult position of not "crying wolf" too early and then being accused of "sleeping on the deck" when sovereign risks surfaced in the markets. Rating agencies are trying to improve their models and become more forward-looking in their assessments. It was also pointed out that ratings are confined to the quality of debt and do not give an opinion on the more complex issues of sovereign risk and the probability of default. Also, ratings have to duly take into account official support and guarantees that markets may perceive as rather doubtful in some cases. There was some support for proposals to decrease regulatory/legislative dependence on ratings, and to take into account a wider variety of ratings, including from smaller rating agencies.

Challenges for the banking sector remain substantial, especially in Europe

The recent stress tests of European banks were perceived as helpful, and despite their shortcomings they have calmed the markets as a lot of information that was released could be used by market participants to make their own assessments. It was noted that the size of the EU/IMF rescue package (EUR 750bn) roughly matches the capitalisation of the European banking sector, and as such provides a credible standby and support plan. However, restoring the bank-lending channel remains a major challenge, especially in Europe with its more bank-based financial system. Reactivating the wholesale bank-funding markets will also be essential in this respect. Capitalisation of the US banking sector has improved, but pockets of risk were seen to persist, especially in exposures to commercial property by regional and small banks. Contingent convertible (bail-in) bonds could become a useful instrument for more evenly distributing the costs of future crises, but they need to be made attractive to bond investors.

II. Current outlook and risks, capital flows and global rebalancing

1. General outlook

The outlook remains sombre and risks remain

A rather sombre economic outlook was presented by the many participants. The crisis has spread from the financial markets to the general economies, and it has now come to affect government debt. The policy measures to cope with the crisis were not decided in a framework of discipline and good governance, but were taken out of necessity, and with a good amount of pragmatism. Therefore, how to exit from these measures remains a major challenge. Getting back to normalcy and to discipline will be very difficult, and markets seem to anticipate a lot of risk in doing so. Unpleasant surprises should be expected on the way to recovery, and policy makers should be prepared for unforeseen events. After the near-collapse of the banking system, the severe economic downturn and now the problem of massive sovereign debt and the unsustainability of fiscal policies, monetary policy remains as the only

remaining support, which if broken, would result in monetary chaos. There is also a danger that despite the global efforts undertaken to harmonise policies, many of the measures actually taken may be inconsistent and lead to inflation and currency misalignments.

Risk is elevated by the inter-connectedness between financial, economic and government systems

The interconnectedness between the financial, economic and government systems elevates all risks. Each of these sectors is currently very vulnerable, and adverse shocks in one area could lead to repercussions in another triggering a negative chain reaction. For example, a double-dip recession could start a downward spiral affecting savings and bank lending and reinforcing an economic downturn. The EU especially, with its low-growth potential, lack of political cohesion and large banking sector, is seen as being vulnerable. The banking sector's size relative to GDP makes the EU's problems potentially bigger than in the rest of the world.

While many large banks have undergone necessary adjustments, systemic weaknesses in the banking sector persist

Many large banks have undergone necessary adjustments, and their situation is now perceived as stable, their fundamentals are sound and balance sheets relatively well-structured. Previous liquidity problems are under control, liquidity is now better-managed and risks are anticipated. In general, the risk-profile of many banks has improved and provides an important element of stability and resilience. These are all crucial improvements that banks can continue to make at the company level. But while at a micro level the situation has improved, these improvements may not carry through to the sector as a whole, where systemic weaknesses persist.

2. Deleveraging issues

We are entering the middle phase of deleveraging with sluggish growth and a weak recovery

The results of a comprehensive study on debt and deleveraging were presented.[1] This study analysed 45 episodes of significant economy-wide deleveraging that lasted between five to seven years. As with this crisis, previous ones usually began with a build-up of leverage in the private (and later the public) sector, followed by periods of deleveraging, with weak or negative growth. Right now, we are two years into the deleveraging process, and judging from a historical perspective, this means we are entering the middle phase. While a double-dip recession seems unlikely, one should not be surprised to see sluggish growth and a weak recovery.

Deleveraging in the financial sector is well advanced, but households have further to go, and the public sector is only about to start the process

Deleveraging is happening at different speeds in different sectors of the economy, with the financial sector well-advanced in terms of reducing its debt. But households, in the US and UK in particular, have only just begun to reduce their debt. In the US, household debt-to-income has been reduced from its peak of 132% of income, to 122%. To put this in perspective, debt-to-income of US households was roughly 100% in the year 2000 (before the housing bubble). If this were the target of deleveraging, at the current rate it would take until 2014 to reach it. Governments have continued to leverage up, and many of them have not even begun stabilising or reducing their debt.

Global cross-border capital flows have dropped sharply, but

Global imbalances and capital flows were a source of major concern. Global cross-border capital flows peaked at about USD 11tn in 2007 and fell by 80% in 2008, to less than USD 2tn, and dropped further in 2009, to about

should again increase

USD 1.5tn. These developments were mainly driven by a contraction in cross-border bank lending. Even though large, interconnected globally active financial institutions pose risks, those capital flows should again resume strongly in support of an upswing, given the need to channel savings to productive investments on a global level.

However, global capital flows should not be hindered by regulatory actions

Financial regulation should do its part to create a financial system where such flows can take place and not be unnecessarily restricted. While there are no major obstacles put in place in this regard by current regulations, there was some fear among many of the globally active banks that policy makers would eventually restrict banks, for example, from taking deposits in one country (*e.g.* the UK) to lend in another (*e.g.* as mortgages in Spain). Such fears were also fed by regulators' recent concerns about capital flows from Germany and Austria into eastern Europe, and how regulators may react to these concerns. Regulatory barriers against such activities would create pools of trapped capital and in the end increase the cost of capital.

Furthermore, non-harmonised restrictions could hamper capital movements

A participant from the international regulatory sector confirmed that such restrictions were currently not under serious consideration. However, a private sector comment hinted at the fact that bank supervisors are using their own, national terms and standards for liquidity stress testing and could therefore "ring-fence" different types of capital. Without cross-border harmonisation this could lead to different national regulations and would indeed hamper the efficient movement of capital across borders, raising bankers' concerns.

3. The risks associated with low returns

A low-interest rate environment fosters more risk-taking in search for yield

Financial repression could be a possible outcome if governments try to influence long-term interest rates. This happened after World War II, in order to bring down debt levels based on low interest rates and some modest growth. Thus, we may see a number of initiatives by governments trying to restrict long-term interest rates.[2] Currently, very low interest rates are the result of massive monetary stimulus, which raises several concerns. While low interest rates have helped the corporate sector to increase profitability via low debt-financing costs, savers and investors are left looking for yield. But investors have, or will come to accept, the fact that returns will be lower in the years ahead.

The quest for higher yields leaves the financial system more vulnerable

The search for yield by institutional investors leads them to increase their investment in potentially riskier assets (like high-yield bonds, emerging market debt and equity, and carry trades); this leaves the financial system in a rather fragile state. While liquidity is ample, it is not clear where relatively high, productive returns could come from. This fragility also means than minor adverse events could lead to major negative disruptions in the financial and economic systems.

And pension funds, in particular, are put in a no-win situation

Anecdotal evidence shows that, for example, pension funds are lowering their benchmark hurdle rates, but only by a little (perhaps half a percentage point), meaning they are still looking for returns of 7% to 8%, which seem to be very difficult to obtain in the current environment. But if pension funds

were to accept lower yields, they would also need to bear the consequences of an increase in the amount of unfunded liabilities and the need to raise contributions, which is very hard to do in the midst of the current recession. This may be a major reason why hurdle rates have not yet been significantly lowered, but further downward adjustments may be expected in the future.

The insurance industry, too, would suffer from a low-rate environment

A low interest rate environment was also seen as a major challenge for the insurance sector. In particular for the life insurance industry, low interest rates make it difficult to earn the anticipated (promised) returns if these were calculated using past higher rates, and assets are not perfectly matched to liabilities. It also makes new business for life insurance companies less attractive. Furthermore, as opposed to banks, insurance companies do not have access to central bank liquidity, thus they cannot profit from low funding rates as set by the central banks.

In response, it is likely that insurers will ultimately raise prices at the expense of policy holders

Thus, while low interest rates help the recovery and support banks, they pose challenges for other parts of the financial industry, such as the insurance sector. In order to cope with low interest rates, insurance companies could take on more risks; however, investment in riskier assets classes and higher leverage is restricted by insurance regulations, and the trend is towards even more strict capital and investment requirements. Ultimately, insurers will have to raise prices at the expense of policy holders. High inflation rates that would pose challenges, especially for the long-term business lines of the insurance industry, were not seen as a high-probability, near-term scenario.

4. Interest rate risks

Fears are that an upward adjustment in interest rates will be sudden, and add to sovereign debt

Since currently low interest rates may eventually return to more normal levels, there is some concern about interest rate risk and strategies to protect against this risk.[3] Indeed, there are fears in some parts of the private sector that an upward adjustment in interest rates will be sudden, and driven by changes in market sentiment and expectations of higher inflation. Higher rates would also increase the financing cost of sovereign debt. In the US, the average maturity of government debt outstanding is four years, with a sizeable part maturing in three years. Refinancing this debt at higher interest rates would add to the current public-sector debt problems.

The banking sector also faces major potential problems should interest rates start to rise

It was also noted that macroeconomic volatility, measured over several years, has unleashed asset price volatility. This has been observed in equity markets, in commodity markets and now in selected foreign exchange markets (inducing carry trades). Increases in macroeconomic volatility have usually been accompanied by increases in inflation volatility (measured over seven years). Thus, inflation can be expected to rise in the future, even though deflation seems the bigger concern currently. Since higher exchange rate volatility may eventually raise inflation-risk premiums, the bond bubble may burst. These developments pose major risks for the banking sector in the years ahead.

5. *Fiscal consolidation issues*

The credibility of fiscal consolidation needs to be enhanced

Concerns were raised that inflation – instead of fiscal austerity – may eventually become the way out of high public debt and sovereign risk. Thus, current efforts at strong fiscal adjustments are necessary. But the private sector, too, needs to reduce its high debt levels. The challenge that arises then is how to make fiscal consolidation more credible. National limits on deficit spending could provide significant and sufficient contributions to that effect, and be among the measures to strengthen fiscal discipline going forward.

Fiscal consolidations need to be growth-enhancing, and growth is necessary to bring deficits down in a sustainable manner

The premise of contractionary fiscal consolidation was questioned based on research showing that fiscal consolidations have often occurred at times when unemployment has been falling. When unemployment is relatively high or rising, however, fiscal adjustments that cannot deliver on improving the employment outlook can hardly be sustained. Expansionary fiscal consolidation is possible if there is rising private-sector employment (which tends to be more productive than public-sector employment), or a stimulatory monetary-fiscal policy mix that causes an increase in investment (this is key), leading to a decline in unemployment. Growth is considered necessary to bring deficits down, but this may also entail higher inflation; going into recession and deflation cannot bring about fiscal restructuring or fiscal consolidation very quickly. The notion that growth can be an important outcome of consolidation (and a re-enforcing factor for it) was supported more broadly. However, for this argument to be valid, timing was considered key. While in the current situation fiscal consolidation cannot be preconditioned on growth, the positive effects of consolidation on long-term economic growth should be expected.

The EMU's joint monetary policy is not seen as imposing restrictions on national fiscal adjustments

In the euro area, difficulties may arise from a joint monetary policy underpinned by national fiscal policies that lack a proper framework for co-ordination. Consolidation efforts by some fiscally stronger centre countries could make adjustments in the periphery, where they are more urgently needed, more difficult. However, it was pointed out that in the end, a very aggressive fiscal policy would lead to adjustments in monetary policy (be it exogenous or endogenous) via exchange rates. With monetary policy a given, and nominal exchange rates fixed, the adjustment would be put into effect through real (inflation-adjusted) exchange rates. In this context, the ECB's rather easy monetary policy stance (as opposed to its rather strict Taylor rule-based stance 1999-2007) was welcomed, as it supports German economic growth, which tends to support growth in the euro area as a whole.

Consolidation efforts in the European periphery are progressing better than previously expected

Some Roundtable participants were rather surprised by the financial markets' lack of recognition that consolidation efforts in the European periphery have made much more progress than expected: unemployment fears have dropped in the core of Europe. According to the most recent official estimates available at the time of the Rountable, the Greek deficit-to-GDP ratio is expected to fall to 7.8% in 2010 and to 7% in 2011.

III. Sovereign risks: measurement, rating and policy responses

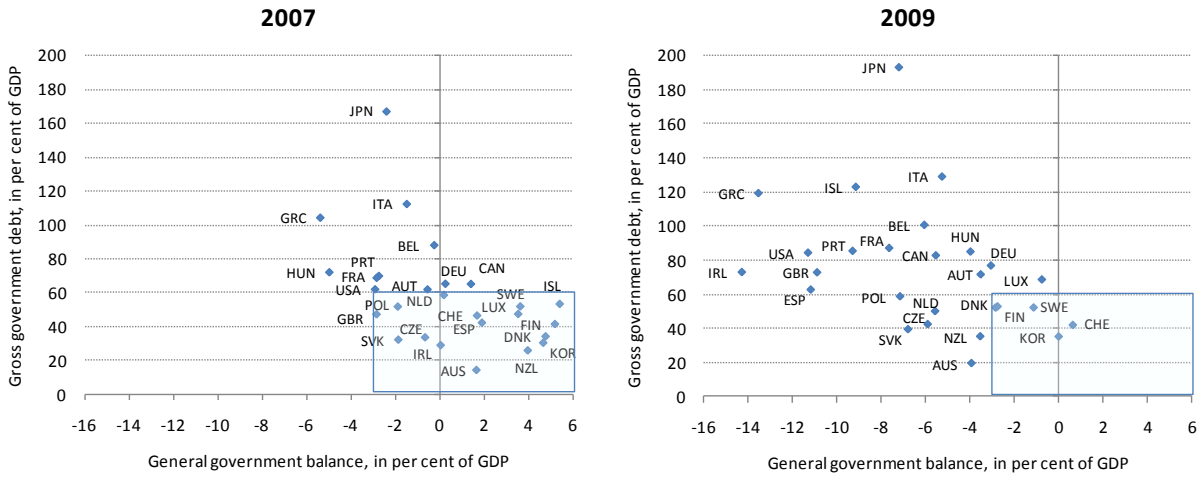
1. Sovereign risk and its measurement

Sovereign risks pose challenges for debt managers; they are a result of the crisis affecting most advanced economies

Government debt managers, as reported at the Roundtable, did not perceive systemic weakness in the government bond markets, but they felt that there was no more "business as usual".[4] The current sovereign debt problems are an outcome of the global financial crisis, as governments across the globe have sought to mitigate its negative effects (Figure 1). Sovereign debt problems are not limited to the periphery of Europe, but are global and affect many of the advanced economies. Sovereign risk will thus remain a key risk feature for the time being, until credible consolidation efforts bear fruit.

Figure 1. Public finances deteriorated during the crisis

General government balances vs. gross government debt, in percent of GDP



Notes: The shaded areas indicate positions within the 3% deficit and 60% debt limit of the EU Stability and Growth Pact.[5]

Source: OECD Economic Outlook database.

Sovereign risk is a complex issue, and the complexity also applies to credible consolidation

Sovereign risk is a complex issue, as it is interlinked with various other factors, and its many indicators cannot be looked at in isolation. Sovereign risk should be regarded as part of overall country risk, which includes sovereign, political, institutional, transfer, and counterparty risks. This complexity also applies to efforts aimed at reducing sovereign risk, which cannot be achieved by fiscal consolidation alone but must be complemented by measures that reduce weaknesses in the financial sector, as well as structural reforms to enhance growth. Such a comprehensive, viable and credible long-term fiscal consolidation plan was seen as currently missing by many of the Roundtable participants, and becomes more urgent taking into account the long-term fiscal burdens of ageing societies.

"Flawed metrics", especially a fixation

Criticism was levied against some of the "flawed metrics" used in assessing sovereign risk. In particular, it was argued that there has been a

on simple debt-to-GDP ratios are problematic

fixation on debt-to-GDP ratios, sometimes without regard to standardising definitions. For example, in the United States, general government debt is now close to 100% of GDP, but many analysts look only at the central (or federal) government debt. Another problem is that high debt ratios can be more easily sustained given the currently low interest rates. However, what counts is whether debt service can also be sustainable in a higher interest rate/lower-growth environment.

2. Problems of using CDS for measuring sovereign risk

CDS spreads are not a good measure for sovereign risk; they are hedging instruments and only express a specific market sentiment

Credit default swaps (CDS) were seen as being too volatile to be considered a good measure of sovereign risk (Figure 2). Factors like market liquidity, investor sentiment or simply portfolio shifts – triggered by hurdle restrictions that may cause investors to retreat from fundamentally sound markets – all have an effect on CDS spreads, which are unrelated to underlying sovereign risk or probability of default. CDS spreads are an indication of market sentiment but should not be taken as a serious measure of default risk – more so as these instruments are usually not purchased as standalone instruments against the risk of a country's default. Often these CDS are used as hedges to remove sovereign risk (or the sovereign element) from another long exposure to a country. Thus, CDS should not be seen as bets against a country's default but as instruments used to hedge exposure to a country, or to take a medium-term position on changes in perceived risk.

CDS volatility in May 2010 was caused by risk hedging of institutions; more recently, price movements are being driven by fundamentals

In particular, the risk-hedging activities of institutions were seen as the major cause of the price movements and high volatility observed in the CDS markets during the sovereign debt crisis (around May 2010). More recently, CDS price movements were seen as being driven more by fundamentals. For example, Ireland which earlier in 2010 got a lot of credit for being one of the first countries to impose fiscal austerity, is being more harshly judged by the markets. What analysts look at is whether there is the political will to bring down deficits. In this early stage of fiscal consolidation, there is a lot of uncertainty whether adjustments are going to be politically feasible and successful.

Differing underlying assumptions in CDS markets make interpretation difficult; standardisation could help

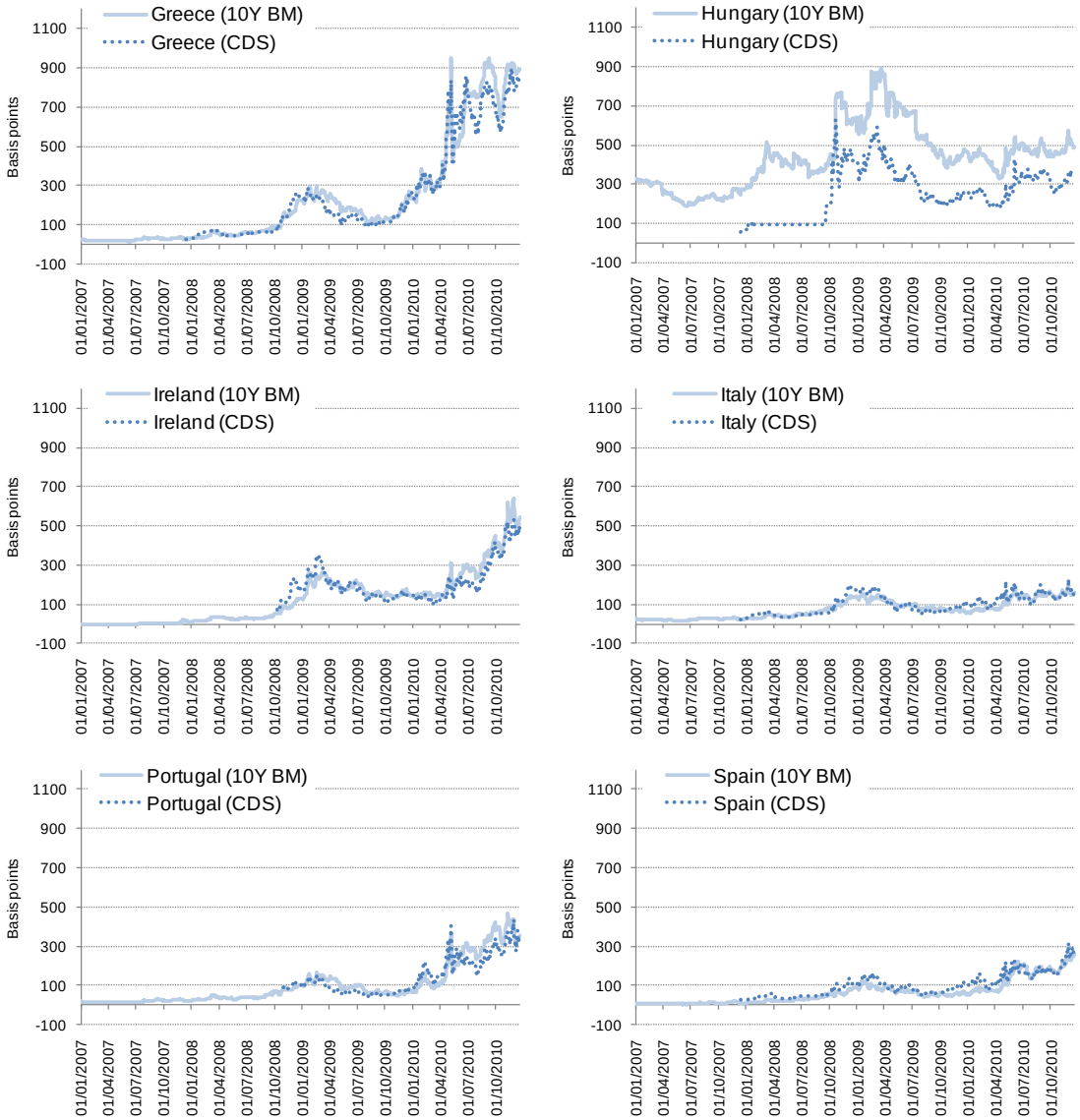
It was also pointed out that CDS markets operate on varying underlying assumptions. For example, assumptions about recovery rates can differ widely, leading to values that are hard to interpret in terms of sovereign risk. In order to do that one has to look at a wide variety of instruments. Standardisation could help, like specifying the underlying recovery rates, and also trading CDS on exchanges. Given that the market is sufficiently liquid, one could also look at the information obtained from options, like the skewness of their implied distributions.

Regulators are trying to improve transparency and functioning of the CDS markets

Regulators are trying to improve transparency in the CDS market, and there are co-ordinated efforts in this regard at the EU level. For example, the EC has just put forward a proposal regarding short-selling and CDS that should improve the market framework and give regulators better monitoring tools.This should also lower the risks associated with these markets and improve their functioning.

Figure 2. Market perceptions of sovereign risk

Spreads over 10-year EMU benchmark bond yields vs. credit default swap (CDS) spreads



Notes: Senior 10-year credit default swap premiums (mid) for sovereign bonds. Note that Hungary is not a euro area member and its spreads against the EMU benchmark therefore also reflect currency risk.

Source: Thomson Reuters Datastream.

3. Sovereign ratings

Sovereign ratings are a useful point of reference but they could be improved

The role of rating agencies in the sovereign crisis was viewed rather positively. Sovereign ratings did not undergo the problems that had occurred earlier with the (overly positive) ratings of structured financial products. While timing could be improved and ratings should become more forward looking, they remain a useful point of reference. However, over-reliance on external credit ratings for sovereign debtors should be avoided, also on the part of regulators.

Efforts are underway to make ratings more forward-looking and less procyclical

Various efforts have been undertaken to make ratings more forward-looking and avoid some of the procyclicality involved in sovereign ratings. For example, communication regarding an agency's stress test scenarios has been improved, being made more specific regarding the baseline scenario and its alternatives and how this impacts the rating. Furthermore, the comparability of ratings across asset classes has been improved by associating specific stress scenarios to the various ratings levels. For example, triple A-rated debt has to withstand stress equivalent to the Great Depression without defaulting. Also, rating throughout the cycle is implemented by taking into account various cycle lengths.

But doubts remain about the validity of ratings in a crisis

However, some doubts were raised regarding such improvements, and the models applied in principle, since these models may not work in a crisis. As the subprime crisis has shown, rating agencies were late in recognising the true risks of structured financial products. Consequently, market participants who took a more pessimistic view than the ratings indicated stood to make a lot of money.

Rating agencies should not rush into up or downgrades and take a medium, structural view

Regarding the room for improvement in ratings, four aspects were mentioned about what markets and issuers of debt should expect from rating agencies. First, agencies should respect and abide by the outlook and review process ("traffic light"), without rushing into an upgrade or downgrade, even though at times this may be unavoidable. Second, while rating though the cycle has been implemented, it is now important to define the cycle. That is, making a judgment whether developments are cyclical or structural is very critical, and it is important to take a medium-term view. Third, rating agencies should not try to compete with signals given by CDS spreads, even though there is at times pressure to explain and perhaps align ratings with what is happening in those markets. Fourth, governments should be rated in the same way as corporates, *i.e.* the same methodologies and scrutiny should apply, in order to ensure comparability across asset classes.

It is also important to look at ratings from multiple sources; smaller rating agencies can also contribute, especially by covering countries not rated by the "big three"

Regarding the methodologies used by rating agencies, those of the large rating firms operating across the OECD are rather similar. However, their results may be quite different. It is therefore important to have several views on sovereign risk. A recent IMF study[6] was rather positive in the assessment of the big rating agencies' performance, but it would be worthwhile to also include in such a study the many other, smaller rating agencies operating around the globe. Some smaller firms rate countries that are not covered by the big three rating agencies. For sovereign risk assessments, it would be important to take into account a range of views including those of smaller agencies. For example, taking an average of various ratings could lead to less market disruption than focusing on the ratings of individual agencies..

A sceptic view was expressed about reducing regulatory reliance on credit rating agencies

Some of the regulatory initiatives regarding rating agencies, and efforts to reduce regulatory reliance on ratings were highlighted (for additional information, see Box 1 for a global overview of CRA regulation). Some scepticism was expressed by the private sector Roundtable participants regarding reform initiatives that do away with the use of ratings in regulation and legislation matters, as well as the proposal that regulatory supervisors

should provide a framework for risk assessment with the agencies then providing the ratings. This would create conflicts of interest on behalf of the regulators as they would have to set the methodology as well as enforce it.

Box 1. Credit rating agency (CRA) regulations: an overview

G20 and Financial Stability Board (FSB)

- **Strengthening CRA regulation and making it more consistent**: At the November 2010 Seoul Summit, the G20 leaders expressed their continued firm commitment "to work in an internationally consistent and nondiscriminatory manner" to strengthen the regulation and supervision of credit rating agencies.
- **Reducing reliance on credit ratings**: Likewise, the G20 leaders endorsed the FSB's principles on reducing reliance on external credit ratings, saying that "standard setters, market participants, supervisors and central banks should not rely mechanistically on external credit ratings." (Seoul Summit declaration)

United States

Credit Rating Agency Reform Act of 2006:

- **The Securities and Exchange Commission** (SEC) is given authority to regulate CRAs, aiming at improving ratings quality by fostering accountability, transparency, and CRA competition. The Act requires the SEC to prohibit, or require the management and disclosure of, any conflicts of interest relating to the issuance of credit ratings.
- Establishes a transparent registration system and oversight regime for "nationally recognized statistical rating organizations" (**NRSROs**).
- Improves **transparency** and **disclosure** *(i)* by requiring NRSROs to publish a description of their rating methodologies and procedures, plus certain rating performance analytics; and *(ii)* by requiring issuers to share with the other NRSROs all information they provide to any particular NRSRO with respect to structured credit product ratings.

Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010:

- Creates an **Office of Credit Ratings** within the SEC to administer rules, promote accuracy in ratings and ensure ratings are not unduly influenced by conflicts of interest. In particular, the Office *(i)* will conduct annual reviews of NRSROs and make key findings public; *(ii)* has the ability to fine rating agencies; and *(iii)* the authority to deregister a rating agency for providing consistently inaccurate ratings over time.
- Subjects NRSROs to the **expert liability** regime from which they were previously exempt. In addition, the SEC may fine NRSROs for certain violations of the securities laws. If a violation affects the integrity of a rating, it may lead to a suspension or revocation of the NRSRO's registration.
- Seeks to improve **investor due diligence** by setting a more stringent threshold of evidence when bringing lawsuits against a credit rating agency, requiring investors to demonstrate they were intentionally misled, except when the complaint strongly indicates that the credit rating agency knowingly or recklessly failed.
- Improves **transparency** and **disclosure** by *(i)* requiring NRSROs to disclose their methodologies, use of third parties for due diligence and ratings track record; *(ii)* eliminating the rating agency exemption from the fair disclosure rule (Regulation FD) that requires firms to provide investors equal access to information about companies; *(iii)* requiring NRSROs to clearly define and disclose the meaning of any ratings symbol and apply this symbol consistently for all instruments for which the symbol is used.
- Seeks to improve the credit rating process for **structured finance products** and to avoid the **conflicts of interest** associated with the issuer-pay and subscriber-pay models by requiring the SEC to undertake a two-year study (Credit Rating Agency Board Study) to establish a system (**Credit Rating Agency Board** or other). This system would designate (by a random matching process, if no other solution eliminating conflicts of interest can be found) the NRSROs qualified to provide initial ratings for structured finance products and thus prevent issuers from picking the agency they think will provide the highest rating.

Box 1 (cont'd). Credit rating agency (CRA) regulations: overview

- Enhances **corporate governance** by requiring each NRSRO to have a Board of Directors of which at least half (but not fewer than two) are independent members, and some of whom are users of NRSRO ratings. Members must not have a financial stake in the ratings issued; they would serve a fixed term of up to five years, with their compensation not linked to business performance.
- Prevents **conflicts of interest** arising from employees of NRSROs providing services to issuers of securities that are unrelated to the issuance of credit ratings by *(i)* prohibiting compliance officers from working on ratings; *(ii)* requiring a review when an agency employee begins working for an underwriter of a security subject to a rating by that agency; *(iii)* requiring a report to the SEC when rating agency employees begin working for a company that had been rated by the agency within the past year.
- Requires the **removal of certain statutory references to credit ratings** and requires that all federal agencies review and modify regulations in order to remove references to, or reliance upon, credit ratings and to substitute an alternative standard of creditworthiness.
- Asks the SEC to provide **additional studies** on *(i)* creating an organisation to establish a standards and ethics code for rating agency professionals (Independent Professional Analyst Organisation Study); *(ii)* establishing standardised ratings terminology and market stress conditions used to evaluate ratings (Standardisation Study); *(iii)* compensation alternatives for rating agencies (Alternative Business Model Study); *(iv)* on the independence of rating agencies and the effect on ratings issued (Independence Study).

Europe

EU Regulations of September 2009 (in force as of December 2009):

- Require **mandatory registration** for all CRAs operating in the European Union (EU). Specific treatment can be extended on a case-by-case basis to CRAs operating exclusively from non-EU jurisdictions provided that their countries of origin have established regulatory and supervisory frameworks as stringent as the one now put in place in the EU.
- Require registered CRAs to comply with a comprehensive set of rules to make sure that ratings are not affected by **conflicts of interest**; that CRAs remain vigilant, ensuring the quality of the **ratings methodology**; and that they act in a **transparent manner**. The regulation also includes a **surveillance regime** for CRAs. In particular, CRAs:
    - May not provide advisory services;
    - Will not be allowed to rate financial instruments if they do not have sufficient quality information on which to base their ratings;
    - Must disclose the models, methodologies, and key assumptions on which they base their ratings;
    - Must differentiate the ratings of more complex products by adding a specific symbol; and
    - Should have at least two independent directors on their boards whose remuneration cannot depend on the business performance of the rating agency.
- **The Committee of European Securities Regulators** (CESR) to be in charge of the **registration and day-to-day supervision** of the CRAs.

EU Regulations of June 2010:

- The CESR is being converted to the newly created **European Securities and Market Authority** (ESMA), which has greater authority and starts operations in January 2011. ESMA is entrusted with **exclusive supervisory powers** over CRAs registered in the EU (thus making CRAs the first type of institution subject to centralised EU supervision).
- ESMA will have the authority to request **information**, launch **investigations**, perform **on-site inspections**, impose **fines** and suspend or terminate a CRA's **license**. Unlike the SEC in the United States, ESMA has the power to evaluate the **methodologies** and procedures used by a CRA to rate securities.

Box 1 (cont'd). Credit rating agency (CRA) regulations: overview

- As with the US legislation and SEC regulations, ESMA is also empowered to reduce **conflicts of interest** by barring a CRA from issuing a rating for an issuer for which it has advised on the structuring of the security, and by prohibiting an analyst who participates in issuing a rating from negotiating the fee that the security's issuer or marketer pays to obtain the rating. When departing from a rating previously issued by another CRA, an explanation of the reasons for the differing assessment must be given.
- Similar to the US rules, EU issuers of **structured financial products** must provide the information they give to the CRA rating their product to all other interested CRAs, thus enabling the other CRAs to issue unsolicited ratings.

Japan

Amendment of the Financial Instruments and Exchange Act, June 2009 (effective April 2010)

- Ensuring *(i)* **independence** of CRAs from security issuers; *(ii)* **quality and fairness** in the rating process; and *(iii)* **transparency** for market participants.
- The Financial Services Agency (FSA) of Japan has introduced a **registration system** that requires registered CRAs to **disclose rating policies** in a timely manner, take measures to **control quality** and **prevent conflict of interests** by avoiding the provision of advisory services. Unregistered CRAs are still allowed to operate, but in using their credit ratings, issuers must notify investors of the fact that those ratings are issued by unregistered CRAs, effective October 2010.
- The FSA also recently adopted a proposal to amend the relevant cabinet office ordinances with the aim of **reducing the use of credit ratings** in the regulatory and supervisory framework, effective January 2011.

Australia

- Since January 1, 2010, CRAs in Australia have been required to hold an Australian Financial Services **license**, requiring them to, among other things, manage **conflicts of interests**, have in place **risk management systems**, lodge annual **compliance** reports, and **disclose** procedures, methodologies, and assumptions for ratings.
- Measures have also been taken to enhance CRA exposure to legal **liability**.

Canada

- In July 2010, the Canadian Securities Administrators (CSA) published for comment a proposal aimed at introducing securities **regulatory oversight** of credit-rating organisations.
- Central to the proposal is the requirement for credit rating organisations to apply to become a "**designated rating organization**" (DRO) in order to allow their ratings to be used for various purposes within securities legislation.
- Once designated, a DRO would be required to have and enforce a **code of conduct** that is based on the code published by the International Organization of Securities Commissions (IOSCO). A DRO would also be required to establish policies and procedures to manage **conflicts of interest**, prevent inappropriate use of **information**, appoint a **compliance** officer and make an annual **filing**. In addition, DROs could be subject to regulatory compliance reviews and enforcement action. The CSA will not oversee the content or methodology of ratings (unlike ESMA).

Sources: G20 (2010), IMF (2010), ch.3 ; Deutsche Bank (2010); national sources: US: http://www.sec.gov/divisions/marketreg/ratingagency.htm; *Dodd-Frank Wall Street Reform and Consumer Protection Act*; EU: http://ec.europa.eu/internal_market/securities/agencies/index_en.htm; Japan: FSA regulations on Credit Rating Agencies, at http://www.fsa.go.jp/en/news/2010/20100331-4.html; Australia: www.asic.gov.au/asic/asic.nsf; Canada: www.securities-administrators.ca/aboutcsa.aspx?id=915.

Ratings are more stable than market sentiment and should counteract mispricing

There was a general view that ratings have been more stable than market sentiment. While credit ratings reflect credit quality, markets may react in response to many other factors. Nevertheless, there may be an accelerating feedback effect from markets to ratings in cases when higher financing costs affect credit quality. But more generally, rating agencies should have an obligation to counteract some of the mispricing within markets by taking a more detached, thoroughly analytical view.

But there is also pressure on rating agencies to react ahead of markets

But there is also some pressure on rating agencies to react ahead of the markets (see Box 2 for a proposal made at a previous Roundtable to introduce more market discipline early on in the process). Before the crisis, the poor ability of markets to price risk and to put proper sanctions on (deficit) offenders was observed. At a time when Greek sovereigns were almost at par with German bunds, rating agencies were accused of "sleeping on their watch" – a situation that later changed. But now markets again have overreacted, perhaps in a way that leads some governments to reign in budget deficits more than they would have if based only on fundamentals.

Earlier ratings for euro area countries did not differentiate enough; they should assess a country's economic potential more broadly

As there has been too little differentiation in the ratings of euro area countries, some countries became fiscally more imprudent than they would have been if the financing costs for their sovereign debt had been higher. Going forward, a broader concept of sovereign risk will be needed, looking at economic performance more generally. For example, the Greek economy will need to be assessed for its potential for growth and whether structural reforms are in place that can unleash this potential. Inflation was also viewed as a likely partial solution to fiscal consolidation because it may be the most viable option politically.

4. Sovereign risk and the markets

Central banks' gold purchases indicate systemic fear

It was pointed out that the level of sovereign debt is correlated with the price of gold, and both are currently rising. The fact that many central banks are currently buying gold may indicate a systemic fear. The exception to this is the United States, as the US dollar is a global reserve currency, which gives that country's monetary and fiscal policy more leeway.

A flight to quality is lowering yields and spreads below their fundamental values

A flight to quality "within the flight to quality" is lowering yields and spreads below their fundamental values. For example, the currently low long-term rates in France and Germany, and the yield spread favouring France, are not justified by fundamentals, considering that German growth is expected to rebound and France's fiscal situation is not as robust as Germany's. But many investors have few options than to invest in these markets.

Market failures need to be addressed by better disclosure at the launch of new issues and reducing fragmentation in secondary markets

Questions were raised about the proper functioning of the markets and their efficiency as there have been severe market failures recently. Liquidity has disappeared or become one-sided and confidence has evaporated, increasing bid-offer spreads. Therefore, the industry has to analyse such deficiencies carefully and make proper recommendations. For example, the International Capital Market Association (ICMA) is engaging in such efforts. First, in the primary markets for sovereign debt there is a need for more

disclosure to investors at the launch of new issues. This can be achieved, for example, by improving due diligence and prospectus quality. Also, it is important to make clear whether an issue is registered and documented under domestic or international law, which can have serious consequences for restructuring or other aspects. On the secondary market, liquidity needs to be improved. Currently, there is a lot of fragmentation between different trading platforms that needs to be addressed in order to achieve more orderly pricing.

Box 2. A proposal to implement market discipline to foster fiscal prudence in the EU

Given the experience of the recent sovereign-debt problems in Europe, it is important that fiscal discipline should be encouraged early and progressively, and not abruptly instituted due to market movements "at the end of the game", as was observed in the case of Greece and Ireland recently. While the current EU Stability and Growth Pact provides for an excessive-deficit procedure (EDP), the procedure takes effect relatively late, allows for several exceptions and there are few sanctions. A proposal to introduce fiscal discipline via markets at an earlier stage would be based on regulations regarding capital and liquidity and rules regarding the concentration of large exposures. Currently, Basel arrangements and capital requirements in the EU (The Capital Requirements Directive, or CRD) are based on the assumption that government debt is (at least in nominal terms) risk-free. The proposed new market discipline mechanism would therefore progressively have to increase the current zero-risk weight given to government debt in Basel and the CRD.

The forthcoming revision to the Capital Requirements Directive (**CRD IV**) provides a **legislative opportunity** to change how a government's securites are valued in banks' regulatory capital when that **government** becomes subject to the EDP due to deteriorating finances. The essence of the EDP procedure is that if a Member State fails to comply with recommendations and deadlines to address an excessive deficit, the Council can move to the next step of the EDP, the ultimate possibility being to impose financial sanctions. As government debt obligations have become more risky, the proposal is that **any new debts (or roll-overs) would incur a capital charge, and limits** would be placed on exposures to this new debt.

On each occasion, when a Member State fails to comply with the Council's recommendations, the riskiness of its debt obligations must be presumed to have increased, so the credit quality would be automatically downgraded, according to the CRD IV rules (perhaps subject to an override by a super-QMV). Thus, any eventual decision to impose sanctions would also be accompanied by a "junk" capital-backing and exposure limit. For example, the new debt could go from a zero-risk weighting to 20, if the existence of an excessive deficit is determined. If the government in question does nothing, the risk weighting could rise to 50, to 100, and eventually, when there are sanctions being imposed, it could hit 150%. This credit-quality downgrade would be reflected in the liquidity requirements, and the guidelines regarding large exposures and concentrations. It has to be emphasised that risk rating changes would concern new debt only. There would be a presumption that the ECB would match the eligibility rules for its "repo" facilities to correspond to the perception of increasing riskiness. Moreover, exposures to that particular Member State would be marked to market, so its higher cost of borrowing (rising rates on its newly issued debt) would compel banks to increase their loss provisioning in regard to that Member State, diminishing their appetite for further losses.

As this process would take a number of years, the government in question would have time to adjust, but it would also be fully aware that if it went to the brink of default, then the EU's banking system would have adjusted to that risk already and would not be undermined. Ideally, at the brink of default, the EU financial system would have a relatively small exposure and would be already fully provisioned.

A policy along these lines could be implemented quickly, as the only requirements would be a change in the Regulations setting up the SGP, appropriate language in CRD IV, and corresponding changes in other sectoral legislation – just as the Omnibus Directive is doing toward the creation of the European Supervisory Authorities (ESAs). The changes may sound modest, but they would be profound in protecting the European Union from the all-too-apparent risk of fiscal crises as the baby-boomers move into an expensive old-age.

Note: A draft of this proposal was presented at the OECD Financial Roundtable on 15 April 2010.

Source: Bishop (2010).

Markets attach some probability to a Greek default, but should this happen there would be a structured, politically backed solution

As far as Greece is concerned, the market is attaching a significant probability to a Greek sovereign default. However, for political reasons an outright default is likely to be avoided. Rather, market participants expect there will be some politically backed arrangements, like a structured agreement, lower payback or a programme covered by the IMF or the European Financial Stability Facility. Whether after a default a sovereign will soon again have access to the markets will depend on how politically important that sovereign is. For example, it was noted that regaining market access for Argentina was more difficult than for Russia. If a default were to occur in Europe, this would challenge the European integrity, thus there would be a European solution. Unlike in Argentina or Russia, it would be a structured arrangement and reorganisation with strong political backing. One should also expect some burden-sharing solution, be it via forgiveness of IMF or EU loans, or, for countries that can print their own currency, inflation.

As default is costly, governments need to make tough choices to avoid it

But the costs of a default should not be underestimated, as the country in question will certainly be stigmatised. If default is not an option, governments will have to make tough choices, often against constituencies that have become used to being insured by their governments against all adversities. The situation in Ireland is perhaps one where such choices will have to be made, also regarding safeguarding the country's banking sector. For example, it was mentioned that Kazakhstan had cleaned up its banking sector some time ago, and its sovereign yield spreads have since come down substantially.

Decisive rescue measures in Europe have reassured markets, but bondholders do differentiate among issuers

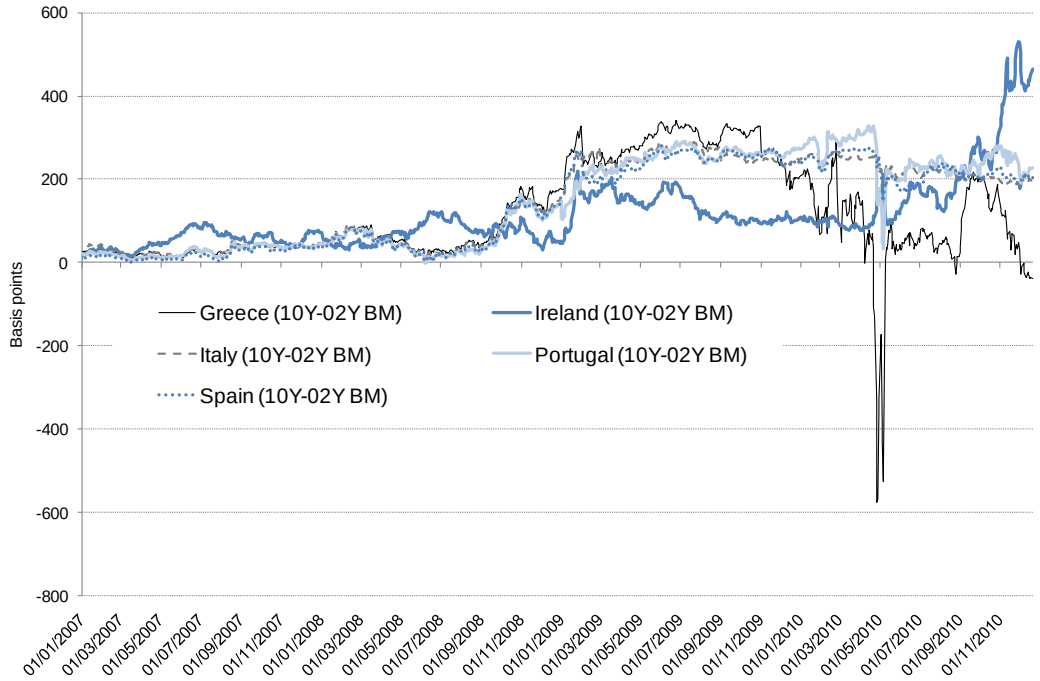
It was also noted that decisive rescue measures in Europe have reassured markets, but the reassessment of sovereign risks has led bondholders to discriminate among issuers. Markets do in fact look beyond the short and medium term and are questioning whether deficits can be brought down to a sustainable level. It was also observed that in countries which have to start their austerity programmes from a relatively worse-off position as compared to their peers, these programmes will have more deleterious effects. Such differences will continue to be reflected in spreads.

An upward sloping yield curve, measured against a benchmark…

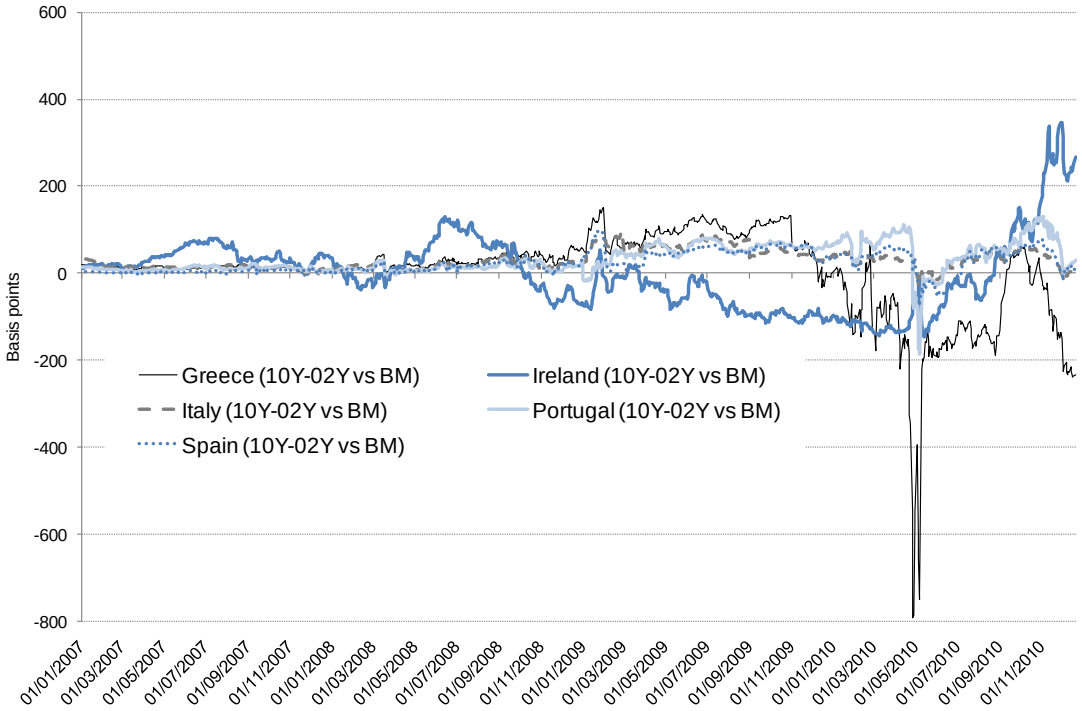
Another interpretation of the markets' perception of sovereign risk, including the risk of default, was offered by an official sector participant. While the focus had been on yield spreads across denominations, this participant noted that the slope of the yield curve, as measured against a benchmark slope, is also worth examining (Figure 3). Under normal conditions (which is the standard case for high-grade issuers), there is a positive relationship between benchmark yield-curve spreads and the term to maturity. As a result, that yield curve which charts yield at various maturities against a benchmark is normally upward sloping – the longer the maturity, the higher the yield. But the yield curve may become inverted (*i.e.* shorter-term yields become higher than longer-term ones, measured against a benchmark) when the credit quality of an issuer deteriorates, as was the case during the sovereign debt crisis in April and May 2010. Back then, the spread between 10-year and to 2-year yields, compared with EMU benchmark yield spreads for the same maturities, was ranging from -30 b.p for Italy, -70 b.p for Spain, -100 b.p for Ireland, -200 b.p for Portugal, and, as outlier, -800b.p. for Greece.

Figure 3. Disruptions in yield curve spreads

(a) 10-year vs 2-year spreads



(b) 10-year vs 2-year spreads vs EMU benchmark 10-year vs 2-year spreads



Source: Thomson Reuters Datastream.

…could indicate that sovereign risk is abating for Greece and other European peripherals

When the European rescue mechanism was put in place, the spreads started to normalise. However, the Greek yield spread measured against the EMU benchmark was inverted for most of 2010. At the end of August 2010, the spread started to enter positive territory, even though Greece had another episode of sovereign risk escalation. This was seen as an indication that the market perceived the sovereign risk to be abating and that this episode would not have a systemic impact (more recently, however, the Greek spread became negative again, and the behaviour of, for example, the Irish spread is more difficult to reconcile with this view). The positive effects of the EU/IMF support package were pointed out, and that some investment firms had issued a recommendation for 30-year Greek government bonds.

The perception of European sovereign risks is differentiated among investors globally, and also their view on inflation risks

It was also noted that the perception about sovereign risks in Europe is very much geographically differentiated among investors globally. In Asia, investors seem to be more confident than in the United States. However, this has to be seen within the context that investors are very much biased by their own experiences. In the case of Asia, Asian economies have ridden though the crisis relatively better, but in the United States, at the height of the crisis, things were more bearish than anywhere else. Even though that negative sentiment has since improved, it has more recently deteriorated again. Similar trends can be seen regarding views on inflation. Investors from low-inflation countries, for example, can hardly see how inflation could soon rise substantially. On the other hand, evidence from some hedge managers in Brazil, a traditional high-inflation country (historically) shows that investors there are clearly more worried about inflation risks.

US investors are bearish and mistrust European deficit statistics, thus governments should ensure their quality to reassure markets

Nevertheless, the sentiment in the US *vis-à-vis* Europe was seen to be surprisingly bearish. In particular, some mistrust regarding the reliability of EU countries' budget figures (drawing on previous experience with Greece) in meetings with US investors was cited. This observed disbelief in some of the European deficit numbers should be a call upon governments to do their best to ensure the quality of their statistics beyond any reproach. Reassuring the markets should be policy makers' key objective. Many investors indicated they are waiting to see the EFSF working and issuing bonds in order to regain confidence.

5. Prospects for emerging market bonds

Search for yield has made emerging market bonds an important asset class...

Regarding the private sector's view on the prospects for emerging markets, it was noted that quantitative easing and low interest rates have created a "subprime goes global" phenomenon, and search for yield is pushing a lot of international funds into these markets. This makes emerging market bonds an important asset class, also because emerging markets growth is more promising than in the US and other advanced economies. On top of that, foreign exchange movements are also favouring these markets.

...but the "subprime goes global" phenomenon bears risks

At the same time, there is a danger that, similar to what happened in the build-up of the subprime crisis, ample liquidity and low rates and risk spreads again will lead to excess and inappropriate capital investment. Thus, financial institutions and other investors may one day find themselves again with

problematic paper on their balance sheets. However, these risks were not seen as being very significant in the near-term.

IV. Challenges for the banking sector

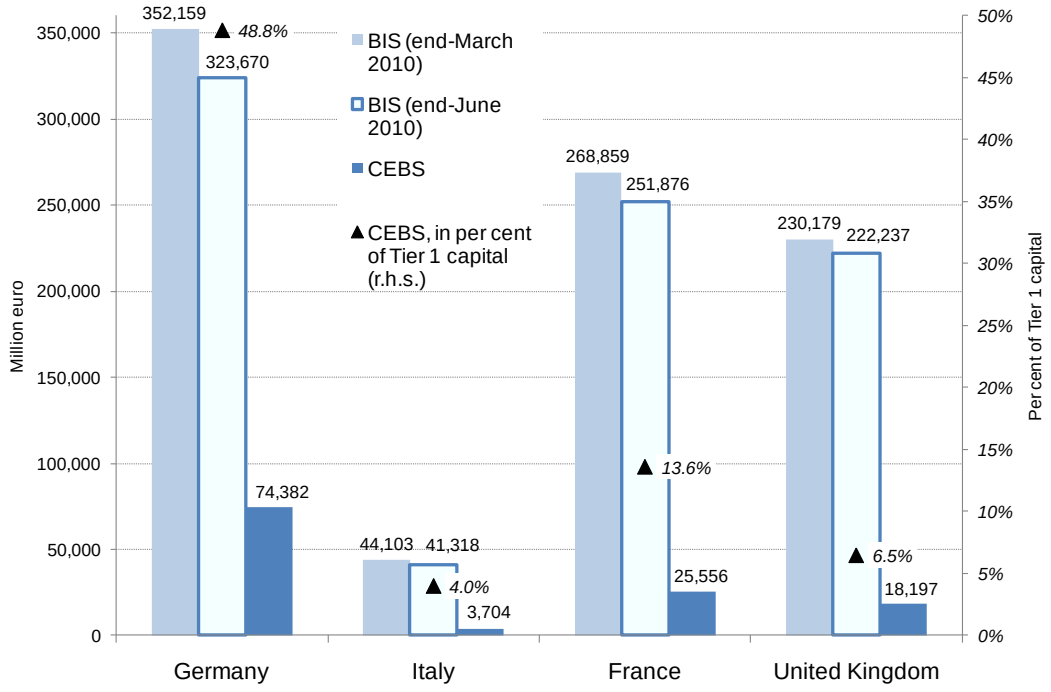
1. Banks, sovereigns and the macroeconomy

Banking sector risks cannot be delinked from sovereign risk, therefore reforms reducing pressure for public bank bailouts and moral hazard are key

It was emphasised that the risk of the banking sectors cannot, in the minds of investors, be detached from the risk of the sovereigns (Figure 4). Credible fiscal plans need credible plans to restore financial sector soundness. Going forward, should new problems emerge, governments cannot allow themselves to be held hostage by a fragile banking sector. Currently proposed reforms to delink the public sector from financial sector problems, such as the writedown of facilities or bail-ins of investors (via hybrid bonds), are key for putting sovereigns in a better position, which in and of itself will also improve the state of the financial sector. Such measures would lower the pressure for the public bailout of banks and would therefore reduce moral hazard. If such problems are not addressed, the widening of risk spreads in the next crisis could be massive even for the more financially sound debt issuers.

Figure 4. Sovereign exposure is still an issue

Exposures to Greece, Portugal, Spain, and Ireland; amounts outstanding as of end-March 2010, in million EUR



Note: BIS: consolidated foreign claims of reporting banks vis-à-vis selected countries, ultimate risk basis; provisional data; CEBS: exposure of stress-tested banks to sovereign debt of selected countries. Note that BIS and CEBS data are not fully comparable.[7]

Sources: BIS Consolidated Banking Statistics, July 2010; CEBS (2010); Blundell-Wignall and Slovik (2010).

The health of the banking sector depends on the health of the economy; credit quality and credit demand has to rise for banks to increase lending

Furthermore, the health of the banking sector depends on the health of the economy. And in order to assess the challenges for the banking sector, one also needs to assess the challenges the economy is facing due to the banking sector. There is a misperception that the economy cannot recover without a recovery in the credit cycle. However, as research has shown, there can be "creditless recoveries"; these are of much lower quality, however, and more subject to shocks.[8] In Europe, where bank financing is more predominant, it would seem that monetary policy would be more effective if implemented through the bank-lending channel. But with credit quality and credit demand low, banks cannot be expected to rush lending. Thus, a lot of the recovery in the banking sector will depend on the recovery of the economy as a whole.

Lending does not pick up because there is a lack of confidence

There was also a view that transparency is not an issue, and that it was possible to see what was happening and likely to come if one took a close look (like back in 2000 when people were investing in ever-higher-priced TNT stocks). Consequently, lending does not pick up because there is a lack of confidence, and no amount of collateral or other risk-reducing measures can restore that quickly. And whenever risk is reduced, investment return is also reduced. Lending activity will pick up once attractive returns can be made again. It was, however, noted that that the regulatory reforms being discussed now are geared to avert future crisis and restore confidence in the future, but they are not targeted to restore confidence now. Other measures may be needed for that. Thus, timing issues are important in discussing these arguments. But then again, the argument was that confidence is about perception, not instruments. For example, after the German hyperinflation of the 1920s the new *Reichsmark* was backed by all the property in the country, and even though this was not actually the case, it was perceived to be so and this restored confidence in the currency. Thus the perception that a security is backed by "real" assets is important.

While regulatory uncertainty has diminished, uncertainty about monetary policies has increased

It was also observed that markets have been influenced more by uncertainty than risk. There has been some regulatory uncertainty, in particular about new capital rules, but most of this has been resolved. The most relevant uncertainty regarding lending was seen to be about monetary frameworks. Many central banks officially target inflation, but it seems they are more focused on a nominal GDP target or bringing down unemployment (in fact, the US Fed has a double mandate). As long as there is uncertainty as to how monetary policy is going to be normalised, it will be very hard to reactivate lending, and restore confidence more generally.

2. Global banking sector stability issues

Crisis-related losses have been revised downwards and banks have recognised the majority of them

The recently published *Global Financial Stability Report*[9] revises downwards the estimate for total losses from the crisis, from USD 2.3 tn six months ago to USD 2.2 tn in the new report, due to slightly higher securities prices. Banks have been recognising the major part of these losses, with the remainder being estimated at slightly more than half a trillion US dollar. Across the G3, banks' Tier 1 capital (including governments' capital injections) has risen on average to over 10% of risk-weighted assets.

Refinancing needs could pose risk in the near term, particularly for banks in Europe and the United Kingdom

While these developments indicate that the banking sector is recapitalising itself and slightly stabilising, one major risk that banks are facing particularly in Europe and the United Kingdom is seen in the refinancing hump of wholesale liabilities coming due the rest of this year and into next year. This is both the result of five-year securities issued during the middle of the decade, as well as shorter-term, government-guaranteed liabilities issued during the crisis, from which governments now want to exit. This need for refinancing also coincides with large sovereign borrowing requirements over the next two years. While this gives banks and sovereigns the chance to refinance at low interest rates (if everything goes well), it makes the system more vulnerable to refinancing risk and operational risk. This can be expected to create incentives for European banks to deleverage, and in fact, European banks have been negative net issuers of wholesale funding over the past few months.

As Japanese banks expand JGB holdings, sovereign and banking risk interaction is rising

In Japan, banks are now becoming the main marginal funder of the government, and they are extending their holdings of JGBs down along the yield curve in an attempt to increase nominal earnings. While these banks may be trusted to manage their interest risk well, it has to be noted that the interaction between sovereign and banking risk is rising in Japan.

The US banking sector has been well recapitalised but regional small banks are exposed to commercial property risks

In the United States, the recently performed FSAP and its stress tests[10] indicated that the US banking sector as a whole has been adequately recapitalised. However, pockets of vulnerabilities remain, in particular in exposures to commercial property by regional and small banks. Stress testing with a (reasonably mild) adverse scenario regarding housing prices and commercial property showed that 15 banks needed about USD 57 bn of capital to maintain a 6% Tier1 ratio.

Currently, many lending losses are accumulated to the US government; therefore, major mortgage market reform is required

However, it is worth noting that the capital needs of US banks seem to be well in check because many lending-related losses continue to be accumulated to the government, in particular via the Government Sponsored Enterprises (GSEs) and the shortfalls in the Federal Deposit Insurance Corporation (FDIC), the Federal Housing Administration (FHA) and other government-related entities. The problem of the GSEs needs to be addressed – a major area of reform that was not covered in the recent Dodd-Frank financial sector reform bill. As of yet, it seems there is no major consensus on how to get the government out of the mortgage markets.

A draft reform bill for the US mortgage market is to be presented by the US Treasury

However, the US Treasury is currently looking into reforms for the US mortgage market, and the GSEs in particular. Treasury plans to present a comprehensive reform plan to Congress in January 2011. Besides the Treasury, there are other agencies involved, like the Department of Housing and Urban Development (HUD).

3. European banking sector issues: EFSF and stress tests

The EFSF can provide a credible backstop; however,

A bigger part of the discussion was dedicated to the situation in the European banking sector, which is still fragile and where confidence in the sector's resiliency overall is relatively low. An important element in creating

investors will need to see how it operates

confidence are backstops. The European Financial Stability Facility (EFSF) was seen as potentially helpful in this respect. While sovereigns and markets would not want to see it being used, investors would be reassured if they saw how this system operates, and actually saw it working, before putting their confidence in it. In any case, the Facility is already fully operational and can be used immediately if necessary. Road shows are planned in the very near future to explain the functioning and use of the EFSF to investors. While it is not yet clear how to deal with any stigma that may be attached to countries that need to draw on the facility, incentives to do so may be low, as borrowing from the EFSF will be relatively expensive.

The size of the EU/IMF rescue mechanism is comforting

The size of the rescue mechanism as a whole (the EU/IMF rescue package) of EUR 750bn, which corresponds roughly to the size of the capital of the European banking sector, was seen as comforting. Because of this, investors should be confident that strained public finances could receive relief funding in case more sovereign bank bailouts become necessary.

Transparency about risks should lead to better and more appropriate liquidity positions

Transparency about risks is important. It would be helpful if there were some information about how close a country is to receiving EFSF funds, but there are admittedly no simple solutions to this. In times of crisis, it is impossible to distinguish between solvency and liquidity, and between idiosyncratic *vs.* systemic risk. However, more transparency would lead to better liquidity positions, which should be a key benefit of the stress tests.

European stress tests were helpful in enhancing transparency

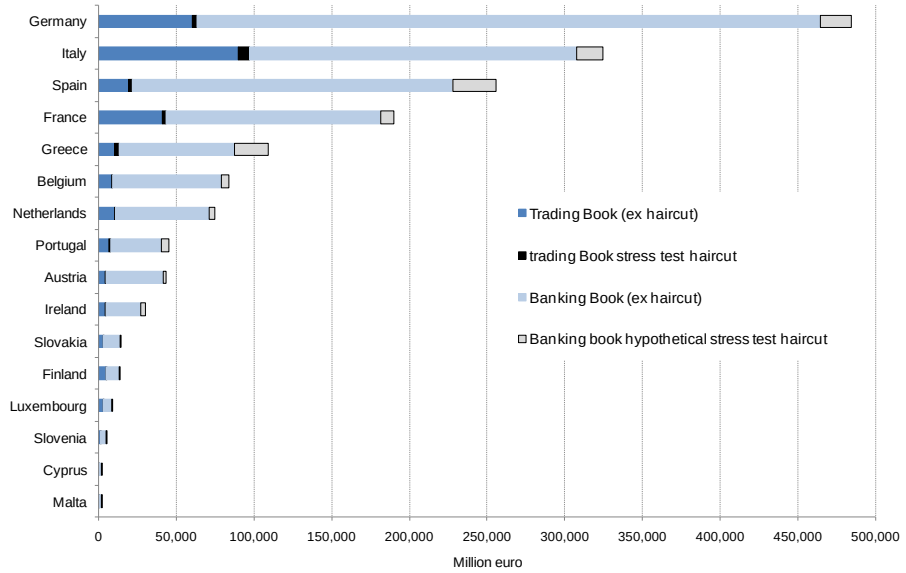
In this context, the European stress tests were seen as helpful.[11] While they can be criticised for not having properly taken into account all relevant risks, they have led to the release of some useful information that has allowed private analysts to make their own assessments (Figures 5 and 6). Even so, it was felt that the information could have been more comprehensive overall, like the one released for the Spanish banking sector, which was seen as most useful. Also, even though the tests have introduced some standardisation, it was pointed out that there was also a lot of national discretion over assumptions and how these were incorporated into loan-loss models. But an indication of how these tests have calmed investors is the fact that about two days after the test results were released, the news coverage ebbed.

Stress tests, however, were a lost opportunity for raising European bank capital

It was also noted that the stress-test exercise was also a lost opportunity in terms of strengthening European banks' balance sheets. In the United States, after the stress tests of 2008, banks raised capital well above the limits indicated by the tests, partly because being able to raise private capital was a precondition for being allowed to pay back the (relatively expensive) public TARP funds. In Europe, this was not the case, and banks (with few exceptions) were basically told by the stress tests that their capitalisation was sufficient. However, levels of capital in the European banking sector are conditioned on economic growth. Thus, banks are leveraged against the macro economy, even if their financial leverage is low. It would have been good if banks had used the opportunity offered by the stress tests to raise additional capital in order to bolster their balance sheets against an economic downturn. A related issue is that some of the bigger banks in Europe have an extremely low return on equity. Funding thus becomes more difficult and investment performance will tend to suffer.

Figure 5. Some risks were not sufficiently reflected in recent stress tests

Exposures to EU sovereign debt, consolidated over CEBS stress-tested banks in respective country, as of end-March 2010, in million euro

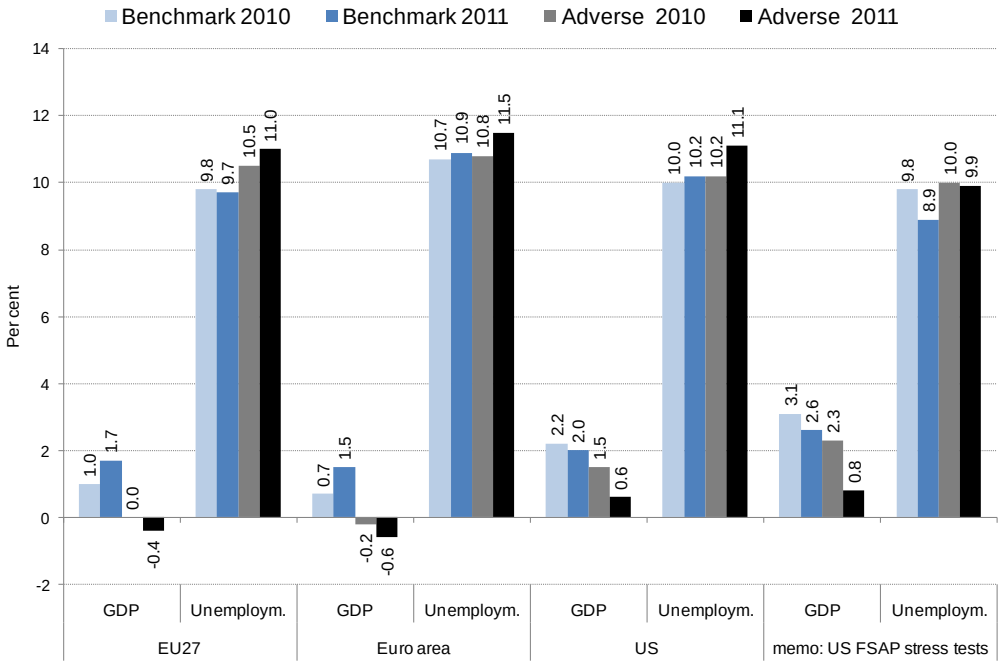


Notes: Haircuts in trading book valuation as applied in CEBS stress tests; hypothetical haircuts in banking book applying the same relative haircuts as in the trading book to the banking book.

Sources: CEBS (2010); Blundell-Wignall and Slovik (2010).

Figure 6. Stress test assumptions may have been too lenient

Real GDP growth and unemployment rate under alternative US (FSAP) and EU (CEBS) bank stress-test scenarios



Note: For details on scenario assumptions and definitions see sources.

Sources: CEBS (2010), (IMF) (2010b).

European periphery banks deleveraged to reduce sovereign exposure; sounder banks are buying assets of weaker peers

It seems that several European SIFIs have leveraged and expanded their balance sheets massively, while others are contracting. There is some evidence that some banks in the European periphery countries, in particular, were deleveraging heavily in order to reduce their sovereign exposure. On the other hand, some banks (normally those with strong balance sheets) were expanding their balance sheets by taking the opportunity of acquiring cheap assets that weaker banks had to sell off.

Bank restructuring has been successful in Spain and needs to be further advanced in Germany

In terms of policy recommendations, bank restructuring should be undertaken where necessary. Spain has been successfully active in this area, and it has reassured sovereign investors that the problem of the *caixas* can be handled. Germany still has to make sure that sovereign risk is being minimised, either by restructuring or closing the *Landesbanken*.

4. Interbank markets and wholesale funding

Interbank markets have recovered from the crisis and are back to normal

While ample liquidity provision by central banks could be damaging for the interbank market, which needs to be put "back on track", one should not overlook the positive developments that have taken place in that segment after the tensions following the Lehman default (September 2008) and the sovereign debt crisis in the spring of 2010. Since about mid-2010 the overnight market has been observing increasing flows to levels that are in line with historical averages.

Price dispersion, however, remains high

Pricing was seen as taking place in the standard fashion, taking into account credit and counterparty risks. However, the dispersion of prices is still sticky and remains quite high. This can, for example, be observed in the Euribor fixing, where the price dispersion among panel banks is still significant, even though one has to keep in mind that these are fixings and not real transaction prices and may therefore not be too relevant for real market transactions.

Government action will be needed to restore the interbank markets in full

In order to restore the interbank markets in full, government action will be needed. As could be observed, major problems were faced by banks that had relatively high exposures to securities issued by governments for which sovereign debt worries are highest. Credible mechanisms to address these problems are needed, like resolution mechanisms for insolvent banks or capital injections, as well as a solution to the sovereign debt crisis more generally. Such solutions need to be in place before the ECB can start thinking about exiting form its currently very loose monetary policy stance.

Wholesale funding conditions deteriorated during the sovereign crisis

Attention was also drawn to the fact that during the period of sovereign crisis in April and May 2010, when interbank and sovereign spreads were rising, wholesale funding conditions for banks deteriorated substantially. There was also some substitution observed between unsecured and secured funding instruments.

Not loss of confidence, but

According to an inside view, the strains on the interbank market were not caused by a breakdown of mutual confidence among banks, as has often been

funding needs have led banks to withdraw liquidity from interbank markets

thought. It was not so much fear about other institutions nor stringent constraints being put on interbank lending operations, but rather a desired increase in liquidity that caused banks to withdraw cash that would have historically been used as a temporary source of liquidity, not a long-term funding provision. Something similar happened at the outset of the crisis when the dislocation was caused by the SIVs. Back then, within about three months, there was a massive one-off transfer of about USD 1 tn in off-balance sheet liabilities (SIVs and conduits) that had to be brought back onto banks' balance sheets; this move was misinterpreted, scaring and confusing markets at the time.

The reactivation of wholesale funding markets should be a priority and could be achieved by enhancing transparency

In the view of an official sector participant at the Roundtable, the reactivation of wholesale funding markets should be one of the biggest priorities going forward. But this can only be achieved if investors regain confidence. However, confidence can only be regained if there are more transparent instruments, better post-trade transparency, and increased liquidity, perhaps through the standardisation of instruments and transactions via trading platforms. The industry was asked to work on this and put forward proposals in this respect.

Central banks need to exit from their extraordinary security holdings and governments from their bond guarantees

The view that transparency and structure are key for the financial markets was broadly supported. It was also noted that probably some government support was needed to "prime the pump", and that there have been various efforts across countries in this respect. But now there are large piles of securities on central banks' balance sheets that need to be brought back into the private sector. Likewise, bonds with government guarantees should be phased out. Messages regarding interbank market exposures are ambivalent and need be consolidated. The use of secured instruments could support efforts to strengthen the interbank market and thus should receive more attention in the near term.

Mechanisms to handle counterparty risk are important

It is also considered important to have mechanisms in place to handle counterparty risk, as is the case in Italy where such a mechanism has well supported the interbank market. There was also a view that pricing policies in regard to monetary operations, such as haircuts and fees, may become more important tools for central banks, the ECB in particular, in achieving their financial stability policy objective.

The ECB will align itself gradually to investor standards thus helping the reactivation of wholesale funding markets

However, in the ECB's view, the primary goal of the collateral policy was to protect the central bank from financial risks, and there was no other policy goal attached. The best protection is vibrant secondary markets for marketable eligible assets. It is also for this reason the ECB has an interest in the reactivation of the wholesale funding market, and it will contribute to this reactivation by aligning itself gradually with investor standards. But it was argued that if central banks were to introduce haircuts on short-term, overnight lending (according to banks' risk profiles), banks in difficulties could be completely shut off from such funding.

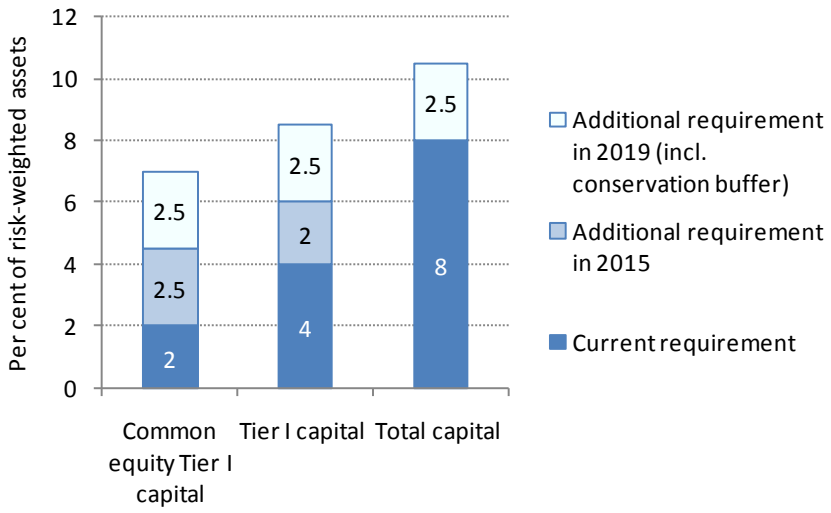
5. *Basel III issues and hybrid bonds (bail-ins)*

The new Basel agreement seems to strike a good balance between financial stability and growth

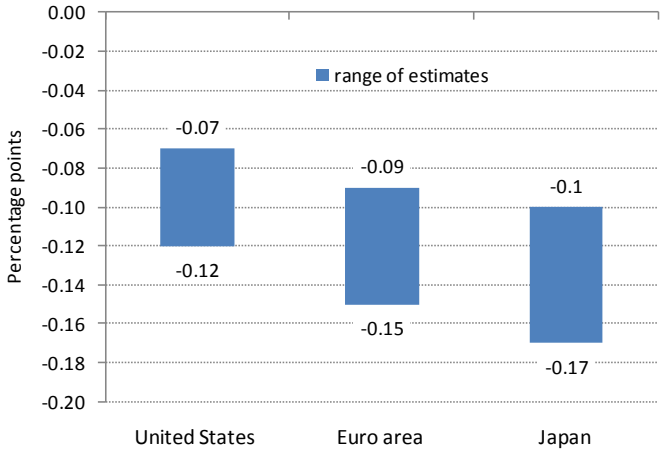
Assessing the newly agreed upon Basel III capital and liquidity rules, the private sector expressed satisfaction that growth was again the focus of policy makers (Figure 7).[12] A few months ago, it seemed that financial stability should be achieved at all cost, regardless of the negative effects on growth, but the recent Basel agreement indicates that the growth factor is being positively taken into account. The new rules seem to strike a good balance between financial stability and growth, and it was felt that specific capital requirements should not go much further.

Figure 7. Basel III: Capital requirements and estimated effects on growth

(a) Capital requirements and phase-in periods



(b) Basel III Impact estimates on average annual GDP growth rates in 2011–2018



Source: BCBS (2010), MAG (2010), OECD (2010).

Resolutions regimes and macro-supervision may obviate the need for further capital requirements

Having a credible bank resolution regime in place would be helpful, as it may preclude the need for further capital requirements for larger, systemically important institutions. Furthermore, more transparency in interbank markets and the bringing of CDS trading onto exchanges would better highlight exposures and improve risk assessment, thus reducing the calls for higher capital requirements. Finally, new initiatives to improve macro-supervision and monitoring are also welcome in this regard.

Basel III creates incentives to improve capital, perhaps via hybrid bonds

It was also pointed out that the new Basel agreement created an incentive for banks to speed up the process of improving their capital structure, as subordinated bank capital (those instruments that bear an economic incentive to call) will now be redeemed earlier than under previously envisaged grandfathering rules. Also discussed was the topping up of certain large financial institutions' capital requirements via the creation of hybrid capital (such as the Swiss proposal for convertible bonds – see below), which would shift losses onto bondholders); however, the incentives for buying these instruments are not yet clear.

Switzerland has proposed a solution for transfering risks back to the private sector

In Switzerland, a Swiss experts panel issued recommendations on how to proceed regarding raising capital requirements (Box 4 and Table 1).[13] If these recommendations are followed, the large, systemically relevant Swiss banks would have to increase their capital buffers sizeably, but they could also fulfil these higher capital requirements by issuing hybrid, contingent convertible ("CoCo") bonds, also called bail-in bonds. This proposal introduces an instrument that supposedly would absorb the risk that apparently no one was able to bear in the recent financial crisis. Looking back at the crisis, there was not enough risk-bearing capital or bonds. The bail-in, risk-bearing bonds would be a supplement to secured bonds and other instruments. And, since they are intended to bear risks, this benefit would of course have a price. The increased funding costs, however, have to be seen as the price tag for resolving a financial crisis, in this case with the risk premium being borne by the private sector. At the moment, there appear to be more risk than reward opportunities, and putting the risk back onto the shoulders of the private sector could be seen as part of the new reality.

However, low incentives for investors to hold hybrid capital may make convertible "bail-in" bonds too costly to issue

It was noted that traditional bond investors are reluctant to invest in bonds that can convert into equity, unless the bonds have much higher expected returns. These instruments need to target the right groups, which are unlikely to be found among bond investors. If the target is capital investors, regulators might just as well increase the standard capital requirement instead of introducing these bonds. The higher risk that these instruments bear would make them very costly for banks. This is especially problematic at a time when banks need not only to shore up their capital but also to rely more on wholesale funding. Furthermore, there may be a shift toward shorter-term funding, which tends to increase rollover risk.

The pricing and rating implications for other types of debt are yet unclear;

It was also pointed out that in case a bank gets into difficulties, funding will be very difficult, and almost impossible, via any type of bail-in instrument where default risk is a pricing element. Such banks would then have to rely on the short-term interbank market for secured instruments. Since under such

standardisation may be helpful in this regard

circumstances investors will prefer secured lending, collateral requirements would rise, which would deplete the bank assets potentially available for the unsecured lenders, with likely consequences on income-to-asset ratios. Effects on the other debt (both senior and junior) are uncertain, too, and so are the rating implications for all these debt tranches in general. The sooner this situation can be clarified, perhaps through some sort of standardisation for the hybrid securities, the better for banks and investors.

Box 3. Swiss proposals to address the "too big to fail" risks posed by banks

A Commission of Experts appointed by the Swiss Federal Council (November 2009) submitted on 30 September 2010 a series of measures for limiting the "too big to fail" (TBTF) risks posed by banks that are systemically important to the Swiss economy. The report proposes specific measures in four core areas:

I. **Capital:** a comprehensive concept for capital is presented and specified. Three capital components form the core of the concept, which should significantly strengthen the liability coverage of systemically important banks (see also Table 1):

- The **minimum requirement** for the maintenance of normal business activities.
- The **buffer**, which allows banks to absorb losses without falling short of the minimum requirement and without having to suspend normal business activities. This takes into account the risk profile and the loss potential of banks.
- The **progressive component**, which on the one hand ensures that systemically important banks have a particularly strong capital base. On the other, this component gives a bank the financial freedom of manoeuvring to deal with a crisis through implementation of a prepared emergency plan. In addition, the progressive component should create an incentive for a bank to limit its systemic importance. To achieve these goals, this component rises progressively in keeping with the degree of systemic importance – as measured by the total balance sheet of the bank and the bank's market share in relevant areas.

New capital instruments (reserve and convertible capital) are used for implementation. Almost half the new requirements for total capital can be met with convertible capital. For banks, convertible capital has the advantage from a tax perspective of receiving preferential treatment as debt capital, since the interest payment can be deducted from taxable profits. This makes convertible capital more attractive than common equity, as far as banks are concerned. If the convertible capital is more expensive than other debt capital because investors perceive a higher risk, such an increase in costs would be desirable. Thus the existing risk costs, which are borne by the taxpayer as a result of the implicit state guarantee, would be redistributed from the general public to the banks, in accordance with the originator principle.

The successful launch of convertible capital should be effectively supported by a Swiss bond market that is competitive and functioning well. This would require an improvement in tax conditions. The new concept applies both to the risk-weighted capital ratio, and to the minimum capital level as a proportion of the balance sheet total (the "leverage ratio").

For the risk-weighted capital ratio, the Commission of Experts set out the following **minimum requirement** specifications that are substantially more rigorous than the current requirements and the Basel III standards:

- Based on their **size and market position** at the time of writing, the total capital requirements for **Credit Suisse** and **UBS** amount to some **19%** of risk-weighted assets,as per Basel III.
- **10%** of the risk-weighted assets must be held in the form of **common equity** (capital of the highest quality in the form of paid-in capital, disclosed reserves and retained earnings following deduction of regulatory adjustments, e.g. goodwill and deferred tax assets).

Box 3 (cont'd). Swiss proposals to address "too big to fail" risks posed by banks

- For **9%** of the risk-weighted assets, the two large banks can issue **contingent convertible bonds** ("CoCos"). These bonds are automatically converted into common equity when a bank's common equity ratio drops below a predefined level (trigger).

II. Liquidity: proposals concerning liquidity requirements largely correspond to the reforms that have already been implemented since the publication of the interim report. The liquidity regime that entered into force for the large banks in June 2010 was drawn up in the form of an agreement that referenced the ongoing work on the TBTF issue. It is proposed that the principles agreed there should now be given legal form.

III. Risk diversification: Measures to improve the diversification of risks are part of the adjustments also envisaged in other jurisdictions, notably the EU. One of the objectives of these measures is to reduce the degree of interconnectedness within the banking sector and thus to limit the dependence of other banks on systemically important banks.

IV. Organisation, resolution and other measures: Guidelines for preparatory organisational measures to guarantee the resolvability (or the resolution) of a systemically important bank in the event of a crisis should ensure the maintenance of systemically important functions in such a case. Measures are intended to be preventive and curative and should be based on a subsidiarity principle. A key role is played by the combined impact of the measures relating to capital and organisation. If a systemically important bank's capital ratio falls below a certain level, the emergency plan is triggered. This means that the systemically important functions are rapidly transferred to a new legal entity. At the same time, the convertible capital that the bank has to hold as part of the progressive component is converted into common equity. This ensures that the emergency plan is carried out with an adequate capital base. If a bank exceeds the minimum organisational requirements and thus improves its resolvability, it will receive a corresponding capital rebate in recognition of its efforts. At the same time, attempts to improve international coordination should be strengthened. In the area of market infrastructure, improvements should be made by introducing central counterparties for over-the-counter derivative transactions (derivatives traded outside an exchange between two market participants).

The Commission of Experts does not propose the creation of a stability fund or "resolution fund" intended to facilitate the orderly resolution of distressed financial institutions. The third capital component contained in the capital concept proposed by the Commission of Experts can be seen as a resolution fund to be set up by the institution itself, which will make a significant contribution towards orderly resolution.

Source: Commission of Experts (2010).

In particular, defining the trigger mechanism for bail-in bonds is crucial

A central question in this regard is when the bail-in of hybrid bonds should be triggered, earlier ("going concern") or later ("gone concern"), when the bank has already failed. These issues (terms, conditions, trigger events) need to be clarified at issuance and standardised, such that uncertainty for senior bondholders in particular is minimised. If this can be achieved, these hybrid instruments could become an interesting complement to existing debt instruments. But currently, standardisation and comparability do not exist. Finally, to improve liquidity when secondary markets for hybrids do develop further, post-trade transparency will also be an issue.

As markets for hybrids grow, innovations that restructure their risk components may create new risks themselves

There was a general view that these instruments are likely to be suitable only for larger financial institutions. At the same time, as these instruments and markets develop, there are likely to be innovations that synthetically strip away the credit component so it could be traded separately. With market confidence restored, for example, the triple-A component of such instruments might be priced and traded. These types of innovations could again create risks similar to those created by structured mortgage products.

Table 1. Comparison of bank capital requirements: BCBS *versus* Swiss proposals

	Previous requirements (definition of RWA and capital categories as per Basel II)		**New requirements** (definition of RWA and capital categories as per Basel III)	
	International standard (Basel II)	**Swiss regime for big banks** (Orders of autumn 2008)	**International standard (Basel III)**	**Commission of Experts' calibration**
		Valid as of 2013[a]	Valid as of 2013, with a transition period up to the end of 2018	
I. Minimum requirement	8% total capital, of which at least: 2% common equity 4% Tier 1	same as Basel II	8% total capital, of which at least: 4.5% common equity 6% Tier 1	same as Basel III, esp. 4.5% common equity[b]
II. Buffer	–	8% total capital of which at least: 2% common equity 4% Tier 1	2.5% common equity	8.5% of which: min. 5.5% com.equity, max. 3% CoCos, trigger at 7% com.equ.
III. Progressive component	–	–	*(Surcharge for systemically important banks not yet defined)*	6% CoCos (for current size and market share of big banks)[c] trigger at 5% com.equ.
		Total:	10.5% total capital of which min. 7% com. equity	19% total capital of which min. 10% com. equity

Notes:

a. The current status quo is shown. Banks are mainly required to meet their capital requirements with Tier 1 capital. Ultimately, *i.e.* after the transition period ends in December 2020, half the Tier 1 minimum capital and the buffer would still have to be held in common equity under the old definition. Hybrid Tier 2 instruments would also be theoretically eligible, as a minority holding. However, these are not very common in the banking system and they are therefore of negligible importance.

b. In addition, the Basel floors for total capital (8%) and Tier 1 (6%) must be satisfied. Here, CoCos in component II and component III are eligible as long as they comply with the relevant criteria of the Basel Committee. All CoCos (in the buffer and in the progressive component) must at least meet the criteria for Tier 2 capital at all times.

c. The size of the progressive component depends on the specific bank's degree of systemic importance. The 6% quoted in the table is an average value that applies for the current status quo of Switzerland's two big banks.

Source: Commission of Experts (2010), p. 59.

Notes

[1] McKinsey Global Institute (2010).

[2] It is interesting to note that FOMC minutes of a videoconference meeting on October 15, 2010, that was released later in November as part of the minutes of the 2-3 November meeting (FOMC, 2010), revealed that Fed policy makers discussed whether to set a target for interest rates on certain government bonds, even though they did not move forward with that idea. A precedent for the idea is a ceiling of 2.5% on long-term Treasury bonds that the Fed maintained for nearly a decade, from April 1942 to March 1951. The pegging of interest rates was introduced during World War II to support extensive federal government wartime borrowing. It is reported that it was lifted only after a standoff between President Harry S. Truman and his Treasury Department, which wanted to keep the yields low, and the Fed, which was worried about the inflationary results of the peg after the end of the 1948-9 recession and the start of the Korean War. The interest rate peg was lifted by the Treasury-Fed Accord, signed on March 4, 1951 (Chan, 2010; Hetzel and Leach; 2001, who call this date "Federal Reserve Independence Day").

[3] Issues of interest rate risks and challenges they pose for the financial industry were the topic of the OECD Financial Roundtable held on 15 April 2010 and are discussed in Wehinger (2010).

[4] A lead intervention in this round of discussion was delivered by the Secretariat of the Working Party on Public Debt Management and focused on issues of sovereign risks and on the borrowing outlook from the perspective of sovereign issuers. Details regarding this intervention are published in Blommestein *et al.* (2010) in this issue of *Financial Market Trends*, Vol. 2010/2.

[5] Note, however, that the debt and deficit data shown here do not fully correspond to the Maastricht definition of these data as used for determining the limits of the Stability and Growth Pact.

[6] See IMF (2010b), Chapter III: The Uses and Abuses of Sovereign Credit Ratings.

[7] The data obtained from these two sources are not directly comparable due to differences in reporting populations, deduction of offsetting short positions in CEBS data, immediate borrower basis (CEBS) vs. both immediate borrower basis and an ultimate risk basis (BIS), and levels of consolidation regarding the holdings of various banking units across national jurisdictions; see the box on p. 19 of BIS (2010).

[8] See Claessens *et al.* (2009) and the references therein, in particular Calvo (2006).

[9] IMF (2010a).

[10] IMF (2010b).

[11] CEBS (2010).

[12] For the new Basel requirements see BCBS (2010); for an assessment of their possible growth effects see MAG (2010) and Box 1.6 "Estimating the macroeconomic impact of Basel III capital requirements" in OECD (2010); for a private sector assessment see IIF (2010).

[13] Commission of Experts (2010).

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