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Financial Market Trends

Volume 2014/2

Focus on

- Investment, stagnation and the crisis
- Why implicit bank debt guarantees matter
- Unlocking SME finance through market-based debt

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Foreword

Financial Market Trends provides regular updates of trends and prospects in the international and major domestic financial markets of the OECD area and beyond. It provides timely analysis of and background information on structural issues and developments in financial markets and the financial sector. This issue of Financial Market Trends compiles the articles that have been released online over the past few months.

The first article in this issue, exploring a wealth of global company data, finds that some companies and industries are possibly over-investing, creating margin pressure globally, while others carry out too little long-term investment in favour of buybacks and cash accumulation. Potential problems of debt-financed over-investment in non-infrastructure industries in emerging markets and the incentives for buybacks are identified as major policy issues that need to be addressed if sustainable growth is to be achieved. Policy recommendations include rebalancing monetary policy, reforming the international financial and monetary system towards more openness, and regulatory and tax reforms that reduce incentives regarding share buybacks.

The next article traces the origins of the 2007/2008 financial and economic crisis, consolidating stylised facts and arguments developed in macroeconomic and financial literature on the crisis. It does so more concisely than its underlying, extensive study that was part the OECD New Approaches to Economic Challenges (NAEC) project. It focuses, in particular, on the interaction of monetary policy, international capital flows and the decisive impact of the rise of the shadow banking industry.

The third article finds that “financial excesses” – in terms of financial sector growth reaching a point where it does not add to real economic activity growth – have been more common in OECD countries that are characterised by larger estimated values of implicit bank debt guarantees and where bank creditors have not incurred losses as part of bank failure resolution cases. It also finds that financial sector employees earn more than what typically corresponds to their profile in terms of age, education, etc., consistent with the view that financial sector employees benefit from implicit guarantees.

The final article discusses in depth the role of securitisation, private placements and bonds as alternatives to bank financing for small-and medium-sized enterprises (SMEs), deepening the analysis provided in the previous issue of Financial Market Trends. It reviews the current state of the market for these instruments and identifies associated risks; analyses the barriers for issuers and investors alike; and provides best practices and high level recommendations to help alleviate barriers without hampering the overall stability of the system.

An index of previous articles (“recent features”) can be found at the end of this issue which we hope will again serve our readers with valuable information and analysis.

Comments and questions should be addressed to the Financial Affairs Division of the OECD Directorate for Financial and Enterprise Affairs (e-mail: fmt@oecd.org). Find out more about Financial Market Trends online at www.oecd.org/daf/fmt.

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Infrastructure versus other investments in the global economy and stagnation hypotheses: What do company data tell us?

by

Adrian Blundell-Wignall and Caroline Roulet*

This paper uses data drawn from 10 000 global companies in 75 advanced and emerging countries to look at trends in infrastructure and other non-financial industries in light of the talk of stagnation. There appears to be a twin paradox in the global economy: some companies and industries are possibly over-investing, driving down returns on equity (ROEs) versus the cost of capital and creating margin pressure globally, while others carry out too little long-term investment in favour of buybacks and the accumulation of cash. This pattern is associated with a shift in the centre of gravity of world economic activity towards emerging markets. Most of the over-investment appears to be occurring in the extremely strong growth of emerging market sales and investment in non-infrastructure companies, much of which is being financed from rapidly growing debt since the financial crisis. Global value chains, emerging market policies of financial repression, low interest rates, taxation incentives, natural resource endowments and other factors determine where investment is stronger and where it is restrained. Potential problems of debt-financed over-investment in non-infrastructure industries in emerging markets and the incentives for buybacks are identified as major policy issues that need to be addressed if sustainable growth is to be achieved. Evidence on the role of causal factors (sales, GDP, the return on equity, the cost of equity and debt and a measure of financial openness) on corporate capital spending is presented. Finally some policy recommendations are made.

JEL classification: F21, G15, G18, G23

Keywords: Global economy, infrastructure, investment, listed companies

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I. Introduction

At a recent meeting the Governor of the Reserve Bank of Australia asked the following question (Stevens, 2014):

“Why do financial institutions and investors see so little risk, while companies investing in the real economy see so much risk?”

This is perhaps the most important question facing policy makers today. Unconventional monetary policy in zero rates and quantitative easing (QE) have done exactly what was intended – they have forced investors to take more risk. This has supported the banking sector and financial markets have run up very well indeed. But outside of the USA, this has not been followed by real economic growth led by an investment cycle within the private sector. Unemployment remains high, and in Europe’s periphery youth unemployment rates are at unprecedented extremes. Emerging markets, too, have slowed and borrowing to fund investment has accelerated. These developments have led some to argue that the world economy may be entering a period of stagnation reflected in a secular decline in the natural rate of interest. Most often a significant role in this process is attributed to the puzzle of weak investment and particularly infrastructure investment. If growth is to move into a more sustainable phase, and potential output and jobs are to be restored, then long-term investment in infrastructure will have to play a greater role alongside an investment cycle in the much larger non-infrastructure industries. However, while many hypotheses about the causes of the lack of responsiveness of private investment to easy monetary policy have been outlined, there has been no systematic analysis of actual private infrastructure investment and its relationship with investment in other industries. In large part this is because of a lack of consistent data amenable to empirical study.

This paper sets out some of the possible hypotheses for lack of investment (despite “zero rates”) in the world economy. National accounts data provide little insight into the issues relating to private infrastructure investment, and such numbers that are available certainly cannot be matched with the corresponding financial aspects of the companies doing the investment. A data set for the private listed sector is constructed based on 10 000 global companies in 75 countries, dividing the industries between infrastructure and (non-financial) other industries. Capital spending, the way it is funded and the alternative uses of funding are collected for each company and aggregated to give a clear picture of what is happening in different groupings of countries. These data are then compared to some of the hypotheses about stagnation that economists have been debating.

Section II sets out some of the stagnation hypotheses. The investment and sales data of the companies covered are discussed in Section III, where the *prima facie* cases for signs of stagnation in major parts of the world economy (if present) are identified. The debt-equity ratios and financial flow data exactly matched to these same companies are presented in Section IV. The matched data for the return on equity, the cost of equity and debt funding cost are also considered in this section. A measure of financial openness is set out in Section V. Section VI then combines the company data and the openness measure to

look at key causal factors in the determinants of infrastructure and general industry capital spending in an econometric panel regression study. Finally, many of the threads are drawn together and some policy comments are offered in Section VII.

II. The various hypotheses offered to explain stagnation

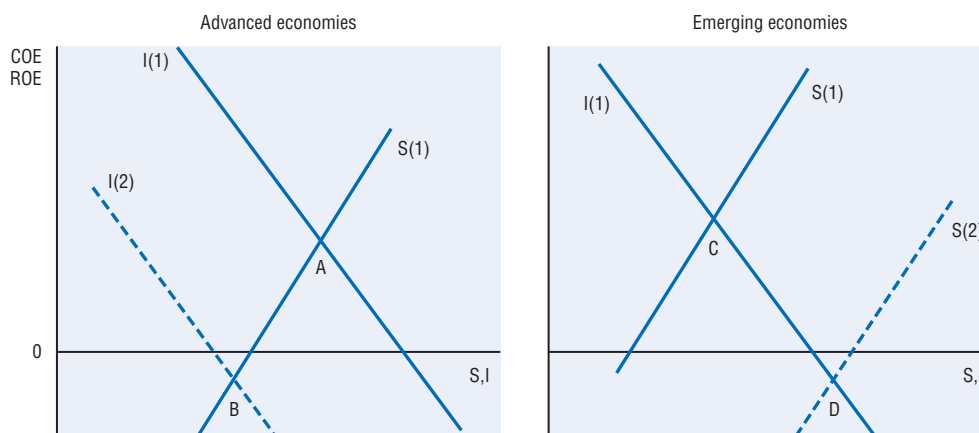
The Wicksell natural rate decline and liquidity trap ideas

Lawrence Summers (2014) associates the stagnation thesis with a fall in natural real interest rate, and calculates that potential GDP is 5% below its pre-crisis level. He suggests that 50% of this can be attributed to weaker investment, 40% to fewer hours worked and 10% due to total factor productivity decline. He cites six factors in investment supply and demand associated with the fall in real rates: that IT/digital firms like Apple, Face Book, WhatsApp, and Google generate mountains of cash for little investment; population growth is declining; income wealth inequality generates more saving; the relative price of capital goods has collapsed; disinflation requires only a lower pre-tax real interest rate to generate the required after tax rate; and the huge accumulation of low risk Treasury securities in an uncertain environment is suggestive of uncertainty. For policy he touches on the need for low nominal rates: if the natural real rate is lower, then the actual rate determined by monetary policy in a low inflation world needs also to be low. He does note, however, the issue of the Japan disease; i.e. allowing zombie companies easily to refinance themselves when they should in fact close.

The lack of demand as the source of stagnation is emphasised by Paul Krugman¹ who, like Summers, also cites population growth slowing in the USA, and Robert Gordon's (2013) decline in innovation. Following the crisis, the economy has moved into a Keynesian liquidity trap zone where monetary policy cannot help. Policy makers are failing to deliver rates low enough to get the economy going. He takes on Bill White's (2012) argument that there is a need to raise interest rates to avoid future crises. There is no sign of inflation and the economy may need liquidity generated "bubbles" to achieve something like full employment.

Glenn Stevens in his annual Anika Foundation speech (Stevens, 2014) focuses on the limits to monetary policy, which played an essential role in fixing the banks following the crisis: a necessary but not sufficient condition for growth. He describes unconventional monetary policy as unsterilised intervention in asset markets, the aim of which is to raise risk taking. However, he notes that this is not taking the form of entrepreneurial risk taking in business investment. Citing strong patents data, Stevens is sceptical of the Summers/Gordon view that declining innovation is the cause of stagnation. Instead, he cites the possibility of past "over-investment", as is widely accepted to have occurred in Japan in previous decades. It is questionable, however, whether one can observe this in the critical infrastructure area around the globe where bottlenecks in emerging markets are evident. In the end Stevens ponders whether it is not animal spirits that are too low, and he emphasises the need to reduce uncertainty (for example by completing financial regulation), and to ensure that international trade remains free (as opposed to what many countries have been doing since the crisis).²

Stagnation as formulated by a shift in the marginal efficiency of investment schedule to the left might then cross the savings schedule at some low or negative return on equity/cost of equity, moving from point A to B in the left panel of Figure 1.³ This could be due to a deterioration of animal spirits. But for advanced economies this could also be due to

Figure 1. **Wicksell-like diagram**

Source: Authors' illustration.

interconnectedness with what is happening in emerging markets: for example a strong rightwards shift in the saving schedule, essentially sliding down the investment schedule in emerging market locations and requiring less investment in the West to meet world consumer demand (as illustrated by the shift from point C to D in the right panel).⁴ The interconnectedness arises as global value chains including emerging economies shift the centre of gravity of investment, production and employment. These shifts are associated with falling returns on equity.

Over-investment and emerging markets

Over-investment will occur when managers invest too much in projects that do not create shareholder value – or more specifically, when returns are less than the cost of equity resulting in the negative net present values of investments. Where this happens collectively, due to the mispricing of risk or to the presence of inappropriate economic policy in a country or region, financial crises can emerge, particularly where the investment was debt financed. Systemic crises with these characteristics already occurred in Japan and in Asia in the late 1990s. The emerging market development “model” involves elements of trade protectionism, managed exchange rates versus the dollar, financial repression (capital controls, financial regulations, interest rate ceilings) and other policies such as ownership restrictions, local content requirements, approvals processes for FDI, etc. Financial repression in particular is associated with high saving which is then intermediated into heavy investment via state-owned banks (the rightward shift in the saving curve noted earlier).⁵

Governance issues that reduce the efficiency of capital in emerging markets

A shift up of the marginal efficiency of capital schedule would correct the tendency toward lower returns, but this requires reforms of the above restrictive policies. Instead these factors are often compounded by governance problems of an “upstream” variety which serve to reduce returns per unit of investment. These include regulations and red tape, bribery and corruption (and corrupt procurement processes), unclear property rights and long judicial processes in the event of disputes. Many governments restrict foreign ownership of infrastructure, and SOEs often play too large a role giving rise to level playing field issues (competition, pricing and corporate governance). These factors limit efficiency

in infrastructure markets and impede competitive neutrality between SOEs and private firms. Product market regulations that constrain competition in infrastructure raise costs across the entire economy and affect the profitability of investments in other sectors.⁶

Impact on western countries

The maintenance of undervalued exchange rates, use of capital controls and trade protectionism promotes emerging markets exports limits imports of final goods and damages the traded goods sector in advanced economies as supply chains shift.⁷ The supply of consumer goods from emerging markets and pressure on wages in the West⁸ acts to keep inflation down and this, together with employment pressures, encourages an easing bias to monetary policy in order to offset the damage to jobs via the traded good sector. The proceeds of dollar foreign exchange interventions in emerging markets are held in US Treasury securities acts to create downward pressure on longer-term interest rates, including via pricing arbitrage mortgages and corporate debt.⁹ As more emerging countries adopt and extend this model, more savings, investment and supply enter the global value chains. The emerging markets have grown from 20% of world GDP in 1980 to around 50% by 2013.

The taxation angle

Tax distortions also interact with global value chains to affect the location of business investment from advanced countries, and the form of financing that is used. For example, large US companies transfer intellectual property rights to Bermuda or the Cayman Islands with zero tax and create a second company group in Ireland consisting of, say, two subsidiaries: one that supplies the product to customers in the EU, and another which is controlled by the company in Bermuda and receives royalties from yet another subsidiary in the Netherlands which owns the European patent. The Bermuda-Irish grouping is a foreign company from the viewpoint of the USA, avoiding tax treatment there. The Irish supply company gets revenue from the EU, but has to pay a heavy royalty to the Dutch company for use of the patent, and thereby gets a tax deduction wiping out much of the taxable income in Ireland. The Netherlands is used in the chain because it does not levy withholding tax for transfers within the EU: so the Dutch subsidiary transfers the royalty to the other Irish subsidiary controlled from Bermuda. Bermuda has a zero tax rate and receives the cash flow from the Irish company that it controls. In this way the large US tech or pharmaceutical companies (and others) pays no tax from these sources to the USA. Cash is held abroad, while firms borrow domestically to pay dividends and carry out buybacks. The borrowing is of course a tax deduction for the US (and other country) businesses. This structure reduces investment, jobs and tax revenue in the home country and may also shift wealth distribution in favour of shareholders and away from wage earners.

Buybacks and the uncertainty issue

There are many possible reasons why companies may be uncertain and reticent to invest in the current environment. Emerging market over-investment may result in downward pressure on margins. The financial re-regulation process is not complete and long-term relationships in banking are subject to change, including via the impact of fragmentation in banking and the reduction of cross-border flows. Rule changes and technology shifts in the operation of stock markets have reduced the use of IPOs, particularly for small and medium-sized businesses (SMEs).¹⁰ Macro policy is not running

at normal interest rate levels, and there is a sense that if this is so economic growth is not durable at normal rates. In a low-interest rate environment some investors cheer companies that focus on dividends and buybacks to improve investor (tax effective) yields, in large part because growth of earnings per share is perceived as more uncertain. This works against investment, and where borrowing (encouraged by tax incentives) is used to pay dividends or undertake buybacks debt-equity ratios rise, exposing the firm to greater risk in the future, and this too works against more sustainable long-term investment.¹¹

III. What do company data trends say about investment, stagnation and its possible causes?

National accounts data

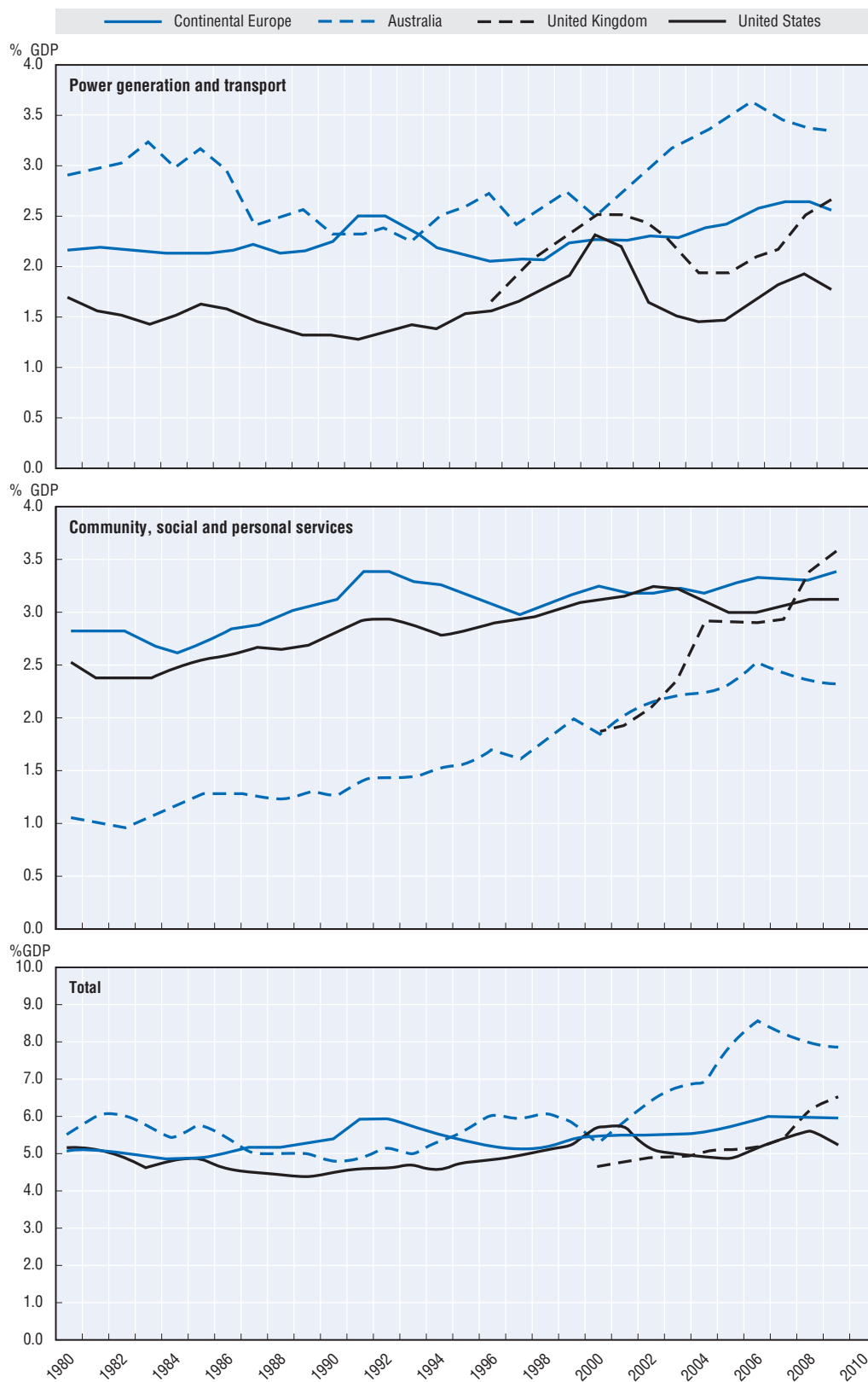
The national accounts are not very helpful in respect to distinguishing some of the above hypotheses. The data for infrastructure investment is available in some OECD countries.¹² It is possible to construct series for gross fixed capital formation in electricity, gas, water, transport, storage and communications (economic infrastructure) and for health and education (social infrastructure). Some of this data is presented in Figure 2. At a first glance there is nothing in these charts to suggest any downward trend in infrastructure investment in recent years in the USA, continental Europe (France, Germany, Italy, and Spain), the United Kingdom and Australia (comparable data for Japan and emerging countries are not available). Indeed, the data suggest the trend in infrastructure investment as a share of GDP is positive, though with a significant interruption after the tech bust in the early 2000s. GDP of course fell in 2008-09 and its growth has been much weaker since then, so the observed slowing in growth of absolute levels of investment cannot easily be separated from the crisis slowdown more generally.

The main features of the data are as follows:

- The US invests less in economic infrastructure (as defined above) than other countries: around 1.5% of GDP prior to the mid-1990s versus more than 2% in continental Europe and 2.5-3% in Australia. From the mid-1990s the communications component of economic infrastructure rose quickly and unsustainably during the tech boom in the USA and the UK. The decline in the early 2000s in both countries was pronounced. Since the financial crisis the share of economic infrastructure investment has risen quickly in the USA, driven by the electricity and gas supply component (the fracking boom for example). The UK recovery has once more been driven by transport, storage and communications.
- In continental Europe economic infrastructure investment began to rise from the late 1990s, from around 2% to 2.6% of GDP by 2010. This was driven by the transport and communication component.
- Australia invests much more in economic infrastructure than the other regions shown due to the capital intensity of requirements for the mining sector. This has accelerated to even higher levels during the more recent mining boom.

In community, social and personal services (essentially education and medical) there has been a clear upward trend in most regions. The USA, the UK and continental Europe in the most recent data are in the 3% to 3.5% of GDP range (compared to 2.5% in the early 1980s). Australia appears to have the lowest spending in this area compared to the other regions shown.

Figure 2. **Infrastructure investment in OECD countries**



Source: Authors' calculations based on OECD structural databases.

Overall, total infrastructure spending in the USA and continental Europe has moved up from the 4-5% range in the early 1980s to the 5-6% range in 2010. While the composition is very different, Australia has moved up from the bottom end of those ranges in the early 1980s to the top end by 2010.

This national accounts data is of limited value however. It does not separate private infrastructure from government investment, the relative extent of which differs between countries, and certainly comparable emerging market data are not available. While the focus of the stagnation discussion is on the falling natural interest rate, this national accounts data cannot be matched with the return on equity and other financial features of investing firms that would help to distinguish between different hypotheses.

Private company data

To help provide a picture of what is happening to investment in the private sector in different regions, capital spending by companies in industries associated with infrastructure and for other non-financial sectors is collected for all listed companies from the Bloomberg global equity index consisting of more than 9 000 companies.¹³ The data are described in Annex 1. It is important to analyse investment associated with infrastructure alongside other industries as the characteristics are very different: infrastructure is more capital intensive, is more associated with state ownership, and is less associated with multi-national enterprise (MNE) activity in global value chains than is the case for non-infrastructure.

The following corporate concepts will be used to explore ideas about which hypotheses seem to find support in the data.

- Financial structure is calculated as the ratio of long-term debt (D) to “enterprise value”, or debt plus equity (E), i.e. $D/(D + E)$.
- The return on equity (ROE) will be used to proxy the “natural interest rate” (net income/shareholders equity). The cost of equity is the dividend plus buyback yield added to the trend growth in company earnings. The borrowing rate is the AAA corporate bond rate in the country where the company is listed.
- To understand the flow accounting concepts, it will be helpful to keep in-mind a simplified accounting identity:

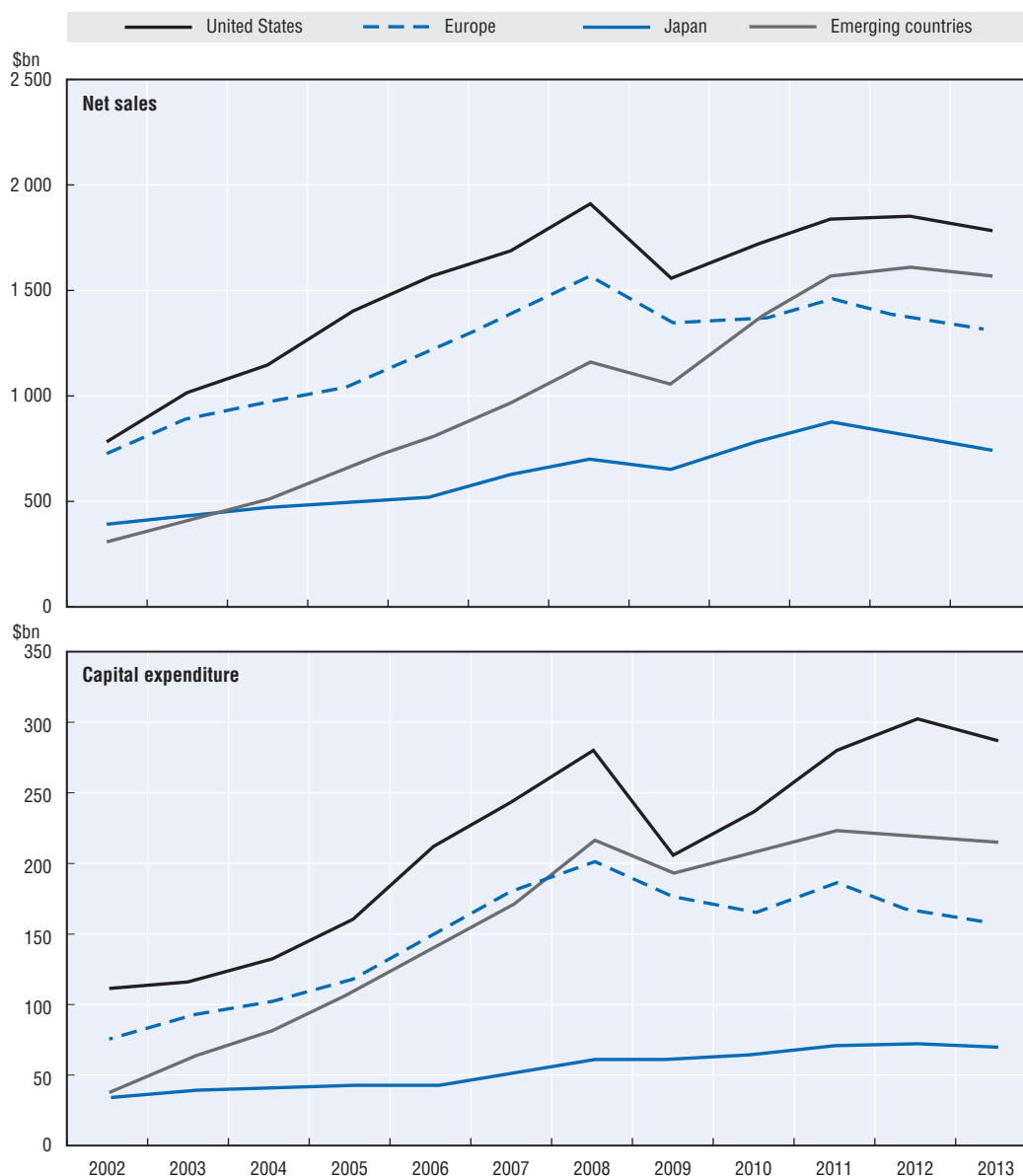
Operating Cash Flow + Net Borrowing = Capital Expenditure + Dividends and Buybacks + Net Asset Purchases + Net Cash Accumulation

Operating cash flow (net income adjusted for receivables, payables and inventory changes) is a key concept that pertains to how much cash companies are generating to maintain and grow their businesses without external financing. They can use internal and external financing: to invest; pay dividends or undertake net share buybacks; buy assets (net) with cash (e.g. buying stakes in other companies); or they may simply accumulate cash balances in the bank. The company data is aggregated up to the USA, Europe (the European Union and Switzerland), Japan and all emerging market countries. The data of course can be disaggregated to any individual country, and all financial concepts are perfectly matched with the companies whose capital spending is being analysed.

Corporate sales and capital spending

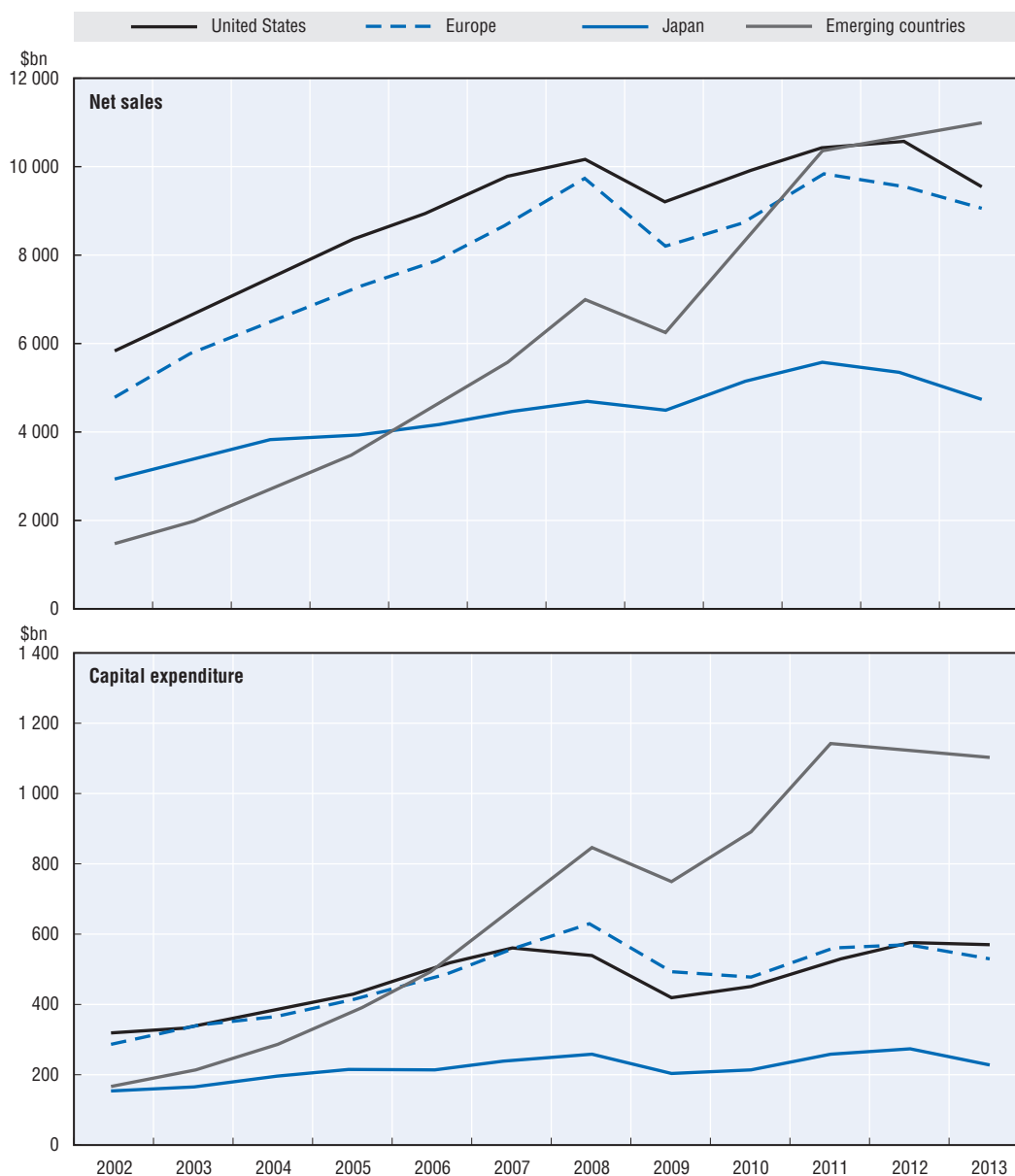
Sales and capital expenditure by companies for infrastructure and (non-financial) non-infrastructure industries are shown in billions of dollars in Figures 3 and 4, respectively.

Figure 3. **Net sales and capital expenditure: Infrastructure (\$bn)**



Source: Authors' calculations, Bloomberg.

- *Infrastructure sales and capital spending (Figure 3)*: in general sales growth appears to exhibit signs of stagnation post the crisis, particularly in Europe. Japan has been falling behind over a much longer period. Emerging market sales have done better, passing Europe in dollar terms (but not the USA). The picture is different for capital spending, however, where the US shows less sign of stagnation post the crisis, while emerging markets and Europe certainly do. Japan has been stagnant for much longer.
- *Non-infrastructure sales and capital spending (Figure 4)*: the most striking pattern here is the very strong growth in emerging market sales (though 2013 may be the start of a reversal). From being well below in 2002 emerging company sales are now stronger than all other regions. The US, Europe and Japan, on the other hand, do appear to have slowed since the crisis (Japan for much longer). It would seem reasonable to suppose that there is a

Figure 4. **Net sales and capital expenditure: Non-infrastructure (\$bn)**

Source: Authors' calculations, Bloomberg.

connection here: as global supply chains shift towards emerging market locations, the increased sales from there might result in greater stagnation of sales in OECD countries (though not necessarily in their subsidiaries and affiliates abroad). Emerging markets appear to have achieved this growth in sales by very rapid growth of capital expenditure – surpassing anything in OECD countries and in a very short space of time. Commensurately, there has been clear stagnation of capital expenditure in OECD-listed companies.

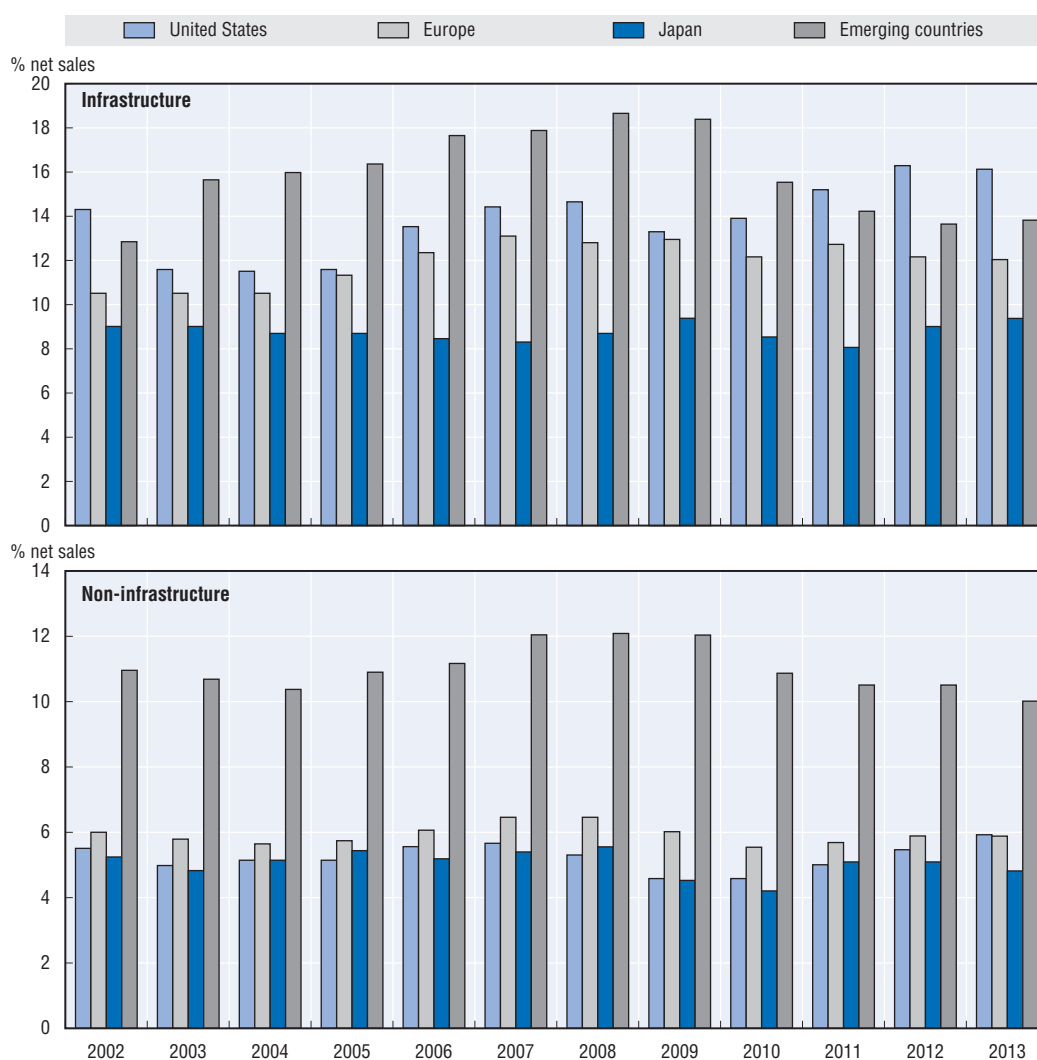
Capital spending as a percentage of sales

- **Infrastructure** (top panel of Figure 5): the emerging markets witnessed stronger capital spending in relation to sales than elsewhere up to and including the crisis period.

Subsequently, these ratios have been declining in complete contrast to the USA where they have been rising. The USA now invests the greatest ratio of infrastructure to sales. Japan's capital spending share is the smallest, and that of Europe is gradually declining. In relation to US sales, there is no sign of 'stagnation' in US infrastructure investment post the crisis, but the reverse appears to be the case in emerging markets. Europe and Japan invest less than the US and emerging markets.

- *Non-infrastructure (bottom panel of Figure 5):* The emerging market capital spending ratio to sales appears to be extremely capital extensive, dwarfing the investment of other regions. Notwithstanding the huge share, the trend for emerging markets is in the downward direction since 2009. The US ratio of investment to sales, while much smaller, has been rising since the crisis (inconsistent with stagnation views).

Figure 5. **Capital spending as a percentage of company sales**



Source: Authors' calculations, Bloomberg.

The company data analysed to this point appear to be broadly consistent with stagnation of sales of companies listed in the US, Europe and Japan. But this is not the case

for companies listed in emerging markets (including advanced country subsidiaries and minority stakes), where sales in non-infrastructure (mainly consumer goods) have been booming as has investment. This is broadly consistent with the view that investment and sales are shifting globally in a very meaningful way to emerging markets where local companies, western subsidiaries and minority interests are positioning to take advantage of global supply chains and trade in value added. The investment in emerging markets is also consistent with the heavy savings and investment development strategy described earlier.

What sort of infrastructure investment?

The regional percentage of total infrastructure spending in four different categories: telecommunications, cable and satellite; transport; electricity and pipelines; and oil and related industries are shown in the left panel of Figure 6. Investment as a share of sales by sector and country is shown in the right panel.

With its natural energy resource availability, the US listed companies devote a huge 45% of capital spending on infrastructure in the oil-related industries: oil exploration, oil refining, and oil and gas drilling. Exploration and production by integrated oil and gas firms have dominated investment in this industry in the USA, rising sharply from the mid-2000s (fracking has been a large part of this). Perhaps related to this has been strong growth in electricity, gas and pipelines and transport in the USA. The US appears to have moved on from the tech boom sector of telecom, cable and satellite.

Some emerging market countries also have huge natural resources, and the share of infrastructure investment in them has been rising continuously, though not as a share of sales (on the right hand side) as in the USA. Electricity gas and pipelines had been rising up until the crisis, but the trend has reversed downwards in recent years. Transport has the smallest share on infrastructure investment, and it has been very weak since 2009. While the overall share of telecom, mobile and satellite has been falling in EMEs, it is nevertheless still very important at around 40% of the total, and as a share of sales EMEs tend to invest more than other countries.

Japan and Europe, with poor natural resource endowments devote very little to oil-related industries. Instead, both Europe and Japan invest by far the largest proportion in telecommunications, cable- and satellite-related industries. Given its shortage of natural resources and dependence on other regions for gas, Europe's investment in electricity gas and pipelines is substantial, both as a share of the total spend and as a share of net sales within the sector. Japan also devotes a high overall share to transport, almost double anywhere else, which seems odd in a small heavily-populated geography, where diminishing returns may be problematic.

IV. What do the company financial data say about stagnation and risk?

Debt-to-enterprise-value ratios

Debt-to-enterprise-value percentages are shown in Figure 7 for infrastructure (top panel) and non-infrastructure (bottom panel).

Equity investment via company retained earnings is the prevalent form for investing by companies and is best suited for long-term sustainable growth: any failure of an investment project sees shareholders lose money and vice versa. Debt, on the other hand, while important at different times in the investment process and often useful for tax

Figure 6. **The structure of infrastructure investment: USA, Europe, Japan and emerging economies**

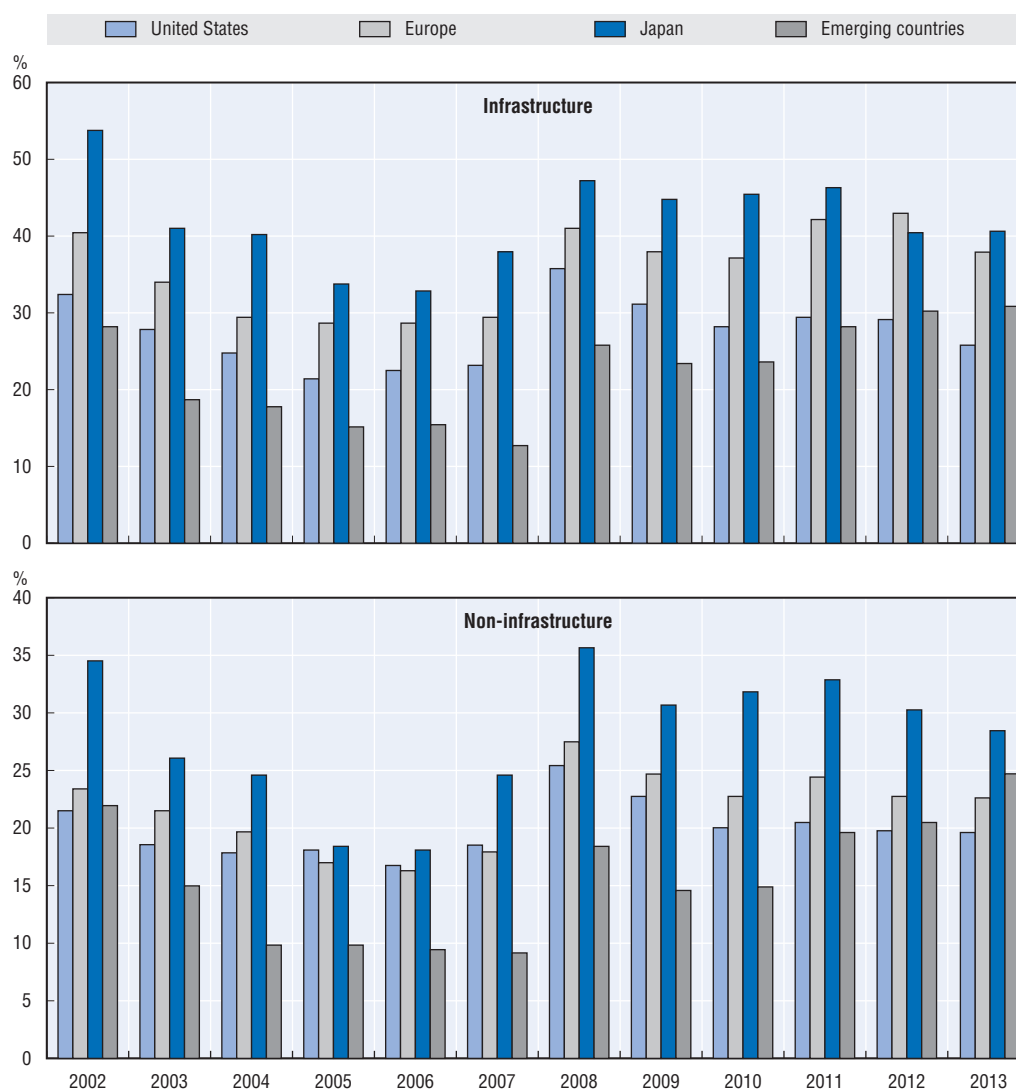


Source: Bloomberg, authors' calculations.

advantages, remains with the firm when investments fail. Debt-financed over-investment was a key characteristic of the Asia crisis of the late 1990s. Borrowing to pay dividends and buybacks, which is encouraged by the tax system, would also work towards a debt bias and against long-term investment.

A number of observations about debt-to-enterprise-value ratios stand out:

- Investment in infrastructure is associated with higher debt ratios than in other industrial groupings, due to: early stage financing needs; longer horizons for revenue benefits; and/or taking advantage of interest deductibility in the tax structuring of ownership and management rights. In emerging markets SOE banks also play a large

Figure 7. **Debt-to-enterprise-value ratios**

Source: Bloomberg, authors' calculations.

role in financing infrastructure and may operate with less-than-commercial terms. For all countries, debt-to-enterprise value is about 30% for infrastructure, and 20% for other industries (on average) over the period shown.

- While there is a lot of press about individual US companies borrowing too much to return capital to shareholders via dividends and buybacks (while foreign subsidiaries hold cash earnings and royalty payments abroad), this is not reflected as a general tendency in the overall data for debt-to-enterprise-value trends. The ratio for US infrastructure companies has been trending down since 2008, and at 25% of enterprise value is below the global average. For non-infrastructure US companies there is no sign of an upward trend.
- Japan (a country where stagnation has been at work for a long time) has the highest debt-to-enterprise-value by some margin (42% average for infrastructure and 28% for other industries). For both infrastructure and other industries debt ratios post the crisis are generally higher than mid 2000 levels.

- Europe is closer to Japan in debt structure for infrastructure, and the post-crisis levels appear more challenging than before. Non-infrastructure industries do not appear out of line with US ratios.
- The situation is very different in emerging markets. The debt ratios were low prior to the crisis (13% for infrastructure and 9% for other industries in 2007). Subsequently debt-to-enterprise-value ratios have been rising rapidly. For infrastructure the level has moved up quickly to over 30% of enterprise value, and for other industries to 25%, in both cases now approaching Japanese levels.

Encouraging sustainable long-term investment requires retained earnings to be put to work and initial public offerings (IPOs) for new companies and less reliance on debt. The global patterns are uneven, but it seems that the speed of acceleration of borrowing in emerging markets is much greater than elsewhere and reminiscent of 1990s Asia crisis trends.

Rates of return on equity

The rate of return on equity for infrastructure and for other industrial companies in the four country groupings are set out in panels one and two of Figure 8, respectively.

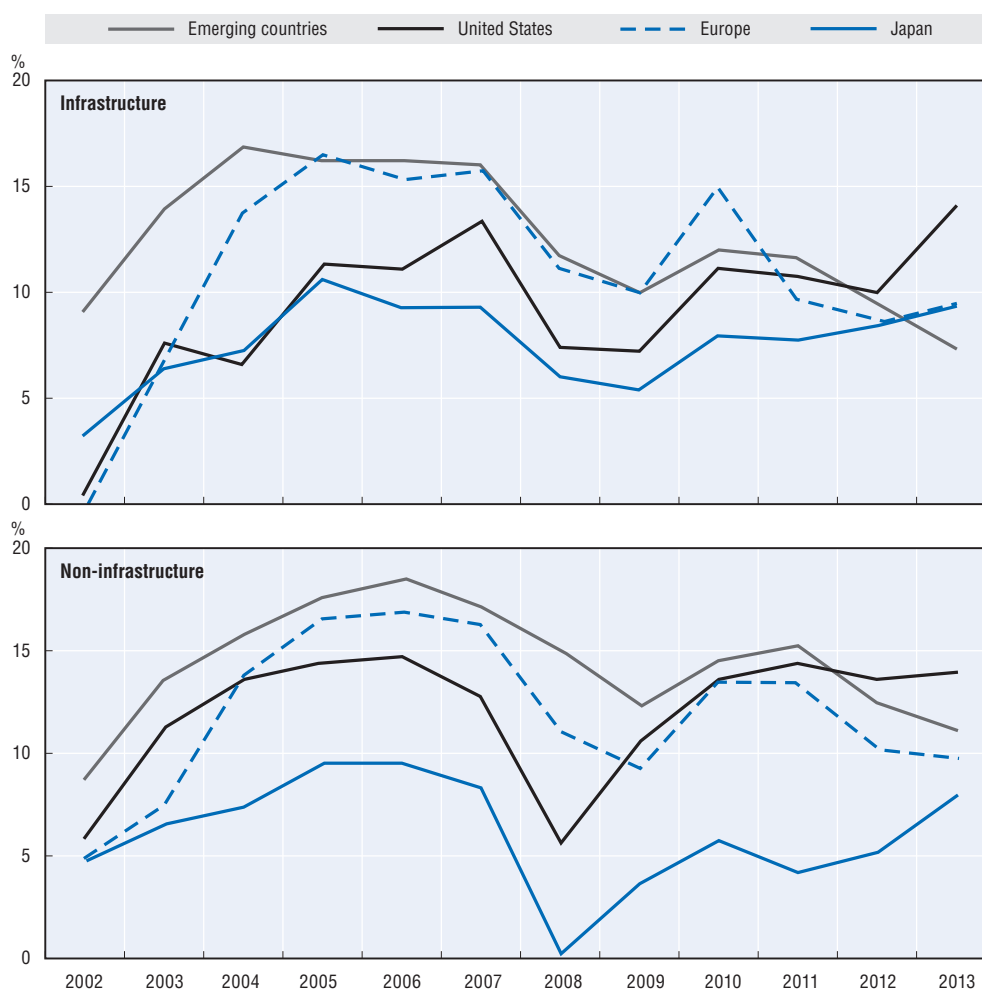
While the averages are around 10%, they vary over time and across regions. The over-investment notion mentioned by Glenn Stevens appears consistent with some of the ROE data. For example, it is immediately apparent that Japan, a country known for over-investment in previous decades, has average ROEs that sit well below that of other countries in non-infrastructure (though it has begun to move up in more recent years).

More generally:

- *The ROE for infrastructure:* is less cyclical compared to other industries. Consistent with the idea of over investment during the tech boom and bust, the ROE is extremely low in the early 2000s in OECD countries, and recovers in 2004. However, in both Europe and emerging countries the ROE appears to begin moving down from even before the crisis of 2008-09. The US ROE, on the other hand, has moved up since the crisis towards the highest level of the period shown (to 14%, very far from the notion of a falling natural rate). In the energy-related infrastructure in the US there appears to be no sign of stagnation.
- *The ROE for non-infrastructure:* is more cyclical, but also shows some broader downward movement in the emerging markets and Europe, whereas the US has fully recovered to pre-crisis levels of around 14%. Japanese ROEs appear to be rising, though it is still the lowest at just under 8%.
- *Some European detail on ROEs:* The above discussion has made reference to the special problems of Europe in running a monetary union in the face of asymmetric real shocks emanating from emerging markets. Two questions arise: do European countries like Switzerland and the UK that have floating exchange rates do better than their euro area counterparts; and do companies in countries in the south of Europe face greater ROE pressures compared to those in the north? Figure 9 shows the ROEs for the non-infrastructure sector of seven European countries. This sector is much larger in size than infrastructure and is more directly in competition with emerging markets.

Since peaking in 2005, following the recovery after the tech bust recession, ROEs have been under downward pressure in the euro-area countries, but particularly so in the case

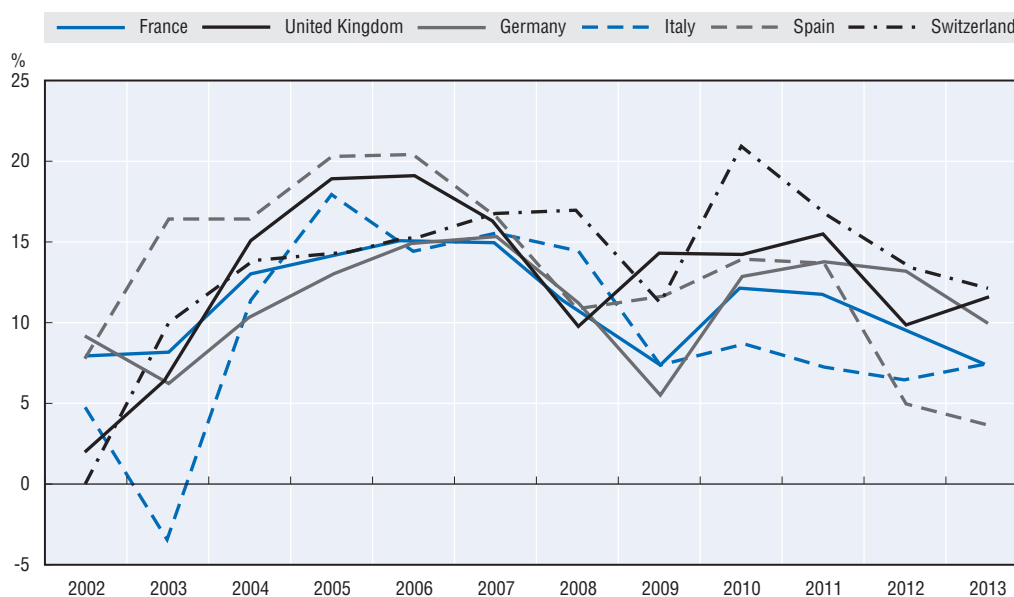
Figure 8. ROEs matched to the companies in each grouping



Source: Bloomberg, authors' calculations.

of France, Italy and Spain. Germany, a major exporter of high-technology capital goods, has held up rather well. The Swiss and UK economies with floating exchange rates have had the best overall performance of company ROEs in the face of the crisis and the pressures of globalisation. In 2013 the UK ROE for the companies covered is 11.5% and for Switzerland 12.2%, versus 10% for German companies, 7.5% for France and Italy and 3.7% for Spain.

The downward pressure on ROEs outside of the USA are consistent with a number of interpretations, but two hypotheses come to mind: i) possible over investment in non-infrastructure related to financial repression and the savings glut notion in emerging markets; and ii) possible governance problems in infrastructure that raise costs and reduce competitiveness (absence of a competitive banking system supported by capital controls, local content requirements, ownership restrictions, role for SOEs, competition restrictions in industry, etc.) in both advanced (particularly Europe)¹⁴ and emerging countries. These problems may be compounded in southern European problems which cannot adjust exchange rates in the face of structural differences with the north, and hence may have a need to adjust governance and competition impediments even more aggressively.

Figure 9. **European ROEs**

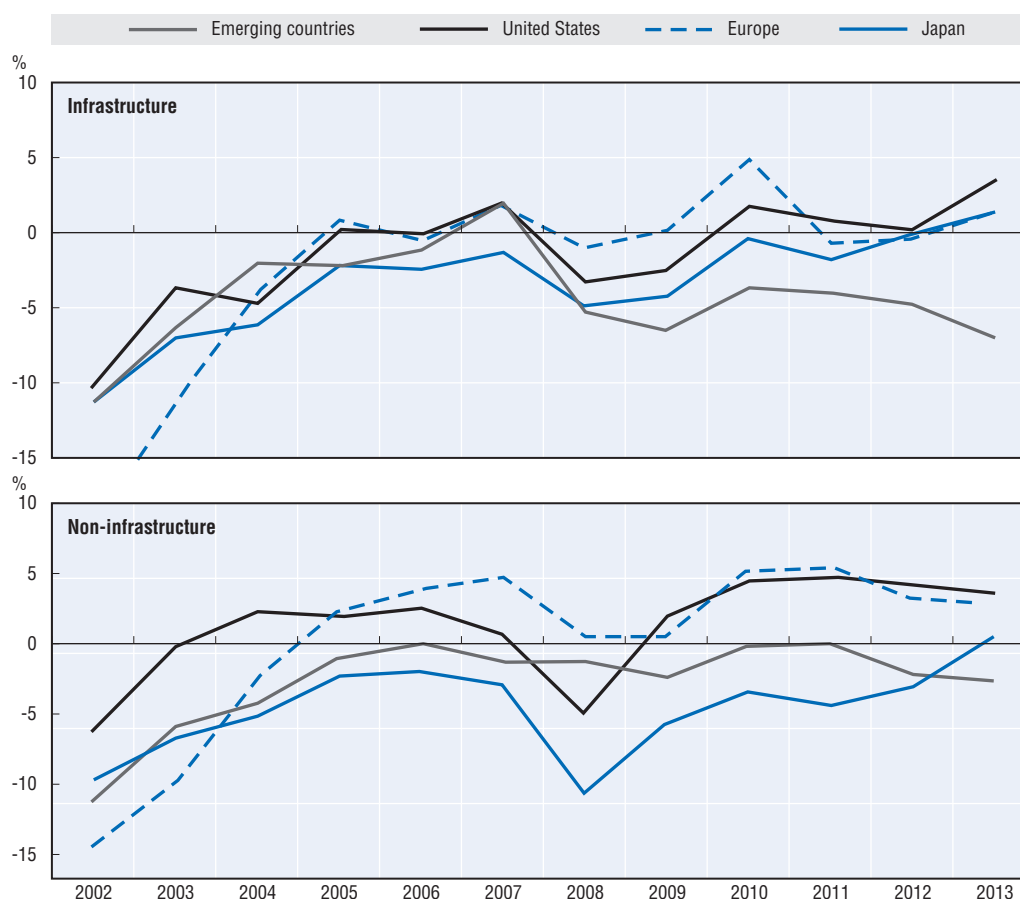
Source: Bloomberg, authors' calculations.

ROE minus the cost of equity

Retained earnings fund most private investment in both infrastructure and other industries. Countries with systems that rely more heavily on borrowing (Europe and Japan) have not had a good economic record on successful investment to support long-term growth. If the ROE is less than the cost of equity company managers cannot create value, the net present value of investments is negative, and they might be incentivised to return cash to shareholders. The cost of equity¹⁵ matched to the companies in this study is compared to the ROEs in Figure 10.

- **Emerging markets:** The ROE minus the cost of equity has recently become negative for both infrastructure and non-infrastructure companies, and noticeably so for the former. This reinforces the notion that there may be serious governance problems related to restrictions on ownership, SOE activity, etc. that make it difficult for private companies to add value in the infrastructure sector. This affects other industries directly. In the non-infrastructure sector (declining) returns are typically just below the cost of equity.
- **Japan:** The ROE is low though improving, but the cost of equity is also very low due to its low dividend yield and weaker earnings-per-share (EPS) growth. Managers in Japan have a greater incentive now to create value by retaining equity to invest than in the prior lost decades.
- **United States:** The data for the US do not seem consistent with stagnation theories. The clearly positive ROE and cost of equity differentials for both infrastructure and other industries are higher than elsewhere and suggest managers can certainly create value.
- **Europe:** lower ROEs matched with a somewhat lower cost-of-equity hurdle is the main cause of the positive differential (lower dividends, buybacks and EPS growth). There is clearly plenty of scope for companies to add value, yet they appear to be holding back.

Figure 10. ROE minus the cost of equity



Source: Bloomberg, authors' calculations.

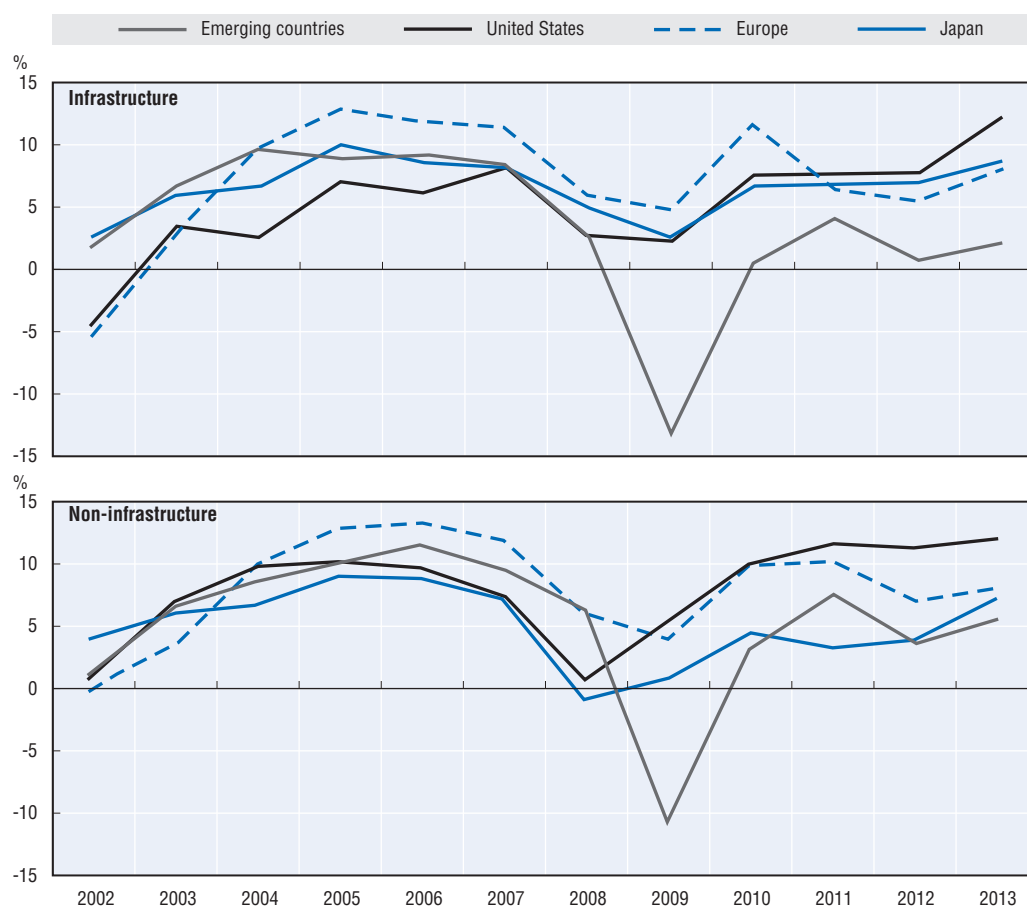
The ROE minus the cost of debt

Debt overall plays a lesser role in financing investment than retained earnings, but is a relatively more important source of external finance in infrastructure than in other industries. The ROE minus the AAA corporate rate in the jurisdiction concerned is shown in Figure 11 for infrastructure companies in the top panel and for other industries in the bottom panel.

Once AAA borrowing rates are subtracted from ROEs a similar configuration emerges for the infrastructure companies in the OECD countries, particularly since the crisis. Interest rates appear to have fallen far enough to be consistent with borrowing for an investment cycle. Japan already had low borrowing rates and the rise in the ROE has done most of the work in improving the attractiveness of debt-financed investment. The US and Europe have reduced rates substantially compared to pre-crisis years by around 300 basis points improving the relative attractiveness of borrowing. The US situation looks particularly outstanding in this respect, with the ROE rising and AAA rates falling.

The stagnation hypothesis appears to be more apparent in the case of emerging market infrastructure. Since 2008, the ROE spread to the AAA borrowing rate has remained low, and significantly below OECD countries. Here it has to be borne in mind that most EME corporate debt is in higher risk category than AAA, and for many companies the net present value of such investment projects would be negative. The “governance” factors

Figure 11. ROE minus the AAA corporate bond rate



Source: Bloomberg, authors' calculations.

discussed earlier reduce the ability of managers to provide value for shareholders. The combined influence of these factors increases risk premiums associated with investment in these countries and add to borrowing costs.¹⁶

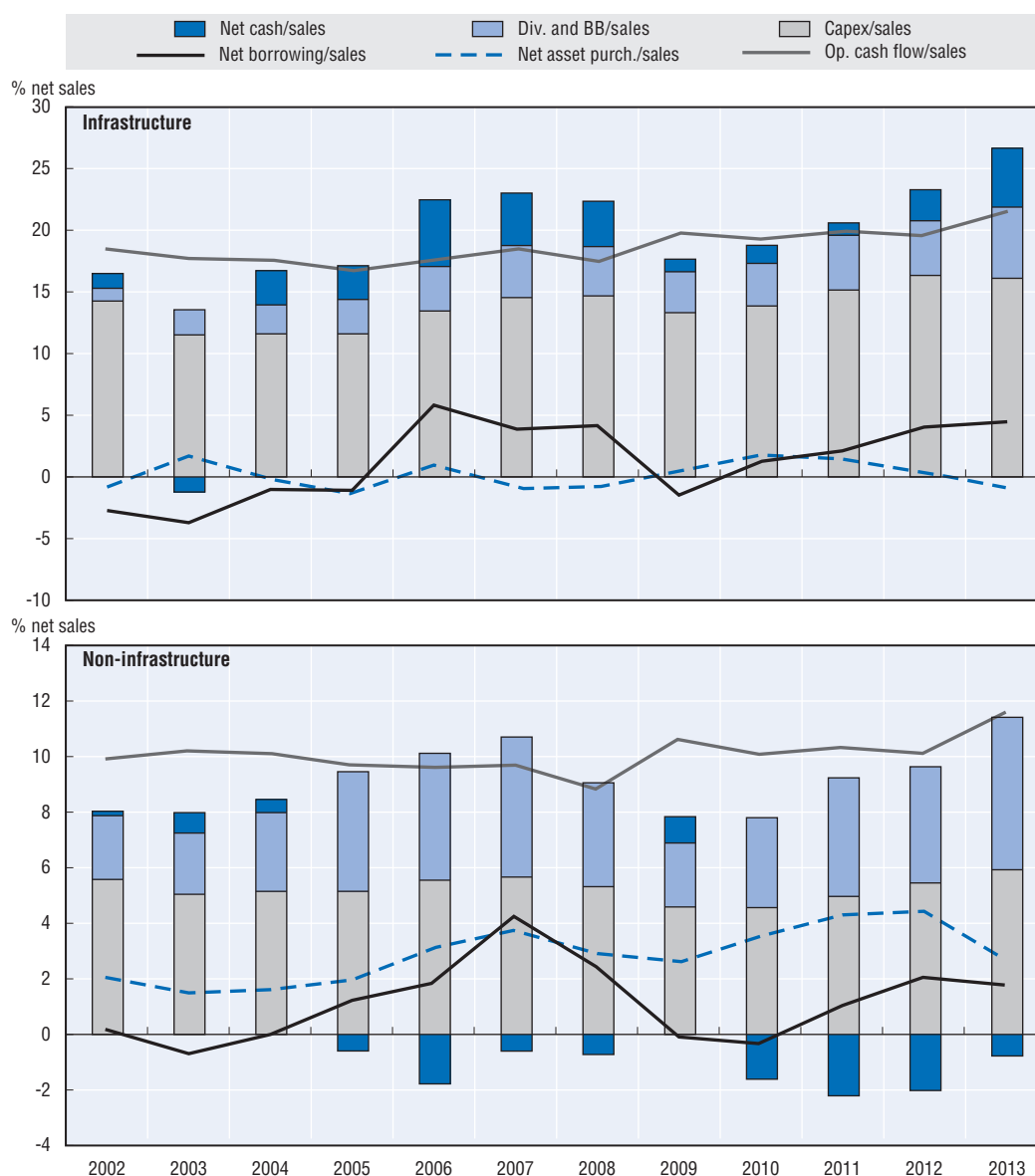
For non-infrastructure companies the broad picture is the same, though the emerging market spread to AAA interest rates looks a little more attractive than is the case for infrastructure, possibly helping to explain the noticeable difference in investment patterns between the two sectors.

United States company financing flows

The flow financing concepts for companies in infrastructure and non-infrastructure industries in the United States are shown in Figure 12.

- Operating cash flow as a share of sales is rising for both infrastructure (since 2005) and non-infrastructure industries (since 2008), and is more than sufficient to cover both investment and buybacks.
- Borrowing was strong just prior to the crisis in both sectors and has been picking up again since 2010. This seems to be broadly correlated to the cycle of dividends and buybacks. However, it is worth recalling from Figure 7 that the USA has the lowest debt-to-enterprise-value ratio of all the country groupings here, in both infrastructure and for

Figure 12. **Capital spending and related flow financing: United States**



Source: Bloomberg, authors' calculations.

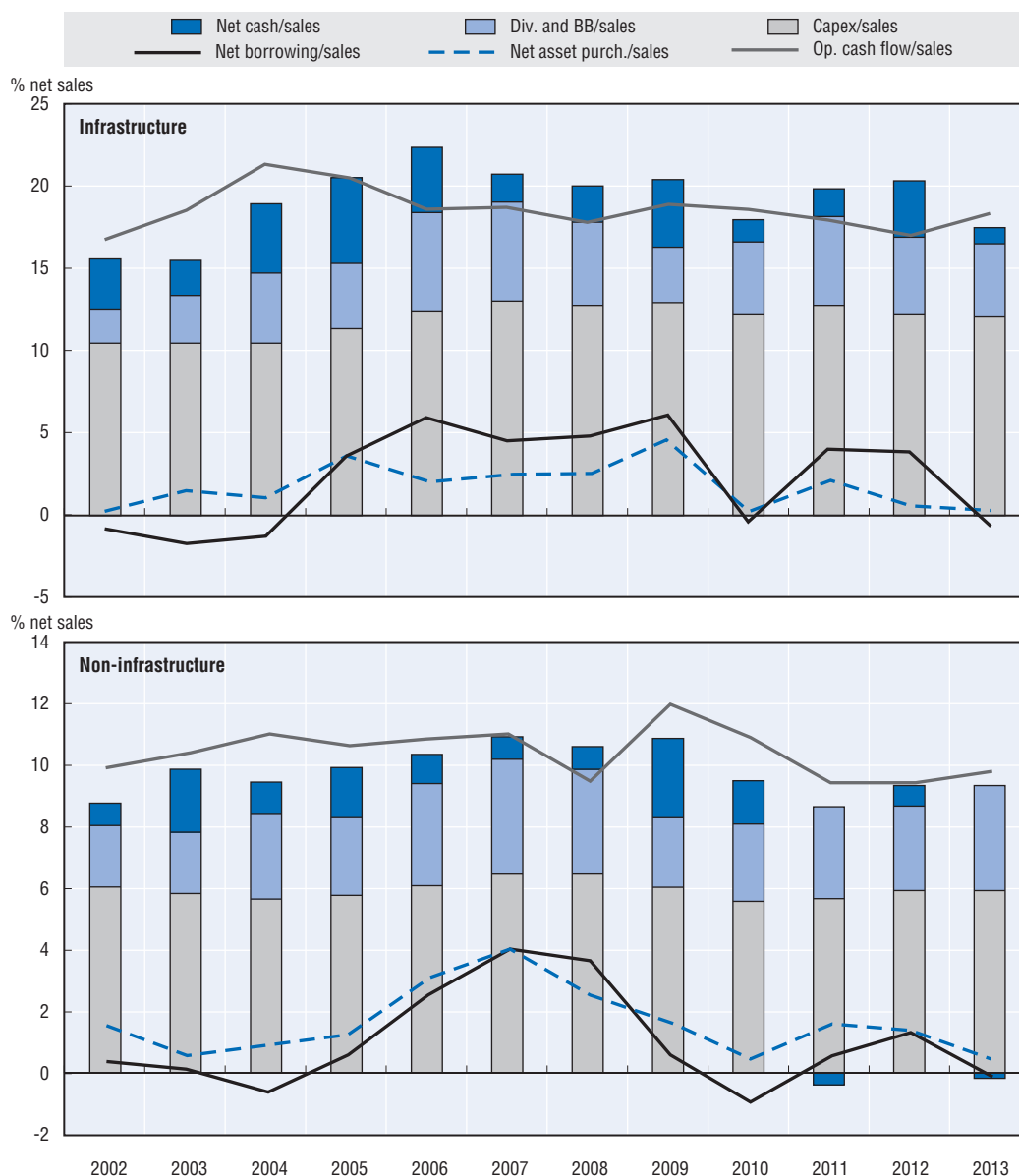
the non-infrastructure sector, and this borrowing is not likely to create sustainability problems for the future (particularly with foreign cash holding to offset it).

- Capital expenditure as a share of sales has been rising (as noted earlier) in both industry groups, but not to the extent feasible given the funding flows. For infrastructure industries, dividends and buybacks and cash accumulation are growing faster than borrowing and these could be reduced in favour of investment, but managers choose not to do so. For non-infrastructure industries dividends and buybacks are running at a truly remarkable pace; at about the same pace as capital expenditure itself in recent years. There would be plenty of scope to increase capital spending, but instead firms appear to be adjusting to demands of investors for greater yield (dividends and buybacks). In terms of activity in the USA, the zero interest rate encourages companies to run down cash balances and borrow to finance buybacks and to acquire other assets.

European company financing flows

The flow financing concepts for European companies in infrastructure and non-infrastructure industries are shown in Figure 13.

Figure 13. **Capital spending and related flow financing: Europe**



Source: Bloomberg, authors' calculations.

- Operating cash flows have not been rising like those in the USA. Infrastructure is flat and for non-infrastructure industries there is a clear downward shift after the crisis (following the aid provided via subsidies in 2009), consistent with margin pressures. Borrowing rose for two years in 2011 and 2012, also possibly helped by support measures in some countries in 2009 (including guarantees and interest rate subsidies). But borrowing has fallen back to zero for these companies in 2013.

- Dividends and buybacks are in line with those of the USA in infrastructure, but are only half of what US companies pay (per unit of sales) in non-infrastructure industries. While there is no marked tendency for this component to rise in aggregate in Europe, companies in the UK and Switzerland (not shown) do indeed look very similar to the USA, with very strong growth in buybacks. The accumulation of cash balances has declined, and the net acquisition of assets is much less than in the USA.
- As noted in Figure 7, debt/equity ratios are high for European infrastructure and this, combined with a weak economy, is not conducive to raising even more debt to fund capital expenditure. Debt levels are not especially high in non-infrastructure industries, and new borrowing is weak due to both (banking) supply and also to demand factors.

Japanese company financing flows

The flow financing concepts for Japanese companies in infrastructure and non-infrastructure industries are shown in Figure 14.

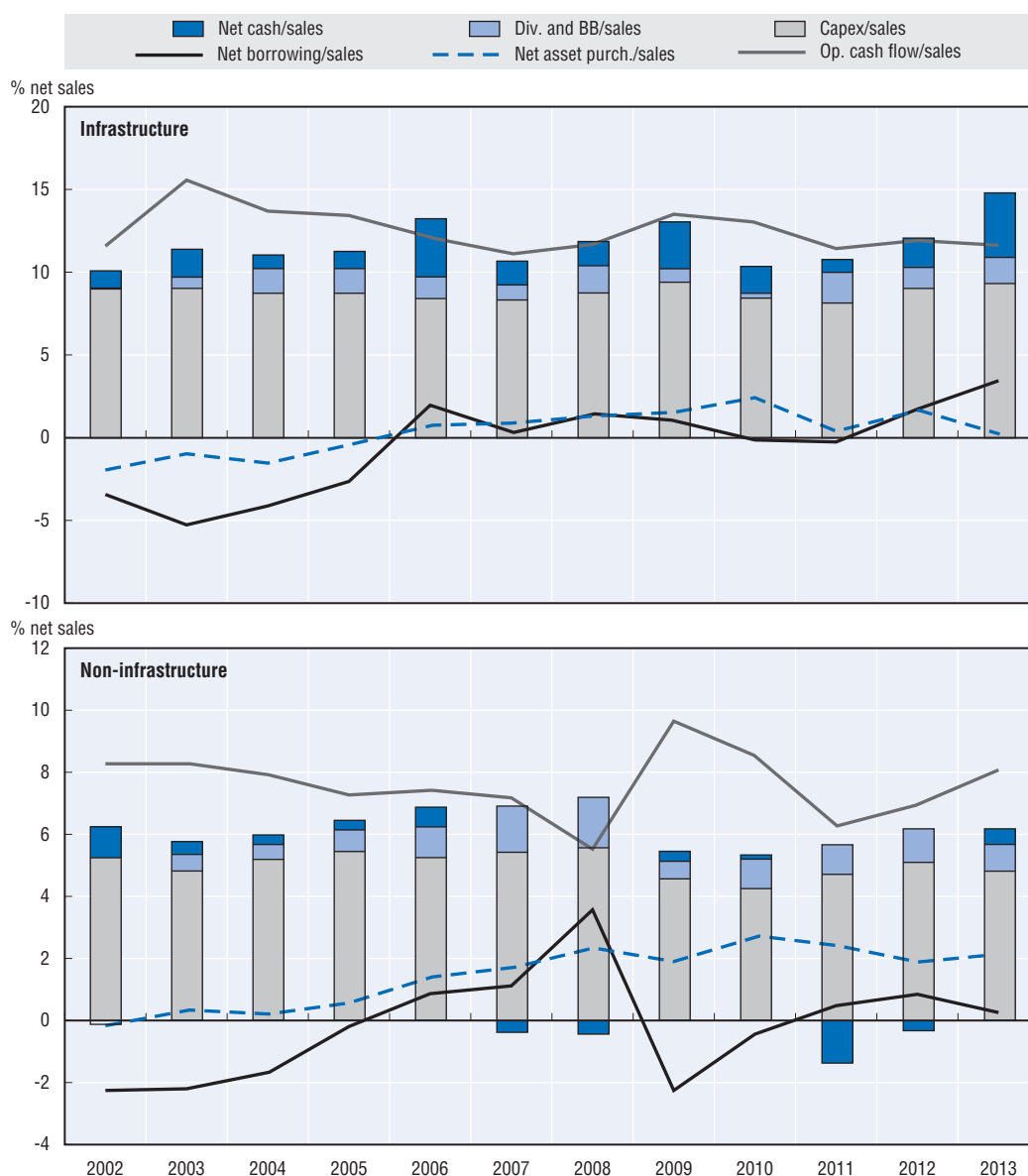
- Operating cash flow as a ratio to sales for infrastructure (in the top panel) is around 60% higher than for other industries (bottom panel). While this is also the case in other country groups, Japan is unique in that the ROEs are also much lower in non-infrastructure, suggesting that other factors are at work. Borrowing overall is flat in both sectors, as companies try to deal with restructuring from high debt-to-enterprise-value ratios from the past.
- For non-infrastructure companies operating cash flow is well in excess of any capital spending, and dividends and buybacks are miniscule compared to companies in other countries. Non-infrastructure companies appear to prefer acquiring other assets such as shares in other companies. This may reflect in part some effect of vertical *kieretsu* structures in Japan, as well as participation in global value chains.
- Tax rules appear to have a large impact on dividend repatriation from foreign subsidiaries. For non-infrastructure industries there is a sudden rise in operating earnings in 2009-10, presumably related to the tax reform at the time, which also results in a corresponding drop in borrowing. A greater role for foreign dividends may explain some of the rise in operating earnings in recent years. The tax reform of 2009-10 has had a big impact on the observed behaviour of multi-national companies (De Mooij and Saito, 2014). In 2009 most of the dividends received by parent companies were exempted from tax if the ownership in the foreign company is at least 25 percent. Foreign subsidiaries as a result began to remit more dividends to Japanese parents.

Like Europe, Japan is traditionally more debt financed compared to the USA, and its debt-to-enterprise-value ratios are higher in both infrastructure and other industries (see Figure 7). The Japanese corporate tax rate is often mentioned as a contributor to these high debt ratios compared to other countries (De Mooij and Saito, 2014). Presumably a major objective of policy in Japan would be to use tax reform and other measures reduce debt ratios and to make equity holdings more attractive. As noted earlier, investment in equity is ultimately the best way to fund long-term investment.

Emerging market company financing flows

The situation in emerging markets shown in Figure 15 is quite different to that in advanced countries.

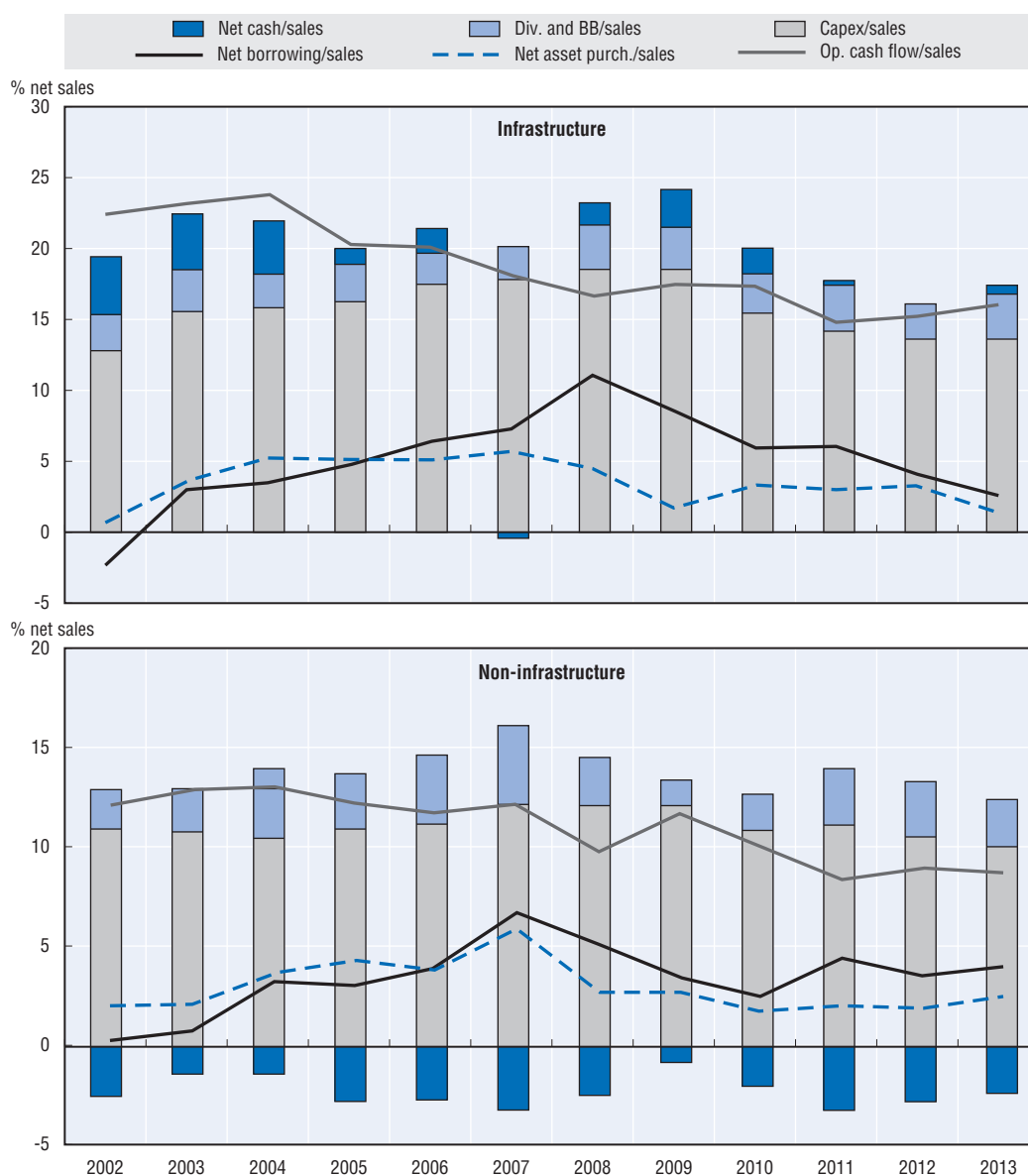
Figure 14. **Capital spending and related flow financing: Japan**



Source: Bloomberg, authors' calculations.

Prior to the mid 2000s operating cash flow as a share of sales was ample to fund capital spending and dividends and buybacks in both sectors. However, from 2004 operating cash flow has been moving down continuously, even ignoring the impact of the crisis. This emerging market experience is consistent with margin compression. Notwithstanding this, capital expenditure continued to rise as a share of net sales until 2008, in both sectors.

- In the case of infrastructure: Capital spending rose and peaked at 18.6% of net sales in 2008 (compared to 14.7% in the USA) and subsequently has fallen sharply to 13.8% in 2013 (while the USA has moved up to over 16%). Prior to 2006 operating cash flow was sufficient to fund capital expenditure and buybacks and, with a marked rise in borrowing (to 11% of sales), net asset acquisitions also rose. Subsequently, as the

Figure 15. **Capital spending and related financing: Emerging countries**

Source: Bloomberg, authors' calculations.

downtrend in operating cash flow followed, capital expenditure and acquisitions have been cut back and borrowing has been falling as a share of net sales.

- *For non-infrastructure companies:* Capital intensity seems to be extraordinary compared to other regions. It peaked at over 12% of sales in 2008 (compared to levels in the range of 5-6% for the USA, Europe and Japan), subsequently moving down to a still high 10% (versus a 4.8 to 5.9% range elsewhere in 2013). Net asset acquisitions following the crisis are lower than for the period before it. Operating cash flow declined, particularly after 2010, and capital expenditure and borrowing to fund it has remained firm (particularly in the past three years).

The debt-to-enterprise value ratio for infrastructure at 31% in Figure 7 is approaching the high levels for Japan and Europe (over 40%). The trend for non-infrastructure emerging

market industries is approaching the high debt-versus-equity bias of Japan: this ratio rose from a trough of 9% in 2007 to around 25% in 2013. The apparent sharp upward movement in debt versus equity in emerging markets is a concern. Emerging markets debt ratios appear to be moving exactly in the opposite directions to those in the USA: the US bias towards equity is more conducive to sustainable long-term investment than the emerging markets tendency towards higher debt.

V. “Openness” measures to capture potential “governance costs” for investors

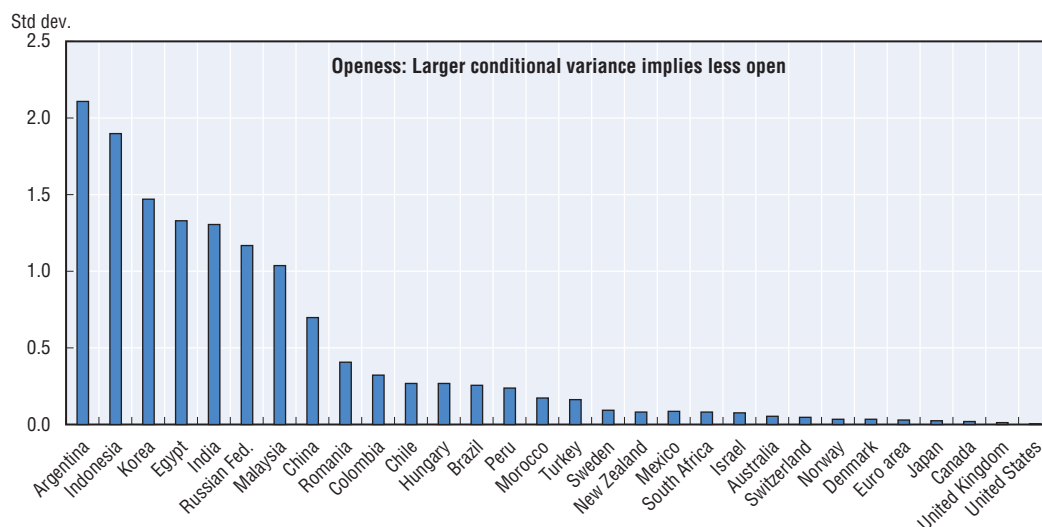
Government policies of financial repression (to help fund their own expenditures cheaply) and exchange rate targeting to support export market share carry direct cost for companies that use banks and capital markets to fund investment. Financial repression measures include the capping of interest rates, high bank reserve requirements, prescriptive policies for bank holding of government debt, government ownership of domestic banks and restrictions on the transfer of assets abroad via capital controls. Exchange rate targeting includes foreign exchange intervention combined with the use of explicit capital controls as well as the use of bank regulation and currency-based measures (that restrict the free movement of capital without having appeared to impose direct control on cross-border flows). These measures raise transactions costs in the capital markets faced by firms and reduce the breadth and depth of markets that lead to liquidity problems (particularly in crisis periods).

To capture the influence of such governance issues that reduce the openness of economies via their banking systems, the 1-year (average) conditional variance of Covered Interest Parity (CIP) is used (the technical details of which are set out in Annex 2). CIP is chosen as it excludes currency risk and focuses on return differentials between currencies which (apart from low transactions cost and white noise) should not be persistently present in a competitive and open financial system. Movements towards greater openness should see covered differentials diminish and their variance decline over time as arbitrage channels are allowed to operate. The extent of deviations from CIP and the speed with which they can be arbitrated away for the domestic banking system versus open-economy dollar prices can be modelled as an autoregressive structure in both the mean and the variance, and the estimated conditional variance can be used as a measure of openness of the banking system (3-month interbank interest rates and the matching foreign exchange forward and spot rates are used). The average portfolio-flow openness (as opposed to FDI openness) for the period 2010-13 is shown for a wide range of developed and developing countries in Figure 16.

VI. A panel study of investment based on the above factors

A panel regression study of the observations of company capital spending discussed in the above analysis provides some interesting insights into the determinants of infrastructure and other-industry investment in advanced versus emerging economies.¹⁷ A vast number of observations are used (i.e., a total of 60,741) and the methodology and results are set out in the Annex 2. The results discussed here may be found in Table A.2.3. The dependent variable is company capital expenditure as a share of net sales, so that it is imposed that capital spending of the company moves in line with its sales, as can be observed in Figures 3 and 4 above. The model is therefore seeking to explain capital spending deviations from company sales with a number of explanatory variables. These include those introduced earlier in the historical discussion: the ROE, the cost of equity, the

Figure 16. **Openness measure (2010-13) based on the conditional variance of CIP**



Source: Bloomberg, authors' calculations.

cost of debt, and the openness measure. For the emerging economies the sample of companies is broken into those with and without a non-deliverable forward (NDF) market. The latter NDF markets normally form when restrictions are so severe that foreign investors cannot participate in foreign exchange derivatives markets in the domestic economy. Instead, they are traded offshore in a dollar-based forward market that allows a shadow hedging market to function. GDP growth of the host country and is included as control variable for the accelerator mechanism to increase the robustness of the results.

The infrastructure sector results

The advanced economies model finds that the market-related variables in the cost of equity and measure of openness are supported by the data at the 5% level for infrastructure companies. The AAA bond rate in the domestic market is also significant at the 10% level. The ROE and GDP growth are not supported by the data in advanced economy infrastructure companies. These results are not meaningfully altered whether or not the large number of US companies is included.

The emerging markets model (full sample and NDF sample) finds that the ROE is not supported by the data. All of the other variables do find some support, particularly for the NDF sample. These more closed economies appear to have a larger impact on investment from domestic activity (as measured by GDP). The 1-year average conditional volatility of CIP is supported at the 1% for emerging economies. This suggests that emerging markets are not independent of the costs associated with financial repression and capital controls. Emerging market banks frequently rely on foreign funding and liquidity issues are often overwhelming in thin markets during crisis periods. These results are not meaningfully altered if the large number of Chinese companies is excluded from the data.

The non-infrastructure (general industry) sector results

The results for the *advanced economies model* for general industry are intuitively pleasing. The openness variable is not supported by the data which presumably reflects the

greater international orientation of non-infrastructure MNEs listed in advanced economies. Such companies have a broader set of choices as to the location of capital spending and intellectual property, for funding sources and for how earnings are used (for cash accumulation in low tax zones, capital expenditure, buybacks and the matching currency between revenues and liability flows). The openness measure will be less relevant for such companies compared to the more domestic-oriented infrastructure firms. The ROE, the cost of equity, and GDP growth are all strongly supported by the data at the 1% level. A multi-national company with foreign subsidiaries and affiliates is first and foremost subject to competition and market metrics are crucial for investment decisions compared to the regulated infrastructure firms and relatively closed emerging markets where rent seeking behaviour is often present.

The results for the *emerging markets model* are also of some interest. The ROE is not supported by the data so market metrics are less evident in decision making. This may reflect the greater role of the state and SOEs in the investment process. Companies in relatively more open emerging countries are similar to the general industrial sector of advanced countries in that the openness variable is not significant. The cost of equity, the AAA bond rate and GDP growth are all supported by the data at the 1% level. For the grouping of companies in countries with NDF markets the openness variable is significant at the 1% level. The cost of debt and GDP growth are correctly signed and significant at the 1% level, while the cost of equity finds no support. Borrowing from state-owned banks may play a bigger role in funding in these more closed economies.

VII. Drawing together some of the threads

Summary of trends

Based on an examination of trends in listed companies there appears to be no one generalisation about “stagnation” in the global economy that one can make. Instead, a number of interesting observations can be made based on an examination of the data from many thousands of listed companies.

- Equity is the most prevalent form of funding investment in all industries, but infrastructure companies use more debt financing compared to non-infrastructure companies. Funding infrastructure with debt is most prevalent in the two bank-oriented countries: Japan and Europe as compared to the USA.
- It does appear that infrastructure sales and investment are stagnating in most countries, but not in the United States to 2013, where heavy investment in oil-related companies is 45% of all infrastructure investment.
- Emerging market non-infrastructure company sales and investment are booming while (relatedly) they are stagnating in advanced countries. Advanced country companies also invest in affiliates in emerging markets, as global value chains and the tax-related location of intellectual property, royalties and earnings are used to create shareholder value.
- Emerging markets are seeing a marked decline of operating cash flow (net income adjusted for distorting accruals) per unit of sales, symptomatic of margin pressure. Company ROEs are weakening. These observations are consistent with over-investment and the misallocation argument related to “governance” problems.
- The ROE versus the cost of equity are the lowest in emerging markets. This is an indicator of over-investment. The heavy investment in emerging markets based on a different model of development may be a factor here, particularly in non-infrastructure

industries. Capital controls and exchange rate management may also augment the cost of debt and equity.

- Margins and ROEs appear to be rising in the US, improving in Japan but are declining somewhat in Europe (though not to the same extent in all countries). There is a clear difference between European countries with their own floating exchange rates (the UK and Switzerland) and euro-area countries. Southern European countries (which compete more with emerging markets) appear to face more ROE pressure.
- Emerging market operating cash flow is simply not enough to fund investment in non-infrastructure industries. Consequently, investment in infrastructure and other industries has been associated with a very rapid rise of debt at the expense of equity. For non-infrastructure industries debt-to-enterprise-value levels are rapidly approaching Japanese levels of indebtedness that were associated with years of over investment.
- Operating cash flow is not a constraint on investment in the USA or in other advanced countries (as it is in emerging markets). However, buybacks are very strong in the USA and are also firm in parts of Europe (and particularly the UK and Switzerland). These buybacks are at the expense of both investment and the wage gains that are needed for more inclusive growth. Where royalties and earnings are based abroad for tax reasons, tax deductible borrowing can be used to carry out buybacks in the home economy.
- A strong bias of infrastructure investment towards telecommunications and transport areas does not appear to be associated with the avoidance of stagnation trends (Japan and Europe). Lack of natural energy resources in Japan and Europe reduces the scope for diversification of infrastructure investment and may contribute to stagnation pressure.
- Operating cash flow per unit of sales is always larger in infrastructure investment, but this is not matched in respect to ROEs which are generally lower there than for other industries. This could suggest a poor allocation of investment, which is more likely to come about when investment is not based on market mechanisms, and is dominated by subsidies, ownership restrictions, product market regulations, and an excessive role of governments and SOE activity.

There appears then to be a twin paradox in the global economy when examining the detailed data of companies in advanced and emerging economies. Some are investing too much in non-infrastructure industries, which is driving down ROEs and creating margin pressure globally, while others carry out too little long-term investment in favour of buybacks and the accumulation of cash. Governance problems appear to be associated with the poor performance of the infrastructure sector. A number of thoughts about policy follow the above observations about the data.

Removing obstacles to investment returns and reducing the cost of equity

Bankable returns that companies achieve (ROEs) and the cost of capital (both debt and equity) were found to be key factors in investment, particularly in the larger general industrial sector, in the econometric results. General industry is much larger than infrastructure and its growth is needed to increase demand for the latter. Easy monetary policy that reduces interest rates and boost share prices can therefore be helpful. However, an excessive reliance on easy monetary policy may become counterproductive. Asset prices and borrowing can go too far, setting up potential future crisis situations. Too low interest rates in advanced economies also lead to poor investment choices (such as excessive investments in real estate) and may also lead to an inter-temporal misallocation of resources. Monetary

policy needs to be balanced with policies that improve bankable returns to investment. Greater competition, freer trade and regulatory and tax reforms come to mind.

Market metrics appear to be less powerful in infrastructure generally, and particularly in the more closed emerging economies. There is a need to remove obstacles to competition and market forces. Impediments to efficient profitable investment include: restrictions on foreign ownership; lack of competition that leads to rent-seeking behaviour; poor corporate governance;¹⁸ lack of competitive neutrality with respect to SOE involvement in the economy; corrupt government procurement processes; lack of competitive neutrality between public and private companies; local content requirements (OECD, 2015a); political interference in the pricing of public goods (relevant for infrastructure); legal delays and excessive court costs; costly micro regulations that restrict access to markets; and so on. These distorting factors are present in both advanced and emerging markets. Such conditions complicate efforts to improve productivity and they add to costs for other industries.

The accelerator mechanism

The results in the panel study also found that the GDP accelerator mechanism was important, particularly for general industry. Policies that enhance stable crisis-free GDP growth and avoid beggar-my-neighbour strategies are essential, including *inter alia*: open world trade, non-distorting supportive economic policy; completing regulatory reform in the financial sector and normalising interest rates, thereby giving companies a better picture of what the exit from the policy responses to the crisis might actually look like.

Financial market openness and avoiding emerging market crises

While financial repression may be necessary in the early stages of economic development (to harness savings and investment) a closed financial system appears to impose costs that soon become a negative factor for growth. Restrictions affecting financial market openness were found to be a significant negative factor for corporate investment in the above econometric findings. For emerging markets the cost of funding via debt and/or equity is directly affected by financial repression. Furthermore, capital flight is more prevalent in such countries during crisis periods. Ultimately, reducing financial repression and particularly capital controls will have to be an essential element of building a framework for sustainable global growth.¹⁹

Unsustainable corporate buyback strategies in western countries

Executives of non-infrastructure companies in the USA, the UK and Switzerland are increasingly rewarding shareholders with short-term share price gains via buybacks at the expense of long-term investment. With very low interest rates and tax incentives to do so, executives of firms carry out buybacks rather than investing for the long term. By doing so they drive the share price up and reduce the cost of equity (via the reduced dividend yield) in relation to the ROE, raising the scope to create more value in the same way, and often with institutional investors cheering them on. But this is a self-defeating mechanism, as it occurs at the expense of the long-term investment that is necessary to promote higher potential growth and the asset backing needed to support ageing populations (pensions and health care) in the future.

Buybacks benefit company executives and mutual fund managers (whose performance is measured over short periods) both of whom are rewarded with stock options and awards.

A typical executive of a large firm has something like 80% of his or her compensation derived from equity participation (Lazonick, 2014). Buybacks enable executives more easily to meet quarterly and or annual EPS targets on which their remuneration is based. Driving up the share price to push stock options 'into the money' increases the personal gain of executives, while reducing the scope for investment. Where this is permitted to be carried through by off-market share purchases at fixed price or via a Dutch auction tender process, there is a strong possibility of discrimination amongst shareholders.²⁰

Driving down the number of shares outstanding and pushing up the short-term share price in these ways does not benefit the economy in the longer run. The policy options to deal with this include:

- Revisiting corporate law and regulatory rules concerning buybacks, and in the limit to restrain them directly.
- Revisiting executive option and share allocation schemes to align them with long-term investment objectives, as opposed to EPS targets.
- Reducing the attractiveness of borrowing to carry out buybacks. Monetary policy normalisation and the tax treatment of interest costs, capital gains and dividends are most important in this respect.

There are many costs associated with regulations, listing requirements, risk controls and reporting that not all smaller companies can afford – capacity building and simplification in the SME sector can help to reduce these costs. Market rules (such as tick sizes) and the increased use of new technology (electronic and dark exchanges, high frequency trading and passive funds management) have far reaching implications for price discovery and hence for the allocation of investment and the ability of firms to carry out IPOs. These rules need further attention by policy makers.

Avoiding another emerging market crisis and rebalancing the global economy

A particular concern in the above analysis of corporate data is that investment appears in general to be less efficient in emerging markets. ROEs are declining and have become too low versus the cost of equity and debt. At the same time, borrowing to finance investment appears to be very strong in the general industrial sector of emerging markets. These were ingredients of the Asia crisis.

Addressing problems in the international financial system would aim to allow more scope to normalise interest rates in advanced economies, where low rates have been a response to the damage to the traded goods sector caused by under-valued emerging market exchange rates,²¹ and would help to reduce the inefficiency of investment in emerging economies. In short, there may need to be a new Bretton-Woods-style conference to deal with the damaging incompatibility of very different economic and financial systems and a full reform of the international monetary system.

Notes

1. Amongst many examples see Krugman (2012) and Krugman (2014).
2. See the OECD-WTO-UNCTAD reports to the G20 on new restrictive measures (2014).
3. As drawn to make these points in Krugman (2012).
4. There is no arbitrage to equalise covered returns globally. Strong capital controls that take many direct and hidden forms ensure that these conditions (e.g. covered interest parity) don't hold.

5. These ideas are developed in Blundell-Wignall and Roulet (2014), and some of the analysis there was used in OECD (2014b).
6. See OECD (2013a), OECD (2015b) and Della-Croce and Sharma (2014).
7. See OECD New Approaches to Economic Challenges work, OECD (2014).
8. Via Heckscher-Ohlin mechanisms.
9. Bernanke (2005) has referred to the issue of a saving glut. This is estimated to be worth some 300 basis points to the end of 2013 in Blundell-Wignall and Roulet (2014).
10. See OECD (2014b), and Weild, Kim and Newport (2013).
11. See Blundell-Wignall and Roulet (2013) where the incentive to buybacks is modelled.
12. See OECD STAN, the database for structural analysis. <http://stats.oecd.org/Index.aspx?DataSetCode=STAN08BIS>.
13. This leaves aside private equity companies, but since there is arbitrage between the listed and unlisted sector this should be quite representative as to what is happening.
14. This may be a north-south issue in Europe too. Southern countries compete more with emerging markets and are subject to greater margin pressure than the higher technology north. The south seems to have been less able to make structural reforms to improve governance issues and bridge competitiveness gaps.
15. The cost of equity is the cost to the investor of retaining a dollar of earnings for investment and the ROE would need to be greater in order to create shareholder value. It is measured here as the dividend and buyback yield plus the underlying trend in EPS growth for each company.
16. Blundell-Wignall and Roulet (2014) in a panel regression study of global companies show that capital control restrictions, measured by the conditional variance of deviations from covered interest parity, have a significantly negative impact on company investment.
17. Annex 1 provides further details about the sample used in the regressions. A co-integration and error correction approach is used. The error correction results imply causal relationships.
18. Where mitigating risks requires the public sector to fill gaps via public-private partnerships it is essential to have the right governance structure of boards. The way in which the board is composed, and the role of the governments as providers of capital, needs to be clearly defined. The OECD has developed a useful set of principles to help guide policymakers in these respects. See OECD (2013a), and OECD (2013b).
19. See Blundell-Wignall and Roulet (2014). Capital controls are shown to have a highly significant negative effect on investment.
20. For example favouring professional versus retail holders, and amongst all shareholders, depending on capital gains and income tax rates where dividend imputation is available.
21. This key global issue is not so much about overall current account imbalances which are also affected by saving-investment imbalances in the government and household sectors as opposed to the corporate sector. It is about where investment and jobs are located in the private sector. There is a need for less financial repression and more consumption and open trade in emerging economies so that the gain from trade can be achieved more fruitfully for all players.

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ANNEX 1

Data and sample description

Two different sets of data are used in this paper to establish the stylised facts: national accounts data for annual real gross fixed capital formation are extracted from the OECD STAN Database for structural analysis over the period 1980-2010; and private company data based on the Bloomberg World Equity Index including 9 403 listed companies in 75 countries and 104 sectors over the period 2002-13. The 44 infrastructure sectors include 1 328 companies (i.e., 848 in advanced economies and 480 in emerging economies) and the 60 other sectors excluding financial companies include 8 075 companies (i.e., 5 104 in advanced economies and 2 971 in emerging economies). Table A.1.1 and Table A.1.2 below present the number of companies by sector and country.

Table A.1.1. **Distribution of companies by sector and country**

Advanced economies	Infrastructure sector	Other sectors (excl. financials)	Emerging economies	Infrastructure sector	Other sectors (excl. financials)
Australia	33	159	Argentina	2	13
Austria	4	32	Bahrain	1	1
Belgium	8	35	Bosnia and Herzegovina	2	35
Canada	60	225	Brazil	32	129
Chinese Taipei	15	211	Bulgaria	1	5
Cyprus ²	3	7	Chile	14	38
Czech Republic	3	5	China (People's Republic of)	142	1 222
Denmark	10	38	Colombia	7	11
Estonia	1	1	Croatia	2	19
Finland	4	54	Egypt	5	48
France	35	173	FYR of Macedonia	2	6
Germany	25	176	Gabon	1	0
Greece	13	41	Hungary	1	3
Hong Kong, China	37	210	India	47	209
Ireland	2	30	Indonesia	7	59
Italy	22	82	Israel	7	71
Japan	59	890	Jordan	5	8
Jersey	2	5	Kenya	1	2
Lithuania	1	0	Korea	19	162
Luxembourg	2	13	Kuwait	3	30
Monaco	1	1	Malaysia	22	59
Netherlands	13	71	Mexico	12	59
New Zealand	12	13	Montenegro	1	1
Norway	23	31	Morocco	2	10
Portugal	6	14	Oman	1	4
Singapore	19	83	Pakistan	3	19
Slovenia	2	14	Peru	3	24
Spain	18	83	Philippines	12	31
Sweden	8	99	Poland	9	34
Switzerland	9	111	Qatar	6	10
United Kingdom	65	355	Romania	4	64
United States	333	1 842	Russia	51	192
			Saudi Arabia	3	55
			Senegal	1	0
			Serbia	3	67
			South Africa	5	76
			Sudan	1	0
			Thailand	18	71
			Turkey ¹	5	53
			Ukraine	8	38
			United Arab Emirates	5	18
			Venezuela	1	1
			Viet Nam	3	14
TOTAL	848	5 104	TOTAL	480	2 971

1. Footnote by Turkey.

The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island.

Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the "Cyprus issue".

2. Footnote by all the European Union Member States of the OECD and the European Union.

The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Source: Bloomberg, authors' calculations.

Table A.1.2. **Distribution of companies by sub-sectors**

Infrastructure sector	Number of firms	Other sectors (excl. financials)	Number of firms
Airport Development/Maintenance	26	Advertising	28
Cable/Satellite TV	28	Aerospace/Defense	55
Data Processing	16	Agriculture	58
Electric-Distribution	28	Airlines	60
Electric-Generation	60	Apparel	145
Electric-Transmission	19	Auto Manufacturers	66
Energy-Alternate Sources	83	Auto Parts/Equipment	189
Environ Monitoring	2	Beverages	93
Gas-Distribution	59	Biotechnology	94
Gas-Transportation	2	Building Materials	334
Hazardous Waste Disposal	10	Chemicals	339
Independent Power Producer	14	Coal	79
Internet Infrastructure Software	5	Commercial Services	327
Marine Services	7	Computers	128
Medical-Hospitals	29	Cosmetics/Personal Care	23
Medical-Nursing Homes	6	Distribution/Wholesale	177
Non-Hazardous Waste Disposals	17	Electric	165
Oil Exploration/Production	138	Electrical Components/Equipments	194
Oil Refining/Marketing	49	Electronics	379
Oil-Gas Drilling	15	Engineering/Construction	299
Oil-Field Services	66	Entertainment	142
Pipelines	13	Environmental Control	98
Public Thoroughfares	50	Food	283
Recycling	14	Food Service	44
Research/Development	8	Forest Products/Paper	91
Retirement/Aged Care	3	Hand/Machine Tools	38
Satellite Telecom	3	Healthcare-Products	118
Schools	30	Healthcare-Services	50
Schools-Day Care	2	Holding Companies-Divers	40
Sector Fund-Energy	1	Home Builders	74
Seismic Data Collection	5	Home Furnishings	99
Stevedoring	1	Household Products/Wares	27
Telecom Services	71	Housewares	17
Telecommunication Equip	33	Internet	142
Telephone-Integrated	66	Iron/Steel	180
Television	33	Leisure Time	97
Transport-Equipement/Leasing	7	Lodging	97
Transport-Marine	97	Machinery-Construction/Mining	26
Transport-Rail	42	Machinery-Diversified	269
Transport-Services	62	Media	107
Water	30	Metal Fabricate/Hardware	197
Water Treatment Systems	30	Mining	263
Web Portals/ISP	17	Miscellaneous Manufacturing	117
Whsing-Harbor Transport Services	31	Office Furnishings	12
		Office/Business Equipment	27
		Oil-Gas Services	20
		Packaging/Containers	82
		Pharmaceuticals	184
		Real Estate	632
		REITS	238
		Retail	455
		Semiconductors	121
		Shipbuilding	20
		Software	132
		Storage/Warehousing	24
		Telecommunications	94
		Textiles	155
		Toys/Games/Hobbies	9
		Transportation	22
TOTAL	1 328	TOTAL	8 075

Source: Bloomberg, authors' calculations.

ANNEX 2

The determinants of capital expenditures: Empirical evidence for a global sample of non-financial companies

To investigate the determinants of firms' (excluding financial firms') capital expenditures, a fairly standard model is postulated, incorporating microeconomic and macroeconomic variables. The dependent variable is company's capital expenditure which is measured as a share of the firm's net sales.

The explanatory variables are:

- The return on equity (ROE) is the ratio of net income to total common equity of the company. It is a measure of a firm's ability to retain earnings for the purpose of capital expenditures. The capital expenditure variable is expected to have a positive relationship with this variable.
- The cost of equity is measured as the dividend yield of the company plus the trend rate of growth of earnings. A higher cost of equity discourages firms to retain earnings for the purpose of capital expenditures. The capital expenditure variable is expected to have a negative relationship with this variable.
- The cost of debt is measured as the AAA-rating corporate bond index of the country location of the company minus the one year government bond yield. A higher AAA bond yield compared to the risk free rate discourages firms from borrowing to increase their capital expenditures. The capital expenditure variable is expected to have a negative relationship with this variable.
- Economic growth is measured by real GDP growth in the home country (GDP). It is the annual per cent change in real gross domestic product of the country location of the firms. The capital expenditures variable is expected to have a positive relationship with this variable.
- The 1-year average conditional volatility of Covered Interest Parity (CIP) is the conditional standard deviation calculated using a GARCH (1,1) model.¹ Along with interest parities, the conditional variance of CIPs might be a measure of dynamic capital mobility. Indeed, with greater capital mobility, not only covered differential rates but also the variance would decline over time. CIP is calculated using deliverable and non-deliverable forward rates.² The greater the volatility, the more CIP is deviating from the zero equilibrium. This phenomenon is observed in countries with strong capital control measures. Stronger controls on capital flows discourage firms to retain earnings for the purpose of capital expenditures. The capital expenditures variable is expected to have a negative relationship with this variable.

Estimation method and data

When economic theory suggests – as in the case of investment models – that there exists an equilibrium relationship between integrated variables, co-integration and vector-error-correction models (VECM) provide an efficient estimator to describe short-run dynamics. Beyond these pure econometric reasons, co-integration techniques and VECM are especially useful in modelling investment. As Hubbard and Hassett (2002) argue, a number of fundamental variables affecting investment move together over the business cycle. This causes simultaneity problems. Shifts in the investment function (often associated with the business cycle) imply a positive relationship between the user cost of capital and investment, while interest rate shocks cause negative correlation between the two. If the first dominates, the user cost elasticity will be small, and accelerator effects (the impact of output on investment) large. This problem could be circumvented by focusing on the long-run relationship instead. In addition, VECM allows a rich dynamic representation of the data, which often turns out to be very useful given the sluggish nature of capital stock adjustment and investment. In this paper Engel and Granger methodology is used.

All annual companies and market data are extracted from Bloomberg and Datastream. Macroeconomic data were also extracted from OECD and IMF Databases. The econometric analysis is run on a global sample of 8 774 listed companies from 56 countries and 104 sectors over the period 2002-13.³ Table A.2.1 presents some general descriptive statistics of the variables included in the model. Table A.2.2 contains correlation coefficients among all explanatory variables.

Table A.2.1. **Summary descriptive statistics of the sample**

	Mean	Median	Maximum	Minimum	Std. dev.
Capital expenditures (% net sales)	11.52	4.87	199.88	-40.77	19.84
ROE	10.54	10.25	100.00	-99.94	18.65
Cost of equity	10.12	8.63	30.00	0.50	7.32
Cost of debt	1.42	1.17	10.85	-1.61	1.73
Real GDP growth rate	3.66	2.80	28.50	-14.80	3.96
1Y average conditional vol. of CIP	0.27	0.03	2.92	0.00	0.44

Source: Bloomberg, Datastream, authors' calculations, IMF (2002-2013). All variables are expressed in percentage.

Table A.2.2. **Correlations among the main explanatory variables**

	ROE	Cost of equity	Cost of debt	Real GDP growth rate	1Y average conditional vol. of CIP
ROE	1.00				
Cost of equity	0.10	1.00			
Cost of debt	0.02	0.03	1.00		
Real GDP growth rate	0.08	0.17	-0.12	1.00	
1Y average conditional volatility of CIP	0.03	0.19	-0.03	0.45	1.00

Note: Correlation coefficients are calculated using a balanced sample. Figures in italics indicate values of the T-statistics that test for null hypothesis of Pearson's coefficients of correlation equal to 0.

Results

Regressions are run on the global panel of non-financial companies for the years 2002 to 2013, involving some 63 482 observations. This study focuses on the differences which may exist between firms operating in the infrastructure sector and firms operating in other economic sectors in alternately advanced and emerging economies. In addition, regressions are run including countries with only a deliverable forward (DF) market or countries with only a non-deliverable forward (NDF) market.⁴ The results are shown in Table A.2.3.

Table A.2.3. The determinants of investment of non-financial companies focusing on the impact of the cost of equity

Co-integration equation (dependent variable: capital expenditure, % net sales)

Variables	Infrastructure			Non-infrastructure			
	Advanced economies – DF	Emerging economies – DF and NDF	Emerging economies – NDF	Advanced economies – DF	Emerging economies – DF and NDF	Emerging economies – DF	Emerging economies – NDF
<i>ROE</i> : Ratio of net income to total common equity of the company	0.004 (0.33)	-0.02 (-0.71)	-0.01 (-0.34)	0.02*** (3.49)	-0.01 (-1.12)	0.01 (0.63)	-0.02 (-1.51)
<i>Cost of equity</i> : Dividend yield of the company plus the trend rate of growth of earnings	-0.14** (-2.13)	-0.12 (-1.24)	-0.28** (-2.29)	-0.13*** (-3.19)	-0.15*** (-3.26)	-0.42*** (-4.60)	-0.04 (-0.68)
<i>Cost of debt</i> : Yield of AAA-rating corporate bond index of the country location of the company minus 1-year government bond yield	-0.23* (-1.80)	-0.28*** (-2.66)	-0.34*** (-2.65)	-0.62*** (-8.81)	-0.22*** (-5.58)	-0.30*** (-4.62)	-0.18*** (-3.58)
Real GDP growth rate	0.02 (0.31)	0.44*** (3.16)	0.82*** (4.98)	0.09*** (2.71)	0.17*** (3.77)	0.10*** (2.40)	0.20*** (3.49)
<i>1-year average conditional volatility of Covered Interest Parity</i> : Conditional standard deviation calculated using a GARCH (1,1) model	-0.06** (-2.31)	-0.04*** (-4.27)	-0.03*** (-3.17)	-0.01 (-0.85)	-0.01*** (-4.02)	-0.01 (-0.70)	-0.01*** (-3.75)
C	0.19*** (20.82)	0.22*** (11.45)	0.22*** (8.93)	0.11*** (22.46)	0.14*** (17.14)	0.17*** (9.84)	0.12*** (11.86)
R ²	0.73	0.54	0.53	0.64	0.54	0.63	0.52
F-Stat	19.49	7.04	6.94	14.45	7.95	10.57	7.56
Prob(F)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Durbin-Watson Stat.	1.26	1.27	1.27	1.44	1.44	1.24	1.46
Total obs.	5 416	2 726	2 319	36 533	18 721	2 672	16 049

Error correction equation (dependent variable: change in capital expenditure, % net sales)

Variables	Infrastructure			Non-infrastructure			
	Advanced economies – DF	Emerging economies – DF and NDF	Emerging economies – NDF	Advanced economies – DF	Emerging economies – DF and NDF	Emerging economies – DF	Emerging economies – NDF
<i>1 Year lagged value of VECM residuals</i>	-0.67*** (-23.32)	-0.66*** (-21.29)	-0.66*** (-20.61)	-0.80*** (-38.49)	-0.73*** (-30.23)	-0.66*** (-7.53)	-0.74*** (-27.34)
Δ <i>ROE</i> : Ratio of net income to total common equity of the company	0.05*** (4.33)	0.09*** (3.73)	0.09*** (3.21)	0.03*** (4.56)	0.07*** (8.96)	0.04* (1.69)	0.07*** (8.09)
Δ <i>Cost of equity</i> : Dividend yield of the company plus the trend rate of growth of earnings	0.002 (0.02)	-0.01 (-0.10)	0.09 (0.57)	-0.20*** (-4.76)	-0.01 (-0.11)	0.03 (0.32)	-0.03 (-0.47)
Δ <i>Cost of debt</i> : Yield of AAA-rating corporate bond index of the country location of the company minus 1-year government bond yield	0.04 (0.36)	-0.22*** (-2.38)	-0.20* (-1.69)	0.24*** (3.70)	0.10*** (2.41)	0.13* (1.62)	0.10* (1.78)
Δ Real GDP growth rate	-0.03 (-0.63)	-0.08 (-0.87)	0.02 (0.21)	0.04* (1.82)	0.01 (0.40)	-0.03 (-0.56)	0.05 (1.14)
Δ <i>1-year average conditional volatility of Covered Interest Parity</i> : Conditional standard deviation calculated using a GARCH (1,1) model	0.02 (1.42)	-0.01 (-1.03)	-0.01 (-1.23)	-0.01 (-0.94)	0.003 (1.52)	0.003 (0.70)	0.004 (1.58)

Table A.2.3. The determinants of investment of non-financial companies focusing on the impact of the cost of equity (cont.)

Error correction equation (dependent variable: change in capital expenditure, % net sales)

Variables	Infrastructure			Non-Infrastructure			
	Advanced economies – DF	Emerging economies – DF and NDF	Emerging economies – NDF	Advanced economies – DF	Emerging economies – DF and NDF	Emerging economies – DF	Emerging economies – NDF
C	-0.01 (-0.67)	-0.01 (-0.77)	-0.03 (-1.30)	0.02*** (3.17)	-0.01 (-1.53)	-0.02 (-0.97)	-0.01 (-0.90)
R ²	0.41	0.41	0.41	0.46	0.43	0.42	0.43
F-Stat	4.60	3.70	3.75	5.95	4.33	3.69	4.43
Prob(F)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Durbin-Watson Stat.	1.74	2.05	2.07	1.94	2.04	2.22	2.02
Total obs.	4 642	2 235	1 909	31 832	15 773	2 181	13 592

Note: This table shows the results of estimating a VECM model for an unbalanced panel of 8 774 listed companies from 56 countries and 104 sectors over the period 2002-2013. Cross-section and time fixed effects are used in the regressions as is the White diagonal covariance method. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Notes

1. If we denote y generically as the CIP, a time-series model that captures the autoregressive (AR) structure in both the mean and the variance can be written as:

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \dots + \alpha_h y_{t-h} + \xi_t \quad \text{with } \xi_t \sim N(0, \sigma_t^2)$$

$$\sigma_t^2 = \beta_0 + \sum_{t=1}^q \beta_1 \xi_{t-1}^2 + \sum_{t=1}^p \beta_2 \sigma_{t-j}^2$$

where $\sum \beta_1 \xi_{t-1}^2$ is the ARCH term (the squared error term in the previous time period) of q order, generally being news about volatility from the previous period; $\sum \beta_2 \sigma_{t-j}^2$ is the GARCH term (the conditional variance in the previous time period) of p order. Thus, y_t follows an AR(h) process with a conditional variance equation described by a GARCH (p, q) process. The GARCH model is implemented via maximum likelihood estimation of the log-likelihood function. The estimated conditional variance σ_t^2 will give us an indication of the evolution of capital mobility. In this paper, GARCH(1,1) model is adopted, which is sufficient to capture the dynamics of the conditional variance of y . The properties of the dataset are examined before the analysis of the empirical results. The Phillips-Perron (PP) test is employed. It is found that the null hypothesis of one unit root can be rejected in all of the time series. CIP time series are driven by AR(1) processes. It is also identified that the estimated coefficients are significant and all the diagnostic statistics are reasonable.

2. CIP is calculated using deliverable forward (DF) rates for countries with only a DF market. For countries with only an NDF market and for countries with both DF and NDF markets, CIP is calculated using the NDF rate.
3. The sample presented in Annex 1 is restricted because of data availability to calculate the conditional volatility of conditional volatility of Covered Interest Parity (CIP). The following list details the 56 countries considered for this econometric analysis: Argentina; Australia; Austria; Belgium; Brazil; Bulgaria; Canada; Chile; China (People's Republic of); Chinese Taipei; Colombia; Cyprus; Czech Republic; Denmark; Egypt; Estonia; Finland; France; Germany; Greece; Hong Kong; Hungary; India; Indonesia; Ireland; Israel; Italy; Japan; Korea; Lithuania; Luxembourg; Malaysia; Mexico; Monaco; Morocco; Netherlands; New Zealand; Norway; Pakistan; Peru; Philippines; Poland; Portugal; Romania; Russia; Singapore; Slovenia; South Africa; Spain; Sweden; Switzerland; Thailand; Turkey; United Kingdom; United States; Venezuela.
4. All advanced economies in the sample have only a deliverable forward market. In addition, because the sample of companies operating in infrastructure sectors located in emerging economies includes a relatively low number of observations, the regression results are not presented in the paper as they might not be reliable enough.

Tracing the origins of the financial crisis

by
Paul Ramskogler*

More than half a decade has passed since the most significant economic crisis of our lifetimes and a plethora of different interpretations has been offered about its origins. This paper consolidates the stylised facts put forward so far into a concise and coherent meta-narrative. The paper connects the dots between the arguments developed in the literature on macroeconomics and those laid out in the literature on financial economics. It focuses, in particular, on the interaction of monetary policy, international capital flows and the decisive impact of the rise of the shadow banking industry.

JEL classification: A10, F30, G01

Keywords: Financial crisis, international capital flows, shadow banking

* Paul Ramskogler is an economist at the Austrian central bank, OeNB. This article is based on a more thoroughly documented report (Ramskogler, 2014). It intends to make the major findings of the report more accessible without providing its fuller details and more rigid analysis. The report was prepared while the author was seconded to the OECD New Approaches to Economic Challenges (NAEC) project. Its findings were presented and discussed at a dedicated NAEC seminar at the OECD in Paris on 22 September 2014. Input and comments by OECD staff on an earlier version of the report and by participants of the seminar are gratefully acknowledged. The author is solely responsible for any remaining errors. This work is published on the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries. This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Introduction and motivation

The economic profession was taken by surprise as a seemingly negligible turmoil, in what was considered to be a rather remote segment of the US mortgage market, turned into a global financial and economic crisis from 2007 to 2008. The serious repercussions triggered by these events are still felt today. As a result, the crisis will likely effectuate the most substantial paradigm changes in economic policy-making as well as in economic theory. Since the outbreak of the crisis, the question about its origins has dominated the policy and academic debate; the result being a plethora of articles investigating the roots of this major event.

This paper takes stock of the major results and synthesises the main insights of the first years of discussion. Its particular value added is that it brings together the arguments developed in the literature on macroeconomics with those laid out in the literature on financial economics.¹

We start with a brief discussion of supply-side factors in the creation of the US mortgage bubble. First, we will focus on the role of monetary policy and policy rates in stimulating banks' reliance on wholesale funding. After that, we will analyse how international capital flows and global imbalances contributed to the reduction in long-term interest rates and credit supply and focus on the insights gained from the difference between net and gross capital flows. Next, we will evaluate the arguments that point to the rise in inequality and its effects on consumer behaviour and mortgage demand. The second part of the paper continues with a discussion of financial sector factors. First, we will evaluate how the rise of institutional capital contributed to global capital flow imbalances. In the next step, we will analyse the role of the shadow banking sector as the crucial bypass for institutional capital into the mortgage market. Finally, we show how the combination of all these factors contributed to what could be called a classic 19th century-style bank run in a new disguise.

I. Macroeconomic factors

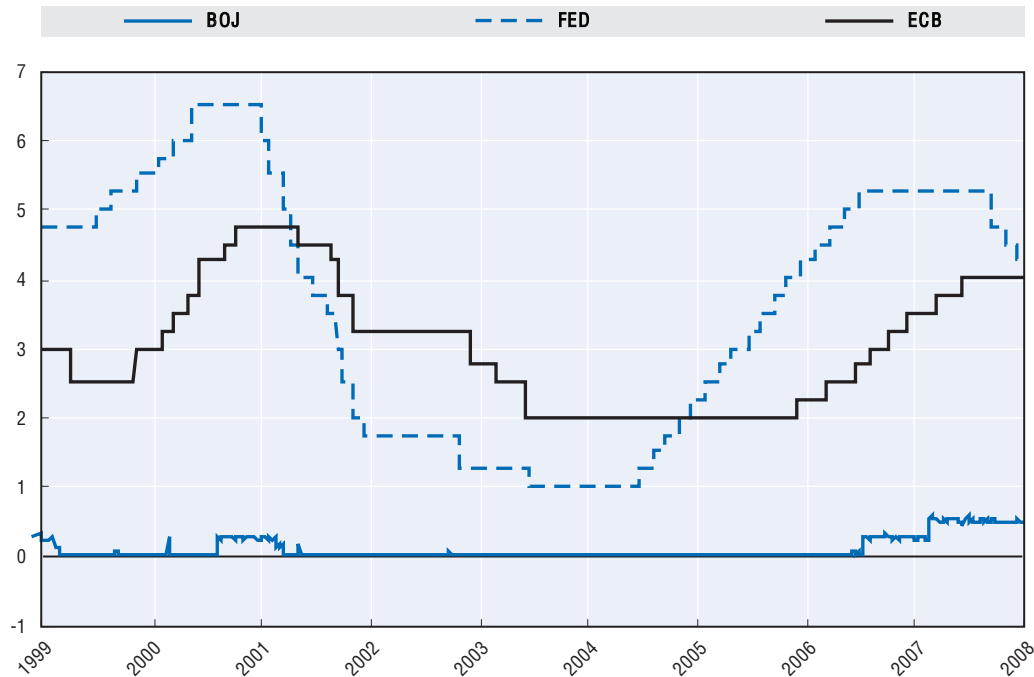
1. Policy rates and credit creation

The first important factor in the run-up to the crisis was the remarkable decline in short-term interest rates. Several factors contributed to this drop. First, starting from the early 1990s, central banks increasingly moved towards inflation targeting policies. This led to a situation in which Taylor rules – that model the interest rate as a function of the deviation from targeted inflation and the output gap – proved successful in empirically describing the behaviour of central banks. At the same time, the gradual opening of the Chinese economy and the fall of the Soviet Union constituted positive labour supply shocks to the world economy. In combination with the widespread decline in the bargaining strength of labour unions in the industrialised world, these developments exerted downward pressures on wages and thus on prices. On top of that, fundamental innovations in the IT industry boosted productivity in many sectors and further reduced the overall pressure on price growth.

As a result, there was a “great moderation” of price growth, and policy rates reached historically low levels (Figure 1). This secular decline in inflation also allowed central banks to aggressively slash interest rates even further once the asset bubble – that had been triggered by the boom in the IT sector – had busted. Growth – particularly in the United States – picked up quickly but unemployment remained high. Against the low inflation background, policy rates were thus left at very low levels and below the level implied by the Taylor rule.

Figure 1. **Policy rates**

In per cent



Source: Thomson Reuters.

Historically, situations in which policy rates are below the Taylor rule have been correlated with asset price increases in many economies (Ahrend et al., 2008), and it appears that deviations from the Taylor rule may also have added to the recent surge in US housing demand (Jarocinski and Smets, 2008). In particular, low policy rates drove down the cost of wholesale funding, and cheap wholesale funding has been an important factor in the increase in credit supply (Borio and Zhu, 2008; Shin, 2011).

While a clear-cut relation between expansionary monetary policies and financial leverage could not be verified (Merrouche and Nier, 2010; Dokko et al., 2011), the low policy rates likely contributed to the substantial increase in wholesale funding that was observed in the banking sector during this period. Still, as wholesale funding is far more information-sensitive – and as a result more unstable during a crisis than e.g. retail deposits – the hike in wholesale funding has made the financial system more vulnerable as a whole. Interestingly, it was particularly European investors who raised a substantial part of their funding on wholesale markets (Shin, 2012; Bernanke et al., 2011) but also US investment banks relied on wholesale markets for up to a quarter of their funding.

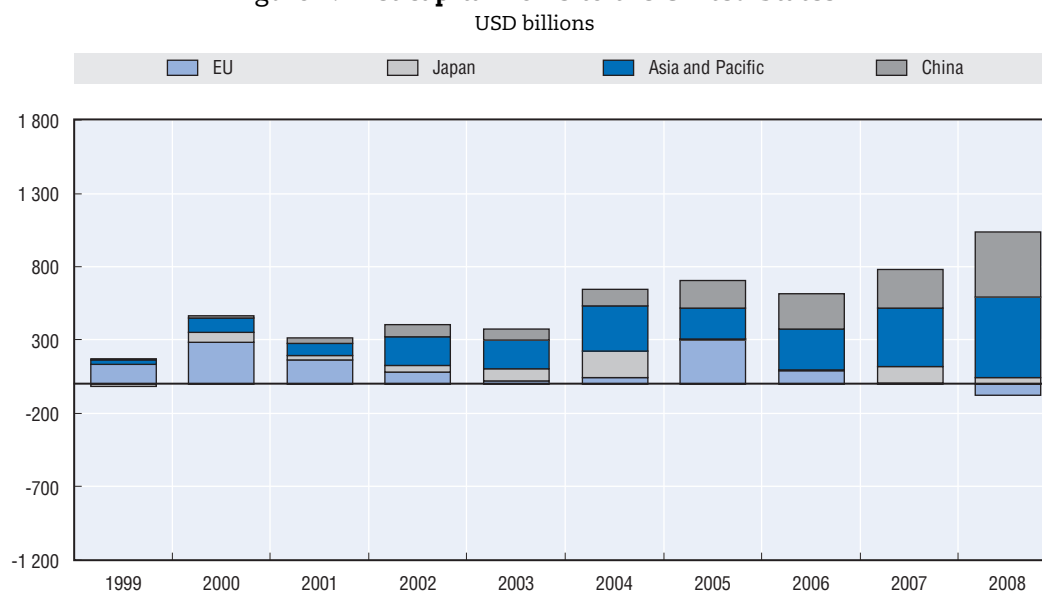
2. Effect and direction of international capital flows

However, it is long-run interest rates that govern capital markets and ultimately co-determine investors' allocative decisions. Policy rates only have an impact in as far as they affect expectations about long-run interest rates. As it turns out, particularly international capital flows exerted significant downward pressure on long-run interest rates in the United States.

First, China's already-mentioned gradual opening was characterised by a combination of export-led growth and a managed exchange rate. Consequently, the Chinese economy accumulated substantial foreign reserves. In addition, economies across South-East Asia started to accumulate foreign reserves as well: the region had experienced a major current account crisis in the 1990s and had to implement economic adjustment programmes including IMF assistance programmes. Historically, it can be shown that IMF programmes trigger an accumulation of foreign reserves in the affected economies (Bird and Mandilaras, 2011). One possible reason for this is that foreign reserves are one of the few robust indicators that reduce the propensity and severity of financial crises (Frankel and Saravelos, 2010). This was also the case during the most recent global economic crisis (Feldkircher, 2014). Consequently, current accounts of Asian (and OPEC) economies were recycled back into Western financial markets (Blundell-Wignall and Atkinson, 2008).

As countries accumulate foreign reserves, the country that issues the preferred reserve currency experiences capital inflows. Given the preference for dollar reserves in Asia (see e.g. ECB, 2013) net capital inflows from Asia to the US grew rapidly. Figure 2 shows a sharp increase in net capital inflows to the US from Asia and the Pacific and China from the turn of the century. From a very early stage, this phenomenon has been labelled "savings glut" (Bernanke, 2005) and related to asset price inflation in the United States.

Figure 2. **Net capital flows to the United States**



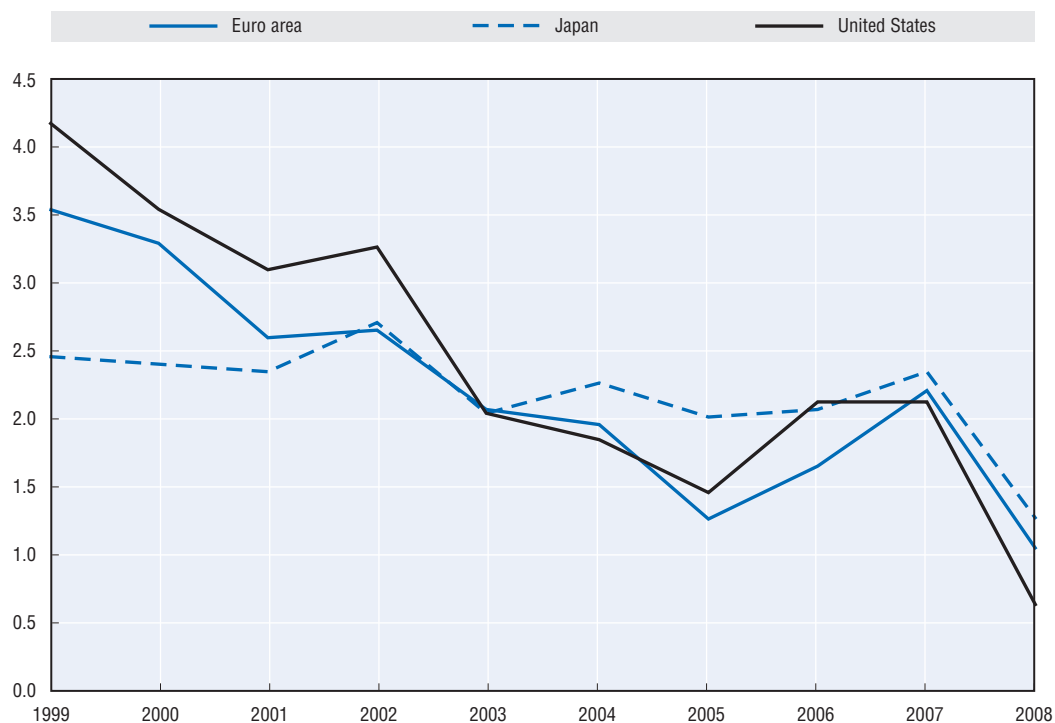
Source: US Bureau of Economic Analysis.

However, as subsequent analysis proved, most of the foreign investment in the market for securitised bonds² – the key market for the allocation of funds to the US mortgage

market (see below) – did not originate in Asia (Bernanke et al., 2011; Shin 2012). This means that the relation between the housing bubble in the United States and net inflows from Asia is not a direct one; capital inflows from Asia exerted an indirect influence on the US mortgage market. As the bulk of capital inflows from Asia to the US was invested in treasuries, long-term interest rates were squeezed (Figure 3). The resulting lower yields on treasuries had a crowding-out effect as other investors invested in the market for securitised bonds in the hunt for higher yields (Bertaud et al., 2012).

Figure 3. **Long-term interest rates**

In per cent



Source: OECD Economic Outlook Database, <http://dx.doi.org/10.1787/data-00688-en>.

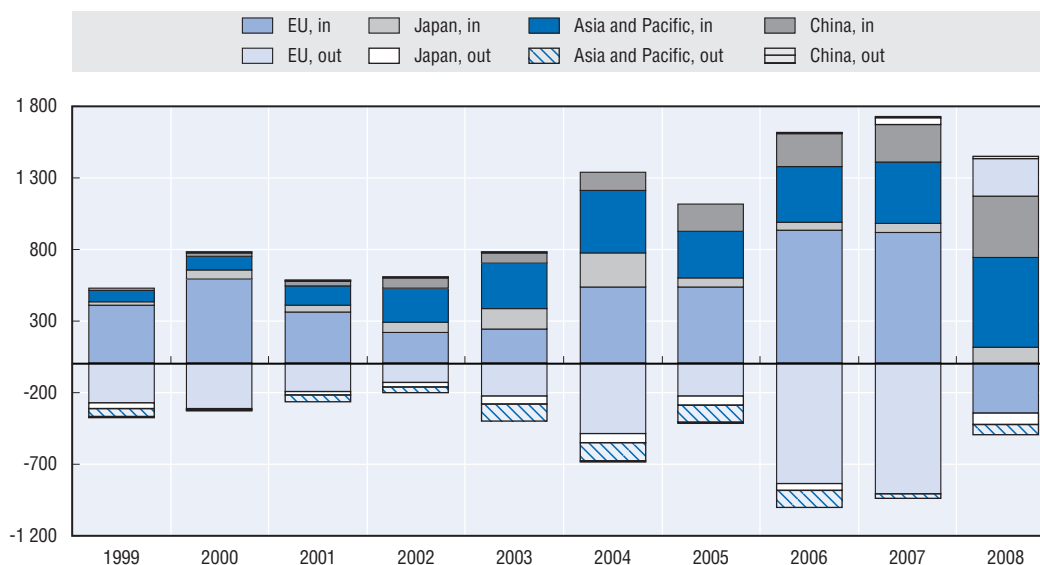
Still, interest rates on securitised bonds dropped even more sharply than interest rates on treasuries, suggesting a genuine shift in investor preference. This is where Europe enters the picture. Of course, US investors started to increase their exposure towards securitised bonds, too, but it was above all European investors who shifted their funds to these markets (Bernanke et al., 2011; Shin 2012). As a matter of fact, on the eve of the crisis, the US had issued roughly 80% of all outstanding securitised bonds worldwide while European investors were holding roughly 60% of these securities (Gourinchas et al., 2011). But why did this major development go unnoticed before the crisis?

In fact, most analysts and decision-makers did notice global (gross) capital flow imbalances but focused on current account (im)balances. Figure 2 above reflects this view of the world. Net capital flows from Europe to the US were moderate before the crisis, but netting is decisive in this instance. As already indicated, European investors were borrowing on wholesale markets in the United States. However, wholesale borrowing by European investors is registered as capital outflows from the US perspective. Thus, somewhat peculiar,

the rise in US wholesale funding by European investors disguised, through aggregating and netting, the hike in European investment in securitised bonds (McGuire and von Peter, 2009; Bernanke et al., 2011). This is reflected in gross capital flows (Figure 4). As a result, the build-up of major imbalances went largely unnoticed because of the relatively balanced current account.

Figure 4. **Gross capital flows to and from the United States**

In billions of US dollar



Source: US Bureau of Economic Analysis.

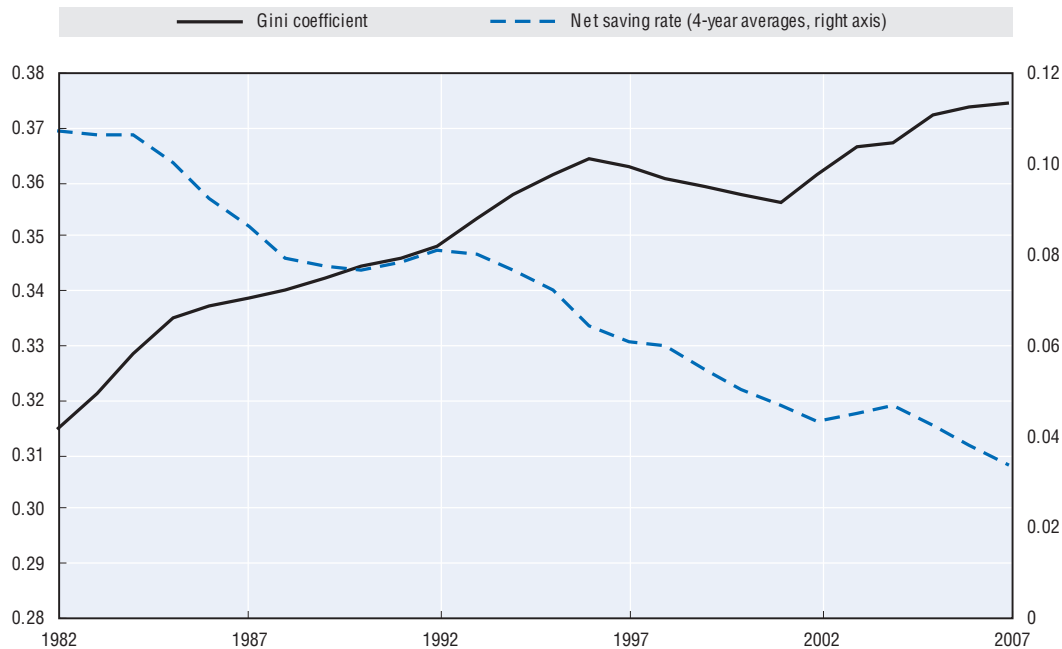
3. Growing demand for mortgages

The downward pressure on interest rates and the desire to achieve higher yields whetted investors' appetite for risky assets. At the same time, structural factors on the demand side appear to have fuelled the demand for mortgages, thereby forming the basis for the production of these risky assets on a large scale. In this regard, the co-movement of inequality and debt in the United States – as depicted in Figure 5 – is particularly remarkable. This co-movement suggests that inequality might have been a driver of credit demand in the United States. However, different explanations exist for this coexistence.

The first explanation relates to Milton Friedman's famous hypothesis that households smooth consumption over their lifetimes. In principle, this hypothesis can explain the patterns shown in Figure 5 provided that income has become more volatile over the lifetime of an average US household. For instance, more people might take out loans to finance their studies and pay down their debt once they finished their studies. We would see an increase in low-income groups (students) who would be in a transitory state in their employment history, though, as they would join the ranks of higher-income groups at a later stage of their professional life (better paid academics). Inequality would increase in this situation. The associated hike in debt would not be problematic, though, as the indebted group would likely be able to redeem its debt.

The major problem with this explanation is that most recent studies indicate that it was the permanent rather than the transitory component of income that led to the hike in inequality in the United States (Primiceri and Rens, 2009; Kopczuk et al., 2010; Debacker

Figure 5. **Inequality and debt**
In per cent



Source: OECD Economic Outlook Database, <http://dx.doi.org/10.1787/data-00688-en> and OECD Income Distribution Database, <http://dx.doi.org/10.1787/data-00654-en>.

et al., 2013). Put differently, once people enter a low- or high-income trajectory, they are likely to remain stuck on it. Consequently, it appears as if the permanent income hypothesis fails to explain the pre-crisis situation in the United States. The increase in indebtedness of low and middle-low income households (Wisman, 2013) might indicate that people simply used loans to finance unsustainable levels of consumption or housing.

This leads to an alternative, increasingly popular explanation for the above observed pattern: people's well-being depends on relative consumption in addition to absolute levels of consumption (Luttmer, 2005). As a result, it has been argued that people exhibit patterns of "conspicuous consumption", that is, they imitate their wealthier peers. In such a situation, expenditure cascades are initiated by increasing consumption at the top end of the distribution inducing low-income households to consume beyond their means. Indeed, regions with higher levels of inequality show higher debt amongst households and higher non-performing loan rates (Frank et al., 2014), and inequality has been more generally related to hikes in household debt (Bertrand and Morse, 2013; Kumhof et al., 2013).³

II. Financial market factors

1. The market for securitised bonds

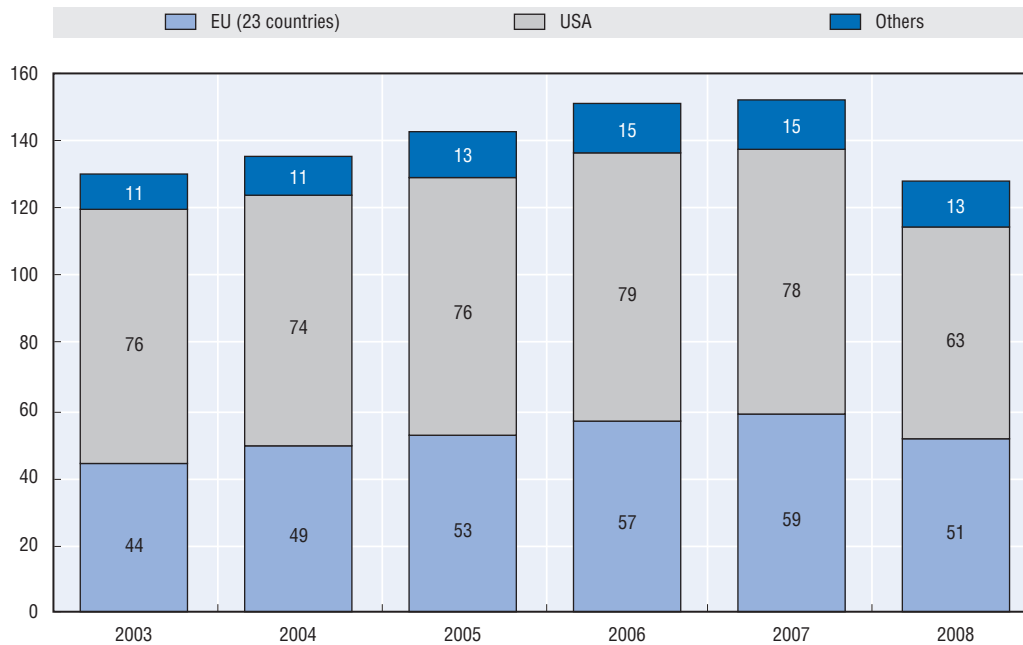
Let us now turn to the role of the financial structure in contributing to the crisis. The most important factor here is that over the past decades, the opportunities to increase leverage increased significantly in the financial sectors of many industrialised economies. One reason was the excess liquidity caused by the factors discussed above, like low policy rates and reserve accumulation (Blundell-Wignall et al., 2009). On top of this, the system's capacity to create credit increased substantially, which ultimately led to excess elasticity of the financial system (Borio et al., 2010). Putting it simply, a financial system's credit-creating

capacity is limited by the interplay between regulatory capital and leverage ratios and the credit-creating institution's equity. Obviously, an increase in the banking sector's equity increases its capacity to create credit. When banks sell credit-based assets, however, even for a given level of equity, they can reengage a given amount of capital in the credit-creating process over and over again even before any of the created debt has been redeemed. This is the case, for instance, when banks bundle loans into tradable securities such as securitised bonds and sell them. Indeed, before the crisis, banks increasingly relied on trading income (as generated by the brokerage of securitised bonds) and less on interest income (generated by the interest rate differential between loans and deposits; Allen and Santomero, 2001; Keeley and Love, 2010). This development made it possible to accommodate the rising desire for credit creation in the United States without a comparable hike in the banking sector's overall equity.

Let us examine this in detail. In many ways, the trade in securitised bonds resembles transactions on a traditional goods market. However, the forward-looking character of these assets creates a fundamental difference to traditional goods on spot markets. Essentially, the current value of credit-backed assets crucially depends on the trustworthiness of the debtors' promise to repay the loan or, put differently, on a debtor's perceived creditworthiness. The validity of a debtor's promise to repay, though, can only be evaluated over a very long horizon, and the perceived creditworthiness can thus vary over time and may include panic-induced radical shifts. This is particularly problematic when long-run assets are financed with short-run liabilities, as commonly occurs in credit transactions. Traditional banking is focused on transforming short-term liabilities into long-term assets, a process referred to as term transformation. It is this term transformation that is the root cause of bank runs. In a typical (e.g. 19th century) bank run, the erosion of trust in a bank's financial soundness (justified or not) prompts depositors to withdraw their deposits in a panic. The affected bank is forced into fire sales of its assets even if it has to do so at a very disadvantageous price. As a result, bank runs can be self-fulfilling prophecies. The introduction of deposit insurance and a borrower of last resort specifically designed to service banking institutions (i.e. the central bank) has helped to make bank runs very unlikely (even with deposit insurance, irrational panic can cause bank runs). However, the more banks bundled and sold securitised bonds, the more they outsourced the term-transformation function. The popularisation of term transformation – involving a large set of non-bank actors – was the decisive factor that made this crisis so devastating.

Of course, banks were only able to create a large market for securitised bonds because they had a large and growing base of investors who were eager to invest in these assets. To a large extent, investors' growing taste for securitised bonds can be related to the rise of institutional investors (Figure 6), which, in turn, can be traced to the following factors: first, there was an increasing shift towards capital-based (funded) pension schemes (OECD, 1998), and growing institutionalised savings in OECD economies were increasingly directed towards cross-border portfolio investments (CGFS, 2007). Second, the increase in cash pools of corporates and high-net-worth individuals (Poszar, 2011) added to the rising demand for institutional investments, as did the increase in financial wealth more generally. We know that at least for the euro area, wealthier households are more likely to hold savings in the form of riskier assets such as mutual funds, bonds or shares (Arrondel et al., 2013), and this observation is likely to hold true more generally. For corporations, a structural increase in their liquidity preference was already present before the crisis

Figure 6. **Total assets of institutional investors**
In per cent of GDP



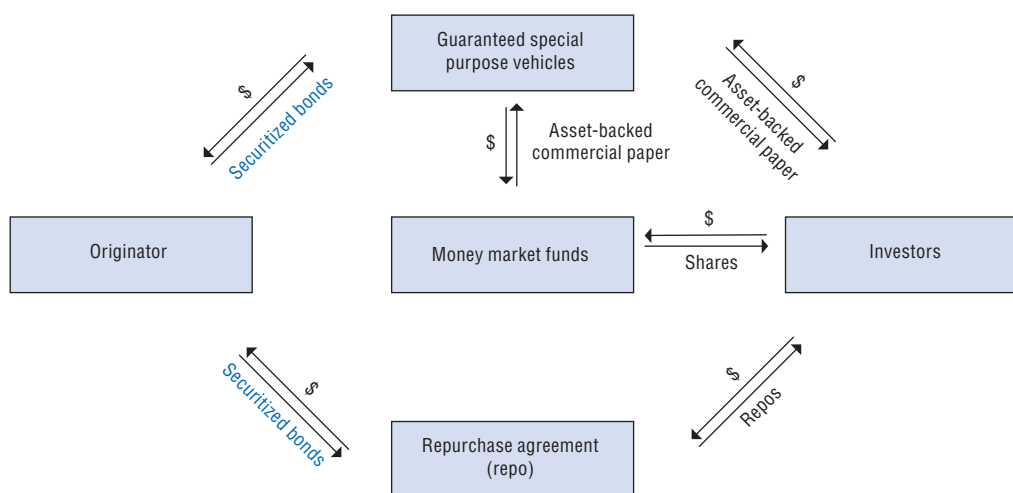
Source: OECD Institutional Investors Database, <http://dx.doi.org/10.1787/data-00498-en>.

(André et al., 2007), boosting institutional cash holdings (Pinkowitz et al., 2012). As a result, the cash reserves managed by institutional investors rose considerably and they increasingly invested in the market for securitised bonds. From 1998 onwards, the securitised bond holdings of US-based mutual funds and insurance companies alone increased fourfold and amounted to almost USD 2 trillion in 2007 (Manconi et al., 2012).

2. Bypassing institutional investors and mortgage markets

Crucially though, many institutional investors have to comply with investment policies that often prevent them from taking direct exposure to mortgages and similar assets. Consequently, the indirect channel was an important avenue through which the funds of institutional investors were channelled into the market for securitised bonds (and thus ultimately into the US housing market). This indirect avenue was provided by the rapidly growing shadow banking sector.

Shadow banking refers to activities that involve a term transformation while not being covered by conventional deposit insurance or issued by an institution with access to the lender of last resort. There are three distinct channels through which investors had indirect holdings of securitised bonds (Figure 7). The first channel is (some) money market funds. These funds – also institutional investors in their own right – started to grow rapidly from the end of the 1990s, holding some USD 1.7 trillion of total assets in 2006 (Kacperczyk and Schnabl, 2013). While many of these funds invest in treasuries, a large majority invests in a broader set of assets that have to be classified as being safe (McCabe, 2010), including in particular commercial market paper and agency debt (Brennan et al., 2009) and thus exhibiting a strong link to the mortgage market. To finance their investments, money market funds sell shares to investors and guarantee to take these shares back at least at face value. The underlying assets serve as collateral.

Figure 7. **The rise of shadow banking: Instruments**

The second channel via which institutional investors were indirectly investing in securitised bonds – and also one of the investment avenues used by money market funds – was the market for asset-backed commercial paper (outstanding asset-backed commercial paper totalled roughly USD 2 trillion in 2006).

To create commercial market paper, an originator – typically a bank – transfers securitised bonds into a special purpose vehicle. The “special purpose” of this vehicle is to hold the assets and issue commercial paper backed by them. Usually, the asset-backed commercial paper created is also covered by different types of guarantees issued by the respective originators. Since most of the guarantees were technically not binding in the case of default, though, originators usually did not have to unveil this exposure on their balance sheets. However, a default was in most cases ruled out in practice by defining it through some slow-moving variable. This close relationship has been underlined by the interdependence of stock prices and the exposure of related special purpose vehicles (Acharya et al., 2013), which clearly demonstrates that the market acknowledged the close relationship. Indeed most sponsors actually stepped in for their vehicles.

The third, more direct and most important channel via which institutional investors were indirectly exposed to securitised bonds was the market for repos (Gorton and Metrick, 2012). Unfortunately this market is extremely opaque and precise data are not available. Yet, we know that for the euro area, the repo market doubled in size from 2002 to 2008 and accounted for 65% of euro area GDP at the onset of the crisis. An incomplete account of the US estimates the market capitalisation of repos at 70% of US GDP (Höhrdahl and King, 2008). In a repo transaction, a market participant (e.g. a bank) sells a certain asset and agrees to repurchase it for a slightly higher price at a later date. The difference between purchase and repurchase price – called the haircut – mimics the interest rate, and the asset can be used as collateral in case the bank fails. A significant share of repos before the crisis was based on securitised bonds (Gorton and Metrick, 2012).

Many of the assets underlying these transactions were regarded as safe, which shifts our attention to the role played by credit ratings. Credit rating agencies had been primarily concerned with the rating of single-name corporate finance. However, in the run-up to the crisis, they increasingly rated securitised bonds, too, and they applied a similar rating

methodology and the same ordinal scale as for corporate bonds (i.e. AAA, etc.), thus effectively pouring new wine in old bottles. In fact, in addition to the probability of default of the individual underlying loans, the creation of most securitised bonds involved assumptions about the joint probability of default – which, of course, has a higher potential for mistakes. Together with a couple of other factors, this changed the ratings' information value (Coval et al., 2009; Fender et al., 2008; Fender and Mitchell, 2005). Given that ratings are often at the heart of institutional investors' investment policies (that restrict e.g. investments into investment-grade assets), changes in the ratings' information value lead to an almost automatic change in investor behaviour, in this case inducing them to take higher risks.

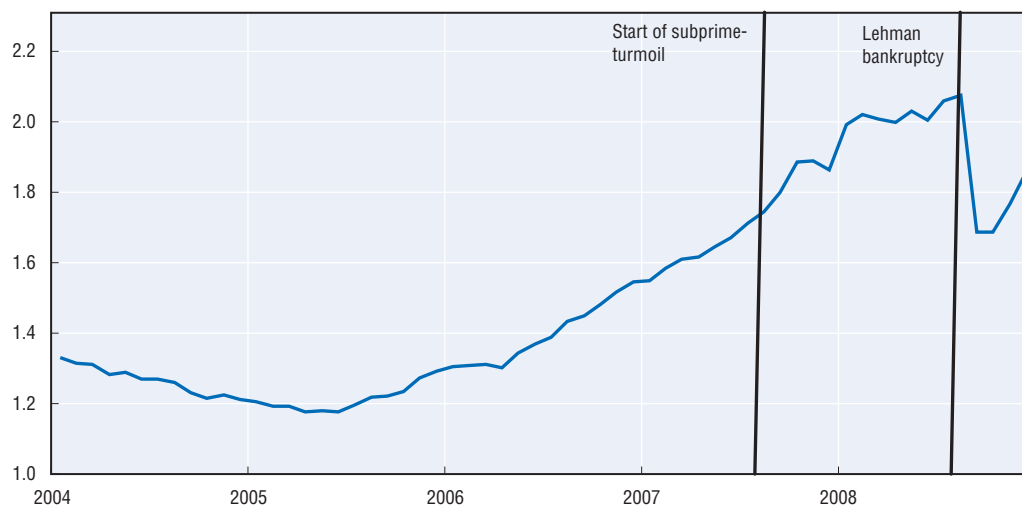
3. A classic bank-run, reloaded

To sum up, the direct and indirect exposure of institutional investors to securitised bonds increased substantially before the crisis. This includes a growing exposure of European investors. The huge indirect channel was based on instruments that involved term transformation (money market funds, commercial market paper, and repos). However, this term transformation was not covered by the backstop of deposit insurance and a lender of last resort, both of which had turned out to be so vital in the past. The function of these traditional backstops was mimicked by securitised bonds that – in one form or another – served as collateral. Securitised bonds thus became a substitute for deposit insurance. As it turned out, this substitute was far from perfect.

At the peak of the crisis, it became clear that securitised bonds did not provide the desired protection against tail risks. Put differently, what had been considered a functional equivalent of deposit insurance turned out to be dysfunctional, and once confidence in the market for securitised bonds eroded, the entire market was shattered by capital flight. However, instead of a direct run on commercial banks, what ensued was a run on repos (Gorton and Metrick, 2012), a run on money market funds (McCabe 2010; Figure 8), in direct relation to that a run on commercial paper (Kacperczyk and Schnabl, 2010; Figure 9) and as a result, the threat of a run on wholesale markets at large. Once the crisis had reached this point, banks – particularly those relying on larger amounts of wholesale funding – found

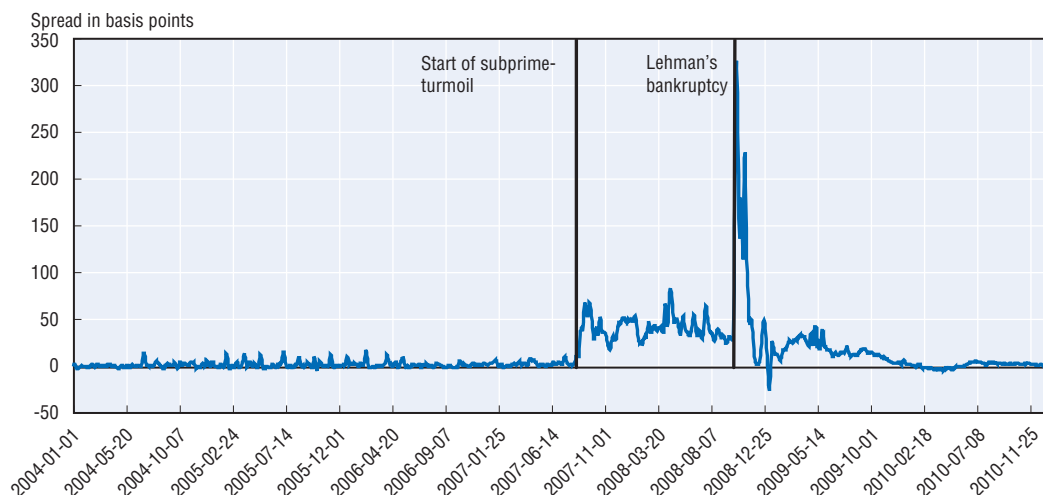
Figure 8. **Net assets of US prime money market funds**

USD billions



Source: Thomson Reuters.

Figure 9. **Overnight commercial paper spreads**
Net of Fed Funds rate



Source: Board of Governors of the Federal Reserve System.

themselves at the brink of disaster as they found it increasingly difficult to roll over their short-term debt positions. This was particularly problematic from a European perspective. While deposits with US banks received a boost due to the run on money market funds, this was not the case for European banks – which had actually relied the most on the wholesale market (Baba et al., 2009). This way, the crisis quickly spread to Europe.

III. Conclusions

This paper has discussed some major findings about the origins of the crisis and attempted to connect the dots between various developments: before the crisis, a unique combination of fundamental innovations and geopolitical developments had led to a decline in inflation and thus policy rates. At the same time, export-focused policies in Asia shifted substantial amounts of capital into the market for US treasuries, thereby pushing down long-term interest rates in the United States as well. These factors made loans cheap. On the demand side, people apparently tried to offset a loss in relative income, which led to significant growth in mortgages.

At the same time, the rise of institutional investors created a ready base of potential buyers of securitised bonds. As securitised bonds were regarded as a substitute of insured deposits (a view that turned out to be wrong), institutional investors' mortgage market-related holdings surged before the crisis.

As soon as trust in the underlying assets started to erode, the fragile structure imploded. As a matter of fact, the creation of deposit equivalents outside the realm of deposit insurance and the lack of a lender of last resort led to a new version of a classic 19th century bank run. The effects of these ruptures are still felt today.

Notes

1. See the underlying paper (Ramskogler, 2014) for more details.
2. Following Manconi et al. (2012) the term securitised bonds (SB) is used as umbrella term for the often used terms asset-backed securities (ABS), mortgage backed securities (MBS) and

collateralised debt obligations (CDO). Thus, it is also intended to include the notorious subcategory of residential mortgage backed securities (RMBS) as well as the more specific asset-backed commercial paper (ABCP). While – in principle – this can include assets other than commercial or residential mortgages, the vast majority of the associated securities were based on such assets before the crisis and we will thus exclusively focus on this aspect of that market.

3. Though it should not go unmentioned that also this explanation has been challenged recently (Coibion et al., 2014).

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Why implicit bank debt guarantees matter: Some empirical evidence

by

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What are the economic effects of implicit bank debt guarantees and who ultimately benefits from them? This paper finds that “financial excesses” – situations where bank credit reaches levels that reduce economic growth – have been stronger in OECD countries characterised by larger values of implicit guarantees and where bank creditors have not incurred losses in bank failure resolution cases. Also, implicit bank debt guarantees benefit financial sector employees and other high-income earners in two ways, increasing income inequality. First, implicit guarantees are likely to raise financial sector pay. This is consistent with the observation of “financial sector wage premia”, or financial sector employees earning in excess of their profile in terms of age, education and other characteristics. Second, implicit guarantees are likely to result in more and cheaper bank lending. If so, well-off people tend to benefit relatively more since household credit is more unequally distributed than income.

JEL classification: D63, E43, G21, G28, O47

Keywords: Bank funding costs, implicit guarantees for bank debt, bank failure resolution, finance and growth, finance and income inequality

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Executive summary

This paper sheds light on the question who ultimately benefits from implicit guarantees for the debt of financial firms and what their economic effects are. Implicit bank debt guarantees reflect the perception that the banks under consideration are so big, or so important for another reason, that the government cannot allow them to fail: they are seen as “too big to fail”. The paper investigates, in particular, whether “financial excesses” have been more extensive in OECD countries that are characterised by larger estimated values of implicit bank debt guarantees. It also looks at the issue indirectly, by assuming that implicit guarantees exist (as documented in previous work) and interpreting selected empirical findings as evidence consistent with their effects.

One key finding of the paper is that banks have lent too much to households and non-financial corporations, where the assessment that “too much” lending has occurred is based on the observation that the empirical link between a measure of bank financial intermediation and real activity growth is negative, once a certain threshold has been surpassed. Moreover, the paper finds that “financial excesses” – situations in which bank credit reaches levels that reduce real economic growth – have been stronger in OECD countries that are characterised by larger estimated values of implicit bank debt guarantees and where bank creditors have not incurred losses as part of bank failure resolution cases.

Furthermore, the paper presents empirical evidence suggesting that implicit bank debt guarantees tend to increase income inequality as they are likely to benefit primarily financial sector employees and other individuals at the upper end of the income distribution. The paper highlights two transmission mechanisms from implicit guarantees to income inequality:

- Financial sector pay: Financial sector employees earn more than what typically corresponds to their profile in terms of age, education and other relevant observable characteristics. The existence of these so-called “financial sector wage premia” is consistent with the view that bank employees benefit from implicit guarantees. Implicit guarantees widen the income distribution, as financial sector employees are concentrated at the upper end of the income distribution and wage premia are especially large for the top earners.
- Household credit: To the extent that implicit bank debt guarantees lead to more and cheaper bank lending to households, such additional lending is likely to be allocated more to high- than low-income households. This is probable since household credit is generally more unequally distributed than household income. Thus, assuming that implicit guarantees encourage credit overexpansion, they are likely to exacerbate income inequality.

These findings indicate that credit expansion has been facilitated by too cheap borrowing and that implicit bank debt guarantees have played a significant role in this process. They are also consistent with the view that at least some of the benefits of implicit bank debt guarantees flow to bank stakeholders other than the banks’ creditors, namely

their employees and customers, and that implicit guarantees tend to benefit more the well-off, thus reinforcing rather than reducing income inequality.

The 2014 OECD/CMF (Committee on Financial Markets) survey on implicit bank debt guarantees highlights that most policy-makers do not regularly monitor estimates of implicit bank debt guarantees. Looking ahead, such estimates could help policy-makers to assess the effectiveness of bank reform. Falling values of estimates would indicate success in reducing government support for hitherto too-big-to-fail banks. Indeed, estimated implicit bank debt guarantees would practically be nil if market participants took the view that the regulatory and resolution framework has become strong enough that all banks, regardless of their size, complexity or interconnectedness, can smoothly exit the market.

I. Motivation

There are numerous complex interactions between financial and real economic activity, and the experience of the recent financial crisis has added to the accumulated evidence suggesting that there are substantial economic costs arising from the mispricing of financial risks.¹ The funding cost reduction associated with implicit guarantees for the debt of financial firms is an example of the under-pricing of risks. Unlike explicit guarantees, implicit ones do not imply the obligation of the guarantor to provide for the guarantee, and they are not charged for, although the guarantee has value and creates economic costs.

An implicit guarantee is only perceived, and the guarantor may even deny its existence or make efforts to dispel the perception that an implicit guarantee exists. Notwithstanding such efforts, implicit bank debt guarantees persist and market participants believe that, for example, bank debt is special in that it benefits from support provided by public authorities. There is some good reason for that perception: despite substantial progress on making the resolution of failure of financial firms more effective, the cross-border nature and complexity of many firms implies that “smooth” exit of such firms is not the norm yet. This perception in turn creates economic costs and, in discussing the present paper, members of the CMF (Committee on Financial Markets) of the OECD highlighted that the situation creates potential contingent fiscal liabilities, competitive distortions and, in the special case of Europe, a significant barrier to fuller financial integration.

Policy-makers have recognised the various economic costs and decided to rein in the value of such guarantees, although one of the challenges in formulating the appropriate policy response is that it is not clear to whom the value of such guarantees accrues and in what ways the beneficiaries’ behaviour is affected.

This paper sheds light on the question who ultimately benefits from implicit guarantees for the debt of financial firms and what their economic effects are. It investigates, for example, whether “financial excesses” have been more extensive in OECD countries that are characterised by larger estimated values of implicit bank debt guarantees. The paper also looks at the issue in indirect ways and effectively assumes the existence of implicit guarantees for the liabilities of financial firms, placing a sharp focus on banks.² Rather than estimating the value of implicit bank debt guarantees³ and relating the estimates to the variables of interest, this part of the paper takes as a starting point that implicit guarantees exist. It then looks at the variables of interest and asks whether their development is consistent with the theoretical priors regarding the effects of implicit guarantees on these variables. The paper thus establishes stylised facts, some of which are directly related with implicit guarantees, while others would be consistent with the effects of implicit guarantees.

The paper is part of a larger, ongoing research programme by the OECD Directorate for Financial and Enterprise Affairs and the OECD Economics Department that aims to support reforms that can make the financial sector function better, thus contributing to stronger and more inclusive growth. It brings together new evidence and evidence from earlier work, applying it in a consistent and novel way to the context of the beneficiaries from implicit bank debt guarantees.

As regards the policy implications, the OECD/CMF Survey on implicit bank debt guarantees confirmed that policy-makers do not treat implicit guarantees as a stand-alone issue; rather, they acknowledge that they are related to other shortcomings in the financial system and its regulation. As a matter of fact, even if current bank regulatory reform efforts are not plainly targeting the value of implicit bank debt guarantees, respondents to the survey expected the different policy measures to rein in the value of implicit bank debt guarantees (Schich and Aydin, 2014b). Measures to make bank failure resolution more effective are considered as a crucial element of the mix of policy measures taken.

Against this background, the paper also provides some updates on developments regarding resolution regimes and practices; these affect the burden-sharing in cases of failure of financial firms, including by allocating any losses to bank owners, creditors, etc. Essentially, resolution practices determine the ex-post value of the implicit guarantee that creditors perceived ex ante to exist. These practices together with the resolution regimes that are currently being put in place shape expectations about future public support for the debt of financial firms and hence the value of implicit bank debt guarantees.

II. Some indirect evidence regarding the beneficiaries of implicit bank debt guarantees

Methodological approach and main findings

The effect of a guarantee on risky bank debt is to mitigate the risk, essentially transferring it from the creditor to the guarantor. Explicit and implicit guarantees are similar in that regard, although the effect of the latter crucially depends on the strength of the belief that the guarantee exists. The extent to which the creditor benefits from the guarantee depends on the creditor's risk preferences and the pricing of the guarantee, that is in particular the extent to which the creditor accepts a lowering of the nominal return in exchange for the belief that the debt is backed by an implicit guarantee. The guarantor essentially subsidises the funding costs of the bank, while receiving no financial compensation from the beneficiary, except potentially some indirect compensation in the sense that the achievement of the policy goal of financial stability may be facilitated. But to whom does this subsidy value accrue: creditors or owners of banks? Their customers or employees? Other stakeholders?

Bank creditors, that is depositors and investors in other forms of debt of financial institutions, are the direct beneficiaries of implicit bank debt guarantees. But they may capture only a part of the benefits. As a matter of fact, implicit guarantees reduce the funding costs of banks, and how this advantage benefits the various stakeholders in the success of the bank is not clear a priori. Benefits may flow to the banks' owners, their customers, their employees or other stakeholders.

This section provides a framework for organising the discussion about the potential beneficiaries of implicit bank debt guarantees and the relative importance of benefits flowing to different stakeholders. It also presents empirical evidence that some bank stakeholders obtain rents (i.e. receive payments or pay prices the social costs of which exceed the private

costs), which would be consistent with the existence of implicit guarantees. In doing so, it puts a particular focus on the place of the bank stakeholders in the overall income distribution. Such a focus helps shed some light on the question as to whether the value of implicit guarantees is more likely to accrue to the relatively worse- or better-off in society.

The main empirical findings are:

- Banks have lent too much to households and non-financial corporations, on average over the long term in the OECD. Bank lending is a key ingredient of modern economies and strongly contributes to economic growth, but above a certain threshold bank lending becomes excessive so that expanding it further hurts growth.⁴ This observation is consistent with the view that implicit guarantees for bank debt, lowering the funding costs of banking activities, have led to an excessive increase in such activities.
- Credit is more unequally distributed than income across households (Denk and Cazenave-Lacroutz, 2015). To the extent that implicit guarantees imply more and cheaper bank lending to households, such additional lending is therefore likely to be allocated more to high-income than lower-income households. Thus, assuming that implicit guarantees encourage credit excesses, they tend to exacerbate income inequality.
- Financial sector employees earn more than what typically corresponds to their profile in terms of age, education and other relevant observable characteristics (Denk et al., 2015). The existence of these so-called “financial sector wage premia” is consistent with the view that bank employees benefit from the presence of implicit guarantees.
- Financial sector employees are especially prominent at the upper end of the overall population’s income distribution, and financial sector wage premia are particularly large for the top earners (Denk et al., 2015). These results are based on econometric investigations using data for 8 million employees from most economic sectors. Wage premia in the financial sector are estimated from differentials in labour income compared with other sectors controlling for a wide array of factors (such as age, education or experience).⁵ Hence, to the extent that implicit bank debt guarantees have encouraged higher financial sector pay, these guarantees have raised income inequality.⁶

These findings indicate that credit overexpansion has been facilitated by too cheap borrowing and that implicit bank debt guarantees have played a significant role in this process. They are also consistent with the view that at least some of the benefits of implicit bank debt guarantees flow to bank stakeholders other than the banks’ creditors, namely their employees and debtors, and that implicit guarantees tend to benefit more the well-off, thus reinforcing rather than reducing income inequality.

Bank creditors

Implicit guarantees directly protect the creditors of banks, reducing the credit risk exposure of these counterparties. As the guarantee is only perceived, no premium is charged in exchange, at least not directly and openly. While the guarantee is typically essentially free, it nonetheless has value and creates economic costs, including through its effect on the incentives of the creditors, other stakeholders of banks and banks themselves. Bank creditors include depositors, senior unsecured creditors and subordinated creditors. As long as they are exposed to the risk of loss (or delayed access to funds), they can be expected to impose market discipline on their debtor.⁷ As previous discussions by the CMF concluded, the under-pricing of guarantees, however, tends to limit the role of market discipline and give rise to moral hazard.

Among the above-mentioned types of creditors, the perception that their claims benefit from an effective government guarantee is probably strongest for insured depositors, even if the insurance arrangement is a private one, but, more remarkably, also for uninsured depositors. For example, the comprehensive database of deposit insurance arrangements established by Demirgüç-Kunt et al. (2014) distinguishes between explicit and implicit deposit insurance arrangements. Where deposit insurance arrangements are explicit, the database provides additional information on design characteristics, such as management, coverage or funding. Where no explicit deposit insurance coverage exists, coverage is assumed to be implicit; the authors succinctly explain: “Indeed, implicit coverage always exists, regardless of the level of explicit coverage.” This assessment reflects the historical record, which includes very few examples where uninsured depositors and even fewer examples where insured depositors have incurred losses as part of bank failure resolution cases.

While there may be a perception that governments always stand behind deposit insurance arrangements, the European Free Trade Association Court (2013), for example, decided that there is no obligation for public authorities to backstop *private* deposit insurance regimes whenever their funding turns out to be insufficient to cover the amounts of deposits insured. But as a matter of general practice, deposits seem to be *de facto* benefiting from special protection, as they are generally exempt from the burden-sharing associated with bank failure resolution, with the notable recent exception of Cyprus.⁸ For example, even in the United States, where the Federal Deposit Insurance Corporation (FDIC) does inflict losses on shareholders and subordinated creditors as a general rule and expects creditors, uninsured depositors and itself to take losses as part of failure resolutions (see e.g. Bennett et al., 2014), the FDIC favours “purchase and assumptions” resolutions that keep depositors fully protected. CMF discussions highlighted that this situation, however, is likely to evolve as a result of the new failure resolution instruments available as part of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Senior unsecured creditors and often even subordinated creditors also benefit from implicit guarantees, which is problematic as these types of creditors would be expected to be a helpful source of bank monitoring and disciplining the risk-taking of banks. Unfortunately, the most recent historical record may, however, have reinforced the perception that holders of unsecured bank debt benefit from implicit guarantees; events where they incur losses have been rare and typically occurred in the context of the failures of rather small banks (see also Section III).

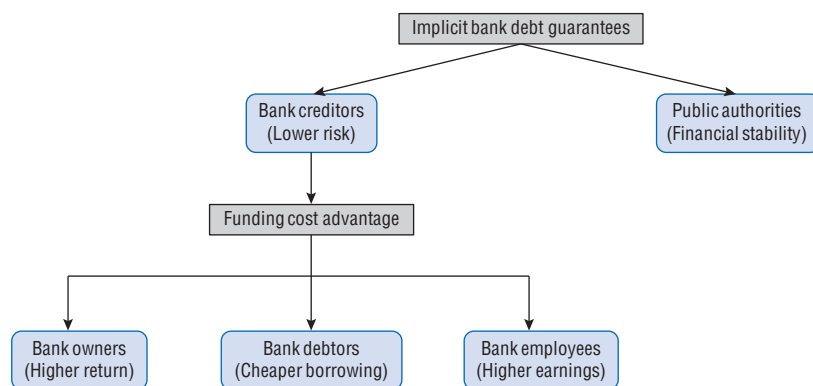
Measuring the value of implicit bank debt guarantees is notoriously difficult, especially given the uncertainty about the types of liabilities covered⁹ and the extent to which support might be forthcoming. The estimates collected through the OECD/CMF Survey on implicit bank debt guarantees suggest, however, that the value of implicit guarantees is substantial, whatever method is used. Figure 1 shows a summary of empirical estimates for funding cost advantages in basis points of interest rates. These funding cost advantages can amount to the equivalent of around 1% of GDP and in a crisis situation even up to 3% of GDP. While several recent studies suggest that the funding cost advantages for banks may have become close to zero in some countries, a large majority of the empirical literature indicates that implicit bank debt guarantees persist.

Other stakeholders in the success of a bank may also benefit from the perception of an implicit bank debt guarantee. The remainder of this section singles out selected groups of stakeholders for special attention. Figure 2 visualises these potential beneficiaries in a

Figure 1. **Most estimates of funding cost advantages are high**

Note: Funding cost advantage in basis points, based on the results of the empirical studies collected and received as part of the responses to the OECD/CMF Survey on implicit guarantees for bank debt. Symbols refer to different countries and for some countries more than one estimate is available. The underlying assumptions and samples differ across countries and individual studies. Midpoint estimates are shown for studies that report ranges. Some respondents only provided estimates of rating uplifts. These were converted into basis points of funding advantages by using the average sensitivity of interest rates to credit ratings during the year specified, as estimated in Schich et al. (2014) which assumes that the estimated sensitivity of yields to ratings is similar for all sample countries. "Short periods" refer to estimation periods between one to three years and "long term averages" to periods covering up to twenty years. The estimates may include published results.

Source: OECD/CMF Survey on implicit guarantees for bank debt (Schich and Aydin, 2014a).

Figure 2. **Many stakeholders potentially benefit from implicit bank debt guarantees**

simplified manner. Depositors with the bank and the bank's other creditors may benefit directly from implicit guarantees due to the lower risk they are exposed to (as long as the guarantee is not unexpectedly withdrawn), while other stakeholders may benefit indirectly. As suggested by the CMF discussion of this paper, implicit bank debt guarantees may, in addition, help public authorities attain their objective of financial stability in crisis times. Such benefits are less likely to be present in the long run, and may then even turn into costs, for example in cases where implicit guarantees contribute to credit bubbles. An analysis of these considerations pertaining to public authorities is, however, outside the scope of the present paper, and the issue is left for future work.

Bank owners

The consequence of overly low borrowing costs to banks due to implicit debt guarantees is that debt finance is under-priced relative to a situation without implicit guarantees. This interpretation is in line with the observation that banks are very heavily leveraged, i.e. have a disproportionately small part of their liabilities funded by equity compared with other corporations.¹⁰ The high leverage has the benefit for the owners of the bank of raising the rate of return on the bank's equity and maximising the value of the guarantee.

The present paper focuses on the perceived guarantee of bank debt, but it is not unreasonable to assume that the perceived protection of the bank's liabilities goes further and includes at least part of its equity. In particular, there might be the perception that the guarantee pertains to the survival of the bank in its present form, which would imply that not just debtors but also shareholders would be directly perceived to be protected, at least to some extent. While the policy response to the global financial crisis has often involved the dilution or even wipe-out of shareholders as part of bank failure resolutions, this was not the outcome in every case. Policy-makers and supervisors may have been inclined to avoid a total wipe-out, and this situation might confer shareholders with an added benefit, which is likely to reinforce the tendency to raise leverage to increase returns (in good times).

The share of financial companies in total stock market capitalisation has increased based on various broad indices, such as the S&P 500 or the Stoxx Europe 600 (OECD, 2014), although this pattern has reversed in some cases after the global financial crisis. This is consistent with the view that bank shareholders have fared at least as well as shareholders in other companies. Unfortunately, data on the identity of bank shareholders has not been available for the purpose of this paper. Analysis of recent euro-area household-level data by Denk and Cazenave-Lacroutz (2015) shows, however, that stock market participation and, even more so, stock market wealth are very unequally distributed across households in different income groups.¹¹ Averaged across the twelve euro area countries in the sample, the top 20% earning households hold two thirds of all stock market wealth in the economy, reflecting a much larger concentration of household wealth than household income. Unless bank stocks are distributed a lot more equally than overall stock market wealth, the higher rate of return on bank equity as a result of implicit bank debt guarantees benefits primarily investors at the top of the income and wealth distribution.

Besides the private sector, governments in several OECD countries are large equity holders of banks. Hence, some of the costs to taxpayers from implicit bank debt guarantees possibly flow back to the public authorities via higher rates of return on their holdings of bank equity. No attempt has been undertaken to empirically quantify the size of this circular flow from public authorities to banks and back to public authorities. In any case, implicit bank debt guarantees should be reined in, even if part of the associated benefits

were to some extent passed back to the public authorities. They still tend to encourage banks to raise their leverage, and governments have a mixed track record as bank owners.

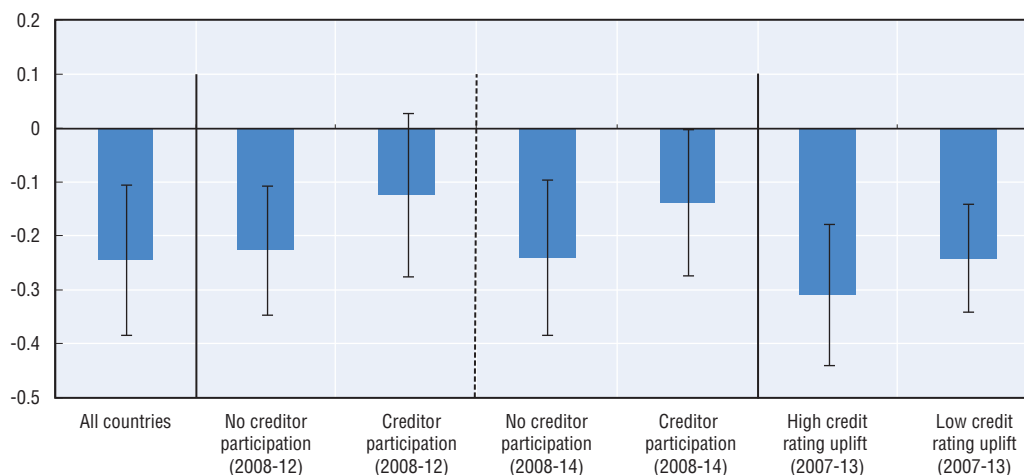
Bank debtors

Part of the benefits from implicit bank debt guarantees may flow to households and non-financial firms taking out a loan from a bank. This mechanism is likely to be particularly important when competition between banks for private-sector lending is strong. It would lower interest rates on loans, which in turn would likely increase the overall amount of credit in the economy.

To examine the empirical relevance of this mechanism, regressions have been run relating economic growth to bank credit, defined as credit to the non-financial private sector by deposit money banks, relative to GDP in a sample of 34 OECD countries. The regression specification includes standard growth determinants identified by previous empirical studies (Mankiw et al., 1992; Caselli et al., 1996; Arnold et al., 2011).¹² Its results suggest a tight association between more bank credit and lower GDP growth (Figure 3; Column 1 in Table 1 of Appendix).¹³ Related OECD work (Cournède and Denk, 2015) shows that this negative link is stronger for bank credit than non-bank credit, in line with other recent empirical evidence showing that market-based financial systems are more conducive to growth and innovation than bank-based ones (European Systemic Risk Board, 2014; Gambacorta et al.,

Figure 3. Implicit bank debt guarantees influence the relationship between bank credit and GDP growth

Percentage point change in real GDP per capita growth associated with an increase in bank credit by 10% of GDP



Note: The figure shows econometric estimates of the association of an increase in bank credit with GDP growth, controlling for a wide range of factors. The point estimates are surrounded by 90% confidence intervals. The bar for “All countries” uses more data than the decompositions by the participation of bondholders in the loss-sharing of banks during the reference period (“No creditor participation” and “Creditor participation”) and the average credit rating uplift during 2007-13 (“High” and “Low credit rating uplift”). The estimates should therefore not be viewed as a weighted average. The specification regresses real GDP growth per capita on bank credit to the non-financial private sector divided by GDP, gross fixed capital formation divided by GDP, average years of schooling in the adult population, the growth rate of the working age population, country fixed effects, year fixed effects and country-specific linear time trends. Table 1 of Appendix provides the coefficients on the control variables and other statistics. The empirical framework builds on Cournède and Denk (2015). In contrast to that work, the focus of the analysis here is on private credit by deposit money banks (not private credit by all financial institutions) and the role of implicit bank debt guarantees.

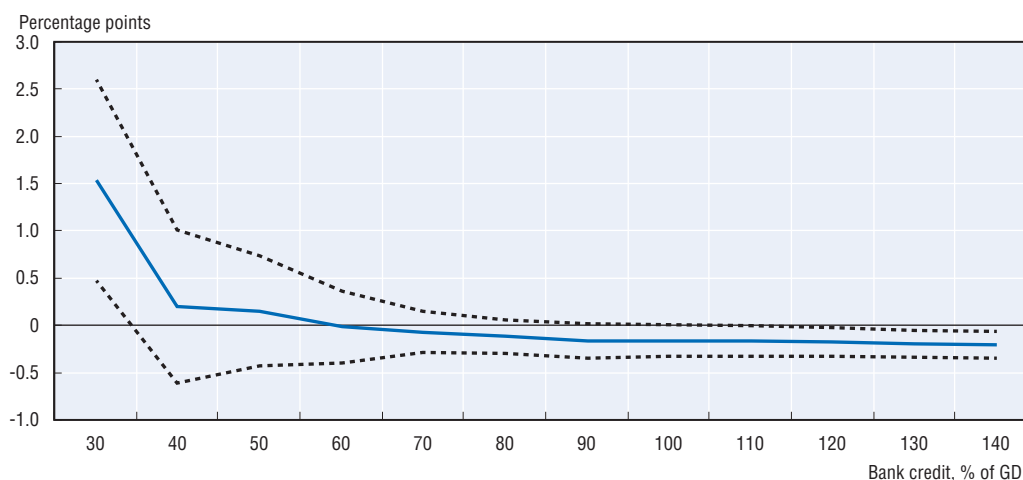
Source: OECD Secretariat calculations using World Bank Global Financial Development database; Bank for International Settlements credit series; Schich and Kim (2012); OECD Secretariat update from Schich and Kim (2012) using data publicly available from Moody’s website; OECD Secretariat update from Schich and Lindh (2012) using Bloomberg and SNL; World Bank World Development Indicators database; OECD Economic Outlook database; Barro and Lee (2013).

2014; Hsu et al., 2014). These results leave questions open regarding the detailed channels that link more credit to lower growth, but they are consistent with the hypothesis that a part of implicit bank debt guarantees manifests itself in overly low borrowing costs and too high levels of bank lending.

The estimated negative link between an increase in bank lending and growth applies to the average OECD country at the historically observed levels of bank credit. Even in the presence of implicit bank debt guarantees, one would expect, however, that some bank lending is growth-promoting and that only after a certain level is reached bank credit becomes associated with lower growth. This is precisely the pattern observed in the data when the econometric approach developed in Cournède and Denk (2015) for credit held by all financial institutions (i.e. not only banks) is applied to bank credit. Multiple regressions are run consecutively including observations with higher levels of bank credit (Figure 4). Along the horizontal axis the number of observations and also the average level of bank credit increase. As bank credit increases, the point estimate converges to the average estimate identified in Figure 3. Looking at sub-sample results, a rise in credit when credit is 30% of GDP is linked with sharply higher growth, statistically significant at the 10% level. However, this relationship quickly becomes much smaller and then negative, so that a credit increase when credit is 110% of GDP is associated with a reduction in economic growth, in a statistically significant fashion. In 2011, bank credit exceeded 110% of GDP in sixteen of the 34 OECD countries. These results are broadly in line with other recent research (Arcand et al., 2012; Cecchetti and Kharroubi, 2012; Beck et al., 2014; Law and Singh, 2014).

Figure 4. The association between bank credit and GDP growth turns from positive to negative as bank credit increases

Estimated change in per capita GDP growth when bank credit increases by 10% of GDP



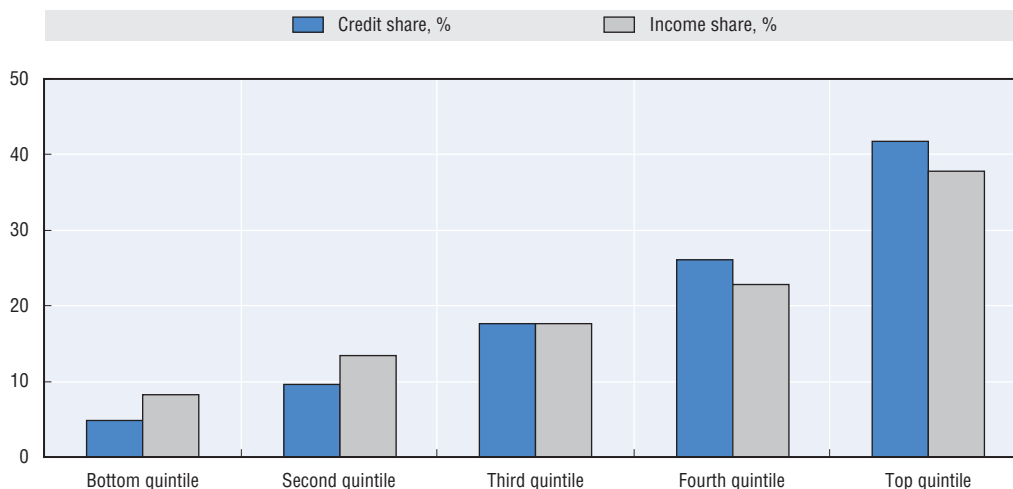
Note: The figure shows how the empirical association of GDP growth with bank credit varies depending on the ratio of bank credit to GDP. Bank credit is credit to the non-financial private sector by deposit money banks. Estimates are obtained by consecutively including observations with higher levels of bank credit in a regression of real GDP growth per capita on bank credit, gross fixed capital formation divided by GDP, average years of schooling in the adult population, the growth rate of the working age population, the logarithm of the lagged level of real GDP, country fixed effects and year fixed effects. The dotted lines represent the 90% confidence band. The sample covers all OECD countries. The empirical framework is based on the approach developed in Cournède and Denk (2015) who present the approach in detail. In contrast to that work, the focus of the analysis here is on private credit by deposit money banks (not private credit by all financial institutions).

Source: OECD Secretariat calculations using World Bank Global Financial Development database; Bank for International Settlements credit series; World Bank World Development Indicators database; OECD Economic Outlook database; Barro and Lee (2013).

The benefits from the expansion of credit triggered by lower borrowing costs as a result of implicit guarantees may accrue unequally to people across the income distribution. The sharing of the benefits depends on whether the implied interest rate reduction differs across income groups, and it depends on how much debt the different income groups have. Analysis of recent euro-area household-level data by Denk and Cazenave-Lacroutz (2015) documents that low- and middle-income households on average do not pay higher interest rates than high-income households.¹⁴ It also shows, however, that the distribution of household credit is more unequal than the distribution of household disposable income: while the middle 20% earners have about 18% of both total income and credit, the credit share of the bottom 20% is lower than their income share, and the opposite holds for the top 20% (Figure 5). Consequently, the likely benefits of implicit bank debt guarantees in the form of reduced borrowing costs accrue disproportionately to high-income households. This unequal sharing of benefits widens the distribution of income, consumption and wealth.

Figure 5. **Household credit is more unequally distributed than income**

Euro area countries, 2010



Note: Credit share is total household credit of an income quintile divided by total household credit of all income quintiles. Income share is total annual household disposable income of the income quintile divided by total annual household disposable income of all income quintiles. Income quintiles are based on annual household gross income for household credit and on disposable income for household income. The figure depicts the simple average of OECD countries which belong to the euro area and for which data are available.

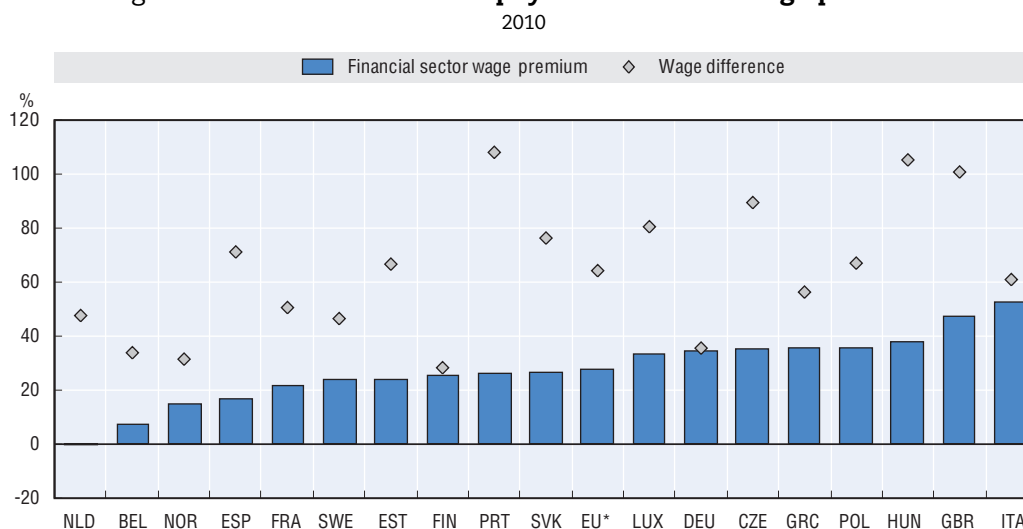
Source: Eurosystem Household Finance and Consumption Survey; OECD *Income Distribution and Poverty database* (Denk and Cazenave-Lacroutz, 2015).

Besides private-sector debt, banks also hold significant amounts of government bonds and other government debt, at least in some OECD countries. If some of the funding cost advantage of banks is passed through to their own debtors in the form of lower interest rates being charged by banks, this is another channel through which implicit bank debt guarantees can flow back to public authorities. Such a circular flow of funds should nonetheless be avoided by public authorities, given the various other costs of implicit guarantees discussed here and in related work. It can also create a vicious spiral between bank and government solvency risk, which can hurt both parties in times of stress, as the recent euro area crisis has amply demonstrated.

Bank employees

Bank employees make up another group of stakeholders who may indirectly benefit from the funding cost advantage created by implicit bank debt guarantees. Related OECD work (Denk et al., 2015), using data on 8 million employees in EU countries, finds that financial sector employees are concentrated in the upper end of the labour income distribution and especially in its top decile.¹⁵ Earnings, including wages and bonuses, are found to be on average 65% higher in finance than elsewhere. Two potential channels can explain the high level of financial sector pay: i) the profile of financial sector employees in terms of education, age, experience, etc., and ii) wage premia that raise wages above the compensation levels usually associated with such profiles. Regressions have been run to examine the degree to which education, age, experience and an extensive list of other relevant observable characteristics can explain wages.¹⁶ This investigation shows that financial sector employees on average earn 28% more than their education, experience and other characteristics usually warrant in other sectors (Figure 6). Observable characteristics thus explain little more than half of the pay difference between finance and other sectors. These wage premium estimates are broadly in line with those obtained by others (Du Caju et al., 2010; Magda et al., 2011; Martins, 2004).

Figure 6. **The financial sector pays a substantial wage premium**



Note: The wage difference is the difference between pay in finance and elsewhere. The wage premium estimates how much of this difference cannot be explained by observable characteristics of financial sector employees such as education or experience. More precisely, the wage difference is the percentage by which gross annual earnings of weighted full-time full-year equivalent employees in finance exceed those in other sectors. The financial sector wage premium is obtained from regressions of the log wage on age, gender, highest level of education, years of experience in the firm and their square, employees in the firm, geographical location of the firm, type of financial control, level of wage bargaining, type of employment contract, number of overtime hours paid and occupation. The average wage difference in the raw data of 65% is 6 percentage points larger than when the wage difference is estimated with the logarithmic specification of the wage regression. EU* is the simple average of OECD countries which belong to the European Economic Area and for which data are available. Data for Germany relate to 2006. The coverage of sectors is not exactly the same for all countries, and the sample size varies considerably across countries.

Source: Eurostat Structure of Earnings Survey (Denk et al., 2015).

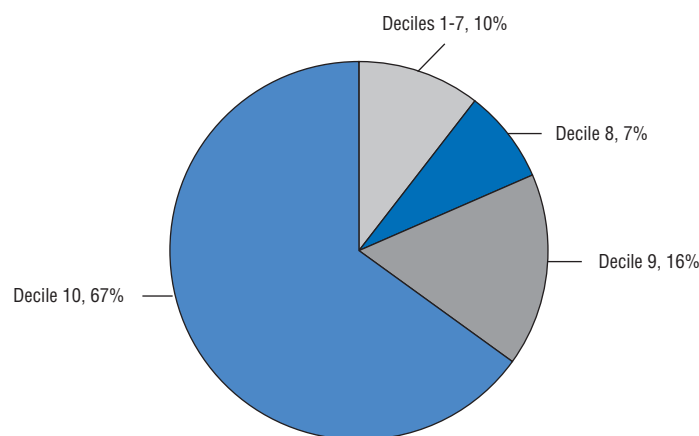
Financial sector wage premia are consistent with the hypothesis that bank employees receive some of the benefits from implicit bank debt guarantees. Their share in such benefits is likely to be larger when they have more bargaining power vis-à-vis the bank, their employer, and when labour market imperfections exist in the financial sector. The

details of such institutional determinants of financial sector wage premia are beyond the scope of the present paper. The discussions by the CMF of this paper suggest that earnings outcomes are also likely to reflect little competition among banks. Stronger competition would make it more difficult for bank managers to retain the value of implicit bank debt guarantees.

Another issue relates to the distribution of these rents across the income distribution. For one, high-income financial sector earners gain more in absolute amounts for the same percentage-point wage premium. In addition, Denk et al. (2015) show that financial sector wage premia (in percentage points) are larger for higher income groups, reaching 40% for the top 10% in the overall income distribution. Also, more financial sector employees are present among the high-income earners. Estimations that account for these factors indicate that the bottom seven deciles receive very little of the rents (Figure 7). The bottom five deciles receive essentially no rents. By contrast, two-thirds of the rents go to the top 10%. The country-specific data convey a broadly similar picture to the aggregate in the figure. This evidence suggests that, insofar as implicit guarantees contribute to financial sector wage premia, their benefits accrue primarily to financial sector workers at the top of the income distribution.

Figure 7. Top earners capture most of the economic rent associated with financial sector wage premia

Distribution of rents associated with financial sector wage premia by income group, European countries, 2010



Note: The figure shows how the rents associated with wage premia are distributed among financial sector employees depending on their income level. For each employee, the rent is defined as the share of her labour earnings that cannot be explained by her observable characteristics such as age, experience etc. The rents to financial sector employees in a particular income decile are the sum of all individual-specific rents in this decile. The figure depicts the simple average of OECD countries which belong to the European Economic Area and for which data are available. Data for Germany relate to 2006. To exclude working time effects on earnings, the sample is confined to full-time, full-year equivalent employees. The coverage of sectors is not exactly the same for all countries, and the sample size varies considerably across countries.

Source: Eurostat Structure of Earnings Survey (Denk et al., 2015).

There is some indirect evidence of a link between implicit guarantees and financial sector wage premia. In particular, if implicit guarantees are in part channelled to the banks' debtors and their employees, one would expect a positive correlation between credit and financial sector wage premia. Empirical evidence indicates that this is indeed the case: credit grows as wage premia become larger (Cournède and Denk, 2015).

Two other mechanisms could link implicit bank debt guarantees with the financial sector labour market: i) implicit guarantees may lead to over-employment in the sector, and ii) over-skilling may allow financial sector workers to benefit from relatively less demanding job requirements. Regression analysis suggests that wage premia are negatively related with employment in finance, which is inconsistent with the first mechanism being at work. By contrast, data from the OECD Survey of Adult Skills (PIAAC) provide tentative evidence that financial sector workers are more likely to be over-skilled than those working elsewhere, even if the size of the difference with other sectors is small (Denk et al., 2015).

Other stakeholders

Other parties involved in banking may also extract benefits from implicit bank debt guarantees. For example, firms in which banks have ownership stakes may experience more stable funding and a higher asset valuation as a result of higher demand for their equity. Also, the suppliers of inputs to banks may receive above-market prices, for example, for the selling of IT equipment or office infrastructure. Or buyers of financial services may have to pay lower fees to financial intermediaries for the services they provide related with, for instance, trading, wealth management or securitisation. As well, swaps and derivatives counterparties may share in the reduced funding costs of banks, and these advantages could add to the benefits arising for swap and derivatives counterparties from their privileged bankruptcy status relative to other credit instruments in several jurisdictions. This super-senior status is often referred to as an explanation for the phenomenal growth of derivatives outstanding until the beginning of the global financial crisis, and the effect of that status may have been reinforced by the presence of implicit guarantees on bank debt. Analysing whether these various other stakeholders and counterparties of banks materially benefit from implicit subsidies is outside the scope of this paper and remains a matter for future research at this stage.

III. The policy response: Facilitating smooth and effective resolution of financial firms

Bank regulatory reform measures

Supporting distressed large banks and their creditors using taxpayer funds has been recognised as undesirable for some time now, but the historical record is nonetheless rich with such examples. Decisions to deny support to struggling large banks are extremely rare in many jurisdictions. The former course of action is often chosen, as in the midst of episodes of heightened financial distress and uncertainty it is probably the best understood option to stabilise the system and avoid widespread economic damage. Alternatives seem either unavailable or are untested. This situation faced by public authorities is well understood by the counterparties of banks, which regard bank debt as “special”, benefiting from an extra layer of support. The policy actions taken in response to the recent global financial crisis have likely further entrenched this perception (Schich, 2013).

Thus, as succinctly put in the July 2014 interim report of the Financial System Inquiry in Australia,¹⁷ the challenge for policy-makers now is to alter these beliefs. In this regard, governments have announced their intentions to rein in the value of implicit bank debt guarantees. And they are taking measures to make it more likely, or more credible, that they can impose losses on creditors.

In fact, while there is no single measure that can serve as a silver bullet capable of eliminating on its own the perception that bank debt is special, efforts to make resolution

more effective are probably key in this regard. As highlighted by the responses to the OECD/CMF Survey on implicit bank debt guarantees, while current bank regulatory reform is not plainly targeting the value of implicit guarantees, the various measures taken together are expected to rein in their value. Rather than a single measure, a mix of different measures is considered as holding the greatest promise, with each measure of that mix contributing to the strengthening of the likelihood and the credibility of orderly bank failure resolution with minimal taxpayer support, thus lowering the perceptions of an implicit guarantee. Elements of that mix include in particular the implementation of internationally agreed capital and liquidity standards, the tightening of micro- and macro-prudential supervision and efforts to making bank failure resolution more effective.

Dealing effectively with bank failure

The overarching target of bank regulatory reform is not to eliminate the risk of bank failure but to reduce systemic risk to a minimum acceptable level. Failure risk is hard to completely eliminate, and its elimination is not even desirable as the possibility of failure is part of the efficient functioning of the financial sector. The ability of successful financial firms to grow and the possibility for inefficient ones to fail are two key features of healthy competition.

When a bank fails, external financing of resolution can be avoided as long as some stakeholders of the bank take losses, with bank shareholders and then its unsecured creditors expected to be first in line. In practice, the issue of allocating losses in an orderly manner is not straightforward, however, and more challenging than in the case of failure of non-financial corporates. Banks supply some critical services that they may need to continue to provide even after failing (or that would have to be provided by other or newly formed entities). The franchise value of a bank can deteriorate rapidly; the values of the asset and liability side of bank balance sheets are closely linked and a fall in confidence can occur and bring down the value of a bank quickly, in which case some critical services would not be available anymore. Hence, speed in the process of resolution is of the essence. Moreover, banks are interlinked with each other, and losses by counterparties of one bank can lead to contagion, either through direct links or because counterparties assume that similar weaknesses are present in other banks, potentially resulting in the materialisation of systemic risk.

Strengthening the capacity to impose losses on bank creditors

Imposing losses on bank creditors is challenging. In this financial crisis, for instance, many instruments intended to absorb losses once capital is depleted, such as especially subordinated debt, were not allowed to fulfil their purpose. Support in form of new equity or loans was provided in many instances of bank failure, effectively eliminating the need to fund resolution or restructure internally through the imposition of losses on subordinated debt. In many cases, subordinated debt holders were bailed out. And even where haircuts to these claims were included as part of the conditions for public support, the extent of the losses was not commensurate with market price valuations at the time. The support often extended implied recoveries for the claims in market value terms that exceeded the haircuts imposed on them as part of the support packages.

As discussed by the CMF on a previous occasion, senior creditors and even subordinated creditors were typically spared from the burden-sharing associated with bank failures during the past few years. This observation is remarkable given that a global financial crisis of the magnitude and intensity just witnessed would be expected to be reflected in

significant losses of many stakeholders, including bank creditors. The need to be able to impose losses on unsecured and uninsured creditors has been recognised; one example (Australian Treasury, 2014a) says:

“Introducing credible ways to impose losses on creditors in the event of failure assists in achieving orderly resolution with minimal use of taxpayer funds. This goes some way to addressing perceptions that some institutions have an implicit guarantee by reducing expectations of Government support, and encouraging investors to pay greater attention to risk.”

Considerable progress has been made regarding the refinement of bank failure resolution regimes, although Financial Stability Board (FSB) discussions and IMF monitoring of progress suggest that further substantial work by FSB members is required on the implementation of effective resolution regimes. In fact, few jurisdictions have bank failure resolution regimes that are fully aligned with the FSB Key Attributes of Effective Resolution Regimes. In particular, many FSB members have not yet adopted bail-in powers or mechanisms to give effect to foreign resolution actions or recovery and resolution planning for all systemic domestically-incorporated banks. Also, discussions within the FSB conclude that further cross-border cooperation is needed to overcome obstacles to the implementation of effective resolution regimes.¹⁸

Practices matter: Involving unsecured creditors

Progress in refining resolution regimes made so far is already reflected in rating agencies' decisions to revise downwards the outlook for banks in several jurisdictions, especially in those affected by the European Bank Recovery and Resolution Directive and the Single Resolution Mechanism. Rating agencies explicitly note that these developments make it less likely that public support for the debt of banks is coming forward, even if they do not foresee reducing the assumption of government support for bank debt to zero. One recent empirical study suggests that the funding cost advantage for large compared with small bank holding companies with the same default risk in the United States may have become insignificantly different from zero (Lester and Kumar, 2014), although the extent to which the results are robust to changes in the assumptions made regarding the estimation of credit default risk is not clear.

Resolution practices matter and, as documented by previous CMF work (Schich and Kim, 2012), where creditor losses occurred, there is clear evidence of a decline in implicit bank debt guarantees, especially but not exclusively in the case of smaller banks. In fact, in countries where legal changes were made to establish more effective resolution regimes and where, subsequently, actual failure resolutions involved losses on the part of at least some holders of unsecured bank debt, noticeable declines in the value of implicit guarantees were observed. Such cases remain isolated: many jurisdictions have experienced none.

Are recent bank failure resolution practices reflecting more fundamental attitudes towards failure?

Implications for the relationship between finance and growth

Failure is difficult to accept, which explains why it often proves so difficult to impose losses on investors in bank failure cases. While this broad statement has some general relevance, there are important differences across countries in the extent to which failure is considered part of economic activity and risk-taking. For example, while bank failure

resolutions often occur in the United States, such cases tend to be rare in many Continental European countries. These differences may reflect some fundamental differences in attitudes towards failure and risk-taking, which in turn might affect the relationship between finance and real economic growth.

Characterising countries by their experience with creditor involvement in burden-sharing

To shed some light on this issue, the recent bank failure resolution experience is used to classify countries into two groups: one where bank failures have occurred and unsecured creditors have incurred losses as part of failure resolution and another one where unsecured creditors have not incurred any losses between 2008 and the first half of 2012 (see Figure 7 in Schich and Kim, 2012). Over this time period, bank failures involving the participation of unsecured creditors in the resolution process occurred in six of the 21 OECD countries studied: Denmark, Greece, Iceland, Ireland, the United Kingdom and the United States. Of course, a situation in which there are no creditor losses could reflect either that i) bank failures are handled without involving creditors or that ii) there are no failures whatsoever because banks are resilient or not exposed to shocks.

The data indicate that the long-term association between bank credit and GDP growth is more negative in countries where bank creditors have not been exposed to bank losses during the global financial crisis. The identical regressions as in section II are re-run allowing for different coefficients on bank credit to the non-financial sector for the two groups. Bank credit in countries where bondholders have not participated in bank losses has a coefficient that is nearly twice as large (in absolute value) as the one for the other countries and only the one for the no-participation countries is statistically significant at conventional levels (Figure 3; Column 2 in Table 1 of Appendix). The two coefficients are, however, not different from each other in a statistically significant fashion.

Countries enter one group or another depending on the treatment of bank creditors during the global financial crisis, while the link with growth is estimated over the past five decades. This discrepancy represents a caveat, which is related to the availability of data. However, the very low frequency of deep banking crises in OECD countries means that the global financial crisis can be interpreted as an episode that manifested the relative size of previously underlying guarantees. This interpretation implicitly assumes that creditors correctly evaluated the nature of underlying guarantees.

The data used for classifying countries are taken from Schich and Kim (2012) and hence refer to the period until 2012, which is when the CMF had discussed the issue of resolution practices. As it turns out, since these discussions, the six countries already identified as countries in which unsecured bank creditors incurred losses during the recent crisis are now being joined by Austria, the Netherlands and Portugal as the reference period is extended to include the years from 2008 to 2014. When these three countries are grouped with the other six in the regression, the coefficient of interest is still nearly twice as large for the countries with no participation of bank creditors in resolution as for the others (Figure 3; Column 3 in Table 1 of Appendix). The estimate for the participation countries is now also statistically significant at the 10% level, reflecting the increase in the number of observations for this group. This suggests that the core result of a less negative long-term link between bank credit and GDP growth for countries that have involved bank creditors in bank resolution since 2008 is not sensitive to when the exact boundary between the two groups is drawn.

Characterising countries by the observed credit rating uplift due to assumed external support

An alternative approach to classify countries is to rely on the extent of the perception that banks benefit from implicit guarantees, using a measure of the credit rating uplift due to assumed external support (i.e. the difference between an issuers' credit rating and its intrinsic strength rating). Such an approach avoids the issue that some countries may simply not have experienced a crisis, but are grouped with countries where failure resolutions have avoided inflicting losses on unsecured creditors.¹⁹

When the average credit rating uplift is used for classification, the empirical evidence indicates that bank credit has a more negative association with GDP growth in countries where implicit bank debt guarantees are estimated to be larger. The coefficient for countries with a high rating uplift is nearly 30% more negative than the coefficient for the other countries (Figure 3; Column 4 in Table 1 of Appendix). Both coefficients are statistically different from zero, with 99.9% confidence, and they are not significantly different from each other. The result that credit has a particularly negative relationship with GDP growth in countries where implicit bank debt guarantees appear large further corroborates the hypothesis that implicit guarantees are an important factor behind the overall negative link between bank credit and growth.

Implications for policy: The need to create an environment in which banks can fail

Bank failure resolution practices were discussed at the CMF meeting in October 2012. The question was raised why so few bank failure resolution cases and creditor losses were observed, which is surprising given the intensity of the global financial crisis.²⁰ Among other things, the discussions concluded that there may be some sort of "first-mover disadvantage" when being tougher on creditors than other jurisdictions. Such a course of action can put domestic banks at a funding disadvantage compared with international peers from jurisdictions where no such stance was adopted. This view might reflect experiences such as that of Denmark in 2010: when losses were imposed on the creditors of a failing mid-sized bank, secondary market spreads for the debt of a large Danish bank compared with its Nordic peers subsequently increased.

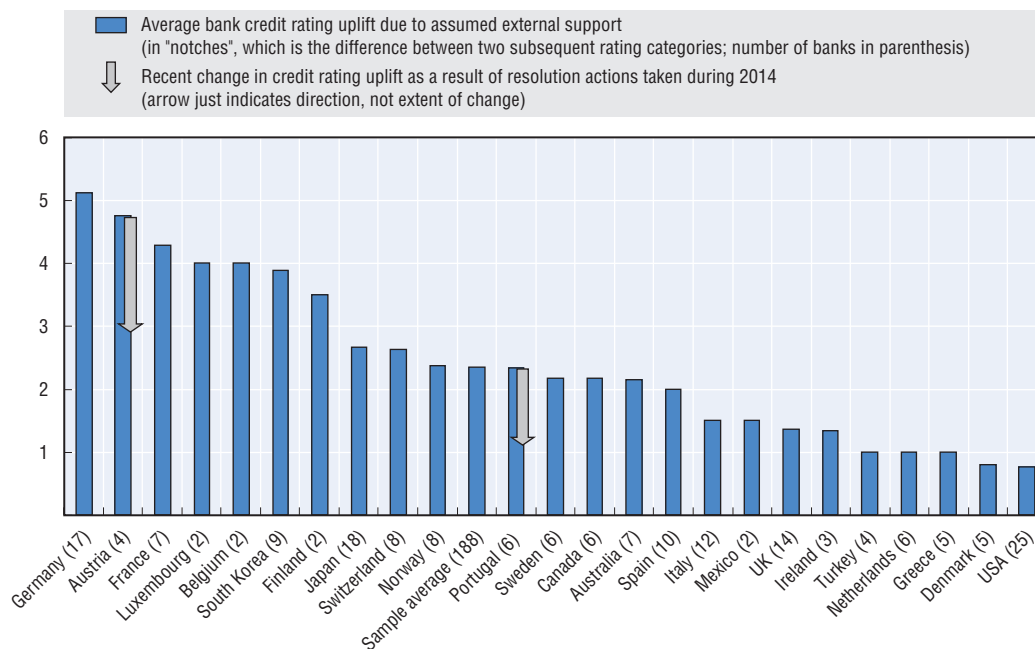
With hindsight, one lesson to draw from the experience where losses had been imposed is that such actions may have had adverse effects on domestic banks' funding conditions, compared to those of their peers in jurisdictions that were more lenient, but that it did not imply a shut-down from the funding market of any bank. Moreover, there is evidence that where losses were imposed by public authorities on bank creditors, public funding conditions improved, most likely as a result of investors appreciating that the contingent sovereign liabilities would turn out to be lower than previously anticipated. For example, demand for Danish government bonds increased after the government imposed losses on creditors of some banks, thus reducing the perception that bank liabilities might be transformed into sovereign liabilities.

More generally, market participants' expectations of further progress in making resolution regimes more effective have already been reflected in lower estimates of the value of implicit bank debt guarantees, especially in the European Union where the Bank Recovery and Resolution Directive and the Single Resolution Mechanism seem to have a bearing on expectations regarding resolution choices. Credit rating agencies regularly refer to these initiatives, although they do not expect that the new regimes will establish the

resolvability of large and complex cross-border institutions from “day one” and they continue to factor into their assessment of the credit rating of large banks the assumption that external support would be forthcoming under extraordinary circumstances.

Several rating agencies have changed their credit rating outlooks for the debt securities of many banks in the European Union and Canada, typically citing a trend towards explicit inclusion of burden-sharing with senior debt holders as a means of reducing the public cost of bank resolutions, but actual rating downgrades have been rare.²¹ The latter seem to have been concentrated on banks in jurisdictions where new resolution tools were used, involving unsecured bank creditors in the associated burden-sharing. Examples of countries where unsecured bondholders have been exposed to participation in the costs of bank failure resolution include Austria, Denmark, Greece, Iceland, Ireland, the Netherlands, Portugal, the United Kingdom and the United States. Earlier, in the cases of many banks, credit rating downgrades and pressures on credit rating uplifts typically reflected the perception that the sovereign’s strength and hence its capacity to provide for the implicit guarantees had declined. Credit rating uplifts remain strong, however (Figure 8).

Figure 8. **Bank credit rating uplifts remain strong at end 2013**



Source: OECD Secretariat update from Schich and Lindh (2012) based on data publicly available from Moody's website.

Resolution policy actions carry an important responsibility in ensuring proper burden-sharing in cases of bank failure. These practices in turn influence expectations and behaviour of bank creditors further down the road. As it stands, credit risk is still too often socialised and this situation makes creditors too sanguine about the credit risks of banks, because they are not expected to bear the full consequences of bank failure. Rather, as a result of experiences with previous resolution cases they often assume that the sovereign will be saddled with substantial parts of the costs associated with bank failure. Effective bank failure resolution should, however, be associated with minimal, if any, taxpayer involvement; rather, resolutions should be funded internally involving equity holders and creditors. To make the

recently available resolution options credible to the counterparties of banks, governments need to be prepared to use them and plan their use. Such planning not only makes the resolution options more credible but, if properly communicated, also increases the transparency and predictability of the response by public authorities to bank failures.

V. Concluding remarks

Implicit bank debt guarantees, growth and income distribution

A well-developed financial sector is an important ingredient of healthy real activity growth. But financial expansion, for example through excesses in credit extension, can also create economic costs. Such over-lending reflecting loans with low rates of return results, among other things, from the existence of under-priced explicit or implicit bank debt guarantees. The empirical evidence discussed in this paper is consistent with the hypothesis that significant implicit bank debt guarantees have influenced incentives and behaviour of bank creditors, owners, debtors and managers.

For one, banks seem to have lent too much to households and non-financial corporations, judged by the significant negative relationship that can be observed between bank financial intermediation and real activity growth on average for OECD countries. This observation is consistent with the hypothesis that implicit guarantees for the debt of banks have made the funding of banking activities too cheap. Evidence for the relevance of implicit guarantees is provided by grouping countries, using different classification schemes, into those with high and others with low guarantees over the recent period which has revealed the extent of previously underlying public support for bank debt. The relationship of credit with growth is estimated to be systematically more negative for the country group characterised by high guarantees.

While the presence of implicit guarantees might have implied an expansion of bank lending to households, such additional lending activity is likely to have benefited higher-income households more than lower-income households. Thus, a priori, it has not reduced income inequality and probably has had the opposite effect.

The financial sector also affects measures of overall income distribution through its own compensation practices. Financial sector employees earn more than what typically corresponds to their profile in terms of age, education and other relevant observable characteristics, and this advantage increases for employees with higher incomes.

This observation of so-called “financial sector wage premia” is consistent with the view that bank employees benefit from the presence of implicit guarantees and that this effect is more pronounced, the higher the bank staff income is. Implicit guarantees thus tend to imply greater income inequality in finance and, other things equal, in the overall economy.

Policy response to reduce implicit bank debt guarantees

The discussions by the CMF in October 2014 concluded that limiting implicit guarantees should not be deemed incompatible with the maintenance of financial stability, as long as policies are properly designed and implemented. The issue of implicit guarantees may be especially critical in the context of the EU single market, where the dependency of the value of the implicit guarantee on the sovereign's health implies a greater degree of financial fragmentation and unequal access to funding throughout the European Union. Equal access to funding of long-term investment and activities of small and medium-sized enterprises is highly desirable at the current juncture.

Looking ahead, current bank regulatory reforms are expected to rein in the value of implicit bank debt guarantees, even if not all measures target them directly. In this regard, previous CMF discussions suggest that it is useful to distinguish between measures that i) strengthen banks, ii) strengthen the capacity of public authorities to withdraw implicit guarantees and iii) directly or indirectly put a price on the “use” of implicit bank debt guarantees. Many regulatory reform measures already implemented fall into category i), while going forward, more emphasis is being placed on category ii). As part of the latter category of policy measures, more needs to be done, however, especially to facilitate the effective resolution of the failure of financial firms and their smooth exit from the market.

In fact, policy actions should ensure proper burden-sharing in cases of bank failure, respecting the hierarchy of claims on the failing institution. These practices in turn influence expectations and behaviour of bank creditors and managers further down the road. As it stands, credit risk is still too often socialised and this situation makes creditors too sanguine about the credit risks of banks, because they are not expected to bear the full consequences of bank failure. Rather, they often assume that the sovereign will be saddled with substantial costs due to a bank failure. Effective bank failure resolution should, however, be associated with minimal, if any, taxpayer involvement.

Earlier CMF work found that, where new resolution regimes have been put in place, stressing the principle of bail-in, and where unsecured creditors have incurred losses as part of bank failure resolutions, the value of implicit bank debt guarantees has declined especially for small but also larger banks. More recent evidence is consistent with that interpretation. Practices do matter.

The 2014 OECD/CMF Survey on implicit bank debt guarantees highlights that most policy-makers do not regularly monitor estimates of implicit bank debt guarantees. Looking ahead, such estimates could help policy-makers to assess the effectiveness of bank reform. Falling values of estimates would indicate success in reducing government support for hitherto too-big-to-fail banks. If there was no empirical evidence of a significant value of implicit bank debt guarantees for “too-big-to-fail” banks compared with other banks, then the bank failure resolution framework would have ensured the perception that any bank, regardless of its size, complexity or interconnectedness would be expected to be allowed to fail.

New bank failure recovery and resolution options are available in many jurisdictions, but to make these options credible, governments need to be prepared to use them and plan their use. Such planning not only makes the resolution options more credible but, if properly communicated, also increases the transparency and predictability of the response by public authorities to bank failures, thus helping dispel the belief that bank debt continues to be “special”. That said, while members of the CMF saw this argument as having merits, several of them also highlighted that public authorities may face challenges in communication which they need to conduct carefully given the potentially contentious nature of the issue.

Notes

1. For some time now, the OECD Committee on Financial Markets has placed a sharp focus on the use of guarantees to achieve public policy objectives and the benefits and costs of under-priced guarantees, and it has decided to continue its work on the issue as part of its programme of work for 2015-16. Such explicit or implicit guarantees influence economic incentives, risk-taking and the income distribution, in some cases in undesirable ways.

2. Implicit guarantees also exist for the debt of other financial intermediaries. Financing is traditionally more bank-intermediated and securitisation less developed in Europe than in the United States. Thus, bank assets have a much greater weight in Europe relative to the size of the economy than in the United States.
3. The OECD Committee on Financial Markets has developed a methodology to estimate the value of implicit guarantees for the debt of banks (see e.g. Schich and Lindh, 2012, and Schich et al., 2014).
4. The assessment that “too much” lending has occurred is based on an application of the econometric approach developed by Cournède and Denk (2015) who investigate the relationship with economic growth of credit held by all financial institutions, not only banks. They present a wider range of panel data results, including evidence not only of correlation but also of causality running from excess finance to lower growth.
5. The specification includes more than 12 control variables.
6. A caveat is that the wage premium in Denk et al. (2015) relates to all employees in the financial sector rather than only those who work for banks. The database underpinning the estimation does not allow to draw such a distinction.
7. See Bennett et al. (2014) for a recent overview of empirical studies of evidence of market discipline.
8. Footnote by Turkey: “The information in this document with reference to ‘Cyprus’ relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the ‘Cyprus’ issue.” Footnote by all European Union member States of the OECD and the European Commission: “The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.”
9. In estimating the value of implicit bank debt guarantees, many empirical studies focus on debt securities rather than deposits. For example, most respondents to the OECD/CMF Survey on implicit bank debt guarantees reported that the empirical studies of implicit bank debt guarantees they were aware of focus on “all ratings-sensitive debt”, while only few respondents mentioned deposits (Schich and Aydin, 2014a). A recent study by Jacewitz and Pogach (2014) focuses on deposits (the largest source of funds for banks) and finds evidence that larger banks pay significantly lower risk premiums on deposits than smaller banks and that these differences cannot be attributed to standard balance-sheet measures of risk.
10. Other factors tend to favour debt over equity funding of firms generally. For example, effective average tax rates on equity finance typically exceed those of debt finance, mostly because interest payments but not dividends are recognised as deductible costs in corporate taxation.
11. The sample covers 12 OECD countries which belong to the euro area: Austria, Belgium, Finland, France, Germany, Greece, Italy, Luxembourg, the Netherlands, Portugal, the Slovak Republic and Spain. The income concept is annual household gross income. The data source for the calculations is the Eurosystem Household Finance and Consumption Survey from 2010.
12. The specification regresses real GDP growth per capita on bank credit, gross fixed capital formation divided by GDP, average years of schooling in the adult population, the growth rate of the working age population, country fixed effects, year fixed effects and country-specific linear time trends.
13. Cournède and Denk (2015) show that the results are insensitive to a wide range of robustness checks. The primary focus of their analysis, in contrast to the present paper, is credit held by all financial institutions, not only banks.
14. The sample covers 12 OECD countries which belong to the euro area: Austria, Belgium, Finland, France, Germany, Greece, Italy, Luxembourg, the Netherlands, Portugal, the Slovak Republic and Spain. The income concept is annual household gross income. The data source for the calculations is the Eurosystem Household Finance and Consumption Survey from 2010.
15. The sample covers 18 OECD countries which belong to the European Economic Area: Belgium, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden and the United Kingdom. The income concept is gross annual earnings of full-time full-year equivalent employees. The calculations use as data source the Eurostat Structure of Earnings Survey from 2010. The definition of finance in this dataset is broader than in the other empirical exercises in the present paper, as it includes jobs in banking, insurance, pension funding and auxiliary financial activities.

16. The financial sector wage premium relates to employees in finance compared with employees in other sectors and is obtained from regressions of log wage on age, gender, highest level of education, years of experience in the firm and their square, employees in the firm, geographical location of the firm, type of financial control, level of wage bargaining, type of employment contract, number of overtime hours paid, occupation and their interactions with a financial sector dummy.
17. The final report of the enquiry (Australian Treasury, 2014b) explains that the resilience of the Australian banking sector should be improved by strengthening policies that lower the probability of failure, including by setting ambitious bank capital ratios, and by reducing the costs of failure, should it occur. The report expects that its recommendations also produce efficiency benefits, including through reducing implicit guarantees and volatility in the economy and promoting confidence and trust.
18. A host of other measures are aimed at supporting the orderly resolution, including those aimed at strengthening depositor protection. For example, a recent consultation paper sets out proposed changes to the United Kingdom's Prudential Regulation Authority's rules in order to implement the recast Deposit Guarantee Schemes Directive (Bank of England Prudential Regulation Authority, 2014).
19. A country is classified as having high implicit bank debt guarantees when the average credit rating uplift for bank debt across its banks between 2007 and 2013 exceeded 3 credit rating "notches" (with one "notch" being the distance between two adjacent rating categories, e.g. between AAA and AA). The data are an OECD Secretariat update from Schich and Lindh (2012) using Bloomberg and SNL. Seven of the 24 OECD countries for which data are available meet this criterion: Austria, Belgium, Finland, Germany, Japan, Luxembourg and South Korea.
20. A careful assessment of resolution practices using case studies from different countries is available in Dübel (2013).
21. Further to resolution practices, credit rating agencies also closely monitor the discussion on bank structural reform in Europe, not least as the outcome of such discussions is expected to have implications for the resolvability as well as risk-taking of large European banks. Several European countries are considering or have already implemented legislation that attempts to separate certain risky activities from those considered as protection-worthy, hence facilitating resolution as well as limiting undesirable cross-subsidisation between the different parts. Many of these approaches are inspired by the so-called Volcker, Vickers, or Liikanen proposals and are reviewed, and compared to the proposal supported by the OECD Secretariat, in Blundell-Wignall and Atkinson (2012).

APPENDIX

*Detailed regression results*Table 1. **Implicit bank debt guarantees and the bank credit and GDP growth relationship**

Dependent variable:	GDP growth per capita			
	(1)	(2)	(3)	(4)
Bank credit:				
All countries	-0.024*** (0.005)	-	-	-
No creditor participation (2008-12)	-	-0.023*** (0.007)	-	-
Creditor participation (2008-12)	-	-0.012 (0.009)	-	-
No creditor participation (2008-14)	-	-	-0.024*** (0.008)	-
Creditor participation (2008-14)	-	-	-0.014* (0.008)	-
High credit rating uplift (2007-13)	-	-	-	-0.031*** (0.008)
Low credit rating uplift (2007-13)	-	-	-	-0.024*** (0.006)
Investment rate	0.249*** (0.041)	0.192*** (0.050)	0.199*** (0.050)	0.200*** (0.051)
School years	0.112 (0.293)	-0.222 (0.274)	-0.153 (0.272)	-0.089 (0.304)
Population growth	-0.678** (0.310)	-1.080*** (0.292)	-1.066*** (0.283)	-0.917** (0.378)
Country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Linear country trends	Yes	Yes	Yes	Yes
R-squared	0.501	0.541	0.541	0.523
Sample period	1961-2011	1961-2011	1961-2011	1961-2011
Observations	1254	872	872	1021

Note: All regressions are OLS. Standard errors, which are shown in brackets, are clustered at the country level. *** indicates significance at the 1% level, ** at the 5% level and * at the 10% level. Bank credit is credit to the non-financial private sector by deposit money banks divided by GDP, investment rate is gross fixed capital formation divided by GDP, school years is average years of schooling in the population aged 25 and over, and population growth is the growth rate of the population aged 15-64. In countries with “No creditor participation”, unsecured creditors have not incurred any losses in the reference period. In countries with “Creditor participation”, bank failures have occurred and unsecured creditors have incurred losses as part of failure resolution in the reference period. In countries with a “High credit rating uplift”, the average credit rating uplift over the reference period exceeded 3 percentage points, while in those with a “Low credit rating uplift” it was less than 3. The sample covers 21-34 OECD countries.

Source: OECD Secretariat calculations using World Bank Global Financial Development database; Bank for International Settlements credit series; Schich and Kim (2012); OECD Secretariat update from Schich and Kim (2012) using data publicly available from Moody's website; OECD Secretariat update from Schich and Lindh (2012) using Bloomberg and SNL; World Bank World Development Indicators database; OECD Economic Outlook database; Barro and Lee (2013).

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Unlocking SME finance through market-based debt: Securitisation, private placements and bonds

by

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Small and medium-sized enterprises (SMEs) are key contributors to economic growth and job creation. The current economic and financial crisis has reduced bank lending and has affected SMEs in particular. Capital markets will have to play a bigger role in financing SMEs in order to make them more resilient to financial shocks. This article reviews the spectrum of alternative market-based debt instruments for SME financing. It focuses on securitisation and covered bonds and also addresses issues regarding small/mid-cap bonds and private placements. It reviews the current state of the market for these instruments and identifies associated risks; analyses the barriers for issuers and investors alike; and provides best practices and high level recommendations to help alleviate barriers without hampering the overall stability of the system.

JEL classification: G1, G2, G23, G28

Keywords: SME finance, SME securitisation, non-bank finance, (high-quality) securitisation, asset-backed securities (ABS), SME CLO (collateralised loan obligation), (covered) bonds, private placements, financial regulation, European DataWarehouse, Prime Collateralised Securities (PCS) initiative

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I. Background, overview and policy implications

In the years since the crisis, the credit transmission channel in a number of jurisdictions has been impaired as regards quantity, price and distribution of credit. The effects of such malfunctioning are particularly felt by small and medium-sized enterprises (SMEs), especially in Europe. **Being heavily reliant on traditional bank lending, SMEs are faced with important financing constraints in an environment characterised by widespread bank deleveraging.** As credit sources tend to dry up more rapidly for small firms than for large companies during economic downturns, broadening the range of non-bank debt financing instruments for SMEs should help to make them more resilient to financial shocks. Given SMEs' importance in all economies, this is also essential for economic recovery from the current economic and financial crisis.

Non-bank market-based financing can improve the flow of credit to SMEs, while enhancing diversity and widening participation in the financial system. This study reviews the spectrum of alternative non-debt market-based instruments for SME financing, focusing in particular on securitisation (off-balance sheet) and covered bonds, but also addressing issues regarding small-/mid-cap bonds and private placements. These financing instruments could complement bank lending, help repair the credit channel and ease SMEs' financing constraints, while also facilitating a better distribution of risk amongst market participants.

The study builds on various sources spanning academic literature, market research and discussions with practitioners in private institutions active in SME debt markets. It reviews the current state of the market for these instruments and identifies associated risks; analyses the barriers for issuers and investors alike; and provides policy conclusions to help alleviate such barriers without hampering the overall stability of the system.

Section II reviews securitisation as a financing instrument in general and identifies structures and techniques relevant for SMEs. It also provides an overview of SME covered bonds as an alternative to securitisation, illustrating its characteristics and similarities to securitisation and its relevance for SMEs. The double recourse offered by covered bonds and the consequent preferential treatment from a legal and regulatory standpoint is the main difference between securitised SME loans and SME covered bonds. Recourse to the originator bank improves liquidity for the instrument, but the regulatory treatment seems to be the main reason for the popularity of covered bonds. Despite its attractiveness as a financing instrument, covered bonds cannot be the sole form of capital market finance for SMEs, not least due to asset encumbrance considerations.

Section III discusses the benefits of SME securitisation to all stakeholders, with a particular focus on its impact on SMEs themselves. The **recent financial crisis has strongly impacted securitisation and covered bond markets** as showcased in Section IV that gives an overview of the past and current developments, and an asymmetric rebound of the respective markets in the US compared to Europe and Japan can be observed.

Section V illustrates the **impact of ongoing regulatory reforms on the revival of the securitisation market**. It presents different approaches to high-quality securitisation and

analyses the existence of an unlevel playing field for the instruments reviewed, making the case for a co-ordinated regulatory approach at all levels. The revival of a healthy, safe and high quality securitisation market could be a way to generate additional capital market funding for SMEs, while providing banks with capital relief that allows for the unlocking of resources and further on-lending to the real economy. Securitisation can act as a credit risk transfer mechanism potentially resulting in a deeper and sounder financial system.

While regulatory reforms are required to improve financial stability and avoid pitfalls of the recent past, some of these reforms may also unduly dis-incentivise originators and investors and thus potentially inhibit the revival of a healthy securitisation market. Complex and sometimes conceptually contradictory regulation may have unintended consequences that should be considered when designing new rules. Clarity over ongoing regulatory work streams is also important for originators and investors, especially institutional investors, to fully engage in these markets that could benefit from their search for yield in the current low interest rate environment. A sensible calibration of ongoing regulatory workstreams (e.g. liquidity ratios of Basel III, capital charges in Solvency II, retention rate requirements) can be important for the revitalisation of the securitisation market.

As illustrated in Section VI, post-crisis **public intervention** has played a significant role in the securitisation market, particularly in Europe, where the eligibility of asset-backed securities (ABS) as collateral for monetary operations has been driving a large part of the market, but has not led to a revival of private market-based SME securitisation. Although such intervention is undoubtedly considered as important for banks' funding, it has not fostered further on-lending to the economy. Such effects and other potential unintended consequences of public intervention (particularly when such intervention does not foster further on-lending to the economy if it provides no capital relief to benefiting banks) should be taken into account in relevant policy making.

Section VII discusses **non-regulatory impediments** to the revival of securitisation. Various challenges in disintermediation of SME finance exist, especially the lack of sufficient economic viability of SME securitised products (mismatch of yield required by investors and return on the underlying asset for the issuer). This, in part, reflects problems regarding transparency of information, data availability and standardisation.

While capital markets can complement the role of bank lending, the **challenges of SME financing (especially due to the heterogeneity of SMEs – which at the same time is an important source of attractiveness to private investors – and typically scant credit information) do not allow for a complete disintermediation** of banks when it comes to the origination of SME loans, given the fixed-cost nature of sourcing and monitoring rather small and mostly local firms. The limited economic viability of SME CLOs (collateralised loan obligations) is one of the potential impediments to the revitalisation of that market, since prevailing underlying spreads do not provide for an attractive economic proposition, not least because of the riskiness and relatively weak performance of the underlying loans. At the same time, the performance of securitisation in Europe has remained robust in most segments throughout the years of the crisis. Understanding the structural strengths and weaknesses of and differentiating among various types of securitisations would be a step forward in revitalising the market. The recent European regulation identifying high-quality securitisations (European Commission delegated acts on LCR and Solvency II) could be seen as such a step, as could be the Prime Collateralised Securities (PCS) initiative.

Transparent and standardised data warehouses can be an effective way to resolve the information asymmetry problem associated with SME lending, with credit information on smaller firms collected and shared with market participants (as is already done by the Banque de France for French SMEs). Such transparency allows institutional investors to make their own assessment as to the creditworthiness of the underlying loans. Views differ over the desirability of standardisation of products, with some arguing that the capacity to have various degrees of credit enhancement is consistent with the different characteristics of SMEs, while at the same time aggregating large pools of SME loans allows for the smoothing out of idiosyncrasies. Contrary to other capital market products, standardisation of SME-related issuance could be counter to the very nature of SMEs, which are inherently diverse, to the extent it takes away the flexible terms on which many small firms rely.

Section VIII compares securitisation and covered bonds. Apart from these two categories, **the case for non-bank debt instruments is more limited in the SME space** as briefly discussed in Section IX which covers small-/mid-cap bonds and private placements. It makes the case for **mini-bonds** as one of the most promising and well-suited types of SME bonds, and presents **private placements** as an alternative to publicly placed instruments. In highlighting the German Schuldschein as a successful case of such instrument it makes the case for more standardisation and harmonisation in the private placement market. The potential for growth in the European private placement (PP) market for SMEs is widely accepted, and could be supported by standardisation of documentation and processes along the lines of the US PP market, as a way to foster this nascent market. Similar to the positive role of Government-sponsored enterprises (GSEs) for the US securitisation market, the credit scoring (“NAIC designation”) assigned by the US National Association of Insurance Commissioners (NAIC) to private placements acquired by US insurers can be regarded as an important enabling factor of a substantial PP market in the United States, although such initiatives could also be led by the private sector.

The concluding Section X provides **implications for policy makers** that are summarised in Box 1 below. Policies concerning regulation, market infrastructure and

Box 1. Implications for policy makers and recommended action

Policy makers widely agree on the potential **benefits of alternative, non-bank debt financing for SMEs**, and there are many arguments in favour of the development of SME loan securitisations, covered bonds and other corporate bond and private placement markets. To this effect, a wide range of policy measures may be warranted, in various areas as listed in the following in terms of general principles.

A. Regulation

1. Carefully designing and overseeing markets for SME debt financing instruments for SMEs can help to foster the use of alternative financing instruments without putting at stake the overall resilience of the financial system. Sensible and balanced calibration of the existing regulatory frameworks affecting such instruments may provide further support, particularly given the potential role of institutional investors in providing alternative sources of SME financing.
2. A holistic and co-ordinated approach on regulation on a relative basis can help avoiding distortions in risk pricing by unduly favouring specific instruments over others with similar characteristics, and stimulate investor appetite.

Box 1. Implications for policy makers and recommended action (cont.)

3. The creation of solid frameworks for the SME covered bond and private placement asset classes at national or broader international levels should be encouraged.

B. Market infrastructure

4. The build-up of loan-level data, performance track records, the encouragement of ongoing reporting and data sharing would support market-based financing of SMEs. Pooling of such information in centralised data platforms, set up and maintained through public initiative, should benefit the entire market by increasing the transparency of the SME financing market and allowing an informed decision-making by capital holders. Appropriate balance in the level of disclosure requirements should nonetheless be safeguarded so as to stimulate investor appetite without rendering such issuance or investment overly costly or cumbersome.
5. The development of standardised “off-the-shelf” versions of non-bank debt financing instruments for SMEs could be pursued with a view to lowering the cost of such instruments and increase the efficiency and accessibility of those instruments to SMEs and retail investors. Support for the creation of indices could be envisaged to enhance liquidity and investor participation in publicly traded SME debt.

C. Demand side

6. On the demand side, the public sector could provide support for raising awareness – among SME entrepreneurs as well as smaller local financial institutions traditionally serving SMEs – about the availability and attractiveness of such financing alternatives for SMEs and financial intermediaries.
7. The public sector could co-operate with private sector institutions in improving the visibility of successful transactions and platforms for such instruments.

D. Supply side

8. Public incentives and assistance for investors to set up appropriate internal infrastructures (SME loan due diligence capacity, models, monitoring systems) could create efficiencies in their due diligence and other procedures and facilitate their participation in the SME-debt market.
9. A critical evaluation of the potential impact from the provision of incentive schemes targeted to such instruments, particularly to investors but also to SMEs (e.g. tax incentives), may be warranted.

E. Public intervention

10. Official support for raising the profile of the public debate may help to overcome the barriers identified and encourage the appropriate and safe use of non-bank debt financing instruments for SMEs.
11. Public intervention should be designed in such a way that private sector participation is not crowded out. Specific evaluation and control procedures (beyond a standard impact assessment) would need to be put in place to ensure that the intended (capital, funding) benefit is passed on to the real economy through the provision of additional SME financing.
12. While the size of the SME securitisation market is insignificant in terms of the wider financial system, careful assessment of the riskiness of inappropriate design and use of such instruments in the context of a widely interconnected financial system should be encouraged. The corresponding benefits to the real economy and their materiality to SMEs should be part of such an assessment.

other interventions targeting both the supply and demand side should help to encourage investors and alleviate constraints in SMEs' access to market-based financing through securitisation, covered bonds and other non-bank debt instruments.

Given the complexity of the SME space, it has to be recognised that there is “no magic bullet” for SME financing. **Disintermediation is particularly challenging for the SME segment.** While successful disintermediation of the SME lending space is hard to achieve, there may also be limits to the desirability of disintermediation. Nevertheless, the post-crisis environment still warrants further development of a healthy non-bank debt market for SMEs. To achieve this, a joint effort may be needed, involving all constituents concerned: investors, issuers, intermediaries, regulators and public policymakers. Such financing, when used properly, can play a significant role in the recovery of the real economy by unlocking resources and capacity for further lending, broadening the SME investor base and diversifying their portfolios, as well as assisting in the creation of a sounder financial system through better risk sharing within the economy.

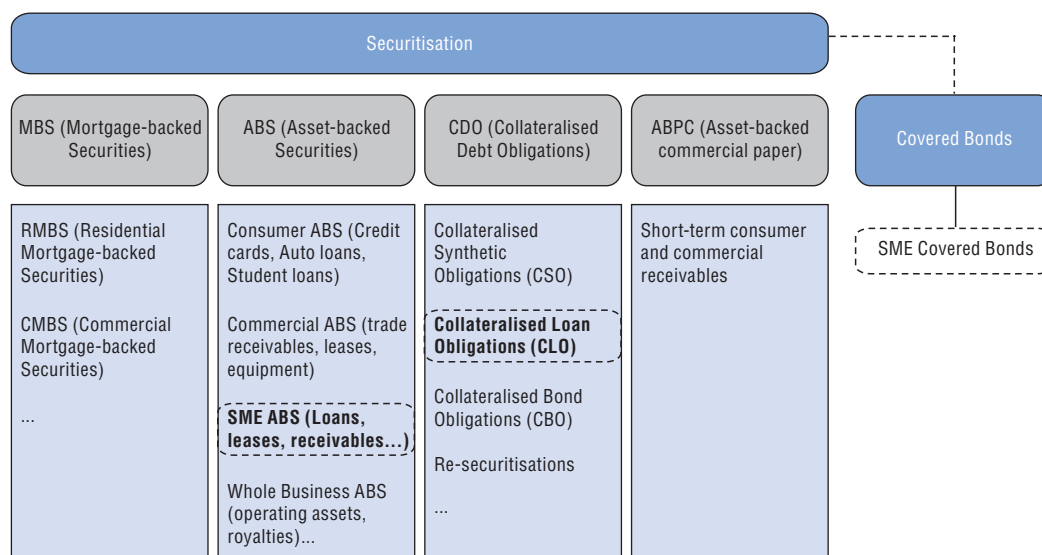
II. Securitisation as a financing instrument for SMEs

A. Defining SME securitisation

Securitisation is a structured finance technique which involves the pooling of assets and the subsequent sale in the capital markets of (normally risk-tranched) claims on the cash flows backed by this pool (OECD, 1999; CGFS, 2005). Investors buying those claims/bonds in the market are entitled to payments of principle and interest on the underlying pooled assets. Through this process, illiquid financial assets (such as mortgages, loans, leases) are bundled together and converted into liquid marketable securities, funded by and tradable in the capital markets.

Depending on the nature of the underlying pool of assets and the resulting securitised cash flows of the portfolio, securitised transactions can be categorised into broad groups of structures typically found in the market (see Figure 1). As implied by their name, mortgage-backed securities (MBS) are backed by pools of mortgage loans (commercial

Figure 1. **Main types of securitisation**



or residential), while the range of collateral that backs asset-backed securities (ABS) is more diverse and includes credit card receivables, auto loans, whole business securitisation, leases and other receivables. Collateralised debt obligations (CDO) are backed by debt instruments (senior secured bank loans, high yield bonds or credit default swaps [CDS]), while collateralised loan obligations (CLOs) are backed by pools of leveraged loans. Asset-backed commercial paper (ABCP) programmes are of short-term nature and are used to finance the acquisition of receivables with the proceeds of short-term commercial notes placed in the capital markets. Covered bonds are on-balance sheet instruments (i.e. they remain on the issuer's balance sheet) with similarities to ABS given they are collateralised by a dedicated portfolio of assets, and are separately discussed below (in subsection D) due to their different characteristics and treatment.

Securitisation techniques that involve SME-related claims may be broadly classified as ABS or CDOs. The majority of SME securitisations involve the pooling of medium and long-term SME credit exposures by financial intermediaries and the issuance of securities backed by cash flows of the underlying SME loan portfolios originated by financial institutions. SME claims are also securitised through ABCP programmes involving the funding of SME trade receivables on a short-term basis, referred to as a “SME Conduit” (Jobst, 2005). Other claims, such as cash flows deriving from the whole operating revenues generated by the entire SME or segmented part of a larger business, are also securitised (whole business ABS).¹

Prior to the financial crisis, issuers of securitisation instruments became ever more creative in finding innovative ways of “slicing and dicing” the cash flows coming from the pool of assets to fine-tune risk/return profiles and achieve enhancements through risk-modelling techniques. The resulting **instruments became complex and difficult to analyse**, such as re-securitisations and CDO-squareds, backed by pools of CDO tranches. But the models upon which the structuring was based were not sufficiently crisis-tested (e.g. in a crisis correlations increase). Ratings agencies may have contributed to the problem by producing ratings that in hindsight were clearly more positive than they should have been. It is then also not surprising that some investors failed to comprehend the mechanics underlying the most complex structures prior to the crisis, or the disparity/divergence in the performance of different types of structured instruments during the crisis. When the US housing downturn caused unprecedented losses for investors in MBS and CDOs, and the crisis spread more widely causing default rates in related instruments to exceed expectations, this added to the post-crisis stigma surrounding securitisations.

B. SME securitisation structure

Despite the diversity of types and underlying assets, the basic mechanics of a securitisation transaction are common to nearly every transaction and the basis of the structure is to a large extent similar (Figure 2).

1. Structure and participants

SME-related securitisations are produced through the pooling of a number of SME assets by a financial intermediary, typically the originator of the loans. Due to the small size of SME loans, the number of pooled assets is relatively large. Drawing on the example of an SME CLO, the ultimate goal of the transaction is the transformation of a portfolio of SME loans originated by a financial intermediary into a publicly-issued debt security. The resulting security is not only tradable, transferrable and liquid but also ring-fenced and isolated from their originator.

standpoint: regulatory capital relief through the transfer of the assets off the balance sheet. At the same time, as the economic cost of capital associated with those loans is reduced, the originator benefits from refinancing advantages. The liquidity produced by the transaction can potentially be used for further on-lending to the real economy. Post-crisis, the benefit is restricted by retention requirements for issuers (see Section V.A.4).

Such “cash” or “true sale” securitisation structures isolate the transferred assets and the SPV from bankruptcy of the originator. Credit risk of the collateral asset pool is delinked from credit risk of the originator, thus increasing the attractiveness of the instrument to investors. The SPV is consequently a bankruptcy-remote vehicle in terms of economic and legal recourse.

In contrast, in synthetic securitisation transactions the asset pool is not legally transferred – only the risk exposure is transferred.³ This is accomplished through the use of derivative instruments on securitised claims – such as credit linked notes (CLN) purchased as insurance against the portfolio of loans. Synthetic securitisations can be funded, unfunded or partially funded⁴ and may not necessarily involve an SPV as issuing agent although they do follow the basic securitisation structure (Jobst, 2005, 2006). The loan portfolio in such cases would remain on the balance sheet of the originator and the corresponding credit risk would be transferred to the capital markets. Synthetic securitisations provide for better risk management and capital optimisation, rather than effective refinancing benefits to the Originator, as ownership of the loan portfolio is not transferred.

Tranching of claims that are backed by a loan portfolio differentiates this securitisation structure from a traditional “pass-through” structure. In the case of the latter, investors take a direct exposure on the performance of the portfolio and are serviced as and when cash is actually generated by the underlying assets. The advantage of creating tranches or different classes of securities is that they can deliver to investors securities of different risk-return profiles (and different corresponding ratings) and different maturities, catering to investors’ differing requirements and risk appetites. Both interest/principal cash flows and losses are allocated according to the tranche’s seniority.

3. Credit enhancement techniques

Unlike plain vanilla corporate bonds, securitised instruments are credit enhanced in that some of the securities’ credit quality can be higher than that of the underlying asset pool. Various types of credit support or “credit enhancement” can be supplied by internal or external sources in order to achieve the desirable credit quality, some of which are mentioned in the following. As a result of such techniques, non-investment grade pools of SME loans or parts of SME loan portfolios can be enhanced and transformed into investment grade instruments.

Securitised tranches are issued under senior-subordinate capital structures (see Figure 2) and are ranked and priced differently, depending on their position in the seniority structure. For instance, mezzanine and all other subordinated tranches provide protection from losses to the senior tranche, the subordinated and equity tranches provide protection to the mezzanine tranche and so forth, insulating senior tranches.

The equity or “first-loss piece”, typically unrated and the most junior tranche of the structure, is expected to absorb any initial losses. Such tranche is to be retained by the issuer in order to provide some “skin-in-the-game” and align his interests with those of the investors, addressing moral hazard.⁵ Recently implemented regulation on required retention

rates for securitisation (see Section V.A.4) has been designed with the same objective. Subordination of tranches therefore serves as the primary form of credit enhancement.

Credit enhancement is also achieved through overcollateralisation, as all tranches begin with a certain amount of overcollateralisation drawing from the first loss position. Overcollateralisation is most prominent in SME covered bonds, and is one of the main attractive characteristics for investors.

The excess spread that results from the difference between the interest on the loan portfolio and the interest paid to the securities issued, including any ongoing fees of the transaction, acts as an additional credit enhancement that protects debt tranches from losses. In the absence of losses, such excess is transmitted through to the holder of the equity part and any losses are effectively absorbed by that part as well.

External insurers can provide credit enhancement through guarantees on senior tranches of securitisation programmes, as was the case with monoline insurers. The premium paid to such third parties is offset by a lower interest rate paid to the investor on the insured securities. In the US, monoline insurers failed to absorb the losses occurred by the subprime crisis and were unable to meet their claims.

Credit enhancement through guarantees is one of the main tools used by the official sector. For example, the European Investment Fund (EIF) is a leading provider of triple A-rated credit enhancement in SME securitisations. It benefits from Multilateral Development Bank status, which enables financial institutions to apply a 0% risk-weighting to assets the EIF guarantees. Typically, EIF guarantees certain tranches of notes (senior and/or mezzanine tranches) issued through a SME securitisation transaction and works on the basis of own resources as well as mandates (EIF, 2014). In the US, government sponsored enterprises (GSEs) such as the two housing GSEs, Fannie Mae and Freddie Mac, were chartered by Congress to create a secondary market for residential mortgage loans and played an important role in fostering the securitisation market for MBS. External guarantees facilitate the provision of the desired rating that renders the transaction commercially viable/investable by a larger number of investors (rating agencies effectively specify the amounts of credit enhancement necessary to achieve desired tranche ratings). In addition, they provide for standardised structures and quality control.

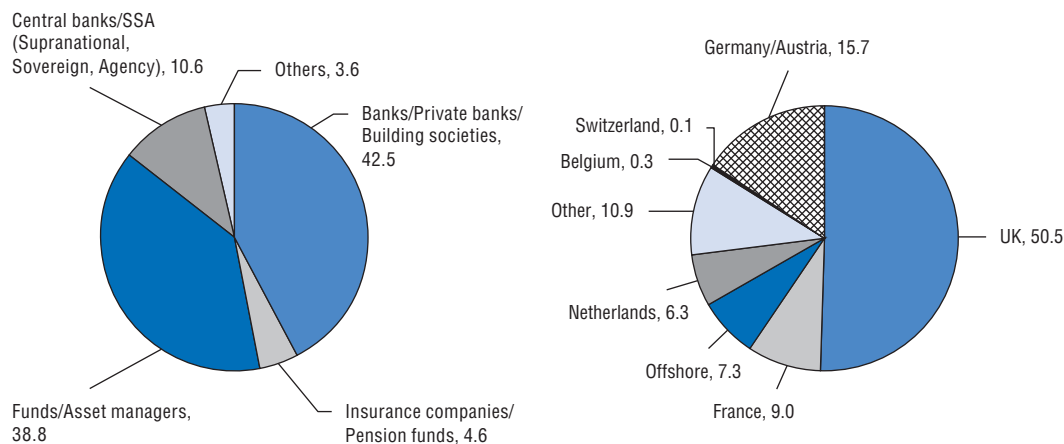
C. Investor base and pricing

The SME securitisation space is a complex market that requires significant resources from the investors' side, rendering it a niche market according to some market participants. Investors need internal analytical capabilities and in-house expertise for the assessment of the pools of loans subject to securitisation and in order to assess the credit quality of the resulting securities. This can partially explain the fact that SME securitisation as an asset class is considered by some to be a niche market and has a rather restricted investor base. Barriers to entry for new or small buyers are relatively high due to the considerable resources required.

Banks, given their first-hand knowledge of SME finances as the primary lenders to SMEs, can be considered to be natural buyers of SME securitisation instruments, together with fund/asset managers reflected in their high share of participation in the market overall (Figure 3). This is explained by the fact that they have the technical expertise and the resources required for such investments. Banks have the ability and information required to perform detailed fundamental analysis of the securitised assets on a loan-by-loan basis. Operational requirements (disclosure, due diligence, stress testing, reporting, and

Figure 3. **Investor distribution for placed new structured finance issuance in Europe**

2013, percentages weighted by investor type and by investor location



Note: Insurance and pension fund participation in securitisation placements can be direct or indirect through asset/fund managers and in the latter case it may not be specifically disclosed as such.

Source: BofA Merrill Lynch (2014).

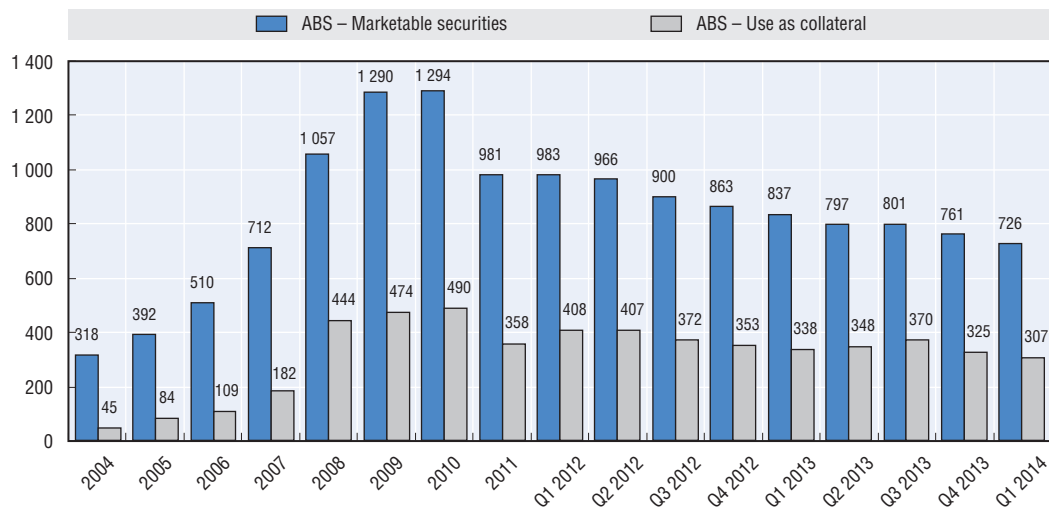
documentation) would be less of a burden to large financial institutions than to smaller investors. Nevertheless, retention requirements could limit their propensity to participate in the market altogether.

Long-term institutional investors have the scale and resources available to invest in SME securitisation but are faced with regulatory and information availability challenges. Pension funds and insurance companies – as well as their asset managers – can build in-house expertise should they wish to invest in this asset class, given their scale and resources. Even sophisticated investors, however, cannot necessarily perform a thorough analysis on the securities due to the lack of publicly available information on the performance of those securities. The heterogeneity of the composition of the pool of SME loans as well as the non-standardised underwriting structure and documentation accompanying such issuances adds to the burden. These impediments have been identified by the official sector and are being addressed, particularly in Europe (see Section V). The main challenge for long-term investors, however, is increasing regulatory requirements for securitisation investments. Insurance companies are particularly affected by the increased capital charges of Solvency II (see Section V.A.2).

ABS issuances can offer attractive risk-reward trading opportunities to hedge funds and other types of funds, but are still not mainstream investments due to limited secondary market liquidity. SME ABS would appear to be advantageous for hedge funds both on an absolute and on a relative basis compared to many other fixed-income products. Structured financial instruments are attractive to such investors given technical as well as idiosyncratic factors which they can exploit. SME CLOs, however, are considered as niche structured credit instruments by hedge funds, not least due to their thin market liquidity and lack of transparent pricing compared to other types of corporate credit (Neuberger Berman, 2013).

Central Banks, supranational and national agencies cover a very important part of the investor base, particularly in Europe. The European Central Bank (ECB) provides credit to financial institutions participating in the Eurosystem credit operations on a collateralised basis through the pledging of assets including ABS and covered bonds (Figure 4). In order to be eligible as collateral for such refinancing operations, marketable assets must comply

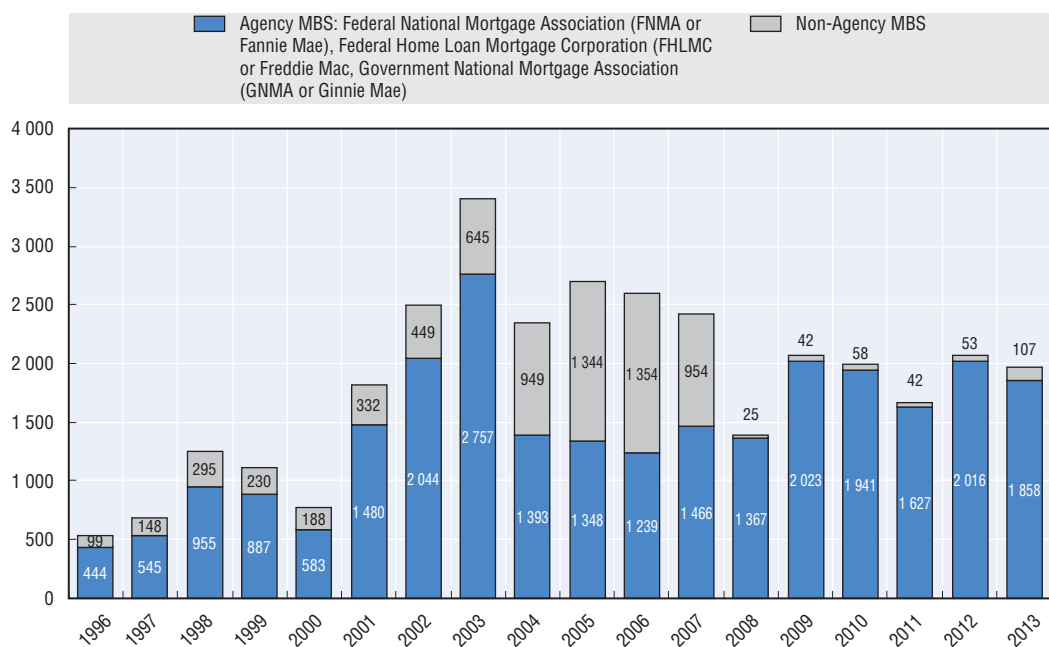
Figure 4. ECB-eligible and pledged marketable ABS
In EUR bn, nominal amounts, averages of end of month data over each time period shown



Source: ECB, www.ecb.europa.eu/paym/coll/html/index.en.html.

with the eligibility criteria specified by ECB's framework for monetary policy instruments. The scale of those operations has been such that the ECB could be considered as the single largest investor in the European securitisation market. In the US, the support of Government Sponsored Enterprises (GSEs) such as Fannie Mae and Freddie Mac was instrumental for the quick rebound of the US securitisation market, as evidenced by the proportion of agency-backed mortgage-related securities out of all such securities issued (Figure 5).

Figure 5. Agency-backed MBS proportion in total US MBS issuance
1996-2013, in USD billion



Source: Thomson Reuters, SIFMA.

The demand for securitisation products has decreased significantly over the last few years as a result of the lingering post-crisis stigma associated with the asset class and the regulatory uncertainty. However, many observers see the possibility of an upcoming turnaround. Regulatory uncertainty is stemming from the pending and ongoing discussions on capital charges and other requirements linked to securitisation, with significant impact on insurance investors in particular. Nevertheless, in the current low yield environment, the search for yield continues across a broader spectrum of investors. There is therefore expectation for ever rising demand for higher credit risk transactions, particularly down the capital structure at the mezzanine level. Industry participants report the return to the market of investors that had exited post-crisis, as well as the entrance of new investors, amongst which are institutional investors such as pension funds (BofA Merrill Lynch, 2014).

Along with regulatory issues, restrained volume of collateral for new issues is another concern raised by industry participants in connection to the SME space in particular. Lack of new collateral seems to be a concern in Europe, where managers struggle to ramp up their portfolios compared to their US peers. Although not the most heated issue, lack of supply is one of the counter arguments of investors reluctant to enter the securitisation market. Supply of collateral is also restrained by the persisting declining trend of SME lending in many OECD and non-OECD countries in the years after the crisis, as evidenced by the OECD Scoreboard on access to finance for SMEs and entrepreneurs (OECD, 2014). Prior to the crisis, increased financial engineering and leverage (re-securitisations, CDO squared, etc.) would have been a potential alternative to boost securitisation levels despite low supply of collateral. This cannot be the case at the current juncture given regulatory efforts addressing the pitfalls of the past and policy efforts actively promoting simple, transparent and high-quality securitisation (see Section V.C).

SME CLOs are considered as one of the highest yielding instruments in the European ABS space. This comes as a consequence of the high entry barriers that investors face, mostly in terms of higher cost, compared to other asset classes, of performing due diligence to appropriately assessing the riskiness of the underlying SME loans. Nevertheless, market consensus appears to be that the investor base is indeed deepening for securitisation overall, and particularly so in Europe. This trend is likely to positively affect the SME securitisation space as well.

Pricing and spread compression in light of the post-crisis environment and recent regulatory reforms could negatively impact SME securitisation. Recent action by the ECB and the BoE aiming at reviving the securitisation market is expected to tighten spreads over Euribor or Libor for securitisations, most likely those eligible as High-Quality Securitisation (HQS; see Section V.C), including SME CLOs. Such a trend would be similar to the one felt in the covered bond market as a reaction to the set of actions affecting covered bonds. ECB purchase programmes, preferential treatment of covered bonds in terms of regulatory capital (significantly lower capital charges relative to securitisation) and liquidity (eligibility of certain covered bonds for the LCR ratio, see Section V.A.3) are some of them. The market also expects second-order effects on the pricing of non-HQS securitisation transactions to follow with a short time lag. Nevertheless, such spread compression could have a negative effect on supply, potentially putting additional pressure to new issuance levels of SME securitisations (BofA Merrill Lynch, 2014).

According to many market participants, the somehow limited investor base does not seem to be the most pressing issue of the securitisation market. Other hurdles are

seen to be more prominent at this stage, like regulatory conditions. This impediment, the industry claims, needs to be prioritised and addressed effectively. Clarity around the final resulting regulatory framework is expected to have a positive effect on investors' willingness to participate in that market. Furthermore, the improvement of data and analytics are seen as important in order to allow for the widening of the investor base and the efficient risk transfer between banks or other originators of SME lending and institutional or other non-bank investors wishing to participate in this market. Supply of SME transactions lags investor expectations due to scarcity of collateral which can only be addressed if underlying credit growth for SMEs picks up. Addressing the above stumbling blocks, the industry argues, will allow securitisation to be seen as less of a niche product, better integrated into the broader fixed income markets.

D. Defining covered bonds

A covered bond is an on-balance-sheet asset-backed debt instrument, secured by a priority claim on high-quality assets, which remain on the lender's balance sheet. The collateral assets "covering" the bonds remain on the balance sheet of the issuer and thus provide double protection to investors who enjoy full recourse to the issuer as well as the to cover pool in case of issuer insolvency. In terms of structure, covered bonds are predominantly bullet, fixed-rate instruments (full repayment at maturity) but have recently evolved into pass-through structures, reducing the asset-liability maturity mismatch risk (S&P, 2013).

The ring-fenced asset pool is characterised by overcollateralisation and dynamic management. The issuer is required to maintain the size and quality of the underlying cover pool and is obliged to replace non-performing loans throughout the life of the transaction. An asset coverage test by an independent monitoring party checks whether sufficient overcollateralisation is available to meet investors' claims and requires the issuer to meet minimum overcollateralisation levels if this is not the case.

From an investor's perspective, covered bonds offer diversification, low risk and good quality investment opportunities. Covered bondholders have preferential claim against the cover pool and the proceeds arising from it, while benefiting from the cash-flows of the entire credit institution/issuer in case of insolvency and in case the funds realised from the monetisation of the collateral do not fully meet their claims (dual or full recourse). In terms of subordination, covered bond investors rank at least *pari passu* with senior unsecured debt holders for any unsatisfied claims. Given the full recourse and bankruptcy remoteness of the asset pool, covered bonds are typically rated higher than senior unsecured debt by the same issuer. The instrument is thus typically considered a yield-enhancing alternative to sovereign bonds.

From the issuers' standpoint, covered bonds offer an alternative cost-effective form of wholesale funding which remains resilient even in times of crisis, as well as investor diversification. In the broader context of the financial system, covered bonds are considered beneficial to overall financial stability: issuers are required to retain the credit risk they are originating, overcoming moral hazard present in originate-to-distribute securitisation and promoting more robust origination practices.

The range of eligible cover assets is prescribed by the specific covered bond framework applying in each country. The most common cover asset is mortgage loans, followed by public sector loans (national, regional or local authority level) ship loans and

aircraft loans or a mix thereof.⁶ Claims against SMEs and guaranteed export loans may also be used as eligible cover assets, although that segment of the covered bond market is relatively new and restricted in terms of outstanding issuance volume.

Covered bonds are either governed by specific legislation (statutory framework) or on general contractual rules and structured programmes in markets where a relevant legislative framework is absent. One of the earliest references to the instrument is found in Prussia back in 1770. Today, covered bonds comprise one of the most important segments of privately issued bonds in the European capital markets. As of early 2014, 26 European countries have developed active covered bond markets covered by a relevant legal framework and at least seven more countries were in the process of adopting/updating covered bond legislation with a view to develop active covered bond markets (see Table 1).

Table 1. **Covered bond legislation in Europe**

	Year
Armenia	2008
Austria	2005
Azerbaijan	2010
Bulgaria	2000
Czech Republic	1995
Cyprus ¹	2010
Denmark	1851/2007
Finland	2000/2010
France	1999/2010
Germany	1900/2005
Greece	2007
Hungary	1997
Iceland	2008
Ireland	2002/2007
Italy	2005
Latvia	1998
Lithuania	2003
Luxembourg	1997
Netherlands	2008
Norway	2006
Poland	1998
Portugal	2006
Romania	2006
Russian Federation	2003
Slovak Republic	1996
Slovenia	2003
Spain	1981/2007
Sweden	2004
Switzerland	1931
Turkey	2007
Ukraine	2006
United Kingdom	2008

1. Footnote by Turkey: "The information in this document with reference to 'Cyprus' relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the 'Cyprus' issue." Footnote by all European Union member States of the OECD and the European Commission: "The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus."

Source: ECBC (2014).

The instrument has taken a global dimension with notably active covered bond markets in Canada, New Zealand, Australia and South Korea (ECBC, 2013).

There is no one single definition of a covered bond across markets. Although the principles are the same for all covered bonds, in practice the different legislative frameworks at different jurisdictions provide for different variations of covered bond instruments (Table 2). Some of the main existing frameworks include German and Austrian *Pfandbriefe*, French *Obligations Foncières*, Spanish *Cedulas Hipotecarias*, Danish *Realobligationer*, Swedish *Sakerställda Obligationer* and the *Lettres de Gages* in Luxembourg.

Interestingly, investors in covered bonds exhibit significant home bias (ECBC, 2013; Figure 6). The different national legislative frameworks, the difficulty in obtaining

Table 2. Covered Bonds outstanding

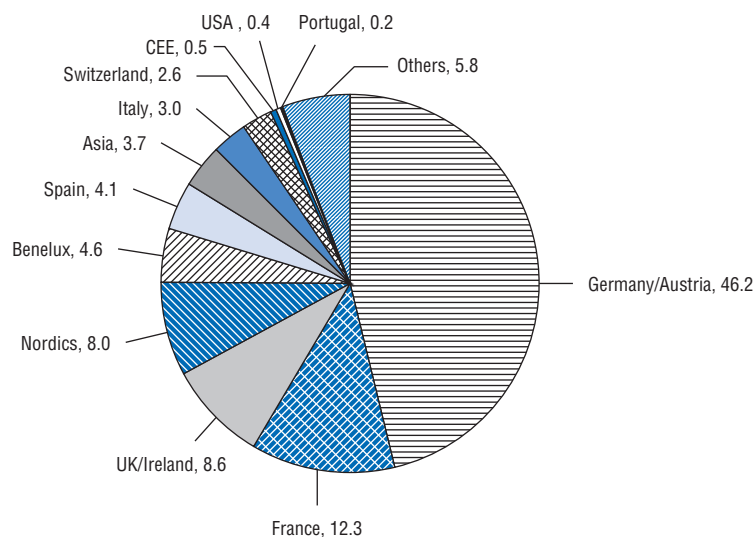
As of year-end 2013, in EUR million

Issuing country	Public sector	Mortgage	Ships	Others	Mixed assets	Total	EUR denominated by euro area issuer
Australia	-	46 021	-	-	-	46 021	-
Austria	23 682	18 854	-	-	-	42 536	39 184
Belgium	-	8 188	-	-	-	8 188	8 188
Canada	-	50 459	-	-	-	50 459	-
Cyprus ¹	-	1 000	-	-	-	1 000	1 000
Czech Republic	-	10 355	-	-	-	10 355	-
Denmark	-	359 646	5 514	-	-	365 160	-
Finland	-	29 783	-	-	-	29 783	29 230
France	68 349	202 822	-	-	73 015	344 185	316 562
Germany	245 961	199 900	5 792	506	-	452 159	437 737
Greece	-	16 546	-	-	-	16 546	16 546
Hungary	-	4 016	-	-	-	4 016	-
Iceland	132	671	-	-	-	803	-
Ireland	22 154	20 827	-	-	-	42 981	36 360
Italy	10 100	120 599	-	-	-	130 699	130 699
Latvia	-	-	-	-	-	-	-
Luxembourg	21 708	-	-	-	-	21 708	12 925
Netherlands	-	61 015	-	-	-	61 015	55 362
New Zealand	-	7 851	-	-	-	7 851	-
Norway	2 035	105 202	-	-	-	107 237	-
Panama	-	218	-	-	-	218	-
Poland	84	707	-	-	-	791	-
Portugal	1 200	34 199	-	-	-	35 399	35 399
Slovak Republic	-	4 015	-	70	-	4 085	-
South Korea	-	2 536	-	-	-	2 536	-
Spain	30 352	334 572	-	-	-	364 924	363 731
Sweden	-	217 854	-	-	-	217 854	-
Switzerland	-	89 064	-	-	-	89 064	-
United Kingdom	5 822	130 792	-	-	-	136 614	-
United States	-	6 000	-	-	-	6 000	-
Total	431 579	2 083 713	11 306	576	73 015	2 600 189	1 482 924

1. Footnote by Turkey: "The information in this document with reference to 'Cyprus' relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the 'Cyprus' issue." Footnote by all European Union member States of the OECD and the European Commission: "The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus."

Source: ECBC (2014).

Figure 6. Covered bonds investor distribution by region of origin
Investor breakdown for publicly placed euro benchmark issues, January 2011 to June 2013, in %



Source: ECBC (2013), NORD/LB Fixed Income Research.

information about the foreign markets and their different characteristics, as well as other more standard reasons such as country limits affect investor participation in international covered bond markets. That is not to say, however, that investors do not seek to take advantage of fragmented markets and important rate differentials between countries, which partially explains the buy-in of German investors in high yielding Spanish Cédulas (while only a very small number of Spanish investors buy low yielding German Pfandbriefe).

III. Benefits and drivers of securitisation

Securitisation allows borrowers, originators and investors to benefit from a solid and transparent market extending to the real economy and the financial system overall. This section provides an overview of the benefits to the main constituencies involved in the securitisation markets, making the case for healthy SME securitisation to become a non-niche asset class, accessible to a wider range of investors. Accessibility of SME structures to long-term institutional investors, such as pension funds and insurance companies, is of particular importance.

A. Benefits to originators

One of the driving forces of securitisation issuance by financial institutions is their need to diversify their funding sources and refinance their loans through an effective source, on flexible terms and at a potentially lower cost than other funding sources. Based on empirical evidence, the reduction of funding cost and the pursuit of economic (as opposed to regulatory) efficiency was the principal motive for securitisation issuance before the crisis, consistent with the domination of originate-to-distribute models (BIS, 2011). Funding diversification has remained one of the prominent drivers of origination post crisis. For lower rated originators, securitisation transactions can often achieve a lower cost of funds than a direct debt issuance by the originator.

The ability to tailor securitisation transactions to meet different investor needs, coupled with the numerous credit enhancement possibilities, allow the originators to tap into a wider and diversified investor base than through senior unsecured debt. Meeting the demand of a broader investor base with different risk appetites might allow for the issuance of securitized products at a lower cost (for each risk/return profile) compared to other instruments. This will likely result in improved credit conditions for the real economy and may enhance resilience in periods of crisis.

By securitising assets, some or most of the credit risk arising from those assets is transferred to the capital markets, with the originator's exposure limited to the portion retained as credit enhancement. The credit risk of the underlying pool of loans is transferred and dispersed to entities/investors that are more willing and potentially better able to manage such risk, reducing the likelihood of banks becoming credit constrained or their funding dependent on business cycle conditions.⁷ However, as the 2007/8 crisis made evident, the possibility of fully off-loading risks may be limited to the extent that SPVs and similar vehicles had to be brought back onto banks' balance sheets for reputational reasons (and in some jurisdictions also required by regulators).

The originator's motivation to achieve such market-based transfer of credit risk originates from the prospect of achieving regulatory capital relief. Such capital relief arises from the reduction in risk-weighted assets and is proportionate to the weighting of loans comprising the underlying pool of each transaction.⁸ As a result, capital is freed up and can potentially generate further lending capacity and on-lending to SMEs and other parts of the real economy.

Besides better risk management, originators benefit from enhanced liquidity and forgo asset encumbrance concerns (as encumbrance associated with securitisation is less significant than other forms of secured financing, e.g. covered bonds requiring over-collateralisation and on-balance-sheet). By transforming illiquid asset pools into marketable securities, originators can easily transfer these into cash through the capital markets. The transformation of illiquid loans into more liquid assets increases the supply of high-quality collateral that can support other transactions, provided that the market is deep and liquid enough and can address relevant regulatory pressure (Liquidity Coverage ratio, increased levels of collateral requirements in the financial system for the protection against counterparty risk) (ECB and BoE, 2014).

At the same time, asset encumbrance associated with securitisation is significantly lower than that resulting from covered bond or senior secured issuance because fewer assets need to be pledged. As a result, originators' funding flexibility is increased (Wehinger, 2012). Securitisation can at the same time support the deleveraging and de-risking process that banks are still undergoing, without damaging lending to sectors that cannot directly access capital markets – as is the case with SMEs.

Issuance of structured finance instruments can also serve as a tool to build up recognition and track record. Originators can improve their profile in the capital markets as well as benefit from visibility in other business lines. Banks which are efficient in originating certain asset types can improve their market share in the specific line of business without creating balance sheet concentration. Better management of the asset-liability profile of the bank's balance sheet is also achieved, especially in the case of pass-through securitisation where repayment obligations match the payments of the underlying assets.

B. Benefits to investors

Both bank and non-bank investors use securitisation as a means to diversify their investment portfolios and exposure to different asset types, industries and parts of the real economy, while still achieving attractive yields according to their risk/return profile. By diversifying, investors can manage their exposure limits in terms of product type/region/liquidity or other characteristics so as to meet their portfolio diversification requirements. Pooling, tranching and credit enhancement results in securities that can be tailored to meet investors' different needs. The flexibility of these structures serves and benefits investors constrained by investment criteria or prudential limitations, such as investing only in investment grade securities.

Customisation of securities in terms of maturity, risk, yield, coupon, underlying type of claims and credit quality allows investors to match their asset-liability profile. This is particularly important in the case of long-term institutional investors such as insurance companies and pension funds. Flexibility in structuring the timing of cash flows attributed to each security or tranche provides a means to match the risks that arise due to mismatches between their assets and liabilities, assisting them in their asset-liability management (ALM, mostly in the medium-term range given the typical tenor of ABS).

Besides ALM, securitisation offers institutional investors diversification opportunities in asset classes that they could otherwise not invest in, such as the SME space. Direct lending to SMEs is in principle difficult for institutional investors at the current environment due to potential lack of expertise, infrastructure, information on past performance, absence of liquid secondary market, and other reasons. Securitisation has the potential to act as the bridge between institutional investors and SMEs, unlock long-term financing for the real economy and facilitate SME lending by institutional and alternative investors, such as hedge funds.

With monetary stimulus around the world pushing bond yields to record low levels, securitisation lends itself to investors searching for yield. This is the case particularly in the riskier, lower ranked tranches of the structure.

C. Benefits of SME securitisation

Securitisation provides an efficient way to alleviate credit constraints and improve the diversity of credit supply to SMEs. Credit availability has been an important impediment to SMEs' access to finance particularly in the years following the financial crisis. SMEs have become ever more reliant on external (mostly bank) financing than in the pre-crisis period, due to the reduced availability of internal funding in a context of subdued growth and demand in most countries (OECD, 2014). By allowing banks to achieve regulatory relief on their SME lending portfolio through securitisation, banks can effectively lend without committing too much of their capital base. Lending activity is boosted and indirect capital market funding of SMEs promoted. Such indirect access to market financing is crucial to credit-constrained SMEs, since most of them are otherwise unable to directly access the capital markets for credit. Participation by non-banks in the funding of the real economy and further diversifying lending sources for SMEs may also improve financial stability overall if it results in lower leverage and (in principle) simpler balance sheets that are less correlated to those of banks (ECB and BoE, 2014).

Promoting the benefits of SME securitisation also means to promote the role of banks that are generally best positioned to originate SME loans. Pricing, capital intensity, as well

as the complex logistics associated with SME loan origination render the exercise cumbersome for non-bank institutions that might lack the expertise, relationships and infrastructure to enable SME loan origination. In addition, through the process of SME securitisation, **banks would be better able to manage their balance sheet and risk with the benefit of greater resilience**. Incentives to monitor the quality and performance of their lending portfolio, enhancement of credit reporting systems and better availability and accessibility of information create a transparent ecosystem. Such an ecosystem can act as a “disciplining device”, reducing information asymmetries between borrowers, originators and investors and help contain systemic risk (Mersch, 2014).

Securitisation of SME loans can also indirectly benefit SME loan origination by encouraging best practices for originators. When participating in securitisation transactions, their lending portfolios get exposed to the scrutiny of investors, lawyers, accountants, trustees and rating agencies’ external reviews. This can often provide originators with insights into best market practices and is most likely to promote habits of standardisation of SME lending terms, documentation, and pricing to allow for the easier securitisation of such loans. SME originators are thus incentivised to better manage their loan portfolio and render it more transparent, which in turn allows for the tracking of performance of the asset class, further fostering its growth.

As the diversity of credit supply to SMEs is improved in a well-functioning and efficient securitisation market, **SMEs can become an asset class that is “investable” and reached by institutional investors or other types of “patient” capital**. This is particularly relevant in the current protracted low interest-rate environment. In addition to facilitating the flow of funds from long-term investors to the SME sector in need for credit, institutional investors can get acquainted with the asset class in general. Building the know-how and the expertise around SMEs via their securitisation investments could allow for further investing in the SME space, perhaps also using different instruments (e.g. private placements).

Besides spurring SME financing and improving the diversity of credit supply to SMEs, such financing techniques potentially **allow for the easing of credit conditions**. The prerequisite for this to be achieved is that the benefits arising from securitisation transactions are passed on to the original borrower at the time of origination. A broader improvement of credit conditions may also result from the lower cost of issuance (for the originator) compared to other sources of funding. SMEs are thus able to enjoy both a lower re-financing risk and a financing at possibly better terms.

Avoiding credit constraints more broadly that arise in times of financial stress is of particular importance to SMEs, given their high dependence on bank financing. Not only can fostering SME securitisation promote and strengthen the role of capital markets in financing the real economy, it can to a certain extent also **somewhat decouple SME lending from banking sector cycles, with potential beneficial countercyclical effects for the macro economy**.

Through securitisation, SMEs obtain, indirectly but in effect, **market funding without the need for (high) individual company credit ratings** required when issuing debt directly in formal bond markets. On top of that, SME debt can even achieve a higher credit rating than the one that could potentially be obtained on a standalone basis, by being part of a highly rated upper tranche in the whole structure. This would otherwise be unachievable for the majority of smaller or micro SMEs.

SMEs securitisation also **makes capital available for further on-lending by originators**. The lending-on-lending cycle also indicates a relevant pivotal point for policy interventions in the SME securitisation space, aiming at boosting lending to SMEs by originators/issuers. The challenge in the design of such policies is the difficulty to ensure that the freed-up capital will be redeployed in new, additional SME lending that would otherwise not be dispersed (i.e. over and above the SME loans that would anyway be issued in the system).

SMEs securitisation also **allows targeted “unconventional” monetary policies** (see also section VI.A below). Outright purchases of SME ABS allows a central bank to stimulate further credit creation by creating incentives for securitising – and thus generating – SME loans. Such policies may also assist the transmission of monetary policy more generally and improve overall price stability, as contended by the ECB that sees such benefits of SME securitisation for the Eurosystem overall (Mersch, 2014). ABS being an important part of the Eurosystem’s balance sheet, the central bank has a strong interest in ensuring transparent, well-functioning and liquid secondary markets for the ABS it holds.

Fostering SME securitisation also has the potential to address fragmentation in SME credit markets, an issue especially relevant for Europe. Originators can access capital markets elsewhere than in their own jurisdiction, removing constraints of market segregation. The benefits of such market access can theoretically be passed on to small borrowers at the time of origination. Public intervention through the provision of guarantees or credit enhancement on SME securitisation transactions further assists in the correction of imbalances of fragmented markets.

IV. Current standing of the securitisation market

A. State of the broader securitisation market

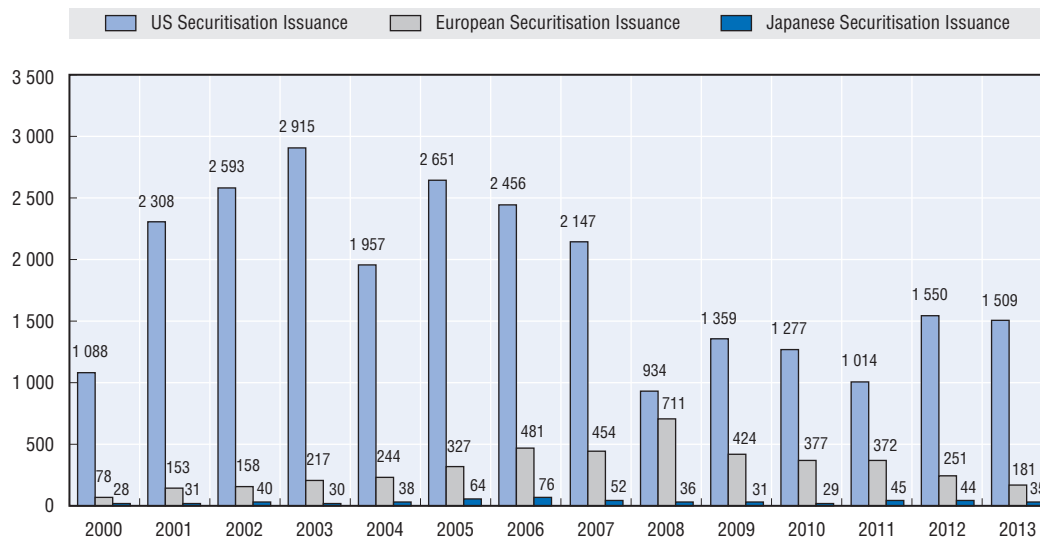
In the years leading up to 2008, the securitisation market thrived across major OECD economies, with securitisation issuance peaking at EUR 711 bn in Europe (2008), and standing at EUR 2 147 bn in the US (2007) and EUR 76 bn in Japan (2006) (Figures 7-11). In the US, new issuance was predominantly driven by Agency MBS, guaranteed by the Government Sponsored Entities (GSEs, Fannie Mae and Freddie Mac) (see also Figure 5 above). The absence of such GSEs in Europe partially explains the lower scale of the European market for securitisation. The support by public financial institutions played also a role in the development of securitisation markets elsewhere, in particular in China (Box 2).

Subprime RMBS and other highly complex and opaque securitisation structures played a prominent role in the build up to the crisis, stigmatising the entire securitisation market. Potentially inadequate regulation for some types of securitisation, complex structuring to “improve” risk diversification by issuers and misalignments of interest between originator and investor led to underpricing of risk and unexpected defaults. Such defaults, together with liquidity squeezes, undermined the securitisation model as a whole and led to a sharp post-crisis fall in securitisation overall. Failure by market participants to recognise the importance of inherent financial market instability and event risk, as was the possibility of a downturn in the US housing market, is thought by some to have been part of the problem, necessitating a more cautious approach toward securitising risk.

Full offloading of risks by the originator through the “originate-to-distribute” model promoted poor loan originating practices from the side of originators. As they had little

Figure 7. **Pre-and post-crisis securitisation issuance in the US vs. Europe and Japan**

Annual issuance levels, 2000-13, in EUR billion

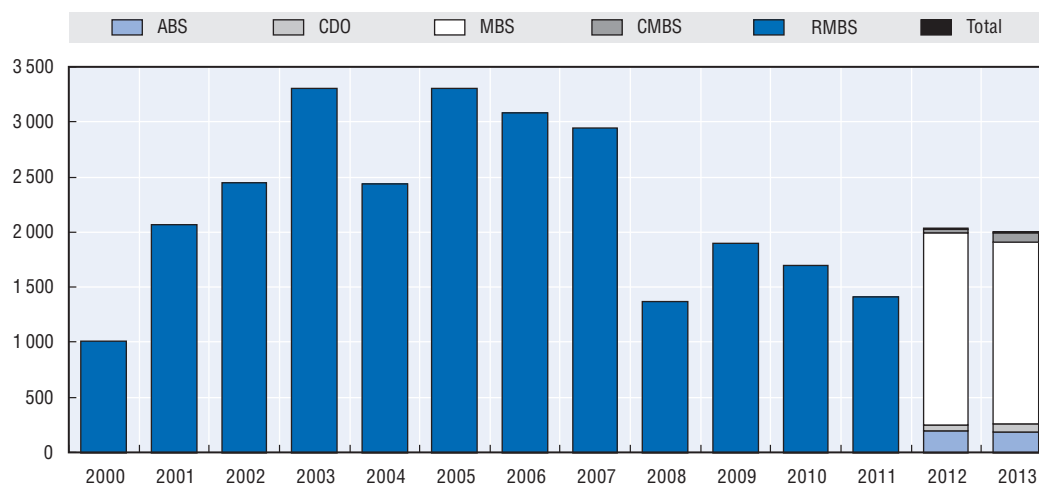


Note: Currency conversions of original data based on annual average exchange rates.

Source: AFME, SIFMA, Bloomberg, Dealogic, Thomson Reuters.

Figure 8. **Securitisation issuance: United States**

Annual issuance levels, 2000-13, in USD billion



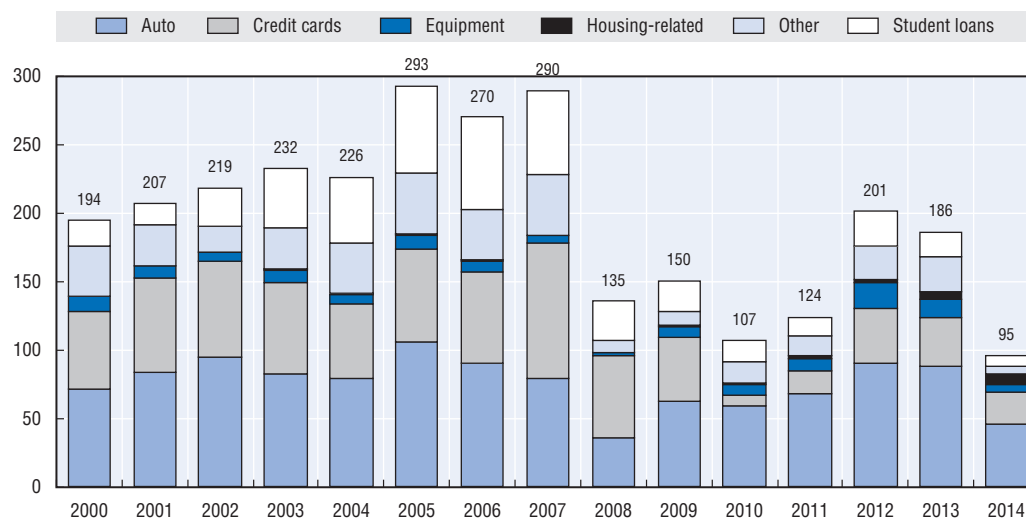
Note: Currency conversions of source data in EUR based on annual average USD exchange rates.

Source: SIFMA, AFME, Thomson Reuters.

“skin-in-the-game” their economic interest was driven by a short-sighted perspective on the loans they granted. Pools of poorly underwritten loans were securitised and purchased by over-leveraged investors who depended on short-term wholesale funding (ECB and BoE, 2014). The absence of proper due diligence, coupled with information asymmetries between issuers and investors, impeded proper credit risk assessment by issuers and investors. This has also contributed to an overreliance on credit rating agencies (CRAs) by investors who did not necessarily go through their own credit risk assessment exercise. The methodology and issuer-pay model of CRAs became subject to increased scrutiny by

Figure 9. **Breakdown of US ABS issuance**

Annual issuance levels, 2000-13, in USD billion

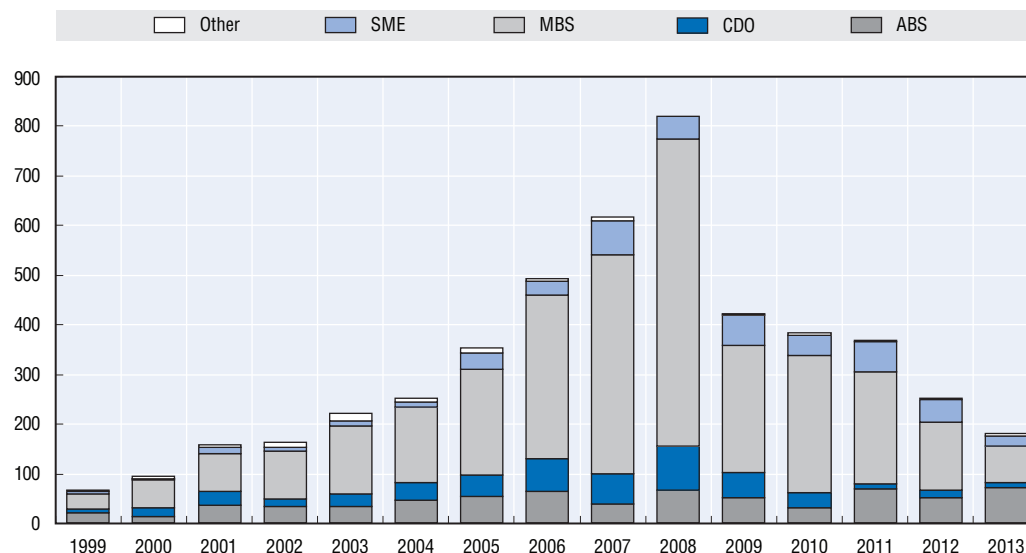


Note: Other includes anything that does not fit into any of the remaining categories, including those with mixed asset categories (e.g., tax liens, trade receivables, boat loans, aircraft, etc).

Source: Thomson Reuters, SIFMA.

Figure 10. **Securitisation issuance: Europe**

Annual issuance levels, 2000-13, in EUR bn



Note: "ABS" includes Auto, Consumer, Credit Cards, Leases, and other ABS; "MBS" includes CMBS, RMBS, and Mixed; "Other" includes Whole Business Securitisations (WBS) and other securitisations. Currency conversions of source data in USD based on annual average EUR exchange rates.

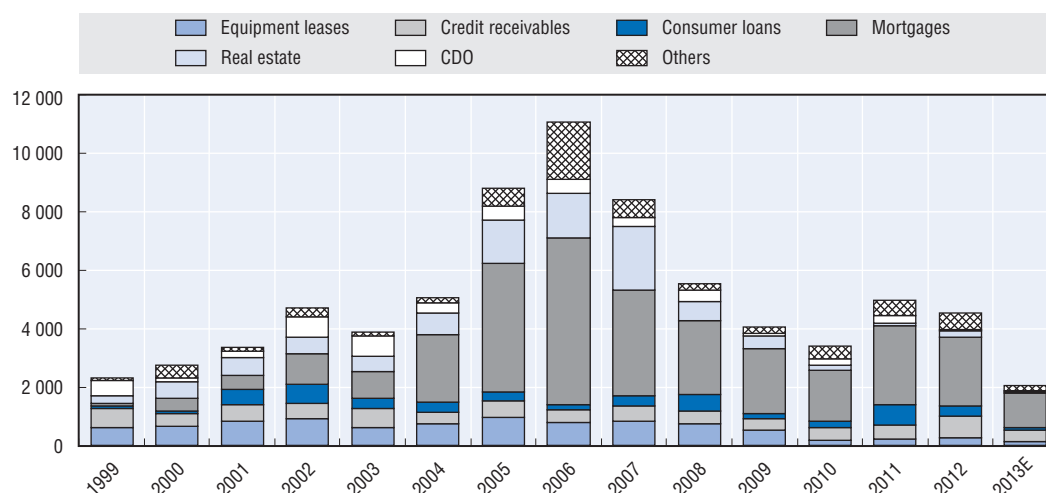
Source: AFME/SIFMA Members, Bloomberg, Dealogic, Thomson Reuters.

market participants and the regulators, with their incentives and methodology being put into question. Post-crisis reforms in CRA regulation and CRA's own changes in ratings methodologies of structured products have tried to address these shortcomings.

The quasi extinction of structured investment vehicles (SIVs) was another reason for the decline in issuance levels. A major part of securitisation (up to 75% in the run-up

Figure 11. Securitisation issuance: Japan

Annual issuance levels, 2000-13, in yen bn



Note: Estimates for the year 2013 cover January-July issuance.

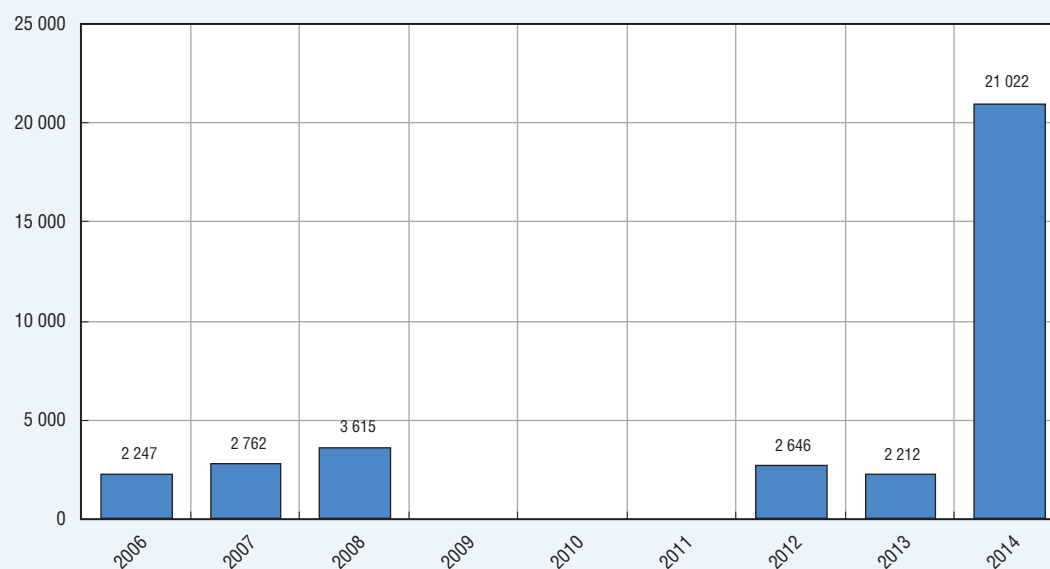
Source: Thomson Reuters, Deutsche Securities Inc.

Box 2. Securitisation in China

The Chinese securitisation market is a recent, though steadily developing market, marked by restrictions in issuance levels (prescribed by quota), limited non-bank participation, and the absence of a dedicated legal framework.

Figure 12. Issuance of asset-backed and mortgage-backed securities in China

Annual issuance, 2006-14, in USD million



Source: Thomson Reuters.

China officially established a securitisation market in 2005 with the launch of a pilot scheme allowing China Development Bank and China Construction Bank to securitise loan assets and mortgages, respectively. The scheme was then expanded to other Chinese commercial banks, investment banks and securities firms

Box 2. Securitisation in China (cont.)

(quota of RMB 15 billion) but was scaled down and ultimately halted in the wake of the 2008 financial crisis. A new pilot programme was introduced in 2012, allowing securitisation issuance up to RMB 50 billion or the equivalent of less than 1% of the banking sector's total balance (ASIFMA, 2013). The scheme allowed inter alia the securitisation of SME loans. In 2013, a third round was initiated with a quota of RMB 300 billion.

Besides quota restrictions, a number of structural and regulatory hurdles seem to have impeded growth of the securitisation market in China. Currently the market is structurally fragmented by the existence of different frameworks governed by different regulatory authorities and applying different guidelines with respect to eligible originators, underlying assets, and the investor base (Table 3). The majority of issuances until recently were limited to the interbank bond market. This, coupled with a limited scope of eligible investors, resulted in a majority of investors being the banks themselves (ca. 80% of issues are held by banks, according to Moody's). This was recently changed by a new regulation¹ and, in June 2014, Ping An Bank issued the first ABS to be listed on Shanghai Stock Exchanges,² boosting liquidity and widening the investor base. Risk assessment proves to be a challenge given weak data quality and lack of historical performance data. Competitiveness of securitised products is another issue, given attractive yields offered by shadow banking products. Tightening of shadow banking regulation could potentially correct arbitrage opportunities for investors, incentivising them to invest in ABS.

Table 3. Securitisation structures in China

Regulator	CBRC, PBOC	CSRC	NAFMII
Approval timeframe	2-3 months	2-3 months	1-2 months
Guideline	Pilot Projects for Securitisation of Credit Assets Procedures issued by PBOC, CBRC and MOF (2012)	Administration of Securities Companies' Asset Securitisation Businesses issued by CSRC (2013)	Guidelines on ABN for Non-financial Enterprises on the Interbank Bond Market issued by NAFMII
Approval mechanism	Case by case basis	Case by case basis	Filling mechanism
Issuer (SPV)	Trust, broker's asset managm.plan	Broker's asset management plan	Corporate
Underwriter	Brokers and Banks	Brokers and Banks	Brokers and Banks
Trading place	Interbank market/exchange	Exchange and OTC markets	Interbank market
Underlying assets	Credit assets of banks and financial Institutions including SME loans , auto loans, mortgage loans, infrastructure loans, agriculture loans, etc.	Physical corporate asset including Highway toll rights, future flow of public utilities, financing leasing receivables, etc.	Future cash flow of public utilities, BOT projects, etc.
On/Off balance sheet	Off balance sheet (Trust SPV)	Off balance sheet (Discretionary asset management SPV)	On balance sheet
Outright sale & bankruptcy remoteness of underlying assets	Yes	Yes	No
Credit enhancement	Mainly internal credit enhancement, few external credit enhancements due to cost concerns	Mainly external credit enhancement, providing funds or corporate guarantee services for corporations	n.a.
Subscriber of the inferior tranche	ABS originator – banks should hold subordinate class with amount of no less than 5% of the inferior tranche and hold no less than 5% of total ABS size. The remaining proportion of inferior tranche can be subscribed via private placement.	Fully subscribed by ABS originator	n.a.
Rating and audit requirement	Double rating mechanism – need 2 rating agencies to grant credit rating upon public issue	Third party rating agency to provide credit rating – an annual rating report to be released during the lifetime of the SPV	Double rating mechanism – need two rating agencies to grant credit rating upon public issue

Source: Adapted from BNP (2014).

Box 2. **Securitisation in China** (cont.)

The development of a formal securitisation market open to a broader range of market participants and governed by a clear and consistent regulatory framework could provide significant benefits to the Chinese economy. It would allow for the decentralisation of risks in the banking system alleviating concerns of excessively levered banks overly reliant on deposits. This in turn would allow local municipalities to divert from over reliance on bank lending for the funding of their infrastructure projects (ASIFMA, 2013).

Given the risks securitisation can pose, the development of the Chinese securitisation market needs to be carefully designed and supervised in order to avoid past pitfalls, like overcomplicated structures, high leverage, flawed risk-pricing mechanisms, and overreliance on external credit ratings. Despite Chinese securitisation being simpler in terms of structure (perhaps also due to undeveloped derivatives markets), the great interconnectedness of such products with banks could undermine broader stability. In addition, legal enforceability and bankruptcy-remoteness remain unclear given the absence of comprehensive rules on the transfer of asset title for various underlying asset types under the relevant framework (Fitch, 2013b). It will be crucial to develop an asset securitisation product design, issue and trade approach that fits into Chinese financial markets, while improving product innovation and risk control capability of relevant financial entities.

The growth potential for the Chinese securitisation market is enormous: total securitisation issuance since the introduction of the asset class accounts for only 0.1% of total banking assets of about RMB 166 trillion (as of July 2014, according to data from Thomson Reuters Datastream). The latest quota of RMB 425 billion is about 0.3% of total banking assets, a startling difference against the equivalent ratio in the United States, where outstanding ABS securitisation stands at roughly over 60% (as of Q2 2014). Quotas would have to be lifted for a meaningful risk transfer for the banking system to take place. Nevertheless, a careful design and implementation of a regulatory framework, appropriate risk pricing and management will be of paramount importance for the establishment of a healthy and solid securitisation market in China.

1. The new regulations were jointly issued by the People's Bank of China, the China Banking Regulatory Commission, the China Securities Regulatory Commission, the China Insurance Regulatory Commission and the State Administration of Foreign Exchange (Circular No.127).
2. See the official website of The 2nd Annual China Securitization Forum 2014 at www.opplandcorp.com.

to the crisis according to some estimates) was done for risk transfer, offloading risky assets to SIVs. While such SIVs were the main “buyers” of securitised products they added another risk, a maturity mismatch between assets and liabilities in SPVs to the extent they were money market funded. Accounting rules allowed for securitisation-related risk exposure to be kept out of sight by offloading them to SIVs, thus allowing for the non-disclosure of associated risks to investors and regulators (IMF, 2009).

In the aftermath of the financial crisis, resurgence has been swift in the US, with the market rebounding thanks to investors’ search for yield, low default rates on issuances (besides subprime RMBS) and a more accommodating approach by the US authorities compared to their European counterparts. 2013 issuance stood at EUR 1 509 bn, almost two-thirds of the pre-crisis level. The GSEs helped the revival by supporting a liquid and deep market.

Unlike the US, the securitisation market in Europe nearly shut post crisis and did not enjoy a similar recovery, with EUR 181 bn of issuance in 2013, just one-fourth of the pre-crisis peak, mostly concerning straightforward vanilla ABS issuances. Despite its resilient performance throughout the crisis, European securitisation failed to recover to its pre-crisis levels. Investors’ risk aversion remained high in the years following the crisis, with the perceived stigma still lingering on the asset class.

The pitfalls of the past have been recognised in policy responses to the crisis and have been addressed in recent regulations that aim to restore investor confidence (see Section V). Recently implemented regulations require risk retention or “skin in the game” from the issuers’ side, removing misalignments of interest and information asymmetries between originators and investors. Such information asymmetries are also addressed through enhanced due diligence requirements, increased transparency and promotion of greater availability of information on loan-level data, asset performance, documentation and other deal structure-related information.

Despite post-crisis efforts to reduce the danger of excesses of the past and rectify potentially damaging aspects of the instrument, the securitisation market is still suffering from the labels attached to it at the height of the 2007-08 subprime crisis. Issuance levels have yet to rebound to pre-crisis levels, particularly so in Europe. A number of structural roadblocks prevent issuers and investors from reviving the market, varying from regulatory treatment and public intervention, to economic viability, transparency and standardisation (see Sections V, VI, and VII).

B. Overview of the SME securitisation market

SME securitisation in the US has been relatively underdeveloped compared to other securitisation classes, given that the market has historically been focused more on the real estate and consumer market segments. Following the downturn of the economy in the aftermath of the crisis, a lot of importance was placed on small businesses as an engine for economic recovery. Alternative financing vehicles such as the SME securitised products gained prominence.

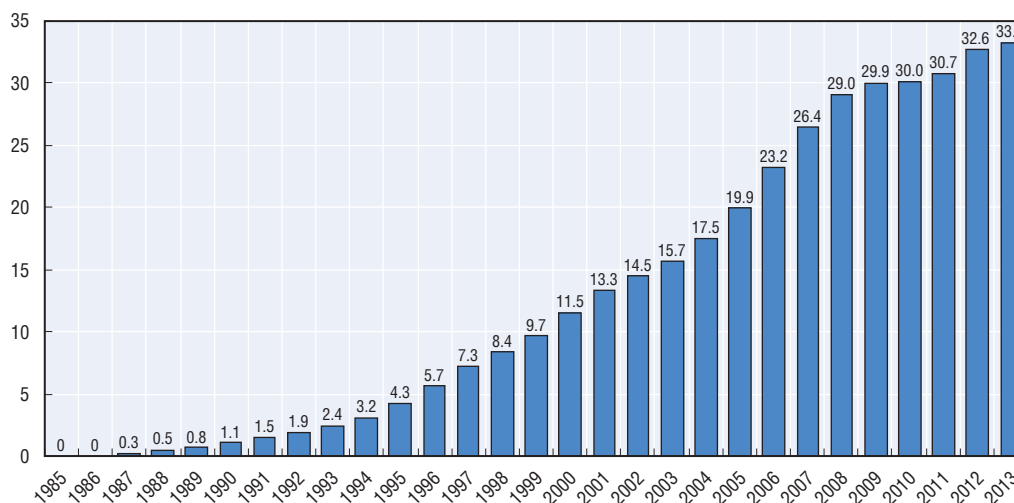
SBA loans, partially guaranteed by the US Small Business Administration, have a leading role in the SME securitisation space in the United States. The SME loans securitisation programme launched by the Small Business Administration in 1985 has long preceded SME securitisation programmes in Europe. SBA volume in recent years has reached record levels in terms of the total amount lent and number of participants involved (Figure 13). Other SME securitisation is considered to be in its early stages by the market, but is expected to further expand at a growing pace thanks to the participation of more non-depository lenders into this space.

In Europe, the share of SME securitisation in total securitisation issuance is small (Figure 14). The total volume of SME transactions peaked in 2007 at EUR 77.3 bn, failing to revert to such levels ever since (Figure 15). Most of the transactions executed prior to the crisis were placed with investors, domestic or otherwise. Spain and Germany were the two most active markets (see Figures 16 and 17). A significant amount of transactions was unfunded, dominated by KfW’s programmes in Germany which accounted for the majority of synthetic SME securitisations prior to the crisis.

From 2008 onwards, the volume, type of placement and geography of SME securitisation changed significantly. Only a small minority of transactions was actually placed with investors (see Figure 24, Section VI.A.5 below) with the majority of deals being retained for repo funding with the ECB. Italy and peripheral countries such as Greece and Portugal became more active, although the volumes correspond to a very small number of underlying deals (BofA Merrill Lynch, 2014). Synthetic securitisation nearly disappeared, as the main motivation for structuring SME transactions was funding rather than capital enhancement needs.

Figure 13. **Small business loan administration ABS outstanding**

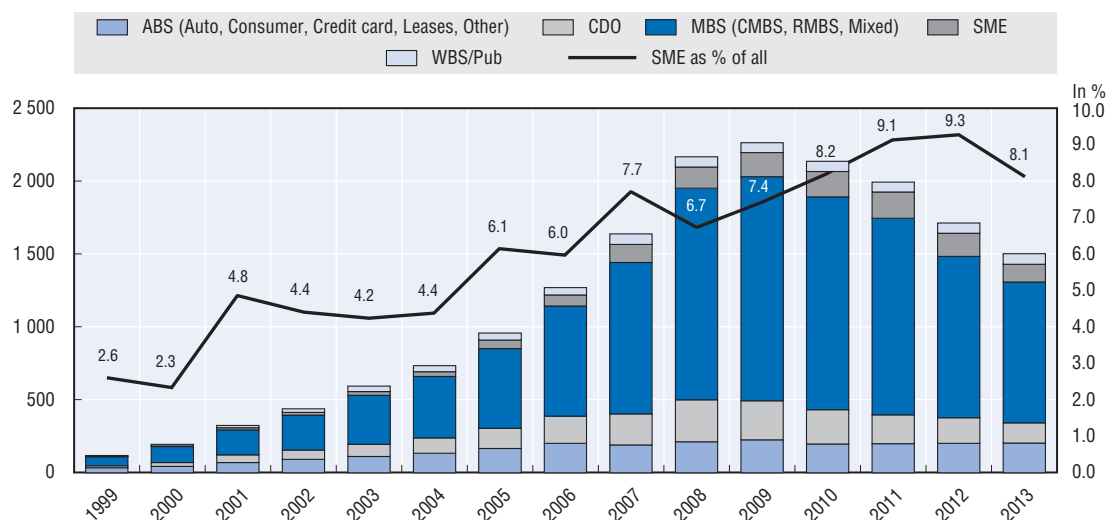
Annually, 1985-2013, in USD bn



Source: SIFMA, Bloomberg, Dealogic, Thomson Reuters.

Figure 14. **European securitisation outstanding by collateral**

In EUR billion (l.h.s.) and SME securitisation as a % of total securitisation (r.h.s.)



Note: "ABS" includes Auto, Consumer, Credit Cards, Leases, and other ABS; "MBS" includes CMBS, RMBS, and Mixed; "Other" includes Whole Business Securitisations (WBS), public finance initiatives, and other securitisations.

Source: AFME, SIFMA, Bloomberg, Dealogic, Thomson Reuters.

Issuance in Q1 2014 was weak, with EUR 1.6bn of SME issuance across Europe, 60% lower than the previous quarter and a further 83% drop on a year-on-year basis. The market for SME structured transactions remains fragile, but optimism for its revival is growing, driven by policymakers' goodwill and statements in favour of the rehabilitation of the entire securitisation industry. For this to happen, a number of headwinds, discussed below, will need to change direction assisted by the regulator and policymakers, but also market participants overall. That said, important safeguards need to be put in place in the structured finance market to prevent the reoccurrence of pitfalls of the past.

Figure 15. **European SME securitisation issuance**

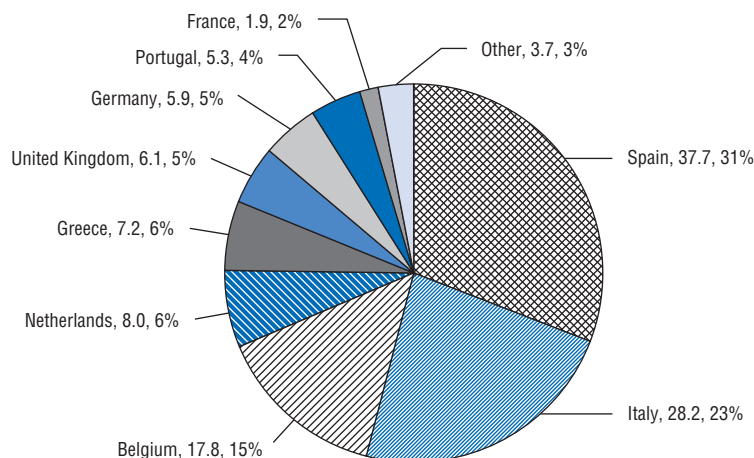
Annual issuance, 2000-13, in EUR billion (l.h.s.) and as a % of total issuance (r.h.s.)



Source: SIFMA, Bloomberg, Dealogic, Thomson Reuters, prospectus filings.

Figure 16. **European SME securitisation outstanding by country**

Outstanding SME securitisation in selected EU countries, in EUR bn and in % of total, as of 2013



Source: AFME, SIFMA, Bloomberg, Dealogic, Thomson Reuters, prospectus filings, Fitch Ratings, Moody's, S&P.

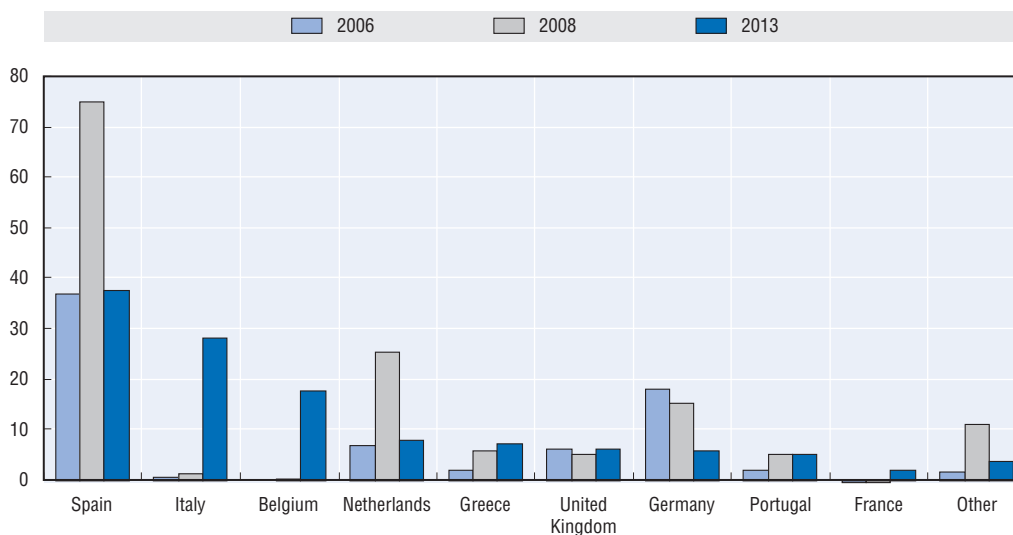
C. Current state of the covered bond market

Compared to securitisation, covered bonds have emerged from the crisis relatively unscathed (Figure 18), and remain one of the key components of capital markets, providing cost-effective and diversified funding to issuers and a safer alternative to senior unsecured securities for investors. The attractiveness of the instrument, particularly in Europe (Figure 19), lies to a certain extent in its potential to enable the channelling of funds to the real economy in an efficient and simple way, away from complex originate-to-distribute models, thus ensuring financial stability. In Europe, favourable eligibility treatment in the context of ECB's (and other central banks') operations has further encouraged issuance levels.

The resilience of this asset class during the recent years of market turmoil is mainly attributed to its key "safety" features. The most important such features are the strict

Figure 17. European SME securitisation in selected countries

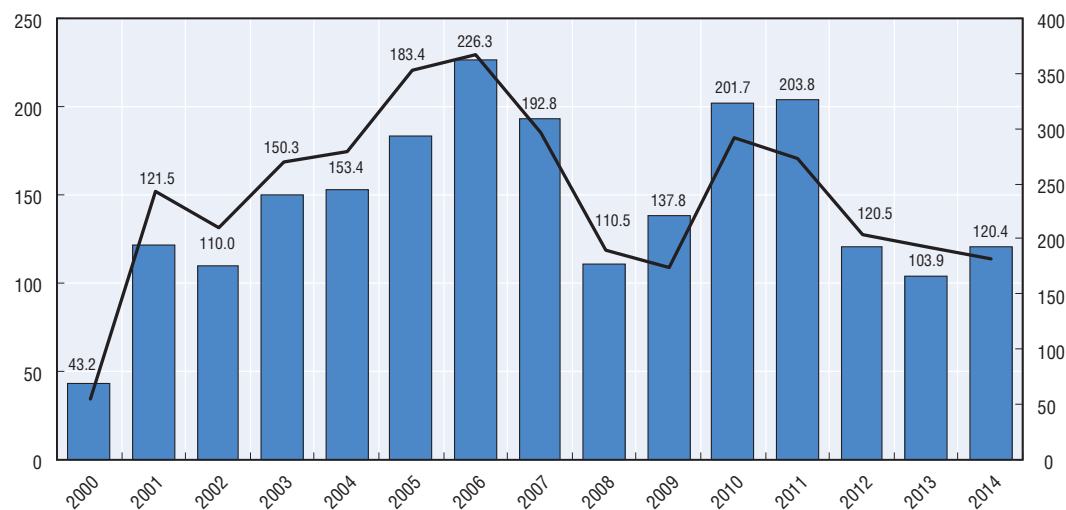
Outstanding SME securitisation in selected EU countries, in EUR bn



Source: AFME, SIFMA, Bloomberg, Dealogic, Thomson Reuters, prospectus filings.

Figure 18. Selected European covered bond issuance

Annual issuance levels, 2000-14; in billions of euros (l.h.s.) and number of issues (r.h.s.)

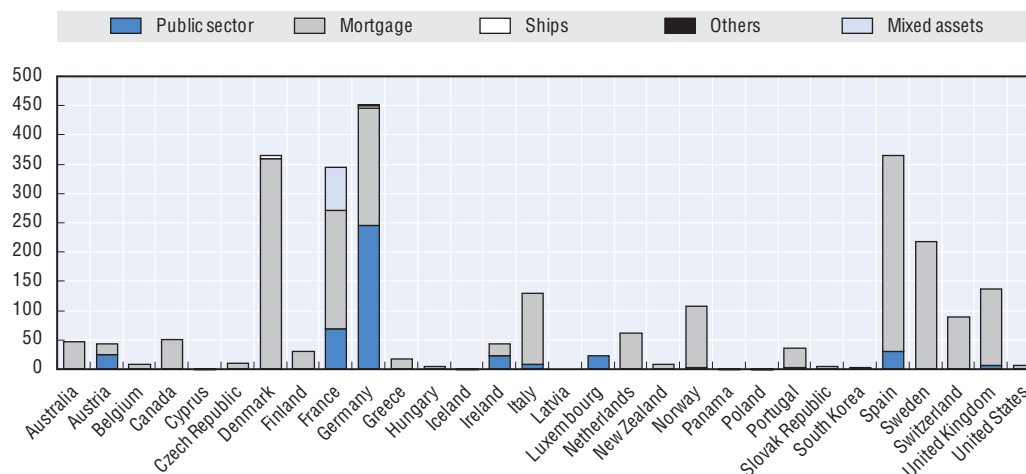


Note: Includes Cédulas Hipotecarias, Lettres de gage publiques, Obligations Foncières, Pfandbriefe, issues in Italy, Ireland, the UK and other European covered bond issuance. 2014 figure as of 8/12/2014.

Source: Thomson Reuters.

legal and supervisory framework and the double recourse that investors enjoy, which is the main differentiating factor between securitisation and covered bond issuance. The double protection against default (recourse to the issuer and to the cover pool) allows such instruments to be rated higher than the issuer's senior unsecured debt. For the same reason, covered bonds enjoy favourable regulatory treatment (Solvency II, Basel III capital and liquidity requirements, bank bail-ins/resolutions), which constitutes the main attractive characteristic of the instrument. Recourse to the originator generally improves the liquidity of the instrument, attracting wide investor and issuer interest.

Figure 19. **Covered bonds outstanding in Europe**
Outstanding levels as reported by the ECBC, 2013, converted in billions of euros



Source: ECBC – European Covered Bond Council (2013), Thomson Reuters.

Despite their numerous benefits and attractive characteristics, covered bonds are seen as a complement, rather than substitute to securitisation and other capital market instruments. This is mainly due to the fact that they stay on issuing bank's balance sheet and do not provide the possibility of risk transfer and regulatory relief offered by securitisation. Asset encumbrance concerns further restrict their use in the current deleveraging environment, and limit their role as substitute for securitisation. That said, the low interest rate environment is pushing institutional investors towards alternative instruments and such quest for yield would be expected to promote the growth of covered bond issuance, especially given the instrument's relatively favourable risk characteristics.

V. The impact of regulation on securitisation markets

A. Ongoing regulatory workstreams affecting securitisation issuance

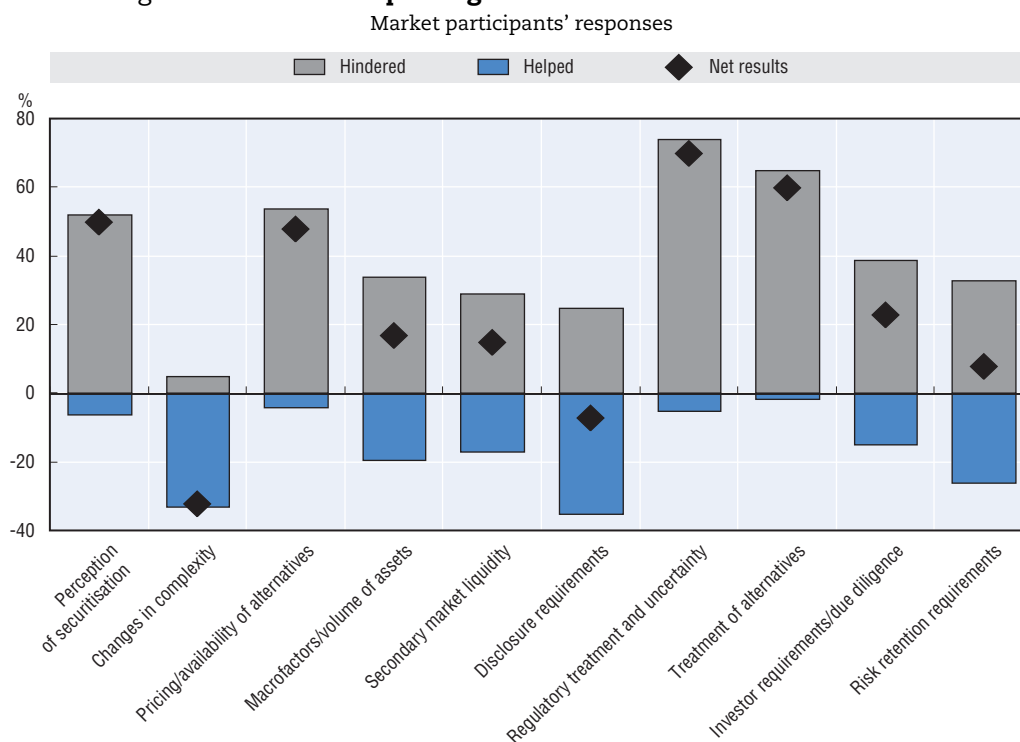
Although there is a growing recognition by policy makers of the economic benefits of securitisation, the relevant regulatory framework is seen by many observers as crucial for a revival of the industry. Post-crisis regulatory response designed to enhance the system's overall resilience was necessary so as to impede the resurgence of complex and opaque structures that contributed to the financial crisis. Nevertheless, the proposed regulatory treatment, designed to address the flaws of the past, is perceived as unduly restrictive by many market participants. This is the case particularly in Europe, where it has been highlighted as one of the most (if not the most) important impediments for the market's re-launch.

The main regulatory initiatives that have a bearing on securitisation address pitfalls brought to the fore during the crisis. Examples of such flaws addressed by regulation are the misalignment of interests between originators and investors, the misalignment of regulatory capital with corresponding credit risk, the overreliance on credit rating agencies and the lack of due diligence by investors, as well as the quality of certain products subject to securitisation techniques.

A number of ongoing regulatory reforms intended to address these flaws and make the financial sector safer may run counter to fostering securitisation by dis-incentivising originators and investors. The final framework of the Basel Committee on Banking Supervision

(BCBS) for securitisation, the European Insurance and Occupational Pension Authority's (EIOPA's) proposal on Solvency II treatment of the instrument, and the implementation of the Liquidity Coverage Ratio are perhaps the most prominent regulatory workstreams with a possible negative bearing on securitisation. While some alleviation has been achieved compared to initial proposals, many market participants deem these regulations still as unduly onerous on both banks and investors. The regulatory environment relative to securitisation instruments is perceived as challenging (Figure 20) and many investors prefer to abstain from participating in that market altogether. Many investors find it difficult to operate under an enduring uncertainty arising from the expected revisions in such regulations, and see it as hampering the re-launch of the market.

Figure 20. **Factors impacting securitisation markets since 2009**



Note: Regulatory treatment category includes capital and liquidity treatment. Diamond-shaped markers reflect net results.
Source: Responses to the BCBS – IOSCO Task Force (BCBS and IOSCO, 2014).

1. Basel securitisation framework: regulatory capital requirements and risk weights

BCBS published the final version of the Basel Securitisation Framework on 11 December 2014 (BCBS, 2014), on the back of its second proposal issued a year earlier (BCBS, 2013a). This final iteration, to come into effect in January 2018, revises the capital charge treatment for securitisation, replaces the complex hierarchies for determining risk weighting with a simpler single hierarchy that reduces “mechanistic reliance” on external ratings, while addressing issues around the lack of risk sensitivity in the pre-crisis era. The final framework allows for some easing in the capital charge treatment for securitisation when compared to the original proposals; however, there are still significant increases in the risk weightings compared to the current framework, with the risk weight floor raised from 7% to 15% (Table 4). Earlier proposals for the new framework have been considered not

Table 4. **External ratings-based approach senior tranche risk weights**Final framework vs. previous proposals and current framework
Percentage

	External ratings-based approach (ERBA)				Ratings-based approach (RBA)			
	Final framework (BCBS, 2014)		Proposal Dec. 2013 (BCBS, 2013a)		Revised RBA proposal (BCBS, 2012)		Current framework	
	1-year maturity	5-year maturity	1-year maturity	5-year maturity	1-year maturity	5-year maturity	1-year maturity	5-year maturity
AAA	15	20	15	25	20	58	7	7
AA+	15	30	15	35	32	75	8	8
AA	25	40	25	50	51	97	8	8
AA-	30	45	30	55	61	110	8	8
A+	40	50	40	65	71	124	10	10
A	50	65	50	75	81	141	12	12
A-	60	70	60	90	94	162	20	20
BBB+	75	90	75	110	106	183	35	35
BBB	90	105	90	130	118	203	60	60
BBB-	120	140	120	170	136	235	100	100
BB+	140	160	140	200	153	265	250	250
BB	160	180	160	230	170	294	425	425
BB-	200	225	200	290	210	363	650	650
B+	250	280	250	360	262	442	1 250	1 250
B	310	340	310	420	321	485	1 250	1 250
B-	380	420	380	440	389	502	1 250	1 250
CCC [+/-]	460	505	460	530	472	568	1 250	1 250
Below CCC-	1 250	1 250	1 250	1 250	1 250	1 250	1 250	1 250

Source: BCBS – Basel Committee on Banking Supervision (2012, 2013a, 2014).

supportive enough for securitisation by market participants, and this may still be the case for the final framework, as the capital that banks are required to hold is a multiple of what they are required to hold today. This is the case even for high quality securitisations as of the time of release of the final report, although this is expected to change if proposals for the definition of safer securitisation into the Basel framework, released on the same day (11 December; BCBS and IOSCO, 2014) are incorporated.

A simplified hierarchy of approaches for the calculation of risk weights has been set out: i) the internal ratings-based approach (IRBA) will apply to banks that have supervisory approval and provided they have sufficient data on the underlying pool, or ii) the external ratings-based approach (ERBA) based on an external credit rating (rating agency) or where a rating can be inferred on the exposure, provided that the jurisdiction permits ratings to be used.⁹ If the above two approaches cannot be used, the standardised approach is applicable, which derives from the simplified supervisory formula approach. In the event that none of the above is applicable, a 1 250% risk weight is used, while re-securitisation structures can only apply the standardised approach.

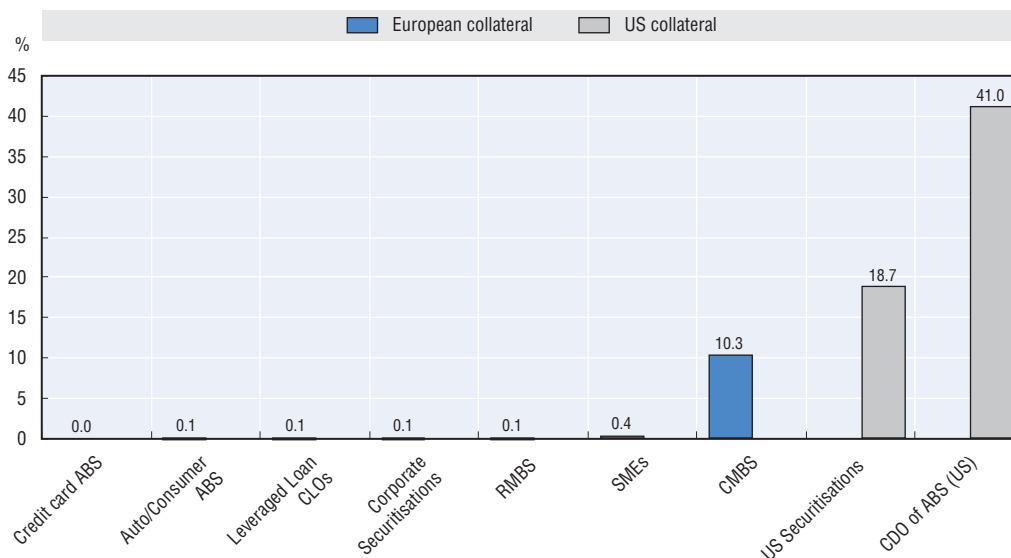
The risk weights applied under the ERBA are reduced compared to the previous proposals, with the incremental improvement being less material as one moves down the rating scale (see Table 4). The floor risk weight is lowered to 15% from 20% in the original revised ratings-based approach (RBA) proposal (2012). The risk weight for an AAA-rated senior tranche with a 5-year maturity is finally 20% vs. 58% in the December 2012 (revised RBA) and 25% in the December 2013 (ERBA) proposal, but considerably higher than the 7% currently applying under the RBA.

The revised framework seeks to reduce the cliff effects of Basel 2.5, where securitisations were fully deductible from capital when they fell below a certain credit level, thus reducing the pressure for unnecessary fire sales of such exposures in times of distress. Risk weights further down the capital structure and for longer maturities are reduced compared to the previous proposals. The “look through” approach applying to senior bonds allows senior exposures to receive a maximum risk weight that is capped at a value as if the underlying assets were directly held. **This allows for senior ABS to have actual risk weights that are lower than the 15% floor.**

Despite a decrease in the risk weighting for securitisation exposures under Basel’s revised proposal, the corresponding capital requirements are still sharply increased compared to the current framework. Such risk weightings are considered to be unduly conservative by bank and non-bank investors relative to the actual performance of the asset class. This is particularly true in the European space, as evidenced by the default rates of transactions compared to complex US structures (Figure 21).

Figure 21. **European securitisation defaults**

Percentage, mid-2007 to 2013



Source: Standard & Poor’s.

From an investor standpoint, a rise in capital costs related to securitised assets may translate into lower returns and limited appetite for this asset class. Increased capital requirements, particularly with respect to high-quality assets, are highly likely to discourage investor participation in securitisation transactions. Further analysis (as envisaged in future work by the CMF) will be required, however, to see whether this would also increase SME funding gaps in cases where such gaps may exist.¹⁰

In addition, the Basel Committee’s trading book review may also result in increased capital requirements for banks acting as market makers, with a possible negative impact on secondary market liquidity for securitised products.¹¹ Market participants indicate a potential risk of shifting part of such activities to unregulated specialised funds.

Further adjustments to the risk weights can be expected for structures that will satisfy the BCBS and IOSCO (2014) criteria of **simple, transparent and comparable**

securitisation, once these are set in stone (consultation period ends in February 2015) and before the framework comes into effect in 2018. Uncertainty around the regulatory capital relief banks will be achieving through securitisation might have deterred issuance by banks while the combined effect of recent regulatory amendments are thought to have a detrimental effect on investor appetite for such instruments.

2. EIOPA on Solvency II capital requirements and EC's Delegated Act on Solvency II

In December 2013, the European Insurance and Occupational Pension Authority (EIOPA) published a set of guidelines on Solvency II capital charges for insurers' securitisation holdings, under its Technical Report on Standard Formula Design and Calibration for certain long-term investments. The intention is to distinguish between high-quality securitisations and riskier ones, and apply different spread charges to the two categories instead of the blanket charge of Solvency II (7% for AAA-rated securitisations).

EIOPA suggests the creation of a **high-quality securitisation (HQS) type, called Type A securitisations**. This type consists of senior tranches of same-type assets of a lower risk profile that also fulfil a number of criteria. SME loans are included in the Type A eligible underlying assets, together with other qualifying assets (Table 5). Synthetic securitisations, CDOs, CLOs (except SME CLOs), CMBS and mixed pools of assets are not allowed under Type A and fall under the Type B category. For it to be eligible as Type A, a securitisation has to be backed by loans for which at least one payment has been made (with the exception of credit card ABS), effectively ruling out securitisations of newly originated loans. A number of the criteria used by EIOPA are similar to the ECB eligibility criteria regarding refinancing operations.

Table 5. **Solvency II securitisation spread charges for Type A and Type B securitisations**

Credit Quality Step	Percentage						
	0	1	2	3	4	5	6
Type A securitisations (selected senior RMBS, SME CLO, Auto ABS, consumer ABS, credit card ABS)	4.30	8.45	14.80	17-20.00	82.00	100.00	100.00
Type B securitisations (CLOs, CDOs, CMBS, WBS)	12.50	13.40	16.60	19.70	82.00	100.00	100.00

Note: Credit quality step 0 corresponds to AAA, 1 to AA+, AA, AA-, 3 to BBB+, BBB, BBB- and so on. Credit quality steps 4, 5 and 6 will generally not fall under Type A.

Source: EIOPA (2013), Deutsche Bank (2013).

The floor for capital charges incurred for holding Type A securitisations is lower than the previous standard for all securitisations, while charges for Type B ones are higher than what was proposed under the previous Solvency II proposal. Indicatively, AAA-rated senior RMBS, Auto ABS, Credit Card ABS and SME CLOs have a lower risk factor of 4.3%, while leveraged loan CLOs, CMBS, WBS and CDOs have an increased risk factor of 12.5% compared to the previously proposed 7%.

According to EIOPA's assessment, SME loans' credit risk charge stands between the charge for rated bonds and loans with credit quality steps 3 and 4 (the equivalent of Moody's Baa and Ba ratings). This assessment is based on historical SME loan default rates and the low diversification of SMEs' income sources in terms of business lines and geography relative to large enterprises. Price drops in distressed situations, are already incorporated in pricing (EIOPA, 2013).

EIOPA's proposal for the recognition of HQS in the context of regulation is undoubtedly a positive step forward. For insurance investors, however, the requirements of Solvency II

are still perceived as prohibitively high. This is the case even for high-quality structures, especially relative to the actual performance of securitisation transactions, particularly in Europe (Figure 20 above). The guidelines are being criticised by the industry for being calibrated on the experience of the collapse of the US subprime mortgage market as the benchmark, unduly punishing better performing structures (Global Risk Regulator, 2014). Despite being incrementally positive for SME CLOs, those capital charges are still considered as unduly onerous and discouraging for insurance investors' participation in that market.

The **European Commission's** delegated act on Solvency II (EC, 2014a) together with the relevant act on the Liquidity Coverage Requirement (EC, 2014b), published on 10 October 2014, are considered the **first legislative acts providing a differentiated approach to securitisation**. Securitised positions are eligible for a more proportionate and risk-sensitive prudential treatment for banks and insurance undertakings acting as investors, provided that they meet a set of eligibility criteria set out in the acts.

Similar to EIOPA, EC's Solvency II delegating act classifies securitisations into Type I (meeting the EC's definition of High Quality Securitisation) and Type II. SME ABS of a minimum BBB-rating are eligible as Type I, together with some RMBS, Auto ABS and Consumer ABS. A number of criteria (time tranching, reporting, etc.) define Type I eligible securitisations, with anything not meeting that definition falling into the Type II category.

European insurance companies investing in senior tranches of SME securitisation of at least BBB-rating that fulfil the requirements of Type I or High Quality Securitisation benefit henceforth from lower capital charges. Many observers consider the final rules of the European Commission as a positive step for the reviving of the securitisation market, and the inclusion of SME securitisation in eligible Type I responds to the industry's calls for lower capital requirements for insurance investors. At the same time, financial stability is not compromised as HQS remains at least twice as onerous as corporate bonds of the same rating (EC, 2014c).

However, market participants consider securitisation charges still as being onerous compared to other fixed income assets, and in particular compared to covered bonds (see Table 6) but also loan portfolios (3.0% capital charge per year of duration). Nevertheless, such relaxation of capital charges has undoubtedly removed some of the disincentives for insurance companies to invest in HQS.

Table 6. **European Commission's delegated act on Solvency II: Spread charges**

Credit Quality Step	Per year of duration Percentage						
	0	1	2	3	4	5	6
Type I securitisations (selected senior RMBS, SME ABS, Auto ABS, consumer ABS of BBB-rating)	2.1	3.0	3.0	3.0	n.a.	n.a.	n.a.
Type II securitisations	12.5	13.4	16.6	19.7	82.0	100.0	100.0
Covered Bonds (up to 5yr duration)	0.7	0.9	n.a.	n.a.	n.a.	n.a.	n.a.
Corporate Bonds (up to 5yr duration)	0.9	1.1	1.4	2.5	4.5	7.5	3.0

Note: Credit quality step 0 corresponds to AAA, 1 to AA+, AA, AA-, 3 to BBB+, BBB, BBB- and so on. Credit quality steps 4, 5 and 6 will not fall under Type I.

Source: European Commission (2014a, 2014c), Deutsche Bank (2014).

3. **EBA's high-quality liquid assets and the European Commission's LCR Delegated Act**

The European Banking Authority (EBA) published on 20 December 2013 a report on the definition of high-quality liquid assets (HQLA) and extremely HQLA, along with

operational requirements for liquid assets and an impact assessment of liquidity coverage requirements. The implementation of the liquidity coverage ratio (LCR) begins on 1 January 2015, when only 60% coverage is required. The ratio will be phased in gradually with a 10% annual incremental requirement to full LCR coverage of 100% by 2019. The purpose of the LCR is to ensure that banks have adequate stocks of unencumbered HQLA that can be converted into cash at little or no loss of value, in order for the bank to meet its liquidity needs in a 30-day liquidity stress scenario.

Contrary to EIOPA, **EBA does not make a distinction between high-quality and high risk securitisations**, but rather places most of asset-backed securities in the lowest bucket for liquidity (Level 2B). The proposals ease earlier conditions applying to securitisations qualifying for LCR, with AA- and above rated RMBS being included in the liquidity coverage ratio, vs. AA and above previously. No risk retention is required and there is no requirement for the underlying loans to have a maximum loan-to-value (LTV) ratio of 80% at issuance, as was the case in the previous proposal. A number of additional criteria are also outlined in the report (EBA, 2013a).

Senior tranches of RMBS securitisations in issuances of minimum size of EUR 100 million, backed by first lien mortgages, rated AA- and above and with a maximum maturity of 5 years are effectively the only ABS qualifying for the HQLA definition. The revised EBA proposal allows for senior peripheral RMBS to be eligible, given the drop of the risk retention requirement and the adjustment in the minimum rating. Nevertheless, broader ABS backed by equities, bank-issued government guaranteed bonds or other credit claims are not considered liquid by EBA.

Under the European Commission's delegated act on LCR (EC, 2014b), HQLA eligibility is extended to asset classes beyond RMBS with a positive effect on the attractiveness of securitisations for European banks, even if the incremental differences are viewed as marginal by some market practitioners.

Senior tranches of SME securitisations (including leasing) rated AA- and above (applying a second best rating rule) are now eligible as Level 2B assets, applying a 35% haircut to the current market value. Level 2B assets cannot comprise more than 15% of total HQLA stock and need to be backed by a pool of homogeneous assets. In the case of SME ABS, at least 80% of the borrowers need to be SMEs at the time of issuance, while none of the borrowers can be a credit institution or investment firm.

EBA assessed the impact of the LCR on SME lending and found no evidence that the introduction of the LCR would result in a decline in SME lending. EBA also concluded that, based on academic research, a decrease in SME lending does not translate into an improvement in the LCR.

Shortly prior to this report, EBA issued another report on the consistency of risk-weighted assets across residential mortgage and SME loans (EBA, 2013d). The report identifies country location, default rates, model parameters and calibration as drivers of risk-weighted diversity. The ultimate aim of the broader exercise is the harmonisation of different approaches to the calculation of risk weights and the convergence in supervisory and banks' practices around risk weighting.

The treatment of securitisation continues to be challenged by the industry. The new proposal is being criticised by market participants for being calibrated based on the recent crisis experience, despite the fact that liquidity is crisis-specific. According to that view, it is doubtful whether liquidity could be modelled based on past experience. EC's delegated

acts were welcomed by market participants as positive, nevertheless a significant portion of senior European ABS with similar liquidity characteristics to comparable asset classes are thought to be disenfranchised by the detail (Deutsche Bank, 2014).

The gap between the treatment of covered bonds and securitisation regarding the LCR is one of the instances of an unlevel playing field between the two asset classes.

Covered bond issued in the EEA rated ECAI 1¹² of minimum size of EUR 500 million are considered to be extremely HQLA and ECAI 1 rated covered bonds of minimum size of EUR 250 million are considered to be HQLA subject to additional conditions relating to regulations governing the structure. Some of those thresholds and conditions have been lowered through the delegated act of the EC, with additional classes also introduced (such as unrated and foreign covered bonds). Such differential treatment of instruments might unduly favour covered bonds over ABS, with covered bonds benefiting from extensive LCR recognition and more favourable treatment in terms of haircuts and rating thresholds.

4. EBA's final draft on securitisation retention rules

Following a consultation paper published in May 2013, EBA came out with a final draft of the **Technical Standards on Securitisation Retention Rules** (EBA, 2013b). Under the Capital Requirements Regulation (CRR) a minimum of 5% risk retention of securitised exposure is required by the sponsor. A fifth way of risk retention was introduced in this draft, besides the four acceptable ways of Article 122a of CRD III (horizontal slice, vertical slice, randomly selected exposure, and retention of originator interest) requiring a minimum 5% retention of all assets that go into a securitisation. Sponsors can now retain a first loss exposure of no less than 5% of every securitised exposure in the securitisation. The legal definition of a sponsor was expanded to include investment firms and therefore CLO managers, while third party risk retention is not allowed. These rules are applicable from 1 January 2014 to CLOs that were issued after 1 January 2011 (including CLOs 2.0 and excluding pre-crisis deals). They will extend to all CLOs where new underlying exposures are added or substituted after the end of 2014. Risk retention will continue to apply even after the reinvestment period for these deals ends.

The clear purpose of the ruling is for sponsors to keep “skin in the game”, with numerous benefits. The misalignment of interests between originators and investors, which previously led to excessive originate-to-distribute models, is being effectively addressed. More disciplined origination practices are also promoted. It is expected by many observers, however, that the rules will be harder to meet by small managers with limited transactions and smaller balance sheets, for whom funding of retained tranches might be scarce. Barriers to entry for smaller CLO managers (and other small non-bank issuers) are therefore expected to be put up as a consequence of this ruling. It has been argued by market participants though that, in the context of simple and transparent SME securitisation, the risk of reputational damage for small regional/savings banks could and would play the same role as the retention rate requirement, without overly limiting those banks that have excellent SME origination capabilities but limited securitisation arrangement capacity (Altenburg, 2014).

5. EBA's final guidelines on Significant Credit Risk Transfer for securitisation transactions

Articles 242 and 243 of the Capital Requirements Regulation (CRR) describe the cases and the conditions under which Significant Credit Risk Transfer (SCRT) has occurred in a

securitisation, waiving the requirement to set aside capital for the originator (EBA, 2013c). There has been an inconsistency in the way national authorities and regulators assess the requirements, and EBA's final guidelines on SCRT issued on 7 July 2014 clarified the criteria for such classifications, introducing a unified framework for the assessment of SCRT. EBA recognised the importance of securitisation in a well-defined prudential framework as a "a useful tool to achieve credit risk transfer and risk-sharing in the financial system and to support the current deleveraging and de-risking process of EU banks without inducing an excessive contraction in the real economy", in addition to its use as a funding tool for the real economy (EBA, 2014a).

EBA's guidelines on SCRT apply to both originators and competent authorities and provide for a more consistent approach for the assessment of SCRT across EU member states. The guidelines include i) requirements for originators when engaging in securitisation transactions for SCRT; ii) requirements for competent authorities to assess transactions that claim SCRT; iii) requirements for competent authorities when assessing whether commensurate credit risk has been transferred to independent third parties; and iv) a standard template on how competent authorities should provide information to EBA for approved transactions claiming SCRT (EBA, 2014a).

The level of transparency and reporting required to receive capital relief has been raised for originators: in addition to information sharing and reporting requirements, originators are required to put in place an appropriate governance process, monitoring systems and controls for periodic reviews. Such constant level of reporting will provide originators with the ability to report on an *ad hoc* basis the level of risk transfer and the respective impact on expected loss estimates. The guidelines also introduce a level playing field for the provision of capital relief for originators with call options incorporated in transactions (and the subsequent risk being transferred back into their balance sheet). In addition, time based calls with a price or spread linked strike are not allowed for a securitisation to be eligible for SCRT. Mechanisms of disproportionate reduction of risk transfer over time or substitution of assets that increase credit risk to the originator are not allowed for SCRT, while investors should have no legal or other types of connection to the originator.

As implied by the EBA guidelines, due diligence requirements and information disclosure are of paramount importance for the fostering of a healthy and robust securitisation market. Loan by loan analysis, simplified presentation of major transaction features, stress testing, and other related practices enhance transparency and information availability. Nevertheless, industry participants note that the inconsistency in the requirements of securitisation transactions vs. similar asset types (such as covered bonds) may create a disincentive for investors in securitisation relative to other instruments of similar risk profile.

6. Volcker rule on ownership interest in covered funds

On 10 December 2013, the Office of the Comptroller of the Currency, the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the Securities and Exchange Commission and the Commodity Futures Trading Commission released a final version of the Volcker Rule. **The rule restricts the ability of US banking and nonbank financial entities to engage in proprietary trading activities.** Of particular relevance to the securitisation industry is a provision prohibiting those entities from retaining any "ownership interest" in "covered funds" save for limited exceptions.

The final rule has an impact on collateralised loan obligations (CLOs), which are considered as “covered funds” under the rule, unless those CLOs have only loans as underlying assets. Under this definition, certain obligations that have characteristics of loans but are more commonly considered to be securities, such as bonds, are not excluded and the Volcker rule will apply. In terms of definition of ownership interest, a request for clarification has been submitted to the Fed by market participants on whether exposure to CLO debt comes under “ownership interest”. To comply with the Volcker Rule, newly issued CLOs will either eliminate their ability to include bonds within their portfolio or include this as an option not to be exercised without a regulatory change. Indicatively, seven of the eleven CLOs to have been sold in the five weeks since the final version of the rule came out did not include bonds in their collateral pool.

7. Other important regulatory workstreams affecting securitisation

Additional regulatory reforms have been put in place recently to address specific securitisation problems that were highlighted during the recent crisis. For example, under CRA III regulation (EU, 2013), firms may only use CRAs if all of a number of conditions are satisfied. There is a requirement to use two or more different rating agencies, while mandatory rotation is required for re-securitisations. Pre- and post-trade transparency for venue and over the counter (OTC) fixed income trades, as prescribed by MiFID II, requires the disclosure of price, volume and time of transactions for all liquid trades and the pre-trade disclosure (on demand/upon request) for illiquid instruments.

Real time reporting might add to the administrative burden of such trades but will provide valuable price information and will support the secondary market. The same holds for the ongoing monitoring of performance and stress testing of exposures required under AIFMD, Solvency II and CRR regulations.

B. An unlevel playing field and the case for a co-ordinated regulatory approach

A comprehensive range of regulations have been introduced either designed to specifically address securitisation risks or indirectly affecting securitisation while targeting the wider market or systemic issues. Some of the regulations introduced have been through a number of revisions in the last three to four years and some are still expected to be finalised. The engagement of regulators with the private sector through public consultations and the ongoing discussions were seen to have had a positive and useful effect. At the same time, to the extent that the consultation and revision process has led to regulatory uncertainty, this has been perceived to have had a constraining effect on the re-launch of the (European) securitisation market.

Calibration of the abovementioned critical regulatory workstreams is seen by market participants as a pivotal step towards the revitalisation of the securitisation market. Failure to remove the impediments to a transfer of corporate lending risk from bank balance sheets, still under continuing deleveraging pressure, to the institutional investor sector, which in a low interest rate environment is suffering from a dearth of yield, is deemed unfortunate.

The complexity of the regulatory framework affecting securitisation creates imbalances at various levels. First, across different market participants: capital charges for banks holding securitisation necessarily differ from those applied to insurance investors, as these charges are derived from different approaches and methodologies (Basel vs. Solvency II). However, better calibration of these charges, accounting for the

differences between sectors, would allow for the risk transfer between banks and long-term investors willing to take different types of risk. This is particularly pertinent for high-yielding tranches found in the mezzanine part of the ABS structure. The different timing of the resolution of those different regulatory workstreams does not assist in their more sensible alignment *vis-à-vis* market participants. Lastly, the non-alignment across jurisdictions creates imbalances in the securitisation markets across the world, deterring some markets from growing while unintentionally directing investors to more attractive jurisdictions.

While a lot of emphasis is being placed on the analysis of the standalone impact of regulatory measures such as capital charges or liquidity ratio eligibility on securitisation, a more holistic and system analysis of the impact of the entire set of regulations affecting the asset class is warranted. Investment decisions are based on the overall framework affecting the instrument, and as such, a co-ordinated and holistic approach to formulating the regulatory framework for securitisation would be beneficial to all stakeholders involved. The EIF has long argued that a stable and reliable regulatory framework is key for the recovery of the European Structured Finance market and that a holistic view should be taken as the regulations are developed (Kraemer-Eis, Passaris and Tappi, 2013; Frohn, 2013), noting that “most individual proposed regulations make sense on a stand-alone basis, but some might also be questionable, taking into consideration the overall picture of the regulatory wave”.¹³ A similar call for detailed horizontal review of the framework across regulation and products was also highlighted by the EBA in its recent discussion paper on simple, standard and transparent securitisation (EBA, 2014b).

Lack of consistency in the regulatory frameworks of similar investment instruments may create an unlevel playing field for asset classes with similar characteristics (same underlying exposure, all secured financing), both at the domestic and at the international level. Inconsistent treatment of closely related instruments can create unintended biases favouring some instruments to the expense of their alternatives.

An example highlighting such imbalances might be the case of covered bonds vs. securitisation (Table 7). While the double recourse safety feature of covered bonds would justify a somewhat more favourable regulatory treatment, capital charges for SME securitisation may be disproportionately higher than those applying to SME covered bond structures (under the standardised approach) or SME whole loan portfolio holdings. Specific covered bonds are also eligible LCR instruments contrary to the vast majority of ABS. The combined effect of additional operational requirements (retention, stress testing, due diligence and disclosure) and other factors (such as ECB repo eligibility in Europe) might unintentionally increase the attractiveness of SME covered bonds compared to SME ABS for investors looking to gain SME exposure. Similarly, capital charges on insurers willing to invest in SME ABS are higher than the respective charges on an actual whole loan portfolio (for equally rated instruments), favouring the direct investment in loan portfolios against the structured approach, adding more hurdles to the revival of the structured market. According to the EBA, even though differences in regulatory capital charges between the two instruments are justified given the different levels of risk of the corresponding exposures, these should be calibrated to “reasonably conservative standards” related to the risks of the corresponding exposures (EBA, 2014b). The EBA also recommends that senior tranche capital charges should not be higher than the charges of the underlying portfolio.

Table 7. **Securitisation, covered bonds and whole loan portfolios: Main regulatory requirements**

	Securitisation	Covered Bonds	Whole loan portfolios
Regulatory Capital	BCBS: <i>Senior tranches (1-5 yr)</i> : AAA 15%-20%; AA 15%-45%; A 40% to 70%; BBB 75% to 140%; BB 140% to 225%; B 250% to 420%. <i>Non-senior tranches (1-5 yr)</i> : AAA 15% to 70%; AA 15% to 140%; A 60% to 210%; BBB 170% to 420%; BB 470% to 860%; B 900% to 1130% – explicit maturity adjustment at tranche plus to pool level; UL + EL. Solvency II: differentiation between HQ and non-HQ securitisations (see Table 7).	CRR: CB rating regardless of maturity AAA/AA 10%, A+ to BBB- 20%, BB+ to B- 50%, CCC 100% (limited differentiation) under Standardised Approach; UCITS compliant vs. CRD compliant covered bonds. Solvency II – preferential capital requirements for highly rated covered bonds (AAA and AA), otherwise treatment same as corporate bonds, based on rating and duration (and contribution to diversification).	BCBS: Residential mortgages 35%, Retail exposures 75%, Corporate loans AAA-AA 20%, A 50%, BBB+ to BB- 100%, B+ to below B 150% – UL only, no explicit maturity adjustment. Solvency II: preferential capital treatment for residential mortgages, all corporate loans treated same as bonds based on credit quality and duration.
LCR	AA and above RMBS included in Level 2B, max. 15%.	Eligible AA- and above CBs issued under CB law in Level 2A, max. 40%.	Non-eligible
Repo eligibility and haircuts (ECB)	Category V, regardless of asset class and maturity; haircut 10% for AAA to A-, 22% for BBB+ to BBB.	Cat II and III, haircut depends on maturity and rating AAA to A- range 1% to 9%, and BBB+ to BBB – range 7% to 35%.	Non-marketable securities, haircut not disclosed. Deal and asset class specific, not widely transparent.
Operational and transparency requirements	Retention, due diligence, stress testing, cash flow models, deal documentation, etc. Disclosure requirements for originators, sponsor and lender of all materially relevant information on credit quality and performance of individual underlying exposures, cash flows and collateral, needed to conduct a comprehensive stress tests; data is determined as of date of deal closing	CRR: At least semi-annually: value of cover pool and outstanding covered bonds, geographical distribution and type of cover assets, loan size, interest rate and currency risks, maturity structure of cover assets and covered bonds, percentage of loans more than 90 days past due.	None explicitly specified.

Note: As of March 2014.

Source: EBA (2013a), EIOPA (2013), BCBS (2013a), BofA Merrill Lynch (2014), BCBS (2014).

Sensible and balanced calibration of the regulatory framework affecting securitisation could limit unintended consequences to investors by addressing a number of conflicts on different levels:

1. on a standalone basis, co-ordinating all different regulations having a direct or indirect impact on securitisation, with a view to provide a consistent and clear framework around the asset class;
2. on a relative basis against similar investment instruments, conflicts in the treatment of securitisation vs. the treatment of other asset classes, such as covered bonds;
3. on a jurisdictional basis across markets.

A holistic and co-ordinated approach on regulation on a relative basis could provide a level playing field, eliminating unintended biases against securitisation. Balancing of some disproportionately costly regulatory and operational disincentives present in securitisation might redirect issuer and investor preferences to this instrument.

Co-ordination of the regulatory measures should not be limited across products or jurisdictions. The case for a co-ordinated approach to financial regulation vis-à-vis other economic policies is also important so as to avoid unintended harm to sustainable economic growth (BIAC, 2014).

C. High-Quality Securitisation (HQS)

Besides EIOPA's Solvency II differentiation between Type A and Type B securitisation, a number of similar initiatives to promote High-Quality securitisation have seen promoted in recent years. Such proposals include the Prime Collateralised Securities (PCS) initiative established by the Association of Financial Markets in Europe (AFME, 2013, 2014a, b), the proposal by the ECB and BoE (2014b), as well as the EIF's view on high-quality SME ABS (Kraemer-Eis et al., 2014).

In 2012, AFME and the European Financial Services Roundtable established the PCS industry-based independent initiative that developed a quality label for high-quality securitisations. PCS grants its label to individual securities fulfilling its criteria of best standards, around the principles of simplicity, structural strength and transparency (PCS, 2014a, 2014b). The four key principles underlying the PCS label rule out transactions issued under an *originate-to-distribute* model (targeting alignment of interest) and those aiming at maturity transformation (i.e. non self-liquidating assets¹⁴), excluding re-securitisations (only single iteration of credit tranching allowed) and require increased transparency (initial and ongoing reporting). The full set of PCS criteria consists of a rather complex set of numerous conditions that transactions should meet in order to be granted the HQS label.

In Europe, the ECB and the BoE have been – among others – vocal supporters of the revitalisation of a market issuance of simple, structurally robust and transparent ABS on a meaningful scale. At the same time they call for concerted policy action involving a range of official entities, including EU and international regulators. In the context of their recent discussion paper (ECB and BoE, 2014b), the two central banks **propose the identification of “qualifying securitisations”** (see Box 3) through criteria not too dissimilar to those currently applying for central bank eligibility of ABS (see Table 8). Qualifying securitisations allow investors to understand and assess respective risks with greater confidence. This type of securitisation could then be encouraged through preferential regulatory capital and liquidity treatment. SME loan securitisations are included in an indicative, non-exhaustive list of examples of underlying assets that comply with these principles, subject to meeting the criteria discussed.

The European Commission's delegated act on Solvency II published on 10 October 2014 (EC, 2014a) **defines Type I and Type II securitisation, with the former being very much aligned on EIOPA's recommendation on high quality securitisation.** Securitised SME loans can qualify for the high quality securitisation label in a lower risk bucket than other securitisations if they meet the transparency and simplicity requirements proposed by EIOPA, very much in line with ECB's collateral eligibility criteria (EC, 2014c).

Such differentiated regulatory treatment of qualifying HQS is also in line with EBA's recommendations on simple standard and transparent securitisations that was published shortly before the delegated acts (EBA, 2014b). The criteria identifying eligibility as simple standard and transparent effectively capture and reduce the major risks identified during the crisis with the exception of collateral credit risk. Some of the criteria include non-reliance on the issuer (true sale, off balance sheet), no leverage involved, homogeneity of underlying assets, and exclusion of re-securitisations. Importantly, the issuer is required to provide 5 years of historical default data of similar exposures.

The joint BCBS and IOSCO Task Force on Securitisation Markets published on 11 December 2014 a consultation document with 14 criteria for simple, transparent and comparable securitisations (BCBS and IOSCO, 2014). The proposed criteria on simplicity,

Box 3. ECB-BoE's high-level principles for "Qualifying Securitisations"

The European Central Bank (ECB) and the Bank of England (BoE) commented on the impediments to securitisation in April 2014 (ECB and BoE, 2014a) following up a month later with a joint discussion paper proposing a roadmap for the revival of the market (ECB and BoE, 2014b). The paper aimed at launching a public consultation, eliciting feedback by market participants on such impediments and on ways to alleviate them.

The two central banks propose the development of high-level principles to identify simple, structurally robust and transparent securitisations that will be defined as **qualifying securitisations**. The risk and return of such transactions can be consistently understood by investors, facilitating their risk assessment and increasing their confidence. Such structures can benefit from greater liquidity and potentially preferential regulatory treatment, with the aim to encourage a substantial recovery of the market.

Criteria defining such qualifying securitisations cover the nature of the underlying assets, structure, transparency and external credit assessment:

- **Underlying assets:** Specifically eligible qualifying securitisations can be credit claims or receivables with defined terms relating to rentals or principle and interest payments. Interest payments may not be referenced to complex formulae or exotic derivatives, and the structure overall cannot have derivatives-linked claims but rather rely on recourse to the obligors.
- **Structure:** Synthetic securitisations and re-securitisations are excluded altogether, with qualifying transactions being plain vanilla, true sale securitisations. Receivables need to be current self-liquidating from intrinsic cash flows and there should be no delinquent loans at the time of issuance. Originators must demonstrate that the underlying claims are homogeneous and originated in line with prudent and consistent criteria in the context of the originator's ordinary course of business.
- **Transparency:** Loan loss performance on substantially similar assets as the underlying to the transaction needs to be made available. Access to information by investor is promoted through the obligation for initial and ongoing data reporting and clarity around debtor payments, priorities of payments, rights transferred to the assets, counterparties involved and servicing. Cash flow models and loan-level or granular pool stratification data should be provided to investors initially and loan level performance reporting throughout the life of the transaction will facilitate investors' risk assessment. Standardised prospectuses and disclosures along the lines of the prospectus directive are promoted.
- **External credit assessment:** The transactions should be subject to ongoing independent credit assessment (for example by two external credit assessment institutions) as well as legal and accounting reviews.

Examples of eligible underlying assets (subject to meeting the entire set of criteria) include SME loans, residential mortgages, consumer finance loans, leasing receivables, auto loans/leases, credit card receivables and certain commercial real estate mortgages.

transparency and comparability are along the same lines as the ones recommended by the EBA aiming at helping stakeholders assess the risks involved in a securitisation transaction. The criteria are designed to address key types of risks involved in securitisation; asset, structural, fiduciary and servicer risks. Once finalised, such criteria are expected to be incorporated in the Basel capital framework within 2015, and securitisations meeting these criteria will possibly be granted preferential treatment.

Table 8. **HQS comparative eligibility criteria under different selected approaches**

	BoE	ECB	Federal Reserve	EIOPA	PCS
	Repo eligibility (Eligible securitisations as collateral)	Eurosystem Standard Collateral Framework (Eligible Marketable Assets)	Discount Window Eligible Collateral	Type A Securitisation	PCS Label
SME loan ABS	✓	✓	✓	✓	✓
CDO of ABS	✗	✗	✗	✗	✗
Synthetic	✗	✗	✗	✗	✗
Re-securitisation	✗	✗	✗	✗	✗
Geography	UK, EEA, US	Originator or intermediary, credit claims, issuer, governing law, security – EEA country or in EEA country	Securities denominated in eligible foreign currencies are acceptable (Japanese Yen, Euro, Australian Dollars, Canadian Dollars, British Pounds, Danish Krone, Swiss Francs, and Swedish Krona)	Admitted for trading in a regulated market (EEA or OECD)	Issuing vehicle and securitised assets in EU and EEA only
Requirements	Discretion in assessing each security. Differences in eligibility for Level A (no securitisation included), B (broadly equivalent to AAA) and C (broadly equivalent to A3/A-) collateral sets.	Cash-flow generating homogeneous assets, only one type of asset, no heterogeneous asset pools allowed. Must not consist of credit-link notes, derivatives instruments.	At least investment grade, certain types must be AAA (e.g. CDOs, CMBS), follow the Depository Trust Company (DTC) Pledging Process, margins for securities are assigned based on asset type and duration.	Homogeneity, at least one payment made under a loan, no credit impaired borrowers; no self-certified mortgages, no default loans at issuance or when added, sound underwriting under Mortgage or Consumer Credit Directive or similar.	Min size, reported proportion retained, min. number of assets in a pool, LTV criteria, strict underwriting criteria, no subprime mortgages i.e. no self-certified product, equity release products.
Seniority	Most senior tranche	Most senior tranche only; no-subordination in case of acceleration or enforcement		Most senior tranche only	Most senior tranche only
Legal		Asset acquisition under EU member law, true sale, no (severe) clawback.	Securities should not be subject to any regulatory or other constraints that impair their liquidation.	True sale, no severe claw-back, ¹ servicing continuity.	Detailed requirements
Disclosure	Loan-by-loan data; completion of mandatory fields in the relevant loan level data template; transaction documentation, ongoing reporting (standardised monthly investor reporting and cash flow models).	Loan-by-loan data on the pool of cash flow generating assets; completion of mandatory fields in the relevant loan level data template; ongoing reporting.	Reporting requirements of local Reserve Banks.	Loan-by-loan, relevant information made available at issuance and on ongoing basis.	Loan level and cash flow data, ongoing information about performance.

1. Retraction of already distributed payments, as a result of special circumstances.

Source: BofA Merrill Lynch (2014), Federal Reserve (2014), Perraudin (2014).

The European Investment Fund's (EIF's) approach to HQS is based on both the transaction structure and the creditworthiness of the assets subject to securitisation. The criteria of such transactions are therefore broader, going beyond the assets' characteristics and leaning towards the view of an investor (see Box 4).

Box 4. High-quality SME ABS according to EIF

According to the European Investment Fund (EIF), a "high-quality SME ABS" transaction would need to satisfy the following principles, over and above the principle of transparency which is a prerequisite for any structured transaction:

1. **Assets:** Senior, first lien, fully disbursed loans to SMEs (as defined by EU recommendation 2003/361).
2. **Originator:** Experienced SME lenders, not pursuing an originate-to-distribute business, keeping on their balance sheet large SME exposures.
3. **Borrowers:** Not marked as in insolvency in the central bank's register.
4. **Loans/Leases:** Not in severe arrears for the past 12 months. Standard amortizing, non-syndicated, non-inflation linked. Limits on the share of loans featuring balloon payments, or switching the interest rate. Loans pay at least semi-annually.
5. **Concentration:** Limits on single group/region/industry and maturity concentration.
6. **Structure:** Senior tranches, with an expected life lower than 5 years. Commingling and set-off considerations addressed by the structure. Cash reserve covering for both principal and interest, large enough to cover senior expenses for 2 IPDs. Default definition within 9 months missed payments. Excess spread trapping in favour of the senior on collateral deteriorating. Plain swaps, without scheduled notional, featuring replacement languages.
7. **Servicing:** No interest suspension allowed, permitted variations clearly defined in volume and magnitude, back-up provisions in place.
8. **Data:** The originator receives an A1 compliance score by the European Data Warehouse, the pool is audited on an either 99/1 or 99/5 basis.

According to EIF, SME ABS tranches abiding to the above principles would merit lower capital charges and favorable treatment in terms of Liquidity Coverage and Net Stable Funding Ratios.

Source: Kraemer-Eis et al. (2014).

SME loans are an eligible underlying asset class for PCS. It should, however, be noted that both the PCS as well as the ECB and BoE proposals are *conceptual* approaches based on the fundamental characteristics of transactions. Both proposals build on an analysis of principles rather than a strictly defined list of asset classes that should be rejected based on poor past performance. Therefore, even though PCS labels are only granted to senior tranches of securitisations, if PCS criteria are met in a transaction they are – by definition – met by all of its tranches (PCS, 2014b). Qualifying securitisations, as proposed by ECB and BoE, can apply to all the tranches of a transaction.

Perraudin (2014) performed a statistical analysis of the relative historical performance of selected European HQS, using a simplified version of the PCS definition. Their relative performance was evaluated in terms of risk (using volatility as a measure) and liquidity (measured by the bid-ask spreads). The purpose of the study was

to analyse whether such HQS are worthy of preferential regulatory treatment. Given that ratings are often part of regulation, ratings were kept constant in the sample. According to the results of the study, HQS had substantially lower risk and somewhat higher liquidity than non-HQS tranches consistently over time, both within asset classes and for the market overall.

The concept of high-quality securitisation has been shared by many stakeholders, including regulators, policy makers and industry participants, although in different forms and styles. In Perraudin's study a HQS definition tended to indeed add information on liquidity and riskiness, over and above the information contained in ratings. Despite sharing a common underlying principle, the large number of different approaches would need to be refined and a common, single definition of what constitutes high-quality securitisation should be agreed upon. This could then be translated into a fairer regulatory treatment, commensurate with the corresponding risk of relevant transactions or tranches. AFME has suggested the introduction of a core definition for qualifying transactions and additional filters and requirements to address specific demands (for instance, LCR liquidity) (AFME, 2014b). Less scrutiny by investors who might over-rely on such labelling runs the risk of potential moral hazard, as was the case with credit rating over-reliance before the crisis.

The introduction of a categorisation of high-quality securitisation is commonly agreed by the market to be overall beneficial, provided that it is not too restrictive or cumbersome. Some industry participants call for caution when forming such a single definition of HQS: in their view, such a definition would need to be sufficiently broad in order for it to be truly beneficial to the market. It is argued, for example, that excluded corporate loan CLOs can be granular homogeneous transactions including SME loans in the asset pools, while the self-liquidating requirement will exclude interest-only corporate loans that could otherwise be eligible. For some industry participants, certification processes and legal verification of notions underlying the criteria (e.g. "true sale") may in practice involve lengthy and contentious technical standards that risk rendering the criteria cumbersome or even unusable. A very complex process would add, from this perspective, another burden and potentially additional regulatory uncertainty about eligibility of transactions, possibly driving investors away from the market. The existence and prior labelling experience of independent agencies, such as the PCS, provide possible avenues for the practical implementation of such a certification process. This is particularly important given the importance of timely determination of qualifying securitisations for marketing, pricing and initial liquidity of the transaction (AFME, 2014b).

It should be noted, however, that according to a recent analysis conducted by the Bank of International Settlements, the **possibility of severe undercapitalisation of ABS mezzanine tranches exists even for extremely simple and transparent securitisations** (BIS, 2014). The study highlights that mezzanine tranches are subject to considerable uncertainty due to the "cliff effect" under which even a small estimation error in the calculation of risk can have an important impact on the bond, bringing the risk of a mezzanine tranche as low as that of the senior tranche or as high as that of the junior tranche of the structure. According to the study, such possibility is pronounced even in mezzanine tranches of extremely simple and transparent transactions, revealing potential undercapitalisation of those tranches and calling for proportionately much higher requirements than those of the underlying pool of assets.

VI. Public Policies that impact SME securitisation

The muted recovery of the securitisation market can be partially explained by prevailing conditions in the financial system (deleveraging) or the economy overall (weak lending growth) or by legacy factors (lingering stigma). This chapter seeks to analyse enabling factors, especially targeted policies, as well as structural and conjectural barriers to the revival of securitisation markets, touching on unintended consequences of monetary policy, deal economics, standardisation of structure and availability of information on creditworthiness and performance.

A. Public policy to support SME securitisation and SME lending: Selected case studies

A number of conventional and unconventional monetary policies implemented before and (mainly) after the financial crisis have had a direct or indirect effect on securitisation (see Table 9). These policies and public programmes played an important role in supporting SME securitisation markets and reviving these markets in the aftermath of the crisis. However, such public interventions and official programmes can also have unintended consequences, as discussed in this section. The following subsections present selected programmes in the United States, Japan, Korea, and Europe. The subsequent section (VI.B) highlights some further considerations to be taken into account when assessing such programmes, with a focus on policy interventions in Europe.

1. US Federal Reserve: Term Asset-backed Securities Loan Facility (TALF)

The Term Asset-backed Securities Loan Facility (TALF) was launched in November 2008 by the US Federal Reserve, a funding facility designed to support the issuance of ABS collateralised by loans of various types to consumers and businesses of all sizes (Federal Reserve, 2008). The programme came at a time when ABS issuance came to a halt and spreads were widening to levels outside the historical range of risk premiums. Given the importance of ABS markets for the funding of a substantial share of SBA-guaranteed SME loans as well as consumer credit, disruption of this market was limiting the availability of credit to support economic activity.

The Federal Reserve Bank of New York (FRBNY) provided loans of up to USD 200 billion on a non-recourse basis to ABS investors to finance the purchase of certain AAA-rated ABSs backed by newly and recently originated consumer and small business loans. The FRBNY's protection was the underlying ABS held as collateral at market value less a haircut. In case of non-payment, an SPV established under FRBNY would liquidate the collateral as necessary. The US Treasury Department provided USD 20 billion of credit protection to the FRBNY's SPV by acquiring the equivalent amount of subordinated liabilities, to provide the SPV with funds and also potentially bear losses of such an amount. Losses over and above this amount were extended by the FRBNY in connection to the TALF under the Troubled Assets Relief Program (TARP).

SME ABS were included in the eligible ABS classes for the TALF programme, as were student, auto and credit card ABS, and CMBS. Eligible securities were plain vanilla structures (no synthetics) and more importantly, self-refinancing was excluded – i.e. originators of the loans could not be borrowers under TALF. Campbell et al. have studied the effects of the TALF programme and found that it improved conditions in the securitisation market, lowered interest rate spreads for some categories of ABS without impacting the pricing (i.e. subsidising) of individual securities (Campbell et al., 2011). According to the impact

Table 9. **Selected SME/securitisation-related unconventional official sector programmes**

Country	Programme	Programme description	Amount	Timeframe
Australia	AOFM	During the GFC, the Australian Government invested in high quality AAA-rated RMBS to support competition from smaller lenders	AUD 15.5 bn	Oct. 08 to Apr. 13
ECB	ABSPP/CBPP	Purchase of senior and mezzanine tranches of euro area ABS in both primary and secondary markets/Purchase of euro-denominated covered bonds issued in both the primary and secondary markets, including fully retained issues	TBD	Q4 2014
EIB/EIF	Structured finance facilities	Supporting SME debt financing through financial intermediaries and operating using either own funds participating as principal in SMEsec transactions guaranteeing senior and or mezzanine notes, or administering public money via the utilisation of third party mandates from the EU and EU member states	EUR 7.8 bn (EIF guarantee commitments) ¹	Since 2000
EIB/EIF	ABS credit enhancement and SME initiative (SMEI)	ABS Credit Enhancement: Part of an enhanced risk mandate between EIB/EIF, joint effort to invest/guarantee mezzanine tranches of SME securitisation transactions. Can cover both funded and unfunded deals, can also be offered in conjunction with EIB investment of SME securitisation transactions for a bigger catalytic impact towards new SME lending SMEI: joint EC/EIB/EIF initiative, offers uncapped guarantees and support on SMEsec aiming to restore access to finance for SMEs across the EU, through capital relief, loss protection and liquidity (optional programme at the discretion of each member state)	ca. EUR 3.8 bn	2014-20
Germany	KfW's promise	Created by KfW to allow banks to transfer first/second loss SME risk into capital markets, thus providing regulatory capital relief. Based on synthetic technology with KfW as the CDS intermediary. EIF has acted as a swap counterparty for the first loss piece and the mezz tranche in many of these securitisations	EUR 47.6 bn until 2008	Since 2000
Japan	SME ABS	BoJ purchases BB and above rated ABS with maturities of up to 4 years and rated ABCP (max. 1 yr), backed by loans/receivables/other credit facilities to SMEs. BoJ would buy up to 50% of each tranche	JPY 1 trn limit	July 03 to Mar. 06
Spain	ICO	ICO guaranteed eligible senior SME CLO tranches issued by banks, allowing for zero-risk weighted bonds. Aggregate guarantee quantum was preset for a given year with banks bidding for allocations	Annual limits ranging EUR 2 bn-7 bn	2000-08
Korea	P-CBO programme	The primary collateralised bond obligation (P-CBO) programme aims to support small and larger corporates via P-CBOs that are ABS backed by newly-issued SME bonds and receive various credit enhancements	(no limit)	Since 1999
UK	FLS	Designed to boost lending in the real economy, eligible banks and building societies could secure funding for 4 years against eligible collateral, in return for lending commitments. Borrowable amount is 5% of lending stock plus any net expansion in eligible lending	No limit. 5% of stock = £ 80 bn at launch	18 mths from Aug. 13. For SMEs from Feb. 14
UK	SLS	Allowed banks to borrow UK T-bills for up to 3 years by pledging high-quality RMBS and other illiquid securities	No limit, £ 185 bn at peak	Apr. 08 to Jan. 12
UK	ABSGS	UK HMT provided guarantees (credit or liquidity but not both) to new issue AAA RMBS for 3-5 years. Substantially unutilised	No limit	Apr. 09 to Dec. 09
US	TALF	Loan facility from the New York Fed that provided 3-5 yr non-recourse leverage financing to buyers of new issue AAA rated ABS, RMBS, CMBS. The US Treasury shared some risk via subordinated exposure to the vehicle	USD 71 bn lent, USD 200 bn limit	Mar. 09 to June 10
US	PPIP	US Treasury provided debt financing (leverage) and co-invested at the equity level along with nine pre-approved investment funds to purchase eligible legacy RMBS and CMBS (pre-2009, orig AAA) away from the banks, insurers, funds, etc.	USD 18.6 bn funding, USD 22 bn limit	Dec. 09 with 8-year term
US	CPFF	NY Fed purchased 3 m ABCP directly from eligible issuers	No limit, USD 350 bn at peak	Oct. 08 to Feb. 10

1. The European Councils of June and October 2013 called for the EIB Group to support securitisation transactions by expanding the range of joint risk-sharing instruments between the EIB and the European Commission, and for increased EIF credit enhancement capacity. For example, in 2013 the EIB invested over EUR 1.7 bn in covered bonds and asset-backed securities and the EIF committed EUR 590 m to both “true sale” and “synthetic” securitisation transactions for the benefit of SMEs. More information can be found here: www.eib.org/infocentre/publications/all/sme-report-2013.htm.

Source: Compiled from information by the ECB, H M Treasury, New York Fed, AOFG, Bank of Japan, KfW, ICO, EIF, EIB, RBS (2014).

analysis of Ashcraft et al., “through the TALF programme, the Federal Reserve was able to prevent the shutdown of lending to consumers and small businesses, while limiting the public sector’s risk” (Ashcraft et al., 2012).

Perhaps more important than the tightening of the spreads was the signal the Federal Reserve gave to investors on the merits of high-quality, non-opaque, simple securitisation structures allowing for the rebuilding of confidence in this market. Aiming at preventing the shutdown of lending to small businesses and consumers, the Federal Reserve encouraged private investors to participate in the market by providing them with liquidity in the form of loans. The interest rate on such loans was high enough to provide some credit enhancement to the public sector and at the same time incentivise investors to repay loans prior to maturity as the market recovered, making the facility uneconomic as new-issue spreads reverted towards historical norms.

Between the end of 2008 and mid-2010, FRBNY lent USD 71 billion under the TALF to investors, and nearly all TALF loans have been repaid or matured. As of 9 January 2013, TALF loans outstanding totalled USD 556 million. Accumulated fees collected through TALF totalled USD 743 million through 9 January 2013. When the programme closed in June 2010, USD 43 billion in loans, with initial maturities of three or five years, were outstanding, reduced to USD 5.3 billion by June 2012 (Federal Reserve, 2013a). The pricing strategy allowed for the early repayment by investors as markets returned to normal. TALF supported the origination of nearly 900 000 loans to small businesses among other loans.¹⁵

2. Outright purchases of SME ABS by the Bank of Japan

In 2003, the Bank of Japan (BoJ) introduced a JPY 1 trillion scheme for outright purchases of SME ABS and SME ABCP, aiming to restore the monetary transition mechanism and diversify credit risks for the financial sector. The programme was focused on instruments rated BB or higher and limited eligibility of ABCP and ABS at a maturity of up to one and three years, respectively (Hirata et al., 2004). The programme aimed at the same time **to increase the financing options for SMEs**, for instance through the use of accounts receivable as collateral, and to fill in the gap of the “middle-risk-taking lender” unavailable to SMEs (the majority of middle-risk firms)

The BoJ purchased a broad range of SME ABS, including those backed by loans, receivables and leases. In order to avoid conflicts of interest with the originators and moral hazard, the BoJ did not purchase first loss tranches, but only mezzanine tranches, limiting its participation to a maximum of 50% of the tranche size. The targeted benefits included improved liquidity on the secondary market for SME ABS, increased volumes of SME ABS in the primary market, lower spreads for SME ABS, the transfer of risk and respective relief to the financial institutions participating, and possibly the increase in volume of SME lending.

The scheme ended in March 2006 as initially announced (sunset clause). Such a pre-defined termination allowed BoJ to exit from its ABS and ABCP purchase schemes smoothly and without selling into the market as market participants were expecting such termination and the market had already shown signs of stabilisation since 2002. The total amount purchased was substantially below the JPY 1 trillion cap (Yamaoka et al., 2010). The total volume purchased, combined with the relatively short maturities of purchased transactions, allowed for the smooth and gradual exit of the BoJ as the securities reached maturity.

3. The Funding for Lending Scheme (FLS) in the United Kingdom

The Funding for Lending Scheme (FLS) in the UK provides a good example of policies designed to ensure they support lending to SMEs. At inception, the scheme provided funding to banks and building societies for an extended period, at below market rates, with both the price and quantity of funding provided linked to their performance in lending to the UK real economy without making a distinction between non-financial large corporates, households or SMEs. A year after its launch in mid-2012, it was seen that the policy had contributed to a substantial fall in bank funding costs, which fed through to improvements in credit conditions for households and large businesses, but there appeared to be less of a positive effect on SME lending.

Reflecting the significant improvements in household and large business credit conditions, the scheme has been tapered when it comes to mortgage and large corporate lending and the **incentives have been re-designed so as to focus towards SME lending.** Under the amended scheme, the incentives to increase net lending are heavily skewed towards SME lending. The extended phase allows participants to draw 5 pounds in the scheme for every 1 pound of net lending generated to SMEs.¹⁶

In addition, participants are required to report corresponding lending data for the period in standardised forms, which must be submitted quarterly. Participants are also required to provide an independent audit report on the accuracy of the data provided to the Bank of England for the FLS extension after the close of the extended drawdown period, while usage and lending data for participating institutions are made public by the Bank of England (BoE 2012, 2014b).

4. Korea's primary collateralised bond obligation (P-CBO) programme

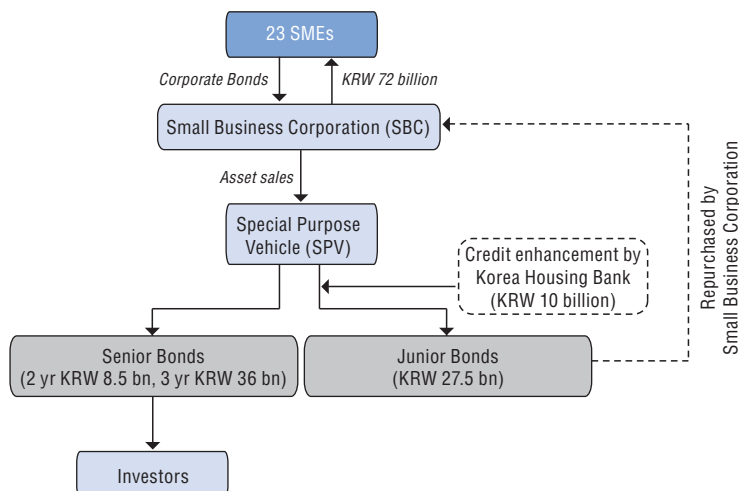
Trust in Korean capital markets was severely damaged in the aftermath of the 1997 Asia crisis. The crisis severely affected the bank lending channel – as banks undergoing restructuring processes were reluctant to provide financing – and paralysed the capital market channel. **In 1999, the Korean government introduced the primary collateralised bond obligation (P-CBO) programme to support small and larger corporates.**

A P-CBO is an ABS backed by newly-issued SME bonds sold to a special purpose vehicle (SPV) who acts as the issuer of the P-CBOs. The SPV issues both senior and junior tranches and sells these to the market. A Trustee for the SPV (optional) reinforces liquidity and supervises cash flows to protect investors.

Credit enhancement provided in various forms was instrumental for the success of the P-CBO programme. The first P-CBOs issued benefited from credit enhancement by the Korea Housing Bank in the form of KRW 10 billion of liquidity facilities, as well as the Small Business Corporation (SBC) which agreed to repurchase junior tranches for the amount of KRW 27.5 billion (Figure 22). The KRW 44.5 billion senior tranche was publicly placed in the market. A special guarantee programme for P-CBOs was established in 2000 with guarantees provided by public credit guarantee funds such as the Korea Credit Guarantee Fund (KODIT) and the Korea Technology Finance Corporation (KIBO). Such credit enhancement significantly increased the amount of AAA-rated senior bonds from a range of 40%-70% depending on the asset pool quality, to over 90% of the total value of the underlying assets (Park et al., 2008). Investors enjoy more attractive yields and the funding efficiency of the programme was reportedly maximised. The first cross-border P-CBO was launched in 2004 with 46 Korean SMEs participating in a KRW 10 billion P-CBO issuance guaranteed by the Industrial Bank of Korea (IBK) and the Japan Bank for International Co-operation (JBIC).

Figure 22. **Primary collateralised bond obligation programme (P-CBO) in Korea**

First P-CBO Programme, 1999

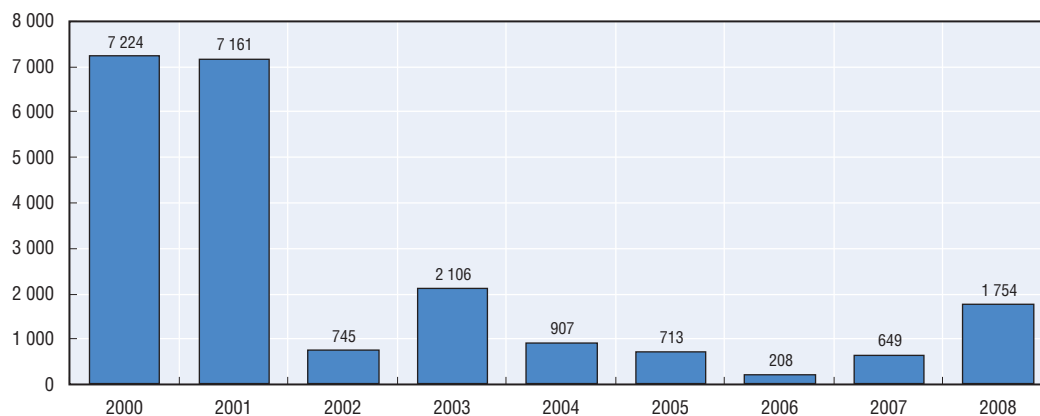


Source: Adapted from Asia-Pacific Finance and Development Centre.

As the corporate bond market began to stabilise from 2002 onwards, the scheme started to be phased out so as to prevent public intervention from distorting the corporate bond market. The amount of P-CBOs subsequently decreased (Figure 23) and KODIT mainly supported rollover transactions from January 2002 onwards. According to KODIT, the P-CBO programme supplied a total of KRW 17 334 trillion to 1 865 companies out of which KRW 2.23 trillion to 180 SMEs (Park et al., 2008).

Figure 23. **P-CBO issuance levels**

In KRW trillion, 2000-08



Source: Financial Supervisory Service.

KODIT began re-issuing P-CBOs targeted to support SMEs after the 2008 financial crisis and economic recession. Issuance of P-CBOs is currently one of the important measures used by KODIT to support financially weakened SMEs in Korea. The success of the guarantee programme can be partly attributed to the development of an in-house credit rating system by KODIT called Corporate Credit Rating System (CCRS), concurrently with the establishment of its guarantee programmes for P-CBOs. CCRS provided a credit

rating for a participating company by combining financial and non-financial quantitative and qualitative ratings (Park, 2006).

Despite the success of the P-CBO scheme, risks such as originator moral hazard and increasing reliance of SMEs in P-CBO issuance might distort the corporate bond market for smaller companies, particularly those with low credit ratings. The introduction of fees at an arm's length basis and the selection of tighter covenants might address such issues.

5. ECB's monetary policy and refinancing operations

In Europe, the ECB, the Eurosystem and national central banks (NCBs) played a central role in supporting the bank lending channel to enhance the availability of credit to SMEs. Allocation of liquidity through main refinancing operations and long-term refinancing operations provided banks with quasi unlimited access to central bank liquidity, on the basis of the pledging of eligible collateral with the central bank. Collateral requirements have been eased a number of times since 2008, and the maturity of operations lengthened as well.

The ECB launched two **long-term refinancing operations** (LTROs) in 2011 and 2012, respectively, with a cumulative take-up of over EUR 1 trillion, providing cheap funding for banks and limiting their funding needs. In June 2014, the ECB announced two consecutive targeted long-term (4-year) refinancing operation programmes (TLTRO) for a combined amount of EUR 400bn. Banks are entitled to an initial allowance of 7% of their lending book to the euro-area non-financial institutions excluding loans to households for house purchase, and an additional quarterly allowance of up to three times their net lending to the same group from March 2015 to June 2016. The interest rate on the TLTRO is fixed at the prevailing rate of the Eurosystem's main refinancing operations plus a fixed spread of 10bps. In addition, the existing eligibility of additional assets used as collateral, notably under the additional credit claims framework, will be extended at least until September 2018.

Given that funding through securitisation is on less advantageous terms than funding through LTRO, it can be claimed that **securitisation issuance has an indirect funding disadvantage relative to LTRO**. Therefore, the funding benefit of securitisation for the issuer is no longer a valid incentive for securitisation issuance. In addition, easy monetary policy might lead to certain unwanted behaviour from investors pursuing risky assets in a quest for yield or for using the cheap funding to acquire higher-yielding sovereign bonds instead of boosting bank lending to the economy. **This issue is somehow addressed in the TLTRO, and was captured in the extension of the Bank of England's Funding for Lending Scheme.** The latter focuses on business lending, and lending to smaller businesses is particularly encouraged by allowing banks to draw GBP 5 in the Scheme for every GBP 1 of net lending to SMEs during the reference period.

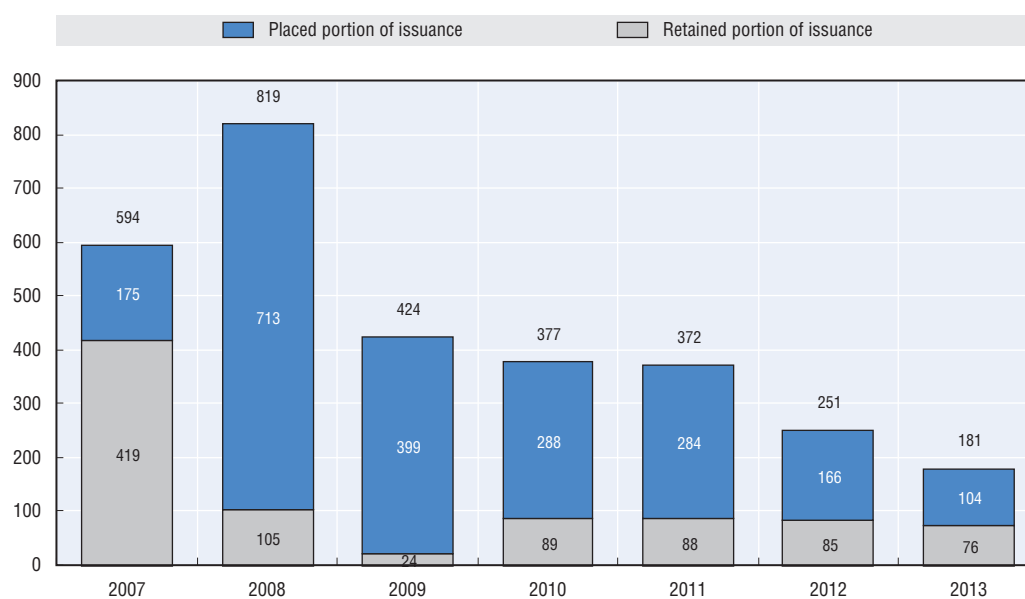
While ABS had been part of the collateral framework of the Eurosystem early on, their eligibility criteria were eased in the years following the recent financial crisis. In addition to normal procedure (conventional requirements of general documentation), there has been an exception for ABS whose underlying assets include SME loans to become eligible as collateral for funding purposes through monetary operations in the Eurosystem, even if they do not fulfil the normal conventional assessment requirements.

Although allowing the posting of SME securitisation as collateral with the ECB was undoubtedly beneficial given the collapse of the interbank market, some industry players believe that such policy had a detrimental effect to the revitalisation of the real securitisation

market. Throughout the period when such collateral was eligible for central bank repo refinancing, most issuances were retained rather than placed in the market. Retention rates are especially high for SME securitisation, as compared to securitisation more broadly (Figures 24 and 25). In addition, the key benefits of securitisation are not achieved through such funding operations, as they provide no capital relief and therefore do not allow for further on-lending through redeployment of funds to the real economy and to the SME sector. At the same time, the absence of a capital relief does not assist in the deleveraging effort of the banks. It should be well noted, however, that the purpose of these official programmes is to enhance the functioning of the monetary policy transmission mechanism by supporting lending to the real economy and not to support the revival of any particular market.

Figure 24. European securitisation: retention rates

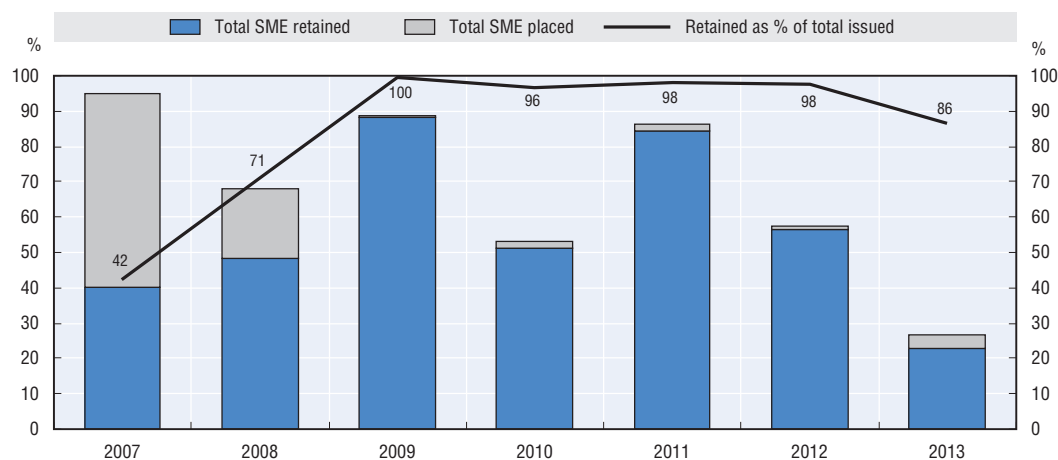
Annual issuance levels, 2007-13, in EUR billion



Source: AFME, SIFMA, Bloomberg, Dealogic, Thomson Reuters.

Figure 25. European SME securitisation retention rates

Annual issuance levels, 2007-13, in USD billion and in %



Source: AFME, SIFMA, Bloomberg, Dealogic, Thomson Reuters.

Another similar initiative raised was the acceptance of so-called “additional credit claims” as collateral, which are to a large extent loans to SMEs. Under this framework, euro area national central banks (NCBs) determine the set of eligibility criteria and risk control measures chosen in order to accept these loans (haircuts, probabilities of default) which are in turn approved by ECB’s General Council. This framework allows for some kind of differentiation regarding collateral requirements for monetary policy purposes, mobilising unencumbered and performing credit claims, while utilising the ‘local’ expertise at the NCB level. NCBs are supposed to take into account that these additional credit claims reflect local features. NCBs are not only best suited to deal with this particular asset class, but also incentivised given that this is not a loss sharing exercise but one where NCBs bear the risks themselves.

Such programmes were of particular importance given the dismal lending environment and the difficulties SMEs had in accessing finance during and after the crisis, in an environment of declining bank profitability and erosion of bank capital (Wehinger, 2014). Falling lending volumes, rising credit spreads, higher collateral requirements by the financing banks as well as multiple-time increases in insolvencies (OECD, 2014) explain and justify the pressing need for the central banks to act on SME financing.

The share of SMEs in overall securitisation in Europe is small overall, with the largest shares of issuance taking place in Spain and Italy (see Figure 16 in Section IV.B above). **SME securitisation support as currently extended by the European Investment Bank and the European Investment Fund** is acknowledged as highly professional and well-intentioned (see Box 5). Nevertheless, eligibility of such instruments as collateral for ECB repo operations is seen by some market participants to potentially carry counterproductive effects, blocking the revitalisation of a market-based SME securitisation. Supported deals end up in a similar way as collateral for repurchase agreements by European banks seeking cheap funding from the ECB. Further development of current schemes should preferably allow market-based perceptions and pricing of risk, once the current regulatory inconsistencies are overcome.

Box 5. EIB Group Risk Enhancement Mandate (EREM)

The European Council (2013a,b) conclusions of June and October 2013 required an increase of the credit enhancing capacity of the European Investment Fund (EIF) with the purpose of supporting the impaired financing of European SMEs. The proposal was the capital increase of the EIF together with the European Investment Bank (EIB) Group Risk Enhancement Mandate (EREM). The objective of this overall financial support package is to provide an increasing access to finance for SMEs and small midcaps, including through the revitalisation of the SME securitisation market, in the context of the economic crisis. The EREM was approved by EIB and EIF Boards in December 2013 and the EREM Framework Agreement was signed between EIB and EIF in March 2014.

The EREM contribution (EUR 4 billion from EIB supplemented by EUR 2 billion) will enable raising the credit enhancement capacities of the EIF with a view to increasing access to finance for SMEs and small midcaps (defined as enterprises with up to 500 employees), mainly through financial institutions, including guarantee institutions and microfinance institutions. Instruments deployed under the EREM shall:

1. contribute to the development of European capital markets instruments to the benefit of SMEs and small midcaps (SME Initiative, SME asset-backed securitisation, loan funds/mini-bonds, etc.), and

Box 5. EIB Group Risk Enhancement Mandate (EREM) (cont.)

2. target specific areas in the fields of youth employment, microfinance, co-operative banks and other smaller financial institutions that do not have access to direct EIB financing, social, environmental and innovation impact, etc. as well as other areas agreed with the EIB.

To achieve this in the most efficient manner, the EIF will leverage on its catalogue of existing products, systems and procedures. The EIF will also establish for each EREM window a clear origination strategy and selection process in full co-ordination with the EIB to serve the market in an efficient manner. The EREM will focus on the 28 EU member states and has the following windows:

- *ABS credit enhancement (active since-mid 2014)*: The amounts made available under the proposed EREM will allow the EIF to increase its capacity as credit enhancer of ABS tranches, both in terms of larger ticket size and broader scope in each individual SME securitisation.
- *Joint SME Initiative (expected early-2015)*: Guarantee scheme and securitisation scheme supported by European Structural and Investment Funds (ESIF) and EU instruments (COSME and Horizon 2020).
- *Other initiatives concerning*: Loan funds, microfinance, co-operative banks and smaller institutions, social impact finance, youth employment programme.

Source: Kraemer-Eis, Lang and Gvetadze (2014).

Despite entailing some unintended consequences, such policy initiatives are still viewed as necessary by market participants under the particular challenging context, with the caveat that these are not long-term solutions that can resuscitate the SME credit market, but rather temporary measures for the provision of liquidity to the market and potentially to credit-restricted SMEs. From an SME finance perspective, capital constraints, and not funding shortfalls, might be a more pressing issue, particularly so in an “unusual” environment in terms of monetary conditions, interest rates and liquidity in financial markets that is likely to persist. For as long as banks are still under pressure to de-lever, SME lending is expected to be avoided as SME loans are capital-intensive products for banks to hold on their balance sheets.

6. ECB's Covered Bond Purchase Programmes and the effect of refinancing operations on the covered bond market

In 2009, the ECB launched the Covered Bonds Purchase Programme (CBPP) in order to stabilise the market for covered bonds and enhance bank refinancing. Under the programme, the Eurosystem bought covered securities of EUR 60 billion within a one-year period. In November 2011, CBPP2 was launched for a total volume of EUR 40 billion, with EUR 16.4 billion purchased until the ending of the programme in October 2012 (ECB, 2012). CBPP2 was phased-out earlier than envisaged given investors' increasing demand for euro area covered bonds and a decline in the relevant supply of bonds.

In September 2014, the ECB announced CBPP3, the purchase of a broad portfolio of euro-denominated covered bonds issued by MFIs domiciled in the euro area, in both the primary and secondary markets, and including fully retained issues. According to the technical modalities of the programme, announced on 2 October 2014 (ECB 2014e, 2014g),

purchases will take place progressively for two years, beginning mid-October. The criteria for qualifying covered bonds are centred around ECB Eurosystem eligibility, with a minimum first-best credit assessment of credit quality step 3 (CQS3; currently equivalent to an ECAI rating of BBB- or equivalent) and will extend to both retained and investor-placed bonds, including fully retained issues.¹⁷ The Eurosystem will apply an issue share limit of 70% per security in general¹⁸ and “conduct appropriate credit risk and due diligence procedures on the purchasable universe on an ongoing basis”. The technical annex also specifies that the ECB’s CBPP3 portfolio will be made available for lending on a voluntary basis.¹⁹

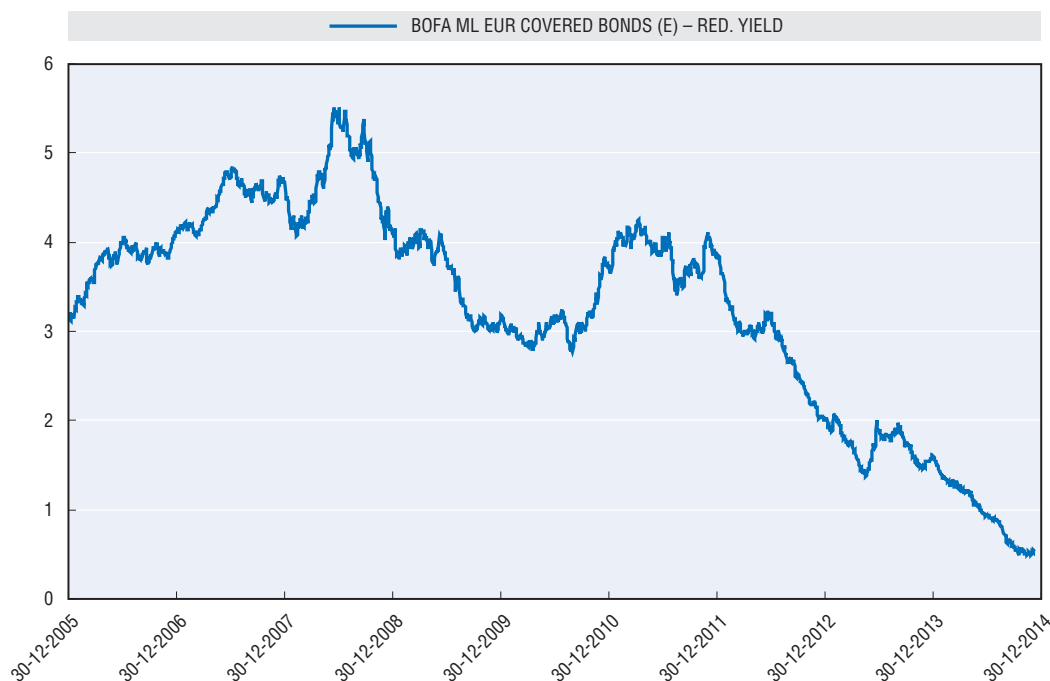
The CBPP is perceived as the enabling factor for the reopening of the covered bond market after the credit crisis. An evaluation study of the first programme in 2011 has demonstrated that the programme has contributed to “a decline in money market term rates, an easing of funding conditions for credit institutions and enterprises, encouraging credit institutions to maintain and expand their lending to clients, and improving market liquidity in important segments of the private debt securities market” (ECB, 2011).

However, to the contrary, **so far the covered bond market appears to have been negatively affected by the monetary operations run by the ECB.** By part of the industry LTROs are held responsible for the drop in public issuance, replacing public covered bond placements with retained supply of said instruments (ECBC, 2013). At the same time, collateral “locked” in pledged retained covered bonds decreases the stock of available eligible collateral for public issuance. This is particularly relevant when it comes to SME covered bonds, given the relatively limited amount of outstanding SME loans in banks’ balance sheets. Analysts expected that public covered bond issuance levels will be further depressed in 2014 following the announcement of the TLTRO, which is the most attractive and competitive source of funding, including compared to cover bond “repo-ing” with the ECB. It should, however, be noted that a very important contribution to the drop of covered bond public issuance came from subdued lending to the real economy and weak housing markets – amongst other factors such as bank deleveraging that resulted in lower funding needs, or asset encumbrance concerns and the corresponding preference of senior unsecured funding.

Following the announcement of the CBPP3 programme in September 2014, a number of new issuances in October and November were well-received by the market, however, the covered bond market did not pick up enough to bring the volume levels to 2010-11 levels. Covered bond spreads have started to tighten upon announcement of the programme with yields falling to 0.5 per cent levels in December 2014 (see Figure 26). Such low yield levels are not deemed sufficient by some investors. Decreasing private demand thus reflects some crowding out by the CBPP3. A number of transactions for new covered bond issuances have reportedly been postponed, as the proposed returns were seen as insufficient for private investors (*Financial Times*, 2014).

In particular, CBPP3 is seen by the market as more of a backstop to ECB’s initiative that does not necessarily help the revival of SME lending. As the experience with past CBPPs that have been tested throughout the crisis has shown, such programmes allow for swift intervention by the ECB if deemed necessary. Despite depressed issuance levels and lack of supply, the size of the covered bond market is material enough to serve the purpose of the exercise (see also Figures 18 and 19 in Section IV.C above). The use of covered bonds besides ABS (see below) will allow for smaller respective purchases than a single-instrument

Figure 26. **Covered bond yields in Europe**
2006-14, in per cent



Source: Thomson Reuters Datastream.

targeted programme, limiting the crowding out of private investors from those markets. Nevertheless, given that the vast majority of covered bonds are backed by mortgages and public sector loans (Figure 19 above), the immediate effect to SME lending would be limited. **Given that selling covered bonds will not provide any capital relief to participating institutions, the effect to primary market issuance is likely to be less significant than the respective ABS programme** (described in the following), particularly in view of the parallel TLTRO, as mentioned above.

Purchases under the CBPP3 commenced on 20 October 2014. As of 5 December 2014, the ECB has purchased EUR 13.488 billion of covered bonds on the secondary market and EUR 4.313 billion on the primary market, with the programme still ongoing.

7. ECB's outright purchases of ABS

On 4 September 2014, the ECB announced a novel ABS purchase programme (ABSPP) starting in October 2014, the modalities of which were announced on 2 October (ECB, 2014e). ABSs were already expected by the market to be the preferred vehicle for the exercise of quantitative easing by the ECB. The ECB has announced the intensification of preparatory work related to outright purchases of ABS so as to improve monetary policy transmission, given the role of the ABS market in facilitating new credit flows to the real economy (ECB, 2014a). The scope of ABS to be considered for purchasing by the Eurosystem is real economy-oriented, i.e. targeting securitised debt of the non-financial private sector (ECB, 2014c). ABS targeted are simple, transparent, and "real" – i.e. based on loans and not on derivatives (ECB, 2014b). Additional reporting requirements may apply in order to ensure that such credit enhancing programme will actually be used to lend to the real

economy. In parallel, on 20 October 2014 the Eurosystem launched a new (its third since 2009) covered bond purchase programme (CBPP3), targeting the purchase of euro-denominated covered bonds issued by MFIs domiciled in the euro area (see subsection 6 above).

According to the technical modalities of the programme (ECB, 2014f), **the ECB will purchase senior and mezzanine tranches of euro area ABS in both primary and secondary markets**, starting in Q4 2014. The asset purchase criteria for senior tranches are centred around ECB Eurosystem eligibility²⁰ and will extend to both retained and investor placed bonds.²¹ The program itself will be in place for at least two years and focus on both newly issued securities and those traded on secondary markets. For fully retained securities, purchases will be possible subject to some participation by other market investors. An issue share limit of 70% per individual security applies, as is the case with CBPP3.²²

Specific details on the eligibility criteria for guaranteed ABS mezzanine tranches remain to be announced at a later stage, together with details on pricing and implementation infrastructure/mechanisms. The joint paper by the BoE and the ECB (ECB and BoE, 2014b) has provided a good outline of the ideal ABS the central bank will be striving for. Prior experiences with buying programmes, such as the US TALF or the outright purchases by the Bank of Japan, as well as the previous CBPPs in Europe provide useful insights on the challenges and the structuring considerations for such programme. Indeed, similar to the Federal Reserve's programmes, ABSPP will aim at senior tranches of ABS, and mezzanine tranches provided that they are guaranteed (by a national government or development bank).

Price transparency issues may arise from the purchase of newly structured non-marketed ABS by the ECB. Nevertheless, the use of ABS as eligible collateral for monetary operations for over ten years has provided the Eurosystem with important expertise as to the pricing and treatment of ABS instruments.

The aim of the new purchase programmes is twofold. On the one hand they will foster credit easing for the banking sector, representing more than 80% of credit intermediation in Europe (ECB, 2014c). At the same time, they will significantly steer the size of ECB's balance sheet to 2012 levels (purchases will not be "sterilised", i.e. they will be financed by increases in central bank money with a subsequent increase of the central bank's balance sheet).

Careful selection of participating ABSs for such exercise needs to be ensured particularly with regard to the corresponding credit risk, in order for the ECB's balance sheet credit quality to be preserved. The collateral eligibility criteria under ECB's refinancing operations do serve as a good guide for the requirements of such product. The ECB has released a tender notice around risk management of ABS and covered bonds positions, focusing on cash flow modelling and pricing of losses for both covered and ABS bonds, current and historical ABS market prices, and an ABS structuring tool (ECB, 2014d).

Purchases of ABS under the ABSPP commenced on 21 November 2014 and the programme is still ongoing at the time of writing of this report. As of 5 December 2014, EUR 0.601 billion of ABS were purchased in the market by the ECB.

B. Some considerations for assessing ECB's and other asset purchase programmes

Views differ over the necessity for public intervention when it comes to senior tranches of high-quality issuances, as private investor demand for that part of the

structure is consistently strong in capital markets. In the case of the ECB, the provision of credit enhancement for the mezzanine tranches of participating deals through national government guarantees reduces the direct exposure of the ECB in riskier parts of the issuances. Nevertheless, important concerns arise around the risk that these guarantees will involve, particularly when it comes to a potential indirect off-loading of riskier and lower credit quality legacy debt to national governments and the ECB. The large scale of the ABSPP programme²³ might also drive originators to pre-crisis originate-to-distribute practices with lenient lending standards. Carefully designed selection and pricing mechanisms can ensure that such practices are avoided and robust origination practices are fostered instead.

There is no consensus on whether quantitative easing exercises have a significant effect on bank lending. A recent working paper by the Bank of England finds no statistically significant evidence that the 2009 gilt purchase programme produced a new bank lending channel and that other policies should be preferred for the improvement in the supply of credit (Butt et al., 2014). The results of this study contrast with results of another recent Bank of England working paper that shows that quantitative easing exercises may have had a statistically significant, albeit small, effect on bank lending (Joyce and Spaltro, 2014).

Together with RMBS and other ABS containing loans to the real economy, SME ABS will be part of such quantitative easing exercise by the ECB, entailing numerous benefits for the SME securitisation market. Liquidity on the secondary market for SME ABS will be improved by such purchases and spreads will most likely tighten for the asset class. Given that the programme will also involve purchases in the primary market, primary origination of SME ABS may be fostered as banks will pursue risk transfer that will assist in de-levering their balance sheet. Tightening of the spreads across the board will help bring back issuances that were priced out as uneconomical (see Section VII.A), particularly when it comes to legacy securitisations, and depending on the evolution of loan rates when it comes to new issuances. The purchase of newly issued SME ABS may also incentivise other players, such as institutional investors, to enter this market. To that end, the International Organization of Securities Commissions (IOSCO) is working towards the creation of a framework of standards and criteria for simple, transparent and consistent ABS that would encourage non-bank investors (pension funds, insurance, asset managers) to participate in this market.²⁴ By broadening the diversity of issuers and buyers in a market more or less dominated by a few jurisdictions, fragmentation issues will be also addressed. Depending on the terms of such a programme, the volume of further on-lending to SMEs and the real economy could be fostered, potentially resulting in improved financing terms for SMEs in the countries involved.

On the other hand, asset purchase programmes face a number of challenges, especially regarding the underlying SME asset class. Record low levels of interest rates may undermine the funding benefit of participation in such programme. Nevertheless, if and when rates increase, the attractiveness of ABS as a funding channel will become more apparent. The effectiveness of the programme could be enhanced by changes in regulation towards a more favourable treatment of certain ABS and in line with the regulatory treatment of similar instruments such as covered bonds. This has recently also been mentioned by the President of the ECB: “certainly, some of these [regulatory] changes will be needed to rebuild a market which could be, especially in Europe, an important channel

of credit intermediation” (ECB, 2014c). Insofar as legal and regulatory treatment may discriminate SME ABS against SME covered bonds, issuers might prefer SME covered bond over SME ABS issuance.

A number of additional challenges exist around asset purchase programmes.

Purchasing on the primary market could risk being perceived as a direct financing of entities. At the same time, outright purchases in relatively small markets risk distorting market pricing. Holders of legacy ABS might refrain from selling their holdings at reduced market prices, in order to avoid marking them to market and incurring potential accounting losses. Others may tactically be unwilling to sell, anticipating that the central bank’s purchases will drive prices higher or by hoping to sell at off-market prices. Purchases at off-market prices would enhance yields for the more junior tranches, driving higher yields for investors who might be incentivised to buy some of those mezzanine tranches. More importantly, originators may find it more efficient to issue RMBS than SME ABS given that the former normally enjoy a deeper investor base and in general more favourable spreads.

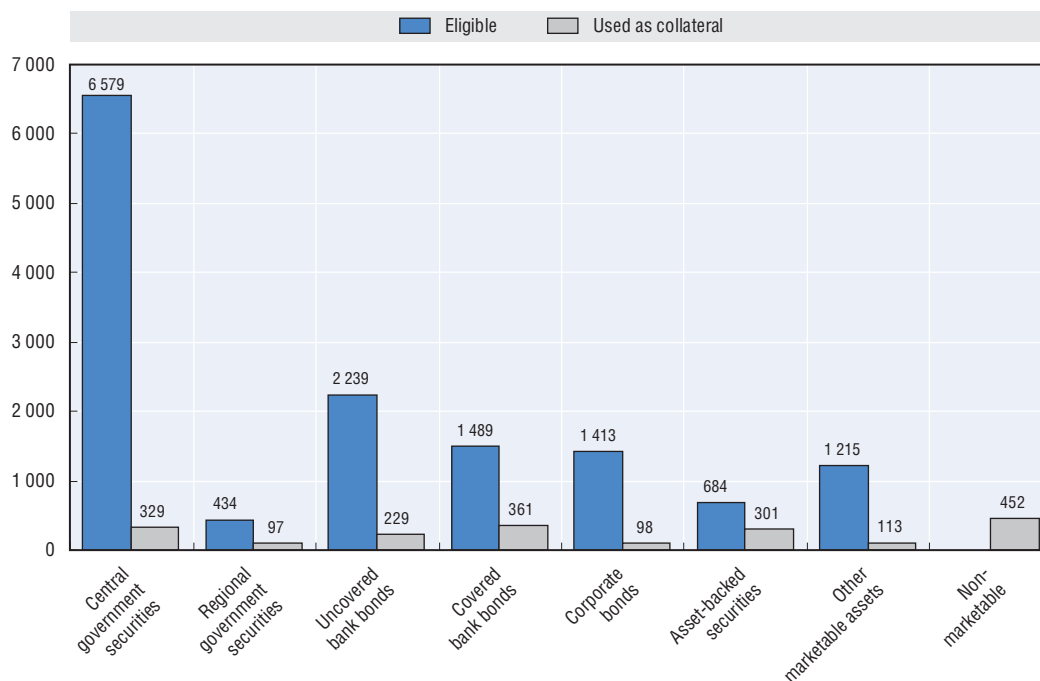
The inclusion of primary issuance in asset purchase programmes and the inclusion of other types of real-economy-related ABS had positive effects on the market. They address the issue of limited availability of outstanding SME ABS, especially in Europe, as the availability of SME ABS may not be enough to reach a critical mass and have a noticeable market and economic impact, for instance in European peripheral countries. Based on the principle that capital is fungible, more standardised asset classes, which are easier to securitise, can be promoted in securitisation programmes, creating headroom in banks’ balance sheets to be redirected to SME lending. Some form of insurance that (part of) the freed-up lending capacity is channelled into SMEs will be important.

Capital incentives, rather than liquidity, are likely to motivate originators for new issuances under an asset purchase programme. Given the abundance of funding provided to banks, especially in Europe through the ECB repo facility, the outright repurchase programme is unlikely to offer a significant funding cost advantage to banks. Nevertheless, capital relief from securitisation will be a major driver of new issuance, provided that it is not outweighed by the capital charges assigned to the first loss portion that is retained by the originator (or other tranches, as required). In Europe, the provision of guarantees for mezzanine tranches by national and supranational institutions will be critical for banks to benefit from capital relief, as banks would need to sell at least 50% by risk weight of mezzanine tranches in order to be able to claim capital relief (Deutsche Bank, 2014a). In addition, a number of leveraged-constraint banks will benefit from the sale of senior tranches even if they fail to get capital relief, as they would look into improving their leverage ratio rather than achieve gains on capital (Reuters, 2014).

The purchase of ABS or covered bonds that are currently retained and used as collateral for central bank funding (Figures 23 and 24 in Section VI.A.5 above) would prevent the crowding out of private investors from the relatively small primary market. Other assets, such as unsecured corporate bonds, could also be part of similar initiatives. To get an order of magnitude of the potential pool of assets available for such purchases, the eligible assets for refinancing operations of the ECB that are not yet pledged could be used as a proxy (see Figure 27).

Figure 27. **Eligible and pledged marketable assets – ECB**

As of Q2 2014, in EUR billion, nominal amounts

Source: ECB, www.ecb.europa.eu/paym/pdf/collateral/collateral_data.pdf?ba3bb0e0c2611c6740a278aa2ee7818a.

VII. Other difficulties and impediments to SME securitisation

A. Economic viability of SME securitisation

The low level of SME securitisation issuances placed in the primary market cannot be solely attributed to prevailing regulatory and monetary policy regimes but is also due to the lack of economic viability of certain SME issuances. As demonstrated by the relevant data (see Figures 24 and 25 above), most SME securitisation issued in Europe at the aftermath of the crisis was retained and used as collateral with the ECB, while very little was actually placed, usually just the senior, less risky, part of the structure. Besides regulatory treatment, asset quality considerations, low liquidity (and associated liquidity premia) and other factors may result in yield levels required by investors that cannot be serviced by the cash flows of the asset pool, rendering public issuance uneconomic.

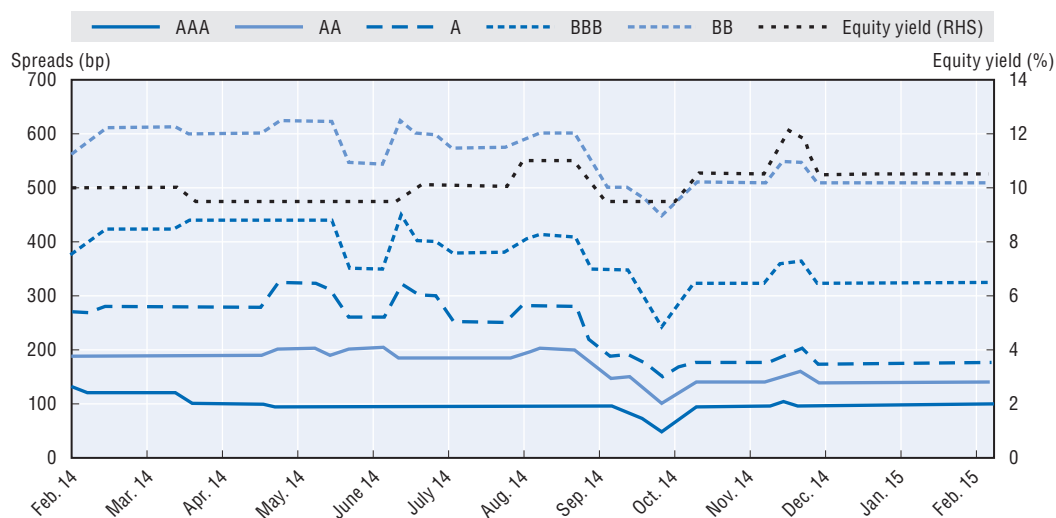
SME securitisation is regarded as uneconomic by some issuers due to the mismatch of the yield required by investors and the return on the underlying asset for the issuer. When investors approach SME CLOs they tend to perform a relative pricing, looking for a spread on a SME CLO that is higher than a comparable residential mortgage-backed security (RMBS) reference. Such a spread premium should compensate investors not only for the lack of liquidity in the market for SME CLOs, but also for the default risk of the underlying SME loans that is normally higher than that of larger corporates' loans or (with the RMBS reference in mind) of mortgages. From the lender's perspective, as the spreads need to reflect the riskiness of the underlying loans, SME loans are supposed to have a higher spread than residential mortgages based on performance statistics and non-performing levels of SME and residential loans disclosed by banks (even though pre-crisis levels of spreads that banks charged on SME loans were rather comparable to the ones

charged on residential mortgages). As a result, for SME securitisation to be rendered economically viable and profitable, spreads charged on SME loans by originators would need to increase and/or the desired yield expected by investors to decrease.

The underlying economics of SME collateralised loan obligations (CLOs) or leveraged (corporate) loan CLOs are suggested by industry participants to be insufficient for the placement of such products in the market. Leveraged corporate loan CLOs are referred to by market players as an interesting comparison to SME CLOs in order to showcase an example of SME deal economics that do not work. Leveraged loans CLOs have seen a comeback after the crisis with EUR 7.5 billion of new issuance reported for 2013 in Europe. Although the underlying loans are mostly loans to European mid-cap corporates whose risk profiles are somewhat different to those underlying SME CLOs, the economics of the structure provide a good example of how SME securitisation could become economically viable. In such structures, the entire capital is being placed with investors, from AAA tranches down to the equity tranches, and investors' (asset managers' in this particular case) demand seems to meet the underlying borrowers' along the entire issuance. Such AAA tranches are priced at 140 basis points (bp) over Euribor (see Figure 28 as pricing examples of non-SME CLO tranches), while the spreads on the underlying loans stand on average at 400bp. Conversely, Fitch estimated in May 2013 that the prevailing minimum primary market spread for AAA-rated SME CLOs would be between 80-100bp over Euribor for core European jurisdictions, while prevailing loan spreads charged on such loans ranged between 120-250 bp (Fitch, 2013a).

Figure 28. **CLO secondary market spreads**

Spreads over Libor in basis points (l.h.s.) and equity yield in per cent (r.h.s.)



Source: Deutsche Bank (2015).

Based on the above example, it comes as no surprise that originators of SME CLOs opt for cheaper ECB liquidity rather than placement with investors in the primary market. Official sector schemes providing funding at favourable terms may render securitisation expensive compared to tapping such official sector schemes (as discussed in section VI.A above). At the same time, investment in government bonds leveraging on LTRO liquidity can be used as an example of the latter, with an attractive yield achieved through

a sovereign bond carry trade when compared to a much higher risk-adjusted break-even point for LTROs directed to SME loans.

SME securitisation is deemed uneconomical when the liability spread exceeds the asset spread. Economics of SME securitisation issuances can be particularly unfavourable when issuance involves legacy (pre-crisis) loans carrying low spreads, against current yields demanded by investors (ECB and BoE, 2014b). Such yields incorporate compensation that covers for greater liquidity risk appreciation, perceived riskiness of the underlying loans given macroeconomic outlooks and other factors, including regulatory charges.

Market views are mixed over the ideal, optimal level of SME asset spreads and its implications for SME securitisation. SME asset spreads are not considered by some as high enough to create a robust cash securitisation market, particularly in the periphery of Europe during the crisis. Thin SME spreads are thought to be justified in countries such as Germany, where default levels were very low and the broad macroeconomic environment allowed for issuance of AAA-rated instruments, but not in countries where SME asset performance did not follow the same pattern. Such thin spreads, deemed unjustified, are also thought by some observers to work against the interest of macro prudential stability by driving over-indebtedness. A potential quantitative easing exercise in Europe could drive spreads tighter, possibly making issuance economical for countries that were previously priced out of the market, such as peripheral European countries.

Ancillary revenues generated from products and services related to SME lending may be another possible reason behind the issuance of non-economic tranches that cannot be placed in the market (besides monetary operations with central banks), and a potential factor behind low asset spreads in underlying SME loan portfolios. Examples of such revenues include credit cards, leasing, insurance products, transaction services (foreign exchange, treasury, payroll), invoice trading, etc.

For traditional commercial banks, however, SME loans are considered a major profit centre and a product offering some pricing flexibility when compared to more or less standardised mortgage spreads. SME loans can therefore involve high margins and banks may choose to hold SME loan portfolios on their balance sheet instead of securitising them, further adding to the issue of asset encumbrance. The high profitability of SME lending can be seen as the natural pay-out for the effort small commercial banks put into building long-standing relationships with SMEs, particularly at local level. The investment required for building the infrastructure necessary to arrange and serve SME loans adds to the originator's costs. Yet, despite high profitability, return on capital of SME loans is seen by some industry players as insufficient and regarded as the key challenge banks are currently facing. SME loans are highly capital intensive. On top of that, spreads charged may not always reflect these high capital charges. For SME lending to make commercial sense from a risk-return perspective, the bank needs to factor in its own funding/refinancing costs, capital requirements associated with the loan, SME default risk, administrative and infrastructure costs as well as the opportunity cost of placing the funds as loans to SMEs.

Investors might also disadvantage securitisation issued by banks considered as “too-big-to-fail”, when compared to other wholesale liabilities (ECB and BoE, 2014b). Securitisation issued by too-big-to-fail institutions is not perceived to be benefiting from implicit guarantees associated with such issuers due to the potential bankruptcy remoteness of the securitisation. Measures are being taken internationally by policy-makers to address such distortion, led by the work of the Financial Stability Board (see also FSB, 2013).

B. Financing options, the role of information and limits to disintermediation

Traditionally, SMEs tend to reach out to their local bank with which they already have a relationship when seeking financing. While such relationship banking has its benefits, it often leads to, or perpetuates, SMEs' lack of awareness of other financing options potentially available to them, such as those provided by the "shadow banking" industry, including crowd funding platforms or hedge funds that directly finance small businesses (Schuller, 2014). Moreover, SMEs are generally ill-equipped to deal with investor due diligence requirements. This lack of information and understanding leads to a weaker position of an SME in financing negotiations. This is an area where SME managers or owners need to be supported by independent advice, no matter if it is coming from the regulator or an independent market participant. Such advice and financial education, more generally, could empower SMEs to reach out for the best financing option – be it a bank loan or something more sophisticated – and to enhance competition between finance providers.

Nevertheless, while it is generally accepted that SMEs are heavily reliant on traditional bank lending, fuller disintermediation of SME financing may be neither achievable nor desirable. This is particularly true for very small and small enterprises, where the cost and ticket size required for capital markets issuance tends to be prohibitive. Pricing, capital intensity, as well as the complex logistics involved in SME loan origination are factors that hinder the complete disintermediation of banks in SME financing. Initiatives for the "unplugging" of banks, particularly in Europe with the collection of funds from investors that are then directed to SMEs, have been faced with challenges on the origination side: the logistics involved in the origination of SME loans can be extremely complex, especially when compared to the refinancing at the portfolio level. The local nature of the commercial relationship, the large number of on-the-ground bankers involved and the large distribution of SMEs, as well as the range of tailored-made products offered to SMEs are all factors adding to the inherent complexity of that type of client.

Many industry participants therefore argue that, **rather than replacing or removing some of the actors involved in SME financing, attention should be brought to the proper functioning of the different constituents involved.** As such, banks are thought as best placed in terms of underwriting and origination of SME loans. This is unlikely to change by the upcoming evolution of the banking landscape following recent and upcoming banking regulations, particularly so in Europe, characterised by the fragmentation of its financial markets. The possibility of online digital platforms facilitated by public institutions closely related to SMEs constitutes a potential alternative way of pooling SME loans favoured by a few market players.

The involvement of banks is also important alongside institutional investors on syndicated loan securitisations through SPVs, particularly in the space of mid-cap company financing. The benefit of having banks alongside investors in such structures is for investors to have the knowledge and equipment to negotiate a structuring or restructuring situation. The provision of a framework by the official sector for the transferability of loans is proposed by some market participants as a potential step forward, particularly as regards syndicated leveraged loans.

Given the fixed-cost nature of sourcing and monitoring particularly small and mostly local firms, capital market funding and lending by non-banks (direct or via funds²⁵) should have a complementary role alongside traditional bank lending channels. For very small firms, issuance in the capital markets would only be made available with

very light requirements and constraints (in terms of quotation, listing, supervising and cost). Private placements (see Sections IX.D and IX.E below) could ease such requirements but still carry costs that are deemed prohibitive for very small SMEs.

For a large part of the SME population, particularly those at the lower end of the size spectrum, the portfolio approach provided by securitisation is the cheapest solution available, allowing for the sharing of funding and structuring costs and costs of (indirect) access to capital markets. Through its “pooling” capacity, securitisation can be the easiest way to bring capital market money to SMEs, working as a bridge that allows the on-the-ground knowledge of the banks to be deployed with capital markets’ funding, insofar as such a bridge does not result in pure “originate-to-distribute” models.

C. Data transparency, data platforms and product standardisation

Lack of availability of credit information of the right form (comparability) and at the right time (timeliness) is a significant impediment to the fostering of market-based SME financing overall. Central credit registers and DataWarehouses, owned and operated by central banks or financial supervisors, exist or are being developed in a number of countries to address this issue. Besides the establishment of such data platforms, mandatory reporting and sharing of credit information could be a way to enhance completeness and availability of SME credit information, perhaps in some cases on an anonymised basis for some of these data (BoE, 2014a). Although public support is relevant and important, the burden of the cost should not lie entirely with the public sector and providers of financing should not be dis-incentivised from collecting and dispersing credit information, as appropriate.

1. Asymmetric information and the importance of data sharing

Data paucity is one of the main challenges to SME securitisation as well as to all other market-based financing instruments for SMEs. An important hurdle to the pooling and repackaging, portfolio-based approach of SME securitisation is the provision of enough relevant information for investors to quantify the level of risk involved. According to some market participants, market-based signals rather than quantitative models are seen as important indicators of risk and a right tool for financial market regulators to adequately measure securitised and un-securitised intrinsic investment risk. To that end, some market participants call for the institutionalisation of an ongoing, public, permanent process of exchange between actors with differing risk perceptions, like between buyers and sellers, and the disclosure of relevant information to both sides of a deal throughout the life of the investment.

The importance of information for credit markets has been advocated by several academic authors (Stiglitz et al., 1981; Miller, 2003) arguing that the asymmetric information between provider and receiver of financing is a fundamental characteristic of credit markets, leading to adverse selection and moral hazard on behalf of the borrower. The same principles apply to market-based financing and the corresponding instruments, and it can be argued that better availability and sharing of information can positively influence borrower and lender behaviour, countering adverse selection and moral hazard risks.

Information asymmetries are also important among competing providers of financing (competing banks for example) and market participants often make reference to the failure of past projects aiming at combining information from different commercial

banks (without any public support). Views differ as to whether such information exchange, with Gehrig et al. (2007) arguing that it does not necessarily lead to more efficient credit markets. The International Finance Corporation, on the other hand, claims that credit reporting systems aiming at reducing information asymmetries enhance competition and reduce default rates, ultimately resulting in lower cost of funding and easier access to credit (IFC, 2012). For a more elaborated analysis of credit information sharing, see OECD's discussion paper on Credit Information Sharing (OECD, 2010).

Such information is particularly important on transactions involving SMEs, given that the SME sector is highly heterogeneous, harbouring sector-specific risks only a fraction of which can be gauged from financial statements. SME entrepreneurs are often less prone, willing or able to share risk sensitive information, while sourcing and monitoring SME financing entails a significant fixed cost for market participants.

The lack of loan level data, a veritable information asymmetry particularly with respect to SMEs, often inhibits the development of more rigorous fundamental analysis of financing instruments such as SME securitisations. Loan-by-loan information allows for the statistical analysis and the analysis of parameters that are meaningful only in relation to each specific loan (interest rates, maturities, collateral pledged). The downside to loan-level reporting and data provision is the cost of the supporting infrastructure and the cost of maintaining such databases.

Public support via public financial institutions could help to compensate for this structural cost disadvantage SMEs have to face as compared to larger borrowers. However, outright subsidisation should be avoided to minimise crowding out.

Sharing of SME credit data amongst providers of SME financing will not only allow for better credit evaluation of SME-related instruments, but will also **level the playing field across institutions**. New and alternative providers of financing may face lower barriers to entry into the SME financing space, thus improving the availability of credit to SMEs (BoE, 2014).

However, while many banks have the relevant information, for commercial reasons they may not be willing to share it, thus so far projects with the objective to combine information from different commercial banks have failed. This is why public support might not be sufficient, and **information sharing would have to be – to some extent – mandatory**.

2. DataWarehouse platforms to improve SME loan-level information

Regulatory initiatives requiring the provision of detailed, standardised loan-level information have been introduced on both sides of the Atlantic. In the US, regulatory initiatives including the Wall Street Reform and Consumer Protection Act (Dodd-Frank regulation) require that loan-level information is made available to investors both at the time of origination and on an ongoing basis. Originators are therefore required to run systems that can process and maintain performance data at loan level at issuance and over the period of servicing of loans.

In Europe, such an initiative was launched by the European Central Bank in 2013 through the **European DataWarehouse (ED)**,²⁶ comprising loan level reporting for underlying loans of ABS issued in Europe. ED is the first ABS warehouse ever created that is owned by its market users, and it is being supported and endorsed by the ECB and members of the Eurosystem. The ECB and NCBs, such as the Bank of England, are fully engaged in obtaining greater structural and collateral transparency and both require loan

level data to be made available in order for asset-backed bonds to be eligible as collateral at each bank's liquidity operations.

Fully transparent and granular loan level data, freely accessible to all qualified users like institutional investors, could be **regarded as a public commodity**. Thus, building and operating SME DataWarehouses may require public support. However, as the European (ED) example shows, such initiatives do not necessarily need public support. Private sector initiatives may even be able to deliver such widely consolidated and standardised repositories in a more expedient manner, by refining the large amount of data already available but currently lacking standardisation, accuracy and minimum quality requirements and allowing for their meaningful use (e.g. Altenburg, 2013). However, others would argue that a facility with even remotely comparable capabilities does not yet exist and would take years to build, involving substantial public investment that could only be justified by the paramount relevance of the SME sector for growth, innovation and employment. **Suitable platform solutions and their trade-offs** (e.g. region-wide vs. national, strictly public vs. in co-operation with the private sector, protection of confidentiality vs. open data) **are yet to be explored in greater detail**.

Such platforms would also allow for a possible repositioning or even for necessary restructuring efforts by individual members of the pertaining SME universe, either initiated on their own or nudged by monitoring participants. In providing loan-level information beyond the collection of mere balance sheet and profit and loss (P&L) data, DataWarehouse platforms contribute to building critical, qualitative know-how across a wide array of industry sectors that is crucial for better assessing investment risk. Therefore **such platforms can be instrumental in detaching investment decisions from a pure external ratings-driven decision making**, addressing the issue of excessive reliance on external credit ratings without a proper understanding of the transaction involved. When it comes to SME ABS, the inability of investors to accurately size the credit risk by performing their own fundamental analysis has meant that many such instruments tend to overprice risk ("trade to worst"). DataWarehouse platforms have the potential to enhance differing perceptions of risk beyond ratings and beyond the awarding of other group-think-inducing quality grading through the dispersion of risk perception, broadening the inherent limitations of available concepts of risk measurement.

However, **the availability of data per se is meaningless if it is not being understood and used by the relevant professionals in order to make informed investment decisions**. Individual loan information as provided by the ED initiative is thought by some market players to be useful only to the extent that an investor can create his own stratification on the portfolio, given the large number of individual loans each SME portfolio can include (in the tens of thousands). In such cases, looking at individual loans or borrowers is not common practise, unless these represent a large part of the portfolio, which is rarely the case for SME portfolios. On the contrary, portfolios of mid-cap firm loans are more concentrated (including about 50 to 150 borrowers in each such portfolio). The **promotion of standardised reporting** would assist investors in their risk analysis and portfolio selection process, as is the case with syndicated loans where private equity houses ensure that information packages are made available to investors.

But at this stage, **the problem of an absence of historical loan-level databases seems to be more pressing**. The reason for this may also be high associated reporting costs as well as the non-mandatory reporting for non-pledged SME ABS (for which the central bank

would require detailed information). Past performance analysis and information on loans in arrears will take a number of years to be fully operational, somehow limiting the current usefulness of the existing data platforms for investors. Reporting requirements through the various regulatory and supervisory regimes may be overlapping, increasing the cost of transparency for issuers. Issuers may therefore be discouraged by the costs associated with such reporting requirements, and may be driven towards other instruments instead.

3. Credit registers, SME credit scoring and the role of standardisation

Increased standardisation provides greater comparability and allows investors to perform comprehensive and well-informed analysis on the underlying exposures. Standardised loan tape templates for SME CLOs (among other structured products) were launched in 2013 by the ECB. Data availability in a user-friendly format, including IT and technical considerations on the platforms, are needed so as to encourage the actual use and proper understanding of the data by investors.

In its response to the BoE and ECB discussion paper on securitisation, AFME highlights the **importance of simplifying and harmonising both data reporting templates and formats**, so that securitisation-specific information “only needs to be submitted once, to one place and in a single format” (AFME, 2014b). A single repository of data, harmonisation of reporting requirements, emphasis on data quality and user-friendliness and facilitation of information flows are more important than additional reporting and data provision requirements.

Observers also point out that, contrary to other types of underlying assets to ABS, **the SME loan asset class would benefit from the creation of additional specialised credit registers**. Such registers provide data on SME loans underlying structured finance instruments while being in line with national confidentiality and privacy laws. Besides improving availability and quality of information, they allow investors to run accurate models of default and recovery rates (BoE and ECB, 2014b). At the same time, more abundant data and information would aid the development of standardised metrics of credit performance.

Data disclosure also includes all forms of external credit assessments, such as ratings assigned by credit rating agencies or credit bureaus, recognised to play a significant role in structuring the market and observing default frequency. Better information flow between participants allows for better assessment of the risk premium required by investors and easier access to funding by SMEs. Public initiatives such as the one sponsored by Banque de France (see Box 6), collecting the information on a loan-by-loan basis (whenever a bank has an aggregate exposure above a EUR 25 000 threshold for the corporate) and assigning ratings to all corporates (above a EUR 750 000 annual turnover threshold), is extremely beneficial to the system. Similar credit registers – without necessarily a relevant scoring system attached to them – exist in a number of other European countries. To mention two extreme examples, the Banco de Portugal has a minimum reporting threshold of only EUR 50 per borrower, one of lowest reporting thresholds for this type of registers (operating on a borrower-by-borrower reporting basis), while the German Bundesbank has a minimum threshold of EUR 1.5 million on aggregate loans per borrower, which is on the high side (operating on a loan-by-loan reporting basis).

The limitation of accessibility only to banks (as regulated entities) is, however, noted by some market participants as a major constraint in the above effort. Mimicking such

Box 6. The Banque de France rating system

The Banque de France rating is an assessment of a company's ability to meet its financial commitments over a three-year period. It comprises:

1. a **turnover rating**, indicating the company turnover, represented by a letter from A to M: A for companies with turnover higher than EUR 750 million, and M for companies with a turnover lower than EUR 0.10 million. A non-significant turnover rating N is given to companies that do not directly carry out an industrial or commercial activity (e.g. holding companies). The turnover rating X corresponds to companies whose turnover is either unknown or too old (over 21 months old);
2. a **credit rating**, assessing the creditworthiness of the company, represented by a range of 13 different levels: 0, 3++, 3+, 3, 4+, 4, 5+, 5, 6, 7, 8, 9, P. The rating 0 is given to companies for which the Banque de France has collected no unfavourable information. In descending order, the most favourable ratings are 3++, 3+, 3 and 4+.1 The credit rating 8 represents irregular payments and 9 very irregular payments (severe cash flow problems). Rating P is given when the company is undergoing insolvency proceedings (court-ordered turnaround procedure or judicial liquidation).

Such credit assessment is based on i) an analysis of company, and potentially consolidated, accounts, ii) a study of bank liabilities and possible trade bill payment incidents, and iii) the company's environment: sector of activity, economic and financial ties with other entities, and, where appropriate, any legal events affecting the company.

The data used for the attribution of a credit rating to resident companies is collected by the **French Central Credit Register** (CCR, established in 1946), collecting loan-level data for non-financial companies from banks with a minimum aggregate threshold of EUR 25 000 on a monthly basis.

CCR is part of the larger information system operated by the Banque de France on non-financial companies since 1982 (Fichier Bancaire des Entreprises, FIBEN). FIBEN combines credit information collected by the French CCR with the companies' accounts and other public data, such as court judgments.

This rating system is used by the Banque de France in the framework of its Eurosystem monetary financing operations and for the purpose of prudential supervision. The ratings are also made available to credit providers and cover more than 250 000 non-financial resident companies (above an annual turnover threshold of EUR 750 000). Although banks are not obliged to use those ratings in their credit assessment, they often do use these scores particularly for the calculation of collateral eligibility for refinancing operations with the Banque de France.

Source: Banque de France (2013), Fiben cotation website, www.fiben.fr/cotation/, Stevant (2010).

initiatives and broadening their range would be beneficial to SME financing because more investors would be able to make their own judgements about risks related to SMEs. With asymmetries of information reduced (if not ruled out), and with fewer regulatory impediments, even high risk tranches with adequate risk premiums could become attractive to qualified investors. The modification of banking legislation is also raised by market participants as possibility to lifting impediments to the greater involvement of institutional investors.

Concrete actions to make securitisation transactions more transparent and standardised are already being taken by public authorities and the private sector, for

instance in terms of standardisation of reporting templates but also in terms of differentiation of “high-quality” securitisation products (see Section V.C above). The Prime Collateralised Securities initiative (PCS), the differentiation introduced in European regulation based on the concept of “high-quality securitisation” for simple and transparent securitisations, as well as the proposal by the Bank of England and the European Central Bank are all in the same vein.

At the same time, in the context of the SME universe, complete standardisation can be seen as impossible and counter to the very nature of inherently diverse SMEs. The capacity of securitisation to allow for various degrees of credit enhancements through different sizes of tranches and different forms of credit enhancing is consistent with the diverse characteristics of SMEs. At the same time, aggregating large pools of SME loans allows for the smoothing out of idiosyncrasies. The high heterogeneity of SME pools is an important source of attractiveness to private investors, with some investors arguing that, despite a fairly high implied probability of default of individual SME loans, the relative stability of SME portfolios renders them attractive from the standpoint of a private investor.

VIII. SME ABS vs. SME covered bonds

As discussed in Section II.D above, **covered bonds are asset-backed instruments with many similarities to securitisation products** and in particular to plain vanilla ABS, as they are both collateralised by an underlying pool of assets. Nevertheless, a number of key differences exist that have rendered the instrument a safer alternative to securitisation in the years following the financial crisis. Some of these differences, in terms of the characteristics and regulatory treatment of the instrument, warrant a more specific discussion and assessment which is the objective of this chapter which also presents some case studies of such instruments.

A. SME-backed covered bonds

1. Features and problems of SME-backed covered bonds

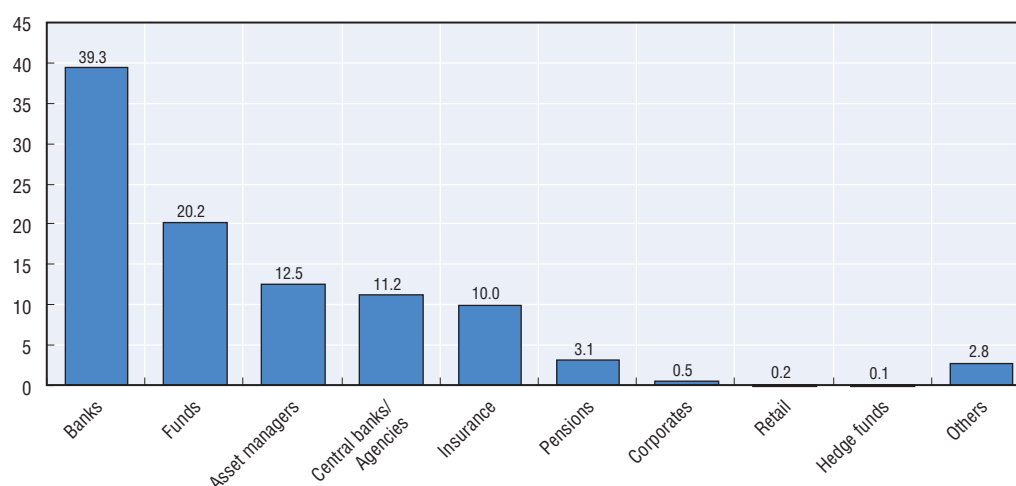
In order to raise financing for SMEs, SME loans can be bundled together in a cover pool against which covered bonds can be issued. However, to date, the use of SME loans as an asset class in covered bonds is not permitted in the legislation of many countries with an active covered bond market. This has been changing with the gradual introduction of covered bond legislation as mentioned above (II.D; e.g. Portugal 2006, Greece 2007, United Kingdom 2008, and Australia 2011) or the update of existing rules. Nevertheless, to date, the use of SME loans as an asset class in covered bonds is not permitted in the legislation of most countries with an active covered bond market. The majority of covered bond regulation is mostly geared towards mortgages and public sector loans and the market for SME covered bonds is relatively new and small in terms of volume outstanding.

Besides statutory shortcomings, the issuance of SME-backed covered bonds is faced with the same inherent difficulties relative to credit risk assessment that are present at the SME securitisation market. Information transparency is a key feature necessary for the promotion of such instruments, and the lack of transparent, standardised information on the credit profile of underlying SME loans is still an impediment to investors in their credit assessment process. It should nevertheless be noted that, when assessing a covered bond, investor focus is somewhat moved away from the cover pool towards the credit of the originator, given the double recourse feature of that instrument.

The investor base for covered bonds is different than the one for ABS, as the risk-reward profile of the instruments is very dissimilar to securitisation, raising the question of sufficient investor appetite for this instrument (Figure 29). A broad base of investors with diversified needs is a pre-requisite for the functioning of such nascent market segments, with the breadth of investor needs allowing for various similar instruments to co-exist.

Figure 29. **Investors in the covered bond primary market**

Investor breakdown for publicly placed euro benchmark issues, January 2011 to June 2013, in %



Note: Covered bonds that are retained by the issuer and used for central bank operations are excluded.

Source: ECBC (2013), NORD/LB Fixed Income Research.

Tenor is another factor affecting SME covered bonds, with SME loan maturities being, on average, shorter than those of mortgages or public sector loans (see Table 10). The turnover of SME covered bond programmes and the dynamics of the underlying cover pool are therefore more pronounced than the respective collateral of mortgage covered bonds, for example, adding to the complexity of the structure in terms of credit assessment (small size of claims, short to medium-term maturities, very high overall volume and turnover in a covered bond programme). **High turnaround of the cover pools therefore requires some additional investor sophistication** in terms of risk assessment expertise and analytical resources for constant surveillance throughout the life of the investment.

Table 10. **Average life of SME loan-backed vs. mortgage-backed structured finance instruments**

Weighted Average Life (WAL) in years

	Residential mortgage covered bonds	SME securitisations and SME covered bonds
Germany	5.9	1.6
Spain	10.8	4.2
Italy	10.1	5.0
Turkey	n.a.	0.9

Source: Moody's (2013), Deutsche Bank (2013).

Appropriate risk appetite, sufficient information and transparency, expertise to analyse credit quality of SME claims are all factors that will allow investors to allocate part of their portfolio to such instruments. Similar to securitisation, a more coherent and harmonised definition of the covered bond asset class and its respective regulatory treatment will improve the perception of investors and their confidence in the asset class, rendering covered bonds a more widely accepted instrument by investors. Over and above the regulatory workstreams discussed in Section V.A (Basel III, CRD IV, LCR), covered bonds are **particularly affected by bail-in frameworks** currently prepared or recently passed in different jurisdictions; including covered bonds in assets that are subject to bail-ins would be counterintuitive and contrary to the inherent principle of insolvency insulation. Uncertainty around the relevant regulatory treatment might drive investors away from the asset class overall.

In the European context, SME assets do not qualify for special treatment under the Capital Requirements Directive (CRD), which only allows public sector loans, mortgages and shipping loans as eligible assets. In addition, SME covered bonds are not eligible for treatment under the UCITS (Undertakings for the Collective Investment of Transferable Securities) framework, co-ordinating the distribution and management of investment vehicles across the EU while maintaining high standards of investor protection. Nevertheless, SME covered bonds are classified within the Eurosystem's collateral framework and are eligible for liquidity repo transactions with the ECB.

SME covered bonds are not complying with the definition of the ECBC covered bond quality label (see Box 7) given that SME loans are not considered to be enforceable as a security of longer maturities (as is the case with consumer loans, too). Non-complex enforceability processes and foreseeability of values and/or performances are required for cover assets serving as a long-term credit security.

Box 7. ECBC Covered Bond Label

The Covered Bond Label Foundation was established in 2012 by the Mortgage Federation (EMF) and the European Covered Bond Council (ECBC) in order to respond to the market-wide request for improved standards and increased transparency in the European covered bond market. The Foundation developed a quality label in co-operation with issuers, investors and regulators, and in consultation with all major stakeholders.

The label establishes a clear perimeter for the asset class and highlights the core standards and quality of covered bonds. At the same time, it seeks to increase transparency and improve access to information for investors, regulators and other market participants. It aims at improving liquidity in covered bonds and positions the asset class with respect to the upcoming regulatory challenges (CRD IV, Solvency II, redesign of ECB repo rules, etc.). As of August 2014, 81 labels were granted to 70 issuers from 13 European Member States, covering over EUR 1.3 trillion of covered bonds outstanding.

The label is complemented by a transparency tool/platform developed at national level based on the "Guidelines for National Transparency Templates" and operational since January 2013. The platform provides detailed covered bond data, comparable asset pool information and legislative framework information on the various national legal frameworks.

Source: ECBC (2013, 2014).

Uncertainty around the level of protection from a resolution in case of an issuer's insolvency for SME structures, given that these are not covered under the specific covered bond legal frameworks (with the exception of Turkey) **translate into an ambiguous categorisation of the structure**. Inclusion in covered bond indexes is not straightforward; for example, the Commerzbank's SME covered bond was not included in Markit's iBoxx index, placing them instead under the "other collateralised" category, restraining participation of investors who track indices.

The contentious nature of SME covered bonds in the investor community could be addressed through the introduction of statutory legal frameworks for such asset class and a potential harmonised framework for covered bonds at least at a minimum level with a view to solidify the instrument while safeguarding the high level of investor security (ECBC, 2014).

2. Turkish banks paving the way for SME covered bonds

Turkey was one of the first countries to allow the option of SME-backed covered bond issuance through specific legislation, counting many such issuances. Turkey's Sekerbank issued the first SME covered bond in 2011, fully subscribed by the Netherlands Development Finance Company (FMO), the International Finance Corporation (IFC) and Unicredit (the latter as the arranger of the deal). Although not considered as a publicly placed covered bond given that the buyers were not real-money investors, it set the precedent for other programmes to follow. Denizbank issued an SME covered bond in early 2013, and has been followed by other issuers in the country, such as Yapi ve Kredi Bankasi. These first transactions by Sekerbank and Denizbank have also been supported by EIF guarantees. This, like the involvement of other IFIs, shows that public support helps to implement such innovative structures.

According to industry participants, a number of country-specific factors were the drivers behind Turkish banks' activity in the SME covered bond space: SME loans transferred to an SPV for a securitisation issuance are not taken into account in the calculation of the issuer's market share in that product. Given the importance Turkish banks assign to the market share metric, covered bonds are preferable as the underlying assets remain on the balance sheet of the issuer. Tax complications linked to the sell-out of assets to SPVs also added to the incentives.

On January 2014, Turkey published an updated regulation on the issuance of covered bonds, unifying the framework for mortgage and asset covered bonds, with the purpose of facilitating public issuance of covered bonds (ING, 2014). Amongst the most important changes affecting SME covered bonds were the introduction of a limit to the amount of covered bonds that can be issued (covered bonds cannot exceed 10% of total assets) as a way to address encumbrance risks. Such limit, together with higher minimum rating and over-collateralisation criteria, are likely to affect issuance levels. Reporting requirement amendments, on the other hand, will increase transparency and availability of credit information, improve investor ability to perform due diligence and credit assessments. A dedicated register for the cover assets needs to be created and records kept in book or electronic format (Cover Register). The bonds are subject to nominal value, cash flow and net present value matching requirements (between the cover assets and the bonds issued). A Cover Monitor is appointed to check the Cover Register and monitor compliance with the matching requirements. SME loans, previously explicitly referenced in legislation as eligible collateral, are now included in the consumer loan asset class.

3. Commerzbank's SME covered bond

In Germany, Commerzbank issued a structured covered bond in 2013, the first one to be backed by loans to German SMEs. Given that SME loans are not eligible under the German Pfandbrief legislation for covered bonds (see Box 8), Commerzbank used a contractual structure with an SPV and a Trustee for payments under a priority of payments (Figure 30). Investors were offered dual recourse to the issuing bank as well as to a guarantee provided by the SPV. Commerzbank's SME covered bond was issued with a 5-year scheduled maturity and a switch to pass-through option in case of insufficient funds, carried a fixed coupon of 1.5% and was issued at par.²⁷

Box 8. Covered bonds under the Pfandbrief Act

Pfandbriefe are covered interest-bearing bonds issued by credit institutions licensed to engage in such issuances (the *Pfandbrief* Banks). The underlying collateral that is eligible under the framework are mortgage loans, public loans to national and local governments, shipping and aircraft loans. SME loans are not eligible cover assets under the Act.

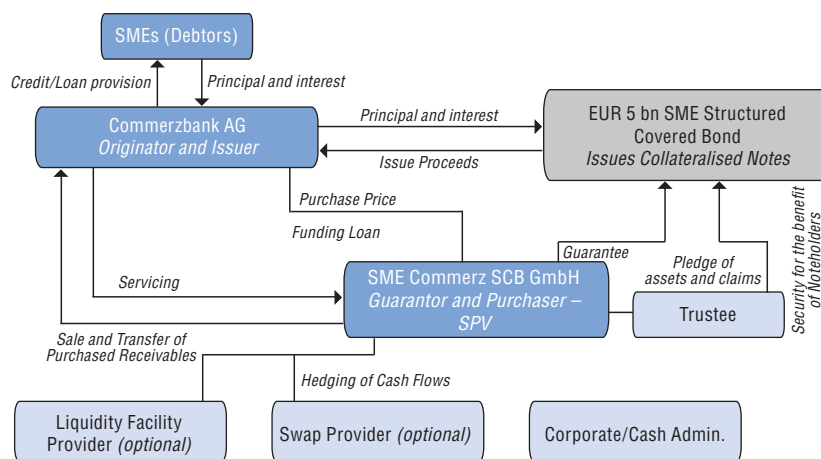
The *Pfandbrief* market is the second largest market for fixed income bonds in Germany and has a good reputation with investors due to the particularly high level of security its structure offers and due to its untarnished credit history. At the same time, given the associated low risk premiums, issuers enjoy a cheap and reliable source of funding.

The issuance of *Pfandbriefe* is bound by the regulations of the German *Pfandbrief* Act (last amended in 2010) with high level of requirements with regard to investor protection. A nominal value matching requirement applies and the cover pool is bankruptcy-remote. While a 2% overcollateralisation requirement is applied, in practice credit ratings incentivise issuers to hold higher percentages of overcollateralisation.

Assets comprising the cover pool are recorded in a cover register maintained by each *Pfandbrief* bank, also required to publish information on a quarterly and annual basis. The *Verband Deutscher Pfandbriefbanken* (VDP) is the professional umbrella organisation that looks after the economic, legal and reputational interests of its 39 German *Pfandbrief* Banks.

Source: VDP (2014).

Figure 30. Commerzbank SME covered bond structure



Source: Adapted from Commerzbank SME Structured Covered Bond Programme Prospectus (December 2013).

The pricing of Commerzbank's SME covered bond was seen as very competitive, particularly given that the implied spread was below the senior unsecured funding spread of the originator. Commerzbank issued an SME CLO from the same part of the balance sheet, used as repo collateral with the ECB. The two issuances were rated by the same rating agency and had a very similar risk profile. Interestingly enough, the originator opted for both transactions in order to benefit from the better regulatory treatment that a covered bond allows for. From an investor perspective, although the risk profile of the underlying portfolio of SME loans was similar, the recourse to the originator improves the liquidity profile of a covered bond providing another advantage in addition to the preferential regulatory treatment of a covered bond. Over-collateralisation, either mandatory under the legal framework or voluntary for the instrument to achieve the highest possible rating, adds a further safety net for investors. Nevertheless, given that these securities are a single name paper, due to exposure rules there is a limited amount of such bonds that a counterparty is allowed to hold.

The Commerzbank transaction can also be used as an example of the high levels of transparency required in such structures and the potential for standardisation. This particular SME covered bond comprises 700 companies, most of them essentially mid-caps with an average revenue level for the companies in the pool of around EUR 500 million, well in excess of the high end of the SME spectrum. The analysis of this pool was therefore performed on a statistical basis, relying on the bank's internal model. Such an exercise is only applicable on a fairly granular portfolio, highlighting the importance of transparent and relatively standardised information. Initiatives such as the Banque de France's standardised rating system for small creditors was highlighted as valuable for the fostering of such instruments. The level of transparency required goes beyond the cover pool of SME loans, as comprehensive information on the issuer of the covered bond relative to, for instance, asset encumbrance, is equally deemed important.

In April 2014, the French Banking Federation introduced the Euro Secured Notes Issuer (ESNI), a new platform designed to support SME lending in France and in Europe. The scheme uses an SPV structure, incorporated under the French *Fonds Commun de Titrisation* rules, where each participating bank has a separate compartment in the vehicle. Within a compartment, notes are ranked *pari passu*. The sponsor banks also provide overcollateralisation.

Despite benefiting from a dual recourse to the issuer and the cover pool assets, the market does not perceive the instrument as a covered bond because the SME loans involved are an asset class that is currently not eligible within covered bond frameworks (HSBC, 2014).

The **inaugural EUR 2.65 bn SME-backed non-tranched notes issued by the ESNI** were backed by loans of BNP Paribas, BPCE, Crédit Agricole, HSBC France and Société Générale, with maturities of up to three years. The underlying SME loans backing the ESNI notes remain on the balance sheet of the bank and were highly rated by the Banque de France. In case of an individual bank default, the loans are taken over by the SPV and transferred to the respective compartment using the covered bond legal framework for the *Obligations de Financement de l'Habitat*.

The platform is supported by the Banque de France, who has the status of In-house Credit Assessment Source (ICAS) recognised by the ECB.²⁸ Banque de France has a credit valuation model and rating system, FIBEN, originally created in the context of monetary

refinancing operations, allowing for an in-house credit assessment and rating attribution of resident companies (see Box 6 above). This credit quality assessment system is used to evaluate and haircut SME loans before including them in the ESNI pool. The very existence of the rating and credit information system of the Banque de France can be considered as one of the most important enabling factors of such a structure.

The ESNI initiative aims at providing an alternative funding tool for banks, which would translate to further on-lending to SMEs. The pilot issue was mainly used to provide liquidity to participating banks, as the notes are eligible collateral with the Banque de France, and perhaps eligible in the interbank market. Similar to other programmes, it is unclear whether publicly placed issuances of this kind will be treated by the industry as covered bonds or senior secured bonds.

Besides ESNI, there are three types of covered bonds in France: *Obligations Foncières*, *Caisse de Refinancement de l'Habitat* (CRH) and *Obligations de Financement de l'Habitat*. France has amended its broader covered bond legislation in 2014, improving the covered bond legal framework through, for example, the increase of the minimum overcollateralisation from 102% to 105% in line with other jurisdictions (Agefi, 2014).

4. Other upcoming or potential SME covered bond issuances

Originators like Commerzbank or HSH Nordbank (who added a KfW guarantee on its cover pool SME loans so as to meet the requirements of the *Pfandbrief* Act) **used securitisation-style elements when structuring SME-backed covered bonds in order to bypass the absence of covered bond legal framework** in their respective jurisdictions.

Austrian regulators are considering allowing SME loans as cover assets, while in **Spain** a amendment in the securitisation law (March 2014) introduced the possibility of structured covered bond issuance in conditional pass-through form, which can include SME loans in the cover pool.

In February 2014, **Italy** created a new type of covered bonds outlined in article 12 of law decree 145 (*Destinazione Italia*), allowing for alternative assets (i.e. besides mortgage and public sector loans) to be eligible as covered assets for secured bond issuance. Such SME covered bonds are not explicitly covered by the Bank of Italy regulation of covered bonds regarding supervision, asset monitoring and minimum capital requirements required by the issuer. Therefore, smaller lenders who are not currently allowed to issue mortgage or public sector covered bonds (*obbligazioni bancarie garantite*) will be allowed to issue SME covered bonds (Fitch, 2014a).

The absence of a critical mass of sufficiently sizeable portfolios of SME loans in highly fragmented markets (such as in the case of Italy) is noted by the industry as another impediment to the promotion of such structures. However, the possibility of pooling portfolios by different banks can result in multi-originator structures where each of the individual originators needs to be assessed and rated for the structure to receive a credit rating. Such **multi-originator platforms**, similar to the initiatives of the European Investment Fund, are **facilitated by the existence of standardised underwriting processes**.

Regulators could enhance the attractiveness of such instruments by working on the introduction and fine-tuning of integrated and consistent frameworks of covered bond regulation, particularly in Europe, so as to facilitate the development of the asset class. Difficulties in defining the eligibility criteria for SME loans, heavy requirements in terms of analytical capabilities, as well as spread compression and the provisions of cheap funding

through monetary policy measures²⁹ significantly reduce the chances of SME covered bonds becoming more than a niche instrument designed for funding and liquidity purposes.

B. Comparing SME-backed covered bonds to SME ABS

SME securitisation (for instance SME ABS) is very similar to SME covered bonds in the sense that both are collateralised by an underlying pool of SME claims. Nevertheless, a number of very important differences exist (see Table 11). Such changes explain not just the different spreads but also the different investor base attracted by each of the instruments, and to a great extent the differences in regulatory treatment for the two SME-backed asset classes.

Table 11. **Characteristics of SME securitisations vs. SME covered bonds**

	SME securitisations	SME covered bonds
Issuer	Mostly SPVs	Mostly financial institutions ¹
SME collateral eligibility	Yes	No – only in few jurisdictions are SME claims covered under special CB law
Credit risk transfer	Yes, apart from portion retained	None, on-balance-sheet item
Recourse to issuer	No	Yes, double recourse
Structure	Tranched	Untranchéd
Repayments	Amortising, typically pass-through	(Soft) bullet or conditional pass-through
Source of repayment	Cash flow of securitised claims	Issuer meets repayments. In case of issuer insolvency, cash flow of covered assets
Capital relief	Yes	No
Asset-liability match	No (pass-through structure, liabilities met by cash flows generated by the assets)	Depending on the programme
Cover pool	Predominantly static	Dynamic
Maturity	Fixed at closing	Unlimited
Overcollateralisation	Rating Agency requirement for rating	Legally/contractually required

1. In some cases, a covered pool of SME claims may be first sold into a special purpose entity (true sale) but the latter would need to be fully consolidated with the issuing credit institution.

When compared to senior unsecured bank or corporate debt, the differences of the covered bonds instruments are more straightforward: covered bonds are more secure (cover pool), less market volatile, enjoy better rating stability (even though ceilings such as the sovereign one still exist) and somehow preferential regulatory treatment (e.g. Basel, LCR, Solvency II, bank bail-in frameworks) as well as official sector support in repo operations (e.g. ECB repo eligibility).

IX. SME corporate bonds and private placements

A. Mid-cap bond markets

Corporate bond issuance is commonly used by large companies for which it is easier to obtain credit ratings and that are relatively less costly for investors to analyse and monitor. Large companies can also issue bonds in large denominations that are typically purchased by financial institutions. Corporate bond issuance involves the regular payment of interest and a bullet repayment at the end of the bond life. For SMEs, however, bond finance is not commonly available, even though several possibilities for midcap companies exist.

SMEs are to a large extent ill-equipped for direct debt issuance on corporate bond markets thus the market for SME bonds is relatively small in terms of outstanding volume

and number of issues. A number of impediments, including the absence of rating and the inability to join indices somehow restrict their attractiveness for a broader range of institutional investors.

In the past years several markets for retail bonds have been created. In Germany, BondM market launched in 2010, targeting Mittelstand companies with turnovers from EUR 50 m to EUR 1 bn. In the United Kingdom, the London Stock Exchange's (LSE's) retail bond trading platform, the Order Book for Retail Bonds (ORB) was launched in 2010, enabling trading in bonds with smaller, more manageable denominations (GBP 1 000 or similar; LSE, 2010) and issues of smaller sizes than the institutional bond market (typically around GBP 25-150 million average issuance size for listed ones and GBP 1-10 million for unlisted ones; KPMG, 2011). ORB benefits from market making similar of that used in shares trading, enhancing liquidity in the secondary market and thus boosting participation in primary markets. Issuers enjoy flexibility in terms of issuance size, allowing for retail participation in smaller sizes (GBP 1 000) while the median size is around GBP 72.5 m (Llewellyn Consulting, 2014).

In France, *Émissions Obligataires par Offre au Public* (IBO) were launched in 2012 and the programme allows listed and unlisted SMEs to issue bonds on NYSE Euronext and Alternext Paris. In Italy, ExtraMOT PRO was launched in 2013 (see Section IX.B). In Spain, MARF (New Alternative Fixed Income Market) was launched at the end of 2013 (Kraemer-Eis, 2014).³⁰ A number of similar initiatives are underway (e.g. at Athens Stock Exchange's EN.A STEP alternative market, and at the Irish Stock Exchange³¹) for the development of markets that allow investors to invest in securities generating SME debt.

Despite such national initiatives, capital markets remain relatively fragmented for SMEs and mid-caps, with low levels of cross-border investment in securities other than "blue chips". This is mainly attributed to obstacles such as different securities laws, bankruptcy laws and tax incentives, but also due to investors' tendency to discriminate between the different types of bonds depending on the perceived quality of the underlying collateral. Another reason may be that so far experiences with SME bonds have been mixed, especially in Germany, with many downgrades and high default rates, and concomitant concerns over transparency, accounting and rating standards.³² This may also be due to problems of asymmetric information where public SME bond markets end up with higher, underpriced risk.³³

Such small and mid-cap trading bond platforms have a number of attractive characteristics, for issuers and investors alike. Issuers can place bonds in the market with listing requirements that are more relaxed than those for larger blue-chip companies. SMEs can issue bonds on an unrated basis, improve their financial flexibility and access a larger investor base. Investors on the other hand have the opportunity to invest in bonds at yields well above the ones offered by large caps, particularly relevant for "search for yield" investors given the current low interest rate environment. Smaller trading denominations on certain markets give retail investors the possibility to diversify their investment portfolio beyond traditional bank deposits.

Cost and reporting requirements associated with bond issuance make this market suited mostly to the upper segment of SMEs and beyond, essentially medium-sized and larger companies.³⁴ The role of brokers is also important in getting those bonds to institutional investors, given that most bond investors look into placements in large scale bond issuances. Convincing brokers to add such asset classes into their distribution platforms can be instrumental for the fostering of the market. When it comes to retail

micro and small company bonds, investors face challenges such as scarce liquidity, relative lack of transparency compared to medium and large corporate bond issuances and incomplete ratings coverage. These, however, could be partly justified by the fact that these markets are not yet mature, as well as by the inherent characteristics of small, young and perhaps riskier SMEs without a longstanding credit history.

There are also intermediary vehicles that pool small cap bonds in funds, offering diversification to investors. The small cap bond fund Micado in France is an example of such bundling, but such structures, and their success, have been rather limited.

B. Mini-bonds: A new instrument to cover the SME funding gap in Italy

The emergence of mini-bonds in Italy offers an interesting case of an innovative instrument that was assisted by regulatory reform and favourable fiscal treatment for SMEs. The introduction of the mini-bonds instrument allowed unlisted SMEs to issue debt traded on regulated markets or specialised trading facilities such as the ExtraMOT Pro platform of the Italian Stock Exchange, even for deals of a few million euro. ExtraMOT Pro was launched in February 2013 as a flexible and cost-effective platform to cater for such deals, allowing SMEs to attract national and international professional investors – private investors are not currently allowed to invest in mini-bonds (Borsa Italiana, 2013).

In the context of the 2012 *Decreto Sviluppo* (legislative decree No. 83/2012), the main legal and tax obstacles for unlisted firms wishing to issue bonds were lifted, thus providing access to capital markets for SMEs wishing to publicly issue debt in the form of such mini-bonds. The legislation lifted the previously penalising tax treatment of bond issuance by unlisted companies relative to listed ones, aligning the rules on tax deductibility of interest expense of the two respective types of firms. In relation to the tax applying to investors in such instruments, the exemption from the 20% withholding tax on interest on debt issued by listed companies was extended to debt issued by unlisted companies, provided that such debt is traded on regulated markets or multilateral trading facilities (Freshfields, 2012).

The conditions to be satisfied by issuing firms include the existence of audited financial statements, the placement of the instruments with qualified investors and the involvement of a “sponsor” to arrange the issuance. Sponsors could be banks, asset managers, investment companies or registered brokers, and must retain a portion of the notes issued until maturity (structure A of Figure 31). The institutionalisation of the role of sponsor was indicative of a trend of pure facilitation of SME financing by banks, rather than direct financing or lending of last resort. This sponsor requirement was later dropped altogether under the 2013 decree described below (structure B of Figure 31).

Following the liberalisation of mini-bond issuances reforms through the regulatory framework enacted in 2012, further possibilities were opened through the enactment of another decree in 2013, in the context of the *Destinazione Italia* regulation (Presidenza del Consiglio dei Ministri, 2013). This regulation extended the opportunity of mini-bond issuance to a greater number of SMEs by allowing special purpose vehicles to acquire corporate bonds. Credit funds can thus be established with a view to aggregate a number of mini-bond issuances in sufficiently large portfolios that can then be securitised. Smaller SMEs are therefore given indirect capital market access through specialised investment funds.

Engineering consulting group CAAR issued the first mini-bond by a non-private-equity-owned unlisted SME in April 2013, a EUR 3 million five-year mini-bond with a coupon of 6.5% (Figure 32). This inaugurating transaction was followed in August 2013 by a

Figure 31. Indicative mini-bond transaction structures

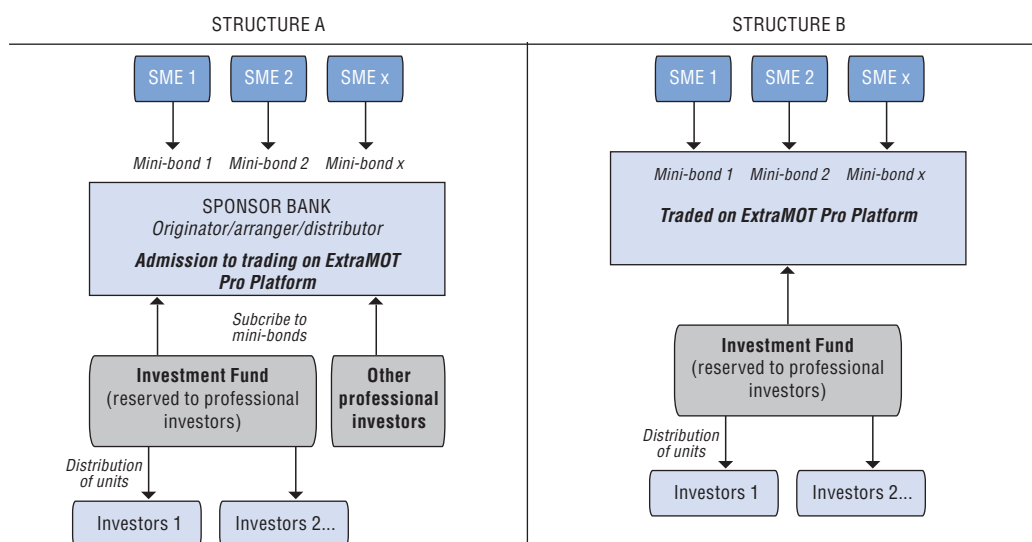
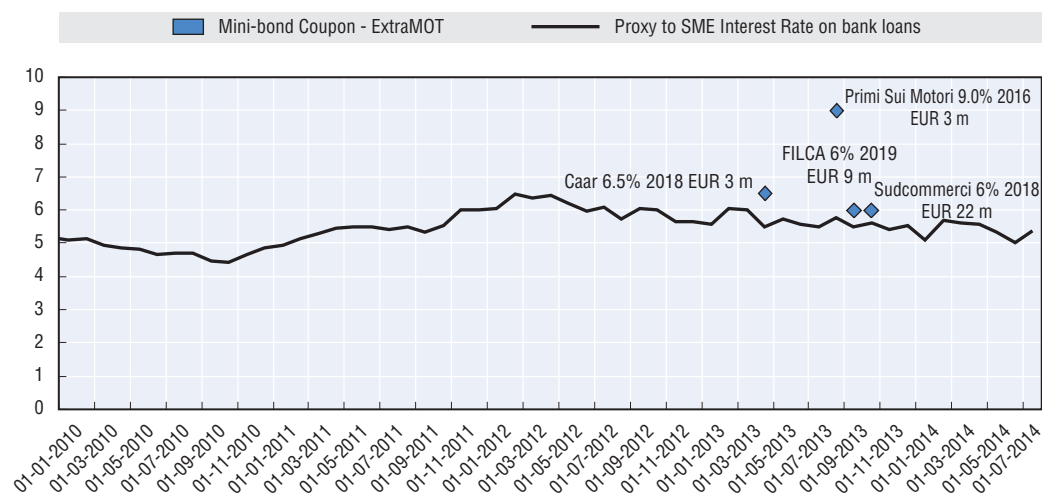


Figure 32. Selected mini-bond issuance rates vs. SME loan rates



Note: Interest rates applying to non-financial corporations for new loans of up to EUR 1 million used as a proxy for SME loan rates.

Source: OECD, based on information from Borsa Italiana and Banca d'Italia.

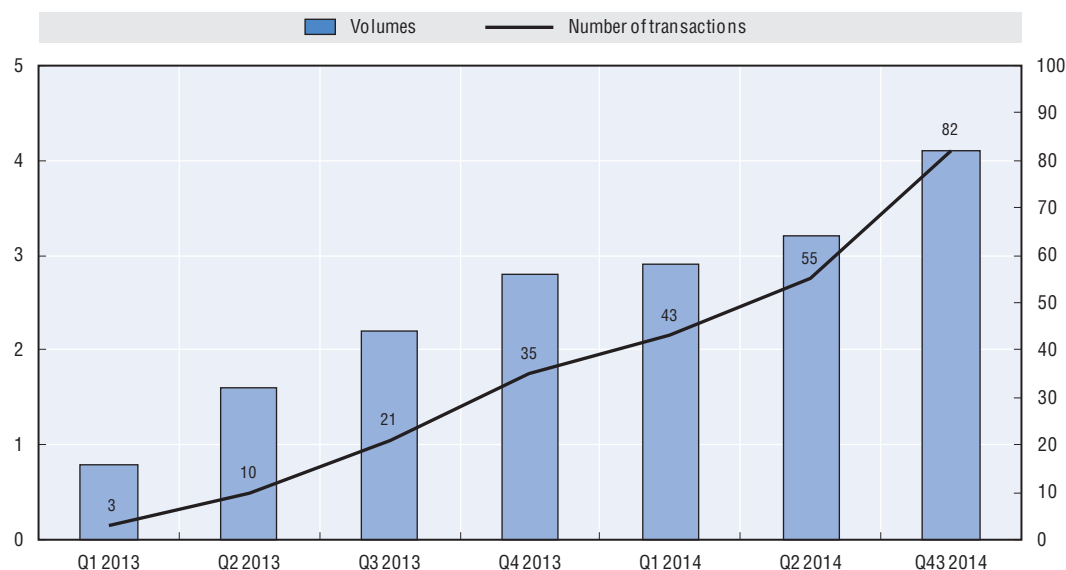
EUR 3 million 9% bond due 2016 note, issued by the listed internet marketing company Primi Sui Motori. Filca Co-operative and commercial estate managing firm Sudcommerci issued a EUR 9 million 6% 2019 and EUR 22 million 6% 2018 note respectively, according to Borsa Italiana.

Despite the attractive characteristics of the instrument for SMEs, issuance of mini-bonds by SMEs has been small, but is rising. By the end of January 2014, around 30 such transactions took place on ExtraMOT Pro, for a value of ca. EUR 3 billion (Fitch, 2014b). Most of the issuance, however, is skewed towards large corporates, although a number of credit funds are being established with a view to invest in mini-bonds: Monte dei Paschi di Siena (EUR 150 million), Antares – Azimut (EUR 300 million), Fondo per le Imprese (EUR 100 million), Anthilia Bond Impresa Territorio (EUR 100 million), BNP Paribas Investment Partners Italia

Mini-bond Fund (EUR 150 million) (Private Equity International, 2014). By end-September 2014, the EIF found 82 issuances with an average volume around EUR 50 million, most of them from bigger companies (Kraemer-Eis, 2014; Figure 33).

Figure 33. **Italian mini-bond issuance since inception**

In EUR billion (l.h.s.) and in number of transactions (r.h.s.)



Source: EIF (Kraemer-Eis, 2014), based on data from Borsa Italiana (09/2014).

Very thin liquidity with a virtually non-existent secondary market, as well as the careful due diligence required for small transactions render the analysis cost-intensive for marginal amounts of investment compared to average funds under management of large players. **Specialised mini-bond funds might overcome such burdens so as to unleash the potential of the nascent mini-bond market for SME financing.**

Innovative “mixed” structures combining characteristics of mini-bonds and securitisation have recently appeared, such as the “Viveracqua Hydrobond 1” project in Italy: a group of eight Italian water utility companies issued ABS backed by their mini-bonds on a cross-collateralised basis. The EUR 150 million 20-year notes have a coupon of 3.9%. The transaction was unrated but the underlying utilities hold unsolicited ratings from the Italian rating agency CRIF. The EIB bought the majority of the bonds, with the rest allocated to banks and pension funds, allowing the utilities to develop long-term investment in infrastructure. Pooling of mini-bonds in aggregate vehicles, as well as multi-originator “club”/joint deals in the form of consortia can give SMEs the scale of issuance required to render the issuance attractive for smaller SMEs.

C. Specialised institutional debt funds and SME lending³⁵

Institutional non-bank lending is also channelled to SMEs through debt funds created by non-bank institutional investors (insurance, pension funds, private equity funds). Although a standard definition does not currently exist, such debt funds typically consist of plain loans, SME bonds, mini-bonds or similar instruments of SME financing that are either pooled together by a fund manager or co-originated with a partner bank (Kraemer-Eis, 2014). Resulting shares in the fund are bought by the investors.

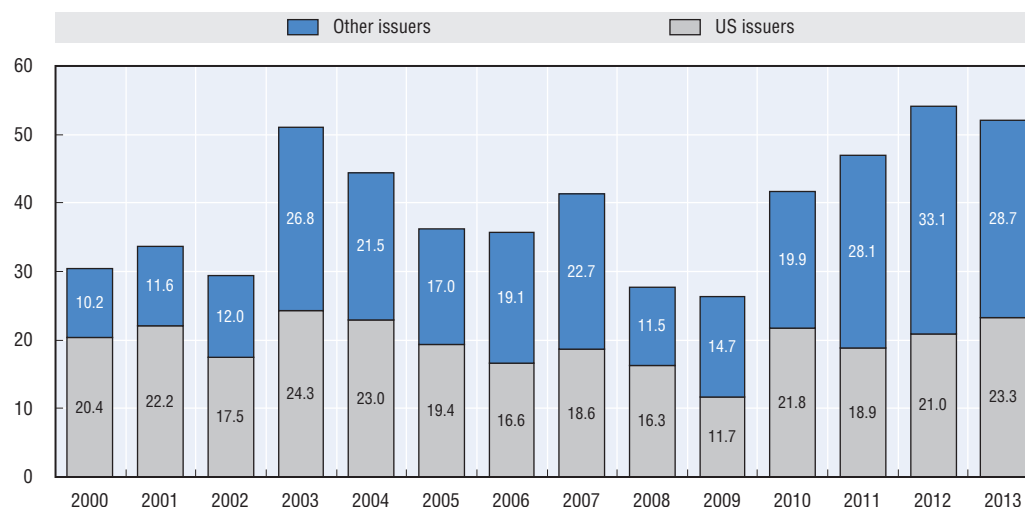
The benefits of SME debt funds for involved stakeholders are not dissimilar to the ones offered by SME securitisation, besides the potential for regulatory arbitrage from the side or the originator-bank. Originator-banks benefit from transfer/sharing of risk while still keeping the relationship with SMEs, as well as potential capital relief. It is therefore necessary that adequate incentive structure mechanisms are in place to avoid moral hazard and similar risks witnessed in the pre-crisis originate-to-distribute securitisation models. The Financial Stability Board in particular is considering adjusting the supervision and regulation of lending activities of non-banks to avoid unintended regulatory arbitrage (FSB, 2013). Institutional investors, on the other hand, benefit from attractive returns and secure access to the SME asset class which is difficult to tap. SMEs enjoy an additional alternative source of finance and potentially longer maturities than the ones offered by traditional bank lending.

According to EIF's screening of the European market for debt funds, only a minority of debt funds are active in the SME space with most of them targeting mezzanine or mid-cap corporates. Nevertheless, this area presents considerable growth potential and the EIB Group is promoting pilot transactions to support debt funds targeting SMEs and small mid-caps under the EIB Group Risk Enhancement Mandate (see Box 5 above).

D. Current state of the private placements market

Private Placements (PP) can offer an alternative to public corporate bond issuance, potentially broadening the availability of finance for medium-to-large unlisted companies. The principle attraction of private placements is that they provide a source of funding without the need for a formal credit rating and reporting requirements common for other capital market debt products. Where regulatory frameworks allow private placements, some markets have already been developed. Besides the US private placement market, which is available to both US and non-US companies (Figure 34), the most well-known PP markets in Europe are the *Schuldschein* market in Germany (see Box 9) and the *Euro PP* in France and internationally (see Box 10). Growth of the existing markets, as well as cross-border issuance (mostly tapping the US market) indicate that there is a growing supply and demand for these products.

Figure 34. **US private placements**
Annual transaction levels, 2000-13; in USD billion



Source: Thomson Reuters.

Box 9. The case of *Schuldschein* loans in Germany (and elsewhere)

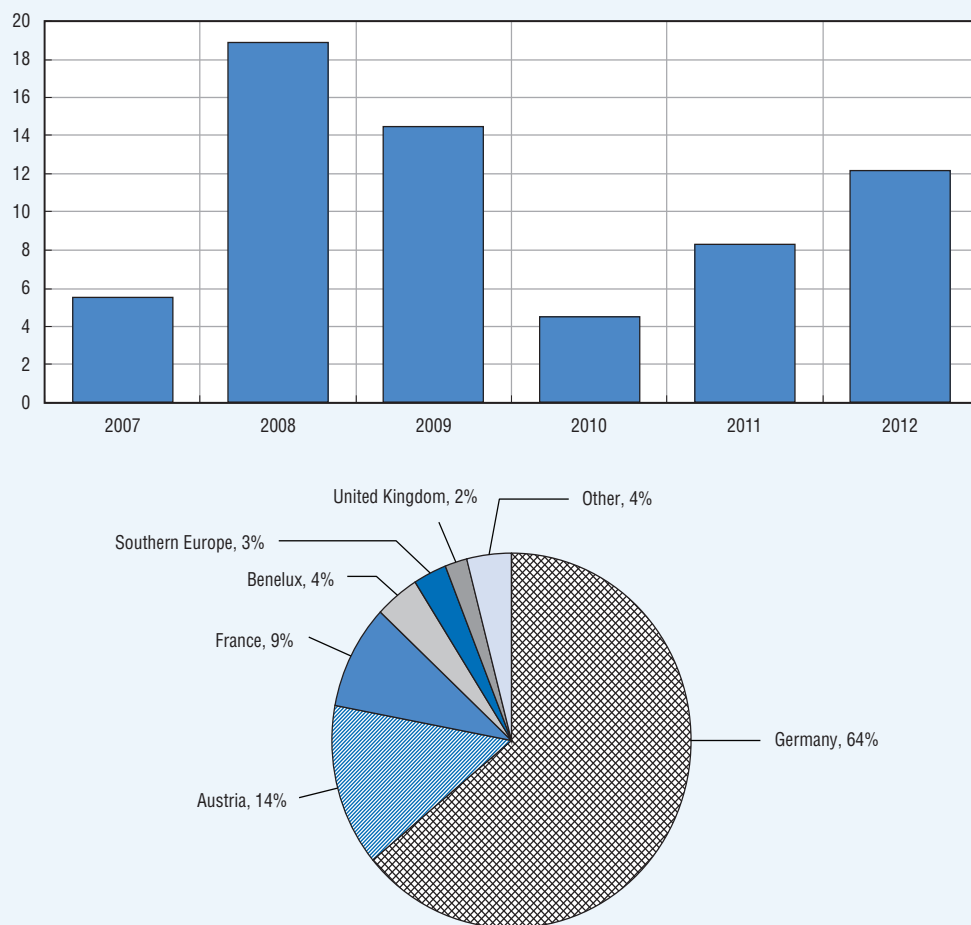
***Schuldschein* loans are private, unlisted bilateral loan agreements, the German equivalent of private placements.** The instrument is traded over the counter (unlisted) and benefits from a strict legal framework (German Civil Code) and standardised documentation.

***Schuldschein's* benefits** are similar to the ones provided by US PPs in terms of competitive pricing, longer tenures, diversification of investor and lender base, no formal rating requirement and particularly its accessibility to smaller borrowers. In addition, the instrument is not accounted for at market value (no mark-to-market) but at amortised cost, avoiding balance sheet volatility. The simple, standardised documentation increases efficiency and allows for expedient procedures while lowering product complexity and issuing costs.

The *Schuldschein* market was traditionally catering for the German market only (primarily for the public sector), however, in recent years issuance by non-German corporates has surged (Figure 35). Similarly, the majority of investors are still German banks, insurance companies and to a lesser extent investment funds. International investors are increasingly attracted by this market (e.g. the 2012 Neopost deal being placed with Taiwanese investors, and Société Générale teaming up with German banks to arrange a *Schuldschein* for French Plastic Omnium and Orpea in the same year).

Figure 35. ***Schuldschein* issuance to corporates**

Annual, 2007-12, in EUR billion (upper panel) and by country, as of 2012 (lower panel)



Source: S&P (2013), PWC (2013).

Box 9. The case of Schuldschein loans in Germany (and elsewhere) (cont.)

Since January 2007, Schuldschein loans became **eligible for ECB credit operations**, increasing the attractiveness of the instrument.

In terms of issuance levels, in 2012 a total of EUR 12.2 billion was placed in the market vs. EUR 8 billion in 2011, for a total of 65 deals (Figure 35). Only a handful of those companies fall into the small/mid-cap group, nevertheless, issuance of small amounts in the range of EUR 10 million was also reported (S&P, 2013). According to Capmacron, the share of *Schuldscheine* in total corporate funding in Germany was 5.5% as of year-end 2012, compared to 2.1% in 2002.

Schuldscheine can be seen as an alternative or competitive instrument to SME bonds (see Table 11 for some of the main differences). One further characteristic differentiating the two instruments is that *Schuldschein* issuance, as with any PP issuance, allows for maintaining a certain level of confidentiality – which could be of importance to small family-owned businesses. More importantly, SME bond issuance is performed on a rather “anonymous” basis from the side of investors, as SMEs rarely know their creditors and bondholders change easily given higher market liquidity. This in turn can render renegotiations/restructurings, when necessary, much more difficult.

Table 12. **Schuldschein vs. SME bonds**

	Schuldschein	SME bonds
Instrument	Loan	Security
Contract	Bilateral	Bearer
Structure	Standardised yet flexible	Standardised
Platform	Over-the-counter	Exchange traded
Formal rating	Not required	Required for most
Documentation	Standardised, relatively slim	Standardised, usually several hundred page long (incl. annual reporting)
Secondary market	Low liquidity (therefore illiquidity premium)	High liquidity (therefore more price volatility during the life of the bond)

However, **lack of standardised documentation and information on the creditworthiness of issuers, lack of liquidity in secondary markets³⁶ and differences in insolvency laws are all obstacles that hinder stronger growth of these markets** on a national and cross-border level. So far, international investor demand is mostly met by US PPs, while international investors are also active in the Schuldschein market.

E. The case of Private Placements for mid-sized companies

The key benefit of taking the private placement route for mid-sized companies is the diversification of their funding away from bank lending through privately placed bonds, without the need to secure formal credit ratings required for publicly traded debt issuance. That said, some assessment of their creditworthiness is indeed required, and to that end, credit rating agencies have been active in providing special mid-market evaluation procedures that analyse mid-sized companies' credit profile and help investors without the in-house capability to better navigate this complex and relatively opaque market. With no minimum size limit, privately placed bonds can cater to the needs of issuers of small tickets – with issuances in the single digit USD million range being

Box 10. Charter for a Euro PP market

A Euro PPs is a form of private placement that has been developed mainly in France for the financing of mid-sized companies. As of end-2014, it is estimated that EUR 9.8 billion of Euro PPs were issued since 2012 through more than 115 issues (www.euro-privateplacement.com/).

Euro PPs are essentially not dissimilar to other forms of private placements; although a number of specific characteristics differentiate them from US PPs. A Euro PP may take the form of a bond issue or a loan, but in both cases, the Euro PPs transaction is based on deal-specific documentation negotiated between the issuer and the investors. The process for carrying out a Euro PP transaction more closely resembles negotiating a bank loan agreement. In particular the instrument ranks *pari passu* with bank debt. The existence of financial covenants requires a more thorough credit analysis and monitoring procedure from both the issuer and the investor side. The terms and conditions of Euro PP transactions, including those covenants, are negotiated between the issuers and the investors (as in the case of bank loans). Unlike other private placements, Euro PP may be listed (Table 13). The flexibility in the form and size of the issue is an advantage for intermediate-sized companies wishing to make use of a tailor-made debt financing instrument that meets their specific needs.

An initiative for the development of a full-fledged Euro PP market both in France and internationally has been pursued since 2012 by all the relevant professional associations gathered into the Euro PP Working Group with the support of French authorities. Building on existing market practices and aiming at promoting a standard approach based on best practises, the Euro PP Working Group has produced a set of standard markets practices (the Euro PP Charter) in March 2014 and more recently a set of standard documentation. Similar endeavours for the development of formal Private Placement markets have been launched elsewhere in Europe, as with the example of the UK (ACT, 2012). The Pan European Private Placement (PEPP) initiative, co-ordinated by the International Capital Market Association (ICMA) aims at bringing together the various initiatives at the European level.

Table 13. Existing Euro PP formats

Format	Documents	Listing	Confidentiality	Transferability
Bonds traded on a regulated market	Bond documentation	Euronext Paris, Luxembourg	No	Yes – no limitation
Bonds traded on a Multilateral Trading Facility	Bond documentation	Alternext or Euro MTF (Luxembourg)	No	Yes – no limitation
Unlisted bonds	Bond documentation	None	Yes	Yes – limitations may be set out in a transfer approval form
Loans	Bank loan agreement	None	Yes	Yes – only to the extent permitted by the loan agreement

Source: Fédération Bancaire Française (2014).

reportedly delivered to very small companies in the United States. In practice, however, the average small privately placed bond is roughly within a EUR 20-30 million range according to market observers.

The direct relationship between lenders and borrowers allows for the development of a closer connection with investors, which is beneficial to smaller companies with limited visibility in the public markets and the wider investor community. According to

market observers, investors who cannot be served by the secondary PP market due to the illiquidity of the market often drive new PP issuance by deploying funds in the market through reverse enquiry, particularly in Europe. Financial intermediation, traditionally by banks, is of particular relevance in such cases.

The role of institutional investors in promoting the private placement market is both critical and essential, as they constitute the driving force in the efforts made particularly in Europe. The interest of institutional investors is based on a search for higher yield (illiquidity premium of private placements), asset risk diversification and long-term assets matching. Investors are also looking beyond yield to the defensive characteristics of the private placement market, when looking for protection against potential volatility.

Nevertheless, the number of active investors today is limited and the investor pool dominated by large institutional investors who have developed their own credit assessment capabilities. The lack of liquidity of secondary markets is another obstacle for investors, but private placements are structurally illiquid instruments and this does not seem to be an issue for buy-and-hold long-term investors. Syndication or club deals structured by lead investors would be a way for a broader number of investors to participate in such markets. Interestingly, a disconnect is often noticed to exist between the expectations of issuers in terms of modest cost of funding and the high expected returns of investors participating in PP markets.

Besides an under-developed investor base, lack of standardisation is one of the key barriers to the development of the nascent PP market in Europe. Lack of standardised documentation increases the issuing cost (advisory, legal fees and other), as individual agreements need to be drafted for each transaction. Standardisation of documentation is considered to be one of the enabling factors in the US PP market. US PPs benefit from standard loan documentation (Model Note Purchase Agreement) and covenants, rendering them user-friendly “off-the-shelf” products which are more straightforward and attractive to both investors and issuers.

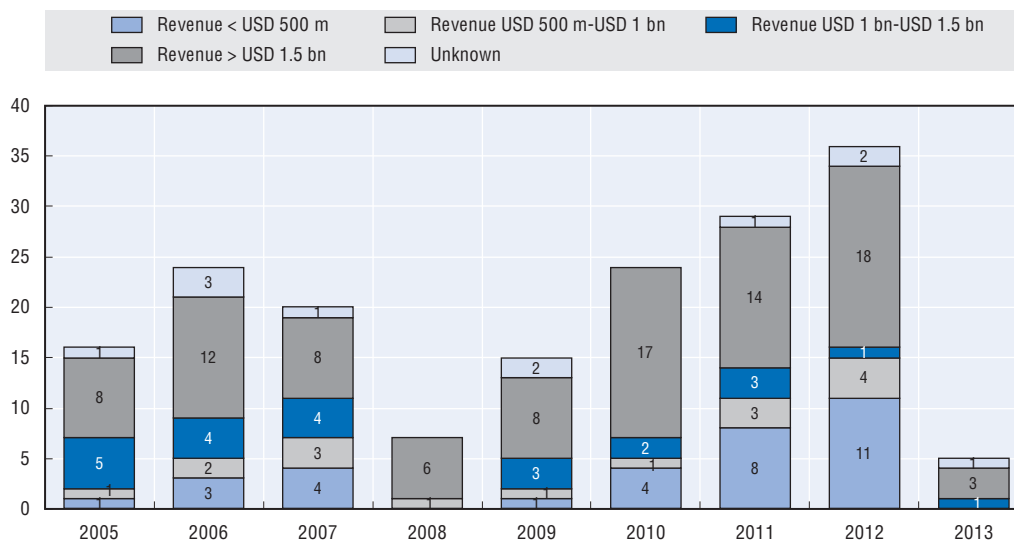
A large part of the success of the US PP market is attributed to the role of the National Association of Insurance Commissioners (NAIC). US PP issuances receive a credit scoring by the NAIC and investors are provided with regulatory guidance on capital weighting.³⁷ Although the existence of a credit scoring mechanism is recognised by market participants as an important enabling factor for the thriving US PP market, views differ as to whether such initiatives should be led by the public or the private sector. In practice, when the NAIC’s Securities Valuations Office (SVO) provides credit quality assessment for a PP issuance, the first insurance company actually buying the PP pays for this service and all subsequent purchases by other insurance companies benefit from the already attributed credit scoring. The cost of such analysis is modest (under USD 5 000), the SVO ratings are recognised by the regulator and the system is designed to align incentives with regard to information. However, according to some observers, the private sector should be the one leading this effort so as to ensure high quality of service provided and harmonisation of accounting and regulatory discrepancies across markets, as is the case with bankruptcy laws. For Europe, the establishment of a similar mechanism on a European-wide level would be a way to create the level of uniformity necessary for investors to engage in the European PP market.

European issuers have been actively tapping the US PP market over the years, with a third of the US PP market reported to consist of European companies’ placements

(Figure 36). Investor demand, especially by institutional investors, helps to push for more harmonisation and standardisation of the European PP markets and support their growth, as evidenced by initiatives to create a pan-European private placement market. A European PP market along the lines of the successful US PP model, but without necessarily copying it, could hold great potential for medium-sized companies. At industry level, an initiative led by the International Capital Markets Association (ICMA) is underway, building on a national Euro PP initiative in France, focusing on the investor side and looking at the essential principles and market practices that will attract investors into a PP market with European-wide appeal.

Figure 36. **European companies tapping the US PP market**

Number of deals annually, by revenue size, 2005-13



Source: S&P (2013).

Standardisation of documentation to the extent possible, credit scoring, regulatory recognition for capital weighting purposes as well as information sharing and financial reporting by issuers to institutional investors are some of the cornerstones of this effort towards the recognition of PPs as an asset class in Europe. Banks can have an active role in this debate as intermediaries, despite the fact they are somehow less involved with regard to PPs as compared with other capital market instruments, given that PPs do not require underwriting per se or market making. A risk of such a model would be the introduction of an unnecessary dichotomy between perceived investment grade and other credit profiles. The aim of a pan-European PP market would be to cater for a greater diversity of credit profiles, corresponding to the reality of mid-sized companies.

The role of public policy is important for the recognition of PPs in Europe as an asset class and for their appropriate regulatory treatment. Policy measures are increasingly being adopted in Europe so as to foster private placement markets for mid-sized companies. In the United Kingdom, legislation will be introduced in Finance Bill 2015 to enable the provision of withholding tax exemption³⁸ for private placements (HM Treasury, 2014). The effectiveness of tax measures to resolve structural issues around such markets in the long-run may be questionable, particularly when it comes to small size deals. Nevertheless, the exemption from the 20% UK withholding tax charge is expected by the

market to boost private placement financing by UK borrowers and facilitate cross-border borrowing through such instruments. In France, authorities have fostered the development of the Euro PP market by implementing important initiatives. In August 2013, a reform of the French insurance code has been set up, in order to facilitate insurance companies' investment in loans directly or through a fund of loans. The measure has been accompanied by concrete actions, such as the sponsoring of a EUR 1 bn fund of private placements as a test case. In addition an industry task force supported by the French ministry of the economy, has developed by end-2013 a guidance document, the Euro PP Charter (serving as a basis to the ICMA initiative; see above, Box 10), intended to provide a non-binding framework of best practices and to enhance the standardisation of the Euro PP market.

X. Concluding remarks and policy implications

More than half a decade into the financial and economic crisis, growth remains sluggish and banking sector problems are still inhibiting a more strongly footed recovery in OECD economies from taking hold. As banks are deleveraging, **capital markets will have to play a bigger role** especially in financing long-term investment, including in infrastructure, SMEs and knowledge-based capital, which are key contributors to economic growth and job creation.³⁹

The **benefits of alternative, non-bank debt financing for SMEs** are widely agreed by policy makers and there are many arguments in favour of the development of the SME securitisation, covered and other corporate bond and private placement markets. As credit sources tend to dry up more rapidly for SMEs than for large companies during economic downturns, broadening the range of non-bank debt financing instruments for SMEs should help making them more resilient to financial shocks. Given SMEs' importance across economies, this is also essential for economic recovery from the current economic and financial crisis. Given that there are many arguments in favour of the development of SME debt instruments markets, a wide range of policy measures may be warranted.

Regarding regulation, **markets for market-based debt financing for SMEs should be carefully designed and overseen and so as to foster the use of alternative financing instruments without putting at stake the overall resilience of the financial system.** Sensible and balanced calibration of the existing regulatory frameworks affecting such instruments should be pursued. Regulation should also take a holistic and co-ordinated approach to avoid regulatory arbitrage with respect to different instruments and stimulate investor appetite. Healthy competition should be secured across similar financing solutions, eliminating any imbalances or disincentives that might direct investor and issuer preferences away from some of these instruments. The creation of solid frameworks for the SME covered bond and private placement asset classes at national or broader international levels should be encouraged.

Regarding market infrastructure, **the build-up of loan-level data, performance track records, the encouragement of ongoing reporting and data sharing needs be prioritised.** Pooling of such information in centralised data platforms, set up and maintained through a certain public initiative, would benefit all participants by increasing the transparency of the SME financing market and allowing an informed decision-making by capital holders. Appropriate balance in the level of disclosure requirements should nonetheless be safeguarded so as to stimulate investor appetite without rendering such issuance/investment overly costly or cumbersome.

Standardisation plays an important role, too. For example, the development of “off-the-shelf” versions of non-bank debt financing instruments for SMEs could be supported with a view to lowering the cost of such instruments and increase the efficiency and accessibility of those instruments to SMEs and retail investors. Likewise, the creation of indices could enhance liquidity and investor participation in publicly traded SME debt.

On the **demand side**, the official sector could provide **support for raising awareness** – among SME entrepreneurs as well as smaller local financial institutions traditionally serving SMEs – **about the availability and attractiveness of such financing alternatives** for SMEs and financial intermediaries. The official sector could also co-operate with private sector institutions in improving the visibility of successful transactions and platforms for such instruments.

On the **supply side**, investors should be assisted and incentivised to set up internal infrastructures that would allow them to participate in the SME-debt market. Furthermore, the potential impact from the provision of incentive schemes particularly to investors but also to SMEs (e.g. tax incentives) targeted to such instruments should be critically evaluated.

With regard to public intervention, the official sector should raise the profile of the public debate required to overcome the barriers identified and encourage the appropriate and safe use of non-bank debt financing instruments for SMEs. **Public intervention should be designed in such a way that private sector participation is not crowded out.** Specific evaluation and control procedures (beyond a standard impact assessment) would need to be put in place to ensure that the intended (capital, funding) benefit is passed on to the real economy through the provision of additional SME financing.

While the size of the SME securitisation market is insignificant in terms of the wider financial system, **careful assessment of the riskiness of inappropriate design and use of such instruments needs to be encouraged in the context of a widely interconnected financial system.** The corresponding benefits to the real economy and their materiality to SMEs also need to be accounted for.

Policy makers also need to acknowledge that **SME finance is, like SMEs themselves are, exceptionally diverse and complex, and faces unique challenges.** As such, there is no “magic bullet” for SME finance and it is only by pushing different ideas, avenues and instruments that the different constraints and predicaments can be tackled in developing a healthy non-bank debt market for SMEs. To achieve this, a joint effort may be needed, involving all constituents concerned: investors, issuers, intermediaries, regulators and public policymakers.

Governments and regulators can provide valuable support for developing the necessary infrastructure for new financing instruments for SME financing and incentivise investment in securitisation and other non-bank debt instruments suitable for SMEs. Such financing, when used properly, can play a significant role in the recovery of the real economy by unlocking resources and capacity for further lending, broadening the SME investor base and diversifying investors’ portfolios, as well as assisting in the creation of a sounder financial system through better risk sharing within the economy.

Notes

1. With bank funding to leasing companies expected to be even scarcer in the future, SME lease securitisation is anticipated to represent a particularly relevant type of SME securitisation (Kraemer-Eis and Lang, 2012 and 2014).

2. It should be noted that monoline insurers, in particular, failed to absorb the losses occurred by the subprime crisis and were unable to meet their claims in the US.
3. Synthetic structures have the potential to ease the execution of SME loan securitisations by circumventing obstacles associated with loan clauses which prevent the legal true sale of SME loans (AFME et al., 2015).
4. A synthetic securitisation is funded if the issuer offloads his payment obligation upfront through the purchase of credit-linked notes or the provision of collateral under a credit default swap, and is unfunded if the issuer's payment obligation is not paid in advance or collateralised. A partially funded structure has parts of the credit risk funded and other parts unfunded (Sidley Austin Brown & Wood, 2001).
5. Optimal retention policies are analysed and discussed in Kiff and Kisser (2010). While it can be shown that under certain conditions retaining an interest in the equity tranche does not always induce the originator to diligently screen borrowers ex ante, their preliminary results show that equity tranche retention continues to best incentivise loan screening.
6. While mortgage loans are allowed under all existing frameworks, public sector loans are available in Austria, France, Germany, Luxembourg, Norway, Spain and UK, while ship loans are mostly found in Denmark and Germany.
7. Although credit risk is off-loaded to SPVs in cash securitisations (save for the retained portions), synthetic securitisations expose originators to counterparty credit risk linked to corresponding insurance purchases.
8. Risk weights of retained tranches of securitisation are prescribed by the Basel Committee on Banking Supervision and relevant EU legislation on Capital Requirements Regulation (ECB and BoE, 2014).
9. According to recent research by Duponchee et al. (2014), the ERBA approach applied to European banks is "profoundly discouraging" to new issuances of HQS, given that post-crisis changes in rating agencies methodologies have "boosted the conservatism of ratings-based capital requirement rules" compared to a formula-based approach.
10. In discussing an earlier version of this paper, some CMF delegates have argued that there might not be a generalised gap but that the issue might be a more localised or regional phenomenon (especially affecting the EU periphery), and furthermore, that a gap tends to exist more with respect to equity rather than debt financing. Also, the BCBS work emphasises that while some risk measures and capital requirements for banks might increase, in the longer term, the associated greater stability is beneficial also for SME funding.
11. See BCBS (2013b). Based on this revised report, a first quantitative impact study (trading book test portfolio exercise) was delivered in September 2014, the second one is to be delivered by end-2014 (see www.bis.org/publ/bcbs288.htm).
12. Within the Eurosystem credit assessment framework (ECAI) an External credit assessment institution (ECAI) source is one whose credit assessments may be used by credit institutions for the determination of risk weight exposures according to the CRD. The ratings equivalence is as follows: AA- and above is ECAI1, A- to A+ is ECAI2, BBB- to BBB+ is ECAI3, BB- to BB+ is ECAI4, B- to B+ is ECAI5, CCC+ and below is ECAI6. From 1 March 2011 the requirement to have two-ratings and the second best-rule applies to all ABSs regardless of issuance date. The second best-rule means that not only the best, but also the second-best available ECAI credit assessment must comply with the credit quality threshold. See www.ecb.europa.eu/paym/coll/elisss/ecai/html/index.en.html.
13. See also Kraemer-Eis, Lang and Gvetadze (2013, 2014).
14. Self-liquidating credit is repaid with money generated by the asset purchased, the repayment schedule and maturity of such self-liquidating credit are designed to coincide with the timing of the assets' income generation.
15. Other loans were 3 million auto loans, more than 1 million student loans, 150 000 other business loans, and millions of credit card loans.
16. Net lending to financial leasing corporations and factoring corporations – which can be important sources of finance for some SMEs – also continue to count towards allowances generated in the following year, pound for pound (as was the initial allowance of the scheme). The programme was further extended on 2 December 2014 so as to provide lenders with continued certainty over the availability of cheap funding to support lending to SMEs during 2015 (www.bankofengland.co.uk/markets/Pages/FLS/default.aspx).

17. For covered bond programmes which currently do not achieve the CQS3 rating in Cyprus and Greece, a minimum asset rating at the level of the maximum achievable covered bond rating defined for the respective jurisdiction will be required for as long as the Eurosystem's minimum credit quality threshold is not applied in the collateral eligibility requirements for marketable debt instruments issued or guaranteed by the Greek or Cypriot governments, with the following additional risk mitigants: i) monthly reporting of the pool and asset characteristics; ii) minimum committed over-collateralisation of 25%; iii) currency hedges with at least BBB- rated counterparties for non-euro-denominated claims included in the cover pool of the programme or, alternatively, that at least 95% of the assets are denominated in euro; and iv) claims must be against debtors domiciled in the euro area.

Note by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the "Cyprus" issue.

Note by all European Union member States of the OECD and the European Commission: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

18. Per security uniquely identified by an International Securities Identification Number (ISIN). In the case of Greek and Cypriot covered bonds not fulfilling the CQS3 rating requirement an issue share limit of 30% per ISIN will apply.
19. Such voluntary lending will be conducted through security lending facilities offered by central securities depositories, or via matched repo transactions with the same set of eligible counterparties as for CBPP3 purchases.
20. A minimum of two ratings is required, with the second best rating of at least credit quality step 3 (CQS3), currently equivalent to an ECAI rating of BBB-/Baa3/BBB.
21. For Greek and Cypriot ABSs which cannot achieve the second-best credit assessment criterion, a derogation based on the fulfilment of the following requirements will be applied for as long as the Eurosystem's minimum credit quality threshold is not applied in the collateral eligibility requirements for marketable debt instruments issued or guaranteed by the Cypriot or Greek governments: i) compliance with the general criteria (see previous footnote) except the credit quality threshold; ii) ratings on a second-best basis at the maximum achievable rating in the respective jurisdiction; iii) a minimum current credit enhancement of 25%; iv) availability of investor reports and of modelling of the ABSs in standard third party ABS cash-flow modelling tools, as assessed by the ECB; v) all counterparties to the transaction (e.g. account bank and swap provider), except for the servicer, have a first-best rating of at least CQS3 and full back-up servicing provisions are in place.
22. Except in the case of ABSs with underlying claims against non-financial private Greek and Cypriot entities not fulfilling the CQS3 rating requirement, where a limit of 30% per ISIN will be applied.
23. The potential universe of securities available to purchase across both covered and asset backed bonds stand at about EUR 1 trillion.
24. See e.g. Bloomberg (2014). This is also part of work underway for the G20 by the BCBS-IOSCO Task Force on Securitisation Markets; see e.g. the September 2014 Cairns communiqué by G20 Finance Ministers and Central Bank Governors at www.g20.org/sites/default/files/g20_resources/library/Communique%20G20%20Finance%20Ministers%20and%20Central%20Bank%20Governors%20Cairns.pdf.
25. Such funds could also include joint bank and non-bank funds like ABN AMRO's loan fund set up in co-operation with nine insurance companies.
26. See www.eurodw.eu.
27. By way of a comparison, Commerzbank also issued a public sector covered bond with a similar term and a coupon of 1%. As of September 2013, the SME covered bond was trading above par, while the public sector covered bond was trading at around 99% of par. While the SME covered bond is structured outside the German Pfandbrief legislation, the ECB treated it as a covered bond for central bank repo purposes, it thus benefits from a favourable repo haircut compared to traditional SME CLOs (Fitch, 2013).
28. Nationale Bank van België/Banque Nationale de Belgique, Banca d'Italia, Banka Slovenije, Banco de España, Central Bank of Ireland, Deutsche Bundesbank and Oesterreichische Nationalbank are the other NCBs of the ICAS source (see ECB www.ecb.europa.eu/paym/coll/risk/ecaf/html/index.en.html)

29. For example, observers point out the unintended consequences of programmes such as the ECB's Longer-Term Refinancing Operations (TLTRO) that render funding through securitisation less attractive. The problem that these measures do not stimulate (intended) on-lending is somewhat addressed in the recent Targeted LTRO (TLTO). See the discussion in Section 5 above.
30. According to information from the Spanish Treasury, in 2013, only one company issued 50 million euro of bonds in the MARF. By end of 2014, its first full year of activity, outstanding bonds achieved 328 million euro and outstanding commercial paper amounted to 172 million euro.
31. While those two markets currently focus on equity they plan to develop mini-bond segments for the issuance of debt by SMEs.
32. In Germany, for example, there are rating agencies specialised on SMEs, like Creditreform, Scope, Euler Hermes, and Feri Euro Ratings Services. According to information provided by the EIF, in June 2014 the 17th SME bond issuer filed for insolvency, the third in 2014. As per early October 2014, 23 such SME bonds were in trouble (default or restructuring), counting for a volume of EUR 1bn (Brächer et al., 2014, Kraemer-Eis, 2014). The series of defaults, in particular among renewable energy companies, raised concerns over transparency, disclosure, accounting and rating standards, with a negative impact on deal pipelines (Kraemer-Eis, 2014). Moreover, there are several lawsuits regarding information contained in brochures. More recently, in January 2015, the Düsseldorf stock exchange, announced to terminate the "Mittelstandsmarkt", its dedicated SME bond platform.
33. As some observers point out, given the dynamics – especially the price dynamics – of these markets, the "best" corporates tend to be "courted" by investors in the private placement market, the "normal" ones remain bank financed, while most of the firms that are tapping public markets have often faced difficulties with other financing options.
34. In France, this would apply to a "mid-size" segment beyond the SME definition of the European Union (fewer than 250 employees and turnover of less than EUR 50 million or total assets of less than EUR 43 million). This specific segment is designated, by official decree, as, "*Entreprise de taille intermédiaire*" (ETI) and defined to comprise companies with 250 to 4 999 employees, or, if fewer than 250 employees, with a turnover of at least EUR 50 million and total assets of EUR 43 million. It covers the segment beyond SMEs and the lower one of larger companies.
35. This paragraph is based on Kraemer-Eis, Battazzi et al. (2014).
36. In fact, PPs are illiquid buy-and-hold instruments, thus PP markets are illiquid by nature.
37. Note that credit scoring of small business loans in the US is also undertaken based on the FICO (Fair-Isaac) scoring model.
38. Exemption from the duty to deduct income tax from interest paid on unlisted securities issued by companies with a minimum duration of three years.
39. This is also being recognised in OECD's work on institutional investors and long-term investment (www.oecd.org/finance/lti), a project that also feeds into efforts at G20 level in this area. Besides infrastructure, SME financing is an important component of this work.

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Financial Market Trends

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