

Bending, Tim et al.

Research Report

Unlocking lending in Europe

Regional Studies and Roundtables

Provided in Cooperation with:

European Investment Bank (EIB), Luxembourg

Suggested Citation: Bending, Tim et al. (2014) : Unlocking lending in Europe, Regional Studies and Roundtables, European Investment Bank (EIB), Luxembourg

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Unlocking lending in Europe

Unlocking lending in Europe

The mission of the EIB's Economics Department is to provide economic analyses and studies to support the Bank in its operations and in its positioning, strategy and policy. The Department, a team of 30 staff, is headed by Debora Revoltella, Director of Economics.

Unlocking lending in Europe

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Foreword

Across the Euro area, lending continues to stagnate, and is even still in decline in some of the worst-hit countries. European firms rely heavily on bank lending to finance investment and working capital. This is true particularly for small and medium-sized enterprises that, because of their size, have little alternative to address their external financing needs. The economic crisis has revealed the rigidity of such an undiversified funding model.

As we look forward, the prospect of a continued stagnation of bank lending should be a cause for great concern. The capacity of many banks to lend to relatively high-risk sectors such as SMEs, and particularly to young, innovative firms, is seriously impaired by capital constraints and a strong deterioration of the quality of the assets on their balance sheets in the post-crisis period. If the dependence of European firms on bank lending continues, and if banks are unable to fully recover their capacity to provide the finance that European firms need, the result will be a further constraint to the already very weak European economic recovery.

Part of the answer is more diversified sources of finance accessible for Europe's SMEs. Better developed capital markets across Europe would help improve the resilience and efficiency of Europe's financing structures in the longer term.

But we also need strong, efficient and resilient banking sectors in Europe, not least because of the size and economic importance of our SME sector. The implementation of the Banking Union is a big step forwards, with a deep assessment of the true status of European banks, and a process of clean-up and recapitalisation, where needed, already taking place to a large extent.

We need as well to achieve a more efficient allocation of risk, helping banks to share part of the risks of lending to SMEs with a wider range of investors. Facilitating a greater development of prudent securitisation in Europe – including SME loan-backed securitisation – is one way of doing this, allowing capital market investors to invest in SMEs, through banks, or even through more direct approaches. Another approach, which it is important not to overlook, is the greater development of credit guarantee schemes. Both public and private solutions can be considered.

We also need to help improve banks' risk-taking capacity and their room for new lending, by increasing their ability to resolve or dispose of non-performing loans. To do this we need a range of complementary efforts that include addressing

deficiencies in national regulations and institutions, enhanced technical expertise to deal with asset quality issues, and the development of effective markets for non-performing loans.

This paper draws on the ongoing research we are doing in the Economics Department at the European Investment Bank to provide a comprehensive overview of these issues, with a particular focus on three key areas for action: securitisation, credit guarantee schemes and addressing the issue of non-performing loans.

A handwritten signature in black ink, consisting of a stylized 'D' and 'R' followed by a long horizontal stroke.

Debora Revoltella
Director of the Economics Department
European Investment Bank

Introduction

Credit growth to non-financial corporations (NFCs) in the Euro area is negative, a trend driven particularly by the newer Member States and the most crisis hit Member States in the south. In these regions, credit to NFCs is shrinking by 5%, or more, year on year. This credit contraction corresponds with stagnating private sector investment.

Stagnation of bank lending can be a constraint on economic recovery in Europe, as bank lending plays a much more important role in financing the corporate sector in Europe than it does, for example, in the United States. A recovery of bank lending will be particularly important for Europe's small and medium-sized enterprise (SME) sector, which is heavily bank dependent and represents as much as two-thirds of value-added in the EU.

This paper begins by providing an overview of the many different drivers of the continuing stagnation of bank lending, from both the demand and the supply sides. It then turns its focus on the quality of banks' balance sheets as one important factor that can hold back lending. We discuss two supply-side factors where we see particular opportunities for policy action. These are measures to accomplish a more efficient allocation of risks with less exclusive reliance on banks' balance sheets, including through securitisation and credit guarantee schemes, and addressing high ratios of non-performing loans (NPLs). This paper examines the challenges posed in each case, and discusses areas for potential policy action.

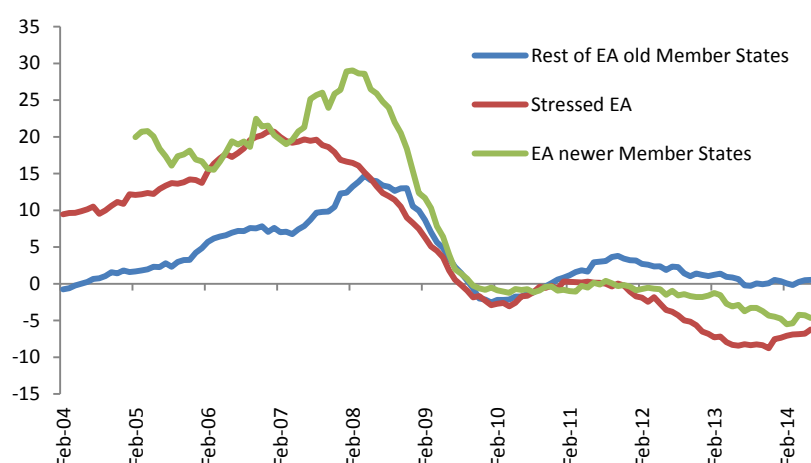
1. The stagnation of bank lending to non-financial corporations in the EU

In Europe, Bank lending to NFCs is stagnating and even declining in some countries, with surveys suggesting that access to and cost of finance is a constraining factor for many firms, despite the subdued economic environment. This chapter provides an overview of these trends and discusses their impacts in view of the importance of bank lending for corporate finance in Europe, and in the most crisis-hit countries in particular. We present initial findings that show how the impact of banking and sovereign debt crisis is related to the degree of bank dependency of an economy.

1.1 Trends in EU bank lending to NFCs

The growth of lending to NFCs in the EU has declined since 2011, becoming significantly negative in many countries. Strong growth of credit to NFCs was brought to an abrupt halt by the global financial crisis (Figure 1). A modest rebound faltered in 2011: lending to NFCs has since contracted significantly in the most crisis-hit Euro area countries and in Euro area new Member States. In the rest of the Euro area, credit growth has fallen to zero, and the pattern is similar for newer Member States outside of the Euro area. In the context of the current (albeit weak) economic recovery, there is little sign of a recovery of bank credit to NFCs.

Figure 1: Credit growth to NFC in the EU (yoy, %)¹



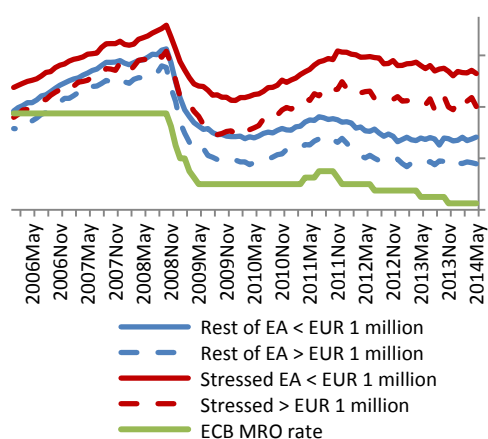
Source: ECB

¹ "Stressed Euro area" comprises Cyprus, Greece, Ireland, Italy, Portugal and Spain.

The difference between interest rates of bank loans to NFCs and the ECB policy rate has risen, suggesting weak monetary transmission. While the ECB MRO rate has dropped by 135 basis points since October 2011 and is now close to zero, lending rates both stressed Euro area States and the rest of the Euro area old Member States have declined by only 90-100 basis points in the same period (Figure 2).

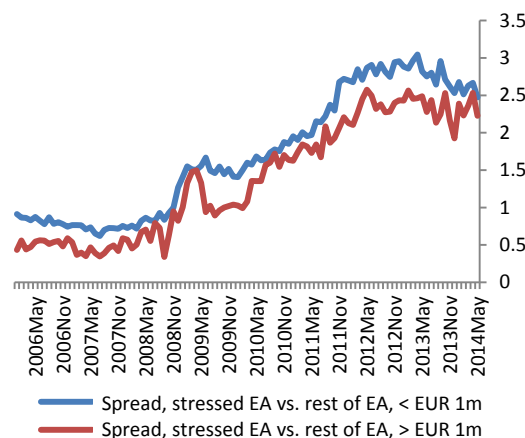
Spreads in interest rates on new loans between the stressed Euro area and other Euro area old Member States have risen strongly, and remain high. Spreads between these groups of countries on loans over EUR 1 million have risen from 0.5 percentage points in 2007 to over 2 percentage points since 2012 (Figure 3). The Euro Area banking market can be seen as “fragmented” in the sense that a strong and persistent dispersion in national borrowing costs for NFCs can be observed, alongside strong country differences in the (often negative) rate of credit growth. Retail interest rates price in a number of factors, including banks’ funding costs (which reflect perceptions of the quality and quantity of banks’ capital), NFCs’ credit risk and banks’ risk perceptions. *Taken together*, these factors help explain the continued dispersion in bank lending rates in the Euro area, with risk factors having increased particularly in the crisis-hit countries since the onset of the financial crisis.²

Figure 2: Euro Area banks’ interest rates on new loans (%)



Source: ECB

Figure 3: Loan interest rate spread between within the Euro area



Survey evidence suggests NFCs continue to face tight credit conditions across Europe. The ECB Bank Lending Survey (July 2014) indicates that credit standards for corporates continue to be tight. Overall, banks have tightened credit standards continuously since 2007, with slight net easing in mid-2014 for the first time in this period (Figure 4). The EIB Bank Lending Survey for Central, East and South East

² Paries et al. “The retail Bank interest rate pass-through. The case of the Euro Area during the financial and sovereign debt crisis.” ECB Occasional Paper Series, no 155, August 2014.

Europe (June 2014) reveals supply conditions continuing to tighten for the entire corporate sector in these regions.

SMEs are bearing the brunt of regional differences in credit conditions. Interest rate spreads between small and large loans to NFCs remain very high in the stressed Euro area countries, while these spreads have returned to pre-crisis levels in other Euro area old Member States (Figure 5). This suggests that the SME sector is particularly affected by differences in borrowing costs.

Figure 4: Change in EA bank lending standards

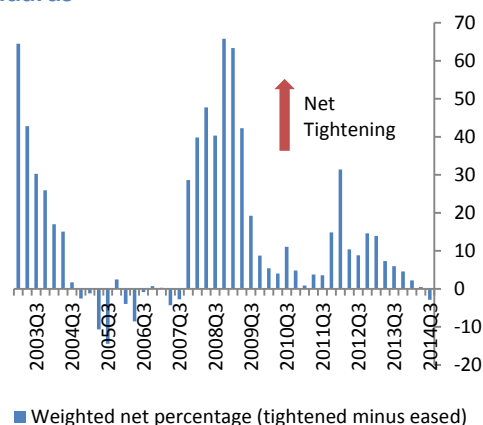
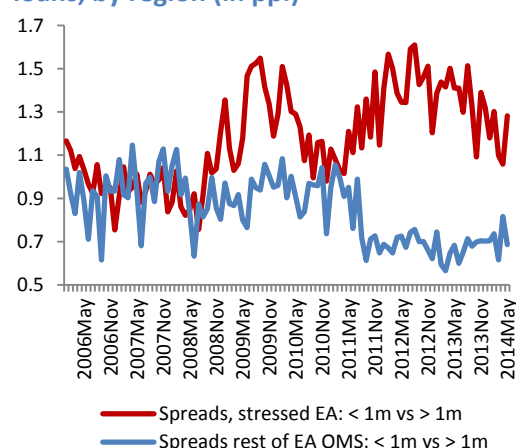
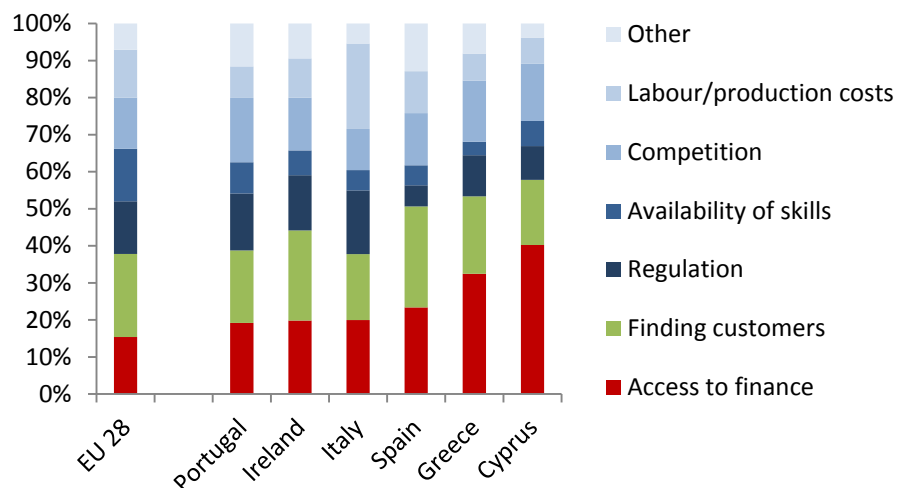


Figure 5: Spread between small and large loans, by region (in pp.)



Source: ECB

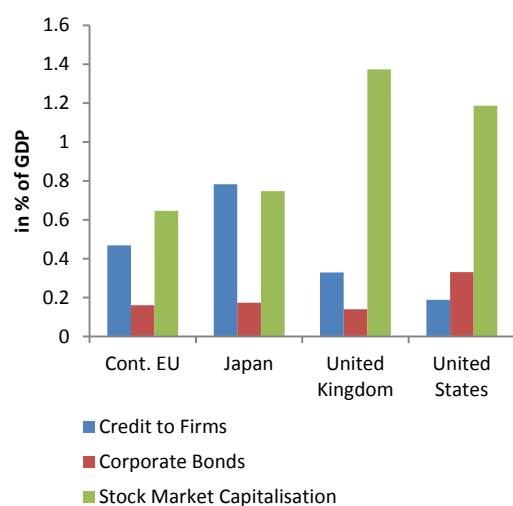
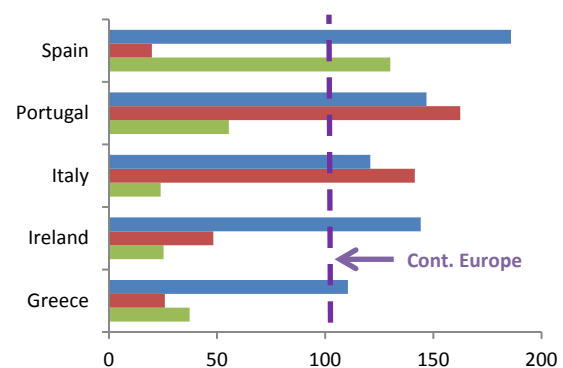
Survey evidence confirms that SMEs are facing finance constraints, particularly in countries where banking sectors are hardest-hit. In general, SMEs are particularly dependent on bank lending because of their small scale, limiting their ability to efficiently overcome asymmetric information and to access to other forms of finance such as capital markets. The EC and ECB SAFE survey (2013) confirms that access to finance is a key problem for SMEs across Europe, alongside finding customers and qualified staff. However, finance appears to pose a comparatively more serious constraint in countries more strongly affected by the crisis (Figure 6). This suggests that investment by SMEs is not only impacted by the general economic environment (and hence demand), but also by the impact of the crisis on banks and thus on the bank lending channel.

Figure 6: Most pressing problems for SMEs, by country

Source: EC & ECB SAFE survey, 2013

1.2 Bank lending dependence and the impact of financial crises

Bank lending plays a critical role in financing the corporate sector in Europe, particularly Europe's large SME sector. In comparison with the US, bank lending plays a larger role, while the role of bond and stock markets is comparatively much smaller. In terms of debt financing, the UK shows a similar structure as continental Europe. The difference lies in a larger stock market capitalisation (Figure 7).

Figure 7: Global financial markets in comparison (% of GDP)**Figure 8: Financing structure of stressed EA (% of continental EU average)**

Source: World Bank, Bruegel

Within Europe, the most crisis-hit countries are notably among those with the biggest banking sectors. In Greece, Ireland, Italy, Spain and Portugal, credit to firms notably makes up a larger percentage of GDP than the continental EU average. Bond markets are smaller than average except in Italy and Portugal, and stock market capitalisation is above average only in Spain (Figure 8).

Over-dependence on bank lending has exacerbated the crisis and prolonged the recovery process. EIB staff research (Box 1) suggests that the degree to which a financial system is “bank-based” or “market-based” tends to have a marked impact on the path of recovery of investment activity after financial crises. On average, banking crises cause a similar initial drop in investment on both bank-based and market-based systems, but recovery is much slower in the former. Sovereign debt crisis cause a larger drop of investment in bank-based systems, but in this case, the speed of recovery is system-independent. This is in line with other recent research on the effects of financial system structure on the recovery of output after crises.

The current investment down-turn in the EU is historically atypical in the persistency of the investment decline. Comparing the path of investment around the EU sovereign debt crisis with historical sovereign debt crises (including episodes preceded by a banking crisis), shows that the current crisis in the EU is unusually prolonged, with a slower, but longer decline than the historical average, and no sign of a recovery three years after the peak of the crisis (2010). In the group comprising Greece, Ireland, Italy, Portugal and Spain, the investment downturn has been unusually deep *and* long (Figure 9).

Box 1: The impacts on investment of banking and sovereign debt crises in bank-based and market-based economies³

Recent research suggests that GDP growth during creditless recoveries tends to be about one third lower than during other recoveries (Abiad et al., 2010), while industries dependent on external financing tend to experience slower recoveries than other sectors (Kannan, 2010). Allard and Blavy (2011) show that economies with market-based financial systems tend to recover faster than more bank-based ones with a growth gap of 0.8 to 1.4 percentage points. Both Kannan and Abiad et al., argue that in market-based countries there is more scope for the issuance of debt securities to substitute for reduced availability of bank lending.⁴

In this analysis, we study the recovery process of investment after both banking and

³ Based on research by P. Brutscher, EIB, forthcoming.

⁴ Kannan (2010), Credit Conditions and Recoveries from Recessions Associated with Financial Crises, IMF WP 10/83. Abiad et al (2010) ,Creditless Recoveries IMF WP 11/58. Allard and Blavy (2011), Market Phoenixes and Banking Ducks. Are Recoveries Faster in Market-Based Financial Systems? IMF WP 11/213.

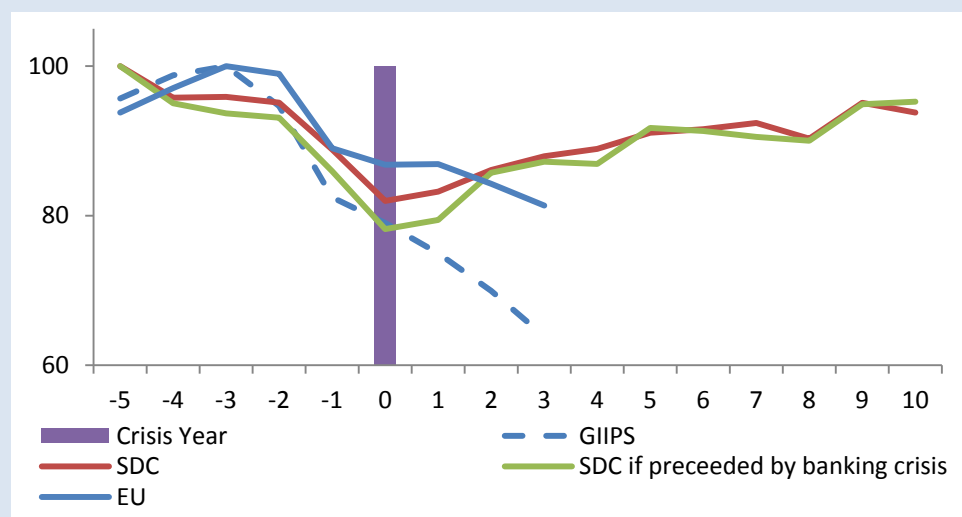
sovereign debt crises, rather than the recovery of output which may be driven by a wider range of factors such as exports. We also explore to what extent differences in financial structure affect the recovery process of investment in the two cases.

We use data on banking crises and sovereign debt gathered by Reinhart and Rogoff (2008, 2010), combined with national accounts information from the World Penn Tables (Heston et al., 2008) and the World Bank's Global Financial Development Database (Cihak et al, 2012).⁵ This gives us a dataset spanning 67 countries and 50 years – with 121 banking crises and 85 sovereign debt crises.

This dataset reveals that, for both banking and sovereign debt crises, it takes on average 3 to 4 years for real investment to recover to its pre-crisis level. Investment to GDP ratio, on the other hand, needs more than 6 years to reach 95% of its pre-crisis peak level, on average, with full recovery to pre-crisis levels taking more than a decade.

In Figure 9, we compare the current European experience (for the EU and for Greece, Ireland, Italy, Portugal and Spain (GIIPS)) with the average development of investment after sovereign debt crises (SDC).

Figure 9: Benchmarking investment (gross fixed capital formation, GFCF) trends in Europe against historical episodes of financial crises



We find that, for the EU, the initial drop in investment after the Euro crisis was relatively mild. The recovery process, on the other hand, is clearly lagging behind historical standards. The experience in the GIIPS countries is even more atypical, with a much deeper drop in investment than the average of past episodes. More than 3 years after the crisis recovery has not yet kicked in. These results hold true, even if we benchmark the current European experience only against those episodes of sovereign debt crises which were preceded by a banking crisis.

⁵ Reinhart and Rogoff (2008). Banking Crises: An Equal Opportunity Menace," NBER Working Paper No. 14587. Reinhart and Rogoff (2010). This Time is Different: Eight Centuries of Financial Folly, Princetown University Press, Princeton (United States). Heston, Summers and Athen, (2008), Penn World Tables. Cihak et al, (2012). Global Financial Development Database.

To investigate the impact of relative bank dependency on investment recovery, we divide the countries in our sample into two groups (“market-based” and “bank-based”) depending on the relative importance of bond and equity financing vis-à-vis bank financing. As a cut-off point, we use the median (an alternative measure using the 60/40 percentiles was used to confirm the robustness of this grouping).

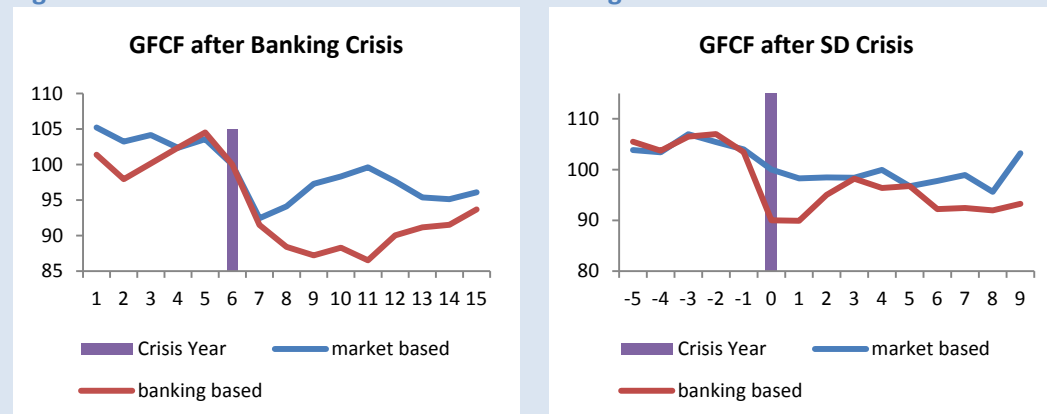
To take into consideration the possibility that factors other than the relative importance of market and bank financing could influence our results, we follow a methodology proposed by Roja et al (2011) and estimate an equation of the following form:

$$(1) \text{Investment}_{i,t} = \alpha + \sum_{k=1}^{10} \theta_k \text{crisis}_{i,t-k} * \text{banking}_i + \sum_{k=1}^{10} \vartheta_k \text{crisis}_{i,t-k} + \gamma \text{banking}_i + e_{i,t}$$

where $\text{investment}_{i,t}$ stands for gross fixed capital formation in country ‘i’ at time ‘t’ (as a percentage of GDP); $\text{crisis}_{i,t-k}$ is a dummy variable which takes on a value of one in case of a financial crisis (in particular country/ year) and zero otherwise. To allow for differences in the effect a crisis has on investment in bank-based and market-based countries, we interact $\text{crisis}_{i,t-k}$ with our measure of financial system difference.

We also include country fixed effects in our regression analysis – to control for unobservable country-specific characteristics (e.g. with respect to economic and financial development) – and a set of time dummies to capture year-specific events (such as international business cycle and contagion effects) that might affect the countries in one sub-sample (but not the other one). Figure 10 plots the results from a simple least squares estimation of (1).

Figure 10: Investment after a Financial Crisis – Regression Results



What the figure shows is that – even if we control for a large set of additional factors – investment tends to recover quicker from a banking crisis in market-based than bank-based economies. F-tests confirm that – at least for the first years after a banking crisis has hit – the evolution in investment is statistically different for the two groups of countries (with market based countries outperforming bank-based countries).

When it comes to sovereign debt crises, we find that there is a much more marked drop in investment in bank-based systems, relative to market-based systems. However, the time needed for investment to recover is much the same. Once the bank-based countries have bounced back from the initial drop, the recovery path is statistically identical to the one in the market-based countries.

Table 1: Investment after a Financial Crisis – Summary Results

	Market-based	Bank-based
Banking crisis	Similar initial drop in investment	
	Faster recovery	Slower recovery
Sovereign debt crisis	Smaller investment drop	Larger investment drop
	Similar speed of recovery	

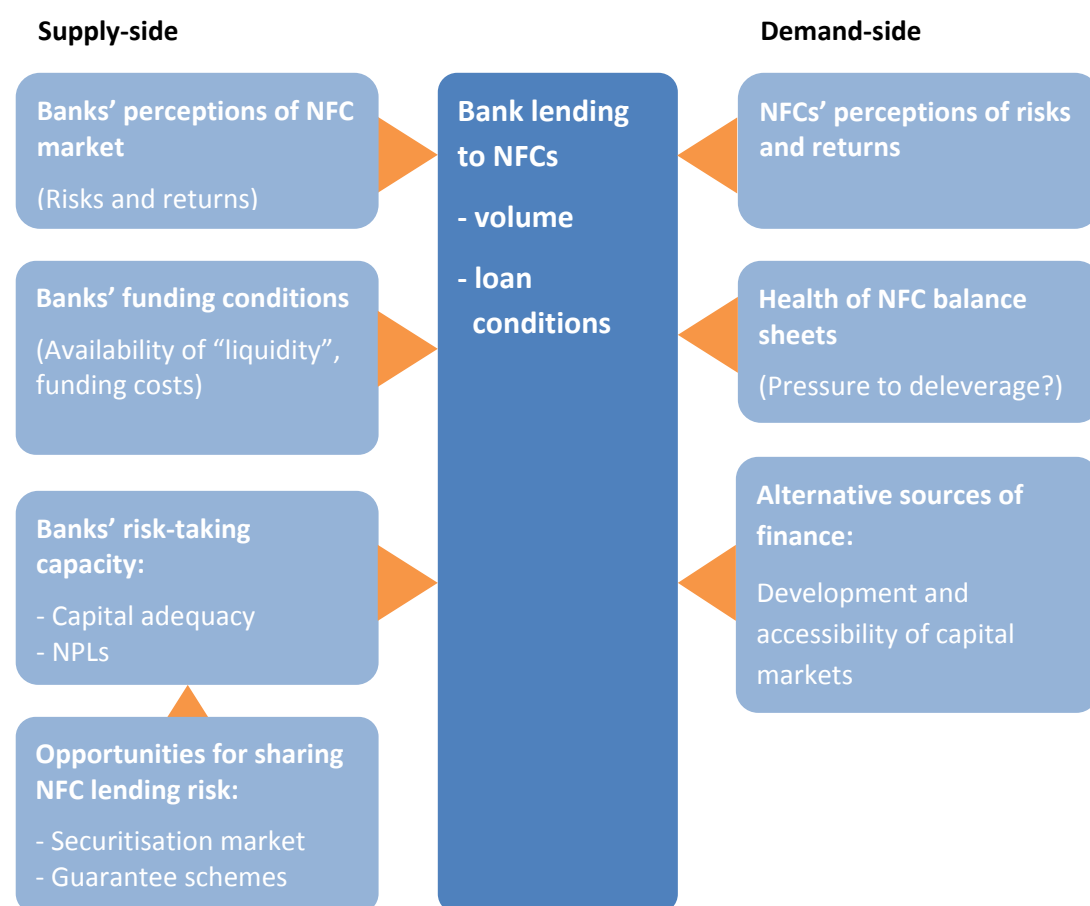
2. What is driving negative credit growth to NFCs in the EU?

Financial market conditions in Europe have improved considerably since the height of the sovereign debt crisis. Spreads in sovereign and corporate bond markets have declined and banking sectors are widely seen as being supported by conditions of ample liquidity, thanks to measures taken by the ECB. However, these conditions of ample liquidity have not, so far, translated into a recovery of bank lending to NFCs. This section provides an overview of the main drivers of the ongoing stagnation of such lending, examining both demand and supply factors. It is suggested that the quality of many banks' balance sheets and their risk-taking capacity is key to understanding why ample liquidity has not meant ample lending.

2.1 What are the key drivers of bank lending trends?

Bank lending trends are driven by both demand and supply-side factors. Changes in the volume and price of bank credit to NFCs cannot be explained by any one factor in isolation, but only by a combination of many factors operating from both the demand and the supply sides. For example, NFC's expectation with regard to risks and future returns on investment are obviously an important factor in determining demand for loans and overall lending outcomes. However, the impact of such demand-side considerations can only be understood in terms of their interaction with supply-side factors such as banks' perceptions of risks and wholesale funding costs. The question is not whether lending is demand or supply constrained, but the extent to which the effect of weak demand has been either accommodated, or compounded, by credit supply conditions. Figure 11 provides a schematic overview of the main drivers of bank lending, as characterised in terms of both volumes and loans conditions (price).

Figure 11: Drivers of bank lending to NFCs



2.2 The impact of demand-side factors

In the context of weak growth and domestic demand, NFC demand for credit is dampened by their perceptions of risks and returns on investment. The ECB's bank lending survey suggests that financing needs related to fixed investment contributed marginally positively to the corporate loan demand in the first half of 2014, for the first time since Q2 2011. The EC and ECB SAFE survey of SMEs indicates that SMEs most often report "finding customers" as their most pressing problem, followed by access to finance.

High corporate debt levels in certain sectors and countries are creating pressure for deleveraging, undermining demand for credit. Indebtedness is highest in construction and real estate sectors in countries which experienced a strong real estate boom (e.g. Ireland, Spain, Cyprus and Malta). These and some other industrial sectors have undergone marked deleveraging. Deleveraging has also been stronger

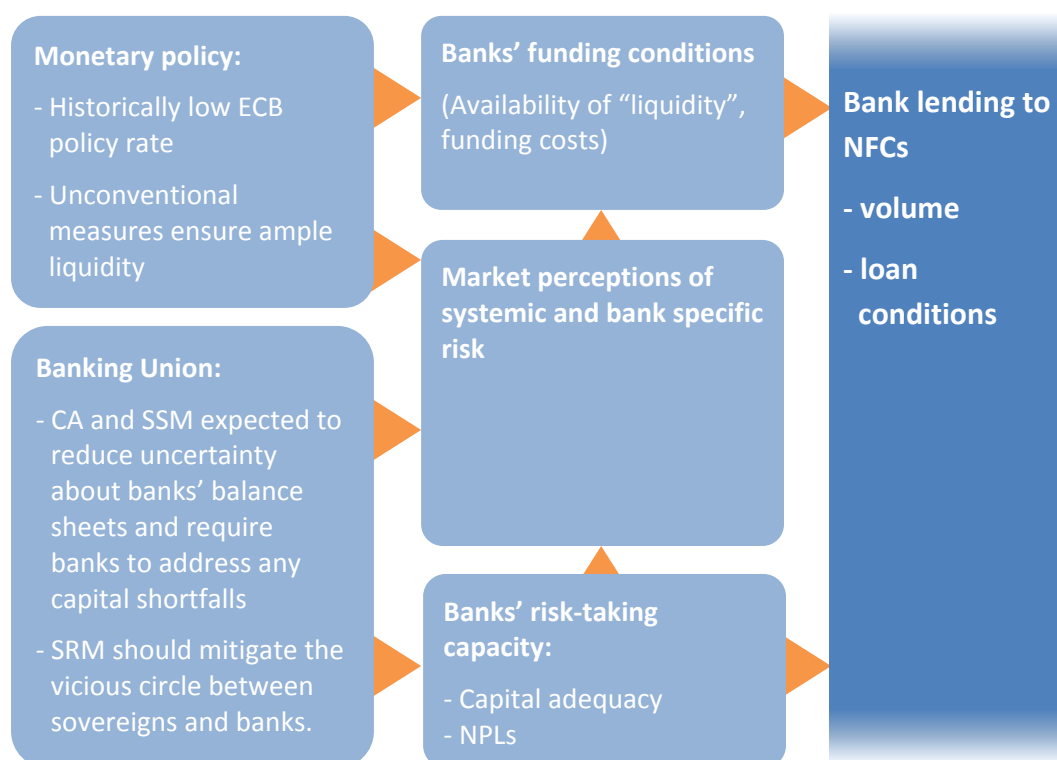
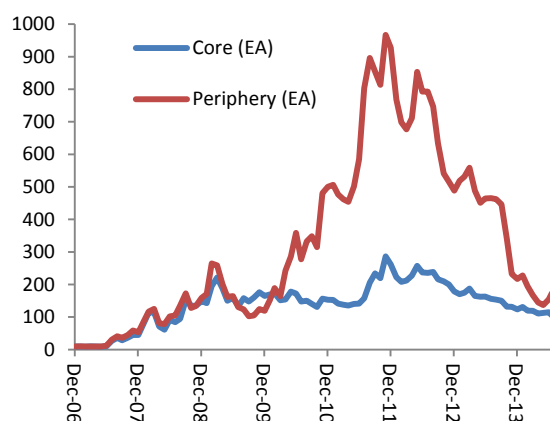
for SMEs than for larger firms.⁶ Average Euro area indebtedness of non-financial firms stood at 104% of GDP (87% of GDP on a consolidated basis) at the end of 2013. According to an analysis of the European Commission, further corporate deleveraging is needed in half of EU member States, with deleveraging pressure highest in Portugal and Cyprus.⁷ Deleveraging and the retention of internal funds (particularly by large firms) have contributed to NFCs becoming overall net lenders in the Euro area.

2.3 Supply-side: funding conditions for banks have improved

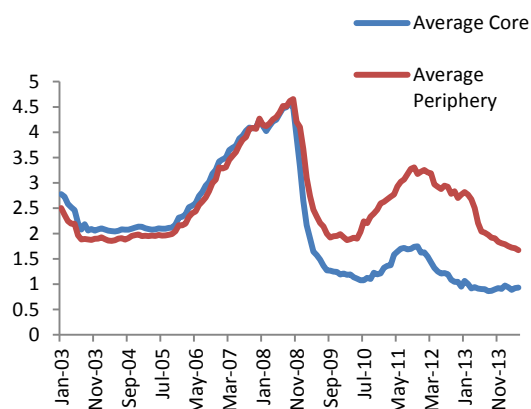
ECB measures can be expected to maintain conditions of abundant liquidity. Monetary policy measures have had a significant impact on the whole sale funding position of banks (Figure 12). Looking forward, the combination of the new Targeted Longer Term Refinancing Operations (TLTROs) and the full allotment in the Main Refinancing Operations (MROs) announced by the ECB in June 2014 are expected to keep short and medium term cost of funds at extremely low levels for all Euro area banks. Combined with the end of the sterilisation also recently announced for the Securities Market Program, the cut of ECB policy rates and the ECB's purchase of ABS and covered bonds to be started in October, these operations can be expected to maintain an environment of abundant, very cheap liquidity at moderately long maturities.

Wholesale funding costs have fallen for Euro area banks, with a dramatic compression of spreads between southern member States and the rest of the Euro area. The pricing of credit default swaps for southern Euro area banks has fallen from nearly 10% at the height of the sovereign debt crisis to below 2% in 2014 (Figure 13). This is in part a reflection of falling sovereign bond yield spreads, given sovereign-bank inter-linkages (Box 2). It also reflects the decline in uncertainty with regard to the financial position of banks.

⁶ ECB Structural Issues Report, Occasional Paper Series, No 151, ECB, Frankfurt am Main, August 2013.
⁷ Cuerpo, C., Drumond, I., Lendvai, J., Pontuch, P. and Raciborski, R. "Indebtedness, Deleveraging Dynamics and Macroeconomic Adjustments", *Economic Papers* 477, European Commission, April 2013. There is said to be a need for corporate deleveraging in Belgium, Bulgaria, Cyprus, Greece, Spain, Hungary, Ireland, Italy, Portugal, Estonia, Latvia, Slovenia, Sweden and the United Kingdom.

Figure 12: Monetary policy and Banking Union influences on bank lending to NFCs**Figure 13: EA banks' CDS (basis points)**

Source: Bloomberg

Figure 14: EA banks' deposit rates

Source: ECB

ECB measures continue to play a vital role as alternative funding sources remain impaired for southern Euro area banks. Despite the compression in spreads across the Eurozone, the interbank market remains shallow, with figures from the Bank of International Settlements continuing to show strong retrenchment of intra-Euro area flows at the end of 2013, with respect to their pre-crisis levels. Banks in the southern Euro area are also continuing to have to offer markedly higher rates to attract deposits than banks in the rest of the Euro area (Figure 14). Both of these factors

suggest perceived differences in risk relating to national banking sectors (related to sovereign risk), national economic outlooks, and individual bank.

However, the positive contribution of monetary easing on credit supply is reaching its limits. With NFCs under stress and facing a weak economic outlook, monetary policy has been accommodative in lowering wholesale funding costs and ensuring ample liquidity. However, monetary policy could not prevent the stagnation and, in many countries, contraction of bank lending to NFCs, nor prevent NFCs in the most crisis-hit countries facing higher relative funding costs. Moreover, with ample liquidity and interest rates at the zero lower bound, further accommodative effects of monetary policy may be limited.

ECB measures will also only have a limited impact on banks' risk-taking capacity. This has been demonstrated by the 3-year LTROs, the large uptake of which has been associated with a similarly large increase in excess liquidity posted at the ECB. In practice, some banks have used the LTROs to rebalance their funding structure and to engage in carry trade with sovereign bonds, while others have used the LTROs mostly as a precautionary credit line.

Box 2: Financial fragmentation and sovereign-bank interaction during the sovereign debt crisis – evidence based on tail dependence networks

A clear lesson from the global financial crisis has been the propensity for company-specific risk to spill over to other firms. These spill-overs arise from contractual linkages in conjunction with heightened counterparty risk, but also from price effects generated by, for instance, fire sales. The result of these spill-overs has been the freezing of interbank markets observed at the height of the global financial crisis in October 2008. The market freeze was followed by a much longer period of interbank market fragmentation during the European sovereign debt crisis, when banks in core European countries were no longer willing to finance banks in the periphery.

Another key feature, particularly salient during the European sovereign debt crisis, has been the interplay between fiscally strained sovereign banks and stressed banks. An impaired banking sector has limited ability to support economic activity, which in turn further strains public finances, eventually putting in question the ability of the sovereign to clean up the banking system. This adverse feedback loop has been repeatedly identified as the key risk to financial stability in the Euro area.⁸ A better ability to understand and monitor the fragmentation of European financial markets as well as the interdependence between banks and sovereigns is thus of utmost importance for central banks and policy makers.

⁸ See for instance European Central Bank, Financial Stability Review, December 2011

This box introduces a methodology⁹ that sheds new light on fragmentation and sovereign-bank interdependence in the European financial system based on time-varying tail dependence networks. The starting point for the tail dependence network is the Value-at-Risk (VaR) of an individual institution. This VaR not only depends on balance sheet characteristics and macro-financial state variables, but also on the returns of other banks in the system. An appropriate model selection technique¹⁰ then identifies the tail risk drivers relevant for the VaR of the given bank. Applying this procedure to all 51 large European banks in the sample yields the tail dependence network. Time variation is achieved by estimating the models on two-year rolling windows at annual frequency.

Figure 15: Tail dependence network based on equity prices

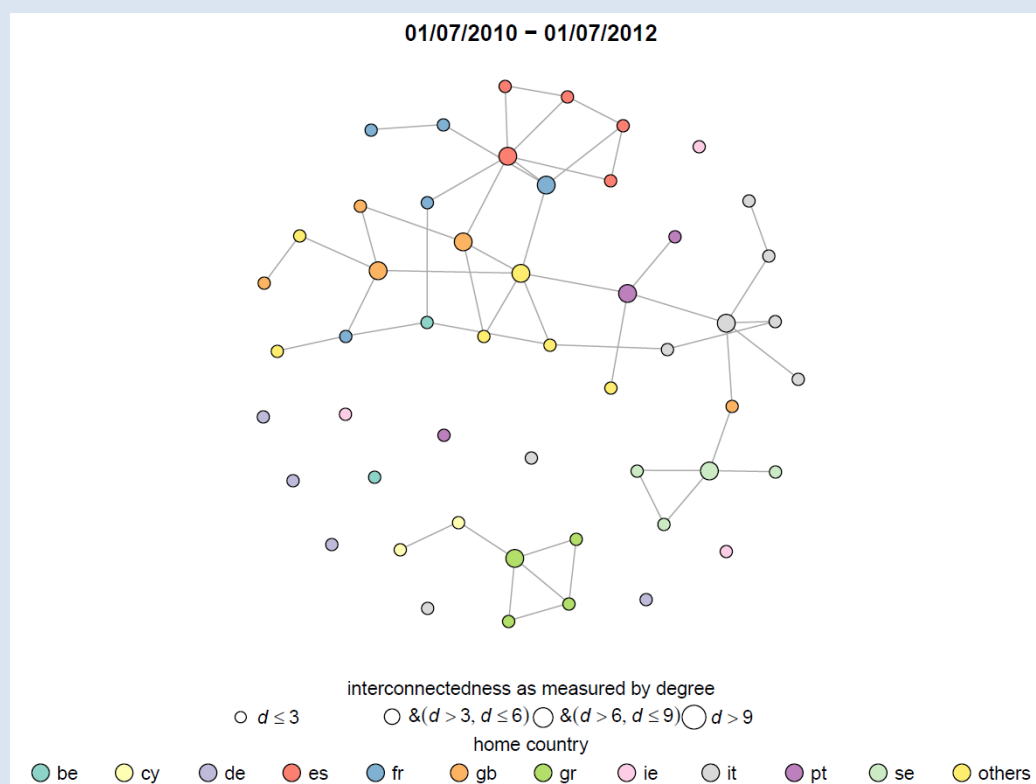


Figure 15 presents a tail dependence network based on equity prices at the height of the sovereign debt crisis 2010-2012. The size of the nodes represents interconnectedness as measured by degree, whereas colour indicates the country where a bank is headquartered. The specification uses sovereign bond yields as state variables and shows developments conditional on shocks coming from the sovereigns. The network is rather sparse, as ten banks do not exhibit any tail dependence relationships at all. A sparse network is consistent with a strong role for sovereigns in the transmission of tail risk.

Figure 15 further shows that Greek and Cyprian banks form a separate component of the

⁹ Betz F, N Hautsch, T Peltonen, and M Schienle (2014) Systemic risk spillovers in the European Banking and Sovereign Network, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2504400

¹⁰ Weighted quantile LASSO (Least Absolute Shrinkage Selection Operator), a form of penalised regression with data driven determination of the penalization parameters.

network. The observed tail dependence relationships are likely due to a common factor that is more general than just sovereign bond yields, which the specification controls for. The common factor could be described as country risk. Figure 15 exhibits a strong clustering of tail dependence relationships at the country level. This is reflected in the first column of Table 2, which shows how the share of domestic linkages evolves over time. This measure of financial fragmentation peaks in 2010-2012, though it remains way above pre-crisis levels also in the final sub-period. According to Columns 2 and 3 of Table 2 crisis countries suffer to a greater extent from financial fragmentation than non-crisis countries.

Table 2: Share of domestic linkages*

	All	Crisis countries	Non-crisis countries
2006-2008	0.34	0.32	0.10
2007-2009	0.37	0.35	0.17
2008-2010	0.28	0.20	0.15
2009-2011	0.47	0.45	0.25
2010-2012	0.52	0.56	0.30
2011-2013	0.45	0.44	0.17

*The estimation window begins at 01 July of each year. Crisis countries: CY, ES, GR, IE, IT, PT.

The tail dependence networks can also be estimated using CDS spreads.¹¹ Having data on the same asset class allows treating banks and sovereigns symmetrically and thus to explicitly represent sovereign bank dynamics in the tail dependence networks. Columns 1 and 2 of Table 3 show that the interconnectedness of sovereigns increases strongly over time. The increase of sovereign interconnectedness is particularly strong for countries that have been strongly affected by the sovereign debt crisis i.e., Ireland, Italy, Portugal and Spain. Table 3 shows that the interconnectedness of crisis countries and non-crisis countries is relatively similar during the global financial crisis (2006-2008). In the subsequent periods, however, we observe a clear increase of the average centrality of crisis countries, while others are affected to a much weaker extent.

The share of sovereign-bank linkages, as shown in Columns 3 and 4 reveals information supporting this view. During the global financial crisis, crisis countries show, on average, a slightly lower share of sovereign-bank linkages than the others. With the advent of the European sovereign debt crisis, however, share of sovereign-bank linkages of crisis countries is increasing strongly, while that of the other countries remains at a comparable level. While there is some evidence that both sovereign interconnectedness and financial fragmentation have peaked, neither has reverted to pre-crisis levels.

The first Panel presents the interconnectedness of sovereigns as represented by degree. The second Panel presents the share of linkages of a sovereign directed at banks. The column titled crisis countries refers to the simple average for a group of countries composed of ES, IE, IT and PT. Non-crisis countries refers to the average over all other countries in the sample.

¹¹ CDS data comes at the cost of reduced sample size, covering only 29 banks and 11 sovereigns.

Table 3: Sovereign interconnectedness and sovereign-bank linkages

	Sovereign interconnectedness		Sovereign-bank linkages	
	Crisis countries	Non-crisis countries	Crisis countries	Non-crisis countries
2006-2008	1.25	1.33	0.00	0.25
2007-2009	4.25	4.86	0.28	0.07
2008-2010	5.25	4.71	0.19	0.20
2009-2011	5.75	5.29	0.26	0.13
2010-2012	9.00	7.43	0.35	0.24
2011-2013	7.00	5.00	0.46	0.33

*The estimation window begins at 01 July of each year. Crisis countries: CY, ES, GR, IE, IT, PT.

2.4 Supply-side: Banks' risk-taking capacity remains constrained

European banks have made significant efforts to shrink assets and boost capital ratios over the past couple of years. Since the peak in May-2012, EU banks have decreased the size of their balance sheets by some EUR 5 trillion or more than 10% (Figure 16). The scale of asset shrinkage has been relatively even across countries.¹² Two main factors have contributed to this trend. Firstly, a reduction in derivatives positions driven partly by increased netting.¹³ Secondly, a cutback in loans to the NFC sector, which has primarily affected stressed Euro area countries. The cut-back in loans to NFC accounts for around one third of balance sheet shrinking. Risk weighted assets, in general, decreased somewhat more than total assets. This reflected a shift from capital intensive corporate activity to less capital intensive sovereign lending, driven both by changes in the structure of demand for credit and by banks' efforts to de-risk their balance sheets to meet more stringent capital requirements.

Lower risk weighted assets in combination with significant issuance of equity and other instruments, as well as capital gains from asset disposals, have boosted banks' capital positions. Between 2010 and year end-2013, the Tier 1 ratio of EU banks increased by 2.6 percentage points, from 11% to 13.6% (Figure 17). EU banks are now well placed to meet the 2019 minimum Basel III capital levels.

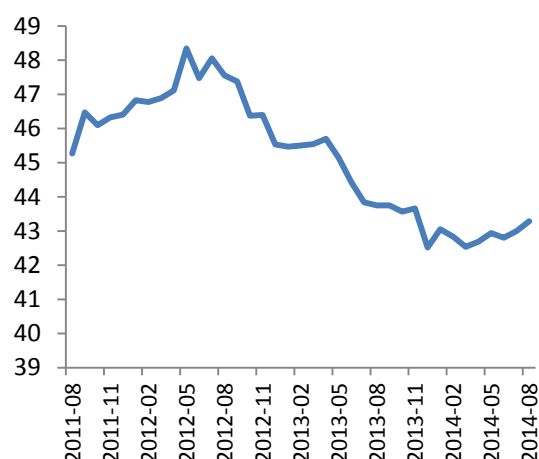
Implementation of the Banking Union is expected to further reduce uncertainties surrounding banks' balance sheets, as well as systemic risk. As part of the

¹² With some exceptions, Polish and Bulgarian banks increased assets by around 20% and 12% respectively. Finish and Irish banks decreased assets by close to 20%.

¹³ Netting entails offsetting the value of multiple derivatives positions.

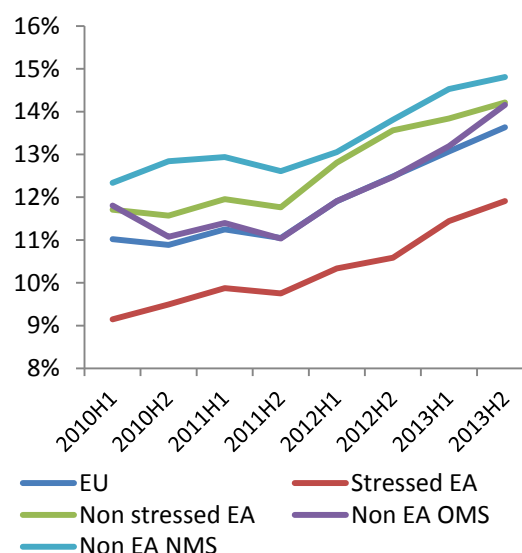
Comprehensive Assessment (CA), the Asset Quality Review (AQR) and Stress Test results are expected to largely remove uncertainties surrounding the quality of assets on the balance sheets of important Euro area banks, and to galvanise efforts to ensure that banks meet capital requirements. The Single Resolution Mechanism (SRM), accompanied by the implementation of the Bank Recovery and Resolution Directive, should improve the credibility of the financial backstop and mitigate the negative feedback loop between sovereigns and banks.

Figure 16: MFI total assets – EU aggregate (trillion EUR)



Source : ECB

Figure 17: Tier 1 capital ratio



Source : ECB

While EU banks look reasonably strong, significant areas of weakness and uncertainty remain. These can be listed as follows:

1. It must be remembered that **the AQR does not apply to many smaller Euro area banks or to banks outside of the Euro Area.** It is hoped that the promotion of best practices by the AQR will have positive spill-over effects for these other banks.
2. **The results of the AQR are themselves still uncertain.** Should banks turn out to be weaker than expected, further equity issuance and/or balance sheet shrinkage might become necessary.
3. **Profitability remains low.** While de-risking and deleveraging has made banks more shock absorbent, larger balance sheets and less leverage also implies lower profitability. To return to sustainable profitability levels many banks will have to raise lending margins and adjust their business model.¹⁴ If banks are unable to increase pricing, credit growth might be hampered.

¹⁴ See IMF, Global Financial Stability Report, 2014.

4. Finally, **soaring NPL ratios**, especially in stressed Euro area countries are raising significant questions about the risk of new lending.

A number of policy opportunities exist for taking action to enhance banks' risk taking capacity and revitalise bank lending for NFCs, particularly SMEs. With the effects of further monetary easing likely to be limited, efforts to ease credit supply constraints on NFCs need to focus more on ways to complement the traditional bank lending channel through a diversification of risks and ways to enhance the health of banks' balance sheets. Key approaches include:

- **Diversifying finance to facilitate a more efficient allocation of risk**, including greater development of direct capital market financing alternatives for NFCs; development of securitisation to improve opportunities for banks to share risk and improve their balance sheets; and improved use of credit guarantee schemes to share lending risk and overcome specific market failures.
- **Speeding-up the resolution of non-performing loans or their removal from bank balance sheets**, through regulatory reforms, targeted NPL resolution approaches and further development of markets for NPLs.

The following sections provide an overview and discussion of policy options and rationales for each of these approaches.

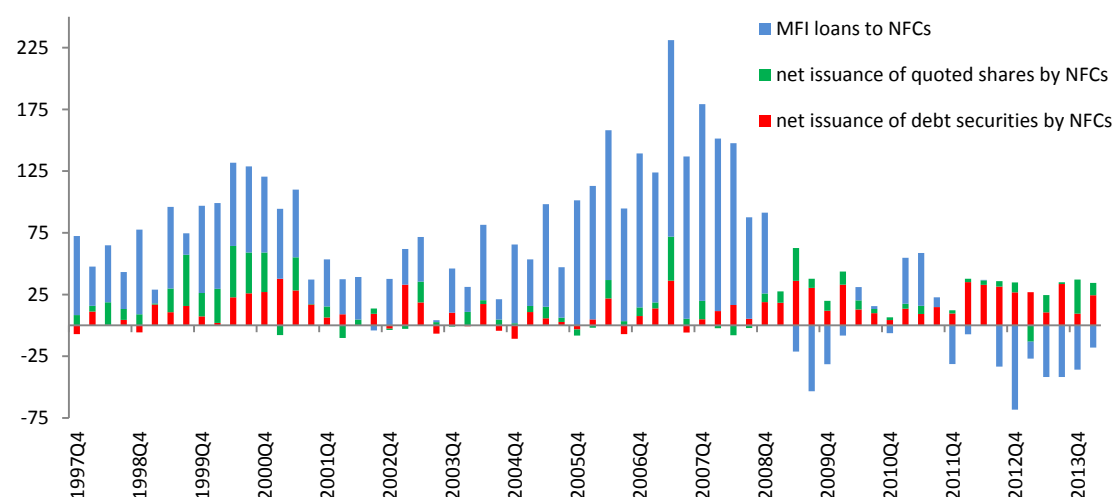
3 Supporting a more efficient allocation of risk

Due to the large number and economic importance of SMEs in European countries Europe will continue to need strong banking sectors. But in some European countries disproportionately high dependence on banks renders lending to NFCs constrained by the risk-bearing capacity of banks' balance sheets. They are therefore particularly vulnerable to crises that impair this risk-taking capacity, as we have seen in section one. In these countries diversifying risk can help address lending constraints. This can be achieved not only through improving the development direct capital market alternatives to bank lending, but also through greater development of securitisation and credit guarantee schemes that enable banks to share some of their risks.

3.1 Capital market development to diversity sources of finance

During the crisis, capital markets have to some extent offered an alternative to bank credit, mitigating credit constraints, particularly for larger firms. Net issuance of equity and debt securities by NFCs has remained positive almost throughout the crisis, the share of bonds in corporate debt increasing from 7.5% in 2008 to 11.5% at the end of 2013. However, these alternative sources of funding have still fallen short of compensating for the decline in bank lending (Figure 18).

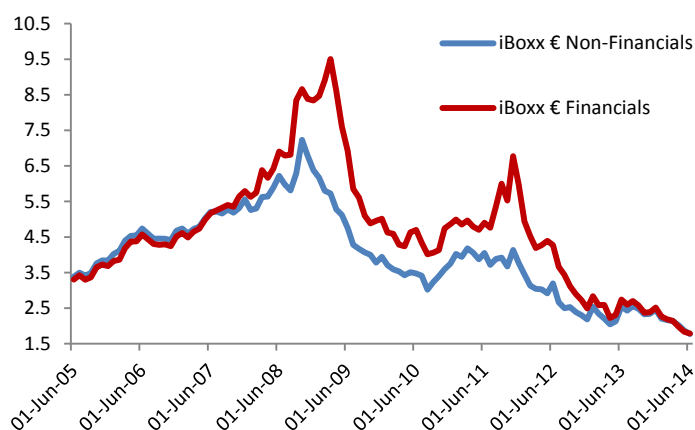
Figure 18: NFC alternative sources of funding (billion EUR)



Source: ECB

The crisis has reduced the relative perceived risk of disintermediation compared to going through the impaired banking sector. Over the 2008-2013 period, the cost of bond market funding has actually been lower for many NFCs than for financial sector institutions (Figure 19). In other words, markets have seen lending to banks as more risky than lending directly to corporates. Large corporates with access to well-developed capital markets have increasingly sought direct funding as a way to avoid paying for the market's perception of the risks of going through banks as intermediaries.

Figure 19: Cost of bond market funding (%)



Source: Markit

However, the resulting substitution effect has only been significant in European countries with well-developed bond and equity markets. As described in Box 3 below, in European countries with well-developed capital markets, it is possible to identify a notable substitution effect in which an increase particularly in the issuance of bonds substituted to a degree for declining bank credit with the onset of the crisis. No such substitution effect can be identified in countries where capital markets are smaller.

Further development of immature capital markets in Europe would increase the resilience of financial systems to banking sector stress – but healthy banking sectors remain crucial, particularly for SMEs. Better developed capital markets in economies that are currently over-dependent on banks would enhance alternative sources of finance for large corporates. At the same time, well-developed and healthy banking sectors remain crucial for European economies as part of a diversified approach to financing NFCs and as the backbone of SME financing, given the economies of scale that make it hard for SMEs to access capital markets directly.

Box 3: The impact of financial system differences within Europe on financial resilience¹⁵

There are significant differences within Europe with regard to the development of capital markets and the relative importance of bank lending. While often overlooked, these differences have implications for the resilience of NFC financing, such as during the recent crisis, and for the development of “alternative” financing sources such as securitisation and venture capital.

To analyse these differences and their implications, we use an “average linkage” clustering algorithm to assign EU countries to groupings based on their similarities with respect to four key variables (all as % of GDP):

- the stock of bank loans to the non-financial corporate sector;
- stock market capitalisation;
- the stock of corporate bonds; and
- the volume of cross-border mergers and acquisitions;

with the last three used as indicators of capital market development and openness. Japan and the United States are also included for the sake of comparison.

Table 4: Comparing financial systems

Cluster	1	2	3	4
Stock of loans to NFC as % GDP	High	High	Moderate/low	Low
Capital market size indicators	High	Moderate/low	High	Low
Countries	Austria Denmark Luxembourg Netherlands Spain Sweden UK	Cyprus Estonia Greece Ireland Italy Malta Portugal Japan	Belgium Czech Rep. Finland France Germany <i>United States</i>	Bulgaria Hungary Latvia Lithuania Poland Romania Slovakia Slovenia
Substitution of capital market financing for bank credit during crisis*	Some substitution	Negligible substitution	Some substitution	Negligible substitution

*To provide a picture of the situation across countries – rather than of the region covered by each cluster – we use unweighted averages.

We identify four main clusters:

1. countries with both large banking sectors and well-developed capital markets, such as the UK and Spain;
2. countries in which banking plays a large role, and capital markets a lesser role,

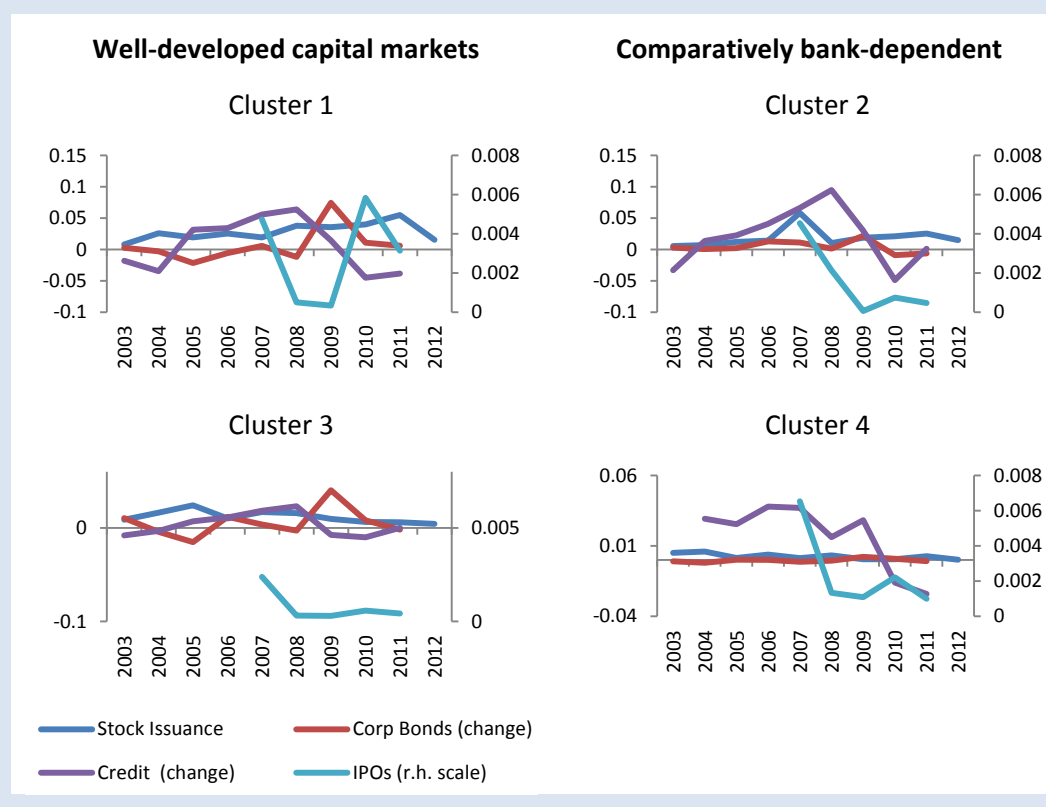
¹⁵ Based on research by P. Brutscher, EIB, forthcoming. Source data: Bijlsma and Zwart, 2013: The Changing Landscape of Financial Markets in Europe, the United States and Japan. Bruegel Working Paper 2013/2; World Bank; AMECO and IMF.

such as Greece and Italy;

3. countries with well-developed capital markets in which bank lending, as measured by the stock of NFC loans, plays a comparatively smaller role, including France and Germany; and
4. countries in which both banking sectors and capital markets appear under-developed (Table 4).

To examine how these four clusters have fared throughout the crisis, we compare change in credit to NFCs, stock issuance, IPOs and corporate bond stocks over time. In Clusters 1 and 3 comprising countries with well-developed capital markets, we find a notable substitution effect in which an increase in bond issuances and (in Cluster 1) IPOs substituted to a degree for declining bank credit with the onset of the crisis. No such substitution effect took place in Clusters 2 and 4 where capital markets are less well-developed (Figure 20).

Figure 20: Financial substitution effects by cluster



3.2 Securitisation as a tool to unlock lending

Prudent loan securitisation potentially provides the European banking sector with a powerful tool to share risk and increase capacity for lending to NFCs, including SMEs. But securitisation is underdeveloped and unevenly developed in Europe. Promoting the development of securitisation for the benefit of Europe's corporate sector

requires a multi-stranded approach focusing on appropriate regulation, European harmonisation and catalytic public support. The new ECB purchase programme for asset-backed securities (ABS) is an important initiative in this regard.

3.2.1 The potential of securitisation

The development of Europe's securitisation markets has the potential to improve monetary transmission and reduce financial market fragmentation, improve banks' risk-taking capacity, and enhance the attractiveness of lending to SMEs. Because the imprudent use of securitisation played a role in the build up to the global financial crisis, securitisation has earned a mixed reputation. However, in theory, the further development of the market for asset-backed securities (ABS) in Europe has the potential to enhance the efficiency of the financial sector in Europe in a number of ways that would benefit the non-financial corporate sector:

- **Sharing risk to enhance risk-taking capacity:** The securitisation of otherwise non-liquid loans to the corporate and household sectors allows risk to be moved off banks' balance sheets and shared with investors, thus freeing-up regulatory capital and enhancing bank's capacity to lend to NFCs. The securitisation of both corporate loans and residential mortgages are also effective in this regard.
- **Improving monetary transmission:** by lowering charges on capital and increasing the supply of assets that can be used as collateral, the greater development of securitisation could increase the efficacy of the monetary transmission mechanism.¹⁶
- **Reducing fragmentation:** ABSs offer a complementary way of facilitating cross-border financial flows to the NFC sector, thus potentially mitigating the ongoing fragmentation of the Euro Area interbank market, by-passing some of the risk associated with stressed Euro area banks.
- **Making lending to NFCs more attractive for banks:** The securitisation of loans to NFCs, including SMEs has the potential to improve the relative attractiveness of lending to NFCs as it provides banks with a way to share specifically the risks associated with such lending.

3.2.2 The state of securitisation in Europe

The securitisation market in Europe is relatively small and highly concentrated, with limited SME loan securitisation. The European ABS market is around one

¹⁶ Jobst, A. A., Goswami, M. and X. Long, "An Investigation of Some Macro-Financial Linkages of Securitization", IMF Working Paper No. 9/26, 2009

quarter of the size of the US market is concentrated in only a few countries, notably Germany, the Netherlands and the UK. It is dominated by residential mortgage backed securities (RMBS) comprising 60% of the outstanding ABS stock. SME loan-backed securities, which tend to relatively low rated, comprise 8% of the market. Italy and Spain together account for nearly 60% of outstanding SME loan-backed securities.

The European ABS market has performed well during the crisis, but has nonetheless shrunk. The cumulative average default rate in the European ABS market during the crisis is well below 2%, comparing favourably with a rate of more than 18% in the US. Despite this fact, European ABS issuance has fallen every year since its peak in 2008 (Figure 21), and the stock of outstanding ABS has fallen by about one third (Figure 22).

Figure 21: European ABS issuance (EUR bn)

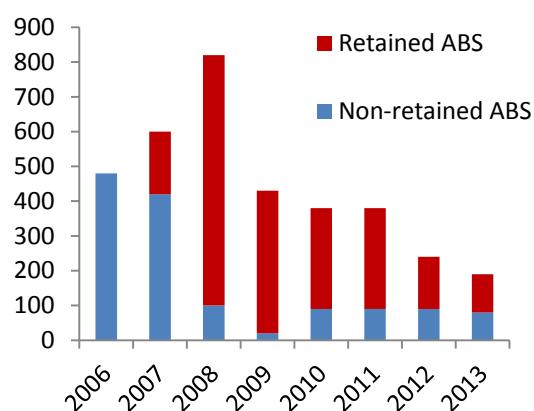
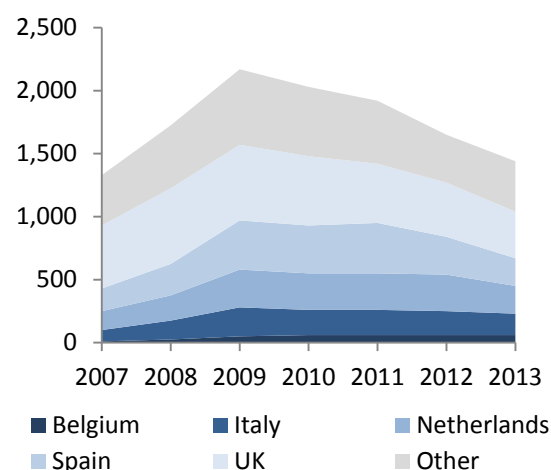


Figure 22: European ABS outstanding (EUR bn)



Source: ECB/BoE based on data from the Association for Financial Markets in Europe (AFME).

During the crisis, ABS issuance appears largely to have been driven by the need for collateral. While in 2006 all primary issuances were placed with end-investors and other banks, three years later almost all deals were retained by the originating banks and many were placed as collateral with central banks (Figure 21). Even though the share of retained ABS issuances has since decreased, in 2013 it was still significantly higher than the share of non-retained ABS. This suggests that one of the main motivations for issuing ABS at the present time remains their potential use as collateral in operations with the ECB.

The European ABS market could potentially double in size. Estimates of the maximum potential size of the securitization market in the Euro area range between

roughly EUR 3 trillion and EUR 4 trillion, with the stock of outstanding ABS standing at around EUR 1.5 trillion at the end of 2013.¹⁷

3.2.3 Constraints to further development of securitisation in Europe

Securitisation in Europe has been impacted by both demand and supply issues. Investor demand for ABS has been dampened by the recession, by the reputation acquired by ABS in the wake of the global financial crisis and hence by concerns about the quality of underlying assets. Cheap liquidity provision by the ECB has also limited the short-term relevance of ABS issuance as a source of market funding, although it has increased importance as a form of collateral. On the supply side, further development of the market faces both structural and regulatory constraints.¹⁸

Structural constraints include heterogeneous national institutional conditions and standards a lack of critical mass in most countries, inhibiting the development of a European market. Inefficient and fragmented national insolvency regimes, as well as heterogeneous reporting standards and credit scoring limit the development of a market that could help overcome financial fragmentation in Europe by facilitating a more efficient allocation of resources and risk across borders. With the securitisation market, especially for SME loans, more or less non-existent in most countries, there is also difficult for such a market to gain self-sustaining momentum.

One-size fits all regulation fails to distinguish between good and bad ABS. While a cautious and prudent approach to securitisation is needed, ongoing regulatory changes (Basel III and Solvency II) discourage investment in securitisation instruments by restraining their general eligibility for liquidity purposes and rendering them too expensive in terms of capital charges compared to other funding instruments. Therefore, it is more beneficial for banks (and to an even larger extent for insurance companies) to hold SME loans rather than invest in SME-loan-backed securitisation.

¹⁷ Altomonte, C. and Bussoli, P. (2014) “Asset-Backed Securities: the Key to Unlocking Europe’s Credit Markets?”, Bruegel Policy Contribution Issue 2014/7 and Batchvarov, A. “ABS, regulatory changes need to create a market beyond the ECB”, in *All you may need to know about ECB QE*, Bank of America – Merrill Lynch, 16 April 2014.

¹⁸ For a more detailed discussion of these constraints and relevant policy experiences and proposals, see IMF, 2014, Euro Area Policies, 2014 Article IV Consultation, Selected Issues, IMF Country Report No. 14/199.

3.2.4 Supporting the development of prudent securitisation

The development of responsible securitisation in Europe requires further harmonisation and a more targeted approach to regulation. Apart from cross-country harmonization of reporting, insolvency and scoring standards, the resuscitation of the securitisation market in Europe would benefit from a more nuanced regulatory approach. Caution is warranted, especially with regard to the type of complex ABS products which have been implicated in the global financial crisis. However, regulatory reforms such as “skin-in-the-game” requirements which reduce moral hazard and information asymmetries are already serving to address ABS quality issues and there is a need to avoid regulatory overshooting. In particular, the regulatory environment should make a clear distinction between high and low quality securitisation products. Reduced capital requirements for high quality, simple and transparent ABS, and their broader eligibility as liquid assets, would be important in allowing the potential of this market to unfold.

Strategic investment by the public support could have a catalytic effect. Public support could potentially play a critical role in providing initial momentum for a Europe-wide market in SME loan-backed securities. National and European institutions could potentially act as strategic investors or guarantors through cost efficient funding structures that maximise the leverage of private resources and ensure genuine risk transfer to private investors.

Planned ABS purchases by the ECB should be an important step in enhancing banks’ risk-taking capacity. Following the official start of preparatory work on outright purchases of selected ABS announced by the ECB in June, the ECB will start its ABS purchase programme and covered bond purchase programme from October on. The Eurosystem will thus purchase a broad portfolio of simple and transparent ABS with underlying assets consisting of claims against the Euro area non-financial private sector and, in parallel, of Euro-denominated covered bonds issued by MFIs domiciled in the Euro area. Due to stricter capital requirements for ABS products as a result of the crisis any purchases of securities by the ECB will free up banks’ capital and thus boost the effect on credit generation of other unconventional ECB measures such as the TLTRO.

However, the impact of the ECB ABS purchase programme on the development of the market for SME loan-backed securities will depend on the speed with which regulatory and technical barriers are addressed. The ECB purchase programme will cover both RMBS and SME loan-backed securities. Given the current weakness of the SME ABS market, RMBS provide a greater opportunity, in terms of volume, for reducing capital requirements of banks as an avenue to stimulate lending. Purchases

of SME loan-backed securities could have a potentially larger and more direct impact on the finances of SMEs by stimulating the development of the market for these products. However, the effectiveness of the ECB programme in this regard will depend on the timing of complementary action, specifically action of regulatory and technical hurdles.¹⁹

Box 4: The impact of financial system differences within Europe on securitisation²⁰

In an extension of the clustering analysis presented in Box 3 above, we compared the size, over time, of markets for different “alternative” sources of finance including securitisation and venture capital (VC). We find that securitisation is markedly more developed in countries with large banking sectors, suggesting an unsurprising complementarity with loan finance. By contrast, we find that venture capital development is linked to the size of capital markets, suggesting the importance of these in offering exit channels for VC investment.

Table 5: Financial system differences and the development of securitisation and venture capital investment

Cluster	1	2	3	4
Stock of loans to NFC as % GDP	High	High	Moderate/ low	Low
Capital market size indicators	High	Moderate/ low	High	Low
Countries	Austria Denmark Luxembourg Netherlands Spain Sweden UK	Cyprus Estonia Greece Ireland Italy Malta Portugal Japan	Belgium Czech Rep. Finland France Germany United States	Bulgaria Hungary Latvia Lithuania Poland Romania Slovakia Slovenia
ABS stock (% GDP)*	High	Moderate	Low**	Negligible
VC investment (% GDP)*	High	Low	High	Low

*To provide a picture of the situation across countries – rather than of the region covered by each cluster – we use unweighted averages.

**The United States is an exception within this group, having a high stock of ABS as a % of GDP.

This analysis suggests that further capital market development in largely bank-dependent countries is important for the development of venture capital investment. At the same time, well-developed and healthy banking sectors remain a necessary counterpart for the further development of securitisation.

¹⁹ Altomonte, C. and Bussoli, P. (2014) “Asset-Backed Securities: the Key to Unlocking Europe’s Credit Markets?”, Bruegel Policy Contribution Issue 2014/7.

²⁰ Based on research by P. Brutscher, EIB, forthcoming. Source data: Bijlsma and Zwart, 2013: The Changing Landscape of Financial Markets in Europe, the United States and Japan. Bruegel Working Paper 2013/2; World Bank; AMECO and IMF.

3.3 Credit guarantee schemes

Credit guarantee schemes (CGS) are another institutional arrangement to enhance banks' risk-taking capacity through risk sharing. CGSs provide partial guarantees on loans by covering a share of the default risk against a fee. CGSs are provided by national governments, private entities or international financial institutions. In emerging economies CGSs tend to be operated by the public sector, while privately run schemes are common in many developed economies. The latter are typically mutual guarantee schemes provided by industry associations to their members.

CGSs are primarily used to alleviate constraints in access to finance for SMEs. Banks are often reluctant to extend uncollateralised credit to SMEs, even at high interest rates, partly due to the high costs of obtaining information on the true credit quality of small and/or young enterprises. As a result, SMEs sometimes fail to obtain the necessary financing even for economically and financially viable projects. From a theoretical viewpoint the most commonly cited explanation for this SME financing gap is the so called credit rationing hypothesis, under which banks are unwilling to use higher interest rates to compensate for higher risk due to asymmetric information and moral hazard. SMEs are more affected by credit rationing than larger companies due to the more pronounced information asymmetry and higher monitoring costs associated with lending to small firms. While the use of collateral can be an effective solution for alleviating credit rationing, collateral is not always available, and its use may have some drawbacks. The borrower may, for example, not have collateral of suitable size and quality and there may be asymmetric information regarding the collateral's value. The use of collateral might also increase transaction costs as it generally involves legal and other administrative procedures. Under such circumstances CGSs can help closing the financing gap by substituting collateral with credit protection provided by an external guarantor.

The presence of asymmetric information and lack of suitable collateral alone do however not necessarily justify public sector intervention. Especially in developed economies, suppliers of credit guarantees have sometimes arisen as purely private-sector initiatives, such as guarantees provided by the mutual Confidi schemes in Italy and private insurance group COFACE in France, although even such schemes tend to benefit from a public counter-guarantee. The need for government involvement in the establishment and funding of CGSs, instead, can result from coordination failures among private-sector entities that, under certain circumstances, prevent them from pooling resources. When lenders are risk averse, efficient private sector provision of guarantees may not occur due to collective action problems, i.e. although the

stakeholders are aware of the problem, no one does anything about it, as the private interests do not coincide with those of society. The state can be able to resolve the collective action problem that gets in the way of risk spreading.²¹ CGSs can also play an important role in times of economic downturns as a part of a counter-cyclical public policy toolkit. During a downturn banks' capital and liquidity positions are generally weakened, leading to reduced availability of credit across the economy. At the same time, heightened uncertainty increases the adverse selection and moral hazard problems embedded in SME lending. Collateral values also decrease. All these factors contribute to increasing the financing gap for SMEs, resulting in the potential for economic welfare enhancements through public sector intervention.

To fulfil their policy objectives CGSs must be adequately priced and structured, and ideally the risk reduction they provide should be adequately reflected in regulatory capital relief. Low cost guarantees risk giving rise to moral hazard, undermining the lenders incentive to monitor projects efficiently and to deter the borrower from excessive risk taking. A well designed CGS should ensure that risk is shared with the private sector. Experience suggests that coverage rates should generally be between 60 and 80 percent.²² With regard to regulatory treatment, it is important that banks face the right incentives for risk diversification, and that regulations allow for adequate capital relief. In the EU integrated banking market, such regulatory treatment should be homogeneous.

In 2008 and 2009 the growth rate in total guaranteed volumes more than tripled to around 25% per year, from 8% in the pre-crisis period.²³ The sharp increase in guarantee activity was driven primarily by crisis related measures - guarantees issued under the specific crisis programmes made up about a third of the total guarantee activity in 2009.²⁴ Total guaranteed volumes continued to grow (by around 8%) in 2010, but growth has since abated to close to 0% in 2012, 2.5% in 2012 and in 2013 the total volume of outstanding guarantees decreased by 2.1% (preliminary figures). The decline in guaranteed volumes in 2013 was driven by large decreases in Bulgaria (-48%), Czech Republic (-23%) and Spain (-15%). Guaranteed volumes in Poland increased by almost three times, but this was due to the launch of a new product. Other countries such as Lithuania, France and Portugal also saw small increases in volumes. However, while the volume of guaranteed amounts decreased, the number

²¹ See Anginer, Deniz & De la Torre, Augusto & Ize, Alain, 2012. *Risk-Bearing by the State: When is it Good Public Policy?* World Bank.

²² See Levitsky, J., (1997); SME Guarantee Schemes: A Summary; *The Financier*, vol. 4, NO. 1 & 2, February/May 1997.

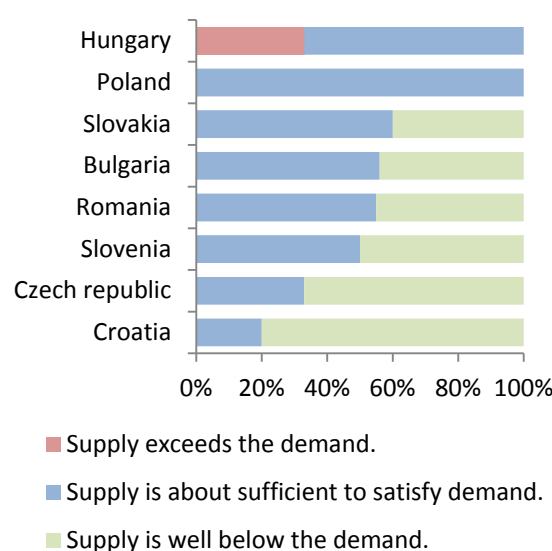
²³ As measured by growth in the total portfolios of members of the Association of Mutual Guarantee Societies (AECM). In 2009 the AECM had 35 members, including 20 EU countries, Montenegro, Russia and Turkey.

²⁴ Here measured as activity of AECM members.

of guarantees outstanding actually increased in 2013. This was driven by smaller average guarantee sizes and increased use of short term credit guarantee to cover working capital or bridge financing needs.²⁵

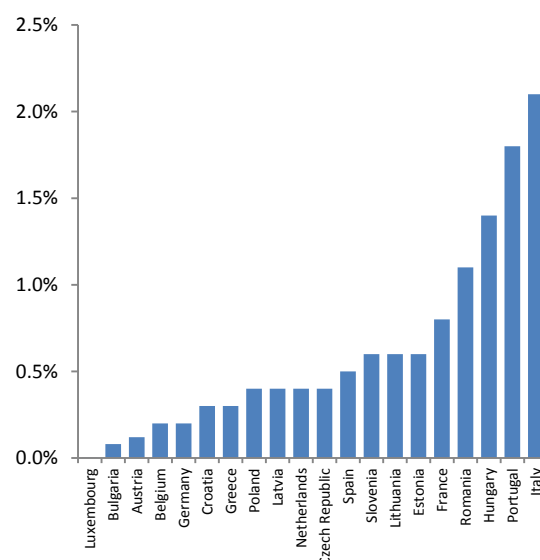
Uneven supply of guarantees across countries in the EU. In terms of total volumes Italy, France, Germany and Spain are the largest guarantee markets in the EU. Collectively these four countries account for around three-fourth of total outstanding amounts.²⁶ Relative to GDP the highest volume of guarantees is currently provided in Italy (2.3%) followed by Portugal (1.8%), Hungary (1.4%) and Romania (1.3%) (Figure 24). According to a recent survey carried out by the EIB within the framework of the Vienna Initiative, most EU respondents found that the current level of guarantee supply is either sufficient or exceeds demand. Respondents from Slovenia, Czech Republic and Croatia, however, generally saw demand exceeding supply (Figure 23).

Figure 23: Is the supply of credit guarantees sufficient?



Source: Bank Survey - Vienna Initiative 2
Working Group on Credit Guarantee Schemes

Figure 24: Outstanding credit guarantees (% of GDP)



Source: AECM

²⁵ For more details see, Helmut Kraemer-Eis, Frank Lang, Salome Gvetadze, *Bottlenecks in financing SMEs' competitiveness*, forthcoming EIB working paper.

²⁶ Share of total outstanding amount of AECM members.

4. Addressing non-performing loans

In addition to the ratio between risk-weighted assets and equity influencing banks' ability to lend, the quality of the assets themselves also has a significant influence, with a high ratio of NPLs holding back lending. Hence the resolution of NPLs and the ability of banks to remove them from their balance sheets play an important role in unlocking lending.

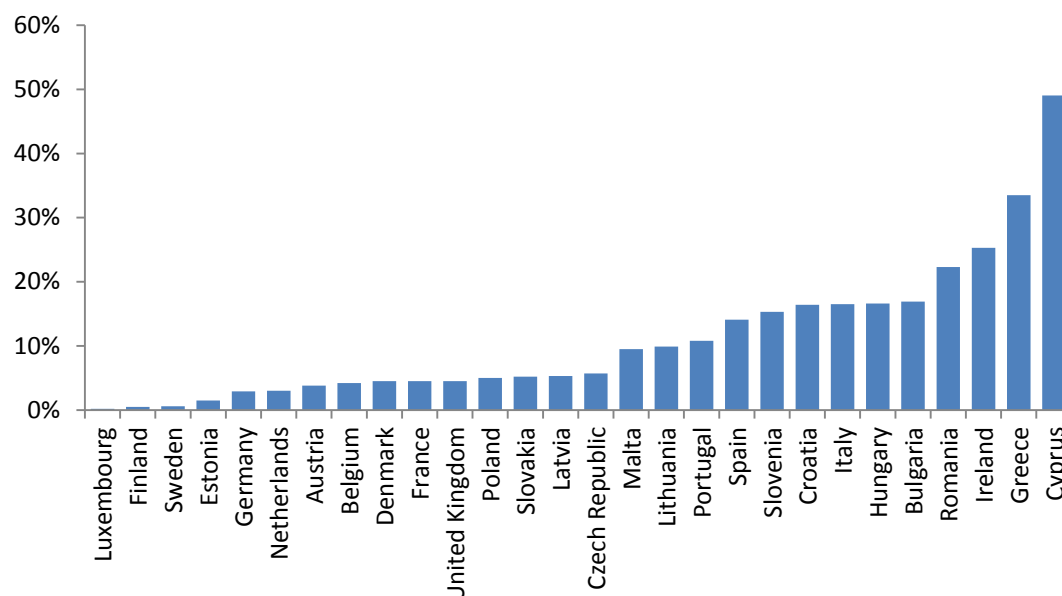
4.1 Challenges arising from NPLs

Bank asset quality has deteriorated across Europe and is reaching worrying levels in a number of countries. Since 2009, the stock of NPLs in the Euro area has more than doubled, to EUR 800 billion. Most of this increase has taken place in crisis hit Euro area countries. As can be seen in Figure 25, NPLs now make up around 50% of total gross loans in Cyprus, 34% in Greece and 25% in Ireland. NPL levels are also high in a number of newer Member States, including Romania and Bulgaria. Asset quality is generally better in the Euro area core and in old member states, however, a limited number of individual banks have large exposures to impaired assets also in these countries. The majority of NPLs so far stem from NFC and real estate loan portfolios; however the quality of household related exposures has also deteriorated. A weak economic environment and high private sector indebtedness continue to reduce businesses ability to service their debt, NPL levels are thus likely to increase further. Anecdotal evidence also suggests that actual NPLs might be significantly higher than those reported. The results of the upcoming Asset Quality will bring more clarity as to the real level of NPLs in the Euro area.

Evidence points to a significant negative impact of NPLs on credit growth. A recent study conducted by EIB staff finds that a 1 percentage point increase in the NPL ratio decreases net lending by around 0.8 percentage points (see Box 5 for details). NPLs depress lending by increasing asymmetric information and uncertainty about asset quality and thus bank capitalization. Banks may have problems in assessing the real values of these assets, particularly where these are covered by collateral and markets for this collateral are very illiquid. Even where banks do have a good idea about the true economic value of their impaired assets (i.e. potential recovery rates), the value is hard to assess for an outside observer, such as a regulator or creditor. Under the presence of asymmetric information, banks which are close to the regulatory capital requirement have an incentive to overstate the value of their NPLs (underprovision) in order to avoid having to raise expensive equity or go out of business. Thus, if weak banks are not forced to acknowledge the true extent of

losses, they are likely to remain undercapitalised, putting pressure on lending. In the 1990s, Japan's 'zombie' banks staggered along for years, neither weak enough to collapse nor healthy enough to lend to firms.

Figure 25: NPLs over total gross loans by country, EU



Source: Latest available data from IMF (FSI), except for Cyprus (Bank of Cyprus, July 2014), Spain (Bank of Spain, May 2014), the UK (S&P 2013), Finland and Germany (World Bank 2012).

To tackle non-performing assets in the EU banking system a transparent and credible asset quality review needs to be conducted to determine the true value of bank assets. This is currently being done in the Euro area. Once such a review has been concluded, appropriate measures can be taken to remove impaired assets from bank balance sheet and allow the banking system to focus on generating new lending. Outside the Euro area, and for banks not included in the AQR, similar efforts are needed, particularly as many of these banks are among the worst affected.

There are a number of alternative strategies for the management and disposal of impaired assets. The suitable policy mix is likely to depend on factors such as the size of NPLs, asset type, structure of the banking system, private- and public sector management capabilities, and fiscal space. Reforms to the legal system, changes to provisioning or tax legislation can be important tools for reducing NPL levels. Such reforms can aim at incentivizing banks to deal with NPLs more efficiently, for example through tougher provisioning rules, or at facilitating NPL resolution, for example by reforming foreclosure rules. When NPLs are very large - either system wide or in an individual institution - the creation of on- or off- balance sheet bad banks or national asset management companies has proven a helpful policy tool in a number of countries. Generally a mix of different policy measures is necessary.

Box 5: NPLs and corporate lending²⁷

We study the effects of the evolution of NPLs on credit growth to the corporate sector on the example of the Euro zone. We focus on the largest banks in each country in 2004-2013.²⁸ We run a dynamic panel model of the form

$$\Delta Corp_{i,t} = \beta_1 \Delta Corp_{i,t-1} + \beta_2 NPL_{i,t-1} + \beta_3 B_{i,t} + \beta_4 C_t + u_{i,t},$$

where $\Delta Corp_{i,t}$ represents net growth rate in corporate and commercial loans, $NPL_{i,t-1}$ is the variable of interest and represents the share of NPLs in gross loans, $B_{i,t}$ is a vector of bank-specific characteristics and includes the net change in Tier 1 capital ratio and log of total assets, and C_t is a vector of country and area-wide variables and comprises the GDP growth rate, EONIA rate and yield on 10-year sovereign bonds. To correct for possible dynamics in NPLs we include changes in NPLs and changes in net NPLs (i.e. NPLs minus the provisioning) as an additional control. Also, as a robustness check we run the model with and without country-specific variables. Subscripts i and t denote the bank and time dimensions, respectively.

We use up to the second lag of the explanatory variables as instruments and apply the “difference GMM” method of Arellano and Bond (1991). The validity of instruments is assessed through the Sargan test statistic, and we test for up to second-order autocorrelation. The results for both specifications are presented in Table 6.²⁹

Table 6: The effects of NPLs on corporate lending on the sample of 16 EMU countries in years 2004-2013

Variables	Coefficients					
	Bank-level variables					
$\Delta Corp_{i,t-1}$	-0.352***	-0.354***	-0.354***	-0.348***	-0.349***	-0.349***
$NPL_{i,t-1}$	-0.845*	-0.88*	-0.795*	-2.908***	-2.866***	-2.862***
$\Delta NPL_{i,t}$		-0.032***			-0.034***	
$\Delta netNPL_{i,t}$			-0.019***			-0.016***
$\Delta Tier1_{i,t}$	-0.087***	-0.07**	-0.102***	-0.077***	-0.078***	-0.081***
$Assets_{i,t-1}$	-0.032	.025	.045	-0.164***	-0.14***	-0.139***
	Country-level variables					
ΔGDP_t	2.747***	2.944***	2.888***			
$EONIA_{t-1}$	.067***	.069***	.077***			
$YIELD_{t-1}$	-0.015***	-0.011**	-0.012**			
Observations	188	187	186	188	187	186
Number of banks	42	42	42	42	42	42
Number of instruments	25	25	25	22	22	22
Sargan test p-value	0.43	0.41	0.245	0.116	0.1473	0.09

²⁷ Based ongoing research by M. Wolski, EIB.

²⁸ Due to the data availability, our sample comprises 42 banks from 16 EMU countries, i.e. Austria, Belgium, Cyprus, Germany, Estonia, Spain, Finland, France, Greece, Ireland, Luxembourg, Latvia, Netherlands, Portugal, Slovenia and Slovakia.

²⁹ Arellano, Manuel & Bond, Stephen, 1991. "Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations," *Review of Economic Studies*, Wiley Blackwell, vol. 58(2), pages 277-97, April.

AR 1 test p-value	0.312	0.312	0.310	0.315	0.3148	0.314
AR 2 test p-value	0.322	0.322	0.321	0.318	0.3195	0.317

*, ** and *** denote 10%, 5% and 1% significance levels, respectively. Sources: *Bankscope/Eurostat (2014)*.

In all the specifications we find a significant negative impact of the level of NPLs on corporate lending. This effect averages to around 3 pp (i.e. 1 pp decrease in the fraction of NPLs in the overall loan portfolio increases the growth of corporate credit by almost 3 pp) nevertheless a part of this is offset by country-specific variables. Having corrected for country-level aggregates, the effect decreases to slightly more than 0.8 pp, amounting to around a third of the average credit growth in 2010-2013 (which was 25%). A smaller impact can be observed from the changes in NPLs and net NPLs, which amount to over 0.03 and 0.015 pp, respectively. Those effects remain robust in magnitude when controlling for the country-specific effects.

The effects of the banks' size are fully offset by the country-specific aggregates. In line with the literature we find a significant and prominent impact of macroeconomic environment on corporate lending (see for instance Klein (2013)).³⁰ In particular, a 1 pp increase in the GDP growth rate results in almost 3 pp increase in corporate credit growth. Similarly, higher country-specific risk premium (approximated by the sovereign bond yield) is associated with smaller corporate lending growth. In a risky environment a borrower has to bear larger financing costs which decrease the attractiveness of investments. At the same time, we view the effects of the short-term interest rates through the prism of the monetary policy responses. In a credit boom a monetary authority is expected to increase the rates as well as in the bust it is expected to loosen the stance.

4.2 Creating the right legal- and regulatory environment to facilitate NPL resolution

Banks often lack the right incentives to dispose of or resolve NPLs. Euro area banks have generally been slow in dealing with NPLs. In particular, undercapitalised banks in the periphery have been reluctant to take accounting losses associated with heavy provisioning, loan write-offs and asset sales. Banks that are overstating the true value of loans/collateral are likely to be unwilling to resolve or dispose of NPLs, as doing so would reveal their true level of capitalisation. This can be the case even if such transactions are profitable in isolation, i.e. even if the price an outside buyer is willing to pay exceeds the bank's internal valuation. If the positive NPV gain associated with asset disposals is too small to compensate for the increased cost of capital associated with revealing the true value of assets. Such reluctance is, in some countries, further compounded by tax regulation. For example, until recently, loan losses in Italy had to be written off over a period of 18 years (see Table 7), severely disincentivising banks to write off loans. Tax regimes in Poland and Hungary provide

³⁰ Nir Klein, 2013, Non-Performing Loans in CESEE: Determinants and Impact on Macroeconomic Performance, *IMF Working Paper*.

similar disincentives for loan write-offs. To create incentives for banks to speed up asset disposals and write-offs, banks must be forced to adequately provision for NPL and properly assess the value of underlying collaterals. Time limits for the clean-up of NPLs could also be beneficial under some circumstances, as would be the removal of tax disincentives.

Legal and regulatory impediments are slowing down NPL resolution in many countries. Greece, for example, introduced a moratorium on foreclosures in 2008 - effectively preventing debt resolution in the mortgage sector. Improvements to the legal framework have since been introduced (see Table 8), but foreclosing regulation remains troublesome. Delays in the judicial system and lengthy procedures for recovering collateral remain a significant hurdle for debt recovery in some EU Member States, including Italy. Removing such legal hurdles can speed up NPL resolution and free space for new lending. Important areas of reform include the acceleration of foreclosures, the shortening of legal delays (including institutional arrangements for rapid out-of-court settlements) and improved enforcement of creditor rights. A recent study by EIB staff shows that institutional factors, including the cost of resolving insolvency, can have a significant impact on NPLs (see Box 6).

EU Member States have already taken significant steps to address NPLs. Table 7 provides some details on recent reforms introduced in selected Member States. These reforms generally focus on facilitating out-of-court settlement and shoring-up insolvency laws, but also include measures such as tax reforms or the introduction of improved performance indicators. However, much remains to be done. In general countries which were hit by the crisis at a relatively early stage, such as Ireland, have come further compared to countries which were hit by the crisis relatively late, such as Cyprus.

Table 7: Summary of measures taken by country - Efforts to incentivise bank provisioning and write-offs

Country	Measures taken
Greece	<ul style="list-style-type: none"> Greece will introduce key performance indicators to monitor banks performance in reducing NPLs. Gradual process which started in June 2014. Banks are expected to commence full repoting by year end 2014.
Ireland	<ul style="list-style-type: none"> In Q1 2013 the Bank of Ireland established Mortgage Resolution Targets for banks. Banks have ramped up engagement with mortgage borrowers in arrears over 90 days, offering solutions to over half of such borrowers by end 2013.
Italy	<ul style="list-style-type: none"> Change in tax treatment of loan losses in 2014. Losses can now be deducted over 4 years instead of previous 18 years.

Table 8: Summary of measures taken by country - Efforts to improve the general legal and regulatory environment

Country	Measures taken
Austria	<ul style="list-style-type: none"> The Austrian insolvency Act of 2010 aims at facilitating restructuring of insolvent companies and, whenever possible, avoid their winding up and liquidation
Croatia	<ul style="list-style-type: none"> New pre-bankruptcy settlement procedures in October 2012.
Cyprus	<ul style="list-style-type: none"> On-going efforts to review and strengthen the insolvency framework and facilitate voluntary work-outs A new arrears management framework has been established, which sets out detailed instructions to be followed by banks when restructuring NPLs Changes to the foreclosure law in September 2014 making foreclosure possible within 2 years (previously it took on average around 15 years).
Greece	<ul style="list-style-type: none"> The moratorium on foreclosures introduced in 2008 was partially lifted in December 2013. Significant restrictions still remain in terms of foreclosing first residences of low income households.
Ireland	<ul style="list-style-type: none"> New personal insolvency framework providing for automatic discharge from bankruptcy after 3 years Measures taken to facilitate out of court settlement In March 2013 the Insolvency Service of Ireland was established. The Service is developing a protocol to standardise loan modifications. An Expert Group on Repossessions produced a series of recommendations on streamlining court procedures. Measure to facilitate out for court work outs for SMEs.
Poland	<ul style="list-style-type: none"> New legislation aimed at facilitating debt restructuring in the pipeline.
Portugal	<ul style="list-style-type: none"> Far reaching reform of the insolvency and restructuring legal framework in 2012 The Portuguese central bank is working on early warning indicators, which will contribute to detecting weak financial situations of companies at an early stage Continuous updates to the national Central Credit registry
Romania	<ul style="list-style-type: none"> Corporate debt restructuring guidelines introduced in 2010 aims at facilitating out of court settlement
Slovenia	<ul style="list-style-type: none"> New rules on out-of-court restructuring and more efficient rules governing creditor-led restructuring are under currently preparation. New insolvency regime introduced in December 2013.
Spain	<ul style="list-style-type: none"> Spain is currently reviewing its insolvency regime The Law of Entrepreneurs approved in September 2013 introduces an expedited out of court settlement procedure for smaller firms. However, the procedure has three important limitations: i) secured creditors and public creditors are excluded; ii) the moratorium set forth in the plan may not exceed three years; and iii) any haircuts cannot exceed 25 percent

- The Decree of Refinancing Agreements and Debt Restructuring enacted on March 2014 aimed to promote out of court refinancing agreements by facilitating debt to equity swaps

Box 6: Institutions and NPLs³¹

We observe that better quality of some of the institutional factors is associated with a lower fraction of NPLs. Figure 26 and Figure 27 present the average NPL ratios of the Euro-zone countries in years 2004-2013, as a function of the recovery rate on insolvent investments and as a function of the average cost of resolving insolvency, respectively. We find that higher recovery rates and lower costs of resolving insolvency go in tandem with a smaller fraction of NPLs.

Figure 26: The average relation between recovery rate on insolvent projects and NPLs

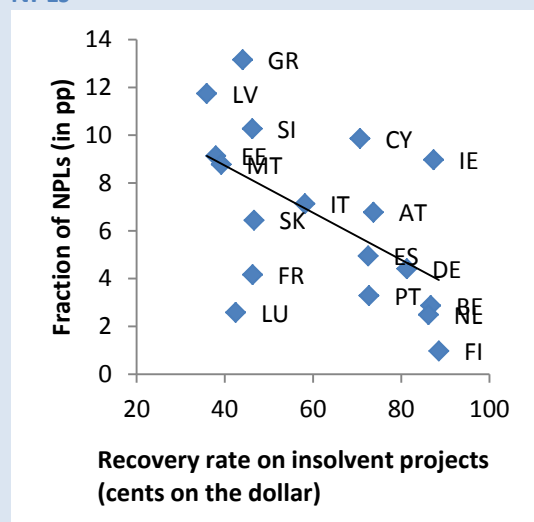
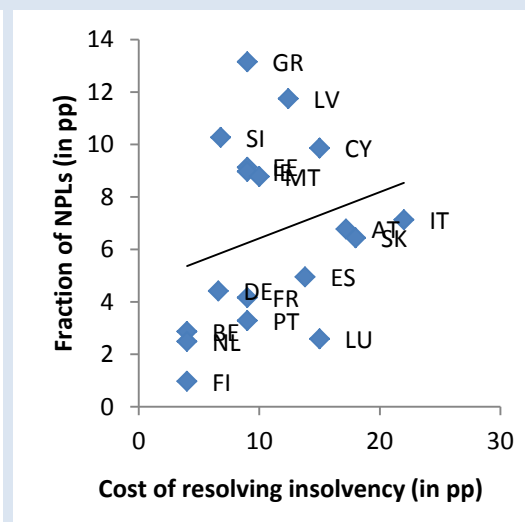


Figure 27: The average relation between cost of resolving insolvency and NPLs



Source: Bankscope and World Bank (2004-2013)

To formally quantify whether the institutional factors matter for the dynamics of the NPLs we run a simple fixed effects panel regression of the form

$$\Delta NPL_{i,t} = \beta_0 + \beta_1 NPL_{i,t-1} + \beta_2 B_{i,t} + \beta_3 C_t + \beta_4 \Delta Inst_t + u_{i,t},$$

where $\Delta NPL_{i,t}$ denotes the changes in the share of NPLs in gross loans (also included as $NPL_{i,t}$), $B_{i,t}$ is a vector of bank-specific characteristics including the changes in the Tier 1 capital ratio and the year-on-year growth rate of total assets, and C_t is a vector of country and area-wide variables and comprises the growth rate of GDP and changes in both the EONIA rate and the yield on 10-year sovereign bonds. We include two sets of institutional variables. The first one comprises resolving-insolvency indices, and the second focuses on enforcing-contract variables. For the former we focus on time (in

³¹ Based ongoing research by M. Wolski, EIB.

years) to resolve insolvency, relative cost and rate of recovery of a project. For the latter we include the time (in days) to enforce a contract, relative cost and number of procedures to follow. All the variables are taken from the World Bank and cover 18 EMU countries in years 2004-2013. Subscripts i and t denote the bank and time dimensions, respectively. We apply the fixed effects estimation technique with the country-clustered standard errors. Due to possible effects of non-stationarity of the $NPL_{i,t}$ variable, we confirm all the results without conditioning on it. Also, depending on the inference we include either percentage changes (denoted by Δ) or absolute changes (denoted by D). We confirm the results on both specifications for all the variables. The results are presented in Table 9.

Table 9. Institutional factors and NPLs on the sample of 18 EMU countries in years 2004-2013.

RI denotes resolving-insolvency variables, whereas EC describes enforcing-contract indices. *, ** and *** denote 10%, 5% and 1% significance levels, respectively. Operator Δ describes net and Variables

Variables	Coefficients					
Bank-level variables						
$NPL_{i,t-1}$	-6.567***	-6.648**	-6.477**	-6.56**	-6.454**	-6.667**
$\Delta Tier1_{i,t}$	.023	.001	.0001	.002	.003	.002
$\Delta Assets_{i,t}$	-1.0*	-.576	-.572*	-.554*	-.545*	-.548*
Country-level variables						
ΔGDP_t	-10.9	-12.579***	-12.587***	-12.521***	-12.334***	-13.156***
$\Delta EONIA_t$	.061	.113*	.132*	.109*	.101*	.13*
$\Delta YIELD_t$	-.008	-.017	-.017	-.016	-.018	-.02
Institutional variables						
$D.RI_{time_t}$	.223					
ΔRI_{cost_t}		.082***				
$D.RI_{rate_t}$			-.026***			
$D.EC_{time_t}$				-.001		
ΔEC_{cost_t}					-1.433	
$D.EC_{procedures_t}$						-.092
$Const$	.781***	.776***	.78***	.767***	.76***	.766***
Observations	669	630	630	630	630	630
Number of banks	105	105	105	105	105	105
R-squared (within)	0.252	0.294	0.297	0.292	0.303	0.295
R-squared (overall)	0.148	0.167	0.17	0.166	0.163	0.166

'D' absolute changes in variables. Sources: Bankscope/Eurostat (2014).

We find that institutional factors matter for the NPL dynamics, however, to a limited extent. Enforcing-contract variables prove to be insignificant whereas resolving-insolvency indices seem to matter only when it comes for the procedural costs and rate of recovery on insolvent projects. A 1 pp increase in the relative cost of resolving insolvent contracts results in about 0.08 larger growth in NPLs, which is approximately 36% of the average NPL growth in 2010-2013. Similarly, a 1 cent increase in the recovery rate on each Euro of insolvent contracts results in a decrease in the growth of NPLs by 0.026 pp.

The effects of the control variables are in line with the literature (see for instance Klein (2013)). Higher levels of NPLs and larger balance sheets can be characterised by a more rigid credit-quality dynamics. At the same time, we confirm the role of the macroeconomic factors. Higher economic growth figures as well as smaller changes in the interest rates are associated with lower growth of NPLs.

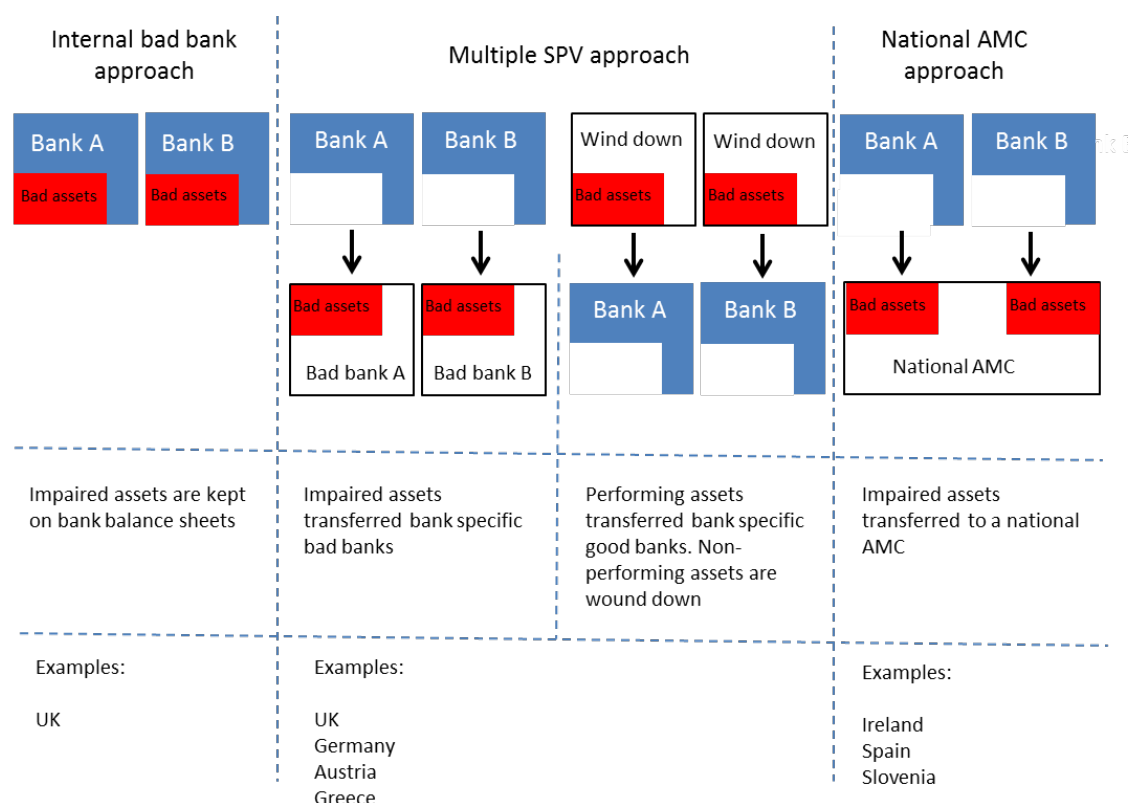
4.3 Targeted NPL resolution

While regulatory and legal reform can do a lot to facilitate NPL resolution, targeted NPL resolution is often necessary when the stock of impaired assets grow too large. A number of different approaches have been used in the EU for targeted NPL resolution; ranging from measures which leave impaired assets on bank balance sheets - managed by an internal bad bank - to the creation of publicly owned asset management companies, fully in charge of loan recovery and asset disposal. Some countries, for example the UK, have used a combination of different approaches. Figure 28 provides a schematic overview of the different measures used, categorised into three groups: The internal bad bank approach, the multiple SPV approach and the National AMC approach. Regardless of the approach used, there is a need to ensure that the necessary technical skills are available locally to manage the process effectively. A lack of technical expertise is often a critical bottleneck for the roll-out of NPL resolution schemes.

The internal bad bank approach involves leaving impaired assets on banks' balance sheets, but under separate management. This approach was used by the UK in 2009 to manage non-performing and non-core assets in Royal Bank of Scotland and Lloyds Bank. The UK government provided a guarantee under the Asset Protection Scheme (APS) to cover losses in the ring-fenced bad bank. Under the APS the state committed to cover 90% of the losses in excess of an initial amount ("the first-loss position") arising from the bad bank portfolio of assets. The first-loss was borne by the banks. In exchange for this cover, the banks committed to pay a fee and to continue lending to the real economy at agreed levels on commercial terms.

Advantages and disadvantages. The internal bad bank approach comes with three main advantages. Firstly, it leaves the full responsibility for asset recovery with the banks, thus leveraging the banks' client-specific knowledge. Secondly, as assets stay on bank's balance sheets it allows the possibility to thin down losses over time. Thirdly, keeping assets on bank balance sheets means that there is no need to negotiate transfer prices. The disadvantage with this approach is that it requires a significant government commitment and that bank clean-up could be slow.

Figure 28: Targeted NPL resolution - overview



The multiple SPV approach can either involve the creation of bank specific bad banks, or the extraction of performing assets into a good bank, leaving the bad assets in liquidation. An individual SPV is set up for each institution that requires intervention and the SPV and the original bank generally have the same owners. This approach has been used in the UK, Germany, Austria and Greece (Box 7).

Box 7: Multiple SPV approaches in selected countries

UK: In 2010, the UK government set up UK Asset Resolution (UAR) to manage assets from two nationalised mortgage lenders - Bradford and Bingley and Northern Rock. Non-performing assets were transferred to UAR while performing assets were sold to other financial institutions.

Germany: In Germany Erste Abwicklungsanstalt (EAA) was set up in 2009 to act as a winding-up agency for WestLB AG's risk exposure and non-strategic businesses. EAA took over a first portfolio of WestLB assets in 2009-2010, mainly of underperforming assets. A second portfolio of higher quality assets was taken over in 2012. In 2010, FMS Wertmanagement was established to wind-up a portfolio of risk exposures and non-strategic assets from the Hypo-Real Estate (HRE) Group. Both bad banks operate under the aegis of the Financial Market Stabilisation Fund (SoFFin) and Financial Market Stabilisation Agency (FMSA), and benefit

from state guarantees under the SoFFin framework.

Austria: In Austria, KA Finanz was created in 2009 to take over assets from defunct municipality lender Kommunalkredit. Currently a second bad bank is being set up to manage impaired assets of Hypo Alpe Adria, which was nationalised during the crisis. The Austrian authorities are planning to sell the banks subsidiaries and wind down the reminding assets in a government owned bad bank.

Greece: Following the Greek default in 2012, four viable and systemic banks were identified through a system wide stress test. These were recapitalised by the state. The remaining 12 banks were designated as non-core and had to be recapitalised by the private sector or be resolved. Performing assets of the non-core banks were either transferred to the core banks or, when private funding could be obtained, to new entities. Non-performing assets were wound down with the support of the state.

Advantages and disadvantages. Similar to the internal bad bank approach, the main advantages with the Multiple SPV approach is that responsibility for asset recovery generally remains with the banks and that transfer prices do not need to be negotiated (as the owner of the bank and SPV are generally one and the same). In contrast to the internal bad bank approach, however, losses are taken immediately. This speeds up bank clean-up, but can be difficult if bank capitalization is weak. State support is generally needed and has formed part of all the packages discussed above. Another disadvantage, especially in comparison to the National AMC approach discussed below, is scale. By using several small bad banks instead of one central unit, economies of scale are lost. In addition, coordination of asset disposals is hampered.

The National AMC approach involves setting up a *central* national entity for asset disposal and recovery to which non-performing assets from a large number of banks is transferred. This approach has been used in Ireland, Spain and Slovenia (Box 8).

Box 8: National asset management corporations in selected countries

Ireland: The Irish National Asset Management Agency (NAMA), set up in 2009, was the first AMC to be created in the EU after the onset of the financial crisis. The entity is fully government owned. NAMA, which focuses exclusively on real estate related assets, took over a total of 11,000 loans collateralised by 16,000 individual properties from five financial institutions. The total face value of loans transferred was EUR 71 billion. Participating banks were paid with government guaranteed securities issued by NAMA. Transfer prices were based on the market value of the underlying collateral, average discount to date amounts to around 57%. NAMA has so far been very successful in divesting loans and real estate assets and is expecting to have disposed of 80% of assets by 2016.

Spain: The Spanish AMC, Sareb, was set up in November 2012. Sareb is 55% owned by the private sector and 45% by the Spanish state. Private shareholders include major banks and insurance companies. Like NAMA, Sareb focuses exclusively on real estate related assets. Sareb took over assets relating to close to 200,000 real estate and construction companies with a face value of around EUR 108 billion (valued at 50.7 billion, implying a discount of 53%) in two phases. The first phase took place in December 2012 and involved assets from four nationalised banks valued at EUR 36.6 billion. The second phase in February 2013 involved assets from the four banks which received state funding (valued at 14.1 billion). As in the case of NAMA, banks were paid in state guaranteed bonds. Sareb is only now starting to ramp up asset sales.

Slovenia: The Slovenian AMC, Bank Assets Management Company (BAMC), was established in March 2013 and is thus the latest addition to Europe's AMC scene. BAMC is a fully publicly owned entity tasked with facilitating the restructuring of banks with systemic importance. So far AMC has taken over 425 assets from two larger Slovenian banks - NLB and NKBM. The total face value of loans transferred is EUR 2.3 billion with an average discount of around 55%. Participating banks were paid with government bonds. Like in the case of NAMA and Sareb, BAMC holds primarily real estate related assets.

Advantages and disadvantages. The National AMC approach offers several advantages. Most importantly, the approach brings economies of scale and professional recovery management. While banks have client specific knowledge, which can be important for the resolution process, they often lack in-house skills required for large scale asset recovery. A National AMC can bring in the transactional, sectorial- and legal expertise needed. Coordination costs are also generally small, though not entirely insignificant; for example, Sareb's private shareholders are themselves trying to off-load assets which have not been transferred and are thus competing with the AMC. This creates incentives for slowing down AMC asset disposals. Similar to under the multiple SPV approach,

losses are taken immediately, which speeds up bank clearance but might have capitalization implications. A significant disadvantage with the National AMC approach is that prices need to be negotiated as assets are transferred from one owner to another. This can slow down the process. Creating a public National AMC may also require significant fiscal space, which might not be available in many of the countries with high NPL ratios, including Cyprus, Greece and Italy.

4.4 Developing a market for NPLs

Developing a well-functioning market for distressed debt in Europe could do much to reduce banks' exposure to NPLs. Regulators are increasingly recognizing that banks might not be the best holders and servicers of non-performing loans and experience from the Asian financial crisis has shown that quick debt sales often generate far better results than taking a wait and see approach. While Japanese banks held their NPLs for a very long time and sold them eventually only at deeply discounted prices, Korean banks moved NPLs off their books more quickly and achieved far better prices. Morgan Stanley estimates that Europe's banks need to sell or refinance EUR 700 billion of NPLs to meet regulatory capital requirements, deleverage their balance sheets and achieve other goals.

European NPL sales nearly tripled between 2010 and 2013, from EUR 11 billion to over EUR 60 billion, but trade-volumes still amount to only a small fraction of NPL assets. There are a number of reasons for why banks are unwilling or unable to sell their NPLs. Firstly, selling NPLs means taking an immediate hair-cut. If banks are under-provisioned they might be unwilling to do so, especially if they are in a weak capital position to start with. Secondly, with loan demand relatively muted, there is little reason for banks to sell NPLs and re-deploy the capital. Thirdly, transaction costs are often very high. Bid ask spreads range between 3 to 5% and substantial fixed costs mean that smaller banks are discouraged from entering the market.

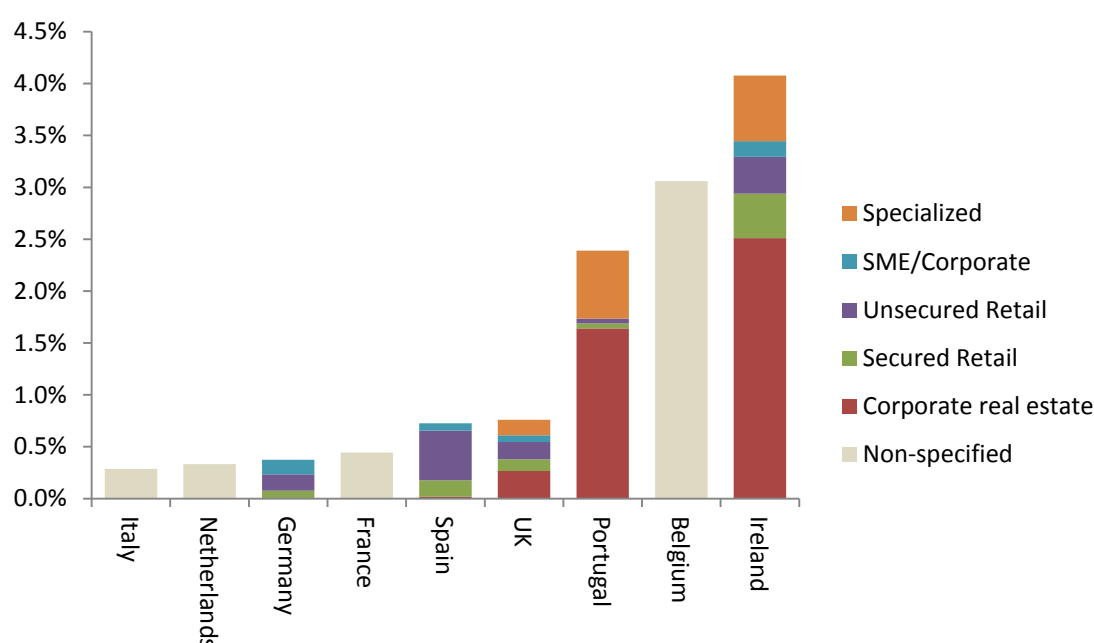
In absolute volumes, the most active NPL markets are the UK, Spain, Germany and Ireland. Relative to GDP average NPL sales³² over the last three years were the largest in Ireland, Belgium and Portugal (Figure 29).

Trading activity focuses on a subset of banks' NPL portfolios. In Germany, Ireland and, to a lesser extent UK, the majority of traded NPLs are commercial real estate loans. In Spain and Italy trades have instead focused on unsecured (e.g. consumer credits, credit cards) and secured (particularly mortgages) retail loans. The sector

³² Due to the high volatility in NPL trades in some countries we refer to the average over the period 2011-2013.

focus depends, among other things, on the relative ease in getting to the underlying collateral. The presence of real estate focused National AMCs in Ireland and Spain has probably supported the commercial real estate and mortgage markets there. Large corporate loans, commercial real estate and relatively standardised products, such as mortgages and credit cards, are likely to continue to make up the bulk of the NPL market also going forward. These are product categories where a potential buyer can build in-house expertise and potentially be able to extract more value than can banks. It will probably be significantly more challenging to build NPL markets in for example SME loans, where strong asymmetric information makes it hard for outside buyers to value assets.

Figure 29: NPL sales in % of GDP by sector (average 2011-2013)



Note: Due to the high volatility in NPL trades in some countries we refer to the average over the period 2011-2013. In fact, PWC reports non-core loan transactions which, however, in most cases should overlap transactions of NPLs. 'Specialised' includes certain structured and asset backed products along with shipping, infrastructure, energy and aviation loans.

Source: PWC (European Portfolio Advisory Group, Market Update, March 2014)

Growth in NPL markets is likely to continue. Regulatory reform aimed at facilitating NPL resolution and incentivizing non-performing asset disposals are being pushed through in many EU Member States, as we have seen above. At the same time, the AQR is likely to provide banks with a stronger impetus to clean up their balance sheet. These developments are likely to support a pick-up in NPL market activity going forward. However, investor appetite is likely to be more muted in smaller countries due to high fixed costs of acquiring country specific knowledge, underscoring the need for continued public involvement.

5. Conclusion

In the wake of the crisis, the capacity of many banks to lend to relatively high-risk sectors such as SMEs and young, innovative firms is seriously impaired by capital constraints and a strong deterioration in the quality of the assets on their balance sheets. Looking forward, it is vital that economic recovery in Europe is not constrained by an impaired banking sector. In this paper, we identify four main areas of opportunity for achieving this.

One part of the answer is to diversify the sources of finance accessible for Europe's SMEs. Better developed capital markets across Europe would help improve the resilience of Europe's financing structures, and the efficiency of risk allocation, over the longer term.

To create strong, efficient and resilient banking sectors in Europe, the implementation of the Banking Union is a big step forward, comprising as it does a deep assessment of the true status of European banks, and a process of clean-up and recapitalisation, where needed.

Further, we need to achieve a more efficient allocation of risk by helping banks to share part of the risks of lending to SMEs with a wider range of investors. One way to do this is to facilitate a greater development of prudent securitisation in Europe to allow capital market investors to invest directly in SME risk, through banks, or even through more direct approaches. Another opportunity is the greater development of credit guarantee schemes which can involve both public and private actors.

Finally, we also need to improve banks' risk-taking and lending capacity by increasing their ability to resolve or dispose of non-performing loans. To do this we need a range of complementary measures that include addressing regulatory hurdles and weak institutions, building technical expertise and supporting the development of effective markets for non-performing loans.



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