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Financing European growth:

The challenge for markets, policy-makers, and investors

Europe's slow growth risks becoming self-perpetuating. One major issue is how a sustainable recovery is to be financed.

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Financing European growth: summary and overview

Purpose

This paper is to serve as background for discussion at a high-level workshop focusing on the challenge of financing Europe's future economic growth. Discussants at the workshop, to be held in Brussels on 18 September 2012, will include senior Commission and ECB officials, MEPs, buy-side representatives, company executives, AFME Board members, and other interested parties.

Context

Re-establishing sustainable economic growth in Europe, and the West more generally, presents major challenges for markets, investors, and policymakers. A range of constraints, both on the 'real' and the financial sides of the economy, will need to be overcome.

At present, confidence is weak; investment is low; and the negative feedback loop between banks and sovereigns remains vicious.

In time, however, "animal spirits" will return: and it is vital that, when that happens, the mechanisms are in place to ensure that the desired investment can indeed take place:

- **Near term**, a potentially large corporate funding gap will need to be filled.
- **Longer term**, Europe needs a system that is capable not only of financing growth in the good years, but that is also robust in the face of shocks.

The challenge is both cyclical and structural, near-term and longer-term, with many elements needed to achieve a satisfactory outcome, including importantly for small and medium-sized enterprises.

Structure of this paper

The paper is organised in six principal sections:

I. **Introduction: slow growth ahead** describes the broad policy context, including the demand and supply-side constraints to growth.

II. **The evolution of the modern complex financial system** summarises the way in which financial systems across the Western world, including in Europe, have evolved rapidly.

III. **The European financial system in international context** emphasises Europe's relative dependence upon its large complex financial institutions (universal banks).

IV. **The constraints faced by Europe's banking sector** argues that bank restructuring will continue for years, and that deleveraging will be considerable, creating challenges for funding future growth.

V. **The challenge for markets, policymakers, and investors** considers a range of cyclical and structural issues, near and long term, including fixing bank funding, and developing bond and stock markets.

VI. **Conclusions and issues to consider** raises five interrelated issues: economic policy instruments; supply and demand factors in capital markets; the cumulative impact of regulation; breaking the negative-feedback loop between banks and sovereigns; and changes in financial structure.■

Financing European growth: the challenge for markets, policy-makers, and investors

Europe's slow growth risks becoming self-perpetuating. Achieving a sustainable economic recovery requires that many hurdles be overcome. One major issue is how growth is to be financed as European banks restructure.

- Financial systems in Europe, as indeed around the world, have evolved rapidly; and in the process have become more complex, and much larger
- Europe is particularly dependent on banks: stock markets and corporate bond markets are smaller and less developed than in the US
- Europe's banks are likely to be constrained as the European banking sector restructures and strong pressures to deleverage continue
- This presents markets, policy, and investors with a number of significant challenges, including a potentially large corporate funding gap
- Policy instruments, capital markets, regulation, the negative feedback-loop between banks and sovereigns, and changes in financial structure are important interrelated issues that warrant further discussion

I. Introduction: slow growth ahead

Euro area GDP is yet to reattain its peak

Europe, and the West more generally, is facing slow growth and weak investment. GDP in the euro area has yet to get back to its pre-crisis level (Figure 1). In the US, by contrast, GDP has reattained its pre-crisis level, but even there investment has not rebounded strongly: and meanwhile the government's fiscal position is deteriorating quickly. Indeed, in aggregate the US fiscal position is weaker than that of the euro area as a whole and most other major economies.

Europe, like the Western world more generally, needs an economic recovery. And to be sustainable, that recovery needs to be investment-driven, if not investment-led. If this is not achieved, and confidence in the efficacy of policy continues to diminish, slow growth risks becoming self-perpetuating.

Investment is low

The share of investment in GDP is currently below 1980 levels in Europe and the other major economies. Investment/GDP ratios fell post-crisis, sharply so in a number of cases, and have rebounded little, if at all. The large pre-crisis increases in countries such as Ireland and Spain have corrected sharply – Ireland now has a relatively low share, at around 11%. The UK and US have ratios of just 15-16% of GDP. The euro area as a whole, and its major economies, have ratios closer to 20%. Japan's relatively high share of investment has been in steady decline since the early 1990s (Figure 2).

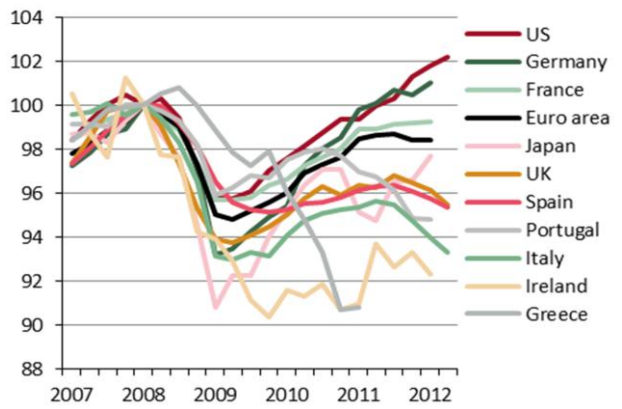
The broader policy context: demand and supply-side constraints

Credit demand could remain subdued…

It is hard to know whether an observed level of bank lending is the product of banks being unwilling to lend more, or of the private sector being unwilling to borrow more.

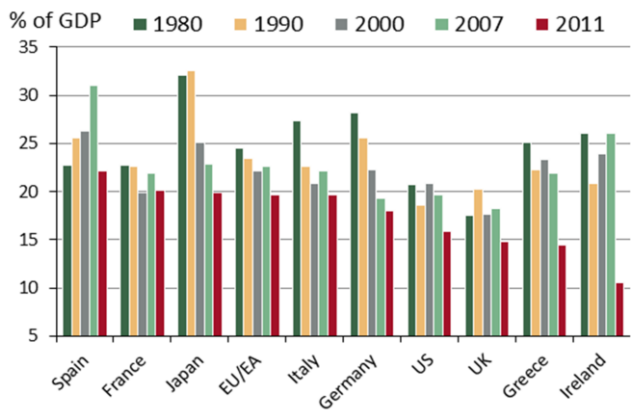
The factors that determine companies' desire to borrow to finance investment are controlled neither by banks nor policymakers. Animal spirits are weak across the Western world**:** and there

Figure 1: The recovery in GDP levels, four years on from their peak



Source: Eurostat
Notes: 2008q1=100

Figure 2: Investment's share of GDP, 1980-2011



Source: IMF WEO April 2012
Notes: Chart shows the EU in 1980 and 1990 and the euro area thereafter

is no policy lever that can directly address this.[1] Until investors come to believe, as they look into the future, that the Western economies are a place in which to invest, the demand for credit is likely to remain subdued. This is likely to take time: on average after a financial crisis it takes seven quarters for GDP to return to its pre-crisis level.[2] But sometimes, as in the present episode, when so many countries are afflicted simultaneously, and world demand and trade are sluggish, it can take many years.

Particularly challenging is the simultaneity of the deleveraging pressures on banks and sovereigns. Sovereign indebtedness has risen to peacetime highs across the advanced economies and consequential fiscal consolidation depresses demand. This can be amplified by simultaneous deleveraging in the banking sector. Moreover, fiscal contraction can increase the pace of bank deleveraging by contributing to a shortage of collateral. The cumulative effect of policy can therefore add to market pressure to deleverage.

…and funding future growth is a challenge

At some point, however, the demand for borrowing will recover: and it is vital that, when it happens, the mechanisms are in place to ensure that the desired investment can indeed take place. The non-financial corporate sector in Europe depends on banks for finance. Restructuring of the banking sector could take many years, and potentially lead to a large corporate funding gap. It is not clear how this would be filled.

II. The evolution of the modern complex financial system

The financial system has changed rapidly

Over the past decade there have been a number of developments which have changed the financial system fundamentally. The range of services provided has expanded, and the way in which they are provided has changed, particularly as a result of the fusion of banking and capital markets. The way that credit is intermediated today is very different: collateral is of vital importance to the system; large complex financial institutions dominate; the shadow banking system has grown; and the asset management complex[3] can be an important driver (Figure 3).

The financial system has, over a relatively short period, become far more complex and interconnected – and less well understood. In the euro area in particular, financial integration has contributed to the changing nature of the system.

Key global developments

Banking and markets are inter-twined

Banking and capital markets have become inter-twined. The growth of private markets, over-the-counter (OTC) derivatives, securitisation, and banks as intermediaries in capital markets has led to a fusion of banking and capital markets.[4] Even the most limited forms of commercial banking involve hedging of risk in interest-rate and foreign-exchange markets. Wholesale loans to medium and large companies lie at the intersection of retail and wholesale/investment banking. More generally, interconnectedness has increased throughout the financial system. Firms are linked by markets and infrastructure through a network of contracts covering derivatives, repos and securities lending, clearing and prime brokerage services, and more.

Capital markets are now more important in the system's ability to provide its basic functions. Core services include the provision and intermediation of credit and equity; risk transfer/management, or insurance; and the transfer and settlement of payments.

A larger proportion of credit intermediation (maturity transformation, credit transformation, and liquidity transformation) is now facilitated, directly or indirectly, by markets. They are also important for risk management, enabling the trading, hedging, diversifying, and pooling of different types of risk (e.g. credit risk, foreign-exchange risk, market risk). The vast majority of global companies, across sectors, use derivatives markets (particularly interest rates and FX markets).[5] So-called shadow banking activities contribute importantly to the basic functioning of the system, but this diverse sector is increasingly complex, and generally not well defined.

Collateral is central to the system

Collateral is central to the functioning of the modern system.[6] Money creation and collateral are inseparable: just as short-term credit is regularly extended by private agents against collateral, so does the re-use of pledged collateral create credit in a way that is analogous to the more traditional money creation process based on central bank reserves.

"Velocity of collateral" has become analogous to the more traditional "velocity of money". The velocity of collateral is a function of re-hypothecation, reflecting the number of times a unit of collateral is used. The number of times collateral is re-pledged is comparable to the money multiplier and 'haircuts' on collateral are equivalent to the reserve ratio, preventing the re-

pledging of collateral from going on forever. Good quality collateral is like high-powered money. The most valuable collateral is that which can be re-used time and again, potentially leading to longer and more complex collateral chains. The corollary is that a sudden lack of good quality collateral in the system can lead to large funding stresses.

Universal banks dominate activity

"Large, complex financial institutions" (universal banks) have come to dominate the global financial system. They are large users of wholesale funding and in many cases, the assets of such banks are larger than host-country GDP. Through all manner of activities and modes of operating such institutions have significant interconnectedness with the rest of the financial system.

Universal banks are responsible for the bulk of collateral intermediation: according to the IMF's Manmohan Singh there are 10-14 large banks active in collateral management globally.[7] Dealer-banks intermediate collateral to provide funding, settle trades, hedge counterparty risks on OTC derivatives, and enhance returns for clients. The central collateral desk is an important node in these institutions' structure, linking everything from demand for funding and collateral to investment strategies and trading flows. The corollary is that dysfunctions in repo/secured funding markets can have far-reaching effects.

At the end of 2007, the largest banks globally received about $10tr of pledged collateral. Primary source capital was about $3.4tr ($1.7tr each from hedge funds and securities lenders), implying a re-use of collateral rate of around three (Figure 4).

The shadow sector is important…

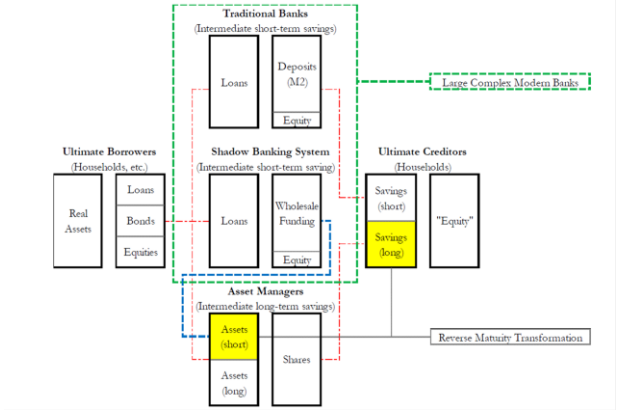
The shadow banking sector has become increasingly important.[8] Shadow banks, like traditional banks, intermediate credit in the economy (directly and indirectly). However, they are funded mainly through secured funding markets (particularly repo); they have no (institutionalised) access to central-bank backstops; and are largely unregulated.[9] They are an important source of credit and liquidity for the corporate sector (financial and non-financial). Shadow activities, directly and indirectly, impact the liquidity and stability of financial markets and funding to the real economy. Activities that act as important sources of funding include securitisation, securities lending, and repos.

A large part of financial innovation also occurs in the shadow sector. Separating 'good' from 'bad' is not easy: but it is necessary, because the term has become pejorative. Some activity has little purpose other than regulatory arbitrage, including various off-balance sheet accounting practices that can be traced back to the originate-to-distribute[10] banking model. Much however is driven by gains from specialisation and comparative advantage over traditional banks. Pozsar et al. (2010) defines this type of shadow activity as belonging to the 'parallel banking' system. Credit intermediation outside the formal sector can help to increase efficiency, and make the system more resilient. The sector can diversify risk away from the formal sector, and provide the economy with an alternative source of funding. This is particularly important if or when traditional channels become impaired. The shadow sector can also increase access to finance for those not served, or not served well, by the formal sector.[11]

…and can be a major source of risk

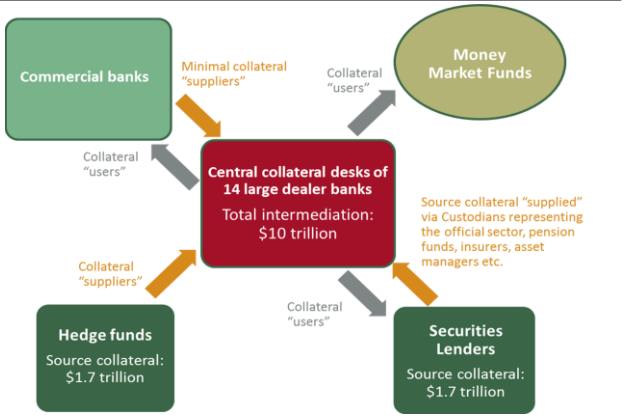
Shadow activity can however be a major source of systemic risk. Leverage can build-up unseen and, as in the formal sector, deposit-like funding structures can be subject to 'runs'. In times of

Figure 3: A simplified depiction of modern credit intermediation



Source: Pozsar and Singh (2011)

Figure 4: Collateral, suppliers and users, 2007



Source: Llewellyn Consulting based on Singh (2011)

stress, liquidity can dry up instantly.

In turn, shadow bank failures have important contagion and spillover effects into the formal sector. This can be due to direct borrowing from the formal sector, credit enhancements and liquidity lines provided by the formal sector to the shadow sector, and the potential fire sale of assets. Given the size and scope of the global shadow banking sector, its activities have important implications for global liquidity and financial stability. Complex lending chains, linking the shadow sector, the formal sector, money market funds, and hedge funds are an important feature of modern systems. The lack of transparency and understanding of the sector is a major issue that is only now starting to be addressed globally.

Asset managers can drive banking trends

The asset management complex can be an important driver of the banking system.[12] Asset managers provide significant short-term funding to the banking sector by transforming long-term savings into short-term assets – now commonly referred to as "reverse maturity transformation"[13] – a process driven by asset manager's demand for safe, short-term, liquid instruments, or non-deposit money-claims.[14] Hedge funds, pension funds, insurance companies and the like are an important source of collateral and funding. Such institutions serve as source collateral ('mines') for the shadow banking system, with the formal sector receiving funding through the re-use of pledged collateral. The routine lending of securities is thus a major driver of collateral-based systems; asset managers are increasingly important sources of funding for banks via the shadow banking system; and the asset management complex has increasingly displaced households as key creditors to banks.

Procyclicality and the money markets

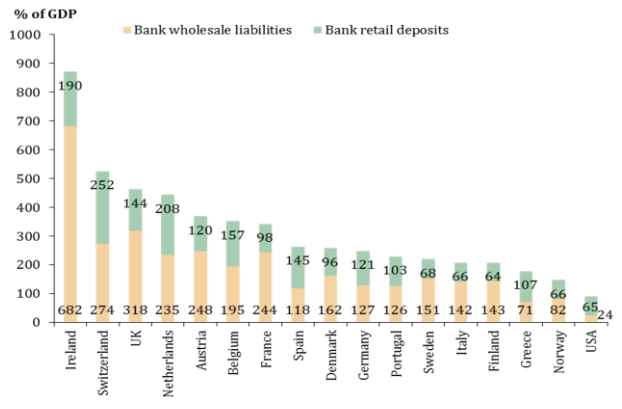
Money markets have grown in importance

The importance of the money markets derives from their contribution to market efficiency and discipline; to financing conditions in the economy; as an initial link in the monetary transmission mechanism; and their effects on overall financial stability.[15]

Money markets, both secured and unsecured, have become crucial funding markets for financial institutions. Wholesale funding markets, rather than traditional deposits, are now a more important source of bank funding. Bank wholesale liabilities are several multiples of GDP, particularly in countries with international financial sectors. In 2010, wholesale liabilities were particularly large in: Ireland (682% of GDP); the UK (318%); Switzerland (274%); Austria (248%): France (244%); and the Netherlands (235%). And wholesale liabilities are much larger than retail deposits in a number of cases; Ireland (3.6x); France (2.5x); UK, Finland, and Sweden (2.2x); Italy and Austria (2.1x) (Figure 5).[16]

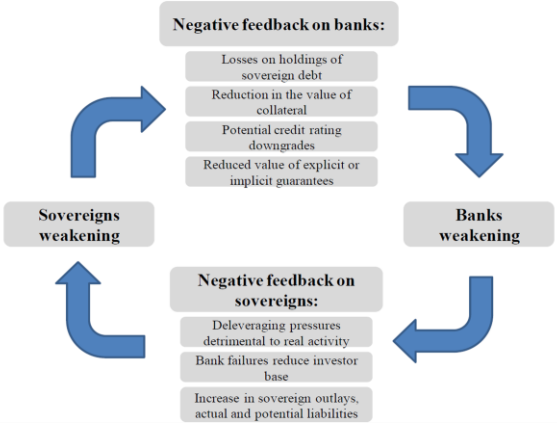
A large part of the intermediation in money markets takes place at the interbank level. The repo market is central to the functioning of collateral-based systems; and government bonds are an important source of collateral for repos. Developments in these markets have implications for the stability of the system and financing conditions for households and corporations. They are an essential source of bank funding, and thereby influence the size of balance sheets, and the amount of credit extended. If liquidity dries up in money markets, it can oblige banks to deleverage; how they choose to deleverage can have important implications for economic

Figure 5: Wholesale liabilities and retail deposits, 2010



Source: Nomura

Figure 6: Negative feedback loop between banks and sovereigns



Source: OECD, Schich and Lindh (2012)

growth.

Modern systems are inherently procyclical…

The procyclicality inherent in financial systems leads to asset bubbles. Credit extended to the private sector has grown since 1980, and sharply so in a number of economies, particularly after 2002. Countries in which credit grew particularly sharply experienced asset-price/real estate booms – first Japan, then several Western advanced economies including the US, the UK, Ireland, and Spain. In Canada, Germany, France, and Italy credit grew less rapidly than in other G7 economies. The increase for the euro area as whole was less pronounced than in the US, particularly after 2002. [17]

Money markets are a key transmitter of procyclicality and leverage cycles. In times of optimism, high asset valuations, small haircuts, and abundant liquidity can spur more leverage and credit expansion. However when confidence weakens, for example following a shock, asset prices fall sharply, haircuts increase, and liquidity can quickly dry up. This can oblige the banks to deleverage, affecting the supply of credit to the economy: or it can force banks to shed assets, potentially imposing externalities on others through contagion and firesales.

In credit systems with conventional deposit-taking banks, and where collateralised money and credit are more important, there is a clear tendency towards procyclicality. The velocity of money and collateral, and the cost and availability of credit, are both procyclical. High levels of activity increase the liquidity of all forms of collateral, foster over-optimistic expectations, and create asset price bubbles. When the bubble bursts, however, money-like collateral shrinks, and the velocity of collateral falls. Less debt is available, its value falls, haircuts increase, and loan-to-value ratios fall. In modern financial systems, this is tantamount to a monetary shock.[18]

…with implications for sovereigns and taxpayers

Banking and sovereign risks are increasingly inseparable (Figure 6). Sovereign risk feeds back to bank balance sheets, and vice versa. Financial sector deleveraging can constrain real activity, and financial crises damage sovereign balance sheets. Government debt typically increases, often substantially, following financial crises. Reinhart and Rogoff's study of major crises, *This time is different,* calculates that three years after a crisis, debt has increased by 86% (on average) in real terms.[19] Concerns about sovereigns also feed back on banks: given their significant sovereign debt exposures, sovereign credit risks multiply concerns about their liquidity and solvency. Collateral issues are of particular importance. In Europe, the feedback-loop is complicated by institutional arrangements: development has not kept pace with financial integration.

III. The European financial system in international context

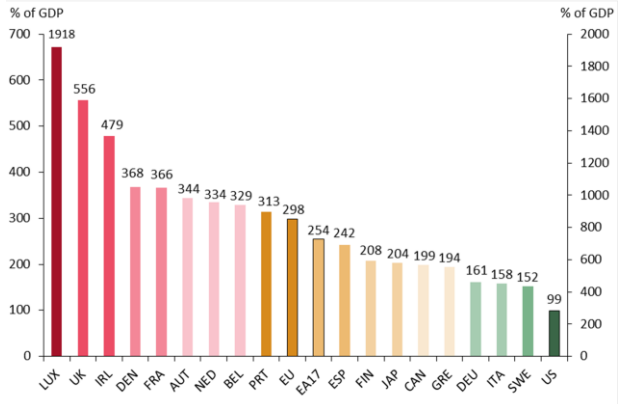
Financial systems have not only become more complex and interconnected, they have also become large in relation to GDP. Their evolution has differed by country/region: between the US and Europe, and within Europe, there are considerable differences, notably in the importance of the banking sector (formal and shadow), bond markets (private and public), and equity markets.

Formal banking sector

Europe has a large formal banking sector …

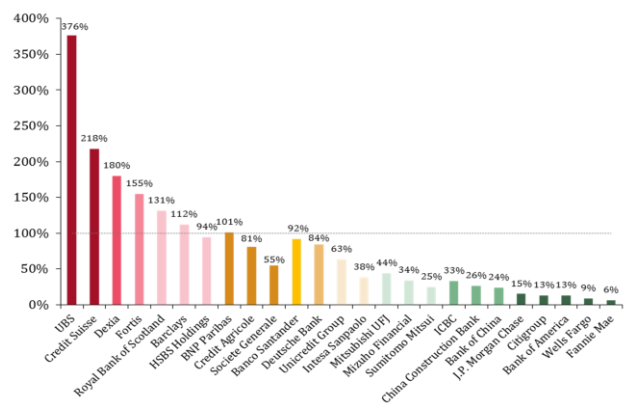
Europe's (formal) banking sector is large relative to GDP (Figure 7). For the euro area as a whole, bank assets total around 250% of GDP; for the EU the number is closer to 300%. In Japan, the

Figure 7: European banking sectors, % of GDP



Source: IMF GFSR April 2012

Figure 8: 25 global banks' balance sheets, % of host-country GDP, 2010



Source: JP Morgan from Zero Hedge (2010)

total is somewhat lower, at around 200%. In the US the formal banking sector is substantially smaller, at just under 100% of GDP. The assets of the formal banking sector constitute around half of total assets in the financial system.

Banking sectors are particularly large in countries with international financial centres. In the UK, bank assets are more than five and half times GDP. In Ireland, bank assets are approaching five times GDP. In Denmark, France, Austria, the Netherlands, Belgium, and Portugal the figure is between three to four times GDP. In other European countries, formal banking sectors are smaller, notably in Germany (around 160% of GDP), Italy (160%), and Sweden (150%).

…and some very large banks

Europe is home to some of the world's largest banks. A significant number of the larger banks have assets greater than host-country GDP. In Switzerland, the assets of UBS and Credit Suisse alone were nearly 6x the country's GDP in 2010. In the UK, three banks – RBS, Barclays, and HSBC – totalled 3.4x GDP; and in France BNP Paribas, Crédit Agricole, and Société Générale totalled 2.4x GDP (Figure 8).

Loans and other advances make up a relatively small part of the overall balance sheet of banks in many European countries. Interbank liabilities, sovereign bonds, and derivatives contribute importantly.

US bank balance sheets are smaller…

In the US, by contrast, the balance sheets of larger banks appear relatively smaller. The assets of JP Morgan, Citigroup, Bank of America, Wells Fargo and Fannie Mae collectively totalled less than 0.6x US GDP in 2010. In Asia too, the largest banks are comparatively smaller: Japan and China had no banks with assets over 0.5x host-country GDP in 2010.

The size of the US shadow banking sector, as well as its relatively large corporate bond and stock markets, help to account for US banks' balance sheets being (proportionately) smaller than they are in Europe.

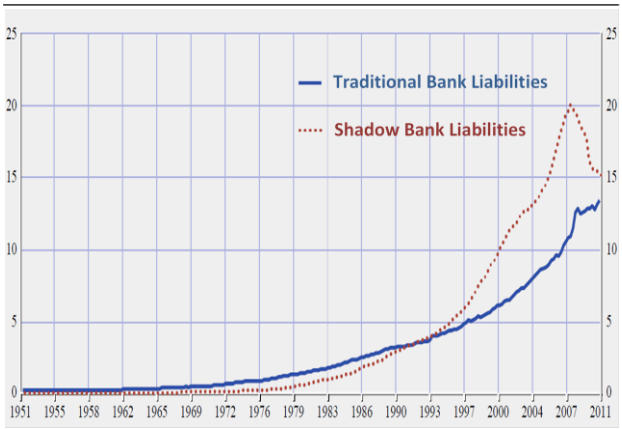
Shadow banking sector

…but the US shadow sector is large…

The US has a relatively large shadow banking sector – substantially larger than the formal sector pre-crisis, and still much larger than the formal sector in recent years. Prior to the collapse of Lehman Brothers, the US shadow sector measured $20-$25tr.[20] By 2010 it had become significantly smaller but, at between $15tr and $20tr, was nevertheless much larger than the formal sector ($13tr), larger than US GDP[21] ($14.5tr). In the euro area, the shadow banking sector was estimated at around €11tr in 2011, less than half the size of the area's formal sector (€28tr), and similar to its GDP. The euro area's formal banking sector accounts for around half of the area's total financial assets. The shadow sector accounts for around 20% (Figures 9, 10, 11).

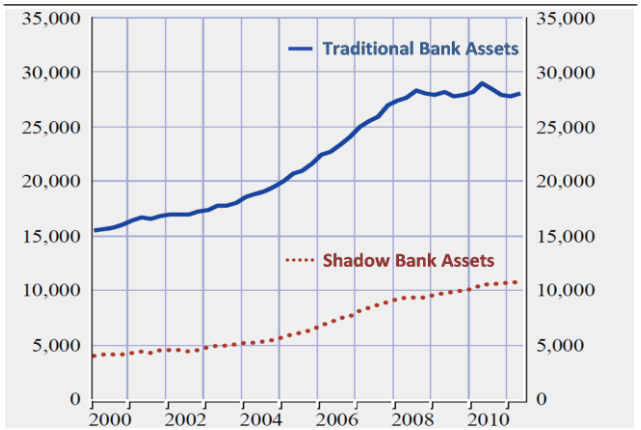
Of the total shadow banking activity across 11 major jurisdictions[22] (around $50tr in 2010), the US accounts for almost half; the UK is next highest with 13%; Japan and the Netherlands are also significant, each with around 8%. In the euro area, the Netherlands, Luxembourg, Ireland, and France together hold three-quarters of total shadow banking assets. Relative to GDP, the shadow banking sector is particularly large in the Netherlands, Luxembourg, and Ireland.[23]

Figure 9: US: formal and shadow banking sector, $trillion



Source: ECB (2012)
Notes: uses the definition of the shadow sector in *Pozsar et al. (2010)*

Figure 10: Euro area: formal and shadow banking sector, €billion



Source: ECB & Eurostat (2012)

…due to off-balance sheet accounting…

Part of the explanation for the US's relatively larger shadow sector lies in the growth of US banks' off-balance-sheet liabilities; in Europe, for example, more derivatives are held on balance sheet.[24] Constrained from expanding their balance sheets by a regulatory leverage limit, US banks sought higher returns on their equity by increasing the riskiness of their asset pool – hence their moves into subprime and leveraged lending, and various securitised products, much of which was held off-balance sheet in special purpose vehicles.[25]

…Fannie Mae and Freddie Mac…

The US shadow banking sector was heavily involved (directly and indirectly) in lending to the private sector pre-crisis. An important difference between the US and Europe is that, due in large part to Fannie Mae and Freddie Mac, only around one quarter of US mortgage debt is on the balance sheet of banks in the formal sector: this compares with 85%-odd in Europe.[26]

…and securitisation

Securitisation activity in Europe never reached US levels, although activity grew significantly pre-crisis, spurred by increasing house prices and mortgage activity in various countries. Securitisation issuance in the euro area was lower than in the US pre-crisis: €462billion compared with $1.7tr, or around 5% and 12% of GDP respectively.[27]

Asset-backed commercial paper and asset-backed securities (ABSs) are the predominant forms of securitisation in Europe; over half of all securitised products are residential mortgage backed securities. The majority of assets underlying ABSs are loans (65%), followed by deposits (16%), and securities other than shares (11%). Most are financed by issuing debt securities. Securitised loans are originated mainly by banks; 72% represent borrowing by the household sector, while just 24% are to the corporate sector. Consumer loans account for just 10% of outstanding securitised loans in the euro area; home mortgages account for the vast majority.[28] This supports the argument that securitisation spurred credit growth, especially for mortgage loans, pre-crisis.

Euro repo markets are smaller…

Recent estimates of the size of the US repo market put it at around $12tr in 2010 (over 80% of GDP). Official data on the size of the euro repo market are not yet available. The December 2011 ICMA survey put the gross value of repos outstanding of 59 financial groups in the EU at €6.2tr, equivalent to around two-thirds of euro area GDP. [29] Government bonds account for around 80% of EU-originated collateral in repo transactions.[30]

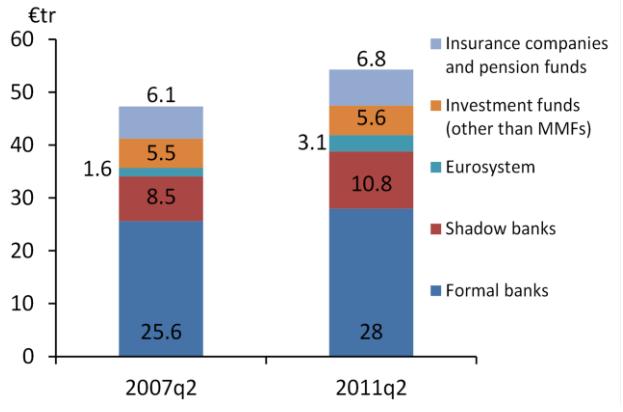
An increasing share of repos is cleared via central counterparties (CCPs) in Europe; the share was 32% according to the December 2011 ICMA survey. CCPs share of the euro repo market is larger, at around 50%. The rest is accounted for by bilateral trading, clearing, and settlement modalities (40%) and triparty repo (10%).[31]

…as are Europe's money market funds

Money Market Funds (MMFs) in Europe are much smaller than in the US. MMFs started and developed in the US largely as an alternative to bank deposits, in order to circumvent regulatory caps that kept bank interest rates artificially low. By end-2008, assets under management by US MMFs totalled $3.8tr (around one quarter of GDP), about 65% of which was accounted for by institutional investors, the remainder by retail funds.[32]

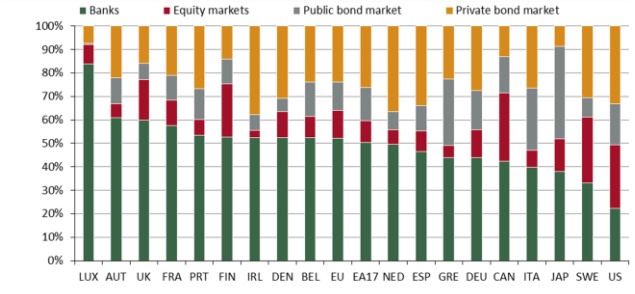
US MMF assets have declined significantly from peaks in 2008, but nevertheless remain far larger than in Europe. In the second quarter of 2011, the balance sheets of euro area MMFs totalled

Figure 11: Composition of total financial assets in the euro area



Source: ECB (2012)

Figure 12: The diversity of the financial system, 2010



% of GDP	LUX	AUT	UK	FRA	PRT	FIN	IRL	DEN	BEL	EU	EA17	NED	ESP	GRE	DEU	CAN	ITA	JAP	SWE	US
Private bonds	170	124	148	133	156	55	344	216	149	137	132	245	177	99	101	62	105	46	140	146
Public bonds	10	63	63	67	78	42	61	39	93	69	72	52	57	125	62	72	106	212	37	77
Equities	189	33	160	69	38	89	29	78	57	67	47	42	45	22	44	138	29	75	129	119
Banks	1918	344	556	366	313	208	479	368	329	298	254	334	242	194	161	199	158	204	152	99
Total	2287	564	927	634	586	395	914	702	628	571	505	673	521	440	368	471	399	536	458	441

Source: IMF GFSR April 2012
Notes: Data are private and public debt securities outstanding, stock market capitalisation, and formal banking sector assets.

around €1.1tr (around 12% of euro area GDP). However activity differs across countries and, given the closeness of the ties to the banking sector, provides a strong link between shadow and regulated sectors. MMFs represent around a quarter of the total balance sheet of Luxembourg and Ireland's monetary financial institutions. In the US, money market funds have particularly strong links to other shadow institutions, for example securitisation vehicles, often funding them through short-term debt.[33]

Equity and bond markets

Equity markets are relatively small in Europe…

European equity markets are relatively small compared with the US and Canada. In 2010, stock market capitalisation was $17.3tr in the US; around four times larger than Japanese equity markets ($4.1tr); three times larger than euro area equity markets ($5.7tr); and significantly larger than EU equity markets ($10.1tr).[34]

Euro area market capitalisation was around 50% of euro area GDP, lower than in Japan (70%) and significantly lower than the US (120% of GDP). Luxembourg, the UK and Sweden have relatively large stock markets, equivalent in size to around 190%, 160%, and 130% of GDP respectively. Stock markets in most other European countries are significantly smaller. In Germany and Italy, stock market capitalisation is below 50% of GDP (Figure 12).[35]

…bond markets too are smaller than in the US

European bond markets are smaller than in the US. In 2010, outstanding public and private debt securities totalled $32.4tr in the US; larger than in the EU ($31.1tr), and significantly larger than in the euro area ($24.7tr) and Japan ($14.1tr). Euro area bond markets were equivalent to just over 200% of GDP (132% private debt; 72% public debt), lower than in the US (around 220%) and Japan (260%). In the latter, public bond markets are particularly large, accounting for around 80% of the total private and public debt securities outstanding. Private debt markets are relatively large in Ireland (344% of GDP), the Netherlands (245%), and Denmark (216%) (Figure 12).[36]

In Europe, interbank liabilities have come to constitute a large proportion of outstanding private debt securities. Corporate bond markets are much larger in the US. At €2.2tr, the eurobond corporate securities market is currently only about half the size of the US market of €4.5tr.[37]

IV. The constraints faced by Europe's banking sector

European banks have high leverage…

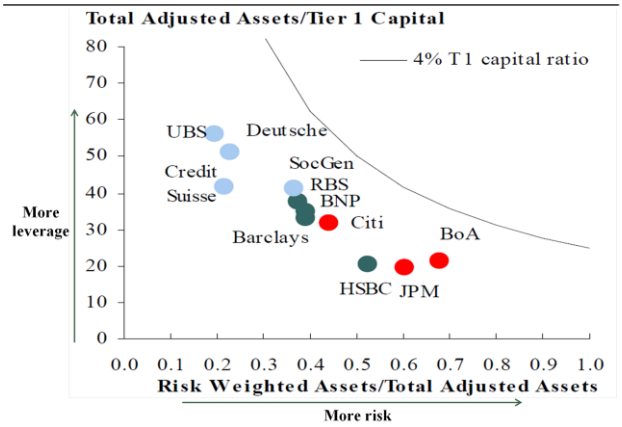
European banks are relatively highly leveraged. This is particularly true of large euro area banks, which are more leveraged than banks in the UK, the US, and Japan: and they were even more leveraged pre-crisis. Whereas large European banks pursued a high leverage strategy, their US counterparts, by contrast, pursued a more high-risk strategy (Figure 13).

Since the beginning of 2009, when leverage ratios were more closely aligned, large banks in the US and UK have reduced their leverage more than have their euro area counterparts, leading to a divergence in leverage ratios (Figure 14).

…high loan-to-deposit ratios…

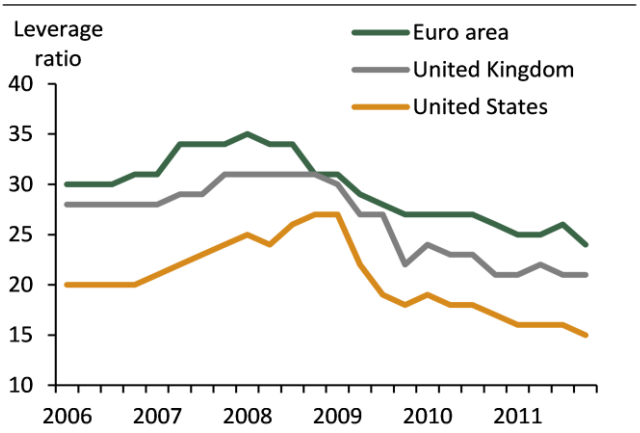
European banks, particularly the larger ones, have relatively high loan-to-deposit ratios: and hence the greater reliance on wholesale funding. This leaves them more exposed to cyclical and structural deleveraging pressures than their counterparts in the US, the UK, Japan, and the

Figure 13: Leverage/risk in large US and European banks pre-crisis



Source: Haldane, A. and Alessandri, P. (2009)
Notes: Adjustments aim to ensure a common accounting treatment of exposures between US and European banks

Figure 14: Leverage of domestic banks



Source: IMF GFSR April 2012

emerging markets. In the US, the extent of intermediation outside of the formal banking sector results in the value of loans on US bank balance sheets being significantly lower than they would be otherwise.

In Europe, the loan-to-deposit ratio has not fallen post-crisis as it has elsewhere. European banks' ratio of (typically illiquid) loans to (stable) retail deposits increased to 130% in 2008, and remained about the same in 2011. This is in contrast to banking systems in the US and Japan which, in 2011, reported a loan-to-deposit ratio of around 75%, having fallen post-crisis. In Japan, the ratio has fallen from 120% to around 70% over the past 20 years; loan books are smaller now than they were in the early 1990s (Figure 15).

…and low stable funding ratios

European banks have stable funding ratios – the proportion of retail and long-term funding in total funding – lower than their counterparts in the US, Japan, and the emerging markets. This suggests that maturity transformation on the balance sheets of European banks is relatively substantial. European banks' stable funding ratio was similar to that of US banks until 2007: thereafter the two diverged (Figure 16). As liquidity risks materialised in 2011, the loss of access to funding markets by euro area banks, particularly those in countries with powerful negative sovereign-bank feedback loops, prompted, inter alia, the ECB's Long-term Refinancing Operations (LTROs).

At the end of 2011, the ECB provided €489bn at an interest rate of 1% to 523 banks in its first three-year LTRO. The second round followed in February 2012, totalling €529bn, and spread across 800 banks. The LTROs significantly eased the short-term pressures in bank funding markets, helping most banks to meet their wholesale funding requirements in 2012, however the sovereign-bank negative feedback loop remains strong.

Europe has been slow to address its banking issue

An unbroken 'negative feedback-loop' between sovereigns and banks will constrain banks. The crisis and the policy response have tied banks (including central banks) and sovereigns even closer together. Moreover, new regulations and more central bank intervention in bond markets could see this develop yet further. Credit rating agencies are also adding to pressures on banks and sovereigns. Europe has been relatively slow to deal with its banking problems[38] and European banks remain reliant on the ECB.

Bank funding

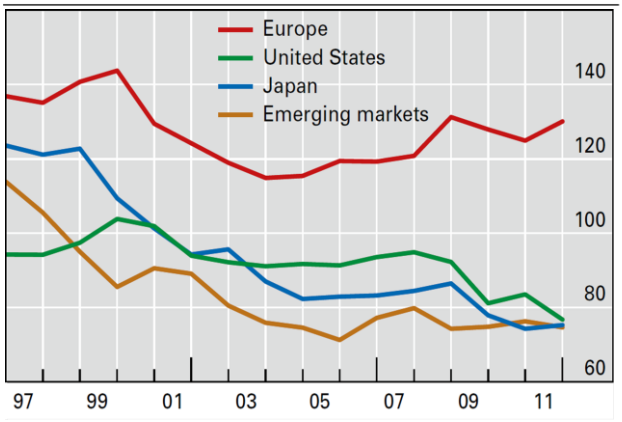
In the euro area, almost five years since the first ECB intervention, central bank funding to the banking sector remains high. How the ECB will exit from its interventions is unclear. If, as seems likely, it will be a number of years – at least – before bank funding is restored to health, a central issue in the coming decade concerns the proper role of central banks in the money markets.

Bank funding faces severe constraints

European bank funding faces severe constraints now and in the future. In the euro area, the key trends have been a shift from unsecured to secured funding, as well as money market fragmentation along national lines, exacerbated by sovereign debt worries across the region.[39] The key developments in the US have been tensions in secured funding markets, particularly repo.

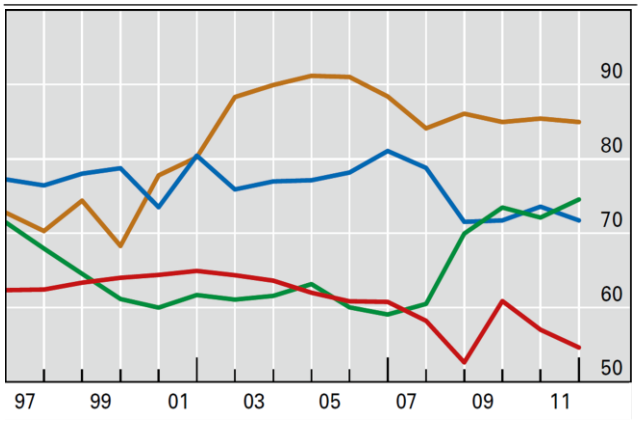
In the US the 'run on repo' was key in the collapse of the shadow banking sector in 2007/08,

Figure 15: Loan-to-deposit ratios, 1997-2011



Source: BIS (2012), Annual Report

Figure 16: Stable funding ratios, 1997-2011



Source: BIS (2012), Annual Report

prompting the FED to take on risk exposures that Professor Perry Mehrling describes as:

> *"… a kind of overnight index swap, a kind of interest rate swap, and a kind of credit default swap. In all three dimensions the FED is operating to support market liquidity …. and can be seen as adapting to its new role as liquidity backstop for the emerging new market-based system*".[40]

Emergency liquidity programmes were also made available to the formal banking sector, but have now been unwound. Such actions raise important issues, for example, which institutions/activities should receive access to central bank backstops, and how this should be regulated**.**

In Europe, unsecured and secured market financing have both been constrained since 2008. Liquidity stopped moving from cash-rich banks to cash-poor banks, and central bank liquidity has replaced interbank lending. The share of interbank liabilities in total assets has trended down since 2008. Recourse to central bank funding by banks averages around 5% of total deposit liabilities, higher than after the collapse of Lehman Brothers.

There has been a wide dispersion in banks' access to funding, with banks in countries where sovereigns are under pressure facing major constraints to accessing even secured funding markets. The euro repo market has also been under stress, experiencing declining volumes, a shrinking pool of eligible collateral, and the exclusion of counterparties due to increased haircuts and margin requirements. More recently, volumes have increased, reflecting primarily the shift from unsecured to secured funding.

Demand for good quality collateral is rising…

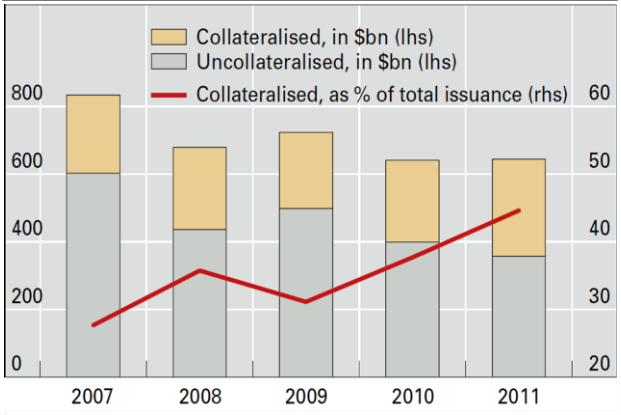
Demand for good quality collateral is rising in order to access funding markets, encumbering bank assets in the process (Figure 17). Demand has increased due to stresses in *unsecured* funding markets, obliging banks to pledge more assets as collateral in order to access *secured* funding markets. These assets are not available to the holders of unsecured debt in the event of failure, making collateralised debt even more attractive to investors, and continuing the cycle. When private funding withdraws from markets, banks also use collateral to obtain official support, further encumbering their assets. It has been estimated that 20% of European bank assets were encumbered in 2011.[41]

Asset encumbrance reduces the ability of the system to absorb shocks, because more pledged assets make banks more vulnerable to margin calls if collateral depreciates. Covered bond issuance in particular can encumber a sizeable proportion of bank assets by making them unavailable to senior unsecured creditors and depositors in the event of insolvency. This is of concern to unsecured creditors as well as to regulators. Higher covered bond issuance seems to lead to wider unsecured bank spreads, and the differential may have permanently widened relative to pre-crisis levels.

… yet global supply is shrinking

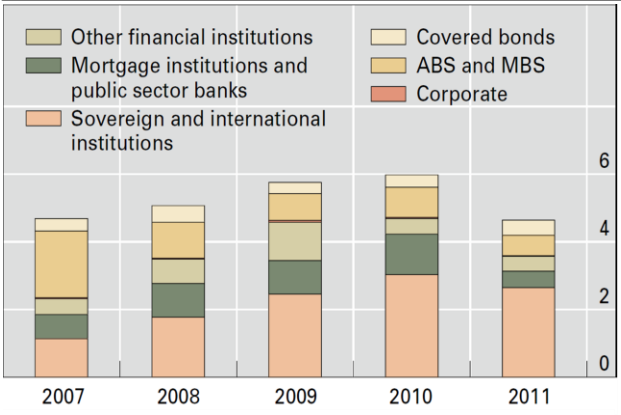
There is a shortage of good quality collateral, both in Europe and globally. The supply of high-quality primary collateral has fallen, due to a major reduction of 'safe assets' in the global financial system. AAA-rated ABS and MBS in particular have dissipated. Initially, AAA-rated

Figure 17: Collateralised bond issuance by euro banks is increasing



Source: BIS (2012)

Figure 18: The supply of AAA-rated securities is falling globally



Source: BIS (2012)

sovereign issuance increased to offset this. But now fiscal policy is tightening, and significantly so, across the major economies; and sovereigns are losing their risk-free status. As a result, the issuance of AAA-rated securities has fallen (Figure 18).

Sovereigns' loss of risk-free status undermines financial stability. Risk-averse private agents and financial intermediaries are deprived of valuable collateral; and governments are less able to provide a reliable backstop for the financial system. The global pool of 'safe' government bonds has shrunk just at the time when demand has risen due to a flight to safety.

Increasing the amount of good quality collateral in the system would do much to alleviate some of the pressures on bank funding. This creates an argument against tightening fiscal policy too quickly: fiscal consolidation can be thought of in this context as also a tightening of monetary policy. The blurring of the lines between fiscal and monetary policy makes managing deleveraging more complicated. Central banks are constrained by the different interests of households and firms, governments, and the financial sector, not least in Europe (Figure 19).

The velocity of collateral has fallen since 2007. Market tensions and question marks over the health of bank balance sheets have reduced the onward-pledging of collateral. With fewer trusted counterparties in the market, this can lead to stranded pools of liquidity, incomplete markets, shorter collateral chains, idle collateral, missed trades, and deleveraging.

The ratio of pledged collateral to underlying assets decreased from 3 in end-2007 to 2.4 by end-2010. The figure did not rebound in 2011: indeed anecdotal evidence suggests that recently collateral constraints have increased further (Figure 20). Global collateral flows are estimated to have fallen since the end of 2007, by around $4tr, due mainly to shorter collateral chains and idle collateral. This will have important consequences for the cost and availability of credit.

Regulation and unintended consequences

New regulations are impinging on banks…

In 2009, the head of Japan's Financial Services Agency observed that:

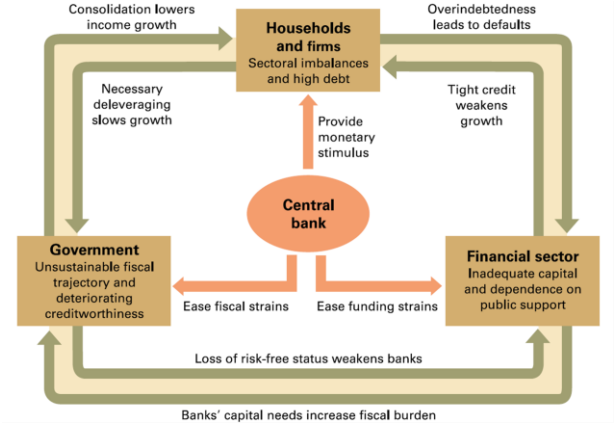
> "[a] *relevant suggestion from Japan's experience* [of the 1990s] *is the need to implement short-term measures and medium-term re-design of the regulatory framework in a simultaneous and balanced manner.* [...] *On the one hand, if the policies lean too much toward crisis management, it could cause moral hazard or distort the system in the longer run. On the other hand, hasty implementation of medium-term measures could rather exacerbate the situation and make crisis management even more difficult."*[42]

The complexity and interconnectedness of the financial systems makes the task of designing and implementing appropriate policy extremely difficult. Important trade-offs, both political and economic, have to be managed, not least between near-term and the long-term**.** Major regulatory reform is necessary, and the window within which to achieve this is finite. However it is important to consider the likely cumulative effect of new regulations. Finding an appropriate balance between economic growth and financial stability is arguably the biggest challenge.

…globally…

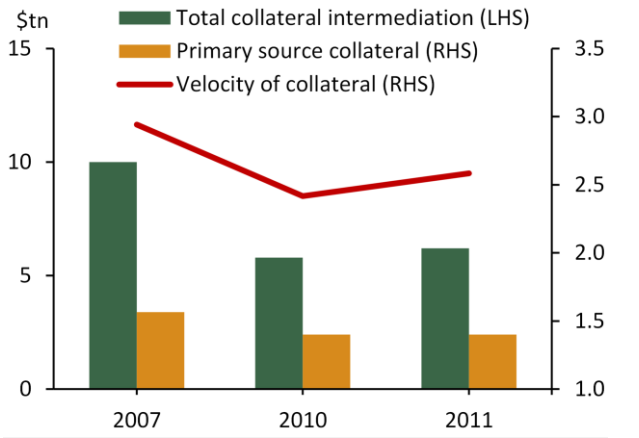
New Basel III regulations are putting banks under considerable pressure to improve their capital

Figure 19: Constraints facing central banks



Source: BIS (2012)

Figure 20: The velocity of collateral



Source: Singh (2011)

positions. New rules include a leverage limit, a capital surcharge for systemically important institutions, and a countercyclical capital buffer. Banks are also under pressure to improve their liquidity positions. Two rule changes stand to be particularly important: the liquidity coverage ratio; and the net stable funding ratio. The cumulative effect could be to constrain bank activity significantly in the near-term.

…regionally…

New European regulations are impinging on the entire financial sector. Many important Directives and other initiatives are planned, proposed, being implemented, or have already been implemented. The Capital Requirements Directive IV intends to implement Basel III faster than in the US and UK. The European Banking Authorities' 9% Tier 1 capital target is now supposed to have been met, and appears more likely to become permanent. A number of other areas of engagement are likely to be significant too. These include: the Markets in Financial Instruments Directive II (MiFID II) and new Markets in Financial Instruments Regulation (MiFIR); Crisis Management and Resolution; the Liikanen review; the Green paper on shadow banking; Solvency II; and more.

…and nationally

Country-specific regulation can impact more widely than on the single country, particularly when that regulation emanates from countries with international financial centres. For example, the UK Independent Commission on Banking provisions, which appear to be a shift away from the universal banking model of the recent past, could well affect the rest of Europe, which does not appear to be heading in the same direction. The US Volcker/Dodd-Frank regulations could also have a significant impact on the rest of the world. For example, regulation of US money market funds (MMFs), which provide substantial US dollar funding to non-US banks, will undoubtedly impact on Europe.

Some consequences will be unintended…

The reform agenda will have unintended consequences that are likely to prove important. The restructuring of universal banks, large players across many markets, will almost certainly have wide-reaching effects on the entire system. The problem of the perimeter remains a key challenge. Reforms of the formal banking sector are likely to push more activity into the shadow sector: and while this has some benefits, it also carries inherent risks, not least because the sector is not well understood. Plans for the shadow banking sector in turn will impact the formal banking sector. Regulation of the non-bank sector, particularly pension funds, insurance companies, and hedge funds, will also have knock-on effects on the banking sector.

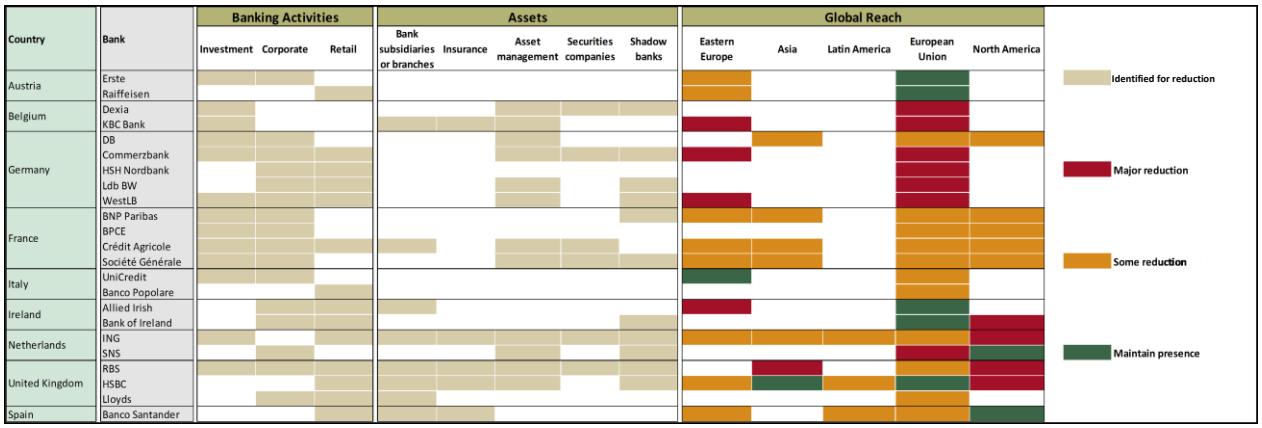
… and significant…

Constraints to the provision of funding could be significant. Large sovereign debt issuance, and regulatory rules requiring financial institutions to hold more government bonds, could crowd out bank funding. Insurance companies, pension funds, investment funds, and others may be less willing, or less able, to provide liquidity and capital to the banking sector.

…including increased funding costs…

The resolvability of financial institutions, particularly those that are systemically important and operate cross-border, stands to be important. The use of bail-in mechanisms as part of bank resolution could have potentially large implications for price and availability of bank funding. While estimates of the effect of implicit guarantees of bank funding are to be treated with caution, various studies suggest that the reduction in funding costs can be substantial.[43] Recent

Figure 21: European banks' restructuring plans announced



Source: IMF GFSR April 2012

estimates of the yearly reduction in funding costs in Europe were highest for Germany, France, the UK, Italy, and Sweden.[44]

Plans for a banking union in Europe also stand to impact bank funding, although the likely effects are as yet hard to evaluate. Common supervision that leads to a better allocation of capital across banks could be a positive. Ex ante funding of resolution and deposit insurance, as well as a minimum amount of bail-in liabilities, would however seem likely to work in the other direction.

…amplified procyclicality…

The regulatory response is adding to procyclicality**.** On the one-hand banks are being asked by policymakers to lend more, to support the economic recovery. On the other hand, they are being obliged by markets and regulators to improve their capital and liquidity positions, substantially and quickly, in an unfavourable environment.

This is perhaps the schism at the heart of the debate about economic growth and financial stability. It is important that, collectively, policymakers do all they can to avoid worsening the near-term economic outlook while they pursue a safer medium-term configuration for the financial sector. Tackling the procyclical nature of the system is in its early stages. Countercyclical rules that temper the system's ability to create large booms and busts are a long way from coming into in operation.

…and collateral shortages

The collateral shortage is likely to be amplified by new regulations. Greater standardisation and central clearing of trading towards central counterparties (CCPs) is likely to increase the demand for collateral substantially. The IMF's Manmohan Singh judges that the shift of a considerable number of OTC derivatives transactions to CCPs will elevate collateral demand by $200bn.[45] Morgan Stanley and Oliver Wyman have put the figure at $500-800bn,[46] while Finadium puts it higher still, at $1tr.[47]

Moreover, according to the IMF the requirements of the new Basel III Liquidity Coverage Ratio (LCR) alone could increase the demand for safe assets by some $2tr to $4tr globally; equivalent to 15%-30% of banks' present sovereign debt holdings.[48]

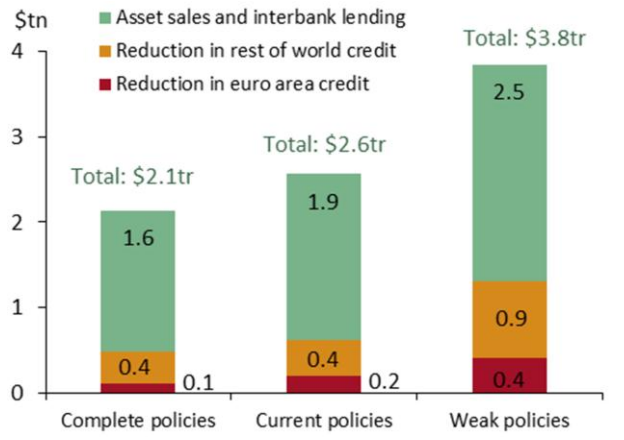
Bank restructuring

Banks are set for an extended period of restructuring

Cyclical and structural pressures from the markets and regulators are strong. Structural risks on bank debt are increasing due to factors such as asset encumbrance, depositor preference, and plans to bail-in bonds in resolution. The financial sector is set for an extended period of widespread and comprehensive restructuring. The banks stand to be constrained, including importantly in their ability and willingness to provide credit to the economy, for many years.

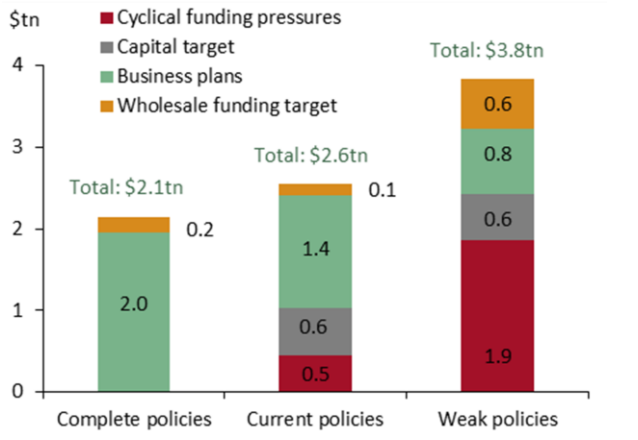
Business plans across Europe show large restructurings (Figure 21). Many of Europe's largest banks have announced plans to sell collectively around $2tr in assets over the coming two years. These banks have a large cross-border and cross-business reach. Areas that are likely to be the most affected include: trading within investment banking; corporate banking (including interbank lending; syndicate loans; factoring and leasing; commodities, project, and trade finance); retail banking (including commercial real estate); and nonbank and shadow bank assets (including the sale of non-bank financial companies). The structural drivers of evolving bank balance sheets are:

Figure 22: IMF estimates of European bank deleveraging are large



Source: IMF GFSR April 2012

Figure 23: European bank Deleveraging breakdown



Source: IMF GFSR April 2012

finishing the clean-up and shedding of legacy assets; better capitalisation; and reduced reliance on less stable sources of funding.

Bank deleveraging is likely to be large

Bank deleveraging is expected to be large: structural and cyclical forces together stand to determine the total. In addition to the structural factors, cyclical factors, including funding conditions for banks and sovereigns, and the wider state of the economy, could increase deleveraging significantly. IMF estimates of European bank deleveraging range from $2-4tr, depending on the extent of cyclical pressures (Figures 22 and 23).

Deleveraging is expected to take the form, in important part, of a reduction in lending, with banks more reluctant to lend on unsecured terms, at longer maturities. The risk is of a further pullback of bank credit and cross-border lending in particular.[49]

The IMF considers three deleveraging scenarios, which suggest reductions in euro area credit of between $100bn and $400bn. Credit supply shocks are expected to be largest in high-spread countries, notably Italy and Spain, where domestic bank balance sheets are dominated more by bank loans.

V. The challenge for markets, policymakers, and investors

Japan's experience may be suggestive

Japan's experience over the past 20 years may be indicative of the challenge ahead. The two principal lessons are that:

- The supply of loans could be a problem until the banking sector has been properly addressed; and
- Longer term, if firms' expectations have adjusted down to lower growth, the demand for loanable funds can become a problem, even when conditions ease in the banking sector

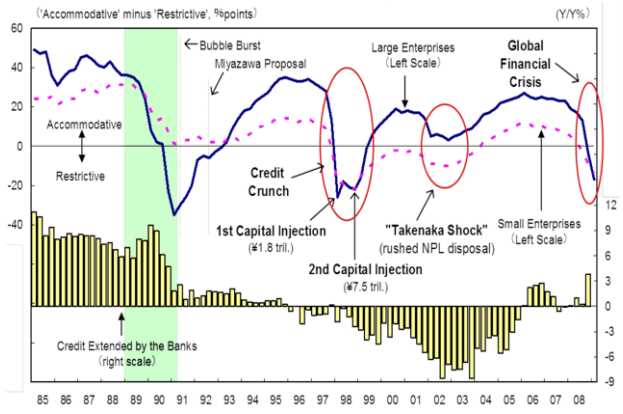
When Japan's crisis began in the early 1990s, credit growth was initially constrained by banks' reluctance to lend. However, credit growth following the Miyazawa proposal[50] in 1992 was weak, due largely to a reluctance to borrow on the part of both large and small companies. As fiscal policy contracted, Japan's economy fell back into recession in 1997. During the late 1990s credit crunch, credit began to fall, again constrained by the banks' reluctance to lend.

Following two large capital injections, financial conditions eased, but credit continued to fall. Smaller companies continued, for some time, to be constrained by the banks' willingness to lend. For large companies, however, it was evidently an unwillingness to borrow that was the limiting factor. Overall, it took around 10 years for credit to start growing again (Figure 24).

The risk is the self-perpetuation of slow growth

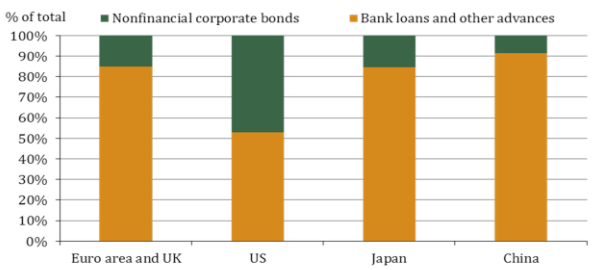
Today in the West, and in Europe in particular, the risk of slow growth becoming similarly self-perpetuating is real. Japan's dependence on banks, and its slowness in addressing its banking problem in the 1990s, is suggestive. Sweden's approach to resolving its financial crisis in the early 1990s, widely heralded as an example of how to deal with a banking crisis,[51] contrasts with that of Japan. A more aggressive clean-up of the banking sector in Europe – including credible recapitalisations, write-downs, and other restructuring of insolvent institutions – could help to

Figure 24: Japan's experience can be suggestive



Source: Richard Koo

Figure 25: Total nonfinancial corporate debt outstanding



% of 2011 GDP	Nonfinancial corporate bonds	Bank loans and other advances	Total financing	Bonds (% of total)	Banks (% of total)
Euro area and UK	11	62	73	15	85
US	36	40	76	47	53
Japan	20	107	127	16	84
China	12	127	138	8	92

Source: S&P (2012) and IMF WEO April 2012

avoid a situation in which large 'zombie' banks contribute to the self-perpetuation of slow growth.

Europe's corporates depend on banks

Europe's non-financial corporates depend on banks for debt finance. Of total non-financial corporate debt outstanding in 2011, bank loans and other advances accounted for 85% in the euro area and the UK; non-financial corporate bonds just 15%. In the US, by contrast, corporate bond markets are a much larger share of total debt outstanding – some 47% – with bank loans and other advances accounting for the remaining 53%.[52] In Asia's largest economies too, non-financial corporate bonds are a small proportion of the total, accounting for 8% and 16% in China and Japan respectively (Figure 25).

Corporate financing *needs* are estimated to be large

Corporate financing needs are likely to be large over the coming few years, estimated at $43tr-$46tr globally between 2012 and 2016 by Standard and Poor's (S&P). This comprises $30tr[53] of outstanding debt that will need to be refinanced, and $13-$16tr of new commercial debt financing[54] (Figure 26):

- The euro area and UK will probably account for around a quarter of the total, comprising around $8.6tr in refinancing needs, and $1.9-$2.3tr in new financing needs – equivalent to around 75% of GDP.
- The likely US total is similar: $8.6tr in refinancing needs; and $2.5tr-$3tr in new financing needs – and also equivalent to around 75% of GDP.
- In Asia, corporate financing needs are estimated to be much larger in relation to GDP. In China, the projected total is around 220% of GDP, and in Japan around 100%

Europe's funding *gap* could be large

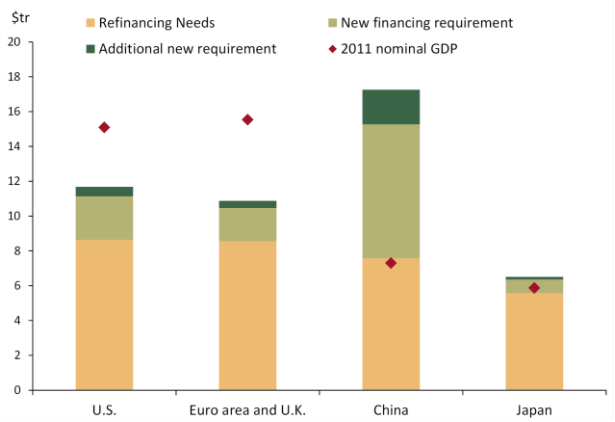
Europe has a potentially large corporate funding gap to overcome over the next few years. Given that the European banking sector is disproportionately large, and dominated by big, complex banks that are set for a more constrained future, it is new financing that seems likely to face the largest constraints. Non-bank sources of funding could help to limit the effects of bank deleveraging on economic growth.

S&P expect that sufficient liquidity will be available to help companies refinance maturing debt, although European companies will almost certainly face a greater challenge than those in the US and Asia. New corporate financing, however, is likely to prove more problematic, and especially in Europe:

- In the US, the bond markets have provided $400bn annually in new corporate funding over the past several years, and the economy's mature debt markets are probably fairly well placed to make up any potential shortfall
- In Europe, by contrast, assuming that European issuers need to tap the bond market for half of new funding (up from 15% historically), net new issuance amounting to $210bn-$260bn is implied annually. Issuance on such a scale could well prove to be a challenge, given that it has exceeded $100 billion only twice in the past ten years.

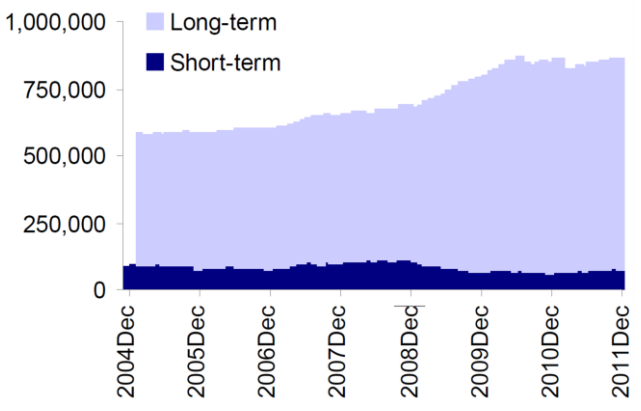
Direct funding from outside Europe's formal banking sector stands to be important. Corporate bond markets, stock markets, the shadow banking sector, private equity, venture capital, family

Figure 26: Corporate financing needs, 2012-2016



Source: S&P (2012)

Figure 27: Euro area corporate debt securities outstanding



Source: European Commission (2012)

offices, insurance companies, pension funds etc. are all potentially significant sources of alternative funding. They may even be preferable for certain types of issuers; for example those that require patient, long-term capital could benefit from pension fund, insurance, or private equity capital.

Longer-term structural challenge

As and when demand for investment returns, it is essential that supply be able to rise to meet it. Moreover, long-term, Europe needs a system that is robust in the face of shocks. This will require the development of diverse financing channels, covering banks, bond markets, and stock markets.

Bank funding is broken

The European bank funding model is broken. A recent report by Barclays[55] discussed four potential solutions: prolonged balance sheet shrinkage, such as occurred in Japan; a permanent role for the ECB in bank funding markets; a Fannie/Freddie structure for Europe; and disintermediation.

The extent to which each might address the structural constraints to bank funding is open to consideration:

1. **Prolonged deleveraging could severely curtail economic growth,** as in Japan over the past 20 years, as loan-to-deposit ratios fell markedly. Though private bank funding might eventually return, the costs could be difficult to bear.
2. **Emergency ECB funding could become the norm**, but this raises important institutional considerations. If a private-sector funding model cannot be sustained, any permanent role for the ECB in bank funding markets would need to overcome political hurdles. Moral hazard concerns would necessitate strong conditionality and oversight.
3. **A Fannie/Freddie structure offers both advantages and disadvantages.** It is estimated that such a structure in Europe could lower loan-to-deposit ratios by around 30%.[56] However government-backed lending has structural implications for government balance sheet risk and taxpayers.
4. **Disintermediation could reduce dependence on banks.** If corporate bond markets in Europe deepened, along US lines, loan-to-deposit ratios could fall by around 15%. Disintermediation is likely, in part due to bank funding costs now being higher than corporates', but policy could also help to spur market developments.

Attracting fixed income investors back will be difficult…

Attracting fixed income investors back to banks will be difficult. Structural risks on bank debt are increasing; and sovereign debt issuance, up from around €200bn pre-crisis to €550bn today, could crowd out bank debt. Unless the structural problems are tackled, bank funding seems unlikely to revive, and ECB funding could become the norm.

Breaking the negative-feedback loop is a major challenge for policymakers; while the recently-announced plans for a European banking union are a constructive step, it remains to be seen whether they will prove to be a game-changer. Ultimately, a banking union cannot be considered in isolation from the other 'building blocks' necessary to make the euro area sustainable.

Broad reforms are needed to deal with structural design flaws. Nicolas Veron argues[57] that Europe needs to build a four-fold union that would allow such executive decisions to be made. The four components are:

- A banking union,
- A fiscal union,
- A competitiveness union, and
- A political union, i.e. institutional reform to embed democratic accountability more solidly in the decision-making.

…without major institutional reform

Perhaps the first two of these might be the most important from a banking perspective: restoring, deepening, and sustaining the integration of of markets across borders is essential. Key here will be decisions about banking union and extra-territoriality. Even in the best-case scenario, however, it will almost certainly be some years, at least, before health is restored to bank funding markets.

The experiences of Japan and the US provide some evidence as to the importance of well-functioning stock and corporate bond markets. In the US, where these markets are most developed, the existence of multiple avenues of financial intermediation have been argued to have served the US well during the credit crunch of the late 1980s, more recently when, in 1998, capital markets froze following Russia's default, and also in the recent crisis.

Developing bond and stock markets will be important

Developing bond and stock markets will be important. This 'spare tyre'[58] of financing is an important difference between the US and Europe, and an important similiarity between Japan and Europe. This will be an important determinant of growth in the near term. Moreover long-term, a more diverse financial system would be more robust in the face of shocks. Developing deeper and more liquid corporate bond and stock markets therefore stands to be important both near-term and longer-term.

Recent developments

There were some encouraging signs…

There were some positive signs that European corporate bond markets had started to replace bank lending. A survey by Fitch[59], based on 161 European firms, found that corporate bond funding increased relative to bank debt after 2008. Outstanding euro area debt securities issued by non-financial corporations rose from €652billion in early 2008 to €777billion in October 2011, 90% of which were long-term securities (Figure 27). Higher rated companies account for the most outstanding volume, though BBB- and BB-rated companies have also gained in importance.[60]

…but these have faltered

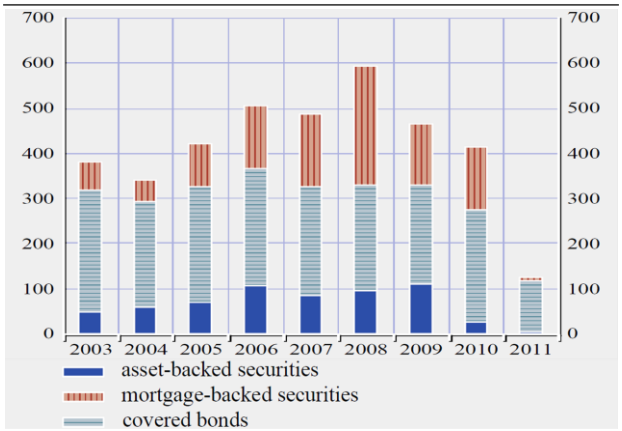
In 2011, however, corporate net issuance fell and spreads widened, particularly for high yield bonds. In Europe, the speculative-grade market has struggled to secure a foothold. Though 2010 was a record year, with $58.6bn issued, volumes fell somewhat in 2011. This compares with $41billion in 2009, a meagre $3billion in 2008, and $24.5billion in 2007. Speculative grade issuance in the US was much higher at $218.3billion in 2011, compared with $163.5billion in 2009, and $69billion in 2008.[61]

European equity markets, like many other markets, faced severe headwinds in 2011. Many planned IPOs and secondary offerings were postponed or cancelled due to market conditions. Though the situation has eased since 2008/09, the ability of equity markets to provide funding to the non-financial sector, as well as the financial sector, remains limited. [62]

The issuance of convertible bonds[63] has hit new lows**,** although demand among investors is strong. So far this year, just 8.7% ($27bn) of funds raised in global equity capital markets were through convertible bonds, the lowest since 1995, and far below previous peaks of around 50%. In Europe, there is little activity in this market at present. Only a few high-grade European issuers have issued convertible bonds so far this year.[64]

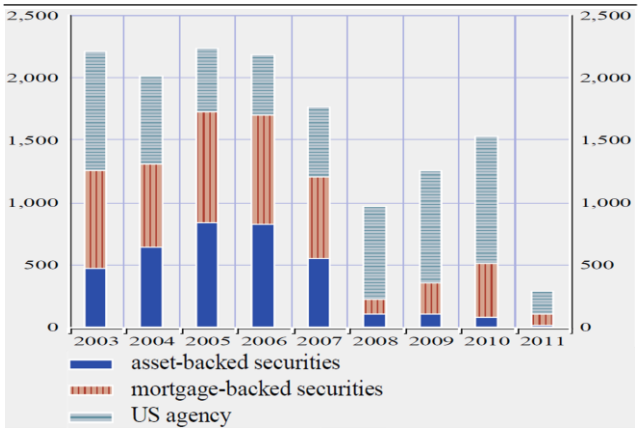
Securitisation issuance in the euro area has fallen sharply since 2008, with particulalry large falls in 2011. Asset-backed and mortgage-backed securities issuance remain subdued. Eligible securitised products can serve as collateral in Eurosystem credit operations, and there is some evidence that, of the securitised products that have been orginated recently, European banks have retained the majority on their balance sheets. Covered bond issuance, while over €100bn in

Figure 28: ABS, MBS, and covered bond issuance in the euro area



Source: Dealogic & ECB (2012)

Figure 29: Securitisation in the US



Source: Dealogic & ECB (2012)
Notes: 'US agency' includes government sponsored agencies

2011, has also fallen compared with recent years (Figure 28 and 29).

Small and medium sized companies

…SMEs face the biggest constraints

While bond markets seem, temporarily at least, to have become a somewhat viable alternative for larger non-financial corporations, developments have done little to alter the constraints on small and medium-sized companies.

Small and medium-sized companies face the biggest financing constraints. The availability of finance is largely a function of firm size:

- Large companies can choose from the full range of financing options;
- Mid-sized companies have more limited options: equity markets and private placements are largely closed off; and corporate bond and commercial paper markets are not an option.
- Small companies really only have one option at present; bank lending. They have only very limited access to equity markets: and private placements, commercial paper, and corporate bond markets are closed.

Increasing access to markets is key

Countries around the world are targeting small and medium-sized companies with policy; success could help to spur future growth and job creation. New infrastructures for issuing and trading corporate bonds are being developed, and this may open up access to markets for mid-sized companies at least. For example, a number of trading platforms have been opened by the German exchanges, targeting medium-sized companies, such as Deutsche Börse's 'Entry Standard Anleihen', Börse Düsseldorf's 'Mittelstandsmarkt', and Börse Stuttgart's 'Bondm'. Targeted companies are not required to have a listing or comply with normal accounting rules.

Issues range from €25-225 million, and 60-75% is held by institutional investors. Increased capital market access for medium-sized companies is needed both because potential issuers have high financing needs and because the banking sector is restructuring. While such new infrastructures are potentially important developments, issuance and trading volumes remain relatively small.[65]

Non-traditional sources could help

Non-traditional sources of finance could help to fill the gap for small companies. A recent report by CSFI surveys around 50 internet-based non-bank sources of funding for smaller companies in the UK. Some of these are debt funding initiatives, such as Funding Circle and ThinCats; others are equity based, including CrowdCube and Seedrs. There are also 'business angels' initiatives such as Angels in the City and the Ideas Factory. Others are less well-known providers of niche working capital including MarketInvoice, Manufacturers' Capital, Orbian, and Demica.

The survey documents internet-based attempts to provide on-line hedging, to use debentures for sustainable energy projects, and even to restart the bill of exchange. And, behind many of these initiatives, there are equally innovative data collection tools that can quicken the credit process. Inevitably, many such initiatives will fail. But the few that survive could thrive and spur growth.[66]

VI. Conclusions and issues to consider

Given the evolution of the modern complex financial system, the dominant position of the banking sector in Europe, and the constraints that the sector will almost certainly face in the years ahead, achieving sustainable growth now and in the future presents major challenges for markets and investors, as well as policymakers.

The challenge is both cyclical and structural in nature, and complicated by political and institutional constraints. Five main issues in particular warrant attention:

1. Economic policy instruments:

- Macroeconomic policy is at, or close to, its limit
- The lines between fiscal and monetary policy have become blurred
- Tackling the procyclical nature of the system is in the very early stages
- Countercyclical rules that temper the inherent nature of credit systems to create asset bubbles are a long way from being in operation
- If anything, new regulations and fiscal policy settings are adding to procyclicality
- There is no policy that can operate directly on “animal spirits”, but progress towards dealing with the euro area’s structural design flaws would hasten their return

2. Supply/demand factors in capital markets:

- Europe faces a challenge in funding its future economic growth
- The banking sector is undergoing a period of restructuring, and European banks have announced deleveraging plans amounting to trillions of euros
- The non-financial corporate sector depends on banks for finance; bond and stock markets in Europe are relatively small
- Demand for non-bank sources of capital and liquidity is set to increase, and it is not clear who can, will, or should fill the hole left by the retreat of the banks
- There is a potentially large corporate funding gap that will need to be filled over the coming years
- Small and medium-sized companies, which are vital for growth now and in the future, face the biggest constraints
- If the challenge is not met, the risk is of good companies going bankrupt, and of new investment being foregone

3. The cumulative impact of regulation:

- A wide-ranging reform agenda is necessary to create a financial system that is safer and more robust in the face of shocks
- The unintended consequences of reforms create trade-offs that will need to be managed
- Near-term, regulatory push is adding to procyclicality, and this is likely to lower growth
- New rules are set to increase the demand for collateral substantially and, at a time when the supply of good quality collateral is shrinking, this could lead to large shortages
- Managing the potential trade-off between near-term growth and medium-term financial stability is a key challenge

4. Breaking the negative-feedback loop between banks and sovereigns:

- The powerful negative-feedback loop between banks and sovereigns is proving difficult to break
- This is adding to cyclical pressures in the euro area
- A more aggressive clean-up of the banking sector could help to avoid slow growth becoming self-perpetuating
- Plans for banking union too will be important, but are in the early stages, and there is much uncertainty
- Breaking the negative feedback loop would go a considerable way towards alleviating both near and longer-term constraints to investment

5. Changes in financial structure

- Europe is heavily dependent its banking sector, and on its universal banks in particular
- The financial system appears not to serve small and medium-sized companies well
- A financial structure that is more similar to that in the US has advantages as well as obvious disadvantages
- Fannie- and Freddie-type structures could alleviate near-term pressure on the banks; but this would merely transfer risk to sovereigns and could prove politically difficult to unwind
- The shadow banking sector is set to grow as the formal sector shrinks; moreover the extent to which the sector ought to 'emerge from the shadows' is unclear. Which institutions/activities should receive access to central bank backstops, and how this should be regulated, are paramount.
- Developing deeper and more liquid corporate bond and stock markets could help to reduce bank-dependence both near term and over the longer term ■

Endnotes

[1]As Keynes wrote in The General Theory of Employment, Interest and Money in 1936: "… there is the instability due to the characteristic of human nature that a large proportion of our positive activities depend on spontaneous optimism rather than mathematical expectations, whether moral or hedonistic or economic. Most, probably, of our decisions to do something positive, the full consequences of which will be drawn out over many days to come, can only be taken as the result of animal spirits – a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities."
[2] See Abiad et al. (2009).
[3] This includes hedge funds, mutual funds, pension funds, money market funds, insurance companies and more. See Pozsar and Singh (2011).
[4] The material in this paragraph draws on Tucker (2011).
[5] See ISDA (2009).
[6] The material in this section draws on Singh and Stellar (2012), Singh (2011), and Singh (2012).
[7] See Singh (2012). The major dealers active in collateral intermediation globally include Goldman Sachs, Morgan Stanley, JP Morgan, Bank of America/Merrill Lynch, Citibank, Deutsche Bank, UBS, Barclays, Credit Suisse, Societe General, BNP Paribas, HSBC, RBS, and Nomura.
[8] The material in this section draws on Pozsar, Z. et al. (2010), ECB (2012), and Tucker (2012).
[9]FSB (2011) defines shadow banking in broad terms as "credit intermediation involving entities and activities outside the regular banking system". Shadow banking is not the same as the non-bank financial sector. The definition relates instead to the type of activity undertaken; for example accepting funding with deposit-like characteristics; performing maturity and/or liquidity transformation; undergoing credit risk transfer; and using direct or indirect financial leverage.
[10] For more on the originate-to-distribute model see Goodhart (2008), Section 3: The new financial structure and Buiter (2007), Chapter 1: The Microeconomic Pathologies of modern Finance, 1A. Securitisation.
[11] A recent innovation involves Safaricom, Kenya's largest mobile phone operator, which launch a mobile phone-based payment and money transfer service, known as M-PESA, in April 2007. The service allows users to deposit money into an account stored on their mobile, to send balances using SMS technology to other users (including sellers of goods and services), and to redeem deposits for money. Charges, deducted from users' accounts, are levied when e-float is sent, and when cash is withdrawn. M-PESA has spread quickly, becoming the most successful mobile phone-based financial service in the developing world; reaching approximately 65% of Kenyan households by the end of 2009. For more see Jack and Suri (2011).
[12] The material in this section draws on Pozsar and Singh (2011).
[13] The phrase has been popularised by Zoltan Pozsar and Manmohan Singh. See for example Pozsar and Singh (2011).
[14] Liquid, safe collateral is the dominant form of 'money' for the corporate sector. Asset managers are major sources of demand for non-M2 types of money.
[15] See Coere (2012).
[16] Source for data Nomura.
[17] See World Bank data on domestic credit provided by the banking sector and domestic credit to the private sector from 1980.
[18] The material in this sub-section draws on Credit Suisse (2012).
[19] Refers to central government debt.
[20] Pozsar et al. (2010) estimate the liabilities of the shadow banking sector at $20tr and $15tr in 2007 and 2010 respectively. Pozsar and Singh (2011) update the figures substantially to $25tr and $20tr.
[21] 2010 nominal GDP. The larger estimate ($20tr) of the US shadow sector would make it substantially larger than the US GDP.
[22] See FSB (2011). The 11 jurisdictions are the US, UK, Japan, the Netherlands, France, Canada, Germany, Korea, Italy, Spain, and Australia.
[23] See ECB (2012) and FSB (2011).
[24] There is a lack of convergence between US and IAS accounting standards, with implications for policymakers in comparing bank balance sheets and leverage ratios in Europe and the US.
[25] Haldane and Piergiorgio (2009).
[26] See Barclays (2012).
[27] Source for data ECB (2012).
[28] Source for data ECB (2012).
[29] Source Constancio (2012)
[30] Source ECB (2012)
[31] Source for data ECB (2012).
[32] Source for data ECB (2012)
[33] Source for data ECB (2012)
[34] Source for data IMF World Economic Outlook April 2012
[35] Source for data IMF World Economic Outlook April 2012
[36] Source for data IMF World Economic Outlook April 2012
[37] Standard & Poor's (2011).
[38] As the US crisis erupted, early calls to action in Europe were not heeded; for example appeals for an "EU bank fund" were rejected in October 2008. In February 2009 Adam Posen delivered a paper to Congress that would help to put in place a framework, including some temporary nationalisations and the Troubled Asset Relief Program, to help end the acute phase of the crisis. See Posen (2009), *A Proven Framework to End the US Banking Crisis Including Some Temporary Nationalizations*, testimony before the US Congress, Washington, February 26, 2009. The paper draws on the historical experiences of the US, Japan, and Sweden, and has relevance for Europe today.
[39] See Coere (2012).
[40] See Mehrling (2011).
[41] BIS (2012), *Annual Report.*
[42] Takafumi Sato, "Putting the current financial crisis in perspective," speech to the Asia Financial Forum in Okinawa, January 30, 2009.
[43]Haldane (2010) estimates a funding cost reduction of more than £100 billion for 2009 for 13 banks in the UK. Sveriges Riksbank (2011), estimates that the average yearly reduction in funding costs for the four largest Swedish banks amounts to SEK 30 billion from 2002 to 2010, or $4.5 billion annually using current exchange rates.
[44] See Schich and Lindh (2012).
[45] See Singh (2010).
[46] See Oliver Wyman (2012).
[47] See Finadium (2011).
[48] See IMF GFSR April 2012.

[49] Emerging Europe appears most vulnerable in this respect. The "Vienna 2.0" initiative seeks to establish mechanisms to prevent deleveraging in Emerging Europe from becoming disorderly.
[50] Prime Minister Kiichi Miyazawawho first proposed to repair the banks with public funds back in 1992, two years after the bursting of the bubble in Japan. The public outcry not only forced Miyazawa to retract his proposal, but also made it difficult for politicians in Japan to talk seriously about such proposals for a full five years. The devastating credit crunch that started in late 1997 finally allowed action to be taken, but precious time was lost in the meantime. For more see Koo (2008b).
[51] See Posen (2009).
[52] The US is also commonly cited to have a 70:30 split between corporate bonds and bank loans in total nonfinancial debt outstanding. This is due to the exclusion of the farm and small-unincorporated sectors of the economy. Using the broader definition gives the 47:53 split quoted in the text. See Barclays (2012) and S&P (2012) for more information.
[53] The $30tr estimate assumes that total nonfinancial corporate debt outstanding matures on a roughly pro rata basis over an average seven-year period, and that three-quarters of the total (stated around $40tr) would come due between 2012 and 2016. See S&P (2012) for more information.
[54] The range owes to two different assumptions about the rate of growth of new financing requirements. The lower estimate assumes that new money requirements grow at the same rate S&P adjusted GDP forecasts over the next five years. The higher estimate assumes that new money requirements grow at 1.2 times the rate of GDP over the next five years.
[55] See Barclays (2012).
[56] See Barclays (2012).
[57] Challenges of Europe's Fourfold Union Prepared statement by Nicolas Veron, visiting Fellow, Peterson Institute for International Economics, and Senior Fellow, Bruegel. Before the U.S. Senate Committee on Foreign Relations: Subcommittee on European Affairs Hearing on "The Future of the Eurozone: Outlook and Lessons" August 1, 2012.
[58] See Remarks by Former FED Chairman Alan Greenspan before the 1999 Financial Markets Conference of the Federal Reserve Bank of Atlanta, Sea Island, Georgia October 19, 1999.
[59] See Fitch (2011).
[60] Source for data European Commission (2012)
[61] Source for data S&P (2012).
[62] See European Commission (2012)
[63] Bonds that pay a fixed income but convert into equity at an agreed price.
[64] See Financial Times article, *Fund risk as convertible bond issues falls,* 11 July 2012.
[65] Source for information and data European Commission (2012)
[66] Source for information CSFI (2012)

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