

**CHAPTER 3: STRUCTURAL REFORM IN THE EU BANKING SECTOR:
MOTIVATION, SCOPE AND CONSEQUENCES**

3.1 CONTEXT

Many banks and types of business models have been affected in the crisis. The main EU bank failures have been attributed to an overreliance on short-term wholesale funding, excessive leverage, excessive trading/derivative/market activity, poor lending decisions due to aggressive credit growth, or weak corporate governance (see Liikanen (2012)).

The current EU financial system is characterised by relatively few large, interconnected and diversified banking groups. Whereas several large EU banking groups have weathered the crisis well, the EU financial system as a whole would have likely imploded due to a system-wide cascade of banking failures without the extraordinary and on-going taxpayer, government and central bank support (European Commission (2011, 2012)). The (contingent) taxpayer support to date amounts to 40% of EU GDP (€5.1 trillion parliamentary committed aid measures) and has undermined the solidity of several Member States' public finances. In the case of some Member States it has contributed to turn a banking crisis into a sovereign crisis (European Commission (2011, 2012)). This has had the effect of further increasing the fragility of the banking system since banks hold large volumes of sovereign bonds on their balance sheet - and hence confidence on these banks depends on the robustness of the public safety nets).

Five years after the start of the financial crisis, price-to-book ratios are still at historically low levels (Chart 3.1.1). Sector-wide CDS spreads still exceed Lehman Brothers era levels and suggest that the EU banking sector remains fragile (Chart 3.1.2). Investors still seem to doubt the solidity of several large EU banks, some of which remain reliant on significant (explicit and implicit) state and central bank support. Interbank markets, once among the most liquid and deep markets globally, have not fully recovered. Banks are still highly leveraged and aggregate balance sheet restructuring and deleveraging has been modest to date. Banking sector concentration has also increased since the onset of the crisis.

Chart 3.1.1: Average price-to-book ratio of large, complex banking groups (2006-2012)



Notes: Dark blue full line: euro area banking groups; light blue dashed line: US banking groups; red dotted line: UK and Swiss banking groups.
Source: ECB Dec 2012 Financial Stability Review (page 64).

Chart 3.1.2: Average 5-year CDS spread of large, complex banking groups (2006-2012; basis points)



Notes: Dark blue full line: euro area banking groups; light blue dashed line: US banking groups; red dotted line: UK and Swiss banking groups.
Source: ECB Dec 2012 Financial Stability Review (page 64).

In this economic context, international institutions have called for a broad and global debate on bank business models¹ and several EU Member States (UK, FR, DE, NL, etc.) and international partner countries (US) have embarked on structural reform agendas to address the lingering problems in the banking sector. The High-level expert group (HLEG) on structural reforms of the EU banking sector, chaired by Erkki Liikanen, also recommended a package of structural and non-structural reform measures in its final report of 2 October 2012 (Liikanen (2012)). Box 1 briefly reviews these initiatives. In all cases, structural reform proposals would typically affect few banking groups only.

This chapter aims to take stock of the on-going debate that is currently taking place in international forums and several Member States, in some cases at an advanced stage, as regards the merits or otherwise of structural measures affecting large, complex and interconnected financial institutions, sometimes referred to as too-important or too-big to fail banks. In addition the chapter emphasises that any impact assessment must take into account the combined impact, both positive and negative, of alternative structural reform measures and complementary regulation affecting banks, already adopted or in the pipeline (notably CRD IV, recovery and resolution frameworks, and Banking Union).

The immediate objective of the chapter is essentially informative and pedagogical: it seeks to make accessible to the general public the arguments advanced by proponents as well as critics of structural measures affecting large interconnected and complex banking groups. This would also allow stakeholders, including citizens, to meaningfully engage and contribute to the debate. It follows that this chapter does not take position on any matter and merely raises the issues an exposes the arguments that require the particular attention of regulators and stakeholders. In doing so it also provides a roadmap for on-going efforts of the Commission services to undertake an in depth, comprehensive and robust impact assessment of alternative structural reform measures.

3.2 FINANCIAL STABILITY RISKS LINKED TO LARGE AND DIVERSIFIED BANKING GROUPS

3.2.1 Large EU banking groups are often complex, interconnected and prone to conflicts of interest

The EU financial system is characterised by the presence² of relatively few large, banking groups², which are active in commercial banking (deposit taking and lending to individuals and

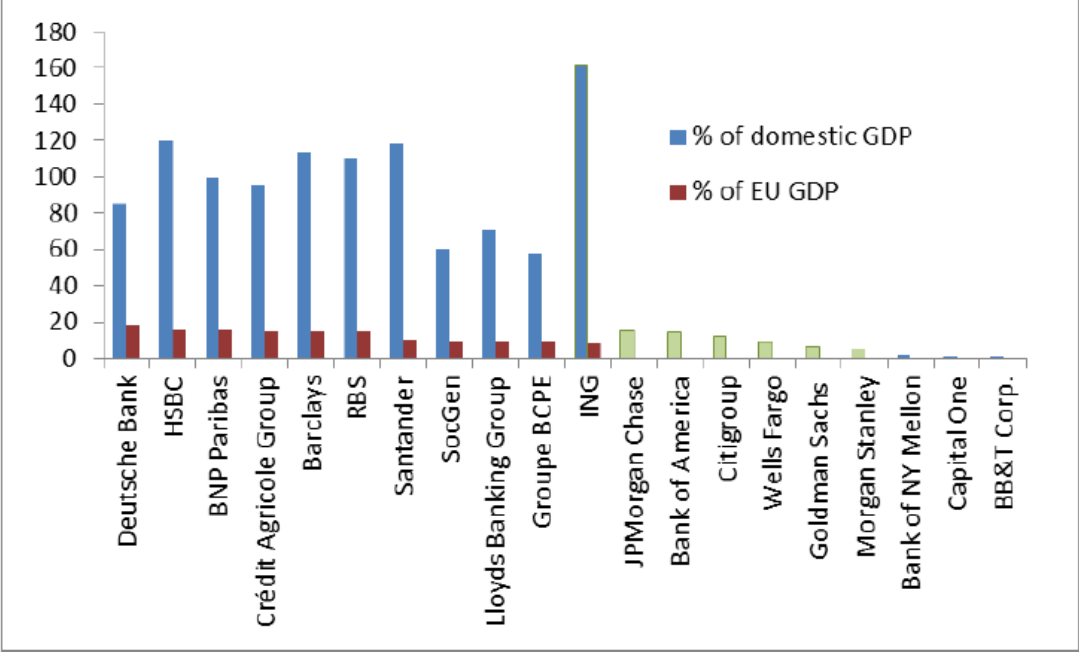
¹ “Despite much progress on the reform agenda, reforms in some areas still need to be further refined by policymakers. These areas include a global-level discussion on the pros and cons for direct restrictions on business models.” (IMF (2012), summary of Chapter 3). “The question is whether there is a better way, via leverage rules or rules on the structures of large conglomerates, to ensure volatile investment banking functions do not dominate the future stability of the commercial banking and financial intermediation environment that is so critical for economic activity.” (Blundell-Wignall et al. (2009)).

² The dominant regulatory and legal model for banking groups in the EU is the universal banking model, whereas it is the holding company model in the USA. EU *universal banks* typically combine retail and commercial banking activities and wholesale and investment banking activities in one corporate entity, with other activities, notably insurance, carried out in wholly owned but separately capitalised subsidiaries. US *financial holding company structures* typically have a single holding company that typically holds all shares of the separately capitalised subsidiaries, which cannot combine commercial and investment banking activities within the same subsidiary. There is typically complete legal separation between the parent and the subsidiaries, and in case the holding company is non-operating, there is also operational independence and the latter acts solely as an investment company. Under a holding company structure, a group is headed by one entity which does not itself conduct any business but simply owns a series of other businesses and co-ordinates their

businesses), traditional investment banking (security underwriting and advisory services), asset and wealth management services, and capital market and trading activities such as market-making, brokerage services, securitisation, proprietary trading, etc. Several of them form financial conglomerates that are also active in insurance.

Prior to the crisis, these large EU banking groups rapidly increased in size, scope and complexity. At the end of 2011, the ten largest EU banking groups *each* had total on-balance-sheet assets exceeding 1000 billion euro. Chart 3.2.1 illustrates that several large EU banking group balance sheets on their own exceed the GDP of the country where they are headquartered, unlike their US peers. This is a problem as long as true resolution of banks in trouble is solely domestically handled by each Member State separately. Claessens et al. (2010) document that the geographic scope of large European banking groups is also relatively broad, as they hold a far larger percentage of their assets abroad, compared to North American or Asian banking groups. In 2007, EU banking groups held 65% of their total assets outside the domestic market (of which 31% in other EU Member States and 34% outside Europe). The equivalent foreign assets amount to 32% and 26%, respectively, for American and Asian banking groups.

Chart 3.2.1: Total assets of the largest EU and US banking groups (2011)



Source: Data from SNL Financial. Eurostat for GDP data.

Source: Liikanen (2012)

Functional and national regulators often employ structural separation as a means of regulating, supervising, and monitoring different parts of a large banking group. Beyond that, large EU banking groups face few restrictions as to how they choose to structure themselves legally, economically, and operationally. They typically comprise of a complex web of legal entities and intra-group relationships. Several of the large groups contain more than 1000 distinct legal majority-owned subsidiaries, and some are active in 60 or more different jurisdictions. Large EU

strategies. *Parent-subsidiary structures* may consist of a parent bank that operates directly, with separately capitalised subsidiaries carrying out separate activities.

banks stand out in organisational complexity compared to non-financial sectors.³ In general, the more complex the industry, the greater the challenges for prudential regulation.

Large EU banking groups are highly connected to each other through interbank borrowing and lending and derivatives markets, although the size of economic exposures is often mitigated by collateral and netting.⁴ In normal times, institutions' interconnectedness may stem from the efficient allocation of capital within the Single Market. In times of crisis, interconnectivity may diversify risks. However, it may also facilitate contagion, also within banking groups. This potential for contagion due to interconnectedness (in turn due to liquidity hoarding, counterparty losses, informational contagion, fire sales or exposure to common creditors) is the essence of systemic risk.

Intra-group support measures vary from institution to institution, driven by the regulatory, legal and tax environment, the management style of the particular institution, and the cross-border nature of the business.⁵ Intra-group exposures/transactions may be put in place to (i) promote group business activities, (ii) enable the group to operate on an integrated basis across different legal entities, (iii) support entity credit ratings in a group and therefore ensuring competitive financing terms for entities of the group, (iv) promote the efficient use of the group's capital resources across the different legal entities, and (v) manage and provide liquidity and capital resources across the group (BCBS (2012)).

Notwithstanding their potential economic and commercial benefits, both intra-group exposures/transactions and support measures can, in certain circumstances, adversely affect the solvency, liquidity and profitability of individual entities within a group. Intra-group support measures complicate the resolution and recovery process in the event of failure. Financial groups which failed in the crisis typically had to consider the question of whether to support a subsidiary or related entity. Although these decisions largely hinge on the potential damage to franchise and reputation, the starting point for making such decisions is based on intra-group contractual and legal obligations. The level of intra-group support and interconnectedness of legal entities within the group affects the extent to which the failure of one entity raises contagion risk for other entities within the group. It also increases the supervisory challenges (BCBS (2012)).

Conflicts of interests within large banking groups are typically addressed through Chinese walls, codes of conducts, compliance audits, and disclosure of potential conflicts of interest. That said,

³ Herring and Carmassi (2010) find that the sixteen largest financial institutions on average have 2.5 times as much subsidiaries as the sixteen largest non-financial firms at end 2007. The literature lists a number of plausible drivers of organisational complexity, notably mergers and acquisitions, a desire to reduce tax liabilities, and regulatory requirements. Multinational banks have numerous opportunities to reduce their tax burden in high-tax countries through intra-firm transfer pricing. Herring and Carmassi (2010) find that six of the sixteen largest global financial institutions each have more than 100 subsidiaries located in tax havens, three of them have located approximately 20% of their subsidiaries in tax havens.

⁴ For monetary financial institutions (MFIs) in the euro area, roughly one quarter of total balance sheet size reflects direct exposure to other euro area MFIs (Buiters and Rahbari (2012)). Financial institutions can be connected directly, but also indirectly. Indirect exposure follows from common risk exposures or from informational or reputational contagion.

⁵ The most transparent form of intra-group exposure is a credit or a line of credit which either the parent grants to a subsidiary or one subsidiary makes available to another subsidiary. Intra-group exposures also originate in other ways; for example through (a) intragroup cross shareholdings; (b) trading operations whereby one group entity deals with or on behalf of another group entity; (c) central management of short term liquidity within the group and (d) guarantees and commitments provided to or received from other companies in the group.

the possibility that conflicts of interest⁶ arise is greater if the institution provides multiple financial services⁷.

3.2.2 Taxpayer support and implicit subsidies to the banking sector

It has been argued that implicit and explicit public safety nets allow banks to enjoy significant benefits, as their funding costs are artificially lowered given that creditors price in the lower credit risk. The implicit support can manifest itself in higher credit ratings of banks, which typically involve a "stand-alone rating" and a "support rating". Whereas the former assesses the bank's creditworthiness by looking at the business model and net cash flow generation of the business activities as such, the latter in addition takes into account the extent to which the bank implicitly enjoys backing from the state when in need (in practise, abstraction is made from possible parental or cooperative support to isolate the sovereign support). Prior to the crisis, the 29 most systemically important global banks⁸ benefitted from just over one notch of uplift from the ratings agencies due to expectations of state support. Today, those same banks benefit from around three notches of implied support on average. According to a number of researchers and regulators expectations of state support have risen substantially since the crisis began (Ueda and di Mauro (2012), Haldane (2010b, 2012)).

Implicit subsidies⁹, are estimated to be significant in absolute level and when compared to average sector profitability, but they are hard to pin down with great precision. According to several studies they are estimated to mainly benefit the largest banks.¹⁰ Importantly, implicit subsidies

⁶ It is sometimes argued that Cultural differences can materialise between retail and investment banking, but also within retail banking and within investment banking as such. In the retail bank, sales people and relationship managers may face different incentives. Within investment banking, traders and advisors or analysts may also have a different mind-set. Conflicts of interests can arise in investment banking, if a bank serves two client groups with opposing interests. For instance, when investment banks advise companies on whether to raise equity they stand to earn substantial fees as underwriters. At the same time, when banks advise companies on the issue price for the new shares they benefit from higher discounts as this decreases the risk of low take-up. Also, banks have an incentive to hedge their risk as underwriters, guaranteeing the proceeds of the share issue, but this may potentially have an adverse impact on their clients' share price. Issuers benefit from high prices and optimistic research, while investors want low prices and neutral research.

⁷ Fecht et al. (2010) report empirical evidence for the German banking sector that proprietary trading can negatively affect retail customers. Stocks sold to retail customers underperform compared to other stocks in the bank's proprietary portfolio and other stocks in the households' portfolios. Customer portfolio performance is also significantly worse in banks that do proprietary trading. They argue that conflicts of interest are at the source of these findings.

⁸ The list of G-SIFIs is established by the Financial Stability Board, based on how banking groups score with respect to their size, interconnectedness, global activity, complexity, and lack of readily available substitutes for the services provided. Of the 2011 list of 29 banking groups, 15 are European banking groups. Of the November 2012 list of 28 banking groups (Dexia, Commerzbank and Lloyds were delisted, whereas BBVA and Standard Chartered were added), 14 are EU banking groups.

⁹ *Explicit* subsidies (such as the explicit insurance of deposits below a certain level) are typically capped in size and can in principle be recouped by introducing adequate pricing of the guarantee or taxation of the beneficiary bank. However, an adequate pricing of deposit insurance is not feasible, given the complexity and fluctuating riskiness of a bank's activities. Demirgüç-Kunt et al. (2005) find that deposit insurance underpricing seems to be the rule rather than the exception. *Implicit* subsidies are not equally transparent (in terms of their terms) and reflect a transfer of resources from taxpayers to the financial sector. The ultimate distribution of implicit subsidies to bank creditors, bank shareholders, staff and clients depends on the underlying competitive structure of the banking industry.

¹⁰ See Noss and Sowerbutts (2012), Oxera (2011), Schich and Lindh (2012), Schich and Kim (2012), Haldane (2012), Alessandri and Haldane (2009), and Ueda and Mauro (2012). Estimation methodologies belong to two groups. First, "funding advantage" models, i.e. ratings-based approaches that focus on the difference between support and stand-alone credit ratings. Second, "contingent claim" models, i.e. option pricing approaches that focus on the resemblance of implicit subsidies to put options or look-back options and model them accordingly. Evidence for the largest 26 global banks suggests an average credit rating uplift in the 2007-2009 period of approximately 2.5 notches (i.e. support rating are 2.5

and the advantages inferred from being state backed are seen to be higher the lower the bank's stand-alone creditworthiness, the higher the creditworthiness of its sovereign and the relatively bigger the bank in its domestic context, as banks' stand-alone creditworthiness is upgraded more and funding costs lowered more, correspondingly (Schich and Lindh (2012)). Some of the subsidies have declined in more recent years, thanks to the introduction of effective and credible resolution regimes (e.g. UK, DK), due to a worsening of the creditworthiness of the sovereign creditor (e.g. IE, EL, ES, PT), or following concrete proposals and government endorsement of structural reform initiatives (e.g. UK)¹¹. In other Member States they have not or hardly decreased (e.g. DE, SW, LU, FI, NL), or have in fact increased (e.g. BE, FR) (Schich and Kim (2012)).

In theory implicit subsidies can cause three types of distortions. First, implicit subsidies may create competitive advantages to beneficiary banks by lowering their funding cost. Beneficiary banks would benefit at the expense of banks that do not enjoy the implicit subsidies. As the biggest banks would likely receive the largest subsidies, this would entrench the too-big-to fail banks, and induce a competitive barrier for smaller banks. Second, as with any safety net or insurance without co-insurance and/or at a too low price, implicit subsidies may increase banks' risk taking (moral hazard). Furthermore, a negative spiral may also develop as the existence of implicit subsidies incentivises banks to take more risk (given the asymmetry in payoffs: gains would be privatised and losses socialised) which increases the cost of bank failure and which further increases the implicit subsidies. Third, implicit subsidies tend to increase the size of the financial sector in aggregate and may divert scarce resources away from other sectors of the economy.

3.2.3 Safety-net induced moral hazard

Deposit-taking banks are by construction vulnerable to depositor runs. When a confidence crisis occurs and depositors withdraw their savings, banks are forced to liquidate illiquid long term assets at a loss (Diamond and Dybvig (1983)). To avoid such confidence crises and the corresponding runs and losses, public safety nets such as deposit insurance and lender-of-last-resort facilities have been introduced. The first were introduced in the wake of the 1929 Great Depression, and by now public safety nets exist in more than 90 countries worldwide. Following a Directive from the European Commission on 12 July 2010, the level of deposit protection was significantly increased in the EU from a minimum of €20 000 to a uniform level of €100 000 (with a maximum pay-out delay of 7 days).

Public safety nets have important advantages. They avoid self-fulfilling confidence crises and various forms of contagion, prevent wide-scale collapse of the intermediation services of the banking sector, and facilitate the ability of banks to engage in effective maturity transformation

notches above stand-alone financial strength ratings). Funding cost advantages are not negligible and may exceed 100 basis points, depending on the time period and stand-alone rating. Within a given country, the majority of the subsidies are enjoyed by the largest banks. UK bank evidence for the period 2007-2009 suggests that small and medium sized banks only received 8.5% of total estimated implicit subsidies for UK banks, compared to 91.5% for the top 5 UK banks (Haldane, 2010b).

¹¹ Moody's (2011) stated on the UK ring-fence plans that "*the ring-fencing proposals would likely lead to a further reduction in our assumptions of systemic support*". JP Morgan (2011) analysts stated that "*ring-fencing of retail operations will be a transformational change for the UK banks and will most likely lead to the undermining of the sector ratings, particularly for the entities excluded from the retail ring-fence*", and anticipate that "*the ratings associated with the non-ringfenced entity should tend towards the stand-alone ratings of such institutions*". HSBC (2011) reached a similar view.

(liabilities can be short-term in the presence of deposit insurance, whereas assets can be long-term in the presence of the emergency liquidity assistance).

Safety nets increase bank margins and charter values, which may dampen risk taking incentives, as banks have more to lose. However, public safety nets may also incentivise banks to expand their balance sheets and take excessive risks with the funds made available to them ("moral hazard").¹² Safety nets take away disciplining incentives of depositors and/or bank creditors and lower the bank's cost of capital (funding cost), which allows banks to expand.¹³ Hence, in the absence of adequate supervision and regulation, safety nets indirectly allow banks to leverage up more easily than would be possible otherwise. High leverage in combination with limited liability incentivises risk-taking by banks, as upside gains are being privatised, whilst downside losses may end up being socialised. Dam and Koetter (2012) use pre-crisis German banking data to show that significant increases in expectations of bailouts for banks lead to significant increases in risk-taking by banks.

To curtail the excessive risk-taking and expansion of banks that may result from the existence of the public safety nets, banking activities have always been heavily regulated and supervised. In fact, when the US introduced the very first set of safety nets, it paired it with a battery of regulation including (i) the prohibition of deposit-taking banks to underwrite or deal in securities, (ii) the limitation of access to deposit insurance and lender of last resort facilities to commercial banks, and (iii) the introduction of a saving deposit rate ceiling to avoid destabilising competition amongst banks (1933 Banking Act in the USA - so called Glass-Steagall Act). The justification for introducing structural separation of commercial and investment banking activities alongside with the safety nets was to (i) reduce depository institutions' ability to engage in risky securities activities, (ii) prevent managers of depository institutions to enter markets that are focused on risk-taking, (iii) prevent inherent conflicts of interest, and (iv) reduce the financial power of depository institutions. More recently, risk-based capital and liquidity requirements (capital adequacy regulation) have been introduced.¹⁴

In the wake of the Great Depression, several EU Member States, amongst others Belgium, France, and Italy, introduced structural separation rules similar to the Glass-Steagall Act.¹⁵ Subsequent reforms removed restrictions on mixing bank and securities activities. In several Member States structural rules still apply, but often limited to specific activities such as housing finance and

¹² Ultimately, the net effect of safety nets on bank risk taking is theoretically ambiguous and depends on the relative empirical importance of the two channels. Gropp et al. (2010) find that government guarantees are on balance associated with strong moral hazard effects.

¹³ It is implicitly assumed that an adequate pricing of the deposit insurance is not feasible, given the complexity and fluctuating riskiness of a bank's activities. Demirgüç-Kunt et al. (2005) find that deposit insurance underpricing seems to be the rule rather than the exception. See Admati and Hellwig (2013) for a good review of why banks chose to become big through increased leverage.

¹⁴ In 1988 a first-ever, landmark, genuinely international prudential regulatory agreement "International Convergence of Capital Measurement and Capital Standard" was reached. Basel 1 has been amended and revised in 1996, 2004 (Basel 2), 2009 (Basel 2.5), and 2010 (Basel 3).

¹⁵ The first structural rules introduced in Belgium date back to 1934 and 1935 (Royal Decree n°2 of August 22, 1934; Royal Decree n°180 of July 9, 1935). "Mixed" banks were required to separate their deposit taking activities from their investment banking activities. Banks were prohibited from holding shares of industrial and commercial companies. Bank managers were prohibited from holding concurrent executive functions in other companies (National Bank of Belgium (2012), Box 2). In France, the 1984 Banking Act recognised the principle of universal banking and eliminated many restrictions on bank lending and on the lines of business different types of banks were permitted to transact. The separation principle in Italy is regulated in Article 19 of the Legislative Decree no. 385 of September 1, 1993 (Single Banking Act).

mortgage banks (Bausparen, covered bond issuance, etc.). Moreover, under current EU legislation, banking and insurance activities are being prohibited from being supported by the same pool of capital in all EU Member States.

3.2.4 Moral hazard concerns amplified through the changing nature of banking

Bank balance sheets grew in the decades prior to the 1980s, in tandem with real economic growth. However, as of the 1980s, bank balance sheets started to increase more rapidly, significantly outpacing GDP growth, and hence total assets to GDP started to increase noticeably. Over the same time period that banks grew remarkably in size and importance, the resilience of banks, i.e. their ability to absorb solvency and liquidity shocks, decreased (risk-unweighted capital ratios and liquidity ratios dropped continuously to historically low levels). Alessandri and Haldane (2009) document these long term trends for the UK banking sector. They first show that the aggregate UK balance sheet remains roughly stable at 50% of GDP for the century between 1880 and 1980, after which it started to grow quickly to reach more than 500% of UK GDP before the crisis struck. The developments in the UK reflect a broader trend in Europe. In some Member States, the banking sector grew even more quickly, but in many Member States, growth was more modest. On average, total assets of the EU banking sector have stabilised around 370% of GDP (Liikanen (2012)).

The underlying drivers of the 1980s structural break that triggered banks' expansion are globalisation, technological innovation (securitisation, IT, etc.), deregulation, and increased competition. Prior to the 1980s, commercial banks could be characterised by a "originate and hold" banking model, which generally refers to a long-term oriented, customer relationship-based banking model, where loans are granted and held until maturity, and where bank funding is mainly derived from insured deposits, rather than tradable wholesale market instruments. Banks were largely focussed on generating net interest income. The relationship-oriented model encouraged banks to originate loans and to gather information and monitor ultimate borrower performance, as the interests of the bank and its customers were typically aligned (the bank does well if the borrower does well and is able to pay off his loan).

As of the 1980s, commercial banks increasingly moved away from a "originate and hold" banking model towards a so-called "originate and distribute" or transactions-oriented model (see Acharya et al. (2009), Buiters (2008)). The "originate and distribute" banking model refers to the banking model in which granted loans are pooled, securitized and sold to investors. The shift in model is associated with an increased reliance on capital markets for funding¹⁶... More emphasis is put on non-interest income, as income is derived to a significant extent from fees and trading. Information and principal-agent problems become more important, as the interest of the bank and its clients are no longer necessarily aligned.

The shift in the business model increases banks' connections to and importance of the shadow banking sector. Banks became part of a long intermediation chain, rather than linking ultimate savers directly to ultimate borrowers (Adrian and Shin (2010b)).¹⁷ Increased leverage in the

¹⁶ According to Shin (2012) the "originate and distribute" model facilitates bank expansion and risk-taking

¹⁷ Rather than simply taking deposits and making mortgages, a long chain of interconnected institutions arises. The mortgages are kept on the asset side of a mortgage pool that issues mortgage backed securities (MBS). This paper is bought by an issuer of asset backed securities (ABS), who issues tranches of collateralised debt obligations (CDOs) in order to finance it. Investment bank holds some of this profitable ABS paper and finance it through collateralized borrowing (repo).

financial sector largely took place outside the traditionally funded commercial banks, in investment banks, hedge funds, private equity funds and a whole range of new financial institutions (SIVs, conduits, etc.), often using new securitisation-based instruments (Shin (2012)). The banking sector has become as large as it is following a lengthening of the intermediation chain, increased interconnection and trading activity. Trading, capital market activities, and (selected) other investment banking activities are deal-by-deal and transactions-based, short-term oriented, scalable, and sometimes subject to significant tail risk even for individual transactions. Arguably, banks have become larger, more complex and interconnected with an increased focus on short-term profits, in part as a result of shareholder pressure and short-term performance-based managerial compensation schemes or accounting practices such as day one profit recognition. There has been a pre-crisis trend among the biggest European banks to strengthen the focus on investment banking, including capital market and trading activities, and to increase their reliance on wholesale funding.

At heart, the banking crisis was triggered by a sudden and generalised freeze in interbank markets. Institutional short term wholesale market creditors refused to roll-over their credit lines (a “run on repo” as described in Gorton (2010)).¹⁸ The traditional “bank run” triggered by retail depositor withdrawals as in the Great depression and several other subsequent banking crises did not occur or only as an aftermath event. Northern Rock (NR) for example faced a run by retail depositors on 14 September 2007, but the unprecedented images of people queuing in the streets to collect their savings concealed the fact that the true run on Northern Rock took place at least a month earlier, when institutional investors refused to roll over their exposures to the bank and the FSA and Bank of England were alerted by the NR management of their acute funding difficulties (see Shin (2009)). The NR balance sheet had grown 23% per year during the period 1998-2007. Such rapid growth could not have been funded with retail deposits. Retail deposit funding in fact dropped from 60% of total liabilities to merely 23% in 2007. The depositor run itself was partially triggered by the design of the UK deposit guarantee scheme, which had introduced co-insurance, inducing depositors to run in order not to lose even a small share of their deposits (depositors were fully insured up to 2000 pounds only, and up to 90% for amounts in between 2000 and 35000 pounds).

It is necessary for any bank to hold marketable securities (such as sovereign bonds or other widely traded securities) on its balance sheet regardless of its business model in order to manage the maturity gap between illiquid loans and liquid deposits or other funding. Even a pure retail bank thus needs to hold a significant share of liquid assets in reserve to protect against a sudden decrease in deposit funding (cf. CRDIV – LCR). Similarly there are risk management advantages to be gained from wholesale funding. Issuing long-term bonds allow a bank more freedom in

Commercial banks make reverse repos and secure their funding short term by issuing commercial paper (CP). Money market mutual funds buy the CP and issue shares to the households that have excess savings. Note that the intermediation chain can be much larger, as ABS can be repoed multiple times, for example. And investment or commercial banks can set up conduits and SIVs in order to finance the direct holding of CDOs and other ABSs.

¹⁸ Likewise, just before its demise Lehman Brothers relied on overnight repo borrowing (collateralised short term wholesale market borrowing) up to one quarter of its massive balance sheet (Adrian and Shin (2010a)). Put differently, Lehman Brothers had to roll over one quarter of its massive balance sheet *overnight*. Admati and Hellwig (2013) discuss the underlying incentives for banks to increasingly rely on short-term debt (“maturity rat race”) and link it to the presence of the safety nets, the resulting debt overhang problem, and the incentives for creditors to protect themselves by lending at increasingly short term maturities.

managing the maturity profile of its liabilities than if they were using deposit based products alone, thus reducing risk. Even short-term wholesale funding has a utility in permitting banks to manage temporary funding mismatches that arise due to normal fluctuations in deposits and other funding sources. The risks with wholesale funding arise when a bank relies too heavily on it, especially if it is on shorter maturities. The LCR and NSFR (still under debate) introduced in Basel III aim to counter these risks.

Excessive trading and market-based activity has been an important risk factor in this crisis.¹⁹ Market-based activities (trading in, or holding, securitised debt instruments) contributed to the failures of major banks in Europe (amongst others RBS and Fortis) and of both investment and commercial banks in the USA (amongst others Lehman Brothers, Merrill Lynch, Washington Mutual). The majority of the large and complex EU financial institutions that received state support in 2008 and 2009 had above average trading income to total revenue ratios. Chow and Surti (2011) analyse a sample of 46 large and complex EU banking groups. 25 banks had trading income to total revenue ratios that exceeded the average ratio plus one standard deviation. 18 of those 25 “vulnerable” banks were effectively part of the sample of 23 banks that received official support in 2008/2009.

Boot and Ratnovski (2012) argue that the deepening of financial markets in the last 10 to 15 years has fundamentally destabilised banks by introducing a trading culture in large, complex and interconnected banking groups²⁰. Specifically, such banks face incentives to use their franchise value and undrawn credit lines to trade on an excessive scale to make short term profits. More analysis is needed to confirm or invalidate such claims²¹

3.3 STRUCTURAL BANKING REFORM DEBATE IN THE EU

The EU banking sector has faced several problems in the run-up to and during the on-going crisis leading to economy-wide resource misallocation: moral hazard, high leverage and balance sheet expansion, lack of market discipline²², lack of bank resolvability, implicit bail-out expectations, and competition distortions. Arguably, pre-crisis, regulation and supervision were also inadequate. According to proponents, structural reform has the potential to increase the effectiveness of the regulatory agenda without being detrimental for financial stability or economic growth.

3.3.1 Structural reform may enhance financial stability, incentives and market functioning

European banks have a relatively long history of combining commercial banking and investment banking in a single legal entity or in a combination of closely connected entities with limited

¹⁹ Trading and lending are not entirely disconnected. The traditional originate-and-hold or relationship oriented model of banking has been shifting towards a originate-and-sell or transaction-oriented model of banking. Loans, previously illiquid, have been made more liquid through securitisation.

²⁰ See also Miller et al. (2013).

²¹ To address this propensity to excessive trading within large banks and associated decrease in banking stability, Boot and Ratnovski (2012) suggest segregating resources by means of a firewalled subsidiary. This would put in place a more credible commitment that the relationship bank maintains sufficient capital within that part to continue to fully serve its customers and would ensure that the funding of the trading business is risk-sensitive. However, they find that banks may still be able to allocate too much capital to their trading subsidiaries, leaving lending constrained. They conclude that it is important to protect capital and risk bearing capacity of bank lending operations. For this, trading within bank groups may have to be limited or prohibited altogether (as proposed under the Volcker rule in the USA).

²² For a useful review of the literature on the ability of bank debt to discipline banks, please see Admati and Hellwig (2013).

restrictions on transactions between them – this “model” is loosely referred to as “universal banking”, though large banking groups across Europe differ significantly in their core activities, nature and incidence of cross border operations, their internal organisational structure, management culture and strategy. Virtually all of the largest banks in Europe, however, benefit from access to intra-group deposit funding that is relatively stable, long in duration, not risk sensitive and explicitly guaranteed. The risks inherent in the banks' trading activities may not be fully priced into their funding costs. In that case this would increase the incentives for excessive trading risks. Proponents of structural reform argue that shielding guaranteed deposits from excessive risk-taking in trading would ensure that the funding provided to trading activities will reflect its inherent riskiness and will take away any undue artificial promotion of excessively risky activities. Without separate debt issuance for deposit-linked and other banking activities, the cost of debt will be a blended mix. It is the implicit taxpayer's subsidy associated with too-big-too-fail, not necessarily increased efficiency, what reduces the group's funding costs and gives rise to important distortions of incentives and competition.

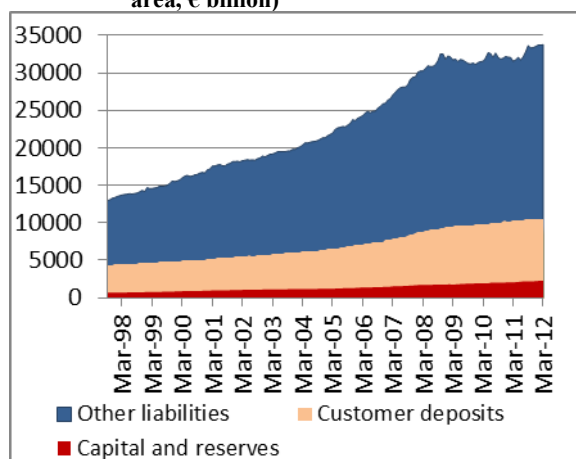
Proponents of structural reform further argue that given the risks and costs of the safety net to society, banks should not indirectly use the safety net to artificially expand in risky activities that are not linked to “critically important and non-substitutable” banking activities. At their heart, banks carry out services that are essential to the economy, and continuation of these services is critically important, to the extent that these services cannot be substituted easily. There is no similar rationale for public funds protecting and subsidising for example proprietary and speculative trading activities.

Bank balance sheets in the EU, particularly those of the largest banking groups, have significantly grown in the years leading up to the crisis (see charts 3.4.1 and 3.4.2 below taken from Liikanen (2012)). Much of the balance sheet growth volume that has taken place was driven by intra-financial business, rather than real economy lending. For the EU aggregate bank balance sheet, loans to households and NFCs only made up 28% of total assets in March 2012 (Liikanen (2012)). By reducing the likelihood that large banks engage on excessively risky trading activities on the back of the public safety net of deposit taking and other essential activities, structural reform, it is argued may re-introduce market discipline, which in turn would tend to limit the balance sheet growth and thereby partly ensure that banks to not become (or remain) "too-important-to-fail"²³.

In addition, proponents of structural reform claim that it has the potential to *directly* reduce excessive intra-group complexity, connectedness and inherent conflicts of interest within EU banking groups, thereby facilitating their management, regulation, supervision, and resolution. Structural reform has the potential to refocus banks on what is critically-important and on their key customer-serving role.

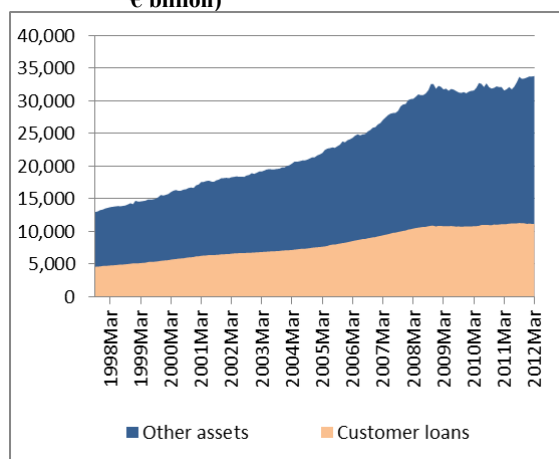
²³ Demirguc-Kunt and Huizinga (2013) find evidence that a bank's market-to-book ratio is negatively related to its size compared to the home country GDP. They suggest that systemic banks that may have become too big to save can increase their value by downsizing or splitting up, in particular if they are located in countries with a weak fiscal position.

Chart 3.3.1: Evolution of liabilities 1998-2012 (euro area, € billion)



Notes: Customer deposits are deposits of non-monetary financial institutions excluding general government.
Source: ECB data.

Chart 3.3.2: Evolution of assets 1998-2012 (euro area, € billion)



Notes: Customer loans are loans to non-monetary financial institutions excluding general government.
Source: ECB data.

Complexity can impair the proper functioning of markets and creates several market failures (Schwarcz (2009)). The recent financial crisis has provided some support to the claim that complexity may not only hinder recovery and resolution in bad times, but it also tends to make it more difficult to manage, monitor and supervise the institutions in good times (Lumpkin (2011)). The price-to-book ratio of the group of large and complex EU banking groups currently hovers around 0.5, whereas it was as high as 2.0 in the run-up to the crisis. Part of that value destruction reflects the legacy of the past (potential further write-offs and possibly on-going forbearance), part may reflect weak perceived profitability going forward, and part may reflect the difficulty and uncertainty to value the individual components and the portfolio as a whole which constitutes a number of large banking groups.

Arguably, banking groups engaged in a variety of activities also require much more complex regulation and supervision. More simplicity in terms of corporate structure would normally allow simplifying regulation and supervision of banks, and potentially render supervision and regulation more effective. Likewise, the prudential regulation of banks is difficult for investors to understand. Accordingly, investors do not or are not able to fully exercise the “watch-dog” function under Basel's “pillar 3” (market discipline). Unsecured bank creditors and investors perceive modern banks as opaque and as black boxes and it is possibly for this reason, inter alia, that they have started to call for structural separation. Institutional investors voiced their concern that banks are too opaque and complex to invest in.²⁴ If this claim were confirmed there is a prospect that certain forms of structural reform could, in fact, improve banks’ funding strains.

On the other hand, other stakeholders argue that structural reform cannot achieve its putative goals. Instead, they argue that structural reform will in fact reduce financial stability, as it will create more homogeneous and less diversified banks that will be less resilient in times of stress and more prone to fail in a herd-like fashion. Moreover, structural reform would not avoid the collapse of a stand-alone, pure investment banks or retail banks, such as Lehman Brothers, Northern Rock, Spanish Cajas, etc. A further concern is that structural reform may not even

²⁴ Investors that have replied to the Commission’s consultation on the HLEG report chaired by Liikanen stated that “All banks fail to provide sufficient transparency of their circumstances, meaning that investors tend to mistrust almost all of them with equal fervour” (Hermes 2012, page 5).

achieve its aim of protecting the separated deposit-taking bank, due to reputational contagion or permeability of the separation rules. Finally, structural reform is unlikely to prevent that separated activities are bailed out when a crisis hits.

Structural reform design and implementation will be of critical importance. Structural reform is explicitly aimed at reducing interconnectedness and complexity, and hence the systemic importance of banks. However, regulation and supervision have been significant drivers of organisational complexity, so it is not straightforward that structural reform will simplify corporate complexity.

It is important to note that all national structural reform proposals to date explicitly seek not to undermine the efficiencies to the benefit of bank customers typically associated with the so-called universal banking business model. The UK comes forward with the most intrusive subsidiarisation approach in the EU but explicitly wants to allow for economies of scope across the different legal entities and for assistance provided to the deposit-taking entity by the other entity if need be (but not the other way around).

In theory, the most credible reduction of conflicts of interest could be achieved through ownership separation, as common ownership naturally creates incentives for management to attempt to maximise economic links and synergies (from the point of view of the bank) and it is arguably difficult for regulation and supervision to counter such incentives. But ownership separation may also entail important costs. A separation of culture often requires separate governance, risk and balance sheet management for the deposit-taking entity and the other entity. A number of respondents to the consultation following the Liikanen report have claimed that this may be compatible in a subsidiarisation approach without requiring full ownership separation.

Ceteris paribus, systemic risks should in principle shrink following structural reform, given that certain speculative activities will no longer be promoted artificially on the back of explicit or implicit guarantees, as is the case today, in particular if resolution and recovery is made more effective thereby sharpening market discipline. Moreover, if systemic risk would materialise nevertheless due to reputational contagion or other reasons, it would still be easier to perform crisis management and resolution of smaller, simpler and distinct legal entities. The options available to policymakers at the point of resolution will increase.

All the above considerations, both by proponents and critics of structural reform require careful analysis and scrutiny. In any event, one cannot consider it a panacea. On its own structural reform measures cannot resolve all problems related to excessive risk taking. Not coincidentally, several structural reform proposals currently under discussion are part of a package of measures that also includes higher loss absorption through increased capital requirements, strengthened risk weighting, bail-in instruments, etc. (Liikanen (2012), ICB (2012)). It follows that any impact assessment of the potential and likely benefits and costs of structural reform needs to take into consideration the complementarities (or lack thereof) with other regulatory measures already adopted or in the pipeline that will also influence the activities of banks.

3.3.2 Could structural reform support sustainable economic growth and jobs in the EU?

Amongst others, banks operate the payment system, make loans to households, businesses and governments, help households and businesses to manage their risks and accommodate their

financial needs over time. The purpose of the financial sector and banks should be to serve the “real economy”. A safe and sound banking sector is a pre-condition to fulfil these essential functions, serve the real economy, and allow for sustainable growth. Sustainable economic growth is what counts, not temporarily boosted artificial growth that results in booms and subsequent busts. As such, there is no conflict between stability and growth.

Banks need to focus first and foremost on providing basic access to finance for households, corporates and governments. However, customer loans currently make up only 28% of the aggregate EU balance sheet of monetary financial institutions (see chart 3.3.2). McKinsey (2013) finds that the growing size and leverage of the financial sector propelled much of the financial deepening that occurred before the crisis, but that financing for households and corporations accounted for barely one-fourth of the rise in global financial depth from 1995 to 2007. It is remarkable that there is a shortage of SME funding in the UK (Breedon (2012)), despite UK bank balance sheets adding up to 5 times GDP.

In principle, structural reform is aimed at directing bank capital and resources to those activities that finance the real economy. Proponents argue that without any structural separation, banks may be incentivised to allocate capital and human resources to trading and intra-financial activity and away from lending activity. Opportunities to engage in socially less useful activities in finance (speculation) can crowd out the provision of useful financial services (lending and banking services) or make them more expensive (Arping (2013)).

A significant part of taxpayer-subsidised pre-crisis activity of banks was intra-financial borrowing and lending that often involved excessive risk-taking.²⁵ The banking sector has become as large as it is following a lengthening of the intermediation chain, increased interconnection and trading activity (Adrian and Shin (2010)). For monetary financial institutions (MFIs) in the euro area, roughly one quarter of total balance sheet size reflects direct exposure to other euro area MFIs (Buiters and Rahbari (2012)). In part, deleveraging may be achieved by reducing intra-bank exposures, exposures between banks and shadow banks and between banks and other highly leveraged financial intermediaries, without necessarily being at the expense of bank funding of households and non-financial corporates. There is no reason why balance sheet reduction that reflects the netting of intra-bank borrowing and lending needs to be at the expense of bank funding of households and non-financial corporates (Buiters and Rahbari (2012)).

According to some academic research, the benefits of more banking activity may not always compensate financial stability risks and other disadvantages. Cecchetti and Kharroubi (2012) empirically find that the enlargement of the financial system, beyond a certain the size, is

²⁵ Haldane (2010a) discusses the earnings of the financial sector in detail and concludes that “*risk illusion, rather than a productivity miracle, appears to have driven high returns to finance*”. Philippon and Reshef (2008) study wages earned in the financial sector and conclude that a large part of the observed wage differential between the financial sector and the rest of the economy cannot be explained by observables like skill differences. Philippon (2012) provides a quantitative interpretation of financial intermediation in the USA over the past 130 years and concludes that “*...the unit cost of intermediation has increased since the mid-1970s and is now significantly higher than it was at the turn of the twentieth century. In other words, the finance industry that sustained the expansion of railroads, steel and chemical industries, and later the electricity and automobile revolutions seems to have been more efficient than the current finance industry. Surprisingly, the tremendous improvements in information technologies of the past 30 years have not led to a decrease in the average cost of intermediation, or at least not yet. One possible explanation for this puzzle is that improvements in information technology have been cancelled out by zero-sum activities, perhaps related to the large increase in secondary market trading*”.

associated with reductions in real productivity growth. This, in part, may be due to the financial sector competing with the rest of the economy for scarce resources. Arcand et al. (2012) also find that there can be “too much” finance. When private credit reaches 80% to 100% of GDP, which is largely exceeded for several crisis-affected EU Member States such as DK, NL, IE, CY, UK, ES, PT, further private credit is found to be negatively associated with GDP growth. The hypothesis is that excessively large financial systems may reduce economic growth because of the increased probability of a misallocation of resources, the increased probability of large economic crashes²⁶, or the endogenous feeding of speculative bubbles. Philippon (2008) observes that outstanding economic growth was achieved in the 1960s with a much smaller financial sector.

As shown in the on-going banking crisis, taxpayer bailouts often prevent the market exit of failing banks, rather than just ensuring the minimum possible (i.e. the continuation of critically important activities and services that cannot easily be provided through other players). To the extent that structural reform facilitates and enhances the effectiveness of bank resolution, exit barriers are being removed, which gives more opportunities for sustainable-successful banks that have a sound and prudent business model (European Commission (2011)).

Depending on its design, the impact of structural reform may not be innocuous. Stakeholders have voiced strong concerns that inadequate structural reform (i) may undermine some of the benefits typically associated with the universal banking business model, (ii) might make bank borrowing and hence lending more difficult and more expensive, and (iii) may put EU banking groups at a competitive disadvantage. These concerns are taken seriously and need to be analysed and scrutinised carefully.

3.4 HOW TO ASSESS THE POTENTIAL COSTS OF STRUCTURAL REFORM?

Structural separation may entail costs for banks, for a number of reasons; lost economies of scope (lost synergy/diversification benefits), increased funding costs, operational costs of subsidiarisation (new independent boards, etc.), and one-off transition costs²⁷. It is critical to assess the extent to which some of these increased costs might materialise, following different structural reform measures and whether the impact will be not only on lower profits but also in greater financial instability and/or higher costs to society at large.

One concern is that a certain proportion of these costs may in fact reflect private costs, but not costs for society as a whole. Lost implicit subsidies and higher funding costs are a private cost for the bank (in particular for the entity that does not take deposits and its customers), but a gain for taxpayers, so on balance this may not be cost for society as a whole. Similarly, structural separation may impose costs on the financial sector and make it more difficult to perform some activities (for example proprietary trading). But that is not necessarily a bad thing, as certain of these costs may be more than offset by benefits to customers and taxpayers through improved

²⁶ Popov and Smets (2011) analyse the role of direct intermediation through financial markets with the indirect intermediation through levered banks. They argue that less deep financial markets in the EU relative to those of the US are, to a large extent, responsible for the smaller increase in productivity and slower pace of industrial innovation. They also compare the liquidity spirals, asset fire sales, and interbank market freezes of the recent financial crisis with the much more orderly burst of the dot-com bubble. They argue that the credit boom of the 2000s was driven by debt finance, while the dot-com bubble was mostly driven by an expansion in equity ownership, and equity is not held in levered portfolios.

²⁷ Upfront one-off transition costs would include amongst others establishing the legal arrangements for separation, dealing with pension and tax issues, renegotiation of intra-group arrangements, and broken ongoing hedges between both parts.

efficiency and financial stability and more generally by facilitating a better allocation of scarce capital, improving growth prospects to the benefit of society. One of the challenges to be faced when making an impact assessment of alternative structural reform measures is that private costs of structural reform are likely concentrated on a few large banking groups, whereas other social costs such as those potentially arising from increased funding costs as well as social benefits are less tangible and spread out over many individual taxpayers and the economy at large.

3.4.1 Economies of scale and scope

Banking groups may benefit from undertaking a wide range of activities to the extent that their assets and earnings become more diversified and resilient to shocks.

Why do banks choose to grow big or to diversify their business models, instead of specialising in a narrow range of activities? A significant body of literature exists on the economies of scale and scope in banking (see Appendix 4 in Liikanen (2012) for a review of this literature). The main economies of scope can be slotted into the following three categories:

- *Cost reductions* - By engaging in a wide range of activities, banks may reduce their operating costs, for example by pooling resources across a broader range of activities (e.g. centralised IT and finance functions; economies in the single information acquisition about clients that can be used for multiple services).
- *Risk diversification* - this is part of the cost reductions and means that banks providing diversified services (with less than perfectly correlated income streams) may be able to diversify the overall risk of their operations and thereby reduce their funding cost as they will be perceived as less risky.
- *Revenue increases* - Clients may value the "one-stop-shopping" offered by a bank with diversified services. Also, by providing a service, banks gain valuable information on their clients that might provide advantages in the provision of other services, such that these banks may better serve their clients.

Economies of scale and scope would, if passed through, benefit bank customers through lower prices and a wider product offering.

On the downside, the literature refers to the following diseconomies of scope (which mainly reflect social costs or costs to society as a whole):

- *Increased complexity* - diversification of large banks tends to increase their complexity, which may raise their risk management cost, reduce their transparency and complicate their resolution.
- *Conflicts of interest* - potential conflicts of interest are more likely to materialize when an institution provides multiple financial services.
- *Increased risk-taking* - While authors generally acknowledge the potential risk-diversification benefits, they note that the expansion of activities allows for diversification into riskier activities, given that supervision and regulation become more challenging to enforce.
- *Increased systemic risk* – Paradoxically, individual diversification by banks can make the system as a whole less diversified. As banks diversify into each other's traditional areas, and most especially in capital markets business, the system can overall become less diverse and potentially more vulnerable to common shocks. This has led many, including the Commission, to call for promoting diversity in bank structures.

The large literature on economies of scale seems to unanimously agree that very small banks (less than a few hundred million EUR in assets) are generally inefficient. The relevant question is at

what point economies of scale get exhausted, if at all. Informational and managerial diseconomies of scale are likely at some scale, whatever the business line.

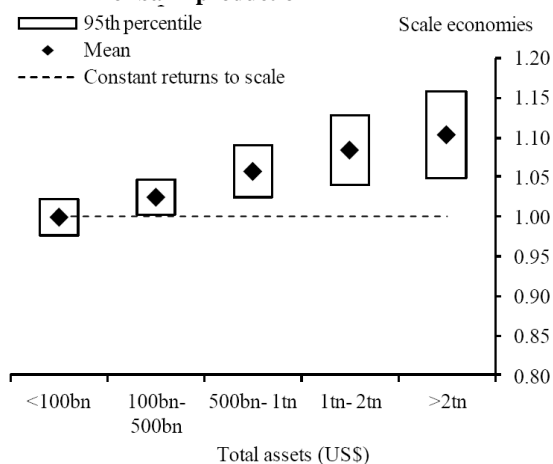
Early empirical studies in banking, failed to find scale economies much beyond bank asset sizes above USD 10bn (Amel et al. (2004)). Recently, a number of studies using data from the 2000s have pointed to scale economies at much higher asset thresholds. For example, Wheelock and Wilson (2012) find scale economies for banks with assets up to USD 1tn and Feng and Serlitis (2009) for banks with assets up to around USD 1.5tn. Using data on banks with assets in excess of USD 100bn, Mester and Hughes (2011) not only find scale-economies, but argue that these may increase with bank size. Note that most of the available empirical studies focus entirely on firm-wide scale economies, when the important scale issues are typically encountered at the level of individual business lines.

Davies and Tracey (2012) re-examined the evidence on economies at different banking scales. Based on standard models, they confirm the above recent evidence and find scale economies for banks with assets above USD 100bn and scale economies that rise with banking scale (chart 3.4.1). But, importantly, they clarify that this finding relies on estimates of banks' funding costs which take no account of the implicit subsidy associated with being too-big-to-fail. According to the authors, removing this funding cost subsidy raises banks' funding costs, lowers estimates of bank value-added and thereby reduces measured economies of scale. Once allowance is made for the implicit subsidy, their findings change dramatically. There is no longer evidence of economies of scale at bank sizes above USD 100bn. If anything, there is now evidence of diseconomies which rise with bank size, consistent with big banks becoming "too big to manage" (chart 3.4.2).

Absent structural restrictions, a banking group will choose the size and scope which maximises its *private* net value. As such, implicit subsidies may artificially boost the privately-optimal bank size. Removing the state implicit subsidy would then suggest a significantly lower socially-optimal banking scale. Boyd and Heitz (2012) find that the cost to the economy as a whole due to increased systemic risk is of an order of magnitude larger than the potential benefits due to any economies of scale when banks are allowed to be large. They compare the lowest-available estimate of the social cost of the crisis with the highest-available estimate of the private benefit of scale and scope economies in banking.

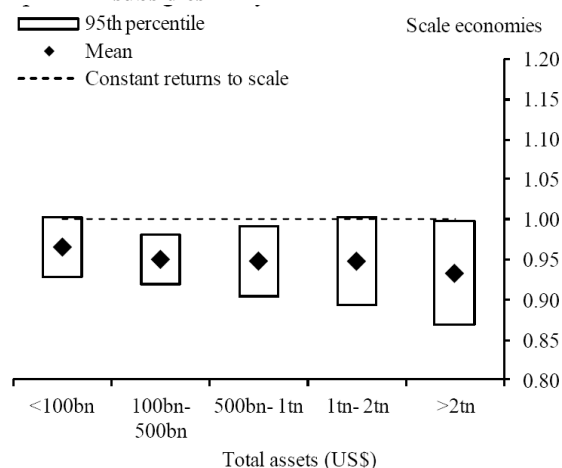
Irrespective of the above evidence on economies of scale and scope in banking, it is crucial to assess, if structural measures in the form of restrictions on intra-group transactions and exposures have any significant impact on the ability of banking groups to achieve economies of scale and scope. Structural reform proposals to date in a number of Member States (see Box 1) state the aim to establish "more clearly structured" universal banks and to impose specific legal, economic, and operational restrictions on deposit-issuing entities. Indeed, except in the case of measures imposing full ownership separation, banking groups are entitled, subject only to competitive constraints, to continue to offer a broad spectrum of services to their customers and obtain any related synergies. At the same time, structural reform advanced to date in some Member States seeks to ensure that the public guarantee is by no means extended to proprietary and certain other trading activities which are not linked to "critically important and non-substitutable" banking activities (such as deposit-taking, lending to SMEs and households, and payment services).

Chart 3.4.1: Scale economies, from a standard model of bank production^{(a),(b),(c)}



(a) The results are for scale economies estimates over the period 2001 to 2010. A value equal to one, less than one, or greater than one implies constant returns to scale, scale diseconomies, and scale economies, respectively.

Chart 3.4.2: Scale economies, adjusting for the implicit subsidies^{(a),(b),(c)}



(b) Total assets have been adjusted to constant year-2010 prices using country level inflation rate data.

(c) Presented results are estimated at the median and interquartile range for each bank in each time period. The scale economies mean is evaluated at the mean of the data.

Source: Davies and Tracey (2012)

3.4.2 Funding costs

As reported above, proponents of structural reform claim that it would eliminate or at least minimise the implicit subsidies and the corresponding funding cost advantage currently enjoyed by the large, complex, and interconnected banks that are deemed too-important-to-fail. Hence, it can be expected that the funding costs of the banking groups affected will increase following structural reform, *ceteris paribus*, reflecting the lost implicit subsidies. To the extent that the increased funding cost is passed on to final customers, all other things equal, this would normally result in higher prices for affected services, possibly including essential services that contribute to economic growth²⁸.

Several important considerations need to be raised in this context. First, households and SMEs that are clients of a banking group that needs to separate its activities are typically and mainly clients of the deposit-taking entity. Structural reform can allow deposit-taking banks to provide a full set of services to their clients, thus serving the real economy. Hence, if bank competition functions well, the increased funding cost for the entity not taking deposits would not necessarily affect borrowing conditions for households and SMEs. The funding cost of the deposit taking entity may remain unchanged or may even decrease compared to the *ex-ante* blended funding rate, given the lack of trading activity, the remaining possibilities to reap diversification benefits, and the remaining geographical and sectoral diversification of the deposit taking entity.

Further, as pointed out earlier, proponents of structural reform argue that households and SME employees are also taxpayers, and on balance consumers and employees would gain from a more stable and efficient banking sector, even if such a benefit is less tangible.

A more subtle consideration is that structural reform measures seek primarily to constrain or discourage artificial and excessive risk-taking. To the extent that any structural measures would

²⁸ Note that the banking sector is imperfectly competitive. As a result, in the presence of some degree of market power, increases in marginal costs will not be passed on one-to-one.

be effective in doing so, the undesired activities will shrink tending to reduce the funding cost burden of the banking group.

Finally, implicit subsidies allegedly distort competition in the market, to the extent that small and medium-sized banks do not benefit from them and hence are being disadvantaged; to the extent that weak banks in strong Member States enjoy a good support rating; and to the extent that strong banks in weak sovereigns do not benefit from a support uplift.

All the above mentioned claims and counterclaims regarding the impact of structural reform measures on banks' funding costs need a careful and detailed impact assessment²⁹.

3.4.3 Competitiveness of the EU banking sector

International competitiveness of the EU banking sector matters to the extent that it reflects a well-functioning single market that ensures an optimal allocation of resources to the ultimate benefit of bank customers, creditors, taxpayers, and society at large.

Competitiveness is enhanced if market drivers exist that ensure the weeding out of the least efficient banks in the sector, thereby facilitating the entry and expansion of rival banks better placed to serve customer demands at the lowest, sustainable costs. To the extent that structural reform measures would improve the resolution process to deal with an impending failure of any dominant financial institution -as proponents claim- this would stimulate competition³⁰, innovation, and may also enhance financial stability.

In this respect, it has been argued that if structural reforms were to reduce the funding advantage of the largest banks, this would level the playing field and make it easier for medium-sized and small banks to gain market share based on client-centred competition on the merits, enhancing diversity in the process³¹. In turn this would enhance the cross border, as well the international competitiveness of the EU banking sector, imposing limits to current forces towards fragmentation in the Single Market.

As regards the ability of alternative and diverse business models to coexist it is worth pointing out that, as argued above, the elimination of the implicit subsidies will tend to increase the funding cost for the banking group, but not necessarily for the deposit-taking retail banking entity. In theory, the funding cost of the deposit-taking entity may remain unchanged or may even decrease. All this further reinforces the need for a solid and in depth impact assessment of any alternative structural measures. Proponents of structural reform argue that numerous stand-alone investment banks exist and that the US Glass-Steagall era demonstrated the viability of stand-alone investment banks. The USA has a long history of structural separation and concentration limits (see Box 1). Proponents insist that the survival and even prosperity of financial specialists in the presence of state supported and subsidised banking groups suggests that a modern version of functional structural separation would not be harmful to the static and dynamic efficiency,

²⁹ In this connection proponents of structural reform also argue that if considered helpful to facilitate growth, society can subsidise borrowing through direct measures without artificially promoting intermediary banking groups to become highly-leveraged, thus avoiding many of the above mentioned distortions.

³⁰ As in non-financial sectors, competition in banking matters for allocative, productive, and dynamic efficiency. Theory suggests, however, that unfettered competition is not first best given the special features of banking (Claessens (2009)).

³¹ Liikanen (2012) reports that customer loans make up a much higher percentage of total assets for small and medium-sized banks.

stability and competitiveness of separated trading entities within or outside deposit-taking banking groups. This line of reasoning will require careful assessment.³²

3.4.4 Recent experience weighing costs and benefits of structural

With respect to private costs of structural reform, the UK Independent Commission on Banking (ICB) surveyed the estimates made by analysts of the costs to banks associated with the ICB proposals (ICB (2012)). It also asked large UK banks to submit their own cost estimates. The cost estimates of different analysts and banks varied widely, both in the assumptions underlying the estimates and in their level of granularity. The resulting range of estimated annual total costs for the four largest UK banks taken together is large, running from GBP 2bn to GBP 10bn, with a mean of GBP 6bn. On the basis of end-2010 data, the mean of the annual GBP 6bn cost represents approximately 0.1% of assets of the four largest UK banks, 33% of their annual pre-tax profit and 10% of their annual profit before tax and staff costs. These are certainly non-negligible cost estimates, but one must consider that reduced shareholder profitability may also reflect reduced riskiness. Furthermore, as mentioned above, at least part of these costs will reflect purely private, not social costs.

The social costs of structural reform relate to the question of how private costs suffered by banks might impact the economy as a whole. Estimating social costs is even more challenging than estimating private costs. In coming up with its social cost estimates, the ICB explicitly adopted a conservative approach, assuming that the total private cost was GBP 6bn, that this cost was passed entirely to banks' borrowers in the form of higher lending spreads³³, and that the affected bank borrowers included all UK borrowers. Under these assumptions the ICB estimated that the ICB reforms would reduce the long-run level of GDP by 0.075%, which amounts to GBP 1bn. All in all, the ICB concluded that total social costs may amount to GBP 1bn to GBP 3bn of annual GDP. According to the UK Treasury, the on-going costs are estimated to be in the range of GBP 1.7bn to GBP 4.4bn a year for its proposed implementation of the ICB separation recommendations, with one-off transitional costs in the range GBP 1.5bn to GBP 2.5bn.

According to several banks, the costs of structural separation will likely exceed its benefits. However, as documented by several studies, the benefits of eliminating financial crises altogether are potentially very significant, as the cost to society of financial crises in terms of lost GDP can be extremely high. In a cross-country study, the median estimate of the net present value cost to output from financial crises amounts to 63% of GDP (BCBS (2010)). This magnitude is consistent with the impact of the recent crisis, but, obviously, the ultimate result will depend on the extent to which the economy will recover, as well as assumptions about any moderation of economic growth trends going forward. Financial crises are documented to occur on average once every 20 years (BCBS (2010)). Hence, the equivalent annual GDP cost of financial crises, according to this metric, amounts to roughly 3% of GDP (i.e. 63%/20). Simplifying things, it would be worth to incur an annual cost of up to 3% of GDP (or 40bn GBP in 2010 terms for the UK) if, by doing so, one could *completely* avoid financial crises to materialise. Obviously, structural reform is not a

³² In this connection it is worth noting that under current EU legislation, banking and insurance activities are being prohibited from being supported by the same pool of capital in all EU Member States.

³³ This is indeed conservative, as borrower rates for households and SMEs may not be affected as much, to the extent that the bulk will reside within the ring-fence.

panacea and it will require careful analysis to estimate the impact it may have on the probability of a systemic crisis, as well as the losses for society given that a systemic crisis materialises.

In sum, only to the extent that it can be argued that structural reforms are able to reduce the probability or the impact of future crises to a sufficient extent from its level in the absence of structural reform and given plausible estimates of costs, net social benefits can be achieved from pursuing the reform.³⁴

The experience in the USA, where a culture of deposit-bank ring-fencing within a bank holding company structure is decades old, and the UK, where retail bank ring-fencing has more recently been announced and evaluated, suggests that the costs may not be prohibitive. However, the costs and the impact of structural separation merit careful consideration, and any legislative proposal by the Commission will need to be accompanied by a thorough impact assessment. As mentioned before, economies of scope may not always be lost following structural reform, as they depend on the precise structural reform design (see “type of separation” in Section 3.5).

3.5 STRUCTURAL REFORM DESIGN AND IMPLEMENTATION ISSUES – NEED FOR A THOROUGH IMPACT ASSESSMENT

The EU has initiated a number of reforms affecting the banking sector to increase the resilience of banks and to reduce the probability and impact of bank failure. These include notably the capital and liquidity requirements to be implemented as part of the new Capital Requirement Regulation and Directive (CRR/CRDIV), the proposed Bank Recovery and Resolution Directive (BRRD), and the European Market Infrastructure Regulation (EMIR). The case for structural reform fundamentally rests on the complementarity of such reform with respect to the existing reform agenda.

There are still concerns, however that important EU banking groups remain complex to manage, monitor, supervise, regulate, and resolve, due to their complexity, connectedness (contagion and shock amplification), geographic scope, and ability to rapidly expand their balance sheet.

International institutions like IMF and OECD have called for a broad and global debate on bank business models and that several EU Member States (UK, FR, DE, NL, etc.) and international partner countries (US) have already embarked on structural reform agendas to address the lingering problems. The High-level expert group (HLEG) on structural reforms of the EU banking sector, chaired by Erkki Liikanen, also recommended a package of structural and non-structural reform measures in its final report of 2 October 2012 (Liikanen (2012)). Box 1 briefly reviews these initiatives.

Taking account of the potential consequences of possibly divergent approaches to this issue adopted by Member States for the single market for banking services, the European Commission has decided to prepare a legislative proposal which it will consider in Summer 2013. The content

³⁴ Few attempts to quantify the net benefits of a concrete structural reform proposal have been performed. Any such exercise is fraught with difficulties and should be considered illustrative and tentative only. As an indication, the ICB (2011) reforms have been estimated to yield significant net social benefits, as they were believed to reduce the probability or impact of crisis by more than [one 40th (2.5%) to three 40th (7.5%)] from their current level. The impact assessment should also take into account the other benefits that are not easily quantifiable, such as the beneficial impact on bank risk-taking incentives and reduced conflicts of interest.

and calibration of the proposal will be shaped following a careful impact assessment that analyses its effectiveness, efficiency, and coherence in the overall regulatory agenda. The Commission services are currently working on the impact assessment and would actively welcome the input of stakeholders on the issues described in this chapter.

3.7 REFERENCES

- Acharya, V., T. Cooley, M. Richardson, and I. Walter (2009), "Manufacturing tail risk: a perspective on the financial crisis of 2007-2009", *Foundations and Trends in Finance*, 4, 4, pp. 247-325.
- Admati, A. and M. Hellwig (2013), "Does debt discipline bankers? An academic myth about bank indebtedness", working paper, 12 February.
- Adrian, T. and H. Shin (2010a), "Liquidity and leverage", *Journal of Financial Intermediation*, 19, 3, pp. 418-437.
- Adrian, T. and H. Shin (2010b), "The Changing Nature of Financial Intermediation and the Financial Crisis of 2007–2009", *Annual Review of Economics*, 2, 603–18.
- Alessandri, P. and A. Haldane (2009), "Banking on the State", paper underlying a presentation delivered at the FRB Chicago International Banking Conference on 25/09/2009.
- Amel, D., Barnes, C., Panetta, F., and Salleo, C. (2004), "Consolidation and efficiency in the financial sector: a review of the international evidence", *Journal of Banking and Finance*, 28, 10, 2493-2519.
- Arcand, J-L., E. Berkes and U. Panizza (2012), "Too much finance?", IMF Working Paper 12/161.

- Arping, S. (2013), "Proprietary trading and the real economy", Duisenberg School of Finance – Tinbergen Institute Discussion Paper, TI 13-032/IV/DSF 52.
- BCBS (2010), "An assessment of the long-term economic impact of stronger capital and liquidity requirements", Banking Committee on Banking Supervision, BIS.
- BCBS (2012), "Report on intra-group support measures", February, Banking Committee on Banking Supervision, the Joint Forum, BIS.
- Blundell-Wignall, A., G. Wehinger and P. Slovik (2009), "The elephant in the room: The need to deal with what banks do", *Financial Market trends*, Issue 2.
- Boot, A. and L. Ratnovski (2012), "Banking and trading", IMF Working Paper 12/238.
- Boyd, J. and A. Heitz (2012), "The social costs and benefits of too-big-to-fail banks: a bounding exercise", working paper. Breedon, T. (2012), "Boosting finance options for finance", report of industry-led working group on alternative debt markets.
- Buiter, W. (2008), "Lessons from the North Atlantic financial crisis", Paper prepared for presentation at the conference "The Role of Money Markets" jointly organised by Columbia Business School and the Federal Reserve Bank of New York on May 29-30, 2008.
- Buiter, W. and E. Rahbari (2012), "Debt of nations: Mr. Micawber's vindication: Causes and consequences of excessive debt", *Citi GPS: Global Perspectives & Solutions*, November.
- Cecchetti, S. and E. Kharroubi (2012), "Reassessing the impact of finance on growth", BIS Working Paper 381.
- Chow, J. and J. Surti (2011), "Making banks safer: Can Volcker and Vickers do it?", IMF Working Paper 11/236.
- Claessens, S. (2009), "Competition in the financial sector: Overview of competition policies", IMF Working Paper, 09/45.
- Claessens, S., R. Herring, and D. Schoenmaker (2011), "A safer world financial system: Improving the resolution of systemic institutions", CEPR International Centre for Monetary and Banking Studies, *Geneva Reports on the World Economy*.
- Dam, L. and M. Koetter (2012), "Bank bailouts and moral hazard: evidence from Germany", *Review of Financial Studies*, 25, 8, 2343-2380.
- Davies, R. and B. Tracey (2012), "Too big to be efficient? The impact of too big to fail factors on scale economies for banks", mimeo.
- Demirgüç-Kunt, A., Karacaovali, B., and L. Laeven (2005), "Deposit insurance around the world: A comprehensive database", Working Paper, World Bank.
- Demirgüç-Kunt, A. and H. Huizinga (2013), "Are banks too big to fail or too big to save? International evidence from equity prices and CDS spreads", *Journal of Banking and Finance*, 37, 875-894.
- Diamond, D. and P. Dybvig (1983), "Bank runs, Deposit Insurance, and Liquidity", *Journal of Political Economy*, 91, pp. 401-419.
- European Commission (2011), "The effects of temporary State aid rules adopted in the context of the financial and economic crisis", Commission Staff Working Paper, 5 October, SEC(2011) 1126 final.

European Commission (2012), "State aid scoreboard: Report on state aid granted by the EU Member States - Autumn Update", 21 December, SEC(2012) 443 final.

Fecht, F., A. Hackethal, A. and Y. Karabulut (2010), "Is proprietary trading detrimental to retail investors?", working paper.

Feng, G. and A. Serilitis (2009), "Efficiency, technical change, and returns to scale in large US banks: panel data evidence from an output distance function satisfying theoretical regularity", *Journal of Banking and Finance*, 34, 1, 127-138.

FSA (2011), "Recovery and resolution plans", CP11/16.

FSB (2011), "Effective resolution of systemically important financial institutions".

Gorton, G. (2010), "Questions and Answers about the Financial Crisis", presentation prepared for the US Financial Crisis Inquiry Commission.

Gropp, R., C. Gründl, and A. Güttler (2010), "The impact of public guarantees on bank risk taking: Evidence from a natural experiment", ECB Working Paper No 1272.

Haldane, A. (2010a), "The contribution of the financial sector – miracle or mirage?", Bank of England.

Haldane, A. (2010b), "The \$100bn question", Bank of England.

Haldane, A. (2012), "On being the right size", Bank of England.

Hermes (2012), "Epidemiology: Next steps in banking regulation", thought piece annexed to the response to the consultation on the HLEG proposals, Hermes Equity Ownership Services.

Herring, R. and J. Carmassi (2010), "The corporate structure of international financial conglomerates: Complexity and its implications for safety and soundness", chapter 8 of the *Oxford Handbook of Banking*, Oxford University Press.

HSBC Global research (2011), "The ICB ring-fence: This is going to hurt".

Hu (2012), "Too complex to depict? Innovation, 'pure information', and the SEC disclosure paradigm", *Texas Law Review*, 90, 7, 1601-1715.

Hughes, J. and L. Mester (2011), "Who said large banks don't experience scale economies? Evidence from a risk-return-driven cost function", Working Papers 11-27, Federal Reserve Bank of Philadelphia.

ICB (2011), "Final report: Recommendations", Independent Commission on Banking.

IMF (2012), "Global Financial Stability Report", October.

JPMorgan Europe Credit research (2011), "Running rings around banks".

Liikanen (2012), "Final Report of the high-level expert group on reforming the structure of the EU banking sector", 2 October, http://ec.europa.eu/internal_market/bank/docs/high-level_expert_group/report_en.pdf.

Lumpkin, S. (2011), "Risks in financial group structures", *OECD Journal: Financial Market Trends*, Issue 2.

McKinsey (2013), "Financial globalization: retreat or reset?", McKinsey Global Institute.

Miller, M., L. Zhang, and H. Li (2013), "When bigger isn't better: bailouts and bank reform", *Oxford Economic Papers*, 65, pp. 7-41.

- Moody's (2011), "UK Treasury Support for ring-fencing proposals is credit negative for banks".
- National Bank of Belgium (2012), "Interim Report: Structural banking reforms in Belgium".
- Noss, J. and R. Sowerbutts (2012), "The implicit subsidy of banks", Financial Stability Paper No. 15, May, Bank of England.
- Oxera (2011), "Assessing state support to the UK banking sector".
- Philippon, T. (2008), "The evolution of the US financial industry from 1860 to 2007: theory and evidence", working paper, New York University.
- Philippon, T. (2012), "Has the U.S. Finance Industry become less efficient? On the theory and measurement of financial intermediation", May, working paper.
- Philippon, T. and A. Reshef (2008), "Wages and human capital in the US financial industry: 1909-2006", working paper, University of New York and University of Virginia.
- Popov, A. and F. Smets (2011), "Financial markets: Productivity, procyclicality, and policy", European Central Bank.
- Schich, S. and S. Lindh (2012), "Implicit Guarantees for Bank Debt: Where Do We Stand?", *OECD Journal: Financial Market Trends*.
- Schich, S. and B-H Kim (2012), "Developments in the Value of Implicit Guarantees for Bank Debt: The Role of Resolution Regimes and Practices", *OECD Journal: Financial Market Trends*.
- Schwarcz, S. (2009), "Regulating complexity in financial markets", *Washington University Law Review*, 87, 2.
- Shin, H. (2009), "Reflections on Northern Rock: The Bank Run that Heralded the Global Financial crisis", *Journal of Economic Perspectives*, Volume 23, Number 1, pp. 101-119.
- Shin, H. (2012), "Global banking glut and loan risk premium", *IMF Economic Review*, 60: 155-192, July.
- Ueda, K. and B. Mauro (2012), "Quantifying structural subsidy values for systemically important financial institutions", IMF Working Paper No. 128.
- UK Parliament (2012), "First report of the Parliamentary Commission on Banking Standards", 21 December.
- Weale, M. (2009), "Commentary: Growth prospects and financial services", *National Institute Economic Review*, 207, January.
- Wheelock, D. and P. Wilson (2012), "Do large banks have lower costs? New estimates of returns to scale for US banks", *Journal of Money, Credit, and Banking*, 44, 1, 171-199.

Box 1: Brief overview of national structural reform agendas*

- *The UK draft Banking Reform Bill* has been introduced to the UK Parliament in February 2013. The Bill requires ring-fencing of deposit-taking and other “core” retail banking activities into a separate entity from “excluded” wholesale and investment banking activities and non-EEA activity. Regulators are given the “continuity objective” of protecting the continuity of provision in the UK of “core services”, which are taking deposits from individuals and SMEs, and related payments and overdraft services. UK institutions with permission to carry out core services – “ring-fenced” entities – may not carry out “excluded or prohibited activities”. “Dealing in investments as principal” (which amongst others covers proprietary trading and market-making) is the only excluded activity initially specified, albeit a broad one and significantly broader than the Volcker Rule. The UK Treasury may specify other excluded activities as judged necessary for the continuity objective. The draft legislation empowers the Treasury to prohibit ring-fenced bodies from entering into transactions of specified kinds or with kinds of counterparty, and to make geographic and ownership prohibitions (e.g. on having branches outside the EU). Services to non-EEA customers, services resulting in exposure to financial customers, “trading book” activities, services relating to secondary markets activity (including the purchases of loans or securities), and derivatives trading (except as necessary for the retail bank prudently to manage its own risk) should be prohibited activities for the ring-fenced entities. There is however a wide range of commercial banking activity that is neither required to be in the ring-fenced body nor excluded/prohibited from it. “Certain simple derivatives to customers” are permitted within ring-fenced banks. Retail and SME lending can take place at either side of the fence. Taking deposits from customers other than individuals and SMEs, and lending to large non-financial businesses. It will be up to the banks and their customers whether such business is transacted within or outside the ring-fenced body. A *de minimis* rule of insured deposits applies, which effectively exempts all but the biggest 6 banks. The draft Bill broadly follows the recommendations of the Independent Banking Commission (ICB) chaired by Sir John Vickers. All legislation is targeted to be in place by 2015 and banks will be expected to have implemented reforms by 2019 at the latest.
- *The French draft reform* proposes that unsecured lending to hedge funds and proprietary trading would be ring-fenced into a separate subsidiary not funded by deposits. All other investment services such as brokerage for third parties, underwriting, and market-making would not be subject to structural separation. Hedging transactions (used to protect the deposit-taking bank from market and credit risks) are also not affected by the structural separation. Only banking groups with significant trading activities are proposed to be captured by the scope of the proposed reform, with the threshold for *de minimis* exemptions to be defined by a subsequent decree. On top of this structural separation for proprietary trading and unsecured lending to hedge funds, which is the core of the French proposal, a full ownership separation (equivalent to a prohibition of activities from banking groups) would be introduced for proprietary trading at high frequency and in derivatives on agricultural commodities.
- *The German draft legislation* is essentially similar to the French one. Unlike the French draft, the German one already sets a *de minimis* exemption for banks whose trading and available for sale assets are less than €100bn or whose total assets are less than €90bn, subject to trading assets not constituting more than 20% of the total assets.

Box 1: Brief overview of national structural reform agendas (continued)

- *The HLEG report* (Liikanen (2012)) proposes to ring-fence proprietary trading, market-making and unsecured exposures to hedge funds. All other activities would instead be left within the deposit-taking entity. In particular, securities underwriting would not need to be separated. A *de minimis* exemption is envisaged by the report for all banks whose total assets are under €100bn and whose trading assets (proprietary trading and market making) are under a threshold (15-25%) of the bank's total assets, to be calibrated by the European Commission.
- *The Netherlands* has set up a Commission on banking structure of Dutch banks and is analysing how and to what extent deposits need to be insulated from selected other activities.
- *The Belgian government* has tasked the National Bank of Belgium to analyse the desirability and feasibility of introducing structural reforms in banking (National Bank of Belgium (2012)) and contemplates isolating selected activities such as proprietary trading from deposit-taking banks.
- *In the USA* and despite the repeal of the Glass-Steagall Act in 1999 by the Graham-Leach-Bliley Act, US banks are currently still subject to specific, narrow activity restrictions that limit transactions between an insured deposit-taking entity within a holding company and its (investment bank) affiliates, subjecting those transactions to strict quantitative limits and collateral requirements and requiring those transactions to be on market terms (Sections 23A and 23B of the Federal Reserve Act). The deposit-taking entity is prohibited from amongst others securities dealing, market making, and underwriting. The parent holding company of the deposit-taking bank must generally qualify as a "financial holding company" to carry on investment banking/trading activities at all.
- *The Volcker rule* builds on the already existing separation requirements that apply to bank holding companies and adds to that by imposing a ban for deposit taking banks and groups that own them, to carry out proprietary trading and investing in hedge funds and private equity funds. This is tantamount to full ownership separation of those selected activities. No *de minimis* exemption is contemplated for deposit taking banks to be covered by the ban on proprietary trading. A *de minimis* calculation applies however to limit a bank's investment in any single fund to 3% and to restrict the banking entity's aggregate exposure to 3% of Tier 1 capital.
- In the US, the *swaps push-out provision* is effectively an OTC derivatives ring-fence. Banks can only deal in non-standardised and non-CCP cleared OTC derivatives if done via a separate legal entity specialised in such activity. Section 716 of the US Dodd-Frank Act states that banks either have to stop engaging in certain swaps (certain credit derivatives, all equity and most commodity derivatives) or do such swaps in a separate legal entity, registered as a swap dealer and subject to capital requirements and margin requirements under the derivatives sections of the Act. The provision is scheduled to enter into effect in July 2013. It would not affect those derivatives judged to be important for banks (i.e. interest rate, foreign exchange, gold/silver, credit derivatives where underlying is an investment-grade security), which could thus continue to be provided within the bank.

Box 1: Brief overview of national structural reform agendas (continued)

- The USA also implemented concentration limits. The national deposit concentration limit prevents acquisitions and consolidations resulting in banking groups having more than 10% share of national deposits. It is in place since the 1994 Riegle-Neal Act and was imposed a quid pro quo for the liberalisation of rules governing inter-state bank acquisitions. Under section 622 of the Dodd Frank Act, an additional concentration limit is proposed that prohibits financial companies from merging, consolidating with or acquiring another financial company if the total consolidated liabilities of the resulting financial company would exceed 10% of the aggregate consolidated liabilities of all financial companies.

*For more information, see the following documents: FR : *Loi de separation et de regulation des activités bancaires* (<http://www.economie.gouv.fr/files/projet-loi-reforme-bancaire.pdf>), DE : *Entwurf eines Gesetzes zur Abschirmung von Risiken und zur Planung und Sanierung und Abwicklung von Kreditinstituten* (http://www.bundesfinanzministerium.de/Content/DE/Downloads/Abt_7/Gesetzentwurf-Abschirmung-Bankenrisiken.pdf?__blob=publicationFile&v=1), UK: *Banking reform: a new structure for stability and growth* (http://www.hm-treasury.gov.uk/fin_stability_regreform_icb.htm), NL: *Commissie Structuur Nederlandse Banken* (<http://www.rijksoverheid.nl/nieuws/2012/09/03/de-jager-start-onderzoek-bescherming-spaarders.html>).