The Value of Banks and Their Business Models to Society

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1. INTRODUCTION

Jakob de Haan and Allard Bruinshoofd[1]

Banks play a central role in the functioning of the economy. Not only do they allocate financial resources, they also collectively create money in the process of granting loans. In this way, they have a considerable impact on the type of activities that are financed in society. During the financial crisis, it became clear that the banking sector at large was not sufficiently stable and customer-focused. Since then, banks and regulators alike have been busy reviewing bank business models, and several committees have been installed to investigate the desired scale and scope of banking activities. This is the backdrop against which the conference on *"The Value of Banks and Their Business Models to Society"* was organized jointly on October 4, 2013 by De Nederlandsche Bank (DNB), Rabobank and SUERF and hosted by the Duisenberg School of Finance. This volume contains several of the presentations at the conference.

The conference started off with the 2013 SUERF Annual Lecture by *Lex Hoogduin*. In a thought-provoking speech, which is included as chapter 2 in this volume, he emphasized the importance of human psychology, and of economics as a moral science. Crises cannot be avoided, as the three root causes of crises are uncertainty, human creativity and evolutionary determined human psychology. These insights call for modesty in the ambition of what can be achieved to reduce instability without hampering progress. Hoogduin warned that trying to engineer culture and morals too much can easily be counter-productive and even lead to disaster. Turning to banks, Hoogduin discussed the core functions of banks and how these add value. He also presented his views on current policy measures and proposals.

Teunis Brosens (ING) presented a paper written jointly with Wilfred Nagel (ING) entitled "The Good, the Bad and the Big: Is There Still a Place for Big Banks?" The authors argue in chapter 3 that answering the question "When is big too big?" is not easy. Size generates gains in efficiency, profitability and diversification, but as banks grow bigger and bigger, "too big to manage" may become an issue. Many banks have recognised this and are simplifying their structures and pruning product ranges and balance sheets. All of this is primarily a concern for the bank's owners. The one reason for policymakers to care and intervene is "too big to fail" and the ensuing taxpayer risk. However, banks and regulators are currently implementing far-reaching changes that substantially reduce the chance that taxpayers ever have to step in again. They therefore advise policymakers to

[1] We thank Leontine Treur (Rabobank) for her contribution.

avoid overshooting. Policy should not overreact by striving to eliminate or split each and every big bank. Instead, the authors think that both financial stability and the economy are best served by a diverse banking landscape inhabited by different types of banks.

Harry Huizinga (Tilburg University) presented a paper written jointly with Ata Can Bertay (Tilburg University) and Asli Demirgüç-Kunt (World Bank) entitled: "Size and Stability of Big Banks" (chapter 4). The study investigates the relationship between size and probability of default. The authors distinguish between absolute bank size (measured by the log of total assets) and systemic bank size (ratio of total liabilities to GDP). The correlation between absolute and systemic size is only 0.327, so it is important to distinguish between these. The analysis is based on a large international sample of exchange-listed banks over the years 1991-2011. Most banks (86%) are rather small in relation to GDP, but there is a tail of 9% of large banks, with liabilities exceeding 100% of GDP.

Looking at the data, the authors find that absolute and systemic sizes have a distinct impact on various variables, such as interest expense, returns, strategy and funding structure. For instance, banks with a large absolute size have a relatively lower capitalization, higher fee income share, and higher non-deposit short-term funding share. Banks with a large systemic size also have lower capitalization, but they have a lower fee income share and a lower non-deposit short-term funding share. Systemically large banks also saw significantly lower deposit growth during the crisis. Large banks, in both absolute and relative terms, tend to pay lower interest rates. This suggests that large banks are considered to be too-big-to-fail with implied risks from the government's perspective.

The keynote address was given by *Aerdt Houben* (Director Financial Stability Division DNB). The title of the address was: "Have We Solved the Too-Big-To-Fail Problem?" It is included as chapter 5 in this volume. Cutting directly to the chase, Houben said that the short answer is: "Almost!" And then added that we'll never fully solve it.

Houben discussed three ways of reducing the too-big-to-fail problem. First of all, we should reduce the probability that problems arise. This is mainly done by improving capital and liquidity positions, as set out under Basel III and implemented in CRD/CRR IV. All in all, from 2017 onwards, core tier 1 capital (including the additional buffer for systemically important banks) will be 4-5 times higher than the 2% required under Basel II.

Second, when problems arise, we should reduce the bill to pay. This can be achieved through resolution plans. If economically critical activities can be separated from the other activities of banks, this will reduce the span of the public safety net and, by implication, the bill to be paid by taxpayers if trouble arrives.

Houben stressed that this is a difficult process: when cutting out non-critical parts of a bank, these activities may not be viable on their own.

Third, losses should be shifted from taxpayers to bank creditors: bail-in instead of bail-out. In the Netherlands, the Intervention Act allows the Minister of Finance to expropriate shareholders and certain other groups of financiers. This was done in the case of the nationalization of SNS-Reaal, which entailed a 100% write-off of shareholders and a full bail-in of subordinated debt. Another recent bail-in example was that of Cyprus. Further afield, in Europe, work is going on in the context of the Bank Recovery and Resolution Directive (BRRD), towards introducing 'bail-in debt'. From 2016 onwards, this instrument will allow for the losses from a failed bank to be borne by the bank's creditors without state support. Such 'bail-in debt' may, when difficulties mount, be converted into share capital or written off outright. Under the current draft BRRD, a new loss hierarchy will be introduced. First, losses up to 8% of total assets are to be absorbed by shareholders and holders of other instruments. Then, losses up to 5% of total assets may be borne by the European Resolution Fund for banking union countries. After that, the ESM (European public backstop) or national backstops may provide support, which means that the taxpayer would only be hit after 13% of the balance sheet is bailed-in. Looking back at European bank losses in the years 2007-2012, the losses averaged some 3% of the balance sheet. Only the losses of Anglo Irish Bank exceeded the 13% threshold. So while the need for state support cannot be precluded even after implementation of the BRRD, the probability will be strongly reduced.

Both the expropriation instrument and the bail-in debt may be used if the supervisory authority considers the institution no longer viable. This discretionary power in the hands of the supervisor creates uncertainty for senior unsecured investors. In order to reduce that uncertainty, some institutions have issued contingent convertible bonds (Coco bonds). These can be converted into equity capital or be written off entirely if the capital position of a bank falls below a predetermined level. Thus whereas Coco bonds have the same effect as expropriation and bail-in debt, they reduce the uncertainty for the other senior unsecured financiers.

The contributions to the panel discussion, chaired by *Dirk Schoenmaker* (Duisenberg School of Finance), have been included in chapter 6. Schoenmaker argued that the business models of international banks are very different. The two polar cases are the globally integrated banks operating through a worldwide web of branches, and the decentralised global banks with various country subsidiaries. The difference between the two business models is clearly relevant. But by using a common brand name, decentralised banks are regarded as integrated groups by market investors. Moreover, decentralised banks also perform some key

functions, such as the development of their risk management model, at the central level. Schoenmaker therefore stresses the need for international coordination between national supervisors to ensure effective supervision at the consolidated level. Such a consolidated supervisory approach may keep the international business model of banks alive. The alternative approach of national based supervision will *de facto* mean the end of the international banking model.

Harald Benink (Tilburg University) insisted on the need for a credible backstop, which among other things requires that intervention and resolution laws are in place. He suggested already introducing bail-in in the upcoming Asset Quality Review (AQR). This is especially important if the amount of hidden losses still out there in the European banking system turns out to be high. Benink would not be surprised if losses yet to be uncovered would exceed EUR 500 billion. If capital shortage cannot be financed in financial markets or by taxpayers, then a bail-in is needed. A legal framework is needed, such as the Intervention Act in the Netherlands. Benink believes that the ECB should demand that countries should have a legal mandate before the AQR is finished. Without these contracts, the ECB should refuse to take these banks under its supervision. Unfortunately, the ECB seems somewhat divided on the question of whether private or public money should be available as a backstop.

Andreas Bley (BVR Association of German Cooperative Banks) stressed the need for diversity of bank business models. The cooperative model in general and the German cooperative model in particular deserve special attention. In Germany, cooperative banks serve 20-25% of the market, and they weathered the financial crisis without state aid. The cooperative bank system in Germany consists of about 1,100 entities that are legally independent from each other, but work together as a network. For example, they have central banks and specialized institutions to provide services an independent bank cannot provide. The median size of cooperative banks is about EUR 300 million in total assets. According to Bley, a credit crunch in the aftermath of the financial crisis has been averted in Germany due to the presence of the cooperative banks. Finally, he warned that regulation may not always be adequate for cooperative banks. For instance, how can cooperatives meet the required level of bail-inable assets by issuing debt instruments such as Coco's if these small banks never went to the capital market before?

Alicia Sanchis (Banco Santander) stressed the need for banks to refocus on clients and their needs, on risk management, on understandable contracts, and on their relationship with markets. In terms of risk management, project viability must be put center stage avoiding an overreliance on collateral. The transformation functions remain at the core of banks, but given pressure on the banking sector and the funding mix, banks should not stretch the maturity transformation too

much. Markets and other forms of (co-)financing could be developed more, and the role of banks becomes that of an intermediary providing expertise. Regulation should allow banks to pursue this re-focusing; legal uncertainty stemming from new rules and regulations should be reduced, and a level playing field with institutions not falling under the same degree of supervision should be put center stage.

Michiel Bijlsma (CPB) discussed how banks are organized, and the long-term drivers affecting bank scope and scale. Though much in vogue right now, regulation is not the key driver. Technology is more important. Technology will reduce transaction costs, information asymmetries and economies of scope, while it will increase economies of scale. As a result, banks will become even bigger. They will also become more specialized and the role of international financial markets in the financial system will become more important. Therefore the key issues for policy are: How to cope with ever bigger banks? How to deal with the national and international presence of banks? How to deal with free riding on information collection in international financial markets? What tasks should be organized nationally/internationally, for example payment systems? Bijlsma stressed the information problem that was at the heart of the financial crisis. People were buying complex products, believing that others had checked them out. There is an underproduction of information on risk, because for trading purposes it is easier and cheaper to use information gathered by others.

2. The Value of Banks after the Great Financial Expansion

Lex Hoogduin[1]

2.1. Introduction

It is a great honour to give the 2013 SUERF Annual Lecture in SUERF's 50th anniversary year at the Duisenberg School of Finance in Amsterdam.

Today we still live in the aftermath of the greatest financial crisis since World War II. It has shaken confidence in the banks, bankers and the financial sector at large. Many observers argue that banks have been value deductors rather than value creators. They have become too-big-to-fail, too-big-to-save, or too-complex-to-manage.

Several new regulations have been enacted in the meantime. But there is still a lot of anger towards banks. There is a moral dimension in much of the criticisms. Banks and bankers have taken irresponsible risks. They have strongly benefited in the upswing and left the taxpayers with the bill after the crisis, is the view.

This has triggered calls for more fundamental change in the financial sector. Bankers have lost sight of their clients, focus too much on short-term gains and too little on what is in the long-term interest of society. Changing this requires a change in culture inside the banking sector and also a change in many banks' business models. Clients should take central stage far more than was the case in the past decades.

Today's conference focuses on the issues of the value of the banking sector to society and business models in the banking sector. I will also focus this annual lecture on those issues. I will prepare the ground by briefly discussing economics as a moral science, the root causes of financial crises, the role of banks in society and the decades' long process in the run-up to the financial crisis of 2007 which I call the period of the Great Financial Expansion (GFE). This is the context in which I will discuss the value of banks to society and their business models.

[1] I thank Allard Bruinshoofd, Jon Frost, Harry Garretsen, Jakob de Haan and Leontine Treur for their comments on an earlier draft of this speech.

2.2. ECONOMICS AS A MORAL SCIENCE

I am an economist. It requires some explanation why an economist should speak about an issue also taking a moral perspective. It is largely forgotten that economics used to be a moral science. And in my view it still is and ought to be the case to make sense.

When I speak about the value of banks, I have indeed in mind more than just value in terms of monetary added value. As said, I believe that the debate about banks is not just about added value expressed in money. It is also not without reason that the expression *moral* hazard, with the emphasis on 'moral', plays an important role in discussing behaviour in the financial sector.

What is the topic of economics? It deals with decision-making about scarce resources in the face of uncertainty. It is about individual choice and intended as well as unintended consequences of such choices at the macro level.

In modern mainstream economics the decision maker is modelled as an agent who maximizes utility or profit. This has, in practice, turned economics into a rather technical, morally neutral science. Economics in this approach is only about efficiency. But it thereby misses the point that people cannot and do not take their decisions in isolation. They are moral beings and in their decisions, views about what ought and ought not to be done, about what is morally good or bad play a central role. That gives a different perspective on many issues. To give one example: In mainstream economics the question "what is the optimal level of inflation?" is a normal question. In a morally grounded approach inflation may be seen as bad, not as something to be optimised but to be avoided.

Economics as a moral science does not start from an 'empty' utility function, but has to know the values in a certain group or society, how they influence choices, and therefore what their impact is. Since moral values are not static, knowledge about history is required. Economics as a moral science needs to be linked to ethics, psychology, political science, and sociology and needs a framework for analysing the evolution of moral values.

My own perspective on the evolution of moral values in society has been strongly influenced by Hayek and Popper. There are strong limits to human's capacity to rationally design an ethical system[2]. Hayek (1978a) calls the false idea that we can, "the error of constructivism". Ethical systems evolve over time in a spontaneous process. The prevailing ethical system embodies far more knowledge than anybody can possess. Decentralised decision-making in a market economy

[2] An example here is the call for increasing personal liabilities of bank managers. This may reduce moral hazard. But at the same time limited liability encourages risk taking, which without this encouragement may be insufficient for generating progress or diminishing misery.

is superior to central planning, not only in efficiency terms, but also in moral terms. It allows for freedom, that is the opportunity for people to pursue their own goals with their own knowledge (Hayek, 1945). The mirror side of freedom is that man is responsible and accountable for his choices. That does not mean that we need no government, but that government should only step in, where decentralised decision-making cannot work properly and to provide the framework for decentralised decision-making.

2.3. FINANCIAL CYCLES AND CRISES

The market system is imperfect. One of its imperfections is that it is prone to cyclical fluctuations and periodic crisis. Although all financial cycles and crises have their own characteristics and are different, they follow a similar pattern and have the same root causes[3]. In that sense what Mark Twain is often quoted as having said about history also applies to financial cycles and crises: "History does not repeat itself, but it does rhyme".

I see three root causes of financial crises in market economies: fundamental uncertainty, human creativity and evolutionary determined human psychology. Human creativity offers new opportunities as time moves on. But we cannot know when that will happen, how big the opportunities are and what their contents is. If we would already know now what future opportunities are, they would not be new. Logically, man cannot know in advance the development of his own knowledge. That is part of the human condition, like scarcity. Uncertainty also means that the price of assets cannot be objectively known. Prices are by definition subjective. That in combination with human traits, such as greed, desire to act, and herd behaviour, can lead to booming asset markets and asset price increases up to a point where they turn out to be unsustainable. And then the whole process goes into reverse. Abruptly.

Especially at the end of the boom, there are often cases of immoral behaviour. But this is not so throughout the boom phase. Nor is immoral behaviour at the root of cyclicality. There are also human traits that check the development of exuberance like fear, worries and panic, but they are not always strong enough and may only get the upper hand when it is too late.

This may be the result of evolutionary dynamics. The same traits that cause cyclicality are at the root of entrepreneurship resulting in innovation and productivity growth. They are thereby the sources of economic growth, progress, and increasing welfare. They have helped mankind to survive and solve problems.

[3] See Reinhart and Rogoff (2009), Kindleberger and Aliber (2011) and Minsky (1986).

Cyclicality and crises are the inevitable by-product of economic and human progress. This may also explain that, so far, no ethical system seems to have emerged that acts as a strong break on cyclicality and crises. The opposite may rather be the case. Our moral system may well be pro-cylical around otherwise relatively rigid core values. Taking risk is considered as good in good times, while the opposite is the case when the cycle has turned. Then prudence is valued very highly, making it likely that a recovery with healthy risk taking is postponed.

All this does not mean that nothing can and should be done to try to reduce instability without hampering progress and to reduce the costs of instability. But it does call for both modesty in the ambition of what can be achieved and modesty in changing culture and human motivation as a means to achieve a better outcome. It should also be taking into account that trying to engineer culture and morals too much can easily be counter-productive and lead to disaster.

2.4. THE ROLE OF BANKS IN SOCIETY

The role of banks in society has evolved over time. Banks have emerged to fulfil four core functions in the economy: providing credit, liquidity, payment services, and facilitating the functioning of financial markets. A market economy cannot thrive without these functions being fulfilled properly. The moral case for a market economy therefore also depends on a properly functioning monetary and banking system. Whatever the specific business model of banks is, these are therefore the core functions of the banking system.

Value is always created to individuals. Society as such is not an acting entity. It has no own ends. Speaking about the needs of society, as sometimes done by critics of the banks, is therefore misleading. It can lead to promoting or protecting the interests of particular groups, which happen to have the political majority in a certain period. It creates rent-seeking activities with inefficiencies as a result.

By providing credit, banks play a decisive role in the allocation of resources in the economy. As Keynes (1936) has emphasised, they hold the key to economic expansion. Banks facilitate the growth of welfare in societies. Schumpeter (1942) has argued that they enable the constant restructuring of the economy.

Presenting banks as intermediaries has led to the misconception that banks just pass on saving surpluses in some sectors to sectors that have shortages and would like to invest. This is confusing saving and finance. When banks grant credit, they create money. That money when spent creates income and savings. Banks are and cannot be passive accommodators of what are called 'the needs of the real economy'. The distinction between a real and monetary sector in the economy is not very helpful and may be misleading. A modern economy is an integration of

both sectors. 'The needs of the real economy' do not exist autonomously. An economy is an organic system, where an element has only meaning in relation to other elements.

Their credit function means that banks have often to say 'no' to potential borrowers. This makes that throughout history banks and bankers have never been popular. That is not likely to change in the future. Neither should it, if banks are going to play their role properly.

Introducing the concept of client centricity and putting emphasis on it may hamper value creation by banks if understood wrongly. If it is taken to mean that banks should passively honour any demand for credit, it will cause over-crediting and misallocations which may lead to stagflation and/or financial crises. To understand this is one of the great contributions of the Austrian school of economics and of Hayek in particular[4].

The credit business is risky, by definition. As mentioned earlier, the future is uncertain[5]. This uncertainty cannot be removed, no matter how good risk management is. Things can always turn out worse than hoped or expected. And risk management is not a hard, quantitative science, despite the impression one may get from looking at the models that are used (Blommestein, Hoogduin and Peeters, 2009). A bank can only add value by taking risk and facing uncertainty. A bank that does not take risk and that is afraid of uncertainty, does not do its job and will turn out not to be viable. In the end, value can only be added and economic progress can only be made by taking the risk that value will be destroyed. And history tells us that this sometimes happens massively in financial crises.

Banks are providers of liquidity by supplying demand and saving deposits. This creates great value to economic agents. By holding part of their wealth in liquid form, agents do not have to commit themselves for a long period and remain flexible to respond to unforeseen opportunities or threats. Liquidity is a special option. And like all options it has value. It is special in that the owner can decide not only when, but also in what state of the world and for what purpose he will exercise the option. It is a valuable option to have in an uncertain world. Money and liquidity more generally support freedom. So the value of money is not only derived from its ability to reduce transaction costs.

Bank deposits are only liquid if agents trust banks. This creates an inherent tension in the bank balance sheet. Credit provision cannot occur without taking

4 See Hayek (1931; 1933).

5 Uncertainty is different from risk. The latter can be quantified and managed. Uncertainty is a lack of knowledge about all possible outcomes of a decision. It cannot be managed, but only be dealt with. And it makes a difference how it is dealt with. This distinction goes back to Knight (1921) and Keynes (1921). See also Hoogduin (1987). For the role of uncertainty in Keynes's economic theory, see Keynes (1936), pp. 109-124.

risk, but providing liquidity services means that the bank should be as safe as possible. This makes banks vulnerable to bank runs. The ways to cope with this tension that have evolved are deposit guarantee systems in combination with minimum capital and, more recently, minimum liquidity requirements for banks, and their supervision.

The minimum liquidity requirements do not go so far as to ask banks to back up their demand deposits for 100% with liquid assets. Would that not be desirable? One could also raise the issue of whether it would not be better to separate providing credit and liquidity services[6]. I will come back to those issues later.

The provision of safe demand deposits automatically leads to a role of banks in the payment, clearing and settlement chain. That adds value: without such functions transactions would not be completed and the value inherent in the transaction itself would not materialise.

Due to their role in the payment, clearing and settlement chain, banks are highly interconnected. This has a positive and a negative side. The positive side is that adverse shocks can be spread broadly and thereby easily absorbed. The negative is that this is only true up to a point[7]. For shocks beyond a certain size, the interconnectedness leads to amplification and a potential domino effect throughout the banking sector. The resulting financial instability can have a large negative impact on growth and employment which one would like to avoid. This may make banks too big or too interconnected to fail. And they need not always to be very big for that to be true.

Post-transaction services could be seen as part of public infrastructure supporting a market economy. That raises the issue of whether such functions should not be done by a public institution. The disadvantages of such a solution are that it may hamper innovations in these services and would lead to inefficiencies. It can also be questioned whether civil servants will manage the risks in the post trade services better than the private sector. Which sector has more skin in the game? The conclusion may be different from service to service also because the risks and potential for efficiency gains may be different for payment, clearing and settlement.

Finally, banks can facilitate transactions on financial markets by providing investment-banking services. This creates value, because without those services some value creating transactions would not take place.

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6 Van Dixhoorn (2013) discusses four alternative monetary regimes: the so-called Chicago Plan, positive money, narrow banking and limited purpose banking.

7 See recent work in the complexity literature about financial instability, like Eisenberg and Noe (2001), Cifuentes, Ferruci, and Shin (2004), and several contributions in Abergel, Chakrabartie, Chakraborti, and Gosh (2012). For a general discussion of complexity, see Mitchell (2009).

Two issues have come to the fore. Should investment-banking services be combined with the other core banking functions? Does investment banking require more risk appetite than the other functions? And if so, is there a risk that decisions in the other parts of the bank will be infected by the risk appetite in the investment bank part? This leads to the issue of separation of retail and investment banking: back to Glass-Steagall or not? Apart from assessing how important the risk mentioned in this context is, one also has to assess the benefits of universal banking. And this advantage mainly comes from diversification and, up to a point, economies of scale and scope. It has also to be taken into account that separate investment banks still can have a negative impact on retail banks, when they fail. Lehman Brothers was an investment bank after all. And finally: most financial crises had their roots in real estate. Providing mortgages is an activity mostly assigned to retail banking. Retail banks by nature are quite risky. On balance my conclusion is that reintroducing a distinction between investment and retail banking need not be high on the reform agenda.

The second issue is to what extent should proprietary trading by banks be allowed? Proprietary trading may create a conflict of interest between the client and bank. It may increase the risk of spreading too high a risk appetite and a too aggressive culture in the bank as a whole. It is also more difficult to see proprietary trading as a core value creating activity of banks. However, it is not so easy to make a sharp distinction between trading for clients and proprietary trading. And may proprietary trading, if well aligned with client trading, not also improve the services to clients by having skin in the game and being actively involved in the price discovery process? This may point more in the direction of ensuring that proprietary trading does not become dominant and inconsistent with trading for clients. This is, for instance, proposed in the Liikanen report and supported by the Dutch Wijffels committee for the Dutch banking sector[8]. It is also the view of the Dutch government which has taken over most of the recommendations of the Wijffels Committee.

2.5. THE GREAT FINANCIAL EXPANSION

Let me now turn to the financial crisis of 2007/2008. In my view, the start of the crisis marks the end of a remarkable era, which I call the Great Financial Expansion. That period probably had started in the late 1960s. The enormous expansion during this period was driven by developments in finance and

[8] High-level Expert Group on Reforming the Structure of the EU Banking Sector (Liikanen report), Final Report, 2012. Commissie Structuur Nederlandse Banken (Committee on the Structure of the Dutch Banks, Wijffels Committee), Naar een dienstbaar en stabiel bankwezen (Towards a Service Oriented and Stable Banking System), 2013.

monetary theory, deregulation and liberalisation, innovations in information and communication technology and the end of the Bretton Woods system of fixed but adjustable exchange rates.

During this period, we have seen a large increase in the size of the financial sector relative to other sectors in the economy and the economy as a whole. Several very big international banks emerged. Derivatives markets developed, enabled by the theoretical work of Black and Scholes (1973) and Merton (1973). The demise of the Bretton Woods system caused an increase in the volatility of financial markets. This provided an impetus to the development of derivatives markets.

It was a period in which central banks were made independent and were given the mandate to focus primarily on price stability. This was the result of the unhappy experience in the 1970s and the revival of monetarism under the leadership of Milton Friedman (1969). Central banks came to stand in the centre of economic policy. Inflation came down to levels in line with price stability and output volatility also decreased. All this was combined with continuous albeit not spectacular growth in advanced economies. It is understandable that this period was called the Great Moderation (Davis and Khan, 2008). Price stability was seen as an important contribution to financial stability. In the process of decreasing inflation, interest rates fell to historically very low levels. Since inflation was the main driver of interest rates, rapidly growing credit and asset prices were not seen as a reason to tighten monetary policy. Central banks at least accommodated the Great Financial Expansion, but probably were instrumental in triggering and sustaining this process.

The market came more and more to be seen as superior to government in generating welfare and progress. It was the time of Thatcher and Reagan. Deregulation and liberalisation also entailed removing barriers to the free movement of goods, services and capital. This contributed to the globalisation of markets and the growth of global trade. Emerging economies started their catching up process with the advanced economies. In China alone hundred of millions of people were elevated from poverty.

Financial markets were seen as self-correcting to a large extent. The efficient market hypothesis reigned. There was also the widespread belief that shareholders would prevent banks from taking too much risk. Risk management developed quantitative tools and came to be seen as a science. If risks were professionally managed, they were thought to be under control.

The emphasis on the power of self-correcting market forces prompted a relatively light-touch supervision of the financial sector. The presumption was that if individual banks were healthy the financial system would be stable. Banks were allowed to use their own quantitative models for assessing risk and capital

requirements. There was no need to pay separate attention to the financial system as a whole. The internationalisation of finance was widely believed to have made the financial system more stable. Shocks to the system could be spread more widely. The financial sector became more interconnected, but on balance this was seen as a good thing. The apparent success of the financial sector and its apparent contribution to the economy may also have increased the risk and occurrence of regulatory capture. And it also triggered overconfidence, herding behaviour, greed and other human traits mentioned earlier to play their role in this financial boom process. The role of asymmetric and very high bonuses is a very visible aspect of this in the Great Financial Expansion.

The theory of finance had a highly micro character. It also made great contributions to asset management. The construction of portfolios was presented as finding an efficient combination of risk and return. Consistently outperforming the market was seen as very difficult, if not impossible. More and more the focus came on index investing and using the information of a limited number of rating agencies.

With hindsight, the period since the 1970s can be seen as the upward phase of a very long financial cycle. In the course of the great financial expansion banks became more vulnerable. Their leverage increased without much notice. Supervision was focused on risk-weighted capital requirements and did not pay much attention to leverage. But even risk-weighted capital buffers became very thin indeed and there were no harmonised liquidity requirements. And therefore there was also too little attention for this aspect of the condition of the financial sector. The size of banks and the financial sector relative to national economies had made the too big to fail problem more acute.

Financial institutions may have become more diversified during the Great Financial Expansion, but at the same time the financial system has become less diverse. Financial institutions used similar risk models and used information from the same rating agencies and exposures became more similar, also because of worldwide diversification. In passing, I note that the irony is that they are likely to have made financial markets less efficient.

Anyone familiar with the theory of complex systems would have been very worried by the combination of a highly interconnected system with low buffers and little diversity[9]. For instance, in biology it is well known that such systems may be very vulnerable. As said earlier, interconnectedness beyond some point is a shock amplifier rather than a shock absorber. The transition from a stable to an unstable regime can be abrupt and be triggered by a relatively small and local

[9] See the references in footnote 7. One may also want to look at: Mitchell (2009) and Haldane (2009), pp. 17-19 in particular.

shock. This may be the role that the U.S. subprime residential mortgage market has played in 2007.

2.6. BUSINESS MODELS

The Great Financial Expansion has come to an end with the most severe financial crisis since the 1930s, followed by a deep recession and a shallow recovery. This has been costly. Part of the value that seemed to have been created has turned out to be unsustainable. It is our duty to think about potential measures to make the banking system more resilient.

I reiterate that it is impossible to prevent all systemic risk and all crises, if we want to have welfare growth. There is a serious risk that the cause for being risk-averse will be overemphasised. It is also important to note that the impact of measures in a complex system like the banking sector can only be imperfectly predicted. There is always a possibility of unintended consequences. The more so, if many changes are made at once. An example in this context is the impact of measures in the banking system on the so-called shadow-banking sector.

Rational policy making can only be piecemeal, as argued by Popper in his concept of social engineering[10]. This implies that it is important to set priorities in taking measures to make the banking system more stable and that change is a process in which surprises will happen. Policy makers should be on guard for surprises and be prepared to learn from experience. And they should look at the financial system as a whole and not at banks or other financial institutions in isolation.

In my view the most important measures for creating a more resilient banking system are: increasing capital and liquidity buffers, and ensuring that these buffers can be used to absorb shocks. And making it credible that any bank is resolvable not only involving shareholders, but also other creditors while minimising any contribution by the taxpayer. This requires agreement on resolution regimes and the drafting of so called living wills by systemically relevant banks. A workable living will may necessitate changes in the organisational and legal structure of a number of banks. The objective of writing living wills is to enable banks in resolution to continue to perform their core functions in order to avoid the usually high costs associated with a stand-still or bankruptcy.

Monetary policies around the world should be normalised[11]. Very loose monetary policy and so-called unconventional monetary policies may easily cause

[10] Popper (1971) has introduced the idea of piecemeal social engineering.
[11] This is close to the approach of the BIS; see Caruana (2013).

renewed financial instability and/or inflation in the longer term. And they reduce pressure on banks to restructure. In the worst case this creates Zombie banks, or keeps already existing Zombie banks in business[12]. An unhealthy banking sector hampers innovation, productivity growth and economic growth. Banks do not contribute to value creation as much as they could.

As there is still doubt about the soundness of the European banking system, a credible and swift restructuring operation is highly urgent. Without a healthy financial system, there will be no sound economic recovery and sustained value creation in society. It is high time to resolve legacy issues if and where that has not been done sufficiently yet. This requires a transparent and realistic valuation of banks' balance sheets, credible stress tests, mandatory recapitalisation, and restructuring and resolution procedures. It finally requires government debt to be made sustainable.

Basel III is a step in the right direction. However, even after full implementation capital buffers remain too low for feeling comfortable. They should be increased further. Moreover, the Basle Committee has recently started a consultation to discuss the balance between simplicity, comparability and risk sensitivity of the capital requirements[13]. My view is that Basel III is too complicated and too ambitious in determining risk weights. This points towards a more prominent role for the leverage ratio in setting capital requirements (Haldane, 2012).

What about monitoring and promoting the right culture and ethics in a bank? I would not spend a great part of supervisory resources on this topic. As argued earlier, norms and ethics are deeply rooted in human nature and cannot be changed at will. And focusing on risk aversion can easily be overdone in the aftermath of this crisis. Some of the norms that supervisors like banks to follow can even be counterproductive. Earlier I mentioned promoting 'client centricity' in the context of a bank's credit business as an example. It seems to be difficult to really monitor and assess the internal culture of a firm. It is clear that in the run up to the crisis, bonus systems were too asymmetric. This has been largely corrected. I would now pause and see how the taken measures play out.

Additional taxes on the banking system are not good policy. For a large part they will be passed on to the clients and to the extent they are not, they hamper the necessary further deleveraging of the banking system. And supervisors should not be too shy in setting the pace for further reducing leverage. Hellwig and Admati (2013) are right in stressing that the costs of reducing leverage, if any, are mainly private. Paul Tucker, the outgoing deputy governor of the Bank of England,

[12] The term was introduced by Kane (1989) and refers to under-capitalized banks that do not perform their credit function properly. They are either too risk averse or gamble for resurrection.

[13] Basel Committee, The Regulatory Framework: Balancing Risk Sensitivity, Simplicity and Comparability, Discussion Paper, July 2013.

somewhat nuances the analysis of Hellwig and Admati but agrees with their core conclusion (Tucker, 2013).

Should regulators directly interfere with banks' business models? I do not think that this is a good idea. The priority measures that I have mentioned have an important impact on the framework in which banks have to operate. They change the rules of the game. Finding business models in that new era after the Great Financial Expansion to provide the old core functions is a task best left to banks themselves in the market process. That is the least imperfect discovery procedure for that type of questions we have available to use the words of Hayek (1978b).

However, this implies that one direct intervention is warranted. Where banks have been nationalised after the financial crisis, they should be privatised again. And banks that have received capital injections should repay this support as soon as prudently possible.

And there is one other intervention that is worth considering. That is nationalising the post-transaction infrastructure, i.e., payment, clearing and settlement. I have not yet reached a firm conclusion on whether that is desirable. For the moment, I give the benefit of the doubt to using market forces in this area too, because of their role in promoting efficiency and innovation.

Regulators and supervisors better not interfere with issues such as whether it is better to separate investment and retail banking, whether it is right for universal banks to do proprietary trading at all, separate the credit and liquidity function of banks and 100% reserve banking.

The first two of those issues have been discussed earlier. Separating the credit and liquidity function of banks, as for example proposed in the Chicago Plan, would make an independent authority or the government responsible for all liquidity creation. This can only work when the demand for liquidity is stable. The quantity theory of money should hold in the medium term that is relevant to monetary policy. The existence of fundamental uncertainty make it unlikely that this is the case, as history has shown. Liquidity creation can therefore also better be the outcome of a process, in which the central bank steers a short-term interest rate and the banking sector creates liquidity. 100% reserve banking would be problematic for the same reason.

It has been argued that banks may have become too complex to manage. This may be true. But I would leave it to the market process to correct that. It may well be that improvements can be made in dealing with complexity. The market process is a better procedure for discovering if that is true than making prescriptions for the size of banks.

2.7. CONCLUSION

The best way forward seems to be pursuing the key priorities that I have mentioned:

- make the banking sector healthy rapidly where this is not yet the case, in parallel with putting government debt on a sustainable path;
- increase capital and liquidity buffers further over time after the Basel III objectives have been reached;
- ensure that these buffers can be used when needed;
- put greater emphasis on the leverage ratio as a measure of banks' required capital;
- create credible resolution regimes in combination with workable living wills;
- and at the same time allow for different bank business models to be tried and flourish;
- normalise monetary policy.

This set of policies seems to give the best chances of making the banking sector instrumental in the recovery from the worst crisis in eighty years and to be of best value to all of us.

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3. The Good, the Bad and the Big: Is there still A Place for Big Banks?

Wilfred Nagel and Teunis Brosens

3.1. Introduction

Since the financial crisis, banks and bankers are often portrayed in ugly ways. Especially big banks are seen by some as operating with low ethical standards, willing to kill for money and taking high risks while doing so. And whereas in the well-known Western nobody rode to the rescue of the outlaws, big banks turned out to be 'too big to fail' (TBTF) and had to be supported by governments using taxpayer money. That, very understandably, has shaped the attitude towards banks and towards big banks in particular.

But banks have learnt lessons, capital levels are being strengthened and regulation is tightening. Moreover, the legal framework for resolution and who pays for it is changing radically. This is why we think it is now time to revisit the question: Is there still a place for big banks? In this chapter, we will argue first, that banks differ widely in terms of efficiency, profitability and complexity. Indeed, some banks may have been 'too big to manage'. We argue that this is primarily an issue for the owners of the bank to address, meaning in most cases, its shareholders. Secondly, many in the banking sector have recognised that banks may have grown too big and complex, and efforts are being made to reduce complexity and prune product ranges and balance sheets. Thirdly, while inefficiency and unprofitability do not justify intervention by policymakers, such intervention is justified when banks are TBTF and thus a potential liability for taxpayers. These concerns have over the past few years sparked reactions within the banking sector and also regulatory developments that in the near future will greatly reduce the chance that taxpayers ever have to step in again. We therefore encourage policymakers to avoid overshooting: policy should not be aimed at eliminating or splitting each and every bank. Instead, our advice is to ask i) what services society expects from banks, and ii) which type of banking system will be best suited to deliver these services in the most efficient and least risky way. We start by discussing why size has become an issue for banks to begin with. In section 3.3 we summarize the reasons why banks have grown big. We then turn to the changes that are taking place, introducing the three lines of defence against failure and its consequences in section 3.4. After evaluating objections against big banks, we explain the usefulness of big(gish) banks in section 3.5. We draw our conclusions in section 3.6.

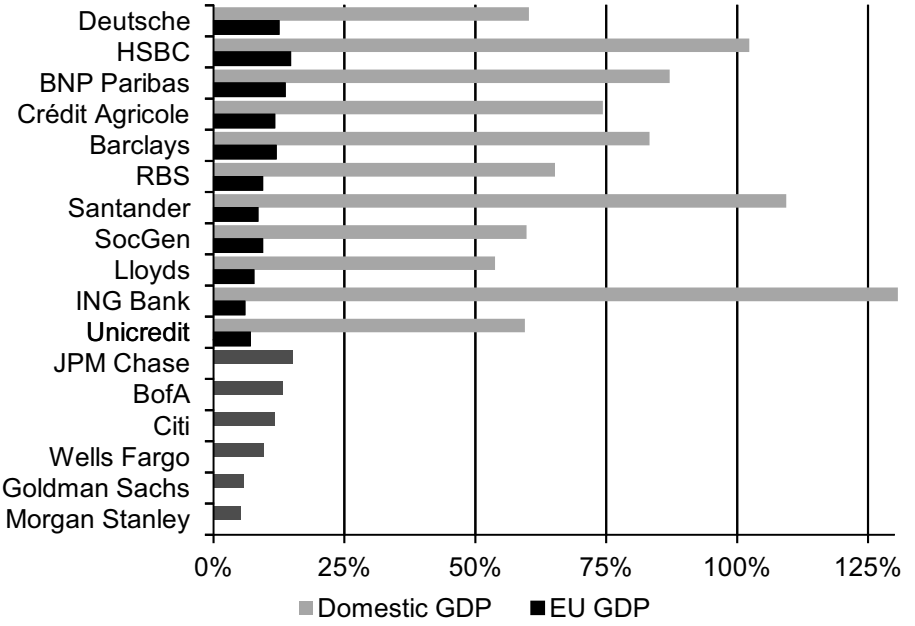
3.2. WHY IS SIZE AN ISSUE?

Let's start by going back to basics. Why has size become an issue for banks? Bigger banks might be less efficient, less profitable or more risky (more volatile returns). These are primarily concerns for the owners of the bank, the shareholders in most cases, to deal with: they suffer from higher risk or lower efficiency and have most to gain from improvements in this area. Investors should discipline banks. There is one important externality though, which is the potential risk a bank poses for taxpayers. As externalities distort incentives, this justifies intervention from policymakers to reduce the externality or take measures to counterbalance it. The former is always the preferred approach as it produces fewer distortions.

A second very basic but important issue, which is sometimes lost in the debate, is how to measure size? What is the relevant unit; and what to compare it with? Do we look at individual banks, or at the banking sector in a jurisdiction? While frequently individual banks are singled out, the size of the banking sector as a whole may be the more important yardstick. A big banking sector consisting of many small banks with similar exposures could be a less stable system than a small sector consisting of a few big, better-diversified banks. And should foreign branches and subsidiaries be included when assessing the size of a bank or a banking sector? Should all of this be reflected in size calculations, and if so, how? A final measurement issue is the denominator. The size of banks, and especially their systemic importance, is often measured by their size compared to the economy of their home country. This reflects the taxpayer risk view in which the home country implicitly guarantees the bank. As shown in Figure 3.1, big European banks have balance sheets representing substantial chunks of their home country GDP – no wonder taxpayers are worried. Big banks in small countries stand out in particular. E.g. ING Bank has assets worth 131% of Dutch GDP.

But this is no longer an accurate representation of taxpayer risk. Firstly because of the numerator issues discussed above: some banking assets are part of subsidiaries that are less of a risk for home country taxpayers. More importantly, with Europe moving towards a banking union, bank resolution is moving to the European level. Residual risk of bank failure will no longer be borne at the national level, but at the much larger European one. When the size of Europe's banks is calculated using the *European* GDP as denominator, their systemic size is much smaller. Systemic bank size in Europe then looks comparable to the major US banks' systemic size. But there is an even more important reason why Figure 3.1 is no longer appropriate to assess taxpayer risk: measures and reforms are being implemented that greatly reduce the chance that taxpayers will be called upon again in the future. We will discuss these in section 3.4.

Figure 3.1. Size Compared to Domestic / EU Economy (year end 2013)



Source: Bloomberg, Ecowin, ING.

3.3. WHY DO BANKS (WANT TO) GROW BIG?

The above demonstrates that there are no exact criteria to determine when a bank is 'big', let alone when it is 'too big'. But let us accept for the moment that, although lacking exact criteria, we know a big bank when we see one. The question then is: why did this bank end up being big? What are the incentives for a bank to grow? A review of the literature is presented by Liikanen (2012). We list the main incentives here:

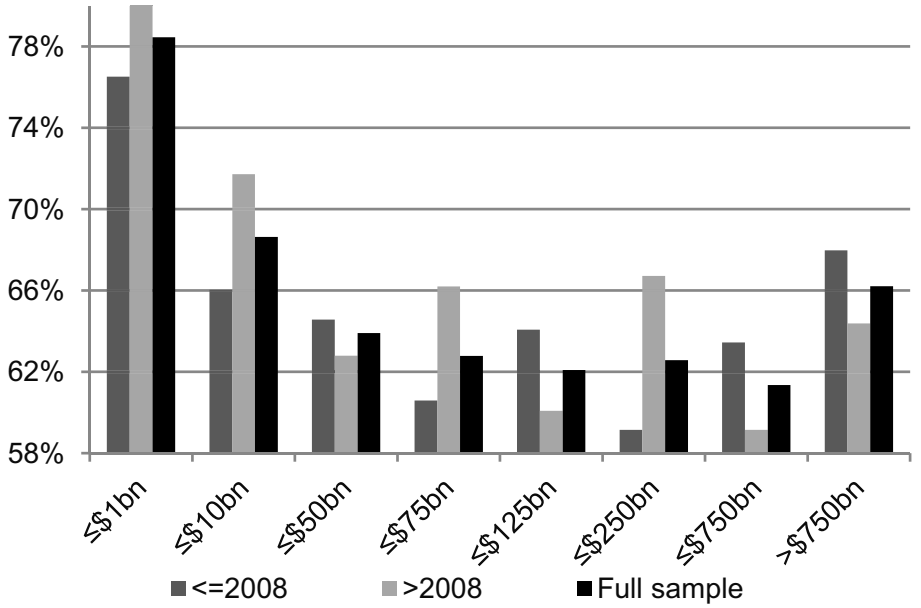
– *Economies of scale.* A bank has overhead costs, for example the risk, compliance, audit and legal departments. The bigger the bank, the bigger the revenue base to pay for these costs. Given the increasing regulatory load facing banks, the overhead to implement and monitor regulation is pressing more heavily on banks, meaning economies of scale are becoming more important. A small bank may become 'too small to succeed' for this reason. Economies of scale also exist in the financial infrastructure that a bank maintains. Payments, clearing and settlement systems require substantial investments, while the marginal cost of carrying payments on these systems is very low.

- *Economies of scope*. Synergies may exist between different bank activities. Over the years, banks have often strived to offer their clients a 'one stop shop'. It is attractive and relatively cheap to offer retail depositors a current/checking account and the opportunity to borrow occasionally too. And corporate clients that take out bank loans may also be interested in assistance when issuing equity or bonds. But these scope economies are not only supply-driven. The ongoing internationalisation has also created increasing demand by business clients for banks that can deliver a variety of services in all the jurisdictions that the client is active in. The international subsidiaries of home country clients are often too small to be of much interest to local banks in host countries. The home bank branch in the same host country will know the parent, understand the risk, and be able to profitably service the subsidiary.
- *The European single market*. The prospect of a single market has over the past two decades created an intense push towards consolidation in the financial sector. This was driven by the perceived opportunities of other European markets opening up, but also by the perceived need to grow stronger and more efficient to better face increasing competition at home. Moreover, the consolidation process in the financial sector and the creation of 'national champions' was often encouraged by policymakers.
- *Diversification*. Risk management and the desire to have multiple uncorrelated revenue sources are a strong and valid incentive for banks to minimise concentrations by diversifying across activities, sectors and borders. This means it is sensible for banks to have presence in several countries. As most of the economies of scale noted above apply per unit, diversification in combination with economies of scale provides a rationale for bigger banks.
- Finally, there are *unfounded and undesirable reasons* for banks to grow big. Empire building by bank management is one such reason. Another one is the funding advantage of being a TBTF-bank: big banks used to pay a lower risk premium to their bond holders, arguably because of the implicit guarantee that their sovereign would bail them out. Although a funding advantage was there, it may have had other causes, such as differences in risk profile. In any case, it is doubtful whether TBTF played an explicit role in banks' growth strategies: failure of big banks was generally deemed highly unlikely and was therefore hardly considered by both bank management and investors (an assumption that unfortunately was proved wrong).

While all of the reasons listed above favour size, there are also managerial and informational diseconomies that become increasingly important when banks get bigger. There is a certain optimum, but there is no crystal-clear way to determine

that from theory. The empirical evidence on the economies of scale and scope is inconclusive. Early studies find economies of scale only among small banks, with asset size below USD 100 million (Pulley and Braunstein, 1992) or below USD 10 billion (Amel *et al.*, 2004; Mester, 2005). More recent research suggests a much higher threshold. For instance, Mester and Hughes (2011) argue for the existence of economies of scale for banks with assets over USD 100 billion. Feng and Serletis (2010) also find that large banks operate under increasing returns to scale. Wheelock and Wilson (2012) find economies of scale for banks with assets even up to USD 1 trillion. Bertay, Demirgüç-Kunt and Huizinga (2012) find that while both rate of return and risk increase with bank size, only risk increases with *systemic* size (size compared to home country GDP), but not returns. To this pile of research we add the analysis of a very simple yet straightforward and widely used measure: the cost-to-income ratio.

Figure 3.2. Cost-to-Income Ratio by Total Assets



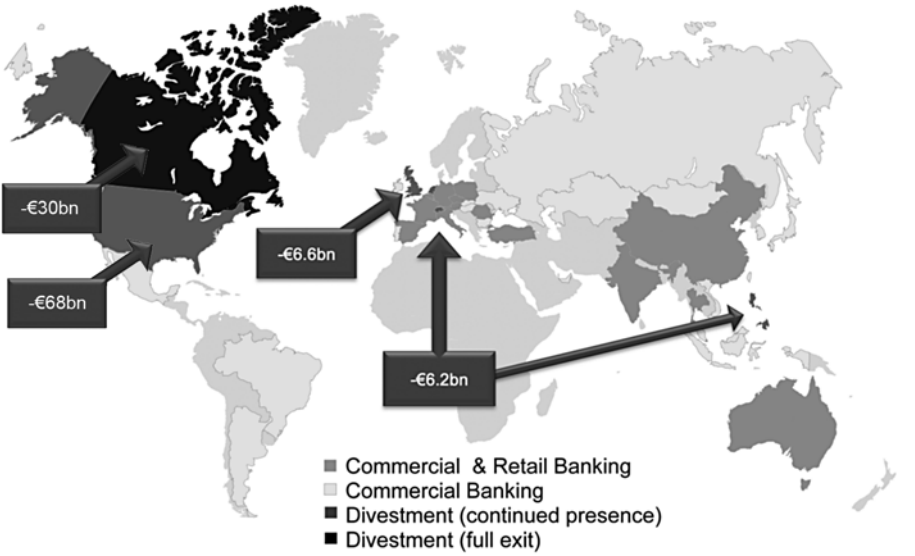
Separate ratios until 2008 and after included, to account for possible changes since the crisis. Dataset contains 11.873 observations in total for years 1998-2012.
Source: Bankscope, ING.

Figure 3.2. shows that the smallest banks on average have the highest cost-to-income (c/i) ratio (although the results for this group may be biased due to deviant activity profiles). Growing the balance sheet to over USD 50bn is correlated with substantial efficiency gains. This is consistent with economies of scale and scope. Beyond USD 50bn of assets, efficiency gains peter out, suggesting

that economies and diseconomies of size roughly balance each other out. For banks with over USD 750bln of assets in our sample the c/i-ratio increases slightly again, suggesting that diseconomies of size start to become an issue at these sizes.

This is something that many banks have come to realise too. ING Bank embarked on a 'Back to basics'-strategy after the 2008 crisis. This was not only a restructuring required by the European Commission following state support received, but also a strategic reorientation to become a more focused bank. The ING conglomerate is in the process of splitting itself in a bank and an insurer. The bank has divested over EUR 110bn since 2008, completely exiting some markets while reducing activities in others.

Figure 3.3. ING Bank Divestments since 2008



Divestments since 2008; values shown are as recorded on 2008 balance sheet.
Source: ING.

3.4. ADDRESSING TBTF: THREE LINES OF DEFENCE

It is often assumed, but seldom made explicit, that bigger banks are more prone to failure than smaller ones. On closer inspection, however, it is not size that causes failure. It is important to note that it is also not lack of liquidity that causes failure. Liquidity problems are in the majority of cases a symptom, not a cause of problems. The real cause of failure is most often asset concentrations turning bad, be it in reality or in the perception of investors. Concentration is a relative concept and can thus occur regardless of bank size. It can be expressed as a percentage of total assets or as a fraction of the yearly profit it could endanger.

When a concentrated exposure turns sour, or even only when investors come to expect that it will, concentrations can lead to a (professional) run on the bank. The bank will find it more difficult to finance itself on wholesale markets. Once the word gets out, these troubles may spill over to retail markets, affecting the bank's deposit base. At that point, the bank either has to be rescued or be allowed to fail.

While bigger banks do not fail more easily than smaller ones, they create a bigger mess when they do. They provide critical services to the economy, making their failure undesirable. Rescuing them on the other hand has in some cases been costly for taxpayers. This is why so much effort since the crisis has been devoted to making it possible for big banks to fail orderly, to limit taxpayer losses in case of failure and most importantly, to make failure less likely in the first place. The plethora of changes that are being implemented boil down to three lines of defence against failure, and in particular failure which hurts society:

1) building a healthy bank;
2) recovery and resolution plans;
3) bigger loss absorption capacity and a clear liability seniority ranking.

If these defences hold, they greatly diminish the TBTF-problem and the potential taxpayer risk. We discuss them in turn.

3.4.1. Building a Healthy Bank

The first line of defence is building a healthy bank, by proper risk management and avoiding big concentrations. One element of risk management, the risk-weighting of assets included in the Basel regulatory framework, has recently become subject to criticism. Of course, it is important to look critically at whether or not the risk-weighting applied is adequate. However, branding the entire system as complex or manipulable is too facile. Risk-weighting serves a useful purpose: it gives banks with few high-risk assets on their balance sheet extra financial clout to fulfil their supporting role.

A second, often underestimated issue is the avoidance of big concentrations. Real estate always deserves special attention in this respect. Home markets are often the riskiest concentrations for banks, as the exposure tends to be the highest. Moreover, it may be difficult for banks to reduce exposure to their home markets, for strategic reasons (the desire to maintain a strong presence), because the bank feels obliged to service the home economy, or because there is pressure from society to extend services, even when that may not be desirable from a risk management perspective.

To better assess exposures and concentrations, risk-weighting calculations are being supplemented by stress tests. These are better suited to evaluate more severe

recessions in which exposures that are uncorrelated in normal economic cycles suddenly start to generate correlated losses, increasing the potential negative impact on the bank's solvency.

Avoiding concentrations is important irrespective of size. But avoiding concentrations may be easier when a bank is bigger, because it has more possibilities to diversify away from its core market or activity. Diversification is most effective if it is into uncorrelated economies, sectors or activities. In the current context that means: across currency zones and continents. Running efficient operations in a different country also means achieving a certain size there.

Avoiding concentrations is easier said than done. Banks cannot build their desired balance sheets from scratch but have to deal with legacy assets and transition problems. And while the bank is being refurbished, it has to remain open for business. But progress is being made.

3.4.2. Recovery and Resolution Plans

The second line of defence is the recovery and resolution plan (RRP). The resolution-part is better known, often referred to as 'living will', but the recovery-part is at least as important, as it aims to prevent failure in the first place. It provides contingency plans for a variety of adverse scenarios. Only if recovery fails, does resolution come into play. This part of the RRP defines critical economic activities and describes how these can be insulated from problems elsewhere within the bank, so that the essential functions can continue when the institution is wound down. This ensures that a formerly TBTF institution can in the future be allowed to fail, because in that case its critical activities can be preserved and continued for as long as necessary.

3.4.3. Bigger Loss Absorption Capacity and Seniority Ranking

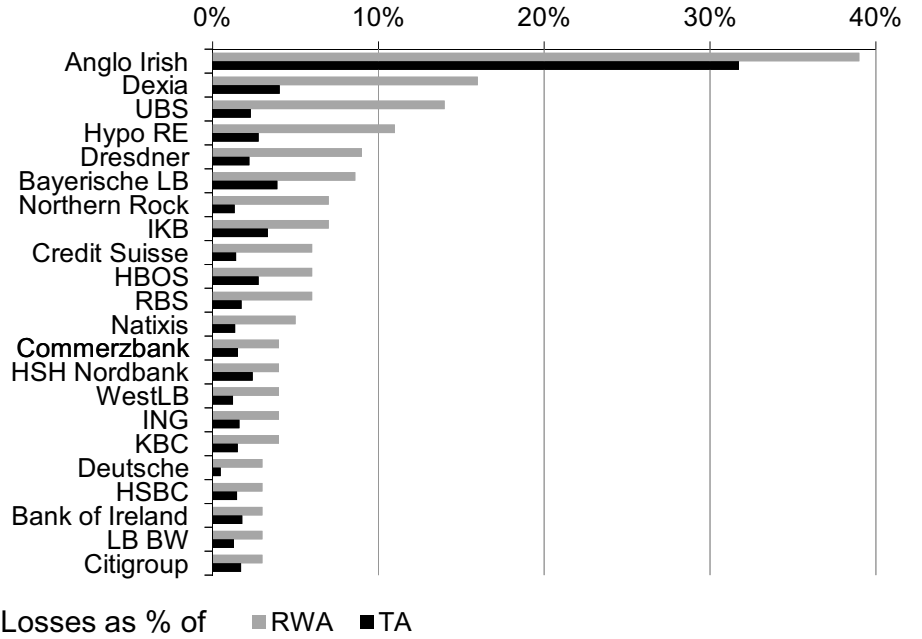
When in resolution, the third line of defence comes into play: a bigger loss absorption capacity and a clear seniority ranking for bank liabilities (as agreed in the Bank Recovery and Resolution Directive). The goal of the resolution process is to minimise the impact of rescuing a failing bank on taxpayers while protecting depositors and making sure that no bank creditor is worse off than in bankruptcy. It is often forgotten that any loss is first absorbed by the bank's profits. ING Bank, for example, has always been able to absorb writeoffs comfortably in profits. Equity is the second to absorb losses. Basel-III substantially increases the amount of bank capital and also its quality: certain hybrid instruments will no

longer qualify. The third layer of loss absorption capacity consists of unsecured debt; first subordinated debt, then senior unsecured debt and corporate depositors. Until recently, senior unsecured creditors and corporate depositors were bailed out at the expense of taxpayers. Under the new regime these creditors are taking their place in the bail-in hierarchy. The envisaged depositor preference places non-corporate depositors above bondholders in the bail-in hierarchy, but if losses remain after bail-in of bondholders, non-corporate depositors not covered by the deposit guarantee scheme may be bailed in as well.

Some are calling for further increases of bank capital beyond Basel-III to mitigate the risk of failure. Yet this misses the point. Under the new regime, avoiding failure per se is no longer key. On the contrary, RRPs and the possibility of bail-in allow failure to take place in an orderly fashion and without recourse to the taxpayer. Therefore, the goal of bank capital no longer needs to be to guarantee the continuity of the bank in all possible scenarios. Instead, loss absorption capacity only needs to be sufficient to enable the orderly resolution of a bank without outside assistance except for liquidity provision. Current regulatory requirements should be sufficient to achieve this in most cases (Nagel, 2014). To illustrate this, we consider the losses suffered by banks in the 2008 financial crisis. Figure 3.4. contains an overview of losses suffered by prominent banks, compared to their risk-weighted assets (RWAs) and total assets (TAs). For most banks, cumulative losses were well below 10% of RWAs and 5% of TAs. For this reason, the report by the UK's Independent Commission on Banking ('The Vickers-report') concluded in 2011 that "loss-absorbing capacity in the range of 16% to 24% of RWAs would have been sufficient to absorb fully the losses suffered by nearly all the loss-making banks in the most recent financial crisis and in [other financial crises]." (Vickers *et al.*, 2011). The current proposal in the UK suggests a 'primary loss absorbing capacity', consisting of equity and unsecured debt, of at least 17% of RWAs. The European Commission has proposed that a minimum of 8% of total liabilities should be bailed in before banks have access to the European Resolution Fund. The minimum level of loss absorbing capacity for banks has yet to be defined based on EBA-guidance. Implementation of these proposals would mean that in most cases, banks' capital and unsecured debt would be enough to cover losses. The risk for the taxpayer would be greatly reduced.

While specifying minimum levels for loss absorption capacity helps eliminating taxpayer risk, the composition of loss absorption capacity should be left to banks themselves. Dividing capital into different layers, each with specific conditions and characteristics, obscures the seniority ranking, which in turn makes capital management more challenging, increases funding costs and complicates resolution.

Figure 3.4. Losses Suffered since 2007



Losses comprise both realised writeoffs and unrealised losses due to e.g. marking-to-market of available-for-sale assets.
Source: Vickers et al. (2011), Bloomberg, ING.

3.5. THE USEFULNESS OF BIG(GISH) BANKS

In the previous sections, we have established that the main objections against big banks, their being TBTF and a risk for the taxpayer, are being effectively addressed by three lines of defence, including RRPs, a bigger loss absorption capacity and a clear liability seniority ranking. But the fact that the negative external effects of a big bank are being addressed, does not yet establish that big, universal banks also add positive value. In our view, a healthy banking landscape contains a variety of banks, both small and big, specialised and universal, niche and cross-border. Certain client wishes are more easily serviced by bigger banks:

– For example, even medium-sized clients sometimes need large commitments. Examples are hospitals and the energy sector, where financing needs are big. Even in a country like the Netherlands there are clients whose financing needs exceed a billion euros. Prudent risk management may prompt a bank to limit the possible loss ('loss given default') per counterparty to say 1% of its equity. Posting of collateral by the client may enable a higher total exposure of up to say 5% of equity. To

be able to service these clients, banks therefore need to have equity worth several tens of billions. Breaking exposures in smaller parts for a number of banks may work in some situations and in a buoyant economy. But for crucial, large projects, and in challenging economic situations, the reality is that one or two large local banks will need to step up to provide the core financing.

– SMEs need working capital, but many also have a need for project finance, hedging, supply chain finance, factoring, export finance and access to equity markets. A EUR 10bn bank will find it too costly to maintain the knowledge and expertise to cater for all these needs. A EUR 1000bn international bank on the other hand won't be interested in servicing a small client.

– When a mid-sized business is in difficulty, a small niche bank will not have the resources to help it, while an international investment bank is not prepared to do so given the elevated risk and low importance of the client relative to the bank's P&L.

– Maintaining and developing an infrastructure for payments and clearing requires major investments.

– Bigger banks may also find it easier to attract the necessary bail-inable wholesale funding, as they tend to have more diversified assets and, given their size, the secondary market of their debt securities is more liquid.

These arguments make a good case to maintain a few biggish universal banks in a country – although these banks do not necessarily have the same scale as the biggest banks on the eve of the crisis. Banks, households and businesses are deleveraging, and where banks are retreating, corporations are turning to debt markets instead. This development is most marked in Anglosaxon countries that had more developed capital markets to begin with. But also in the eurozone core and to a much lesser extent the periphery, where banking is traditionally more important, the share of market finance is slowly rising. In addition, new financial intermediaries are entering the market. Institutional investors are expanding further into corporate lending, and it appears only a matter of time before a major internet company uses its vast user base and knowledge of digital customer relations to diversify into financial intermediation. For banks, securitisation, though tainted by being at the epicentre of the financial crisis, appears a logical route to facilitate the disintermediation process by allowing investors to use the bank's knowledge of its customers. Banks may thus extend their underwriting business alongside their lending business.

Although disintermediation and the advent of new financing models and actors will reshape the future of Europe's financial economy, banks will remain important financiers of the economy. Moreover, they retain an important

monopoly. While all financial intermediaries issue liabilities, only banks can issue money. With about 90% of the Eurozone's money supply consisting of commercial banks' liabilities, money creation remains a basic but essential economic function of banks.

3.6. CONCLUSIONS

Answering the question of "When is big too big?" is not as easy as it may seem. Efficiency, profitability and manageability provide no clear-cut answer, as evidence is inconclusive and there is no well-defined level above which growing a bank is unambiguously negative. Moreover, these issues are primarily a concern for the bank's owners. Another important question is whether it would really be better to have many small, undiversified banks in a systemic crisis rather than a few diversified ones.

We conclude that size, however measured, is too context-dependent to serve as a useful standalone criterion to assess riskiness, profitability or resolvability of a bank. That said, we do acknowledge that firstly, over the past twenty years banks may have grown bigger than was healthy for them and their ecosystem. It is for good reasons that banks started simplifying their structures and pruning product ranges and balance sheets after the 2008 crisis. And secondly, during the financial crisis of 2008-9, TBTF and potential taxpayer liability proved to be a very valid reason to be concerned about big banks. However, since then TBTF has been addressed effectively by Basel-III, a clear liability seniority ranking and RRPs.

Given these and other changes in the banking sector, our advice to policymakers is to beware of overshooting. We should also not forget that we cannot and should not ban risk completely. Risk taking is needed to generate economic growth: In the end, a certain amount of credit is needed, and it represents a certain amount of risk, which, concentrations aside, cannot be eliminated. Therefore, trying to eliminate all risks from the banking sector will only push risks elsewhere in the economy, including to less-regulated areas of the financial system. And finally, one should realise that, with bail-in and a resolution regime in place, bank capital no longer needs to guarantee the continued operation of a bank in all scenarios. Instead, loss absorption capacity should be enough only to allow a bank to be wound down in an orderly fashion.

In our view, the way to think about the desired banking sector of the future is to ask what banking services will be demanded in the future, and derive from that what banks will be needed to meet those. We think that both financial stability and the economy are best served by a diverse banking landscape with different types of banks: both concentrated and diversified ones, domestic and cross-

border ones, and retail, commercial, investment and universal banks. Within this landscape, some banks will be small, and some will be big. How big exactly, that remains to be seen. It should in any case no longer be a worry for taxpayers in the future.

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4. Size and Stability of Big Banks

Ata Can Bertay, Asli Demirgüç-Kunt, Harry Huizinga[1]

4.1. Introduction

In the last several decades, banks have become very large in absolute terms and relative to their national economies. Countries with large banks run large risks to their public finances as the examples of Iceland (2008), Ireland (2010), Cyprus (2012) and the Netherlands (2008) have shown. While the public finance risks of large banks are apparent, it is less clear whether there are other costs or benefits associated with systemic size, i.e. size relative to the national economy that need to be taken into account. To inform the debate about bank size, Bertay, Demirgüç-Kunt and Huizinga (2013) provide empirical evidence on whether systemically important banks are different in three key areas. This chapter summarizes the main contributions of that paper. First, the authors examine whether large banks have a different performance in terms of risk and return outcomes. Second, they consider whether large banks have different business models as to their activity mixes and funding strategies. Third, they investigate whether large banks are subject to market discipline to a different degree compared to smaller banks.

These issues are considered for a large international sample of banks over the years 1991-2011. This international setting enables to make a distinction between a bank's absolute size as measured by the logarithm of its total assets, and its systemic size as measured by its liabilities-to-GDP ratio. The correlation between absolute size and systemic size is 0.327. This weak relationship is also visible in Figure 4.1.

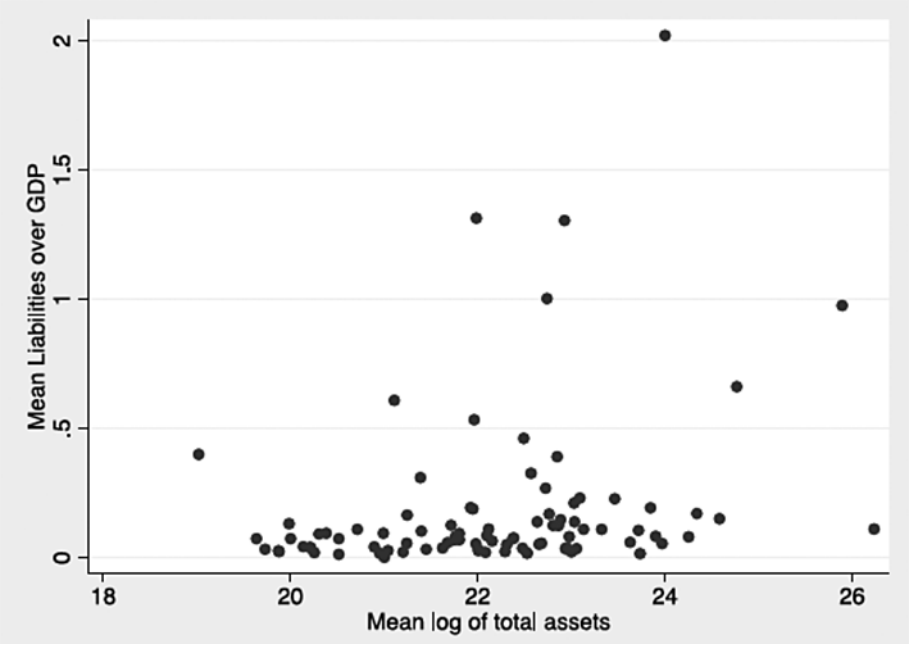
4.2. Risk and Return

Bertay, Demirgüç-Kunt and Huizinga (2013) examine whether large banks have different performance in terms of risk and return outcomes? In their analysis they use three variables: ROA, ROE, Z-score (see Table 4.1).

[1] This summary is based on the article by A.C. Bertay, A. Demirgüç-Kunt and H. Huizinga, "Do we need big banks? Evidence on performance, strategy and market discipline" published in *Journal of Financial Intermediation* 22, 532-558, Copyright Elsevier (2013).

The regression in column (1) implies that a one standard deviation increase in the liabilities over GDP reduces a bank's return on assets by 0.14%. This amounts to 4.5% of the standard deviation of the return on assets of 0.032, which is a small effect. In column (2), the dependent variable is a bank's return on equity, as a proxy for the return to shareholders. The assets variable obtains a positive coefficient of 0.019 that is significant at 1%, while the coefficient for the liabilities over GDP variable is negative at -0.028 and significant at 1%. In the Z-score regression shown in column (3), the assets and liabilities to GDP variables are estimated with insignificant coefficients. Bank absolute and systemic size thus do not appear to be associated with bank risk. Taken together, the evidence suggests that: banks with large absolute size have higher return without impact on risk, while banks with large systemic size have lower return without impact on risk.

Figure 4.1. Scatter Diagram of Absolute Size (horizontal axis) and Systemic Size (vertical axis)



4.3. BUSINESS MODELS

Bertay, Demirgüç-Kunt and Huizinga (2013) also examine business models. Table 4.2 shows some of their findings. In the regression shown in column (1), the dependent variable is the fee income share, as an indicator of a bank's reliance on

non-interest income. In this regression, the assets variable obtains a positive coefficient that is significant at the 1% level indicating that larger banks earn relatively more non-interest income. The liabilities over GDP variable obtains a coefficient that is negative and significant at the 1% level, implying that systemically large banks generate relatively more interest income. This could reflect that a bank can more easily scale up its interest generating activities than its fee income generating activities relative to the size of the national economy. In the regression shown in column (2), the authors consider how the share of non-deposit funding in total short-term funding is related to their bank size variables. The coefficients on the assets and liabilities to GDP variables are estimated to be positive and negative, respectively, while they are significant at 1% and 5%. Banks that are large in absolute terms thus rely relatively more on the capital market for their short-term funding, while the opposite holds for systemically large banks. The regression in column (3) shows that equity, as an index of bank capitalization, is negatively and significantly related to both the assets and the liabilities over GDP variables. Larger banks thus generally are less well capitalized and operate with higher leverage.

So the results reported in Table 4.2 (p. 44) suggest that banks with large absolute size have lower capitalization, higher fee income share, and higher non-deposit funding share.

Banks with large systemic size have lower capitalization, lower fee income share, and lower short-term funding share.

Table 4.1. Absolute and Relative Size and Bank Performance

	Fee income	Non-deposit short-term funding	Equity
Assets	0.029***	0.023***	-0.019***
	(0.002)	(0.002)	(0.002)
Liabilities over GDP	-0.077***	-0.020**	-0.025***
	(0.014)	(0.009)	(0.008)
Equity	0.578***	0.130***	
	(0.031)	(0.040)	
N	15384	15598	16042
R-sq	0.470	0.326	0.375

Table 4.2. Bank Size and Bank Strategies

	(1) ROA	(2) ROE	(3) Z-score
Assets	0.002***	0.019***	-0.379
	(0.000)	(0.001)	(0.730)
Liabilities over GDP	-0.007***	-0.028***	4.857
	(0.002)	(0.011)	(4.927)
Equity	0.098***	0.137***	21.367*
	(0.012)	(0.041)	(11.841)
Short-term debt	0.001	0.048***	28.149***
	(0.004)	(0.016)	(4.619)
Investment bank	-0.006*	0.002	-7.318***
	(0.003)	(0.010)	(2.711)
Non-banking credit institution	0.005	0.046	-2.178
	(0.005)	(0.028)	(6.238)
Other bank	-0.008***	-0.024**	2.861
	(0.002)	(0.010)	(4.209)
Inflation	-0.003	0.340*	107.444**
	(0.024)	(0.182)	(51.782)
GDP growth	0.229***	1.912***	316.743***
	(0.029)	(0.308)	(77.533)
GDP per capita	-0.001	-0.009***	-1.025
	(0.001)	(0.003)	(0.962)
N	16010	15938	3018
R-sq	0.187	0.203	0.153

4.4. MARKET DISCIPLINE

Finally, Bertay, Demirgüç-Kunt and Huizinga (2013) examine market discipline. A bank's depositors can discipline a risky bank by demanding a higher interest rate. Table 4.3 presents some of their regressions of bank interest expenses on bank size variables, indices of bank risk, and a set of controls. The regression in column (1) relates the interest expense variable to the assets and liabilities over GDP variables to represent bank size and the equity variable as a proxy for bank risk. The coefficient of the assets variable is negative and significant at the 1% level, indicating that banks that are large in an absolute sense face lower interest expenses. In contrast, the liabilities over GDP and equity variable are estimated with insignificant coefficients.

In the regression in column (2) an inter-action term of the equity and liabilities over GDP variables is added to see whether a bank's interest expenses are relatively responsive to the bank capitalization rate for systemically large banks. In this regression, the coefficient of the liabilities over GDP variable is positive and significant at 1%, while the interaction term obtains a negative coefficient that is significant at 1%. The latter finding implies that a bank's interest expenses decline relatively much with its equity variable for banks with a high liabilities-to-GDP ratio.

As market discipline can also be related to absolute bank size, in the regression in column (3) an interaction term of the assets and equity variables is added. In this regression, the interactions of liabilities over GDP and assets with equity both obtain negative coefficients that are significant at 1% and 5%, respectively. This

Table 4.3. Market Discipline Through Interest Expenses

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Interest expense	Interest expense	Interest expense	Interest expense	Interest expense	Interest expense	Interest expense
Assets	-0.001***	-0.001***	-0.001***	-0.001***	-0.002***		
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
Liabilities over GDP	0.002	0.008***	0.007**	0.004*	0.005***		
	(0.002)	(0.003)	(0.003)	(0.003)	(0.001)		
Equity	0.004	0.005	0.094**			0.016**	0.019**
	(0.006)	(0.006)	(0.047)			(0.008)	(0.008)
Equity * Liabilities over GDP		-0.142***	-0.122***				
		(0.042)	(0.042)				
Assets * Equity			-0.004**				
			(0.002)				
Z-score/100				-0.001			
				(0.001)			
(Z-score/100) * Liabilities over GDP				-0.011**			
				(0.005)			
Liquidity					-0.005***		
					(0.002)		
Liquidity * Liabilities over GDP					0.001		
					(0.003)		
Gross income						-0.001***	-0.001***
						(0.000)	(0.000)
Gross income over GDP						0.109***	0.255***
						(0.027)	(0.046)
Equity * Gross income over GDP							-2.984***
							(0.699)

Note: country fixed effects, time fixed effects, clustering of errors at bank level

is consistent with market discipline through interest expenses on the basis of both absolute and systemic bank size.

In the regression shown in column (4), the equity variable and its interaction with liabilities over GDP is replaced by the Z-score and its interaction with the liabilities to GDP ratio. In this regression, the coefficient of the Z-score is negative and insignificant, while the liabilities to GDP ratio and its interaction with the Z-score receive positive and negative coefficients that are significant at 10% and 5%, respectively. A higher Z-score thus tempers the positive relationship between a bank's interest expenses and its systemic size, as evidence of market discipline on the basis of bank systemic size. Alternatively, the regression shown in column (5) includes liquidity as a proxy for bank risk and its interaction with the liabilities-to-GDP ratio. The coefficient for the liquidity variable is negative and significant at 1%, suggesting that banks with more liquid assets relative to short-term funding face lower interest expenses. The interaction of the liquidity variable with the liabilities-to-GDP ratio obtains a positive coefficient that is insignificant.

In the regression shown in column (6), the gross income variable is used as an alternative index of absolute bank size, and correspondingly the ratio of gross income to GDP to represent systemic bank size. The coefficient of the gross income variable is estimated is negative and significant at 1%, while the gross income over GDP variable obtains a positive coefficient that is significant at 1%. So these results suggest that banks that are large in absolute terms have lower interest expenses, while systemically large banks face higher interest expenses. In the regression shown in column (7), an interaction term of equity and gross income relative to GDP is added. The coefficient of this interaction variable is negative and significant at 1%, suggesting market discipline exists for systemically important banks.

Overall, the results indicate that large banks in absolute terms pay lower interest rates and that systemically large banks also pay lower interest rates if they have average capitalization rate. This suggests that large banks are too-big-to-fail. However, there is also evidence that systemically large banks pay higher interests if they are very lowly capitalized. This suggests that systemically large banks can be too-big-to-save.

4.5. CONCLUSIONS

The main results of Bertay, Demirgüç-Kunt and Huizinga (2013) are as follows. The authors find that a bank's rate of return on assets and its return on equity increase with its absolute size, but decline with its systemic size. Neither absolute

nor systemic size is significantly associated with bank risk as implicit in the Z-score.

Bank systemic size contributes relatively little to explaining the overall variation in the return on assets and the return on equity. This reflects that most banks are not systemically large with liabilities-to-GDP ratios close to zero, and that the number of banks with much higher liabilities-to-GDP ratios is too small to have a major impact on the overall distributions of the return on assets and the return on equity. Systemically very large banks, with a liabilities-to-GDP ratio of one, have returns on assets and equity that are 0.7% and 2.8% lower compared to systemically smaller banks with a liabilities-to-GDP ratio close to zero. A bank's Z-score, a proxy for bank stability, is not significantly related to either absolute or systemic bank size. Any benefits bank shareholders may derive from large systemic size thus are not reflected in the return on equity or the accounting-based Z-score. This suggests that increasing a bank's systemic size *per se* is not in the shareholders' interest.

Regarding bank business models, the evidence suggests that banks that are larger in absolute terms obtain a larger share of their income in the form of non-interest income such as trading income and fees. Systemically larger banks, in contrast, earn a relatively small share of income as non-interest income. At the same time, banks that are large in absolute terms are shown to attract a relatively large share of their short-term funding in the form of non-deposit or wholesale funding, while the opposite holds for systemically large banks. Banks that are large in absolute terms thus appear to be less traditional in their focus regarding their income generation and their funding, while systemically large banks are more traditional.

As to market discipline, the results suggest that the sensitivity of a bank's interest cost to its capitalization rate rises with the bank's systemic size, consistent with a too-big-to-save effect. All the same, the estimation implies that the interest costs of a bank decline in absolute terms with systemic size, with the exception of banks that have very low levels of capitalization. This suggests that too-big-to-fail considerations related to systemic size generally dominate too-big-to-save effects in determining a bank's funding cost.

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5. Have We Solved the Too-big-to-fail Problem?

Aerdt Houben[1]

5.1. Introduction

Five years ago the Dutch government rescued Fortis Nederland and ABN Amro by nationalising them. Earlier attempts to stabilise Fortis Group through a joint capital injection by Belgium, the Netherlands and Luxembourg had been largely ineffectual. The Dutch government's action to nationalise these banks made it abundantly clear that some institutions are Too-Big-To-Fail (TBTF). The business continuity of such banks is so important that an ordinary bankruptcy is out of the question. The decision by the Dutch authorities contrasted with that of their US counterparts, who had decided not to save Lehman Brothers three weeks earlier. To the surprise of the financial markets, Lehman had not been found too big to fail, and had simply been allowed to collapse. This unexpected bankruptcy fuelled turbulence in the already restless financial markets and the interbank market all but dried up.

These opposing examples, of Fortis and ABN Amro in the Netherlands and Lehman Brothers in the USA, illustrate the difficult choice authorities faced five years ago when a systemically important bank ran into trouble: either allow the bank to fail – which might have grave consequences for the rest of the financial system and the real economy – or support the bank with taxpayers' money.

5.2. Three Approaches

While public support to systemic banks reduces the risk of financial disorder, the implicit government guarantee for these banks has a number of drawbacks. In particular, the guarantee may give rise to moral hazard, as both banks and their creditors may be inclined to behave less prudently, knowing there is a public backstop if things go wrong. Systemically relevant banks will therefore benefit from an implicit funding subsidy, which distorts the level playing field. The guarantee may also result in an excessively large banking sector. Moreover, the government budget is at risk, and not all governments have been able to carry the load of the too-big-to-fail guarantees.

[1] The author is grateful for support from Joost Passenier, Simon Baltussen and Wouter van Bethem.

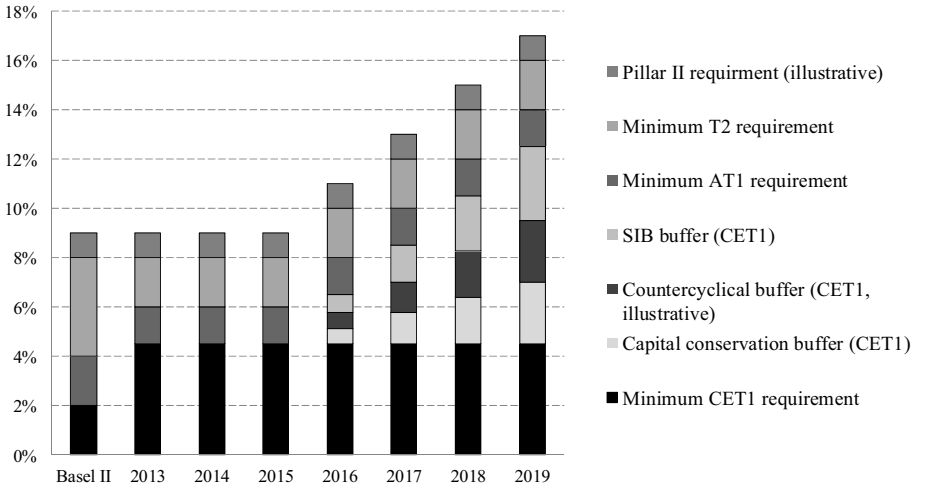
In short, a key lesson from this crisis is that authorities need to contain the too-big-to-fail issue. In recent years, three complementary approaches have been pursued to achieve this.

5.2.1. Approach 1: Reduce the Probability of Default

First, measures have been devised to reduce the risk of a systemically important bank running into difficulties.

To begin with, the capital and liquidity positions of banks are being reinforced under measures set out in the Basel 3 Accord and implemented in CRD/CRR IV (Figure 5.1).

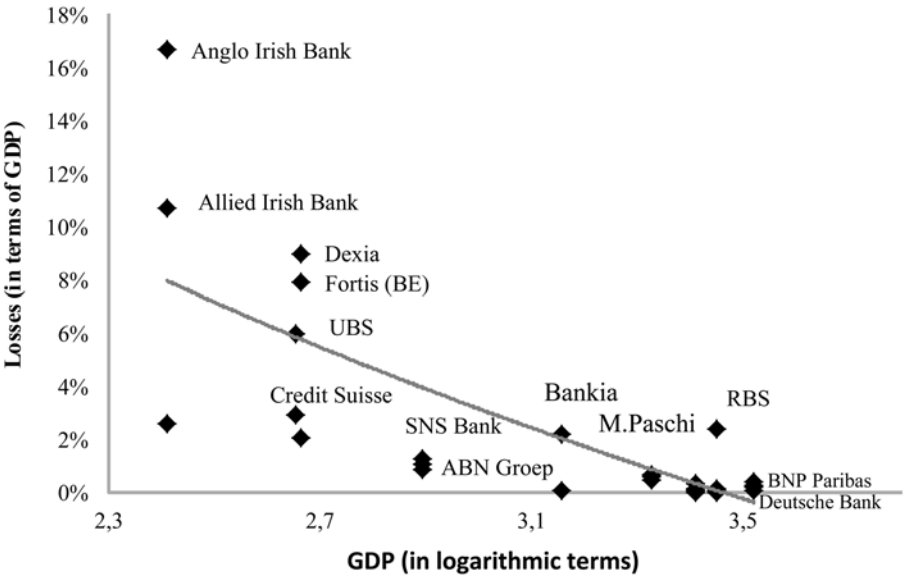
Figure 5.1. Increasing Quality and Quantity of Capital



This applies to all banks. Put briefly, banks are required to hold more capital, and capital of better quality. Apart from their statutory minimum capital, banks will hold additional buffers they may draw down in hard times, as long as they remain above the required minimum. Second, a leverage ratio is to be introduced. This is a capital requirement that disregards the risk-weighting of assets and that functions as a minimal line of defence. Third, banks will be required to hold a minimum amount of liquid assets relative to their liquid liabilities. On top of all this, systemically important banks will need to meet a supplementary capital requirement, called the Systemically Important Bank (SIB) buffer. In the Netherlands, we will impose a SIB-buffer of 1-3%. The underlying idea is that for systemically important banks, the risk of failure must be even lower than for other banks. Indeed, the need to reduce this risk is more pressing for small

countries than large countries, given the more limited capacity to bear banking system losses. This can be illustrated by the larger relative size of bank losses (as percentage of GDP) in small countries (Figure 5.2).

Figure 5.2. Banks' Losses 2007-2012



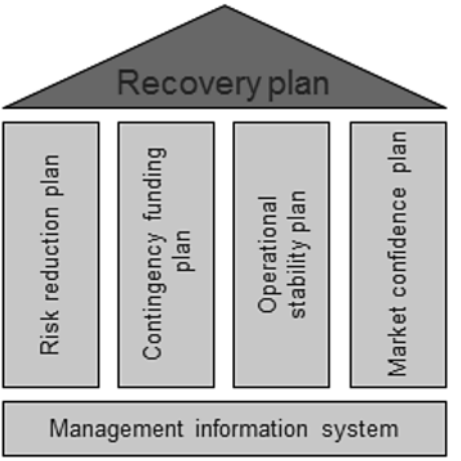
Losses: maximum total comprehensive losses
Source: Annual Reports

Next to strengthening their capital position, systemically important banks have drafted recovery plans. In a recovery plan, a bank spells out the measures it can take itself to survive a difficult episode, without public support. An important element in a recovery plan is a set of crisis management measures (Figure 5.3). These measures describe the actions a bank can take to restore, for instance, its capital or liquidity position. The idea is that by drawing up such a plan, a bank gains a better perspective on what it can do to solve its own problems and will thus be better prepared if a crisis erupts.

5.2.2. Approach 2: Reduce the Loss Given Default

While reducing the probability that a bank runs into problems, such preventive measures cannot exclude the possibility. For this reason, measures have been taken to develop resolution plans that aim to reduce the bill presented to the public should problems nonetheless arise. Here, the idea is that rather than protecting *all* activities of a systemically important bank, the government should

Figure 5.3. Recovery Plan: Building Blocks



only guarantee the continuity of the critical economic activities. To the extent that such activities can be separated from the other business, this will reduce the span of the public safety net and, by implication, the bill to be paid if trouble arrives.

Resolution plans spell out the measures to be taken to achieve the orderly resolution of a collapsing systemic bank, with a minimum of risk to financial stability and the taxpayer. The plans distinguish two phases: the first quick stabilisation phase (over the weekend) and a second, potentially extended restructuring phase. In this second phase, group entities might be reorganised, for instance, or phased out and the management could be replaced. In the context of resolution planning, institutions may also take steps to streamline their legal, financial and operational structure ex ante. This may involve a trade-off between resolvability and commercial considerations, which can generally be softened if the restructuring measures are spread out over time.

5.2.3. Approach 3: Shift the Residual Loss from Taxpayers to Bank Creditors

Yet, still more needs to be done. While these measures reduce both the chance that an institution runs into trouble and the size of the bill if it does, there is still a possibility that an unpaid bill remains outstanding. In an uncertain world, this tail risk cannot be ruled out altogether. As a final step, therefore, instruments must be created that permit the use of private creditors' assets rather than taxpayers' money to recapitalise a failing systemic bank.

In the Netherlands, the new Intervention Act provides an important step forward in this regard. Besides its many other facets, the Intervention Act empowers the Minister of Finance in exceptional circumstances to expropriate shareholders and certain other groups of financiers. The Minister may decide to do so only if there is a serious and immediate danger threatening the stability of the Dutch financial system. This power makes it possible to present the bill of a bank's failure to that bank's financiers. Not that this is an ideal solution – after expropriation, the government is left as the new owner of the institution.

Further afield, in Europe, work is progressing in the context of the Bank Recovery and Resolution Directive (BRRD). This will create a new instrument for authorities. From 2016, this statutory bail-in instrument will allow the losses from a failed bank to be allocated to its creditors without the state acquiring ownership. When difficulties mount, authorities may use this bail-in to convert debt into share capital or to write debt off outright. This makes recapitalisation of a bank possible without the use of public funds and without leaving the state owning a bank it does not want.

Both the expropriation instrument and bail-in debt may be used if the supervisory authority considers an institution no longer viable. A difficulty is that this discretionary power in the hands of the supervisor creates uncertainty for investors. In order to reduce that uncertainty, some institutions have issued so-called coco bonds. Coco bonds are debt instruments that have a contractual clause stating that the debt will be converted into equity capital or written off if the capital position of a bank falls below a predetermined level. Thus, whereas coco bonds have the same effect as expropriation and bail-in debt, they offer more certainty in advance regarding the conditions that will cause them to be converted or written off. In this respect, contractual bail-in bonds have the advantage of reducing uncertainty beforehand. While these debt instruments will undoubtedly be more costly for the bank, creating a layer of contractual bail-inable debt will also make the bank's other debt safer. Given the much larger size of this other debt, the overall costs for a bank may actually decline over time. Indeed, it is to be hoped that the market for bail-in debt will now be developed.

5.3. THE BANKING UNION

The introduction of the banking union also contributes to solving the too-big-to-fail problem, in particular through the introduction of a European Resolution Mechanism. This mechanism aims to alleviate the pressure on government budgets, by breaking the link between governments and the local banking sectors. As this will contribute to a single banking market, different from the fragmented market we have now, banks may become less systemic, given their

smaller size relative to the bigger market. This also underscores the importance of avoiding a process of consolidation in the future, because this would create even larger institutions that will then be too big to fail not at the country, but the European level. We will have jumped out of the pan into the fire.

5.4. DOES THIS SOLVE THE TBTF PROBLEM?

The big question is: by creating these new instruments, have we, or have we not, solved the TBTF problem? While the new measures go a fair way towards that end, a future bail-out cannot, for various reasons, be precluded entirely.

To begin with, the losses suffered by a bank may outstrip the assets available for bail-in. Yet how realistic is this possibility? Under the resolution Directive (BRRD), banks must absorb losses up to 8% of their total assets by writing off own funds, and by converting subordinated and other debt into own funds, before qualifying for support out of the prospective resolution fund, which is maximised at 5% of total assets. When the 8% and the 5% requirements have been met, access to public funds such as the ESM is possible. How do these requirements compare to the losses borne by banks in the recent crisis?

The cumulative losses suffered between 2007 and 2012 by the largest loss-making European banks averaged some 3% of total assets. Of these banks only two had losses in excess of 8% of total assets (Figure 5.4). So, while the need for state support cannot be ruled out altogether, after implementation of the BRRD, the probability will be strongly reduced.

This has one further implication, however. Since authorities will be reluctant to use the bail-in tool when it may aggravate systemic risks, we need to avoid bail-inable debt being held by other banks. Indeed, the legal latitude to refrain from bail-in will be very limited once the BRRD comes into effect. And the amended rules regarding state aid for banks allow state aid only, in principle, after all shareholders, subordinated creditors and holders of hybrid debt securities have paid their share of the loss.

All in all, substantial measures have been undertaken in recent years to contain the TBTF issue. As the bail-in measures in the cases of SNS Reaal and Cyprus show, initial steps have been taken in the new direction. There is still work ahead to increase capital levels, implement the novel resolution regimes and introduce convertible instruments to safeguard the continuity of banks without the need to spend public funds. Looking back, we have come a long way in moving from bail-out to bail-in.

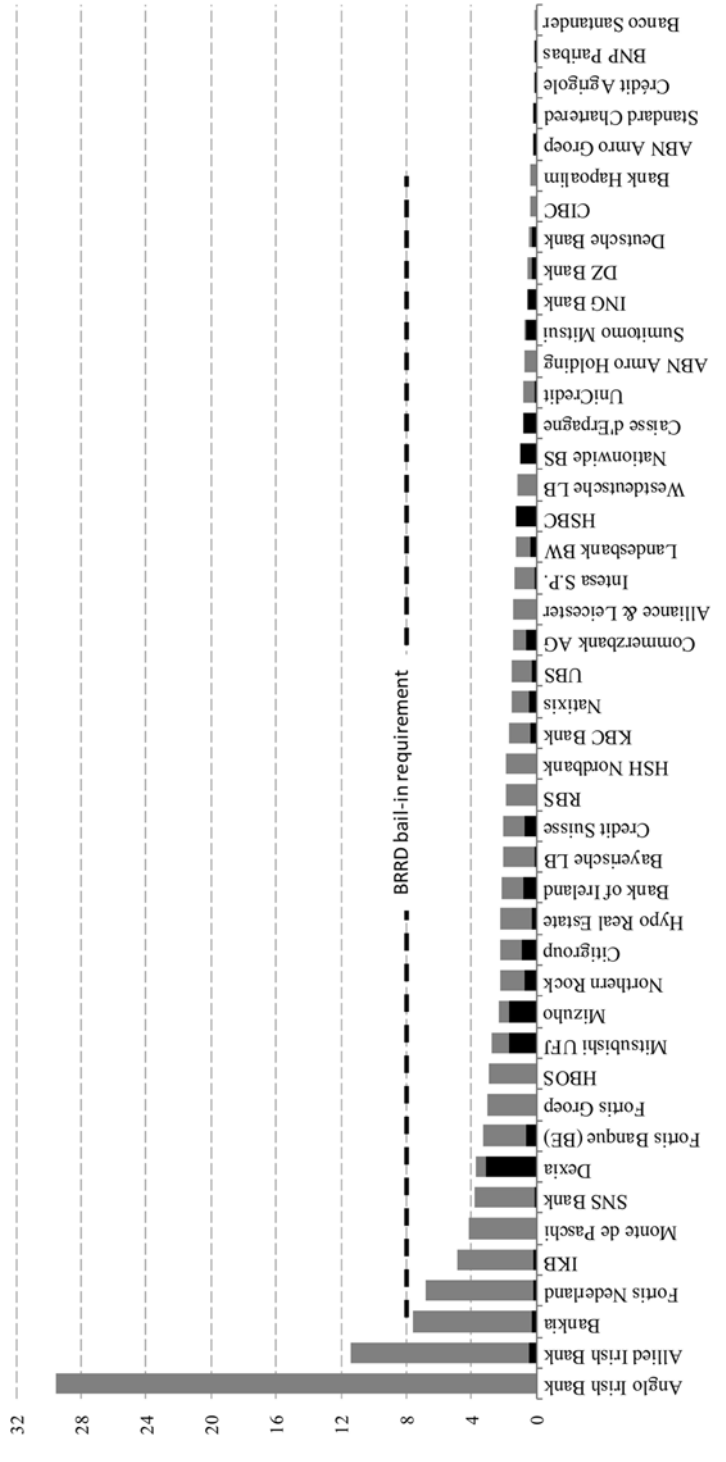


Figure 5.4. Losses of Banks as% of Total Assets (2007-2012)

** SNS Bank include losses taken through profit and loss for 2013 H1.*
Source: Annual Reports

6. What Have We Learnt about Banks and their Business Models?

Dirk Schoenmaker, Harald Benink, Andreas Bley, Alicia Sanchis and Michiel Bijlsma

6.1. Is the International Business Model still Viable for Banks?

Dirk Schoenmaker

6.1.1. Introduction

The financial reform agenda has had a large impact on banks' business models. Houben (in chapter 5) and Benink (section 6.2) rightly indicate the need to hold more capital to reduce the probability of a bank failure. While there is still some discussion about how much extra capital is needed, there is a consensus that banks have to move away from their thin capitalisation before the crisis. Houben shows how far banks are on the path of restoring capital buffers.

Houben and Benink also stress the need for bail-in of creditors to reduce the exposure of taxpayers. Although bail-in is sometimes cast in terms of eliminating the need for bailouts by the taxpayer, that would be wrong. Reinhart and Rogoff (2009) show in their epic work on eight centuries of financial folly that financial crises are of all times. So we may reduce the need for taxpayers' money, but we cannot eliminate it. Another requirement to reduce the impact of a bank failure is the call for banks to develop a resolution plan specifying how they can be resolved in a crisis (see Avgouleas *et al.*, 2013).

Before the crisis, the focus of many (in particular Anglo Saxon oriented) banks was single minded on serving the shareholder by producing large profits. Bley (section 6.3) shows that diversity of business models may be useful to foster financial stability. The German banking sector has a three-pillar structure with commercial banks, state-owned banks (Sparkassen and Landesbanken) and cooperative banks. The German cooperative banks appeared to be more constant in their business lending due to their business model. Related to that, Sanchis (section 6.4) describes the refocus on the client. Shareholders are no longer put in pole position but the client. To my mind, there is no real trade-off between putting client needs first and shareholder needs second. Banks that serve their clients may well be able to run a sustainable, and profitable, business model, based on long-term relationships with their clients.

Bijlsma (section 6.5) argues that technical changes will drive changes in banks' business models. Interestingly, Bijlsma shows that advances in information technology may have opposing effects on the business model and develops four scenarios: isolated banks, flat finance banks, big banks, and conglomerates. He also touches on the international dimension of banking and the need for international policy coordination. In the next section, I will explore the latter point in some more detail.

6.1.2. International Banking

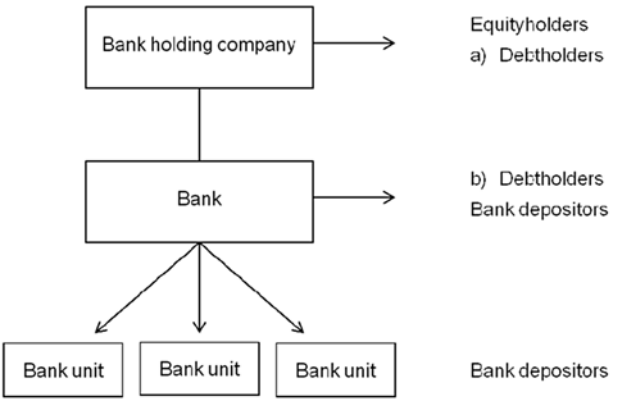
While most post-crisis changes (such as more capital) are moving in the right direction, the international dimension is moving in the wrong direction. Supervisors have become more nationalistic in their approach towards supervision after the global financial crisis. This general trend can be explained by the mandate and accountability of supervisors (Schoenmaker, 2013). As supervisors had to explain to their minister of finance and also in their national parliament what went wrong with the national part of the banks under their supervisory watch, they have tacitly decided to do the utmost to avoid such unpleasant grilling in the future. That led rightly to higher capital requirements, and so on. But it also led to an increased focus on the national bank parts for which they are held responsible. This national, protectionist, approach of supervisors across the world has a large impact on the business model of international banks. Is the international business model still viable?

Banks follow various approaches to run their international activities. Although bank groups are very different from one another, two main international business models emerge: the integrated model and the decentralised model (Schoenmaker, 2013). In the integrated business model, the top management makes almost all key decisions for the whole group. IT and risk management systems as well as treasury operations are integrated. Branding is also typically done at a global scale. Large banks increasingly adopt the marketing strategy of global consumer companies, such as Coca Cola, by developing a strong global brand. Good examples of integrated global banks are Citigroup, Deutsche Bank and ING. In the decentralised model, there is basically a separate bank in each country. The bank holding company is then the 'owner' of the separate country subsidiaries of the bank. Although top management still makes some group-wide decisions, an important difference is that the local bank boards have a significant degree of autonomy. The activities are, in principle, structured in such a way that they are not mutually dependent. HSBC and Santander are typical examples of decentralised global banks. But these banks also operate under a global brand name.

Figures 6.1 and 6.2 illustrate the corporate structure of the two main models. External funding in the form of equity and debt is a defining characteristic of the

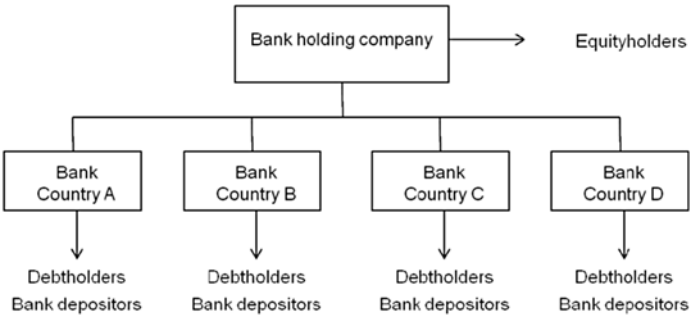
corporate structure (IIF, 2012). While the equity part of the external funding is always raised at the holding level, debt funding – provided by bond holders and other unsecured financiers – is raised at different levels of the banking group. In the integrated model of Figure 6.1, debt funding is provided at the top level, either the bank holding company or the bank, as the main legal entity, just below the holding. The central treasury unit subsequently down-streams the external funds to the various operational units within the group. By contrast, debt funding in the decentralised model of Figure 6.2 is provided at the level of the country banks (that is the main subsidiary incorporated in each country). In this multi-bank model, each country runs its own treasury operation.

Figure 6.1. The integrated global bank



The integrated global bank. Decision-making and external funding are predominantly at the top level (holding or bank just under the holding). Equity is raised at the holding level, while debt is also raised at the top level: either at the holding (a), or the top bank (b). Bank depositors (and other bank creditors) are at the top bank as well as the bank units further down in the group (the arrows down).

Figure 6.2. The decentralised global bank



The decentralised global bank. Decision-making and external funding are predominantly at the country level. While equity is raised at the holding level, debt is raised at the banks incorporated in the various countries. Bank depositors (and other bank creditors) are also at country bank level as well as the bank units further down in the countries.

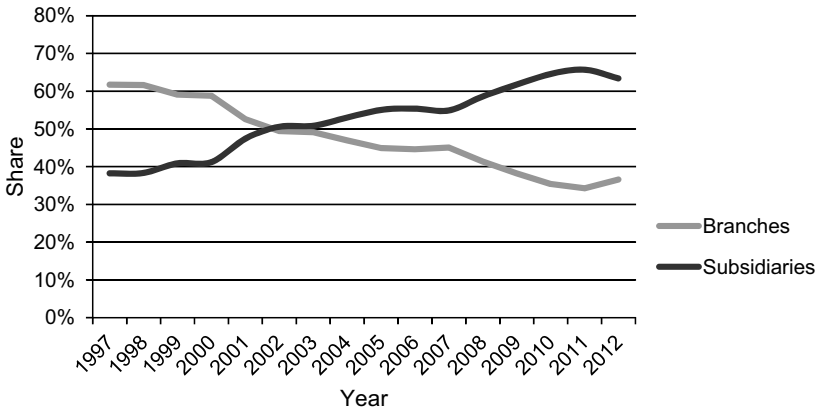
Another element of the corporate structure concerns the legal structure that international banks adopt; in particular, the question whether an international bank organises its cross-border operations through branches or subsidiaries. While subsidiaries have a legal status with their own corporate charter and balance sheet, branches have no separate legal status but are part of another legal entity, often the parent bank. The legal form influences the allocation of supervisory responsibilities between the home and host authorities. Foreign subsidiaries are separately licensed and supervised by the host country. As branches do not have their own balance sheet, the host country cannot monitor the solvency position of branches. The Basel Concordat for the supervision of international banks thus assigns the supervision of solvency to the home country (Basel Committee on Banking Supervision, 1983). Nevertheless, the host country still has the power to monitor the 'soundness' of foreign branches operating in their jurisdiction. The European Union (EU) is going one step further with the Single Market in Banking. The Second Banking Directive allows banks to expand by establishing branches in other EU Member States without additional supervision by host country authorities (home country control).

A range of bank structures exists with varying degrees of centralisation. At one end of the spectrum, an integrated global bank operates through a worldwide web of branches. At the other end, a decentralised global bank has multiple subsidiaries. In practice, the shades are grey, as international banks typically have a mix of branches and subsidiaries. Citigroup, a US-based integrated global bank maintains, for example, both a branch and subsidiary in London. The upshot is that integrated banks tend to make more use of branches, while decentralised banks have at least one main subsidiary in each country of operation.

The subsidiary form is on the rise in the EU. Figure 6.3 illustrates that the share of foreign branches has declined over the last fifteen years, while the share of foreign subsidiaries has increased from 38 to 63%. In particular, the steep increase after the start of the Global Financial Crisis in 2007 is notable, with a slight decrease in 2012. There is anecdotal evidence that host country supervisors informally push for 'subsidiarisation' to reassert their control over host operations. In particular, when retail business becomes sizeable, supervisors may require a subsidiary. This violates the EU Single Market, which provides banks with the freedom to establish cross-border branches. Nevertheless, the push for local control is consistent with the national approach. Prior to the Global Financial Crisis, New Zealand had already adopted this policy of requiring subsidiaries, if and when the retail operations of Australian banks in New Zealand become large.

In practice, factors like reputation risk, are blurring the stark legal difference between branches and subsidiaries. Freshfields Bruckhaus Deringer (2003), an

Figure 6.3. Relative share of branches and subsidiaries in Europe



Relative share of branches and subsidiaries in Europe. The share is measured by cross-border assets in branches, respectively subsidiaries, as a percentage of overall cross-border assets in EU banks. Source: EU Banking Structures, ECB.

international law firm, examines to what extent legal firewalls (separate legal personality and limited liability of subsidiaries) can help to reduce or prevent contagion risk within a financial group. They find that legal firewalls can help to protect from direct contagion (credit exposures arising from intra-group transactions or operational risk from sharing of services), but are less effective in limiting indirect contagion (reputation risk and funding risk). This is because indirect contagion arises from perceptions and behaviour of (potential) counterparties and other market participants. The strategy of most major banks to develop and maintain a global brand reinforces contagion risk.

A good example of indirect contagion is the Drexel Burnham Lambert collapse in 1990. While the Drexel Burnham Lambert Group was experiencing difficulties in the US, the London subsidiary was solvent. Nevertheless, the Bank of England had to intervene as facilitator because the counterparties did not want to deal directly with the London subsidiary.

6.1.3. International Policy Coordination

While banks that run the decentralised business model argue that national supervision of the respective national entities is sufficient, I very much doubt that assertion. The reputation risk factor indicates that even a decentralised banking group is considered as one group by the market. Funding will dry up for the whole group, if one of the major subsidiaries is in trouble. Next, a truly decentralised model would require high capital holdings in each national subsidiary and independent management that can take decisions independent

from the head-quarters. It would also need stand-alone IT and risk management capacity in each subsidiary.

So, there is still a need for a consolidated supervisory approach of international banking groups. Europe is on its way to a Banking Union. The Banking Union will support the international business model of banks, at least within the euro area. The ECB will become the central supervisor of the large euro-area banks. Beyond Europe, the Bank for International Settlements could play a role in the supervision of the so-called G-SIBS (global systemically important banks). In a new book on Governance of International Banking, I explain how the international financial institutions can play a role in the supervision and resolution of international banks (Schoenmaker, 2013).

6.1.4. Conclusions

The business models of international banks can be very different. The two polar cases are the globally integrated banks operating through a worldwide web of branches, and the decentralised global banks with various country subsidiaries. The difference between the two business models is clearly relevant. But by using a common brand name, decentralised banks are regarded as integrated groups by market investors. Moreover, decentralised banks also perform some key functions, such as the development of their risk management model, at the central level.

This article therefore stresses the need for international coordination between national supervisors to ensure effective supervision at the consolidated level. Such a consolidated supervisory approach may keep the international business model of banks alive. The alternative approach of national based supervision will *de facto* mean the end of the international banking model.

6.2. How to Clean up Problem Banks in Europe

Harald Benink[1]

European government leaders, ministers of finance and the Governing Council of the European Central Bank continue to discuss the important issue of how to clean up problem banks in Europe. The asset quality review (AQR) to be finalized before late 2014 by the ECB, in its envisaged role as Europe's single bank supervisor, can be expected to reveal hidden losses and capital shortages of

[1] This contribution is an updated version of the article "Endlich Handeln" which was published by Harald Benink and Harry Huizinga in the German financial newspaper *Handelsblatt* on November 21, 2013.

hundreds of billions of euros in case a thorough assessment is made. It is essential that agreement be reached on the backstops for these losses before the AQR is well underway. Otherwise, the ECB cannot be expected to undertake a credible review, thereby wasting a unique opportunity for cleaning up Europe's largest banks.

Unfortunately, Europe is still divided on the question to what extent taxpayers or shareholders and unsecured creditors should absorb any major losses. Advocates of using taxpayers' money tend to support proposals to recapitalize banks by way of the European Stability Mechanism (ESM), to let the ESM provide loans and guarantees to national resolution funds, or to use national taxpayers' money directly. Proponents of imposing losses on shareholders and unsecured creditors, through a so-called 'bail-in', instead stress the applicability of European Commission state aid rules that require shareholders and junior unsecured creditors to suffer losses before a bail-out can be approved. Such bail-ins recently occurred in Cyprus, Spain and the Netherlands.

The discussion takes place at the highest European level. Last October, it became known that Mario Draghi, president of the ECB, wrote a letter on this matter to Joaquín Almunia, EU competition commissioner. Draghi expressed his concern that a bail-in could jeopardize market confidence. Almunia replied that all decisions on a bail-in would be taken on a case-by-case basis, taking into account potentially adverse effects on financial stability.

In our view, bail-in is by far the preferred option to deal with banks that are revealed to be insolvent. Another bail-out of shareholders and unsecured creditors of a large bank now would confirm that these banks are too big to fail (or to restructure), thereby weakening incentives of professional investors to engage in proper risk monitoring of banks and rendering future banking crises more likely. Moreover, a bail-out would contradict the thrust of the EU's recovery and resolution directive that requires all EU member states to have a bail-in mechanism in place starting in 2016.

To make bail-in a feasible option, an appropriate legal framework needs to be in place so that losses can be imposed smoothly on bank shareholders and unsecured creditors. However, many euro and EU countries currently do not have any bank resolution procedures on the books at all. The ECB, while tasked to identify losses under the AQR as a bank supervisor, similarly lacks the resolution powers to mandate the restructuring of a problem bank.

It is essential that, in the very near future, these shortcomings will be addressed. The ECB in particular should not accept the supervision of banks from countries that do not have effective procedures in place to deal with banks that are found to be insolvent. Instead, the ECB should insist that countries put in place bank

resolution laws that provide for bail-in. The existing intervention laws in Denmark and the Netherlands may serve as useful examples. In addition, the ECB should conclude 'resolution contracts' with individual countries by which they agree that bank restructurings must not amount to bail-outs, but instead follow agreed upon rules for bail-ins.

Five years into the financial crisis, Europe's banking system continues to be undercapitalized. Without a proper bank recapitalization, Europe may well enter a Japanese-style prolonged period of economic stagnation. To ward this off, Europe's government leaders must finally act. They need to agree that countries whose banks will fall under ECB supervision as from late 2014 will establish adequate national backstops in preparation of the AQR. And, in our view, these backstops should imply the introduction of effective bank intervention laws at the national level and the conclusion of resolution agreements between the ECB and individual countries, thus facilitating bail-in.

Without proper backstops in place, the ECB should delay the finalization of the AQR and refuse to become Europe's single bank supervisor already as of late 2014.

6.3. VOLKSBANKEN RAIFFEISEN FINANCIAL NETWORK – CONTRIBUTING TO FINANCIAL STABILITY IN GERMANY

Andreas Bley

Institutional diversity in the banking sector is a key driver for stability in financial markets and for a robust financing of the whole economy. While this proposition seemed like a hazardous idea before the crisis, today it is widely shared. In fact, the important and stabilizing role of a manifold banking market is mentioned by both the Liikanen Report and the Wijffels Commission[2]. Diversity is characterized by a bunch of different bank business models with differently structured and defined ownership and the geographic radius of banking.

The German banking sector and its specific three-pillar structure is an adequate example for the heterogeneous structures in European banking sectors. Commercial banks – that consists of big banks (Deutsche Bank with its daughter company Postbank, Commerzbank and UniCredit) and a large number of regional and subsidiary banks – hold 35% of loans to non-banks in Germany. The Sparkassen-Finanzgruppe (state-owned savings banks and Landesbanken) is

[2] High-level Expert Group on Reforming the Structure of the EU Banking Sector (Liikanen report), Final Report, 2012. Commissie Structuur Nederlandse Banken (Committee on the Structure of the Dutch Banks, Wijffels Committee), Naar een dienstbaar en stabiel bankwezen (Towards a Service Oriented and Stable Banking System), 2013.

the second pillar of the German banking sector. These state-owned banks stand for 45% of all loans to non-banks. The third pillar consists of the cooperative banks and their regional institutions with a market share of close to 20%.

The financial crisis caused severe damage in Germany. According to the European Commission, government aid reached EUR 282 billion. State payments were higher only in the UK[3]. In Germany, however, not the whole banking sector but just a small double-digit number of financial institutions received money from the government. These included IKB Deutsche Industriekreditbank, Hypo Real Estate, Commerzbank and the majority of state owned Landesbanken. In contrast, not a single cooperative bank was in need of government help. Thus, German cooperative banks were the only group of banks in Germany that did not receive even a penny from the government and taxpayers.

The pronounced stability of the German cooperative banks during recent crisis years is due to its business model and the special cooperation within the Cooperative Financial Network. Around 1,100 cooperative banks provide the basis for the network. These banks are dispersed among all regions in Germany. At this, the action range of every bank is usually limited to a specific region.

All cooperative banks together combine 17 million members and around 30 million customers. That is, every fifth German is a member of a cooperative bank. Due to its great quantity cooperative banks are comparably small. In figures, the total assets a cooperative bank holds, amounts to EUR 700 million on average. The median bank holds around EUR 300 million of total assets.

In view of the fact that German cooperative banks are firmly anchored in their regions, they are able to make strong and close relationships to their customers and members. In order to provide not only for close customer proximity but also for the necessary economies of scale, cooperative banks are working together in a financial network with a common corporate design. Specialised institutions enhance the range of financial services. These include the central banks DZ BANK and WGZ BANK, the insurance and investment company Union Investment, the building society Bausparkasse Schwäbisch Hall, the leasing company VR Leasing and three mortgage banks (DG HYP, WL BANK, and Münchener Hypothekenbank).

The Association of German Cooperative Banks (BVR) plays a prominent role in the Cooperative Financial Network in Germany. To the main tasks of the BVR belongs the development of concepts for the network as a strategic centre of competence. The decentralized structure of the network is reflected in the fact that local cooperative banks form the majority in the BVR bodies and committees.

[3] EUROPEAN COMMISSION, *The effects of temporary State aid rules adopted in the context of the financial and economic crisis*, Commission staff working paper, October 2011.

Furthermore, the BVR provides and operates the BVR protection scheme, a central element of the German cooperative financial network. It safeguards the credit standing of its member institutions by averting imminent financial difficulties or eliminating any such existing problems and thereby prevents negative impacts on confidence in the cooperative institutions[4]. The BVR protection scheme was founded in 1934 and is the oldest fully private protection scheme worldwide. Since its establishment, no cooperative bank in Germany has failed and no customer has incurred any losses on its deposits.

The cooperative banking network in Germany showed its resilience during the financial crisis. More specifically, cooperative banks expanded lending to the German economy while other banks had to deleverage, in some cases in a dramatic degree. Therefore, the strong lending by regionally rooted banks, like cooperative banks and savings banks, helped to avoid a credit crunch in Germany in 2009[5]. Between 2008 and spring 2013 the Landesbanken and the four big banks decreased lending by EUR 36 billion (-17%) or EUR 27billion (-6%) while cooperative banks increased their lending by EUR 42 billion (+27%). German savings banks achieved a similar absolute lending expansion (+EUR 43 billion or +15%).

The basis for the steady lending growth of cooperative banks is a strong funding and capital base. Customer deposits of the local banks exceed lending by EUR 100 billion or 20% (2012). The strong capital base is best seen in the consolidated financial statements of the network. Total capital amounts to EUR 75 billion related to total assets of EUR 1,090 billion[6]. This compares to a balance sheet of Deutsche Bank of EUR 2,010 billion and a capital of EUR 54 billion. Finally, the rating upgrade of the Cooperative Financial Network by S&P to AA- in December 2011 acknowledges the robust and sustainable business model of cooperative banking in Germany. This is even more remarkable because rating upgrades are rare events during financial crises.

Diversity has the potential to enhance resilience. But, what is the optimal structure of a banking system? There is no clear answer. The stability of ecological systems depends on a complex nexus of determinants and is hard to predict (Zolli and Healy, 2012). It would be a 'pretense of knowledge', in the words of Friedrich August Hayek, to design a banking system which can be expected to be very robust. Thus, the evolution of proper banking structures should be left to market powers. That means that competition should decide about the arrangement of business models.

4 BVR, *Statute of the Protection Scheme* 2010 (www.bvr.coop).

5 DEUTSCHE BUNDESBANK, *Developments in lending to the German private sector during the global financial crisis*, Monthly Report, September 2009, pp. 15-32.

6 BVR, *Consolidated Financial Statements 2012 of the Volksbanken Raiffeisenbanken Cooperative Financial Network* 2013.

In Germany cooperative banks have proved to be competitive in the 150 years of their existence. They have not needed a special breeding ground to do business successfully. Therefore, banking supervision and regulation should provide a level playing field for all the different banks. What has to be prevented is implicit discrimination of specific business models like that of cooperative banks. More precisely, a precondition for a level-playing field is that the business models of large shareholder-owned banking groups are not regarded as the one and only business model in banking (Michie, 2010). According to the concept of proportionality, banking supervision should take the risk profile and systemic importance of the banks being supervised sufficiently into account[7]. Today, smaller banks suffer from more and more complex regulation since supervisory requirements means serious administrative challenges to them.

A second prominent obstacle for fair competition is the too-big-to-fail (TBTF) problem. Banks which are too large and/or too complex to fail profit from enormous benefits. The past years have shown clearly that the business models of some banks still depend on this. Without the opportunity of cheaper funding due to TBTF some of these financial institutions would lose their profitability and competitiveness. According to OECD computations, in Germany the implicit subsidy of the rating-uplift of TBTF banks amounts to at least EUR 30 billion. This amounts to more than 1% of GDP and equals the profits of the whole banking sector in 2011 or 2012 (Schich and Lindh, 2012). In both years, German banks' earnings are even above the average[8].

In conclusion, to establish a level-playing field is of outstanding importance for future financial market supervision and regulation. The provision of efficient and non-discriminating procedures of bank restructuring and resolution as well as appropriate capital surcharges for TBTF banks are fundamentally important to promote diversity in banking and to safeguard financial stability.

6.4. BUSINESS MODELS AFTER THE CRISIS: RE-FOCUSING AND REBALANCING FOR ADDING VALUE

Alicia Sanchis

Many lessons have been learnt since the crisis. It is now clear that we need a more robust and less pro-cyclical financial system, effective crisis management frameworks, more focus on macro-prudential issues and a greater coordination of micro- and macro-economic policies across the globe.

[7] BASEL COMMITTEE ON BANKING SUPERVISION, *Core Principles for Effective Banking Supervision* September 2012, p. 74.

[8] DEUTSCHE BUNDESBANK, *The performance of German credit institutions in 2012*, Monthly Report, September 2013.

As a result, a complete overhaul of the financial regulatory framework has taken place to introduce the right incentives. In this context, bank managers face a huge challenge: how to cover market expectations in order to remain attractive to investors, prudential regulators expectations regarding financial stability, and other stakeholder's expectations about a more ethic and committed behavior. In other words, how to ensure attractive return on equity levels under the new legal and social restrictions. The profitability of the banking sector is under pressure. The return on equity has experienced a sharp decline from levels between 15% and 25% in the years prior to the crisis, to levels between 5% and 10%. These are levels that are below the cost of capital for the sector. Part of the decline is cyclical, but we have to be aware that an important part of the return on equity's fall is structural as is the new regulatory framework.

The response to this challenge is not a change in the nature of banking. Banks should continue to provide payment systems, and maturity and risk transformation to contribute to growth of the real economy. But, at the same time, they should increase the return on assets by creating added value to the customers and, more generally, to society and not by exploiting market failures.

This should imply a refocus and a rebalancing of business models and banks' internal policies. First: a refocus on the client, i.e. banks should better identify client needs. This implies a shift towards more relationship banking versus product-based banking. There is a trade-off between scale economies and client-tailored services. Exploiting scale economies is at the essence of viable banking activity but not at the expense of largely disregarding specific client needs. Banks should be more client-centric, trying to better cater to client needs through, for instance, more client segmentation. This means knowing the client and building a more stable relationship.

Second: a refocus on risk management, i.e. banks should better analyze the viability of operations. We need to refocus on the analysis of project viability not over relying on collateral. A prudent risk management implies using collaterals and other risk mitigating tools to ensure a sound and viable bank. However, collateral should be seen as the last backstop to absorb potential losses but the viability of the operation/client should be the first line of defense. The collateral management should not be at the expense of careful project viability analysis. This will ensure more stable results and add value to the economy by contributing to the better allocation of scarce savings resources.

Third: a refocus on contracts, i.e. contracts should be understandable for clients, reflect and price the different scenarios they envisage in a fair way, and cover the spectrum of client needs. Contracts should be clear enough so the client understands the full consequences of what he is signing. This is essential for building trust, consolidating client relationships and reducing legal and

reputational risks. Equally, contracts should include more long-term features and reflect the nature of more stable relationships. Banks need to adopt a more long-term view when doing business and be less pro-cyclical. So far regulation has introduced incentives through capital requirements and remuneration policies that will incentivize a more counter-cyclical behavior. But these incentives should flow through all the decision-making chain to end at the operation and client level. This means, for instance, reviewing the contracts that frame the relationships between the bank and the clients and ironing out these features that respond to short-term views. Moreover, banks should contemplate a broader set of scenarios when deciding including those less likely but with a greater impact. To the extent possible, contracts should also reflect these scenarios and include insurance-type features. More complete contracts should be the base of robust relationships that do not rely too much on '*expected behavior*' but in an established and priced path.

Fourth: a refocus on the relationship with the markets, i.e. seeking opportunities of engagement through sound and fruitful links. Maturity and risk transformation are at the heart of banking activity, but both have limits that banks should not trespass. Focusing on very risky long-term projects would imply an excessive maturity mismatch and risk for banks. Institutional investors and markets should complement banks financing in order to cover all the spectrum of maturities and risk funding needs. Banks can provide their expertise and close client relationships to fill the gap between the end client and markets. Banks should find the way for a more effective engagement with markets in order to cover funding needs across all the spectrum of maturities and risks. The industry lead PCS project, where high-quality securitizations are identified by this label, is an example of the kind of initiatives the banking sector could promote for a more complete financial market.

Thus, banks should review their client relationships, risk management practices, expertise, contractual frameworks and their engagement with financial markets. These changes should be embedded in the banks' business culture in such a way that each decision is guided by the need to fairly satisfy client needs, in a world where clients will be more demanding and supervisors too.

But several requirements have to be met for this effort to be effective and end in a sustainable banking sector. First: a regulatory framework that incentivizes such efforts. Regulators should ensure that the result of so many interrelated pieces of regulation do not result in penalizing banks when providing real added value to the economy, especially for those banks which are well diversified and exhibit good risk and governance practices.

Second: a stable regulatory framework that reduces legal uncertainty. Regulators should focus on the consistent implementation of the already agreed-upon

measures while refraining from opening new fronts (e.g. mandatory separation of retail and wholesale business). Macro-prudential policies should be designed to be as predictable as possible.

Third: a level-playing field with other financial institutions which are not subject to the same prudential standards (i.e. shadow banking).

Fourth: a more cooperative and coordinated regulatory and supervisory framework that avoids fragmentation.

Fifth: a risk-sensitive prudential framework. It is vital that the regulatory framework does not incentivize banks to adopt riskier approaches in view of non-sensitive frameworks that turn low risk operations into non-viable ones.

On top of that, it is necessary that politicians define global macro-economic policies that ensure a stable environment for banks to operate and institutional arrangements that overcome current inconsistencies (as is the case in Europe). True, banks can contribute to global financial instability in a context of global macro imbalances and institutional gaps but, by the same token, banks could and should be a key piece in fostering sustainable growth in a context of more balanced global macro-economic policies and institutional stability.

6.5. FUTURE DEVELOPMENTS IN THE FINANCIAL SECTOR

Michiel Bijlsma

Several forces have been gradually changing the structure of the financial sector over the past decades. First, and foremost, advances in information technology have made storing and retrieving data cheap and reliable, and collecting and processing information fast and easy. This has reduced transaction costs and increased the availability of verifiable, hard information. Second, globalisation has resulted in larger and more diverse markets in which banks operate. As a result, the profits from outperforming competitors have increased and performance pay has become a central instrument to attract and retain highly talented employees. Third, changes in regulation have levelled the international playing field, enabling banks to offer a wider range of services, and stimulating international expansion.

In reaction to technological change, globalisation and deregulation, banks' strategic choices have in the past reshaped the financial sector (Mishkin and Strahan, 1999; Berger, 2003; Boot and Marinc, 2008). Transactions have become more arms-length, allowing broader participation in financial markets and increased diversification of risks. Financial markets and financial intermediaries have become increasingly intertwined. Banks compete more fiercely for talent in

global markets, and have become more reliant on securitisation of bank loans and short-term financing through money markets as sources of funding.

How should we extrapolate these developments? What will the financial intermediary sector look like in twenty years' time from now and what does this imply for regulation? Below, I develop four scenarios to help regulators in thinking about the future of finance and how regulation should adapt (based on Bijlsma *et al.*, 2010). These scenarios assume that in the longer run the structure of the financial sector will be driven by technological changes, as it has been in the past. In response to increasingly global markets, advancing information technology, and changing regulation, financial intermediaries will decide whether to merge, what products to sell, how to fund their activities and how to structure their corporate governance. These choices will determine the structure of the financial sector. But what drives these decisions?

To understand from an economic point of view how future developments may affect the strategic choices that banks make, and thus to make an educated guess at relevant future scenarios, we have to understand what determines the costs and benefits of these choices. Understanding this starts with the question: what is the added value of financial intermediation over intermediation through markets? A first potential answer to this question is that financial intermediaries exist due to economies of scale in reducing frictions in financial markets. This competitive advantage determines the boundary between banks and markets. A second answer is that banks benefit from their ability to forge long-term relationships with their clients, which allows them to generate and use soft, non-contractible information. A third answer is economies of scope, which determine what services banks decide to offer and the potential for cross-subsidisation between these services. See e.g. Freixas and Rochet (1997) or Allen and Carletti (2008) for a more elaborate discussion of the theory and Degryse *et al.* (2009) for some relevant empirical literature.

I will build four scenarios upon these three ingredients by arguing, first, that future developments can either reduce or increase the importance of soft information, and, second, that future developments can either reduce or increase economies of scope. The central driver of these changes, in my view, will be information technology.

Advances in information technology can have two opposite effects on the level of information asymmetry. On the one hand, improved information technology can be used to generate more hard information, which can be processed in statistical models. Examples of hard information are data on a client's credit history, cash flow realisation, revenue, investments, liabilities etc. A bank can credibly transfer such information to other banks or investors. These outside parties can then base their commercial decisions on this information. Also, firms that want to borrow

can more credibly convey their credit history to financiers by using hard data. In contrast, soft information cannot credibly be transferred to other banks or investors. Examples are an assessment of creditworthiness based on a relationship of mutual trust between an account manager and his client, or intimate knowledge of the day-to-day operations within a particular firm. Such information only has value to the bank that generates it. If soft information becomes less important, this may reduce the bank-specific nature of the relationship between firms, which allows borrowers to switch banks more easily. It also allows banks to securitise a larger fraction of their assets, because it will become easier to assess the quality of bundles of securitised loans. Long-term relationships matter less, informational frictions in direct credit markets are reduced, and banks focus on reducing remaining frictions.

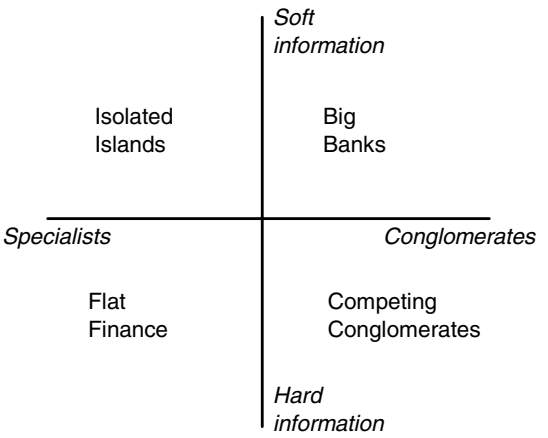
On the other hand, advances in information technology may also be used to generate more soft information and to make better use of it. A bank's long-term relationship with a client generates soft information on a client's creditworthiness and valuable bank-specific skills to manage this client. Banks will focus on fostering long-term relationships. The value of a bank's assets will depend on soft, non-transferable information and outsiders have difficulties assessing their quality. Bank assets will become more informationally opaque. To optimally extract and use such information, banks' account managers have to be close to their clients. As a result, geographical distance matters. In addition, competition for existing clients becomes less fierce, but competition for first-time clients increases.

Advances in information technology may also have two opposing effects on the importance of economies of scope. The importance of such economies of scope determines what services banks offer their clients. On the one hand, improved information technology may allow financial intermediaries to better reap the benefits of economies of scope between different services. Data mining may allow banks to approach their customers with tailor-made business proposals. Once banks have built an expensive IT infrastructure, they can use it to sell many different products. An assessment of a clients' creditworthiness may also provide information about cross selling opportunities. On the other hand, information technology creates more scope to arrive at optimal outcomes through contractual relations, such as outsourcing or partnerships, to achieve particular synergies between different activities. The latter reduces the advantage of conglomerates, and will lead to specialisation.

Based on this differential impact of information technology on two fundamental drivers of banks' strategic choices, I distinguish between two dimensions. The first dimension refers to the type of information – hard or soft – lying at the core of banks' business models. How important is soft, private information in

banking? Will banks live in a world where distance is unimportant, securitisation is easy, banks compete fiercely with each other, and banks and markets are substitutes; or in a world where distance matters, securitisation is difficult, competition between banks is muted, and bank and markets are complements? The second dimension is the level of specialisation: will universal banks compete in bundles of products, or will specialized financial intermediaries compete in segmented markets? As depicted in Figure 6.4, by combining these two dimensions, we get four scenarios: Isolated Islands, Big Banks, Competing Conglomerates, and Flat Finance.

Figure 6.4. Four Scenarios

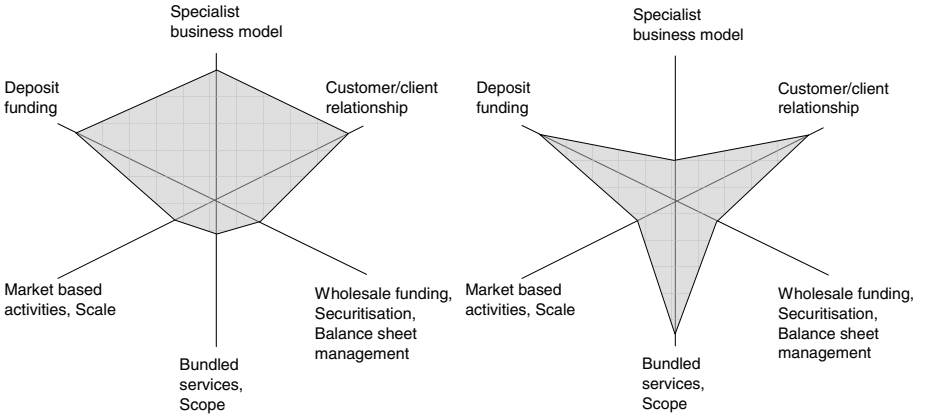


What does the financial sector in these different worlds look like? Figures 6.5 and 6.6 illustrate how markets differ between the scenarios. In Isolated Islands, banks specialize because economies of scope are absent. They invest heavily in their relationship with their clients because this generates the soft information that is the key to a bank's success. To generate soft information, banks have to stay in close contact with their clients. This gives rise to a local orientation. A local orientation also implies that scale matters less. In addition, competition is muted because bank clients are locked in due to the absence of hard information on their credit status. To fund their activities, banks depend heavily on deposit funding. Funding in the interbank wholesale markets is difficult because assets are opaque and therefore have relatively little collateral value.

In Big Banks, soft information still plays a central role and scope economies are important. Banks offer their clients a complete and functionally integrated set of products and services. As a result, banks' balance sheets contain a diversity of assets and are more complex. When customers need a particular service, they will

first turn to the bank from which they already buy several products. This creates an additional lock-in effect, which reduces competition even further.

Figure 6.5. Market Structure: Isolated Islands (lhs: left hand side) and Big Banks (rhs: right hand side)

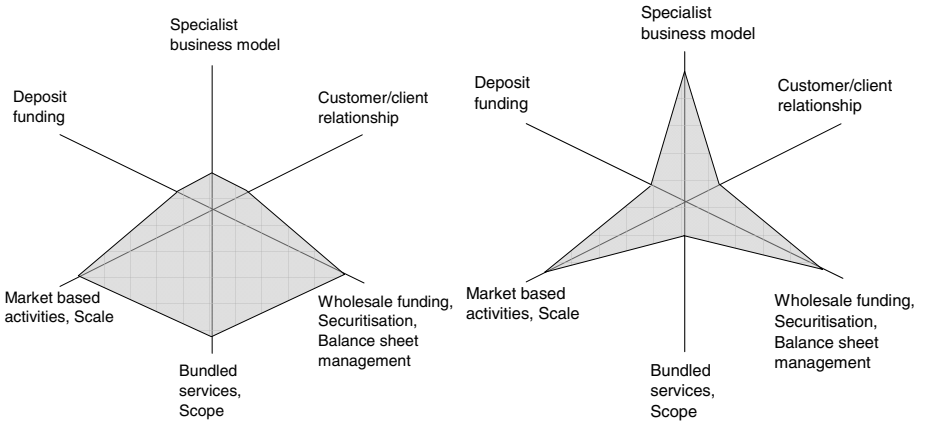


In Competing Conglomerates, scope economies are important, but now hard information is abundant, which reduces the importance of soft information. As a result, bank assets are less informationally opaque: third parties can more accurately determine the value of these assets by using hard, transferable information. This makes banks' assets more liquid. As a result, securitisation is easier, which allows banks to finance themselves more easily through wholesale markets, thus reducing their reliance on deposit funding. Because banks can select and monitor clients based on hard information, distance matters less. Consequently, banks are footloose and can serve their clients from anywhere in the world. For some services and products, consumers and firms can turn directly to markets. For these activities, banks compete head-on with markets and economies of scale become more important.

In Flat Finance, finally, hard information remains abundant, but scope economies are absent. This implies that large international banks specialize for example in investment services or retail internet banking. Clients can easily change banks, as information on their creditworthiness is credible and transferable to other banks, while they are not restricted to buying package deals. As a result, banks that operate in a particular market segment compete fiercely.

It may be tempting to identify existing banks that fit a particular scenario. However, a particular scenario reflects a whole ecosystem of banks, i.e., retail banks, corporate banks, investment banks, hedge funds, money market mutual funds, special purpose investment vehicles etc. If one wants to think of our future

Figure 6.6. Market Structure: Flat Finance (lhs: left hand side) and Competing Conglomerates (rhs: right hand side)



scenarios in terms of the current world, it is best to think in terms of countries or regions. For example, although one should not take such comparisons too seriously, Isolated Island may be compared to Germany, big banks may be compared to Japan, competing conglomerates may be compared to Europe, and flat finance may be compared to the United States. Also, these scenarios represent the extremes of a continuum of possibilities. I focus on these extremes to make the distinctions between them, as well as the consequence of these differences for policy, as clear as possible.

The world banks live in has various consequences for policy, some of which I discuss below. First, the extent to which international policy coordination is possible differs per scenario. If banks are footloose, policy coordination will be more difficult because banks can credibly threaten to move their business to other countries.

Second, the causes of financial instability will differ across worlds. If banks are local, the risk of local shocks is what drives financial instability. If bank assets are opaque and soft information matters, market information will signal trust, while reputation and information spillovers are an important source of instability. If information is hard and banks are able to securitize and sell their assets, then interconnectedness will play an important role. The ability of financial intermediaries to fund themselves by issuing securities determines the length of intermediation chains. Longer chains increase interconnectedness and therefore systemic risk. The ability to offload assets quickly also increases moral hazard. To protect themselves against increased moral hazard, banks' financiers will prefer to provide short-term funding, which again increases systemic risk.

Third, the extent of information asymmetry between regulator and regulated differs per scenario. This determines how effective regulation that requires complex information is. If banks form conglomerates or can quickly offload or hedge assets, non-transparency increases and regulators will find it harder to assess a bank's risk. In addition, if soft information is needed to monitor the credit risk of assets, the information asymmetry between bank and regulator also increases.

Fourth, what type of *ex ante* prudential regulation should be in place? If regulators are at an informational disadvantage, regulation that requires complex information will be less effective. Simple indicators that trigger close scrutiny may be a useful complement in that case. When information is hard, regulation that uses market forces to discipline banks may play an important role.

Finally, how effectively banks' financiers can monitor and discipline banks, determines how useful markets can be in creating information for regulators and in reducing the risks. Market-based financial intermediation, where banks depend increasingly on markets for their funding instead of deposits, increases the scope for market discipline. In addition, markets are better able to monitor and thus discipline specialized banks, compared to complex financial conglomerates.

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