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**Emerging Themes in Banking:
Recent Literature and Directions for Future Research**

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Emerging Themes in Banking: Recent Literature and Directions for Future Research

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Abstract

This paper presents a review of the recent literature in banking around the core themes of performance, risk and governance of financial institutions. We write this review against the backdrop of the recent financial crisis and the major changes it caused to banking sectors in many countries. There are several themes emerging from this review, but the overarching issue relates to the need to better understand bank risk taking incentives and the implications for systemic stability. There is a need for more work on the role of safety net subsidies and how these are linked to systemic risk; financial innovation and the adoption of new products and processes and the linkage to risk-taking, market returns or contagion. There is also a need to better understand the relationship between competition and risk, and understand the inter-connections between capital, profitability, liquidity and risk.

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1 Introduction

From the beginning of the 1990s until the middle of July 2007, change in the banking industry was driven by the twin forces of deregulation and technological change.¹ Deregulation removed barriers to competition in traditional and new (non-banking) product areas as well as geographically. Similarly to legislative developments in the US (which repealed long standing regulations that separated commercial from investment banking), the European Union's Single Market Programme legislated for the possibility of a universal banking system and a single banking license in 1992. The introduction of the euro in 1999 further removed barriers to cross-border trade in banking and financial services.² Similar developments have taken place in other developed and (in some cases) developing banking systems.³

Technological change revolutionised the processing and analysis of financial data, as well as delivery systems, which reduced bank costs, increased lending capacity, and improved the quality and variety of banking services available to customers. In addition, financial engineering and risk management, coupled with the growth of new and broader derivatives markets were believed to have improved banks' risk management capabilities.

Up until the middle of 2007, the general consensus appeared to be that high-performing banking systems, supported by excess capital and state-of-the-art risk management capabilities, bolstered by appropriate market-based regulation would continue to finance investment and stimulate economic growth at recent historical levels. However, over

¹ A detailed exposition of the theoretical foundations of banking is not within the scope of this review. Useful theoretical expositions outlining the role and functions of banks within the financial system and wider economy include: Leland and Pyle (1977); Diamond and Dybvig, (1983); Diamond, (1984); Fama, (1985); Boyd and Prescott, (1986); Bhattacharya and Thakor, (1993); Holmstrom and Tirole, (1998); Diamond and Rajan, (2001); Kashyap, Rajan, and Stein, (2002); and Levine, (2005).

² Detailed overviews of the evolution of banking in North America are provided by Berger et al. (1995); Jones and Critchfield (2006) and DeYoung (2009), and for EU-15 countries by Goddard et al. (2001, 2007, 2009a).

³ Uchida and Udell (2009) provide a detailed review of developments in Japan, while Bonin et al. (2009); De Carvaho et al., (2009) and Klapper et al. (2009) provide overviews of banking in Eastern Europe; Latin America and the developing nations of Asia. Barth et al. (2004, 2006, 2008) provide an invaluable resource of information regarding the regulatory and supervisory practices across banking systems around the globe.

the past 2 years, turmoil in the global financial system have impacted severely on what was once a profitable, fast growing, dynamic and highly innovative banking sector. As major banks have suffered large losses, many of the largest banking organisations have had to raise additional capital privately or be bailed out by their respective national governments.⁴ These developments have led academics and policy-makers alike to re-examine the scale, scope, governance, performance and the safety and soundness of financial institutions.

It is against this backdrop that we write this review paper that describes the key developments on the performance, risk and governance of financial institutions in recent years and suggests where future research might progress. The rest of the paper is structured as follows. Section 2 examines recent strategies carried out by banks and their impact on efficiency and performance. Section 3 assesses bank ownership, corporate governance and risk taking. Section 4 discusses bank management issues related to liquidity, capital, provisioning and mark-to-market accounting. Section 5 provides a summary.

2. Bank Strategies and Performance

In recent years competitive pressures on earnings streams relative to costs, attributed partly to financial deregulation, prompted financial institutions to pursue diversification strategies, often including mergers and acquisitions. Furthermore, the tremendous growth of the securitisation market, and its consequent collapse during the recent financial turmoil, has highlighted the importance of understanding the implications of bank strategies for the stability of the sector. This section presents a review of the literature on banking strategies, from mergers and acquisitions (M&As) to product diversification, and their impact on bank performance. The motives for M&As and diversification will be discussed and include: asset

⁴ Brunnermeier (2009) provides an excellent overview of the causes and consequences of the financial crisis, while Goddard et al., 2009 (b,c) provide a detailed treatment of policy interventions taken by governments in Europe to stabilise the banking system. A number of papers and reports have proposed new forms of regulation to restore and maintain the stability of the financial system. The most comprehensive to date is the volume written by leading scholars at the Stern School of Business and edited by Acharya and Richardson (2009).

growth, realisation of efficiency gains; reduction of idiosyncratic risk and increased profitability. The links between diversification and the volatility of income or market-based returns will also be explored. Further, we will discuss the impact of bank mergers on pre- and post-merger accounting performance, and stock price reactions to merger announcements.

Diversification

A large literature exists which examines the determinants of corporate diversification, and the subsequent impact of this diversification on firm value. Motives for corporate diversification can be summed up under the market power, agency and resources views.⁵ Santomero and Eckles (2000) suggest that the rationale for diversification in financial services is to grow, realise efficiency gains via economies of scale and scope, reduce idiosyncratic risk and strengthen the financial system.⁶

Consistent with this rationale is the growth in non-interest income. For example, for US banks, non-interest income increased from 20 percent in 1980 and peaked at 43 percent in 2001. Since then, however, the share of non-interest income has tended to reduce and this has gone partially in hand with a renewed focus on retail banking evidenced by rising trends in retail loan and deposit shares and an increase in the number of bank branches. Many academics and commentators have argued such a re-focusing has been driven by the stability of revenue and profit from retail sources and the relative volatility of non-retail activities.

⁵ The 'market power' view suggests that diversified firms might be able to exploit anti-competitive behaviour. This can be done via cross subsidisation, reciprocal buying and mutual forbearance. The 'agency' view asserts that due to a separation of ownership from control, managers may pursue growth through diversification strategies in excess of that necessary to benefit their shareholders. The 'resource' view asserts that firms possess a range of resources and assets, which can be exploited in other markets. If such resources can be sold in the market, to other firms, then the rationale for diversification would disappear. However, in cases where transaction costs are high, firms may be forced to exploit these assets themselves. Such assets have been given various names, such as specific assets, core competences and distinctive capabilities, and can provide firms with opportunities to grow, to cut costs via economies of scope or to enhance revenues.

⁶ There is an enormous empirical literature on the measurement of cost structure and efficiency in the financial services industry. The early literature is reviewed by Berger et al. (1993); Berger and Humphrey (1997) and Berger and Mester (1997). More recent literature is assessed in Hughes and Mester (2009).

In general, empirical research which has examined the performance and diversification of banks in North America has tended to conclude that expansion into less traditional financial activities is associated with increased risk and lower returns (De Young and Roland, 2001; Stiroh, 2004a, b, 2006, 2009; Stiroh and Rumble, 2006; and Goddard et al., 2008).

Outside the US, a less uniform picture tends to emerge. Smith et al. (2003) investigate the diversification effects of non-interest income in 15 EU countries and conclude that non-interest income is less stable than interest income. However, they also find negative correlations between these two income streams which leads them to conclude (in contrast to the US studies) that non-interest income tends to stabilise bank earnings. This might explain why large European banks tend to perform better (in terms of market based measures) over sustained periods of time (Baele et al., 2007). This is confirmed to some extent by Lepetit et al. (2008) who find that risk is negatively related to the extent of bank trading activities. However, other European evidence contends that small banks that have diversified into non-interest income activities are riskier than those that focus on traditional areas of business (Mercieca et al., 2007).

A number of studies have focused on specific countries within Europe. Acharya, et al. (2006), using a sample of Italian banks, find that asset diversification across individual bank loan portfolios neither improves performance nor risk. Hayden et al. (2006) use data on individual bank loan portfolios for a sample of German banks to assess the extent to which diversification in lending across different industries and geographic areas improves performance. They find no large benefits, with all types of diversification leading to lower bank performance.

In the most comprehensive study of its kind, Laeven and Levine (2007) assess the effects of diversification on the market value of large banks across 42 countries. They find that market values of diversified financial services firms tend to be lower than their specialised

counterparts. The authors conclude that the potential benefits of economies of scope are not sufficient to feed through to improved market valuations, and that diversification appears to increase agency problems.

Most recently, Demirguc-Kunt and Huizinga (2009) examine the effects of diversification and funding strategies on bank risks and returns for a sample of banks from 101 countries covering the period 1999-2007. They find evidence that banks with high proportions of non-interest income, or those that rely on non-deposit funding, tend to be very risky. This appears to provide clear evidence that there are limits to the extent to which banks can steer away from traditional financial intermediation activities.

Mergers and Acquisitions

Theory summarises the motives for merger activity in any industry under the general headings of synergy, hubris and agency.⁷ Empirical evidence on the motives for bank mergers both in North America and Europe tends to confirm the importance of the synergy motive (Wheelock and Wilson, 2000 and 2004; Focarelli et al., 2002). Banks and other financial institutions with low earnings, low capital-to-assets ratios, high local market share, or which operate in urban areas, are more likely to be acquired (Hannan and Piloff, 2006; Goddard et al., 2009d).

⁷ Synergy refers to the increased market power of the merged entity, and to the potential for cost savings. Cost savings may be realised through the exploitation of scale economies, vertical integration or the adoption of more efficient production or organisational technology. Savings may be realised through the elimination of overlapping costs, by combining head office and various back office functions or branch networks. Scope economies, realised through the cross-selling of products and services, as in deals involving banks and insurance companies, may also be available. Mergers may allow the exploitation of certain accounting advantages, such as under-utilised tax shields. Another possible cost saving derives from the removal of inefficient management at the target institution. Hubris suggests that managers make mistakes in evaluating target firms, and overestimate the potential for synergy. Consequently, bidding firms tend to pay too much for the target. Finally, according to the agency hypothesis, acquiring managers deliberately overpay for their targets, because they benefit personally, even if the stock price and shareholder wealth is adversely affected. There may be greater prestige associated with managing a larger organisation; promotion opportunities may be better; or merger may divert attention and allow senior managers to avoid dismissal if their institution has been performing poorly.

Studies on the impact of bank mergers examine pre- and post-merger performance using accounting ratios and/or efficiency indicators as well as stock price reactions to merger announcements. Early evidence from the US tends to take the view that realised post-merger cost efficiency gains are quite limited (Peristiani, 1997; DeYoung, 1997). More recent empirical evidence for both the US and Europe suggests that information spillovers from previous mergers, and learning-by-doing within banks have led to improvements in post-merger returns (Cornett et al. 2006, DeLong and DeYoung, 2007; DeYoung et al. 2009).

An emerging strand of literature examines the impact of M & A activity on bank customers and the extent to which large banks engage in M & A activity to boost size in order to exploit government safety net subsidies.

A substantial literature has investigated the impact of industry consolidation on bank customers. Early US studies tended to find that M&As in the 1980s resulted in market power effects, with lower deposit rates and higher loan rates in more concentrated markets. In studies using 1990s data, the relationships between local market concentration and deposit rates became weaker (Shull and Hanweck, 2001). There is also substantial evidence that large banks, and especially merging banks, allocate a lower proportion of their assets to small business loans compared to small banks, although these adverse effects appeared to be offset by an increased flow of credit to small businesses from non-merging small banks (Berger et al, 1998; Berger et al., 1999). Overall, the early literature suggests that the impact of bank mergers on both the price and availability of banking services is relatively modest.

Recent studies have focused predominantly on the influence of bank mergers on the price and availability of small business credit. These studies have been driven not only by the desire to understand the market power effects of mergers, but increasingly by an interest in relationship lending and the role of soft and hard information in determining banks' credit decisions (Stein, 1998; Boot, 2000; Boot and Thakor, 2000). Evidence on the net effects of

bank M&As and market consolidation on credit availability however is rather mixed. Some studies find that bank mergers reduce credit availability for small borrowers (Craig and Hardee, 2007) and capital constrained firms (Carow et al., 2006), while others find that these market power effects vary depending on the specific product in question (Park and Pennacchi, 2007). Whether credit availability declines or holds steady in the aftermath of bank mergers, the bulk of the evidence suggests that credit becomes more expensive (Calomiris and Pornrojngkool 2005; Garmaise and Moskowitz 2006; Panetta et al., 2009a).⁸

Another interesting recent strand of the M&A literature seeks to identify the features of actual or potential bank acquisition targets. Studies of domestic bank deals tend to arrive at the same conclusion, poor performing banks are those most likely to be acquired. They may be less efficient, have lower capital levels, poor risk management processes, lower liquidity and so on (Wheelock and Wilson 2004; Akhigbe et al., 2004). A related literature which examines the determinants of cross-border banking also identifies efficiency (as well as country differences in information costs, regulatory, economic and other factors) as being important in influencing overseas expansion. Generally, this literature finds that large efficient banks are more likely to be engaged in overseas expansion (Beitel et al., 2004; and Pasiouras et al., 2007).

Given the onset of the credit crisis from mid-2007 and the bailouts of banks and other large financial institutions that followed, it is now apparent that the increased size of banking firms raises major policy concerns about bank risk and the implications for macro-economic and financial market stability. As recent experience shows, banks that grow very large are eventually viewed as ‘too big to fail’ (TBTF) or ‘too big to discipline adequately’ and may

⁸ Bank mergers tend to impact on deposit rates as well. Focarelli and Panetta (2003) found that post-merger deposit rates decline initially, but increase in the longer run whereas Craig and Dinger (2009) find only small effects from US bank mergers on deposit prices.

have the opportunity to exploit safety net subsidies (Kane, 2000; Stern and Feldman, 2004; Mishkin, 2006).⁹ The literature on bank consolidation in the US prior to the recent crisis expressed growing concerns about TBTF subsidies (Morgan and Stiroh 2005, Schmid and Walter, 2009).¹⁰

Closely linked to the arguments about consolidation and safety net subsidies are those that examine systemic risk. Such risk is that the failure of one large (or important) financial institution might cause losses and insolvencies at other financial institutions, with the end result being a system-wide financial panic and potential macroeconomic disruption. Such is the complexity of large banks, that it might be impossible to unwind such institutions in the event of failure (Herring and Carmassi, 2009).

De Nicolo and Kwast (2002) argue that systemic risk may have increased but not particularly as a result of the consolidation trend. However, there is evidence that trends in international consolidation and conglomeration are likely to have increased risks for large financial firms (De Nicolo et al, 2003). Empirical studies that examine systemic risk issues in European banking either looking at bank profits or stock-return volatility data indicate that systematic risk has increased in recent years (Baele et al., 2007; Uhde and Heimeshoff, 2009). Clearly there is a need for more work on the role of safety net subsidies in banking, especially since we now know that these are substantial, given the bank bailouts and other rescue packages that have been implemented post credit crisis. It would also be interesting to investigate how such subsidies are linked to systemic risks.

⁹ Banks are likely to grow to realise returns to scale. Recent evidence suggests that banks experienced increasing returns to scale right up until the onset of the current financial crisis (Wheelock and Wilson, 2009).

¹⁰ As far as we can tell there have been no studies to date examining safety net subsidy issues outside the US.

New Technologies

The impact of new technologies on banking activity has been a key feature of the industry over the last decade or so. In banking, several studies have examined patterns of adoption of innovations, including: Automated Teller Machines (Hannan and McDowell, 1984; 1986; Saloner and Shepard, 1995); Automated Clearinghouse Settlement Systems (Gowrisankaran and Stavins, 2004); credit scoring technologies (Akhavain et al., 2005); and Real Time Gross Settlement Systems (Bech and Hobijn, 2006). Furst et al. (2002) use multivariate logit regressions to identify factors driving the adoption of internet banking. Banks that are more likely to introduce internet banking services are those that incurred high fixed costs relative to net operating revenues; banks that are members of a bank holding company, or are located in urban areas. Courchane et al. (2002) examine the decision to invest in internet banking using a two-stage real options framework. Bank size, industry concentration and bank location were significant determinants of the probability of adoption. Nickerson and Sullivan (2004) suggest that banks are more likely to adopt internet banking when uncertainty over the level of demand is low. Sullivan and Wang (2005) find that the adoption of internet banking was slower in US states where average income is low, where there is a scarcity of internet access, where financial institutions are older, and where average bank size is smaller. Fuentes et al. (2006) find that banks are more likely to adopt transactional internet banking when competition is intense, and when rival banks have already adopted. Recent evidence suggests that financial institutions face a greater probability of acquisition if they fail to adopt internet banking.

Ono and Stango (2005) examine the factors that influence the decision to outsource information technology services. The decision to outsource is associated with asset size, and the diversity of the organisation's product offerings. Using a game-theoretic model, Borzekowski and Cohen (2005) find that the propensity to outsource is increasing if the

number of other organisations in the same geographic location that also elect to outsource increases.

DeYoung et al. (2007) use a large number of metrics to assess the impact of internet banking on US bank performance. They find that internet banking allows banks to increase market share by attracting new customers, and also reduce production costs, thus enhancing profitability. Beccalli (2007) finds investment in information hardware and software has little overall effect on profitability or efficiency of European banks. However, certain types of investment in IT services from external providers (such as consulting and outsourcing) appear to impact positively on performance.

While a substantial amount of work has been conducted looking at the impact of the adoption of new technologies, no work (as far as we are aware) has been done linking technology adoption to such factors like risk-taking, market returns or contagion. These could provide fruitful areas for future study.

Financial Innovation and Securitisation¹¹

The creation and distribution of new financial products and services has influenced a broad spectrum of areas, ranging from retail financial services (particularly in the mortgage area) to corporate banking where new loan and structured products proliferate. The substantial growth in Over-The-Counter (OTC) derivative markets has been a major fillip to the industry with exponential growth in ‘new’ credit products including credit-default swaps and traditional products that have derivative wrappers (such as mortgages with caps and collars, investment products with capital protection and so on). There has also been a boom in index tracking investment products, such as Exchange Traded Funds (ETFs) that generate beta returns based on underlying indexes (FTSE, Dow Jones, commodity indexes, property

¹¹ Molyneux and Shamrouk (1999) and Frame and White (2004, 2009) provide detailed treatments of the theoretical and empirical evidence on financial innovation in banking

indexes etc). Probably the most significant recent financial innovation that is widely cited as a major cause of the credit crisis has been the growth in securitised products, particularly those backed by residential (often sub-prime) mortgages (BIS 2009; Brunnermeier, 2009; Kane, 2009).

Banks have traditionally allocated resources from those in surplus (depositors) to those in deficit (borrowers) by transforming relatively small liquid deposits into larger illiquid loans. Banks have also long engaged in traditional off-balance sheet activities such as loan commitments, letters of credit, and other guarantees that help counterparties plan for future investments. However, in recent years, this simple conceptualisation of banking business has radically changed. The largest banks in many countries have transformed themselves, typically via merger and acquisition (M&A) activities, into multi-product financial service conglomerates with offerings including retail banking, asset management, brokerage, insurance, investment banking, and wealth management. These major developments on the product side have also been matched by the emergence of a diverse array of new funding sources. Driven by securitisation, particularly of residential mortgages, banks have become less constrained by their deposit bases for lending (Strahan, 2009; Loutskina and Strahan, 2009). On-balance sheet assets have increasingly been bundled and sold into the market to release capital to finance expansion.¹²

¹² Securitisation involves the creation of assets formed by slicing streams of anticipated income from mortgages and other loans, corporate bonds and credit cards into low- and high-risk tranches. The senior tranche has the first claim on the income from the underlying assets, offering the lowest return for the lowest risk. The mezzanine tranche has the next claim, offering a somewhat higher return for higher risk. The most junior equity tranche is paid only after the claims of the senior and mezzanine tranches have been settled, offering the highest return for the highest risk. The ‘originate to distribute’ model refers to the practice whereby banks trade their securitised assets through off-balance sheet investment vehicles or conduits, known as ‘structured investment vehicles’ (SIV). The SIV collects the cash flows from the underlying assets, and passes them to the holders of the tranches. The latter can insure themselves against default by purchasing credit derivatives, such as credit default swaps (CDS), which offer contingent payments in the event of default on the underlying assets, in return for a regular fixed fee. Marqués Ibañez and Scheicher (2009) provide a comprehensive overview of securitisation.

Empirical research tends to find that banks engage in securitisation in order to reduce risk, reserves and capital requirements. Other reasons include diversifying portfolios and funding both new operations and assets (Greenbaum and Thakor, 1987; Pavel and Phillis, 1987; Donahoo and Shaffer, 1991). Gorton and Pennacchi (1995) argue that originating banks that retain a portion of the loan on the balance sheet, or offer an implicit guarantee on the value of the loan to reduce moral hazard problems, have incentives to efficiently evaluate and monitor the borrower (implying that those banks that do not offer such ‘guarantees’ have no incentive to monitor credit quality). Cebenoyan and Strahan (2004) find evidence suggesting that banks use risk-reducing benefits of securitisation via loan sales market to engage in more profitable, but higher risk activities and to operate with greater financial leverage.

Sarkisyan et al. (2009) use US bank holding company data from 2001 to 2008, to examine whether securitisation motivates banks to shift their portfolios towards higher risk assets. The authors observe that securitisations of mortgages, home equity lines of credit and credit card receivables reduce banks’ risk-taking, whereas securitisation of auto loans increases the risk appetite of issuing banks.

In principle, trade in securitised assets and credit derivatives should improve the efficiency and stability of the financial system, by facilitating the transfer of risk to those investors most willing or able to bear it, spreading risk more widely throughout the system, and transferring risk to non-bank purchasers of securitised assets. In practice, however, the securitisation movement has contributed to the present crisis by creating a lack of transparency in the valuation of credit risks and problems of adverse selection and moral hazard, namely by creating dis-incentives for originating lenders to screen borrowers prior to lending and then subsequently monitor their performance ex-post (Keys et al., 2008, Brunnermeier, 2009).

Recent research has been devoted to assessing how securitisation affects the overall risk position of securitizing banks. In the US, Jiangli and Pritsker (2008) use bank holding company data for the period from 2001 to 2007, and find that mortgage securitisation reduces bank insolvency risk, increases bank leverage and profitability. Most recently, Purnanandam (2009) also provides consistent evidence showing that US banks used the proceedings from securitisations to issue loans with higher than average default risk. In particular, the evidence also shows that banks using the aforementioned techniques to a larger extent before the 2007 sub-prime crisis had significantly higher mortgage charge-offs after the crisis.

Overall, the growth in securitisation activity has increased the linkages between banks and markets. From a positive perspective, the securitisation trend offers the potential for banks to manage their balance sheets more effectively and to move risks to those most willing to bear it. This can result in a more efficient use of capital resources and a better allocation of risks in the system overall. It also enabled banks and other financial intermediaries to generate extra revenue and therefore helped boost financial performance. While securitisation, well managed and appropriately overseen, can offer such benefits, we know since the advent of the sub-prime crisis that there is a serious negative downside to such activity.

The US Treasury Secretary, Timothy F. Geithner's, written testimony before the House Financial Services Committee, summarises what went wrong and suggests how regulation can be strengthened to improve the safety and soundness of the financial system:

Loan originators failed to require sufficient documentation of income and ability to pay. Securitizers failed to set high standards for the loans they were willing to buy, encouraging underwriting standards to sag. Investors were overly reliant on credit rating agencies, whose procedures proved no match for the complexity of the instruments they were rating. In each case, lack of transparency prevented market

participants from understanding the full nature of the risks they were taking. In response, the President's plan requires securitisation sponsors to retain five percent of the credit risk of securitised exposures; it requires transparency of loan level data and standardisation of data formats to better enable investor due diligence and market discipline; and, with respect to credit rating agencies, it ends the practice of allowing them to provide consulting services to the same companies they rate, requires these agencies differentiate between structure and other products, and requires disclosure of any "ratings shopping" by issuers. (23 July 2009)

Since the collapse of the sub-prime lending market, securitisation business has collapsed and banks that were heavily engaged in this activity (both issuing and investing in collateralised debt obligations (CDOs) and other asset-backed securities (ABS) on their own account) have experienced major losses, if not failure (Berger et al, 2009). By the end of 2008, Bloomberg reported that bank losses stemming from the meltdown in the US sub-prime market amounted to \$744.6 billion (Wachovia had the biggest loss of \$96.5 billion, followed by Citigroup \$67.2 billion; and Merrill Lynch \$55.9 billion).

The major losses faced by banks involved in securitisation activity have been a key feature of the recent global financial sector collapse. Subsequently, both U.S and European regulators have announced plans to limit the securitisation activities of banks.

3. Bank Competition, Ownership, Governance and Risk Taking

Another major theme of banking research has focused on the extent to which competition, bank ownership type (private versus mutual) and corporate governance mechanisms (such as board, ownership and executive compensation structures) are related to bank risks and performance.

Bank Competition

Competition in banking is important, because any form of market failure or anti-competitive behaviour on the part of banks has far-reaching implications for growth, efficiency and welfare throughout the economy. Accordingly, an understanding of market power or competition in banking is a highly relevant exercise, carrying important implications for competition policy, macroeconomic policy, financial stability, and for the effective regulation and supervision of the banking and financial services sector.

Research that examines the links between the competitive environment and bank performance has a long empirical tradition. Early research focused on structure-performance linkages starting from the Structure-Conduct-Performance (SCP) paradigm and the Chicago Revisionist School. The former contested that a small number of banks may be able to collude either implicitly or explicitly, or use independent market power, to charge higher prices (lower rates paid on deposits, higher rates charged on loans and fees and so on) so as to earn abnormal profits. The latter contest that finding evidence of a positive concentration-profitability relationship does not necessarily infer collusive behaviour as it may simply reflect the relationship between size and efficiency (larger banks gain from scale and other efficiency advantages so more concentrated markets are inherently more profitable). The extent to which banks are able to earn high profits through collusion or the exercise of market power, or as a consequence of superior efficiency, has never been satisfactorily resolved (Berger, 1995a; Goddard et al., 2001, 2007; Degryse and Ongena, 2006; Casu and Girardone, 2006, 2009; Dick and Hannan, 2009).

In addition, the contestable markets theory and its new empirical industrial organisation (NEIO) counterpart emphasises the influence of potential as well as actual competition, and consequently focuses on competitive conduct of firms in response to changes in demand and supply conditions. Empirical banking research in this vein has found

differences in competitive conditions across banking sectors from the 1980s until the present day (Molyneux et al., 1994, Claessens and Laeven, 2004; Goddard and Wilson, 2009).

Most recently, researchers have examined the dynamics of bank performance in an attempt to assess the extent to which underlying entry, exit and governance mechanisms are efficient enough to drive banks' profit rates to converge towards the same long-run average value. The alternative is that some incumbent banks possess the capability to prevent imitation, or retard or block entry. If so, abnormal profit tends to persist from year to year, and differences in firm-level long-run average profit rates may be sustained indefinitely. Evidence suggests that barriers to competition and information constraints influence the degree of persistence (Berger, 2000; Goddard et al. (2004a, b).

While there is a developed literature on the measurement of competition, and its implications for bank performance (efficiency, prices, profitability) and economic welfare, less is known about the links between competition and bank risk-taking, and overall financial stability. Two views are posited in the literature. One school of thought (competition-fragility view) argues that less competitive banking systems are less fragile because the numerous lending opportunities, high profits, capital ratios and charter values of incumbent banks make them better placed to withstand demand or supply side shocks and provide dis-incentives for excessive risk taking by senior managers (Allen and Gale, 2000, 2004; Carletti, 2008). An alternative view (competition-stability view) argues that competition leads to less fragility. This is because the market power of banks results in higher interest rates for customers making it more difficult for them to repay loans. This increases the possibility of loan default and increases the risk of bank portfolios, and subsequently makes the financial system less stable (Boyd and De Nicolo, 2005). Empirical evidence in support of either view is rather mixed. For example, Boyd et al. (2006) and De Nicolo and Loukoianova (2006) find that the risk of bank failure rises in less competitive markets, while Jiménez et al. (2007) find that

risks decrease with a rise in the market power of incumbent banks. For developing banking systems, Ariss (2009) assesses how different degrees of market power affect bank efficiency and stability in developing banking systems. The results appear to provide some support for the view that competition leads to instability in that an increase in market power leads to both greater bank stability and enhanced profit efficiency, albeit at the expense of significant cost efficiency losses. As noted earlier, Uhde and Heimeshoff (2009) use aggregate data for the EU-25 countries to show that national banking market concentration has a negative impact on European banks' stability.

More research is required in this area using different measures of competition and risk, in order to resolve on-going theoretical controversy. A recent study by Berger et al. (2009b) is a useful step in this direction. The authors use a variety of risk and competition measures derived from a dataset of banks from 23 countries. However, their results are rather mixed and provide limited support to both the competition-fragility view and competition-stability views in that while market power increases credit risk, banks with more market power face less risk overall. Zhao et al. (2009, 2010) assess the extent to which deregulatory measures aimed at promoting competition lead to increased risk taking across Indian banks. The results suggest an increase in banks' risk taking incentives along with an increase in competition.

Bank Ownership

Banking systems often comprise of private and mutual (cooperative and savings bank) institutions, which operate together in a competitive market. Since mutual banks often pursue social and economic development objectives (and may be subject to a lack of capital market discipline) their performance (as measured by profitability or efficiency) might be expected to compare unfavourably with that of profit-maximising privately-owned banks.

Jensen and Meckling (1976), Fama (1980) and Fama and Jensen (1983) suggest that a lack of capital market discipline weakens owners' control over management, leaving management free to pursue its own interests with few incentives to be efficient. Conflicts of interest between owners and managers may sometimes make the relationships between profitability and other variables difficult to disentangle. For example, while owners seek to maximise profit, managers might be willing to sacrifice profit so as to pursue growth; reduce risk by undertaking more secure activities; or to maximise utility through expense preference behaviour (Berger and Hannan, 1998; Hughes et al., 2003; Goddard et al., 2004a).

A number of studies in North America and Europe have assessed the extent to which the growth, profitability, efficiency and risk of banks differs across ownership type. In the US, early evidence presented by Nicols (1967) and O'Hara (1981) suggests that mutual banks are likely to be more efficient than their private sector counterparts. Saunders et al (1990) and Mester (1989 and 1993) also finds that mutual banks are more efficient, while Cebenoyan et al. (1993) suggest there is no difference between the efficiency of mutual and joint stock Savings and Loans institutions. This somewhat surprising finding is generally attributable to two main factors: the disciplining nature of depositors and their limited diversification. Mutual banks may be sanctioned by deposit withdrawals if they are seen to be poor performers and this provides incentives managers to run such banks efficiently. The argument being that in the case of private and quoted banks, shareholders have less discipline over managers to drive through efficiency gains. The second explanation is that mutual banks tend to cater to retail customers and small businesses and have not diversified into costly (and sometimes value destroying) new business areas. Focusing on core activities improves efficiency. We note below that other factors such as limited competition and varying financial structures may explain performance differences compared to private banks.

In Europe, Wilson and Williams (2000) present evidence that suggests that savings and cooperative banks grew faster than commercial banks in the 1990s. Goddard et al. (2004b) find some variation in the persistence of profitability over time between ownership types. Measured persistence is higher for savings and cooperative banks than for commercial banks – suggesting that there is less competition in the mutual sector. Ianotta et al. (2007) note that mutual banks exhibit lower profitability than their privately owned counterparts, in spite of their lower costs. Beck et al. (2009a) find that private sector banks in Germany have higher, but more volatile profitability than their mutual counterparts. Most recently, Girardone et al. (2009) find that mutual banks within the EU were more efficient than their commercial counterparts, and that in many cases such differences were attributable to the financial structure of their respective industries. In Japan, Loukoianova (2008) finds that private sector (City and Trust) banks are both more cost and revenue efficient than their regional counterparts.

Governance and Risk

Financial institutions are subject to prudential regulation, designed to increase the efficiency of financial service providers and protect the interests of depositors. Regulation seeks to ensure that financial institutions remain solvent by building up reserves. The regulatory system also provides deposit insurance and lender-of-last-resort facilities, and possible intervention to bail-out failing institutions. Market discipline imposed by investors is seen as a complement to such regulation. However, bank balance sheets are opaque for investors because the quality of loans and investment portfolios are difficult to assess. However, if investors can identify the condition of banking accurately, bank's stock prices will provide useful information on their economic condition (Flannery, 2009). Furthermore, the incentive for shareholders to monitor banks depends on how effectively their rights are

protected (Levine, 2004; Adams and Mehran, 2008; Adams et al., 2009). This perhaps explains why banks with dispersed (unconcentrated) ownership structures are more prevalent in countries with stronger shareholder protection laws. Overall, depositors, shareholders and regulators are concerned with the robustness of corporate governance mechanisms. The added regulatory dimension makes the analysis of corporate governance of opaque banking firms more complex than in non-financial firms (Adams and Mehran, 2003; Adams, 2009).

Kirkpatrick (2009, p.1) argues that *'... the financial crisis can be to an important extent attributed to failures and weaknesses in corporate governance arrangements which did not serve their purpose to safeguard against excessive risk taking in a number of financial services companies. Accounting standards and regulatory requirements have also proved insufficient in some areas. Last but not least, remuneration systems have in a number of cases not been closely related to the strategy and risk appetite of the company and its longer term interests.'*

Most studies of corporate governance in banking have examined how risk and performance are affected by investor protection laws, banking regulations and the extent of ownership concentration. A recent US study by Elyasiani and Jia (2008) finds that the stability of institutional ownership increases bank holding company performance. Two recent cross-country studies make notable contributions in this regard. In an analysis of 244 banks across 44 countries Caprio et al. (2007) note that banks typically do not have dispersed ownership, but instead are often controlled by families, foundations or the State. Concentrated ownership structures appear to increase valuation, while weak shareholder protection laws reduce bank values. Building on Caprio et al's insights, Laeven and Levine (2009) find that risk is higher in banks that have large owners with substantial cash flow

rights. However, this effect is weaker in countries with strong shareholder protection laws. The authors argue that large cash flow rights are crucial in reducing the adverse effects on bank valuations associated with weak shareholder protection laws.

For Europe, Ianotta et al. (2007) use a sample of large banks from 15 European countries, and evaluate the impact of alternative ownership forms (government, mutual, private), together with the degree of ownership concentration, on performance and risk. The authors find that public sector banks have poorer loan quality and have a higher chance of failure than mutual and privately owned banks. Banks with a mutual status have better loan quality and lower asset risk than both private and public sector banks. Furthermore, higher levels ownership concentration increases loan quality and lowers risk.

Executive Compensation

Another topical area of research has examined the effect of compensation incentives on bank risk-taking. Most studies use measures related to the value of executive share options, or some ratio of share options to total compensation. Chen et al. (2006) find that the structure of managerial compensation (proxied by the ratio of the value share options to total compensation) leads to increased risk-taking. Mehran and Rosenberg (2008) find that share options lead CEOs to undertake riskier investments, while Fahlenbrach and Stulz (2009) find that banks with CEOs whose incentives were closely aligned with the interests of their shareholders performed poorly during the credit crisis. Such poor performance was not anticipated by senior managers and subsequently led to large wealth losses.

Another range of studies have examined the links between performance and executive turnover. A notable example is Čihák et al. (2009) that assesses the drivers of executive turnover for a sample of US banks. They present clear evidence that executives in charge of banks which are risky or have incurred losses are more likely to be dismissed. However, such

dismissals do not lead to improved bank performance. In another recent contribution, Erkens et al. (2009) find that CEOs are more likely to be replaced following large losses for banks with boards comprising high proportions of independent directors and institutional investors, but less likely when banks were controlled by insider blockholders.

4. Capital, Liquidity, Provisioning and Fair Value

In the light of the credit crisis and the subsequent appearance of under-capitalised banks, it will come as little surprise that bank researchers have long explored key issues in bank management and particularly how banks manage their capital, liquidity and risks. In recent years, the role of capital in minimizing the impact of unforeseen losses has received increased attention in the academic and policy arenas. A substantial literature has sought to investigate how capital and liquidity vary with risk, bank size and macroeconomic conditions. In addition studies have also explored bank risk management practices and links to performance. More recently the literature has focused on capital regulation, accounting standards, managerial incentives and pro-cyclicality in banking.

Bank Capital

Over the past 30 years, the role of capital in minimizing the impact of unforeseen losses has received increased attention. In line with the Basel Capital Accords, national regulators have introduced minimum capital adequacy requirements, and in some case supported by a Prompt Corrective Action (PCA) procedure for regulatory intervention.¹³

¹³ Capital adequacy regulation has been formulated under the auspices of the Bank for International Settlements (BIS). Basel I (in 1988), and the more recent updated Basel II (in 2006), establish minimum capital adequacy guidelines for internationally active banks. Virtually all developed countries' banking systems, and most others, currently adhere to Basel capital standards. In the European Union, Basel II is to be incorporated into European Union law under the Capital Adequacy Directive 3 (CAD 3) and in the US transition to Basel II began in 2008. BIS has been instrumental in helping to establish minimum international standards in the regulation of banks (particularly in emerging and less-developed countries) via its guidance and oversight on the 'Core Principles for Effective Banking Supervision' (1997, 2006). Current capital regulation tends to be pro-cyclical because the risks which banks accumulate during economic upturns are only realised during economic downturns (Panetta et

Subsequent to the passing of these rules and prior to the current financial crisis most banks have held capital in excess of the regulatory minimum. According to Berger et al. (2008), this could be for a number of reasons—high earnings retention, the perceived advantages associated with high economic capital (such as preserving charter values), acquisition plans, and external pressure from regulators or the financial markets. Some banking organisations may also hold excess capital in anticipation of a crisis in order to cover a significant portion of losses, and to allow more lending and off-balance sheet activities than would otherwise be the case under such conditions. However, the on-going crisis has once again raised major concerns about the capital strength of banks. These continued worries have in many cases led to a collapse in stock prices and widespread bailouts.

A number of theoretical papers have attempted to assess the extent to which capital regulation affects the behaviour, performance and expected bankruptcy of banks (Santos, 2001; Carletti, 2006; Inderst and Mueller, 2008). Banks may increase their risk and leverage due to the moral hazard associated with deposit insurance. However, if bank managers are risk averse and concerned about the bank's charter value, credit rating and probability of bankruptcy, any increase in capital requirements will lead to an increase in bank capital-asset ratios (Berger, 1995b; Kisgen, 2006; Peura and Keppo, 2006). The imposition of capital regulation to poorly capitalised banking systems reduces the amount of investment opportunities, the riskiness of bank portfolios and thus the likely returns to banks.

Jackson et al. (1999) examine the effects of capital regulation on the behaviour of banks in developed countries for the period 1988-96. Average capital-assets ratios increased from 9.3% to 11.2% over this period, with the capital of poorly capitalised banks increasing most rapidly.

al., 2009b). Furthermore, the externalities of individual bank activities are not incorporated into regulatory and supervisory models. Consequently, systemic issues tend to be ignored.

The recent literature emphasise the pro-cyclical nature of the banking business, which may be enhanced by a tendency of financial institutions to lend excessively during economic upturns, and to adopt over-cautious lending standards during downturns. Theoretical explanations for such behaviour are based on informational asymmetries that vary with the business cycle, including disaster myopia, herd behaviour, agency, institutional memory and collateral (Herring, 1999; Berger and Udell, 2003; Dell’Ariccia and Marquez 2006; Dell’Ariccia et al., 2008). An implication is that borrowers’ access to external finance also varies pro-cyclically. Therefore an element of reverse causality is possible: pro-cyclical movements in bank lending, capital and loan-loss provisioning may tend to amplify real economic fluctuations.

Macroeconomic conditions therefore, influence whether it is easier to manipulate the numerator (capital) or the denominator (risk-weighted assets) of the capital ratio: if economic conditions are buoyant, banks find it easier to raise capital or retain earnings, but during recessions it is easier to reduce loans. Capital arbitrage (moving assets off balance sheet through securitisation) enabled many banks to report higher capital ratios than would otherwise have been possible. Shin (2009) posits that securitisation increased financial instability because it allowed banks to over-extend balance sheets and reduce credit standards.

Recent research has focused on the role of capital buffers in absorbing shocks to banks’ capital base. Shocks to capital arise from sudden increases and decreases in risk – particularly credit risk. While bank lending is pro-cyclical, credit risk is counter-cyclical: defaults tend to increase during economic downturns. Capital regulation that requires banks to hold more capital during economic downturns than during upturns may tend to accentuate this effect (Jokipil and Milne, 2008). A sharp decline in bank lending in primary markets, following the re-pricing of credit and liquidity risks in secondary markets and downgrades of

asset-backed securities in the US and elsewhere since 2007, suggests that banks do not increase their capital buffers sufficiently during economic upturns to absorb loan defaults without reducing lending during downturns.

Evidence for Spain finds a positive (lagged) relationship between rapid credit growth and loan losses. This appears to be driven by less stringent lending standards (in terms of screening and collateral) during boom periods (Jiminez and Saurina, 2006). In a twist to the literature, Beck et al., (2009b) find strong evidence that loans screened and monitored by female loan officers show lower default rates than loans handled by their male counterparts.

Future research is likely to focus on ways in which regulations can be designed to make bank capital less pro-cyclical. A number of possibilities exist such as: moving to simple leverage rules (equity as a portion of non-risk weighted assets; or linking capital rules directly to changes in macroeconomic conditions (Panetta et al., 2009b). Robust empirical research in support of such proposals is yet to be presented.

Bank Liquidity

One of the key functions of the banking sector is to maintain liquidity. Banks use short-term liquid deposits to finance longer-term illiquid lending, and provide liquidity off the balance sheet in the form of loan commitments and other claims on their liquid funds. Banks play important roles in funding liquidity (the ability to raise cash on demand) and in maintaining market liquidity (the ability to trade assets at low cost), thereby enhancing the efficiency of financial markets. Banks dominate in the provision of funding liquidity because of the structure of their balance sheets as well as their access to government guaranteed deposits and central bank liquidity. There is considerable functional overlap between commercial banks and other financial institutions in providing market liquidity through devices such as loan syndication and securitisation. Until the current financial crisis, the

traditional liquidity role of banks declined because the growth of securitisation offered cheaper ways to finance loans. In the US and UK, credit growth far exceeded core deposit gathering, leaving significant funding gaps that had to be financed via the inter-bank market and from securitisation activity. This in large part led to the current financial crisis.

Until very recently, little attention has been paid to the importance of bank liquidity and its implication for value. However, evidence suggests that the extent to which banks create liquidity differs by bank size, ownership structure and the extent to which they are focused on retail banking activities (Berger et al., 2005). Consequently, the amount of such liquidity has a significant positive relationship to bank value (Berger and Bouwman, 2009a). Evidence forwarded by Berger and Bouwman (2009b) suggests that financial crises and bank liquidity creation are connected. The authors show that financial crises are normally preceded by a significant increase or decrease in bank liquidity creation. Further research in this area is warranted in order to understand the inter-connections between capital, profitability, liquidity and systemic risk.

Provisioning

Loan-loss provisions are directly linked to a financial institution's current loan portfolio. They can often be volatile and depend crucially on short-term fluctuations arising from the changes in the solvency and creditworthiness of individual borrowers, more general macroeconomic conditions and managerial discretion.

In the case of earnings management, banks could make higher than required loan-loss provisions in good years, so that these can be used to smooth earnings in bad years. A constant stream of profits might be associated with reduced risk and better credit rating for external funders, a less volatile stock price and secure managerial tenure and increased rewards (Greenawalt and Sinkey, 1988; Kim and Santomero, 1993; Wall and Koch, 2000).

There is now a substantial literature that has tested the income smoothing hypotheses. Some have found a positive relationship between loan loss provisions and bank earnings (Greenawalt and Sinkey, 1988, Kanagaretnam et al., 1995); while others have found no relationship (Ahmed et al., 1999).¹⁴

In the case of capital management many regulators allow banks to include loan-loss reserves as part of their required regulatory capital. Banks with low Tier 1 capital ratios (equity/assets) will make higher levels of loan-loss provisions in order to increase their regulatory capital. This is easier and cheaper than raising Tier 1 capital via rights issues and such like (Ahmed et al., 1999; Hasan and Wall, 2004)

Many authors have suggested that provisioning for loan-losses varies with the business cycle. Banks tend to make less provisions for loan-losses during an economic upturn (when economic conditions, and the probability of business defaults is relatively low), but increase them in an economic downturn (when economic conditions deteriorate, and loan defaults increase). As a consequence bank provisioning is said to be pro-cyclical, as it tends to re-enforce current developments in the business cycle. In other words, during an upturn bank provisioning behaviour means that lending increases and credit risks are built-up, while in the downturn lending decreases even more as banks have to increase the amount of provisions they have. There is some theoretical and empirical evidence to support this notion (Borio et al., 2001; Laeven and Majnoni, 2003; Bikker and Metzmakers, 2005). An alternative view is that banks are forward-looking, and that loan-losses are anti-cyclical. Under this view, banks recognise that during economic upturns the risks of lending increase as credit expands and risk assessment may become less thorough. Consequently, banks will build up loan-losses in an economic upturn. However, given that loan-losses are supposed to

¹⁴ A related literature assesses the impact of changes in loan-loss reserves on bank returns. The findings are mixed. Some evidence suggests that returns improve following news of increased loan-loss reserves (Liu and Ryan, 1995; Docking et al. 1997; Hatfield and Lancaster, 2000). Others find that announcements of increased loan-loss provisions send a negative signal, and this depresses returns (Lancaster et al., 1993).

absorb foreseen losses (and not unforeseen losses), accounting rules do not give banks unlimited latitude in setting loan-loss reserves. Ultimately, the relationship between provisioning and the business cycle could be determined based on whether static or dynamic provisioning rules apply. Static (often referred to as specific) provisions are based on the current performance of existing loans. When a loan becomes impaired, the bank will make an allowance for this by increasing its loan-loss provisions. This means that bank loan-loss provisions follow the economic cycle with some lag. Dynamic (often referred to as general) provisions are based on the expected future performance of loans. The assumption is that any loan carries with it some probability of default, and so should have some level of loan loss provisions associated with it. If banks adopted these types of provisioning policies the relationship between provisioning and the economic cycle is no longer clear.

Laeven and Majoni (2003) use a sample of 1419 banks from 45 countries over the period 1988-1999 to assess the extent to which bank earnings; loans and GDP growth affect provisioning behaviour. They find a negative relationship between loan- loss provisions and GDP growth. This suggests pro-cyclicality. In other words (p.179):

Bankers on average create too little provisions in good times and are then forced to increase them during cyclical downturns magnifying losses and the size of negative capital shocks.

Panetta et al., (2009b) provide a detailed account of pro-cyclicality issues in banking and recommend that provisioning should be dynamic and based on credit value adjustments (like market risk calculations under Basel 2).

This is a topical area of current policy research. Future work could usefully be devoted to understanding the experience of banking systems (such as Spain and Columbia)

which have used dynamic provisioning rules prior to the current financial crisis. A useful step in this direction is a recent paper by Perez et al. (2008) on the provisioning of banks in Spain. In their empirical analysis, the authors find that despite the detailed rules for loan loss provisions in Spain relative to other countries, managers still appear to continue to use provisioning as a discretionary device to moderate earnings volatility.

Fair Value Accounting Issues

Over the last decade or so there has been a gradual tendency for banks to move from historical cost accounting to fair value accounting, prompted by the greater involvement in capital markets activity, rapid financial innovation and the embrace of market-based risk management. These developments have been led by the two main accounting bodies worldwide, the US Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB), responsible for two distinct accounting standards (US GAAP and IAS/IFRS, respectively). IAS/IFRS were widely adopted at the start of January 2005, when the EU made them applicable for listed companies.

Many commentators have argued that so called fair value (mark-to-market or mark-to-model) reporting overstated losses and created additional uncertainty regarding the quality of the assets held by financial institutions during the financial crisis. However, others contend that it was the continuing practice to value many assets at historic values which led to increased opacity and uncertainty, and that fair value reflects the market values of assets and liabilities, thus allowing investors to exert market discipline on banks.¹⁵ It is difficult to

¹⁵ Under both the International Financial Reporting Standards (IAS39) and the US Generally Accepted Accounting Principles (FAS159), banks hold a range of financial instruments valued using either fair values or historical value. Assets that banks intend to hold to maturity are valued at historic cost. In contrast, assets for sale or trading assets are valued at market prices (fair value). Any gains or losses relative to for sale or trading assets is reported in accumulated other comprehensive income (FASB, 2006, 2007). Fair values are established using either level 1 inputs (observable prices in active markets); level 2 inputs (using prices for similar assets in active or inactive markets); and level 3 inputs (using modelling assumptions based on assumed prices, otherwise referred to as 'mark-to-model').

determine fair value prices during economic downturns where markets are often illiquid, but this equally applies to economic upturns when prices often exceed fundamental values and artificially inflate the profits of banks. Consequently, such inaccuracies in valuation have implications for individual bank risk and the stability of the financial system (Barth, 2004, 2008).

Even prior to the crisis, there was a general view that fair value accounting had procyclical effects (Taylor and Goodhart, 2004). Although fair value accounting provides more timely information and helps improve transparency it also adds excess volatility (Plantin et al. 2008a,b; Banque de France, 2008; Ryan, 2008; Laux and Leuz, 2009). While many commentators highlight this issue, the extent of extra volatility added by fair value accounting is somewhat unclear (Barth, 2004; Barth et al., 2008). Panetta et al. (2009) highlight (among other things) various issues covering fair value accounting and the banking crisis. They emphasise factors such as banks' excessive discretion in fair value treatment (supported by Huizinga and Laeven, 2009); lack of transparency and disclosure; and significant differences between IASB and FASB rules. The authors suggest that regulators should remove (or at least minimise) these gaps.¹⁶

Allen and Carletti (2008) argue that mark-to-market accounting should be used under normal market conditions, but not during a crisis because prices do not reflect economic fundamentals. Instead market prices should be supplemented with both model-based and historic cost valuations. The authors argue (p365) that *.. mark-to-market accounting has significant drawbacks. As many have argued it leads to large changes in financial institutions' balance sheets that are not justified by the fundamentals. These changes do not*

¹⁶ In April 2009 the Financial Accounting Standards Board voted to relax fair-value accounting rules. Changes approved by the FASB allowed companies to use "significant" judgment in gauging prices of some investments on their books, including mortgage-backed securities. The measures in fact helped to reduce bank write-downs and boosted net income. The IASB revealed proposed revisions to IAS39 in July 2009, up for discussion until end of September 2009.

reflect an inability to meet future commitments and so do not reflect insolvency. When historic cost accounting is used these problems are avoided to a large extent. However, historic cost accounting also has drawbacks. In particular, if price changes do reflect fundamentals then historic cost accounting is not desirable and mark-to-market is superior.

Empirical evidence thus far in support of either view is rather scant. Some notable exceptions exist. Using a dataset of US bank holding companies, Nissim and Penman (2007) examine the likely impact of expanded application of fair values in the banking industry. To do this, the authors assess the differences between fair values and book values of various assets and liabilities. They also assess the extent to which credit and interest rate risks contribute to such differences. They conclude that fair value accounting is not likely to significantly improve the information in bank financial statements.

Novoa et al. (2009) utilise a small sample comprising five large European and US banks to examine the effects of fair value rules on balance sheets during normal and crisis conditions. A simulation exercise reveals that while fair value accounting may increase pro-cyclicality, it provides a clearer picture of bank value than its historical accounting counterparts.

Debate about the pros and cons of fair value accounting and the impact on the banking and financial sector continue. As noted earlier, fair value accounting does appear to lead to excess volatility, and although it is not viewed as the main cause of the recent credit crisis (BIS 2009; UK Treasury, 2009) –it may have exacerbated these issues. Focusing on fair value issues in pricing bank assets (particularly in distressed periods) is likely to be a fruitful area of future research. Comparing accounting treatments and the related performance of banks governed by rule based US FASB compared to the more flexible IASB should also offer relevant insights. Future research could engage in simulating the effects of marking

more liabilities to market (or model) and different consolidation treatments of off-balance sheet entities under the two different accounting regimes.

5. Summary

The causes, impact and policy response to the recent financial crisis will have a major impact in setting the banking research agenda way into the future. This review has highlighted major recent developments on the performance, risk and governance of financial institutions in light of the recent financial turmoil. Several avenues for future research have been emphasised, either because they are under researched or because they have acquired a new impetus as a result of the crisis.

The scope of this paper is vast, but is by no means an exhaustive review of recent literature. The first part (section 2) relates to bank strategies and performance, i.e. corporate diversification, M&As, technology and financial innovation. The analysis has shown that there is a need for more work on the implications of bank strategies for financial sector stability. Given bank bailouts and other rescue packages that have been implemented post credit crisis, a deeper understanding of the relationship between systemic stability and safety net subsidies is necessary. Similarly, studies focusing on financial innovation and the use of new technologies (and new products) should take into account of their impact on risk-taking, market returns and possible contagion. There is no doubt that since the crisis there have been calls to further regulate the banking sector. In order to help design the most appropriate regulatory blueprint, research should further investigate the overall impact of securitisation and other risk management practices on financial sector efficiency and on the allocation of risks.

Section 3 has evaluated the issues of competition, ownership, governance and executive compensation in banking. Competition is often thought to have a positive impact

on banks' efficiency, quality of product and service provision, innovation and international competitiveness. However, the competition-fragility view posits that more competitive banking systems tend to become more fragile. More research is required in this area using alternative measures of competition and risk so as to provide more convincing evidence in relation to the competition-fragility and competition-stability puzzle. Other topical areas of research focus on bank ownership, governance and executive compensation. The latter is probably one of the most debated current issues, as banks are under pressure to review their existing systems of managerial compensation. Thus more empirical research on the riskiness of alternative ownership and governance types and their relationship with the performance of banks seem to be crucial avenues of future research.

Finally, issues related to capital, liquidity, provisioning and fair value accounting have been reviewed in section 4. The analysis has shown that the current and future research will continue to evaluate the effects of pro-cyclicality on the banking industry. Specifically, future research should illustrate ways in which regulation can be designed to make bank capital and provisioning less pro-cyclical. Future work could be devoted to understanding the experience of banking systems which have used dynamic provisioning rules prior to the current financial crisis. Research should also look into the inter-connections between capital, liquidity, performance and systemic risk. Last but not least, researchers should explore various issues in relation to fair value accounting including its potential effects in terms of pro-cyclicality, banks' discretion in terms of earning management and increased transparency and disclosure.

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