

Mergers and Acquisitions of Financial Institutions: A Review of the Post-2000 Literature

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Abstract This paper provides a review of the recent financial institution mergers and acquisition (M&A) literature covering over 150 studies. Several robust themes emerge in the post-2000 literature. North American bank mergers are (or can be) efficiency improving, although the event-study literature presents a mixed picture regarding stockholder wealth creation. In contrast, European bank mergers appear to have resulted in both efficiency gains and stockholder value enhancement. There is robust evidence linking high CEO compensation to merger activity and strong implications that deals can be motivated by the desire to obtain ‘too-big-to-fail’ status and reap the associated subsidies. Evidence on the impact of both geographic and product diversification via merger is mixed. There is growing evidence that financial institution M&As can adversely impact certain types of borrowers, depositors, and other external stakeholders.

Keywords Banks · Financial institutions · Literature review · Mergers and acquisitions

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1 Introduction

The firms that comprise the global financial system have been consolidating since the 1980s and are likely to face further re-structuring in the aftermath of the recent crisis in financial markets. The number of financial services firms has declined significantly in recent years and the typical surviving firm is larger, more diversified, and operates in more places than ever before. The broad forces promoting this consolidation are well-known and have been documented in a number of review articles, e.g., Berger et al. (1999), Dymski (1999), Group of Ten (2001), Amel et al. (2004), and Jones and Critchfield (2005). Industry consolidation occurred primarily as a result of financial and technological innovation that altered the optimal production functions of financial firms. The enabling force was a wave of financial deregulation that was necessary for banks and other financial services to take full advantage of the new production processes. Technological advances revolutionized back-office processing, front-office delivery systems, and payments systems (Berger 2003; Humphrey et al. 2006). Financial innovations included but were not limited to financial engineering and new risk management tools, larger and more sophisticated derivatives markets (e.g., asset-backed securities, credit default swaps), and the ability of large and mid-sized businesses to float their own debt securities. These innovations have drastically changed the competitive and strategic conditions faced by financial firms (Frame and White 2004; DeYoung 2007a, 2007b). The changes in deregulation that followed allowed commercial banks and other financial services firms to expand—almost always via mergers and acquisitions (M&As)—into geographic markets and product markets that were previously off-limits.

Despite general agreement on the broad forces driving consolidation and M&As in the financial sector, there is little consensus regarding this consolidation on industry performance. For example, the extant literature provides no consistent evidence regarding whether, on average, the participating financial firms benefit from M&As, whether the customers of these firms benefit, or whether societal risks have increased or decreased as a result of this activity. While these mixed findings could reflect the different methodologies used in previous studies, we believe it is more likely that the high incidence of contradictory findings results from the time period being studied. Much of the extant literature examined M&A data at early stages in the industry consolidation process, mainly from the mid-1980s through the mid-1990s, and as a result may have been observing disequilibrium or pre-equilibrium phenomena. The data in Figs. 1, 2, 3, 4, and 5 illustrate this point. In terms of aggregate dollars, the annual value of deals that combined commercial banks, insurance companies, or firms from different industry segments did not peak until the late 1990s in either the U.S. or in Europe. Additionally, the data suggest that the annual value of deals that combined securities firms, or financial services firms across international borders, has not yet peaked.

The aim of this paper, therefore, is to provide a substantive update of the previous literature reviews on financial sector consolidation, focusing primarily on the post-2000 literature. The paper is structured as follows. Section 2 discusses the influence of M&As on financial firm performance, including evidence from market reaction (event studies), analysis of efficiency frontiers, and standard accounting (performance) ratios. Section 3 focuses on merger motives other than shareholder value maximization, such as the pursuit of managerial utility and/or the financial benefits of becoming a ‘too-big-to-fail’ financial institution. Section 4 analyzes the recent evidence on the substantial diversification of financial firms across financial sectors, domestic markets, and international markets, which has been achieved mainly via M&As. Section 5 discusses the impact of financial M&As on borrowers, depositors, and other external stakeholders. Section 6 concludes.

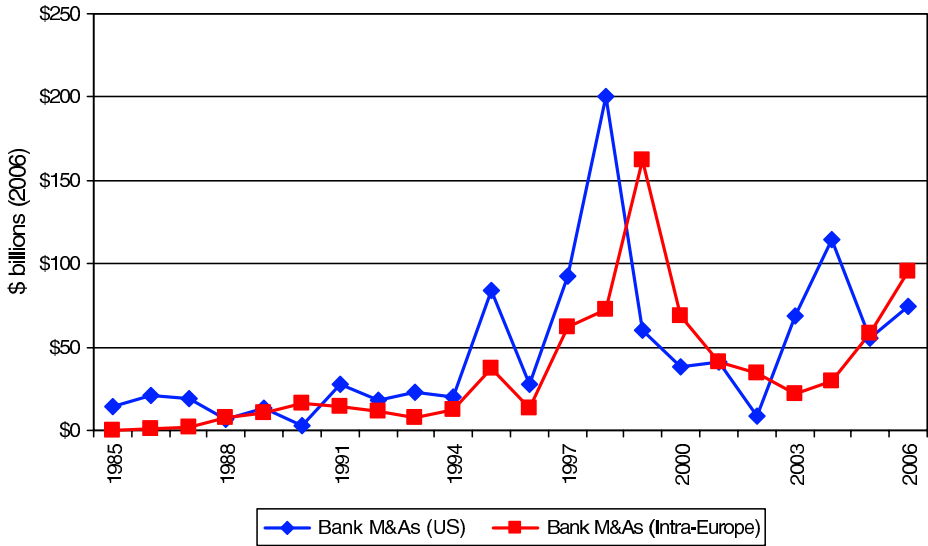


Fig. 1 Consolidation of banks

2 The financial performance of merging firms

Financial gains generated by M&As emanate from one of two sources: improvements in operational efficiency or increases in market power. Merger-induced improvements in operational efficiency can be tested directly by comparing pre- and post-merger levels of simple accounting ratios or more complicated frontier-based (cost or profit) efficiency

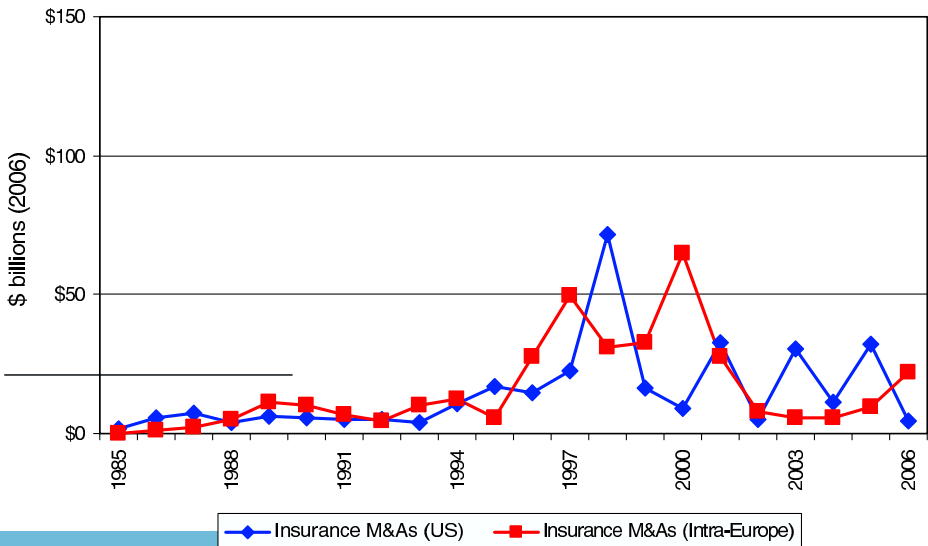


Fig. 2 Consolidation of insurance companies

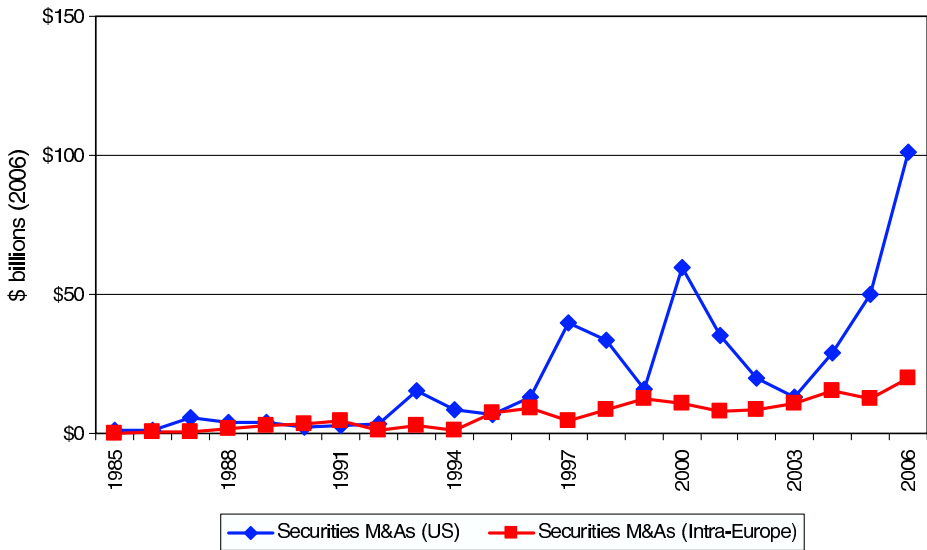


Fig. 3 Consolidation of securities firms

measures. The consensus view regarding mergers of financial institutions (mostly commercial bank mergers) during the 1980s and early 1990s is that accounting ratio, cost efficiency, and (although less studied) profit efficiency improvements were elusive.¹ Another strand of the literature takes a more comprehensive approach and uses ‘event-study’ methodology to gauge the stock or bond market reaction to M&A announcements. In these studies, the combined effects of the abnormal returns to acquiring and target firm shareholders in reaction to the merger announcement reflect the market’s perception of the value created or destroyed by the merger, where the abnormal return is the amount by which an actual stock price exceeds the stock price predicted by an asset-pricing model. One problem with this approach is that the source of any value creation cannot be easily identified, and must be teased out of the data using a second-stage statistical procedure—for example, positive abnormal returns could be the result of either greater market power or improved efficiency.

The consensus view regarding event studies of bank M&As in the 1980s and 1990s is that, on average, target shareholders earned strong positive abnormal returns, bidder stockholders earned marginally negative returns, and the combined abnormal returns were statistically insignificant or economically trivial (e.g., Houston and Ryngaert 1994, Hudgins and Seifert 1996, Pilloff 1996, Subrahmanyam et al. 1997).² However, results from M&A performance studies published since 2000 diverge from this pre-2000 consensus. In general, the recent literature suggests that both North American and European bank mergers are

¹ Again, see Berger et al. (1999), Dymksi (1999), Group of Ten (2001), Amel et al. (2004), and Jones and Critchfield (2005).

² A consensus does not imply unanimity. Kwan and Eisenbeis (1999) concluded that bank M&As during the 1990s did create value for shareholders. Kane (2000) found that acquiring stockholders in U.S. bank ‘mega-mergers’ earned positive abnormal returns, and argues that this may be a consequence of access to greater market power and/or regulatory subsidies flowing to TBTF firms.

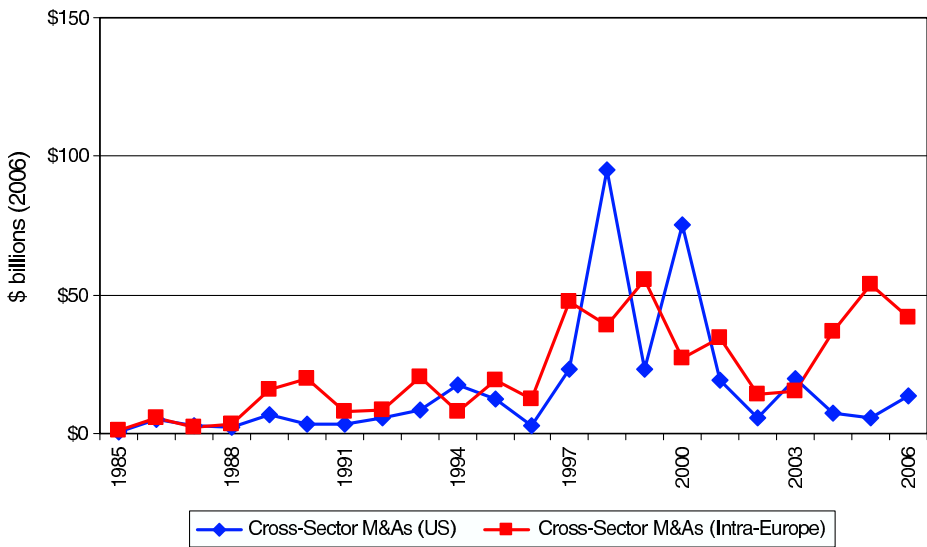


Fig. 4 Cross sector financial firm consolidation

efficiency improving, but only European bank deals have resulted in stockholder value enhancement.³

2.1 Post-merger performance in the U.S.

The most unambiguous evidence of merger-induced financial gains in the U.S. comes from firm's financial statements: either straight ratio analysis or efficiency frontiers derived from financial statement information. For instance, Kwan and Wilcox (2002) found evidence of significant cost reductions in their study of U.S. bank mergers during the 1990s, but only after adjusting the data for merger accounting rules. Consistent with this, Knapp et al. (2006) found that bank holding company (BHC) mergers between 1987 and 1998 generated substantial profit gains up to five years post-merger, after adjusting annual BHC profits to the average industry trend (otherwise known as profits mean reversion). Cornett et al. (2006) found evidence of revenue efficiency improvements for large mergers, product-focused mergers, and geographical focused mergers. Hannan and Pilloff (2006) used a hazard function approach to examine the features of acquired banks between 1996 and 2003 and show that cost-efficient banks tend to acquire their more inefficient counterparts; this finding suggests the existence of potential post-merger performance gains.⁴ In the only recent study looking at post-merger market share gains, Berger and Dick (2007) found that large BHCs that entered new local markets between 1972 and 2002 were better able to maintain the target banks' market share if they were an early entrant into that market and/or

³ The event study methodology is not without its critics. Becher (2009, 2000) argued that event 'windows' are difficult to identify and are often too narrowly defined as mergers are anticipated by the market well before they are announced publicly.

⁴ The earlier literature found potential efficiency gains [see Rhoades (1993), Shaffer (1993), Kohers et al. (2000)], but little evidence that these potential gains were typically realized [see Berger and Humphrey (1992), Linder and Crane (1993) and Focarelli et al. (2002).]

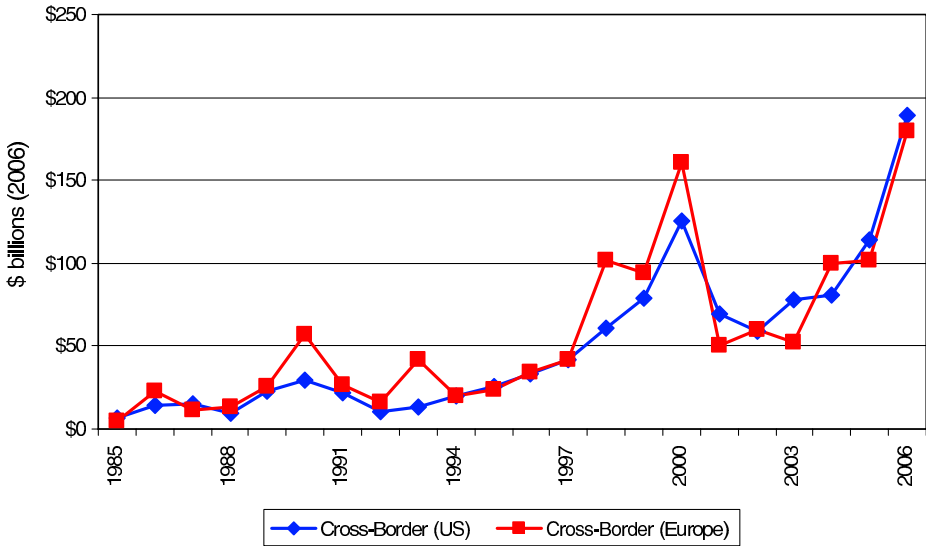


Fig. 5 Cross border M&As

had a recognized brand image. Hagendorff and Keasey (2009) used accounting data to compare bank M&As in the U.S. and Europe between 1996 and 2004 and find that U.S. banks tend to focus on revenue generation post-merger although this does not result in improved performance as costs increase.

Performance gains may extend well beyond the merging firms. Evanoff and Örs (2008) argued that merely evaluating the impact of a merger on the combining parties may miss much, if not most, of the overall impact of that merger. Following but substantially extending work by DeYoung et al. (1998), they evaluated the response of non-merging incumbent banks in markets where consolidation occurred; their findings suggest that the incumbent banks made significant efforts to remain viable in the new post-merger competitive environment. Incumbents significantly improved their efficiency following M&As, with the most significant improvements coming in markets where the potential for improvements was greatest, e.g., in markets initially characterized by significant market power. They conclude that the literature may be overlooking the most significant welfare-enhancing aspect of merger activity.

Studies that examine the reactions of stock and bond prices to bank merger announcements tend to yield more mixed results. Houston et al. (2001) failed to find conclusive evidence that mergers create value for large bank deals between 1985 and 1996. Knapp et al. (2005) found negative returns to shareholders in large bank deals between 1987 and 1998, as well as reductions in post-merger profits, credit quality, and fee income. DeLong (2001) noted that focused bank deals—that is, deals in which the merging banks practice similar strategies with respect to product offerings or geography—enhance stockholder value by around 3.0%, but non-focused bank mergers do not create value. Becher and Campbell (2005) found different effects for focused deals before and following geographic deregulation (Riegle-Neal Act). In the earlier period they found that geographically focused mergers were value-enhancing with significant abnormal returns, more so than mergers which expanded the acquiring bank's geographic footprint. However, in the post-deregulation period focused mergers showed less success than expanding mergers. These

findings may indicate that it became more difficult to acquire market power via merger after deregulation, when the threat of potential entry kept downward pressure on profit margins.

Stakeholder gains have been linked to a wide range of market and firm-specific factors. Brewer et al. (2000) found that bank takeover premiums tended to be higher for more profitable banks. Penas and Unal (2004) found evidence of bondholder gains due to reduced post-merger cost of debt. Henock (2004) finds that takeover speculation (as opposed to an actual acquisition) yields significant returns to bank shareholders, while ‘defensive’ acquisitions designed to prevent takeovers destroy shareholder value. Olson and Pagano (2005) identified shareholder gains related to the pre-merger ‘sustainable’ growth rate (that incorporates bank’s return on assets, dividend payout, and equity capital ratio) of the acquirer. DeLong and DeYoung (2007) found positive abnormal returns to bank merger announcements that dissipate rather quickly; perhaps more importantly, they find that these short-run market reactions, as well as the longer run financial performance of the merged banks, are positively related to the number of mergers that took place in the years prior to the deal announcement. Their conclusion that M&As generate spillover knowledge that is exploitable in later M&As—which they characterize as ‘learning-by-observing—is consistent with the generally mediocre financial performance of early bank M&As in the U.S. during the 1990s and the generally improved financial performance of European bank M&As that occurred later on during the 2000s.

Evidence on non-bank financial institution mergers in the U.S. is rather scarce. Adams et al. (2002) found significant and positive scale economies in the provision of electronic payment processing services by the Federal Reserve (Fedwire, ACH, and book-entry securities). Jayaraman et al. (2002) studied U.S. mutual fund mergers between 1994 and 1997 and found that target fund shareholders experienced positive abnormal gains, acquiring funds experienced negative abnormal losses, and poor past fund performance increases the likelihood of acquisition for certain types of funds. Bauer et al. (2009) use an event study approach to investigate utility gains relating to credit union mergers between 1994 and 2004 and find evidence of gains to the owners/members of target credit unions and to the regulators, but not to the acquirers.

2.2 Post-merger performance outside the U.S.

A large volume of studies in recent years on European bank mergers provides compelling evidence of performance improvements. Huizinga et al. (2001) examined 53 European bank M&A’s between 1994 and 1998 and found evidence of cost efficiency improvements and positive, but relatively small, profit efficiency gains. Other pan-European studies find efficiency or/and profit gains post merger (Diaz et al. 2004; Kapopoulos and Siokis 2005; Campa and Hernando 2006; Altunbas and Marques 2008; Fritsch 2007; Hagendorff and Keasey 2009, Beccalli and Frantz 2009). These studies also suggested that focused deals in which the merging banks practice similar strategies (Altunbas and Marques 2008) as well as bank-to-bank mergers (Diaz et al. 2004) tend to perform better in terms of efficiency and profit performance. Other studies find that post-merger profit improvements can take a while to appear (Diaz et al. 2004; Campa and Hernando 2006). De Guevara et al. (2005) suggested that measured efficiency gains at the bank level may be masking harmful effects at the market level; in their study of market power in EU banking (using the Lerner index) they find that consolidation drove down marginal costs faster than output prices, suggesting an increase in market power.

Evidence from single-country studies tends to confirm the findings from the pan-European studies. Resti and Siciliano (2001) examined post-merger accounting perfor-

mance, as well as shareholder wealth effects, for a sample of Italian bank mergers between 1992 and 1997; they find that profits improve post-merger. Similar effects were found by Carbó and Humphrey (2004) who used a variety of estimation approaches (translog, Fourier, and cubic spline cost functions) to predict scale-related cost effects from 22 mergers involving Spanish savings banks between 1986 and 2000. They found that unit costs fall by 0.5% post-merger, boosting returns by about 4%. Similarly, De Guevara and Maudos (2007) determined that the cost efficiency of Spanish banks improved between 1986 and 2002 during a period of consolidation, due largely to declines in marginal costs. Humphrey and Vale (2004) examined the cost efficiency features of Norwegian banks (using the cubic spline approach) between 1987 and 1998 and found evidence of cost improvements resulting from mergers. To put these gains in perspective, the authors noted that the merger-induced cost improvements were not as large as those obtained when banks switched from paper-based to electronic payments systems. Koetter (2005) found that only about half of German bank mergers during the 1990's were successful in improving cost efficiency, and that these cost efficiency gains took up to seven years to fully materialize. Behr and Heid (2008) found evidence of cost (but not profit) efficiency improvements in German bank deals between 1995 and 2000. Ashton and Pham's (2007) analysis of 61 UK bank mergers between 1988 and 2004 found efficiency improvements on average, but little evidence that cost savings were generated by reductions in retail deposit rates. In contrast, Carbó et al. (2003) found that mergers of Spanish savings banks had no impact on efficiency; costs at merging savings banks rose at the same rate as the (non-merging) industry average over the 1986 to 1998 period. Cummins and Misas (2001) found that insurance company mergers in Spain between 1989 and 1998 resulted in productivity improvements.

A more limited number of studies examine shareholder wealth effects in European bank mergers, and these present a general picture of positive value creation. Cybo-Ottone and Murgia (2000) studied 54 relatively large European bank mergers (assets in excess of \$100 billion) between 1989 and 1997. They found positive abnormal returns for in-country mergers of banks and insurance companies, as well as for in-country bank-to-bank deals, but found no efficiency gains for mergers of banks with securities firms or mergers of institutions from two different countries. Resti and Siciliano's (2001) event study analysis of Italian bank mergers between 1992 and 1997 also found positive shareholder wealth effects. Beitel et al. (2004) used a sample of 98 large European bank mergers from 1985 to 2000 to investigate the drivers of excess returns. Overall, the results indicate positive cumulative abnormal returns for the combined bidder and target shareholders. They also note that more than 60% of all transactions were value creating. Positive wealth effects were found to be greater for non-diversifying transactions, when acquirers engaged in fewer M&A transactions, and when the target exhibited poor past stock performance. Campa and Hernando (2006) examined 244 European bank M&As between 1998 and 2002 and investigated both shareholder value effects as well as pre-and post merger profits and efficiency. They found evidence of positive abnormal returns to target shareholders, and significant improvements in the target bank's financial performance around two years following the completion of the transaction, with no significant influence on bidder's stock prices. Schmutz (2006) found that the gains for target shareholders outweigh the losses for bidders in cross-border deals involving European, U.S., and also found that the acquired banks were relatively cost efficient. Lepetit et al. (2004) and Ekkayokkaya et al. (2009) both used event study approaches to examine bidder returns involving European bank M&As; the former study found positive abnormal returns for bank/non-bank deals, while the latter study found more value enhancement for bank-to-bank mergers prior to the adoption of the euro in 1999.

There is also some evidence of merger-induced performance improvements outside of the U.S. and Europe. A study of hypothetical large Canadian bank mergers using data from 1976 to 1996 revealed potentially large scale economy benefits (McIntosh 2002). Hosono et al. (2006) studied Japanese bank mergers and found evidence of substantial post-merger cost and profit efficiency gains, although the capital positions of the merging banks tended to weaken.

3 Non-profit maximization motives for M&As

The fact that many earlier merger studies found little evidence of performance improvements has encouraged researchers to investigate alternative explanations for the consolidation phenomenon, paying particular attention to alternative managerial motives. There are two main arguments. First, managers may engage in M&As in order to maximize their own utility at the expense of shareholders, including objectives geared to such things as maximizing CEO remuneration, choosing a ‘Quiet Life,’ or building a personal empire (Dymski 1999; Hadlock et al. 1999). Second, managers of large financial institutions may seek growth-by-acquisition in order to attain the status of a “too-big-to-fail” (TBTF) bank. TBTF status results in an implicit government guarantee which reduces investor and creditor risk and provides a cost-of-credit advantage over smaller rivals.⁵

3.1 Utility maximization

The primary effect of a merger or acquisition is increased firm size. Managers are likely to pursue a strategy of fast growth if their pay and other benefits are linked to firm size. Large size sometimes confers market power on a firm, which can result either in higher prices and profits or to a ‘quiet life’ for managers that is free from the hassles of competition (Berger and Hannan 1998). Large size can also destroy firm value if ‘hubris’ leads managers to systematically overestimate their ability to manage a large organization, and therefore overbid for targets (Roll 1986).

Anderson et al. (2004) examined large U.S. bank mergers and found that total post-merger CEO compensation is positively related to the anticipated gains from merger (i.e., measured at the announcement date) and that post-merger CEO compensation packages are often restructured to include greater incentives for managerial productivity. Other researchers report less optimistic findings. Bliss and Rosen (2001) studied 32 large U.S. banks (over \$1 billion) and found increased CEO compensation after large mergers or rapid internal growth; however, the authors interpreted their findings as evidence of managerial empire building and suggested that these increases in compensation occur irrespective of value creation or productivity improvements. Rosen (2004) found that when CEOs can expect large compensation increases from increased size, they tend to engage in extended merger programs. Hughes et al. (2003) noted that BHCs with higher levels of managerial ownership tend to make performance-destroying acquisitions. Gupta and Misra (2007) found that acquisitions made by bank managers with value-enhancing motivations tend to have a very different impact on stockholder returns from acquisitions made by bank managers acting based on agency problems. Hagedorff et al. (2007) suggested that weak

⁵ Such efforts may actually be profit maximizing behavior, but the gains realized do not result from the standard efficiency or diversification gains associated with merger related structural changes.

governance structures may be the explanation for the typically negative abnormal returns to acquiring bank shareholders in the U.S. bank mergers of the 1980s and 1990s.⁶

Outside the U.S., there are few studies that focus on the managerial motives for bank mergers. In the case of Europe this may be because of the overriding evidence that bank mergers are indeed performance-enhancing. However, De Guevara et al. (2005) and De Guevara and Maudos (2007) suggest that, if CEO pay and market power are positively related, then lower competitive pressure following large mergers may be related to managerial motives—although as far as we are aware, this has never been tested.

3.2 Safety net subsidies and systemic risk

Given the turmoil faced in global banking systems since mid-2007 and the bailouts of large financial institutions during 2008 and 2009, it is now clear 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 TBTF or ‘too big to discipline adequately’ and may have the opportunity to exploit safety net subsidies (Kane 2000; Stern and Feldman 2004; Mishkin 2006). The literature on bank consolidation in the U.S. prior to the recent crisis expressed growing concerns about TBTF subsidies. As far as we can ascertain, no studies have examined safety net subsidy issues relating to consolidation outside the U.S.

While it is generally recognized that TBTF subsidies are difficult to evaluate (Ennis and Malek 2005), evidence from the U.S. suggests these subsidies are likely to be substantial. Shull and Hanweck (2001) argued that the 10 largest U.S. banks enjoyed advantages of TBTF implicit guarantees, because they paid less for funds than did smaller banks and operated with lower capitalization rates. Penas and Unal (2004) find that merger-related bondholder gains could be explained by banks obtaining TBTF status. Morgan and Stiroh (2005) noted that after regulatory authorities named eleven U.S. banks as TBTF in 1984, the ratings on new bond issues of these banks increased relative to other banks. In addition, they find that bond spreads at TBTF banks became less sensitive to changes in bond ratings after that event, suggesting that investors were more optimistic than credit raters about the probability of support for the TBTF banks. This condition remained flatter for TBTF banks (than other unnamed banks) post FIDICIA. Although Mishkin (2006) argued that the Federal Deposit Insurance Corporation Improvement Act of 1991 (FIDICIA) may have reduced the TBTF subsidy, Morgan and Stiroh (2005) found that the bond spreads at TBTF banks continued to be less sensitive than average to bond ratings changes even during the 1990s.

Other studies focus on the merger premium paid for large banks as an indicator of the safety net subsidy, the argument being that higher premiums will be paid for banks that have implicit bailout guarantees. Schmid and Walter (2009) examined large conglomerate deals between 1985 and 2004 and find that significant premiums are paid in mega-conglomerate (\$100 billion plus) deals. Brewer and Jagtiani (2007) also found higher premiums for targets banks over a critical size. Jones and Oshinsky (2007) examined the probability of insolvency for the FDIC-administered Bank Insurance Fund; they find that fund insolvency risk has increased over time and that the size of the ten largest banks now poses a higher fund insolvency risk than in the past.

⁶ On perhaps a more positive note, there is some evidence that managers do not take account of insider information about bank M&As. Madison et al. (2004) find that target bank insiders significantly decrease both share purchases and share sales prior to merger announcements.

Closely related to the arguments linking consolidation to safety net subsidies are those that examine systemic risk, an area of on-going concerns in global banking systems. Systemic risk can be defined as the risk that the insolvency of one large or otherwise important financial institution might cause financial losses and insolvencies at other financial institutions, with the end result being a system-wide financial panic and potential macroeconomic disruption. De Nicolo and Kwast (2002) examined the correlations of stock returns (net of diversification effects) for a sample of large and complex U.S. banking organizations over 1988 to 1999 and found that correlations had increased, although the specific impact from consolidation appeared to have fallen in the latter half of the 1990s. They argued that systemic risk may have increased but not particularly as a result of the consolidation trend. Trends in international consolidation and conglomeration are also likely to increase risks for large complex financial firms (De Nicolo et al. 2003). D'Souza and Lai (2006) showed that financial sector consolidation can influence the amount of liquidity in money markets, and that the extent of this influence depends on the post-merger allocation of capital within merging firms.

A limited number of recent studies have examined systemic risk issues in European banking, although none of them directly examined the impact of bank M&As. Dermine (2006) reviewed recent regulatory developments in European banking and discusses concerns over large banks and the potential bailout costs. Uhde and Heimeshoff (2009) examined concentration and risk issues using a large sample of EU-25 banks between 1997 and 2005, and found that both bank profitability and the probability of bank insolvency are positively related to banking sector concentration. Baele et al. (2007) used a stock-return model to examine franchise value, systematic risk, and idiosyncratic risk at European banks between 1989 and 2004. They found that increased levels of non-interest income boosts franchise values but also increases systematic risk, suggesting that bank returns have become more highly correlated with the market over time.

4 Diversification

Greater geographical and product diversification has accompanied the financial sector consolidation trend. The Gramm-Leach-Bliley (GLB) Act 1999 (also known as the Financial Services Modernization Act) effectively repealed the Glass-Steagall Act of 1933 and granted broad-based securities and insurance powers to commercial banking companies in the U.S. Japan's 'Big-Bang' reforms (also completed in 1999) removed the separation between commercial and investment banking. The 1992 EU Single Market Program also legislated for a universal banking system. By 2000, therefore, all major financial systems had removed the primary product-based barriers in the financial services sector (although combining 'banking' with 'commerce' remains for the most part restricted). Acquisition has been the preferred approach for U.S., European and Asian financial institutions to expand into new financial areas; it is faster than growing the new franchise internally and it delivers needed expertise and human capital not already present in the acquiring firm.

Geographic restrictions to branch banking had been removed several years earlier in most countries. The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 repealed the McFadden Act of 1927 (which had long prohibited nationwide branching in the U.S.) and resulted in the highest-ever five-year run of bank mergers in the country's history, measured in both the number and the value of the banks acquired (Berger et al.

2004b).⁷ Brewer et al. (2000) found that merger premiums increased by around 35% during this period. Similar geographic deregulation occurred in Italy and Spain in 1992—after which the number of domestic mergers and new bank branches grew significantly (ECB 2000)—and a surge of cross-border M&A activity followed the implementation of the Single Market Program in Europe.

Expanding into new geographic markets or new product lines has the potential to generate an improved risk-return tradeoff via diversification. The early literature tended to find that diversification, whether geographical or product, did lead to reductions in risk; however, there is also evidence that banks consumed these positive benefits by shifting to higher risk portfolios, income streams, and banking practices (Berger et al. 1999; Group of Ten 2001). As we shall see below, the more recent literature tends to confirm these findings. Deregulation has also had a material influence on the market for financial institutions M&As. Colombo and Turati (2004) found in Italy that competition in local market increases the likelihood of M&A (as do higher loans-to-deposits ratios). Other European bank studies such as Bikker and Haaf (2002), Weill (2004) and Casu and Girardone (2006) have found mixed results, while the U.S. literature has tended to find increases in merger activity related to deregulation; for example, Brewer et al. (2000) found that deregulation boosts bid premiums for target banks.

As banking systems have been deregulating, it needs to be borne in mind that the regulatory approval process (e.g., antitrust, community reinvestment) can act as a constraint on bank merger activity (Wheelock and Wilson 2004). The regulatory process for mergers, as shown by Carletti et al. (2007a) study of international bank deals between 1987 and 2004, illustrates that having less-transparent rules governing both competition and the supervision of bank mergers is associated with higher market returns from M&As.

4.1 Product diversification

Because regulations have long prevented financial institutions from diversifying across product lines, a handful of mainly U.S. studies have attempted to forecast the potential diversification gains from hypothetical combinations of banks and nonbank financial firms. Lown et al. (2000) and Estrella (2001) both found the potential for risk-reducing diversification benefits in hypothetical combinations of banking companies with insurance providers. Allen and Jagtiani (2000) found that hypothetical diversification of banking companies into insurance and/or securities businesses reduces overall firm risk but increases systematic market risk, and concluded that diversification benefits are insufficient to justify the expansion of banks into these areas. Wall et al. (2007) analyzed the potential for diversification benefits by combining banking services with various nonfinancial activities; they found the potential for significant risk-return improvements from combining firms from the banking sector with firms from the construction, retail, or wholesale sectors.

One obvious weakness of studying hypothetical merged firms is the inability to observe the cash flow synergies (either positive or negative) that would occur in actual merged firms. Rime and Stiroh (2003) found no evidence of scope economies (or scale economies) at large banks, and no evidence of cost efficiencies at any banks, in their study of product diversification acquisitions made by Swiss banks between 1996 and 1999. Studying German banks, Hayden et al. (2006) found no gains from diversification into non-bank

⁷ See DeYoung (2007b) for a detailed analysis of the recent evolution of the U.S. banking system.

financial products, but they did find evidence of diversification benefits from expansion into non-financial/commerce areas.

Another strand of the product-diversification literature uses stock return event studies. Results from recent studies have been mixed. Hendershott et al. (2002) studied the market reaction to the Gramm-Leach-Bliley Act of 1999, and concluded that benefits from diversification into new product lines are more likely to accrue to non-bank financial firms than to banking firms. They found that insurance firms and investment banks experienced positive market reactions to the new law, whereas the stock prices of commercial banking companies were left statistically unaffected. Cornett et al. (2003) found that bank mergers that increased the product line focus (as well as the geographic focus) of the acquiring bank resulted in significantly higher stock market reactions, a finding confirmed by DeLong (2003).

Researchers have examined a wide range of other phenomena related to product-diversification mergers. Drucker (2005a, 2005b) looked at the potential for conflicts of interest in commercial bank/investment bank mergers. He found that rates paid on high-yield debt (junk bonds) increased post-merger when bank borrowers have only one lender, which suggests that banks exploit such relationships. Similarly, Kang and Liu (2007) found that Japanese banks tended to discount corporate bond issues after they entered the securities market. Cornett et al. (2002) examined U.S. bank holding company adoption (mostly via acquisition) of Section 20 investment banking subsidiaries during the 1990s, and found improved cash flow performance for these companies. Ely and Robinson (2004) showed that small U.S. banks that also operate securities affiliates make fewer loans to small businesses. Slijkerman et al. (2005) concluded that reductions in downside risk occur when large U.S. and European banks diversify into insurance. Stiroh and Rumble (2006) found that U.S. bank expansion into non-interest income between 1997 and 2002 generated diversification benefits, but that these benefits were generally offset by the volatility of these new income streams. Others, such as Fecht and Grüner (2006) and Carletti et al. (2007b) have presented theoretical models to illustrate how liquidity shocks can limit the benefits of diversification. Finally, some studies have found substantial conglomerate discounts in financial services firms (Schmid and Walter 2009 for U.S. firms; Laeven and Levine, 2007 for banks operating in 43 countries) while others have not (Elsas et al. 2006 for U.S. and European banks; and van Lelyveld and Knot 2009 for European bank-insurance conglomerates).⁸

4.2 Geographic diversification

Financial institutions have tended to expand domestically before leaping across international borders. Hence, much of the earlier literature on geographic expansion examined domestic M&As, while more recent studies have examined cross-border M&As. The recent literature on cross-border mergers involving U.S. and European banks tends to find little or no evidence of cost efficiency improvements (Berger et al. 2001; Vander Venet 2002), although there is some evidence of improvements in profit efficiency and accounting returns (Vander Venet 2002; Elsas et al. 2006). Cross-country European bank merger studies have also yielded mixed results. Beitel et al. (2004), for example, found that focused mergers do better than diversifying mergers in terms of returns to stockholders, whereas

⁸ While van Lelyveld and Knot (2009) do not find evidence of a universal diversification discount they do find substantial variation around the mean valuation of European bank-insurance conglomerates, with (among other things) discounts tending to be larger for bigger conglomerates.

Lepetit et al. (2004) and Ekkayokkaya et al. (2009) found the opposite result. Buch et al. (2005) compared actual versus optimal cross-border portfolios for banks in France, Germany, the UK, and the U.S between 1995 and 1999; they concluded that banks over-invest domestically and therefore could realize potential diversification gains from further international expansion.⁹

A handful of recent studies have examined the impact of geographic expansion within the U.S. Emmons et al. (2004) examine two aspects of hypothetical mergers between actual U.S. commercial banks: increased bank size and increased geographic scope. They found that mergers between small community banks located in different geographic markets reduced risk by no more than mergers of similar-sized banks located in the same market. Berger and DeYoung (2001, 2006) found that the greatly increased geographic footprints of U.S. bank holding companies due to industry consolidation resulted in managerial difficulties that reduced operational efficiency. However, they also found that technological advancement has gradually reduced the importance of these inefficiencies over time. Because geographic expansion inevitably leads to multi-market contact, there is some concern that competitive rivalry may diminish as banking companies enter each others' home markets, and allow the 'home bank' to dominate and drive prices, i.e., mutual forbearance. Cohen (2004) presented a model suggesting that banks and thrifts do not compete in segmented markets, whereas a study by Adams et al. (2007) suggested the opposite.¹⁰

A large related literature examines the determinants of cross-border banking, which is usually accomplished via acquisition. Generally, these studies have found that large efficient banks (from developed financial systems) are more likely to be engaged in overseas expansion (Berger et al. 2000; Focarelli and Pozzolo 2001a, 2001b; Buch and DeLong 2004; Berger 2007; Havrylchyk and Jurzyk 2007; Buch and DeLong 2003; Hernando et al. 2009; Correa 2009). The reasons for bank and insurance firm expansion within Europe appear to be similar (Pozzolo and Focarelli 2007).

For banks considering entry into new markets via acquisition, selecting the best target banks is an important consideration. Wheelock and Wilson (2004) used a cross-sectional approach to examine 890 U.S. bank mergers between 1984 and 1993 and found that efficient banks are less likely to be acquired. Consistent with these findings, Akhigbe et al. (2004) showed that the chances of a U.S. bank being acquired is higher if the bank is large and/or relatively less profitable, while an earlier study by Wheelock and Wilson (2000) found that banks with lower capital ratios are more likely to be acquisition targets. Collectively, these studies suggest an efficient market for corporate control. Studies of European bank mergers also find that poorly performing banks are more likely to be acquired. Beitel et al. (2004) and Pasiouras et al. (2007) showed that targets are less cost- or profit-efficient than acquirers on average. Focarelli et al. (2002) found that the targeted banks in Italian bank acquisitions have relatively poor credit management, and that the M&As tend to result in improved credit allocation and loan portfolio quality. However, some studies generate conflicting evidence. Valkanov and Kleimeier (2007) examined large bank deals in the U.S. and Europe between 1997 and 2003; they found little difference in the capital strength of European banks engaged in M&A activity, and also that U.S. target banks tend to be more highly capitalized than their acquirers. In a study of distressed and

⁹ Francis et al. (2008) also find positive cross-border wealth effects for deals involving U.S. non-banks during the 1990s to the early 2000s.

¹⁰ See also Cohen and Mazzeo (2004) and Hannan and Prager (2004).

non-distressed German bank mergers, Koetter et al. (2007) found that the financial performance of banks engaging in M&As is poor relative to regulator-ratings. Similar results were found by Hosono et al. (2006) for Japan, where cost- and profit-inefficient banks were most likely to engage in M&A activity. Goddard et al. (2009) use a hazard function approach to investigate consolidation in the US credit union industry between 2001 and 2006. They find that the hazard of acquisition is inversely related to asset size and profitability. Credit unions that were more liquid, and those that had no Internet presence, were more likely to be acquired.

5 External effects of M&As

A substantial literature has investigated the impact of industry consolidation on bank customers. Early U.S. studies tended to find that consolidation in the 1980s resulted in market power effects, with lower deposit rates and higher loan rates in more concentrated markets, although studies using 1990s data found weaker relationships between local market concentration and deposit rates (Shull and Hanweck 2001). There is also considerable 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 small incumbent banks (Berger et al. 1998; Berger et al. 1999). Overall, the pre-2000 literature suggests that the impact of bank mergers on both the price and availability of banking services is relatively modest.

5.1 The price and availability of business credit

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 from mergers, but increasingly by an interest in relationship lending and the role of soft and hard information processing in banks' credit decisions (Stein 1998; Boot 2000; Boot and Thakor 2000). A stylized fact has emerged that small banks rely on soft information to construct enduring bank-borrower relationships, while large banks tend to rely more on hard information to write loans that are securitizable or otherwise saleable in secondary markets (DeYoung et al. 2004). For example, Cole et al. (2004) found that large banks tend to base their small business lending decisions more on financial ratios than on prior lender-borrower relationships, while small banks rely more on the character of the borrower in making lending decisions. Like all stylized facts, this dichotomy is only an approximation of reality: Berger and Black (2008) and Uchida et al. (2006) point out that small banks also use a variety of hard information sources to make business loans, such as collateral, spreadsheet analysis of audited financial statements, etc.

The recent evidence on the net effects of bank M&As and market consolidation on credit availability is mixed. Some studies have found that consolidation has reduced credit availability for small borrowers (Craig and Hardee 2007) and capital constrained firms (Carow et al. 2006), while other studies have found that these market power effects can vary depending on the specific product in question (Park and Pennachi 2007). A study of the Italian banking system found that bank mergers have a substantial adverse effect on small business credit availability that lasts at least three years after the merger (Bonaccorsi di Patti and Gobbi 2007); another study found similar results for Spanish bank mergers (Montoriol-Garriga 2008). However, other studies have found little difference in the small

business lending behaviour of small and large banks (Berger et al. 2007). Francis et al. (2008) found that mergers between large banks reduce small business formation in local U.S. markets for two years after the merger, while small- to medium-sized bank deals boost business creation. In their study on small firm banking relationships in selected European regions Mercieca et al. (2009) find that concentration reduces the number of banking relationships, implying that consolidation may encourage small companies to have fewer banking links. Marsch et al. (2007) found that consolidation in German banking has no impact on small firm credit availability.

Similar mixed or neutral findings have been generated in studies that examine third-party responses to bank mergers. Avery and Samolyk (2004) found that the post-merger decline in lending to small business in the U.S. tends to be matched by increased credit from other incumbent (local, non-merging) banks. Berger et al. (2004a) found a similar increase in post-merger credit supplied by alternative sources including newly chartered banks.

Hauswald and Marquez (2006) developed a theoretical model to show that mergers enable banks to acquire proprietary information, and they use that information to both soften lending competition and grow their market share. They argued that as competition increases, investment in information acquisition declines, which leads both to lower loan rates and inefficient lending decisions. These findings are partially supported by Ogura and Uchida's (2007) study of Japanese bank consolidation, which found that mergers of small banks reduce their ability to acquire soft information; the authors did not find this to be the case for larger bank combinations.

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 Pomrojnangkool (2005) examined the specific case of a merger between two U.S. banks (Fleet and BankBoston) and found higher post-merger spreads for medium-sized mid-market borrowers, but no change in post-merger spreads for small-sized mid-market borrowers. Garmaise and Moskowitz (2006) found that U.S. bank mergers typically do result in higher loan rates.¹¹ Sapienza (2002) examined Italian bank mergers between 1989 and 1995 and found that target bank borrowers faced lower loan rates following M&As, but this effect attenuated for larger target banks. Montoriol-Garriga (2008) found that Spanish businesses that manage to maintain their lending relationship after their banks are acquired benefit from reduced loan rates, especially if the merger is between two large banks with substantial market overlaps. Finally Panetta et al. (2009) showed that the merging institutions make significant adjustments to loan rates post-merger to better reflect the riskiness of existing borrowers.

Holding constant the post-merger effects on the price and quantity of credit, the recent studies suggest that clients of target banks are deleteriously affected relative to clients of acquiring banks. In their study of Belgium banking between 1997 and 2003, Degryse et al. (2006) found that acquiring bank borrowers are less likely to lose lending relationships compared to target bank borrowers. Karceski et al. (2005) found that upon the announcement of Norwegian bank mergers, the equity value of small publicly traded firms that are target customers falls, and this decline increases with the size of the target bank.

5.2 Depositors and other stakeholders

Bank mergers and banking market consolidation tend to impact some deposit rates more than others. The cross-country study by Corvoisier and Gropp (2002) showed that increased

¹¹ This study also famously found a positive association between bank mergers and crime rates, with an estimated elasticity of property crime with respect to merger-induced banking concentration of 0.18.

banking sector concentration between 1993 and 1999 resulted in less competitive pricing on demand deposits, but not on other types of deposits. Craig and Dinger (2009) replicated the findings of earlier studies that found only modest effects from U.S. bank mergers on deposit prices; using improved econometric techniques they showed that checking account interest rates actually fell substantially (while MMDA rates held steady) in the two years following bank mergers. It is notable that these findings are limited to the main checking accounts of businesses and households: evidently, post-merger banks are able to exploit the price inelasticities and switching costs associated with these accounts. Focarelli and Panetta (2003) found that post-merger deposit rates decline initially, but increase in the longer run. However, their results are the strongest for the most productively efficient banks, and therefore may reflect the ability of efficient banks to out-compete their rivals rather than a more general post-merger finding.

Recent studies document a wide-range of other post-merger effects. Kahn et al. (2000) found that mergers resulted in higher market rates on unsecured personal loans, but lower interest rates on automobile loans which are secured by liens. They stressed the importance of soft versus hard information. Stavins (2004) argued that industry consolidation should have a significant effect on the correspondent banking business, and found that the Federal Reserve System saw significant declines in check-processing volumes as industry consolidation intensified. Wu and Zang (2007) found that bank mergers result in higher analyst turnover, especially for the top forecast performers. Robinson et al. (2005) found that Community Reinvestment Act (CRA) protests and negotiated lending agreements that typically follow the announcement of large U.S. bank mergers had no significant effects on stockholder returns at the merging bank.

Merger activity can also have a significant influence on other market participants and potential entrants. Reinforcing the results of earlier studies, recent studies have found strong evidence that inter- and intrastate deregulation led to more new bank charters (Jeon and Miller 2007), that mergers encourage new bank charters (Keeton 2000; Seelig and Critchfield 2003), and that the presence of a large BHC stimulates entry into rural banking markets (Feinberg 2009).

6 Conclusion

This paper tracks the evolution of the financial firm M&A literature from 2000 onward. Studies prior to 2000 typically focused on the U.S. bank merger wave, because the industry consolidation process occurred earlier in the U.S. compared to Europe and elsewhere. Typically, the bulk of the pre-2000 literature concluded that bank mergers had the potential to be efficiency improving, although the event-study literature found little evidence of positive stockholder wealth effects. This encouraged North American researchers to investigate other dimensions of the merger wave, focusing on explanations for mergers such as managerial motives or diversification effects. In contrast, studies of the consolidation process outside North America continued to investigate efficiency and wealth effects.

Our review of the post-2000 financial institution M&A literature discusses over 150 studies and concludes that North American bank mergers are (or can be) efficiency improving, although stockholder wealth effects still remain inconclusive. In contrast, a clear consensus emerges from studies of European bank deals, which appear to have resulted in both efficiency gains and enhanced stockholder value. This could be because European banks involved in merger deals learned best-practices (and worst-practices) from the earlier

North American deals. The (mainly) U.S. evidence on managerial motives for bank M&As tends to find positive relationships between CEO compensation and merger activity.

The post-2000 literature also suggests that the subsidies associated with becoming ‘too big to fail’ are important incentives for large bank acquisitions; a prescient suggestion that aligns well with recent events in both the U.S. and Europe. Evidence regarding the impact of geographic- and product-diversification mergers on bank performance is mixed. There is growing, albeit mixed, evidence that financial M&As have adverse impacts on a variety of borrowers, depositors and other external stakeholders.

The turmoil that engulfed global financial systems starting in the summer of 2007, the ensuing weakness and insolvencies of hundreds of banks and other financial firms, and the widespread intervention of governments to prevent the largest financial firms from failing, are all likely to influence the future size and frequency of financial institution mergers and acquisitions. This review highlights that while future M&A activity in the financial sector can result in performance improvements, policymakers need to be aware of the potential negative impact on prices, credit availability, too big to fail and related subsidies, and market power effects. The current environment also provides a unique opportunity for researchers to fill major gaps in the extant literature. Managerial motives and the risk effects of financial sector consolidation have barely been analysed outside North America. The literature on nonbank financial institution M&A and deals outside Western financial systems is also limited. We suggest that future research should aim to fill these gaps while bearing in mind the current overriding policy concerns related to systemic stability.

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