Comparing Bank Mergers in Europe and the USA: Bidding Bank Performance

by

Jens Hagendorff

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Leeds University Business School
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The candidate confirms that the work submitted is his own, except where work which has formed part of jointly-authored publications has been included. The contribution of the candidate and the other authors to this work has been explicitly indicated overleaf. The candidate confirms that appropriate credit has been given within the thesis where reference has been made to the work of others.

The following thesis sections are based on work from jointly-authored publications

Thesis Section	Jointly-authored Publication
Chapter 4: Bank Deregulation and Bank Consolidation in Selected Countries	Hagendorff, J., Collins, M. & Keasey, K. (2007). Bank Deregulation and Acquisition Activity: The Cases of the US, Italy and Germany. *Journal of Financial Regulation and Compliance*, 15, pg. 199-209.
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Section 1.4: Agency-theoretic Explanations for Value-destroying M&A & **Section 7.3** Hypotheses Development: Board Monitoring and Acquisition Performance	Hagendorff, J., Collins, M. & Keasey, K. (2007). Bank Governance and Acquisition Performance. *Corporate Governance - An International Review*, 15 (5), pg. 957-968

The candidate confirms that he is the principal author of each publication listed above.

The work contained in these articles arose directly out of the work for this PhD thesis. For each article, the candidate undertook the literature review, data collection and statistical analyses and made a significant contribution to the conceptual framework used.

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"What you are,
you are through contracts alone:
your power, mark me well,
is bound by sworn agreements."

The giant Fasolt tells Wotan, the God
Richard Wagner, *Das Rheingold*

Abstract

Banking is different from the provision of other goods and services and of pivotal importance to economic growth and financial development. Against the background of continuing merger activity in the US and European banking sectors, this thesis (i) compares the performance implications of bank mergers and acquisitions (M&A) for bidding banks in both geographic regions and (ii) seeks to explain reported differences. Research on European bank M&A has received relatively little academic interest in the extant literature. To date, conclusions about the performance implications of acquisition activities are almost exclusively derived from a US market context. However, the case for investigating the performance effects of M&A outside the US seems compelling given significant structural, legal and regulatory differences between the US and many European banking sectors.

The results reported in this thesis show marked differences for both market valuation effects and post-merger financial performance between bank mergers in Europe and the US. On the whole, the performance outcomes for European bidding banks appear to be more positive compared with those of US institutions. Thus, European bidding banks realise positive abnormal returns over the announcement period and small increases in post-merger performance in the years following a merger. It is particularly interesting that performance improvements for European banks are most pronounced

for cross-border and product diversifying M&A—two types of M&A about whose performance effects the US-based literature is most sceptical. By contrast, shareholders in US bidding banks experience wealth losses and there are no gains in post-merger accounting performance.

The thesis also reports findings regarding the dominant motivation behind M&A in Europe and the US. It appears that European banks pursue a cost-cutting strategy when they increase cost efficiency levels and decrease post-merger lending vis-à-vis non-merging banks following a deal. US banks, on the other hand, expand both on- and off-balance sheet activities in the post-merger period, but simultaneously appear to suffer from deteriorating post-merger efficiency levels.

Finally, novel findings that link laws and regulations (prevalent in the country of the bidder and the target) to merger performance are presented. As regards laws applicable to targets, the results reported in this thesis are consistent with the view that the level of investor protection enjoyed by target bank shareholders partly explains why mergers attract different market reactions across countries. Evidence is proffered that shows an inverse relationship between the level of investor protection prevalent in the target country and abnormal returns that bidders realise during the announcement period. Accordingly, bidding banks realise higher returns when targeting low protection economies (most European economies) than bidders targeting institutions which operate under a high investor protection regime (the US). The explanation put forward for this is that bidding bank shareholders need to be compensated for an increased risk of expropriation by insiders which they face in a low protection environment where takeover markets are illiquid and there are high private benefits of control. As regards regulation in the country of the bidder, this thesis examines whether the stringency of bank regulation has an impact on the effectiveness of corporate governance at bidding banks.

The bidder's governance effectiveness is measured as the extent to which board characteristics improve bank merger outcomes in Europe and the US. Essentially, this allows the following question to be examined: Is regulation a substitute or a complement to governance? If regulation and governance are substitutes, one may expect that, to the extent that monitoring by shareholders restricts managerial discretion and its potentially negative effects on shareholder wealth, stricter regulation is associated with less effective governance. However, the results reported in this thesis suggest that board characteristics such as independence, diversity and board leadership structure play a role in improving bank M&A in the US, but not in Europe. Given that the US, by most standards, exhibits the stricter regulatory regime, the results point to a complementary role between bank regulation and governance.

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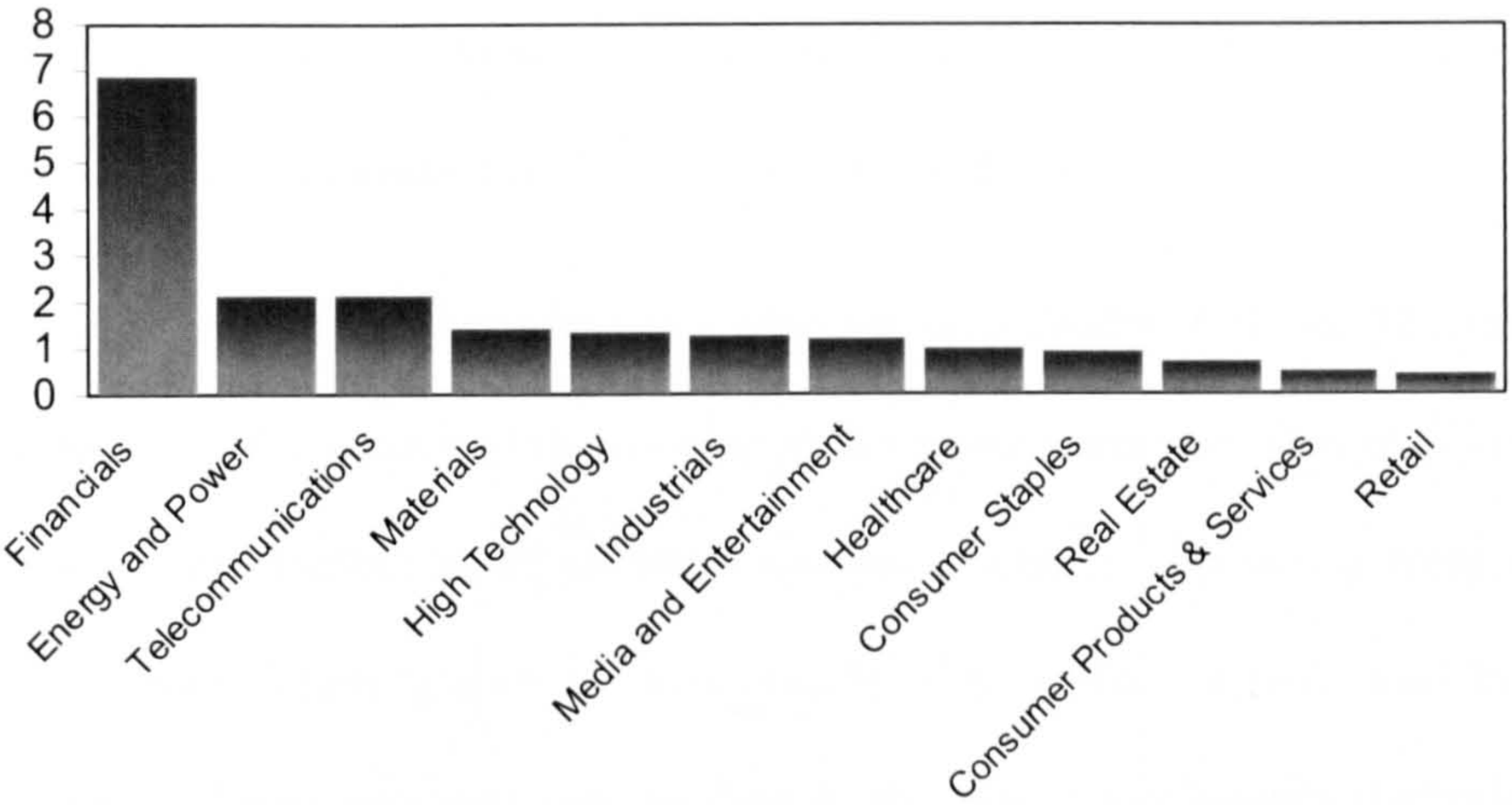
AR	Abnormal Returns
BHC	Bank Holding Company
CAR	Cumulative Abnormal Returns
EU	European Union
FDIC	Federal Deposit Insurance Corporation
FSCS	Financial Services Compensation Scheme
G-10	Group of Ten
GAAP	Generally Accepted Accounting Principles
GLBA	Gramm-Leach Bliley Act
IFRS	International Financial Reporting Standards
IPO	Initial Public Offering
M&A	Mergers and Acquisitions
SOX	Sarbanes-Oxley Act
TSB	Trustee Savings Banks
US	United States (of America)

1
Introduction

1.1 Introduction

The banking industry has undergone dynamic and structural changes on a scale experienced by very few industries in modern times. Competition from non-bank financial institutions has eroded banks' traditional role as intermediaries between depositors (surplus units) and borrowers (deficit units). In most countries, the growth of financial markets has been facilitated by deregulation, advances in communication technologies, as well as by demand from savers wishing to deploy assets more efficiently, partly to meet the retirement provisions of ageing populations in the developed world. Collectively, these trends have reduced banks' ability to engage in consumption smoothing based on nominal deposits and have brought about a transformation to increasingly market-based systems where financial assets are valued at market prices. This transformation has had profound implications for the way risks are borne by individuals and shared amongst them across time. It is encapsulated in the growing importance of non-depository financial institutions (e.g. pension funds, mutual funds, and investment trusts) and the growing share of non-interest income on the balance sheets of commercial banks that diversify into areas such as insurance, brokerage, and asset management (Allen and Santomero, 1997, 2001).

Figure 1-1 Value of Worldwide M&A Activities by Economic Sector ($ trn), 1985-2004



Source: Hagendorff et al. (2007b, pg. 960). Values are in trillion US$. Completed majority acquisitions only.

Berger et al. (1999) argue that M&A are the strategic answer of banks to changes in their industry environment. Worldwide, the banking industry has outpaced all other sectors in terms of the value of completed M&A. The value of completed financial sector M&A deals exceeds $6.85 trillion between 1984 – 2004 (see Figure 1-1), and banking firms accounted for 53% of this sum during the period 1990 – 2000 (Amel et al., 2004). While bank mergers are a worldwide phenomenon, bank merger studies are almost exclusively confined to the US market. Despite its position as the second most active M&A market, Europe has received relatively little academic attention. This is unfortunate, given that differences in financial systems, bank regulation, and governance practices across the two regions may have implications for both the type of bank mergers that occur and the performance implications of M&A in Europe and the US. For example, a comparison of bank M&A in the two regions could offer important insights into regulatory and corporate governance aspects of the performance of banks. In addition, there are political pressures from the European Union (EU) for a more integrated European banking sector that may have positive implications for the effectiveness of monetary policy across the Euro area (by reducing interest rate pass-through times in

retail financial services) and would substantially reduce the fees associated with cross-border banking transactions (Goddard et al., 2007). Hence, it is timely to study European M&A more closely against the backdrop of US activity.

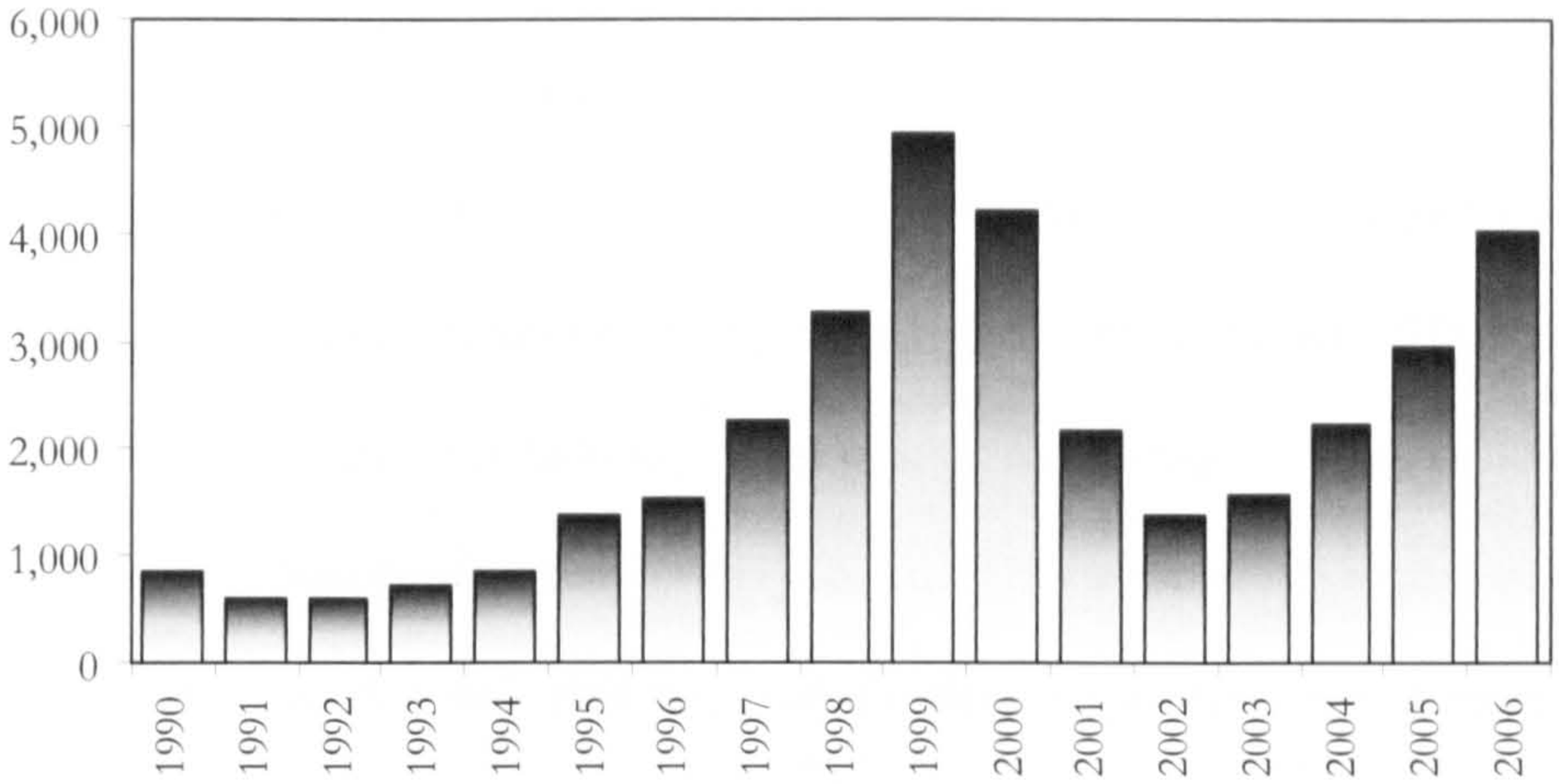
The remainder of this introductory chapter is organised as follows. The next section provides a brief overview of the merger performance literature. This is followed by a discussion of why banks' M&A activities warrant a separate discussion from that of non-financial firms. There is then a consideration of why M&A activity may be motivated by a non-value maximising agenda. Finally, the main contributions that this thesis makes to the debate about the motivations and performance implications of merger activities in the banking industry are presented.

1.2 Mergers and Acquisitions (M&A): The Stylised Facts

Research into the performance implications of merger activities in a multi-industry setting has a long tradition, especially in the fields of strategic management and financial economics. This subsection introduces the main findings of this vast and still expanding literature. Many of the stylised facts about the performance effects of merger activities in the non-financial sector discussed in this section will be useful in later chapters when formulating expectations about merger outcomes in the banking sector.

M&A activities across all economic sectors reached record highs in 1999 (see Figure 1-2). However, despite managers' apparent enthusiasm for acquisitive growth strategies, the extant empirical literature remains highly sceptical about the viability of these activities (King et al., 2004; Datta et al., 1992; Agrawal and Jaffe, 2000). Most of the numerous studies undertaken on the post-acquisition performance of firms estimate a failure rate between 45% and 55% (Ravenscraft and Scherer, 1989; Porter, 1987; Montgomery and Wilson, 1986). At the very best, the discrepancy between the cont-

Figure 1-2 Value of Worldwide M&A Announcements ($ bn), 1990- 2006



Source: Thomson Financial, Bureau of Labor Statistics (http://stats.bls.gov). Values are reported in constant 2006 US$.

inued popularity of mergers, on one hand, and realised outcomes, on the other, indicates that knowledge about the performance implications of mergers remains incomplete.

Ravenscraft and Scherer (1989) analyse the accounting performance of three-quarters of all mergers in the US manufacturing industry between 1975 – 77. For 2,700 acquisitions, the results show that the target's profitability suffers for a period of up to 8 years following an acquisition compared with pre-merger levels. Only for the case of 'mergers of equals', the authors report increases in post-merger profitability. Similar results are reported by Ghosh (2001) who finds no evidence consistent with M&A improving economic performance for his sample of 315 US multi-industry mergers during 1981 – 1995. For Europe, Morosini et al. (1998) examine 52 large cross-border mergers between 1987 and 1992 and show that mergers do not increase sales over a two-year period. By contrast, Healy et al. (1992) and Linn and Switzer (2001) find slight gains in cash flow profitability for newly-merged firms. The former analyse a sample of 50 large US mergers in the period 1984 – 1997, while the latter examine a sample of 413 US mergers which were announced between 1967 and 1987.

Empirical investigations into the market reaction to M&A show that merger announcements, at best, are value-neutral for the merged entity. For bidding shareholders, on the other hand, merger announcements are almost certain to lead to negative returns. In an analysis of the value effects of merger announcements between 1998 and 2001, Moeller et al. (2005) find that bidding shareholders, on average, realise wealth losses around merger announcements that correspond to 12% of a deal's total value. In a meta-analysis, Datta et al. (1992) find that cash-financed acquisitions create more shareholder wealth for acquirers than equity-financed transactions. Given that acquirers choose the method of payment that is most beneficial to them—i.e., they will choose equity if it is overvalued (Shleifer and Vishny, 2003)—the use of equity as acquisition currency is believed to signal to investors that the proposed transaction is less desirable at the financial terms offered (King et al., 2004). Further, related acquisitions were repeatedly found to generate abnormal returns for acquirers (Capon et al., 1988; Doukas and Kan, 2006). Lubatkin (1983) argues that related acquisitions create more value than product diversification as synergetic benefits can be realised from combinations of similar activities. Further, multiple bids for a single target increase target returns at the expense of the abnormal returns that bidders realise in the announcement period. Jensen and Ruback (1983) argue that competition in the market for corporate control spurs an auction-type bidding process among acquirers that lets them bid away merger-related gains. Finally, Hitt et al. (2001) find a positive relationship between acquisition experience and post-acquisition performance. They interpret their finding as consistent with experienced acquirers being better suited to overcome challenges associated with identifying and screening suitable targets as well as with integrating the resources of the target into the context of the acquiring firm.

In order to gain a more finely-grained analysis of what drives merger outcomes, studies in strategic management have employed subjective measures of performance

based on interviews or questionnaires. By and large, the results of these studies point to the post-merger integration process as crucial to realising potential synergetic benefits from mergers. For example, Capron (1999) surveys 253 target firm managers and finds target firm managers are likely to refuse cooperation with the acquiring firm's management team over any steps that lead to a decline of their status within the merged entity. Consequently, meaningful cost efficiency improvements in the post-merger period are most likely to be brought about by the divestiture of bidder assets. Similarly, Very and Schweiger (2001) identify management's propensity to listen to local advisors, and the target's senior management team, as having a positive performance effect. The finding is based on a series of interviews conducted with the senior management of 26 companies in France, Germany, Italy, and the US that had recently completed a cross-border merger. Finally, Brouthers et al. (1998) survey a sample of Dutch firms and show that managers have multiple motives when engaging in acquisitions. The authors compare merger motives to outcomes (both reported by managers) and find a high degree of congruence between the two. For instance, mergers that were initiated to raise the acquirer's market power, tended to achieve this. For 12 out of the 17 motives surveyed, mergers were successful when measured against the motives reported by management. Perhaps overconfidently in the face of self-reported data, Brouthers et al. (1998) conclude that 'managers are right, mergers are successful' (p. 352).

In summary, there are few general conclusions emerging from the vast body of M&A studies. King et al. (2004) attribute contradictory findings in the extant literature to the small degree of overlap between the numerous studies published over the last thirty years. 'New effects have characteristically been sought over replication of known effects, so knowledge accumulation has been slower than might be expected given the high level of research activity in the M&A area' (p. 188). Further, the generalisability of many previous findings is limited on the grounds that they examine (i) different eco-

nomic sectors, (ii) different time periods, and (iii) employ different metrics of post-acquisition performance. The thesis may remedy one of these issues by concentrating on a single industry. The next section discusses why banking provides a particularly suitable case for a single-industry analysis of M&A.

1.3 Are Banks Special?

Banking is different from the provision of other goods and services. The functioning of a country's banking system is directly linked to investment, employment and to economic growth (Levine, 1997). Banks play a pivotal role in the allocation of resources between surplus and deficit units, in mitigating against the effects of information asymmetries and in the provision of governance advice to firms which borrow from them (especially in economies with poorly developed capital markets). Hagendorff et al. (2007b) argue that while none of these functions are unique to banks—some are also performed by non-depository institutions—bank activities are subject to special qualities that mark them out from non-bank firms and, thus, justify a related but separate discussion of banking firms in the context of M&A.

(i) An important part of the *raison d' être* of banks (and indeed other financial institutions) are the advantages they have in overcoming information asymmetries as well as in conducting effective screening and monitoring to access privileged information on clients which may not be readily available to the market (Diamond, 1984; Collins and Baker, 2003, pp. 47-56). By definition, this makes some important activities of banks more opaque than those of non-financial firms and, consequently, more difficult to monitor for outsid-

ers.[1] The opacity of bank operations may cause M&A among banks to have different performance implications than M&A involving industrial firms if, say, pre-merger diligence is more difficult to carry out for the acquirer.

(ii) Banking is a regulated industry. Interference by monetary authorities is evident in stipulations on capital and liquidity adequacy, implicit and explicit deposit insurance schemes, and the operation of any implicit or explicit bank bail-out policy. Regulators monitor and restrict managerial discretion and may, thus, limit the extent to which managers' actions affect shareholder wealth and marginalise, or possibly even substitute for, monitoring by shareholders (Booth et al., 2002; John and Senbet, 1998). As shareholders and other stakeholders (e.g. depositors, debtholders) are disincentivised to monitor management effectively, non-value maximising motives behind M&A (e.g. empire-building) may become more frequent in banking than in unregulated industries (Adams and Mehran, 2003).

(iii) Bank ownership is severely restricted in most countries. In some countries, governments either act as owners of large parts of the domestic retail banking industry (such as in large parts of Asia and Africa, but also, until recently, in France) or restrict the ability of outsiders to purchase a substantial interest in certain banks (e.g. in Germany and Italy). These practices—predicated on the widespread belief that regulators ought to put concerns about systemic stability before any concerns about managerial inefficiencies and their potentially adverse impact upon shareholder returns—are also common in economies

[1] Morgan (2002) provides some evidence for the opaqueness of banking activities by showing that analysts disagree more often over how to rate bonds issued by banks than bonds issued by non-financial companies.

where otherwise government intervention is not widespread (including in the UK and USA). As a result, in most countries, there are no hostile bank acquisitions. It is, thus, conceivable that the performance implications of M&A in banking are different from merger activities in other industries where the market for corporate control is more competitive.

1.4 Agency-theoretic Explanations for Value-destroying M&A

Against the background of continually high volumes of M&A activities, researchers in the fields of finance and strategic management are puzzled by the lack of empirical studies that report merger-related wealth gains for acquiring bank shareholders (Amel et al., 2004; DeLong and DeYoung, 2007; Houston and Ryngaert, 1994). Table 5-1 (pg. 83) presents the results of a selection of bank merger performance studies and shows that positive announcement returns for acquiring banks rarely materialise. Similar results are reported in the literature that examines the long-term financial performance results following bank M&A (see Table 6-1, pg. 121). Collectively, these findings contradict standard economic theory which posits that M&A occur because of their potential to cut costs and/or increase revenues. Instead, non-performing merger activities are consistent with explanations that, at least in part, stress the role of managerial opportunism behind M&A. The extant literature has developed a number of possible explanations for why managers may engage in non-value maximising M&A.

(1) The *hubris hypothesis* suggests that senior executives overestimate their own abilities to identify and realise the potential gains from a merger (Roll, 1986; Hayward and Hambrick, 1997). According to this argument, disappointing firm performance in the post-merger period is the result of unrealistic expectations on the part of executives of the bidding firm.

(2) Theories of *managerial opportunism* propose that managers may engage in M&A activity and knowingly put corporate performance at risk to pursue personal objectives such as higher remuneration and other firm size-related benefits (Anderson et al., 2004).

(3) A final agency-theoretic explanation of why so many acquisitions do not lead to wealth gains for shareholders is based on a *managerial preference for risk-reducing strategies*. At a basic level, the argument posits that, because senior executives cannot diversify their human capital invested in a firm, they, instead, engage in corporate strategies that decrease the variance of company returns in order to minimise their own employment risk (Amihud and Lev, 1981; Wright et al., 2002). Shareholders, on the other hand, who may deal with earnings volatility by holding diversified portfolios, are vulnerable to low returns when bank managers engage in product-diversifying acquisition strategies (Morck et al., 1990).

It is important to note that prevailing motives behind bank M&A may vary considerably across countries and time periods (e.g., financial distress in Japan in the nineties; or overcapacity and the search for economies of scale in the US, Spain, and Italy in recent years). Also, there are explanations for underperforming bank mergers that are not based on agency costs between managers and shareholders. For example, Heffernan (2005, pp. 251-2) argues that the increases in market concentration levels that resulted from bank consolidation may have had adverse effects on regional competition and post-merger efficiency, and may, thus, have partly offset merger-related performance gains. Further, DeLong and DeYoung (2007) show that negative market reactions to bank mergers are especially pronounced at the beginning of bank merger waves. This implies that uncertainty resulting from a lack of informational spillovers following completed M&A makes investors wary of the performance implications of announced deals.

1.5 Contributions of the Thesis

Given the high values of deals in the financial sector over the past twenty years and given the pivotal role of banks as the main providers of corporate finance and governance advice to the firms which they fund, establishing a clearer understanding of the performance implications of bank M&A is important. Until today, knowledge accumulation about the antecedents of value creation for US and European bank M&A remains patchy. This thesis, therefore, makes a number of valuable contributions to the understanding of what motivates bank mergers and what determines their outcomes.

Throughout this thesis, the performance implications of bank mergers will be examined from the perspective of the bidding bank. Consequently, the underlying research question is whether the management of the bidding bank has made the correct decision in pursuing M&A. Empirical analyses that examine the post-merger performance of newly-merged entities of bidders and targets, on the other hand, seek to establish whether merged firms are more effective at delivering banking services than bidder and target have been before the M&A transaction. The focus on bidding banks in this thesis follows numerous studies[2] and is based on the stylised fact that, while target bank shareholders are practically always set to gain from takeover approaches, the shareholder wealth effects on bidding banks vary widely and are often negative.

This thesis is the first empirical investigation to directly compare the performance implications of bank mergers in Europe and the US. As detailed below, the main contributions can be grouped into three distinct themes: A Comparison of Bidder Perform-

[2] Among others, James and Weir (1987), Rossi and Volpin (2004), DeLong (2003a), and Campa and Hernando (2006) focus on the returns that bidding shareholders realise following bank mergers. Similarly, Cornett and Tehranian (1992), Cornett et al. (2003), Knapp et al. (2006), and others examine merger-related changes in accounting performance as realised by acquiring credit institutions.

ance in a US and non-US Context; the Motivations behind Bank Mergers in Europe and the US; and the Role of the Legal and Regulatory Environment.

1.5.1 A Comparison of Bidder Performance in a US and non-US Context

This thesis, for the first time, performs a direct comparison between the merger performance of European and US M&A on the basis of short-term valuation effects (Chapter 5) and long-term accounting returns (Chapter 6). An important contribution of such an exercise is to demonstrate that conclusions drawn from samples of US bank mergers may have to be modified outside their original market context.

Previous research into the performance effects of bank mergers overwhelmingly focuses on consolidation in an US-context and reaches conclusions which are mixed at best (for an overview, see Amel et al., 2004). The literature examining the shareholder wealth implications of the market for corporate control has repeatedly reported investor scepticism about any gains associated with US-focused bank mergers (James and Weir, 1987; DeLong, 2001; Cornett et al., 2003; DeLong and DeYoung, 2007). Studies that focus on European banking, by contrast, tend to find more favourable market reactions to bank consolidation (Beitel et al., 2004; Lepetit et al., 2004; Karceski et al., 2005). Similarly, research on the long-term performance of bank M&A based on US data fails to find improvements in the post-merger period (Zollo and Singh, 2004; Houston et al., 2001; Ramaswamy, 1997; DeLong, 2003b; Akhavein et al., 1997). Again, studies in a European market context appear more optimistic about merger-induced gains in long-term performance than US-based studies. Vander Vennet (1996), Focarelli and Pozzolo (2005), and Campa and Hernando (2006) report improvements in financial performance in the years following European bank mergers.

Chapter 5 of this thesis compares the short-term valuation effects of bank M&A in Europe and the US in a single sample and confirms that, while US bank merger an-

nouncements attract a negative market reaction, M&A targeted at European economies leads to positive abnormal returns. Also, Chapter 5 finds evidence that European cross-border M&A creates bidder wealth in Europe and leads to bidding bank losses in the US. Further, contrary to similar activities in the US, product diversifying bank mergers do not destroy bidder wealth in Europe.

Chapter 6 then offers a direct comparison of the long-term performance results of bank mergers in Europe and the US. Arguably, the realised performance effects of bank mergers and acquisitions (rather than the value effects of M&A) are a particularly important metric for investors, depositors and policymakers to assess the success of M&A strategies (Group of Ten, 2001). Further, the cost and efficiency implications of bank M&A are of interest to bank regulators who are concerned with the effects of larger and more diversified financial firms on systemic stability (Barth et al., 2004). An important contribution of Chapter 6 is to show that the performance implications of bank M&A are different between Europe and the US. Thus, European bank mergers produce small performance gains for acquiring banks in the post-merger period, while US banking firms do not experience any changes in performance as a result of M&A. The profitability gains of European credit institutions are particularly pronounced for product diversifying and cross-border mergers. Further, European banks reduce non-interest expenses and, to some extent, retreat from lending activities in the post-merger period. US banks, by contrast, manage to increase their on- and off-balance sheet activities in the post-merger period.

A valuable contribution of both Chapter 5 and Chapter 6 is to show that conclusions based on an US market context do not necessarily apply to markets outside the US. This is particularly true for some of the so-called 'stylised facts' about M&A that have emerged from the US-based literature. According to these 'facts', bank mergers are per-

formance neutral at best, and bidding banks are very strong performers in the pre-merger period. While both 'facts' can be verified for the US subsample of bank mergers, neither holds for European M&A in the analyses performed in this thesis. Specifically, European bank M&A generate both positive market revaluations and profitability increases in the post-merger period. Further, the results presented in Chapter 6 show that bidding banks are only weakly-performing against their peers in the pre-merger period.

1.5.2 Motivations behind Bank Mergers in Europe and the US

Common rationales behind bank mergers include raising market power (Berger et al., 1998; Bikker and Haaf, 2002), an optimal response to industry deregulation or technological progress (Group of Ten, 2001), executive hubris (Anderson et al., 2004; Hughes et al., 2003), or averting bank failure (Heffernan, 2005). However, differences in the motives behind M&A across geographic regions have received little academic attention to date. Chapter 6 seeks to make a contribution here by presenting new insights into what motivates bank M&A in Europe and the US.

The reasons for M&A most frequently-cited by managers are to cut costs and to increase revenues in the post-merger period (Amel et al., 2004; Berger et al., 1999). Cost cutting will be targeted at interest and non-interest expenses and revenue enhancements tend to involve an expansion in lending as well as in off-balance sheet activities. To establish the motives behind M&A in Europe and the US, Chapter 6 analyses bidding banks' post-merger financial statements for results consistent with a cost-cutting strategy (e.g. economising on labour costs or branch networks) or a revenue-enhancing strategy (e.g. selling different types of financial products or increased lending).

Consequently, a valuable contribution of Chapter 6 is that it is the first investigation to document different motives behind bank M&A in Europe and the US. There is some evidence consistent with European banks pursuing a cost-cutting strategy during

the three years following a merger. Specifically, banks in Europe manage to reduce non-interest expenses and, to some extent, retreat from lending activities in the post-merger period. US banks, by contrast, manage to increase their on- and off-balance sheet activities, thus, pointing towards revenue-enhancement as a motivation behind M&A. However, US banks experience a deterioration in cost efficiency, possibly as a result of their efforts to increase revenue.

A further contribution of Chapter 6 is that the results control for a mean reversion trend in performance data. Mean reversion describes the phenomenon of above-industry pre-merger performance reverting to zero following a merger (see Knapp et al., 2006; Barber and Lyon, 1996). Since a mean reversion trend may wrongly be interpreted as M&A having negative performance effects, many previous studies may suffer from a negative bias against M&A performance (Morck et al., 1990; Ghosh, 2001).

1.5.3 The Role of the Legal and Regulatory Environment

To date, knowledge accumulation about the antecedents of value creation for US and European bank M&A remains patchy (Amel et al., 2004). This thesis documents different performance implications of bank M&A in Europe and the US and makes some of its most important contributions when seeking to explain reported performance differences between the two geographic areas. To do so, three empirical chapters analyse the potential influence of laws and regulations, which affect the banking sector as well as the wider financial system, on M&A activities and performance. Chapter 4 examines the deregulation of the banking industry in selected countries, Chapter 5 studies the quality of target country regulations that protect minority shareholders, and Chapter 7 analyses whether the stringency of bank regulation in the country of the bidding bank impacts upon the design and effectiveness of the corporate governance arrangements of bidding

banks. The main contributions of these chapters regarding any impact of the legal and regulatory environment on merger outcomes are detailed below.

As an introductory chapter to the empirical investigations that follow, Chapter 4 explains in more detail how industry deregulation has enabled the massive scale of bank mergers over the last twenty years. Since few general conclusions about deregulation and bank M&A can be drawn from large cross-sections of countries, Chapter 4 examines four different banking systems (the US, Germany, Japan, and the UK) to highlight the different approaches that regulators have taken to facilitate the consolidation of national banking sectors. Differences in regulation across countries and how these have promoted M&A activities are discussed. For example, it is argued that the US provides the clearest example of a causal link between regulatory changes and an unprecedented surge in M&A. Germany, on the other hand, has maintained many legal obstacles to consolidation, especially consolidation between different types of financial institutions within its three-pillar banking structure (commercial, savings and cooperative banks).

Chapter 5 contributes to the literature that employs investor protection regimes to explain why the same type of corporate event may attract different market reactions across countries. Specifically, Chapter 5 compares the bidder announcement returns associated with US and European bank mergers and shows that the legal and regulatory environment prevalent in the target country impacts market expectations about the value that bidders may extract from targets in these environments. Accordingly, it is argued that changes in the bidder's market valuation signal a stock market assessment of the efficiency of internal governance and external control mechanisms employed by target institutions.

The results presented in Chapter 5, for the first time, cast some light on the different value effects surrounding bank mergers in Europe and the US. Bidder an-

nouncement returns are negative to deals where targets operate under a high investor protection regime (e.g. the US). It is suggested that this may be due to bidders finding it more difficult to capture acquisition-related gains from a target in the liquid (and, hence, competitive) takeover markets associated with this type of corporate governance system (see La Porta et al., 2002; Moeller and Schlingemann, 2005). Conversely, in low investor protection environments (most European economies), a less freely-operating market for corporate control lets bidders earn superior announcement returns by compensating for the higher private benefits of control, as well as higher agency and information asymmetry costs. Consistent with the argument that low target protection regimes necessitate compensation for bidding bank shareholders, it is shown that investor preference for cash-financed bank mergers is particularly strong in low-protection environments. Also, Chapter 5 finds evidence that cross-border M&A creates bidder wealth if acquisition targets are located in a less sophisticated protection environment than their acquirers.

Also, Chapter 5 provides the first empirical investigation into the value effects of investor protection regimes that is not restricted to cross-border M&A. Previous studies related to this chapter (Bris and Cabolis, 2004; Starks and Wei, 2004) analyse the influence of investor protection regimes on the performance of cross-border deals and, hence, argue that any effect of target firm protection laws on bidder returns only exists if targets and acquirers operate under different regimes—that is, if acquisition targets switch investor protection regimes following a deal.

Chapter 7 continues to elaborate on the legal perspectives theme and examines the effects of bidding bank governance on acquisition outcomes under different regulatory regimes. It is argued that monitoring by shareholders in the bidding bank may play a key role in improving merger outcomes, since bidding shareholders are frequently exposed to managerial opportunism through M&A. As detailed above (Section 1.4),

merger activities tend to destroy bidder wealth, while managers at the bidding firm are set to benefit from higher prestige and increased remuneration packages regardless of the performance of a takeover (Anderson et al., 2004; Masulis et al., 2007; Bliss and Rosen, 2001). Specifically, Chapter 7 contributes to the literature that analyses the relationship between regulation and governance—a topic linked to the wider debate of causality between regulation and the emergence of economic institutions that promote shareholder value (Roe, 2005, 2003; Rajan and Zingales, 2003). Thus, Chapter 7 is particularly concerned with the following question: Is regulation a substitute or a complement to corporate governance? The widely-accepted view for banking firms is that governance and regulation are substitutes. The argument goes that the presence of a regulator weakens board monitoring, because shareholders will not duplicate efforts by regulators when mitigating against contracting costs between managers and shareholders (Subrahmanyam et al., 1997; Baysinger and Zardkoohi, 1986; Kole and Lehn, 1999). Yet, the results of Chapter 7 are inconsistent with this view and, instead, point to a complementary relationship between regulation and governance.

Recent studies related to Chapter 7, such as Adams and Mehran (2003) or Becher and Frye (2007), restrict their analysis to the composition of boards and the design of governance mechanisms in regulated and unregulated industries. It could, therefore, be argued that these studies contrast the *potential* monitoring capabilities of regulated versus unregulated industries. Thus, an important contribution of Chapter 7 is that it examines the *actual* monitoring effectiveness of shareholder monitoring in preventing value-destroying acquisitions under different regulatory regimes.

Chapter 7 makes several further contributions. First, this chapter analyses the governance of banking firms. In the applied literature, there is a tendency to exclude banking firms from governance research on the premise that tight industry regulation substi-

tutes for shareholder monitoring of management. However, the corporate governance of banking firms constitutes an important case to analyse. Owing to the special attributes of banking (e.g. the opaqueness of corporate finance operations that rely on privileged information on clients as well as a weakly-functioning takeover market; see Section 1.3), there may exist above normal constraints on the protection of shareholder interests in the context of M&A. Since the results of Chapter 7 point to a complementary role between regulation and firm-level governance, it cannot be confirmed that the reasons for excluding banking from much of the extant governance research are well-founded. Further, little academic work has been devoted to the study of European bank governance. This study is the first to contrast internal governance mechanisms for the US and European credit institutions and, in particular, to analyse European bank governance arrangements in the context of bank mergers. Finally, Chapter 7 presents a unique, manually collected dataset on the corporate governance of banking firms in Europe and the US.

1.6 Structure of the Thesis

This thesis is organised as follows.

- As a background to the analysis, Chapter 2 provides an overview of the patterns of merger activity worldwide and identifies banks as the spearheads of M&A activities in the financial sector.

- Chapter 3 explains the research methods used in this thesis and outlines how the sample of M&A transactions has been collected. The following four chapters are of an empirical nature.

- Chapter 4 discusses how the deregulation of bank M&A in four selected banking systems has led to an increase in such activities.

- Chapter 5 analyses the merger announcement returns to bidding bank shareholders in Europe and the US.

- Chapter 6 studies the financial performance following bank mergers in Europe and the US, and makes some inferences about the motivation behind M&A in both geographic regions.

- Chapter 7 analyses the effectiveness of board characteristics in preventing underperforming M&A under the different bank regulatory regimes of Europe and the US.

- Chapter 8 draws together the conclusions, policy implications and limitations of this thesis. Directions for further research are also discussed in this chapter.

2
Banks and the Global Consolidation of the Financial Services Sector

2.1 Introduction

This chapter provides an overview of the consolidation that has transformed the financial services industry in many countries over the last two decades. As a result of these activities, banking firms have grown larger and market an ever more diverse product range to clients in many more countries. An examination of the global patterns of financial M&A shows that mergers between institutions where bidders and targets are chartered in the same country and operate in the same industry are by far the most common form of industry consolidation. Further, banks are spearheading the consolidation of the financial sector as both the number and the value of mergers between banks have been consistently higher than those between either insurance companies or securities firms (e.g. investment banks). Even though bank M&A has been a global phenomenon, acquisition activities have been more widespread in particular countries. For example, US banks have been by far the most active players in the market for corporate control. The number of US credit institutions roughly halved between 1985 and 2001. However, starting in the late nineties, banks in other countries—most importantly, Japan, France and the UK—were consolidating at a much higher pace as well.

According to the Group of Ten (2001), consolidation involves the resources of an industry to become more tightly controlled either as a result of combinations of existing firms, growth among leading firms, or the exit of weaker firms from the sector. This analysis focuses on the first of these three methods by examining the M&A activities of banks, insurance companies, and securities firms. However, control over industry assets may also become more concentrated in the absence of acquisitions. For instance, joint ventures and strategic alliances, which are not covered in detail in this overview, are methods of consolidation that do not entail a transfer of ownership and a change in corporate control.

The remainder of this chapter is organised as follows. The next section discusses different types of M&A activity. This is followed by an overview of acquisition activities in the last two decades in the financial services industry in general and the banking industry in particular.

2.2 A Typology of Merger Activity

Figure 2-1 presents a typology of different types of M&A activity. M&A transactions fall into one of four categories based on the financial products offered by bidders and targets and the country of charter of the merging institutions. A commercial bank in the UK acquiring a French credit institution would be an example of a cross-border in-market merger (Type III consolidation), whereas a German insurer acquiring a retail bank in Germany falls into the category of Type II consolidation (domestic cross-market mergers).

The relative importance of each of the four types of consolidation in the financial services industry is indicated by Figure 2-2 which presents the aggregate value of each

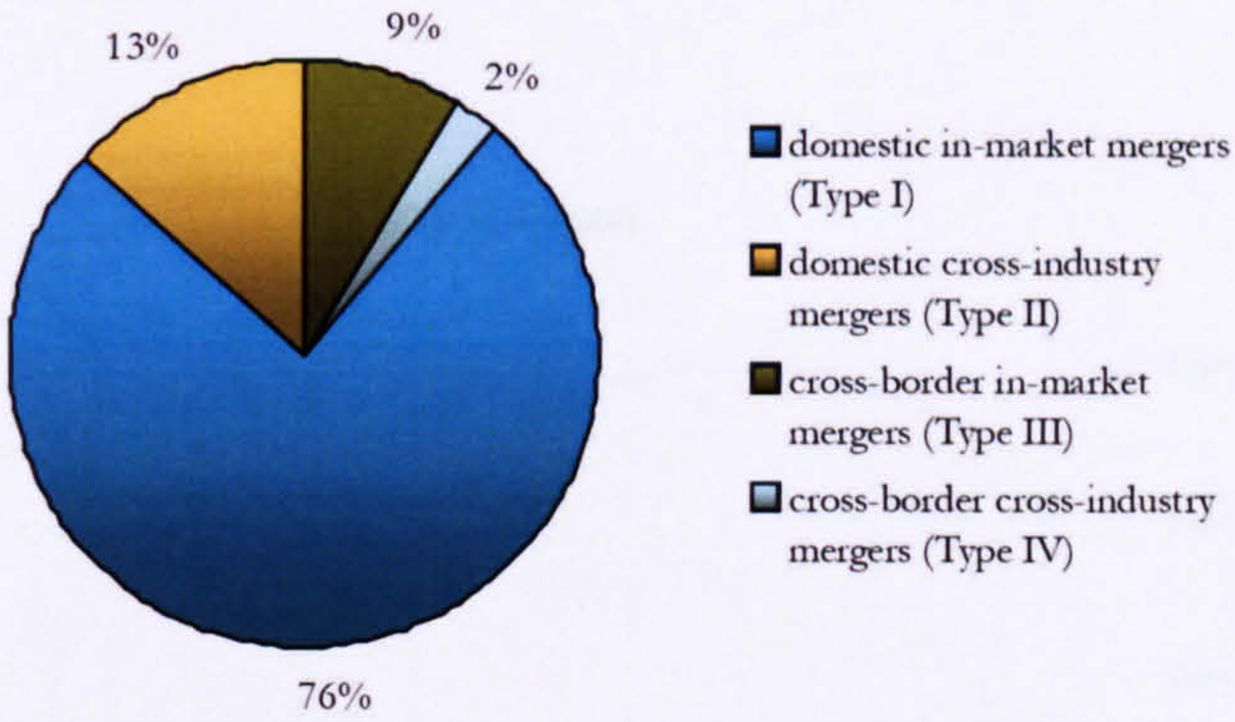
Figure 2-1 Typology of Mergers and Acquisitions

Country \ Product	same	different
same	**domestic in-market mergers** (Type I consolidation)	**domestic cross-market mergers** (Type II consolidation)
different	**cross-border in-market mergers** (Type III consolidation)	**cross-border cross-market merger** (Type IV consolidation)

merger type as a percentage share of total financial M&A activity during the nineties. The data presented form a complete account of the financial M&A activities in the G-10 countries plus Spain and Australia during the nineties when a total of 7,300 financial institutions were acquired. It becomes obvious that the bulk of M&A transactions took the form of Type I consolidation. In total, 76% of the value of mergers in the financial services industry involved companies operating in the same country and marketing the same products.

Domestic cross-market mergers (Type II consolidation), by contrast, only accounted for 13% of the total value of M&A activity. Perhaps most striking, however, are the marked differences in the overall levels of cross-border and domestic M&A activity. A mere 11% of deal values were due to financial companies acquiring a target in a foreign country (Type III and Type IV consolidation), with Type IV consolidation (cross-border cross-market mergers) accounting for 2% of the total value of financial acquisition during the nineties. As will be discussed later, these differences point to operational and, in the case of banking, to regulatory barriers associated with managing assets across borders.

Figure 2-2 Total Value of Financial M&A Deals 1990 - 1999, by Merger Type



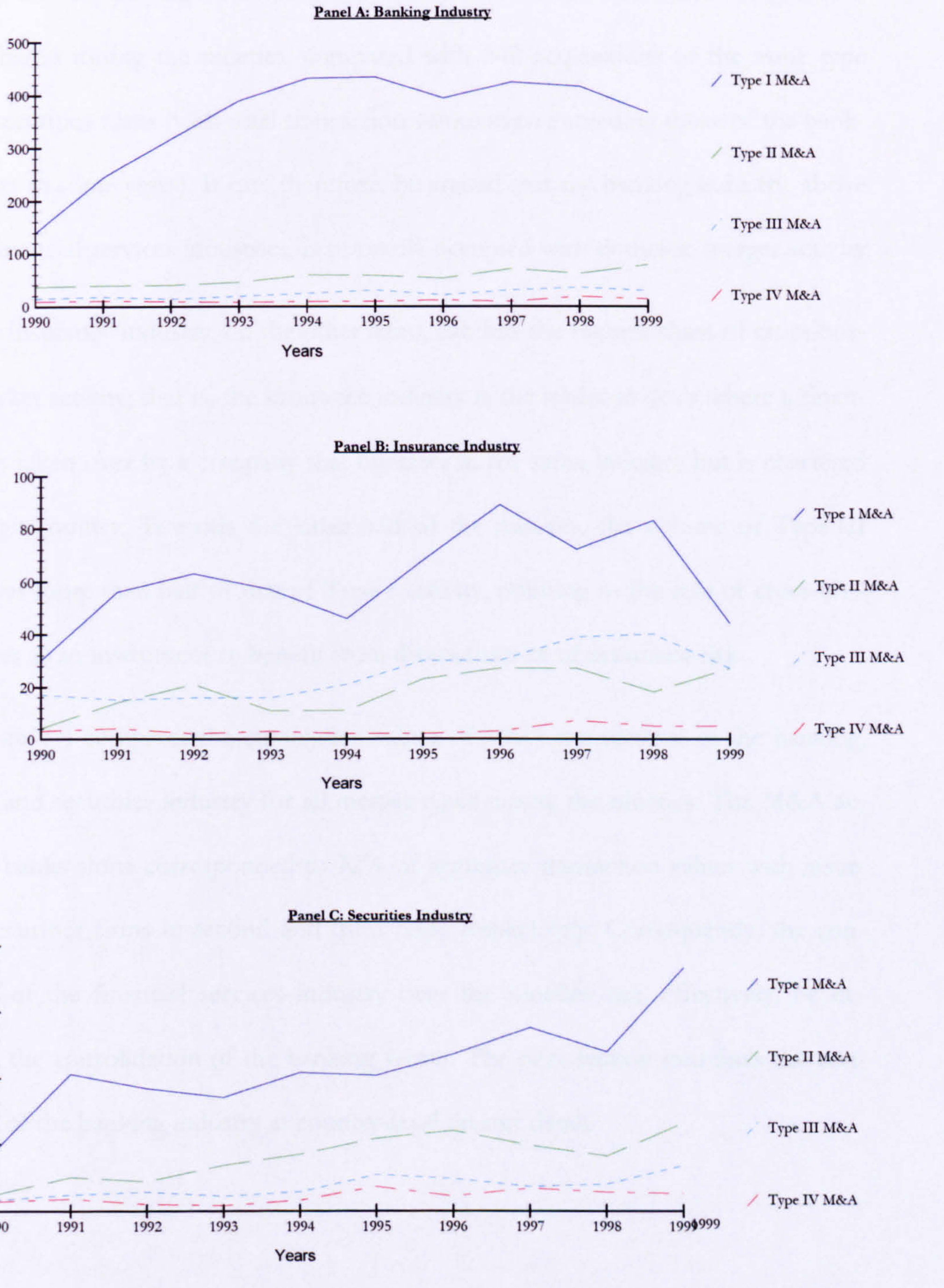
Source. Group of Ten (2001), Statistical Annex. Financial M&A include all acquisitions where one of the parties belongs to one of the following groups: banks, insurance, or securities companies.

2.3 M&A of Banking, Insurance & Securities Firms

Figure 2-3 contrasts the volumes of financial M&A deals for banking, insurance and securities firms. For each of the three industries, the number of Type I – IV mergers is plotted against time. The resulting three time-series sequences illustrate two points: First, there was a general increase in the overall level of M&A activity throughout the nineties. Regardless of the type of consolidation and financial industry considered, the number of mergers and acquisitions increased steadily throughout the nineties from already high levels. Second, while domestic in-market mergers were the most common type of M&A activity in any of the three industries, the relative importance of Type II – IV consolidation varies by industry.

For securities firms, Figure 2-3 highlights the relative importance of cross-market mergers. Differences in annual volumes between Type I and Type II consolidation are considerably smaller for the securities industry than, say, for banking. This hints at the importance of product diversification strategies for investment banks, commodity firms, and the like.

Figure 2-3 Number of M&A by Financial Industry and Merger Type, 1990-1999



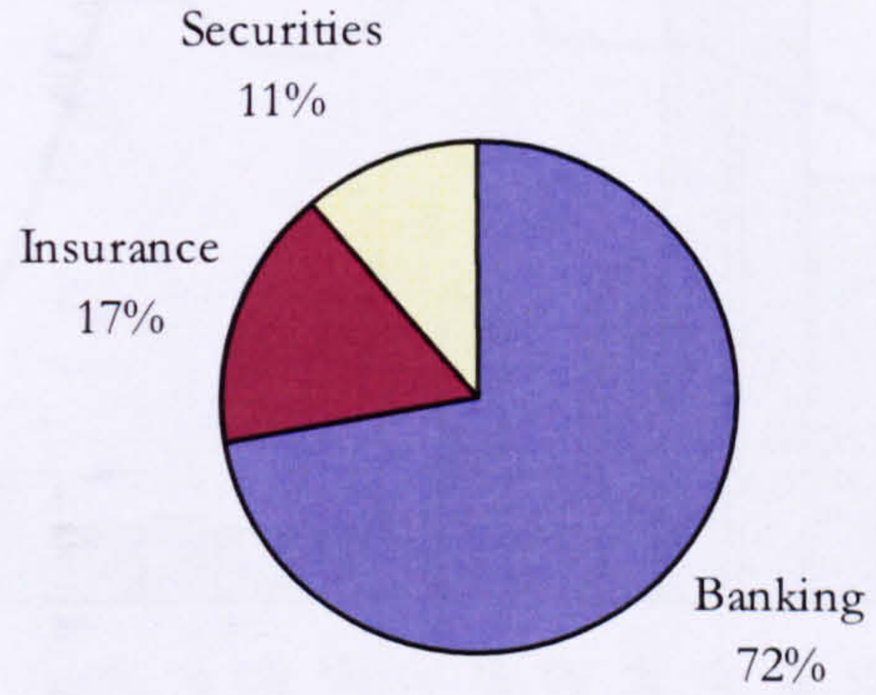
Source: Group of Ten (2001), Statistical Annex. Number of M&A transactions is by the industry sector of the target firm. Reference countries are the G-10 countries plus Spain and Australia. The year of the deal announcement is used as the year of the merger or acquisition, but only deals completed as of May 2000 are included in the sample. Banks are defined as commercial banks, bank holding companies, credit institutions, real estate mortgage bankers, and savings and mutual savings banks. Insurance companies include both life and non-life insurers. Securities firms are made up of investment banks, securities and commodities firms, and other firms like exchanges.

Conversely, in the banking industry, Type I consolidation has been much more prevalent. Thus, domestic cross-market mergers (though second in terms of the overall frequency) are only playing a very minor role. There were 543 cross-market acquisitions made by banks during the nineties, compared with 540 acquisitions of the same type made by securities firms (with total transaction values even exceeding those of the banking industry in some years). It can, therefore, be argued that the banking industry, above all other financial services industries, is primarily occupied with domestic merger activity.

The insurance industry, on the other hand, exhibits the highest share of cross-border in-market activity; that is, the insurance industry is the leader in deals where a financial firm is taken over by a company that operates in the same industry but is chartered in a foreign country. Towards the latter half of the nineties, the volume of Type III mergers was more than half of that of Type I activity, pointing to the role of cross-border mergers as an instrument to benefit from diversification of insurance risk.

Figure 2-4 compares the cumulative values of M&A transactions in the banking, insurance and securities industry for all merger types during the nineties. The M&A activities of banks alone corresponded to 72% of aggregate transaction values with insurers and securities firms in second and third rank, respectively. Consequently, the consolidation of the financial services industry over the nineties can, effectively, be described as the consolidation of the banking sector. The next section examines the consolidation of the banking industry at country-level greater detail.

Figure 2-4 Industry Shares of Total Value of M&A Transactions, 1990-1999



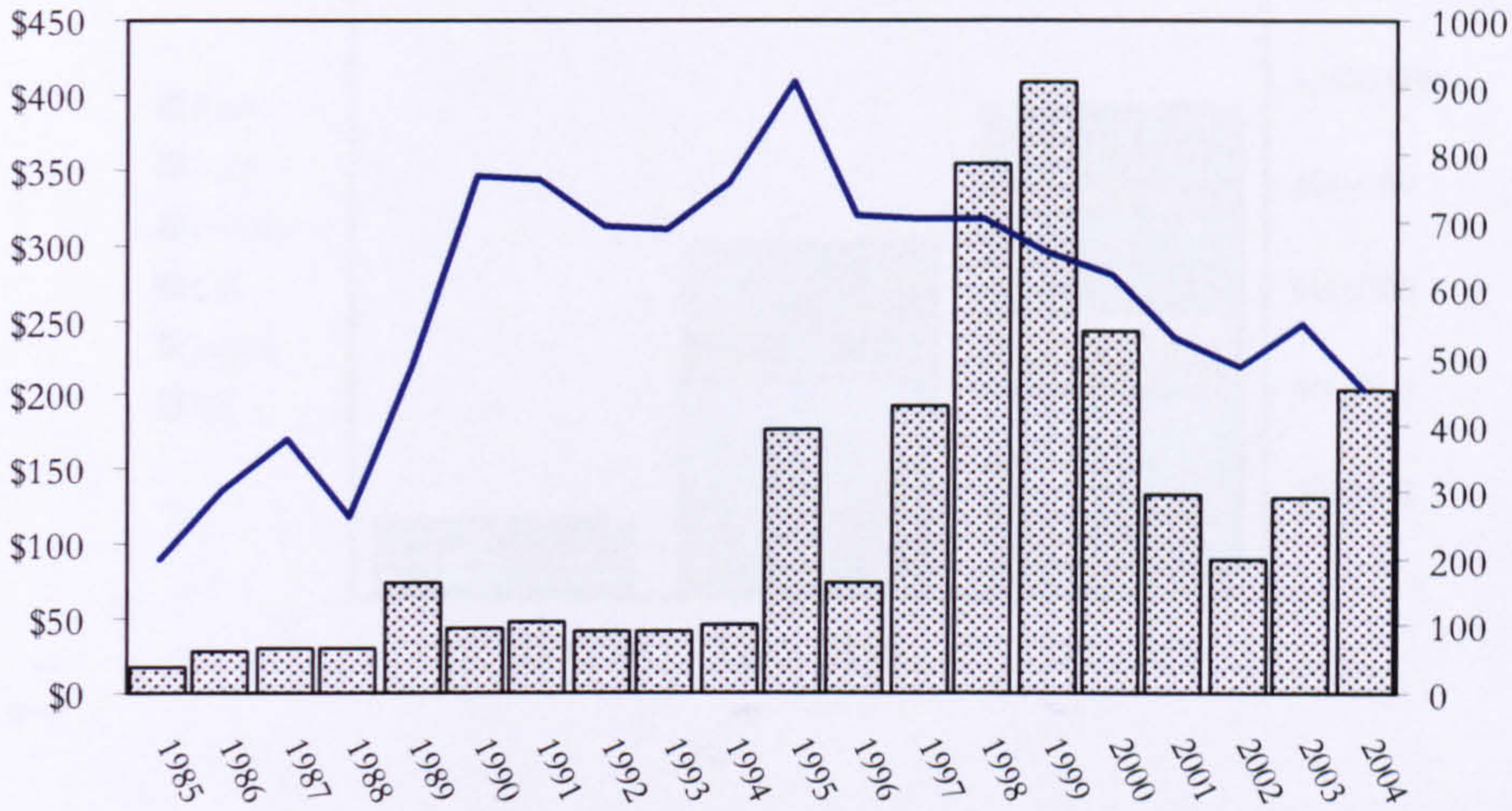
Source: Group of Ten (2001), Statistical Annex. Financial M&A include all acquisitions where one of the parties belongs to one of the following groups: banks, insurance, or securities companies.

2.4 Recent Trends in Bank M&A

2.4.1 Worldwide Trends

The sharp increase in both the number and the value of global bank acquisitions over the past 20 years is illustrated by Figure 2-5. Annual total transaction values rose steadily over much of the 1980s before peaking in the latter half of the nineties. Two relatively active years in terms of merger volumes coincide with major regulatory initiatives: In 1989, the Second Banking Co-ordination Directive introduced a 'single passport' whereby European institutions only have to be chartered in a single European country in order to operate throughout the EU. Second, the Riegle-Neal Interstate Banking and the Branching Efficiency Act of 1994 eliminated previous geographic restrictions on US banking and branching. Echoing a general downturn in the world economy after the bursting of the dotcom bubble, the first years of the new millennium saw a sharp fall in the overall values of bank M&A. However, it appears this trend has reversed as Thomson Financial reports a rise in global bank merger activity for 2003 and 2004.

Figure 2-5 Number and Value of Global Bank M&A, 1985-2004

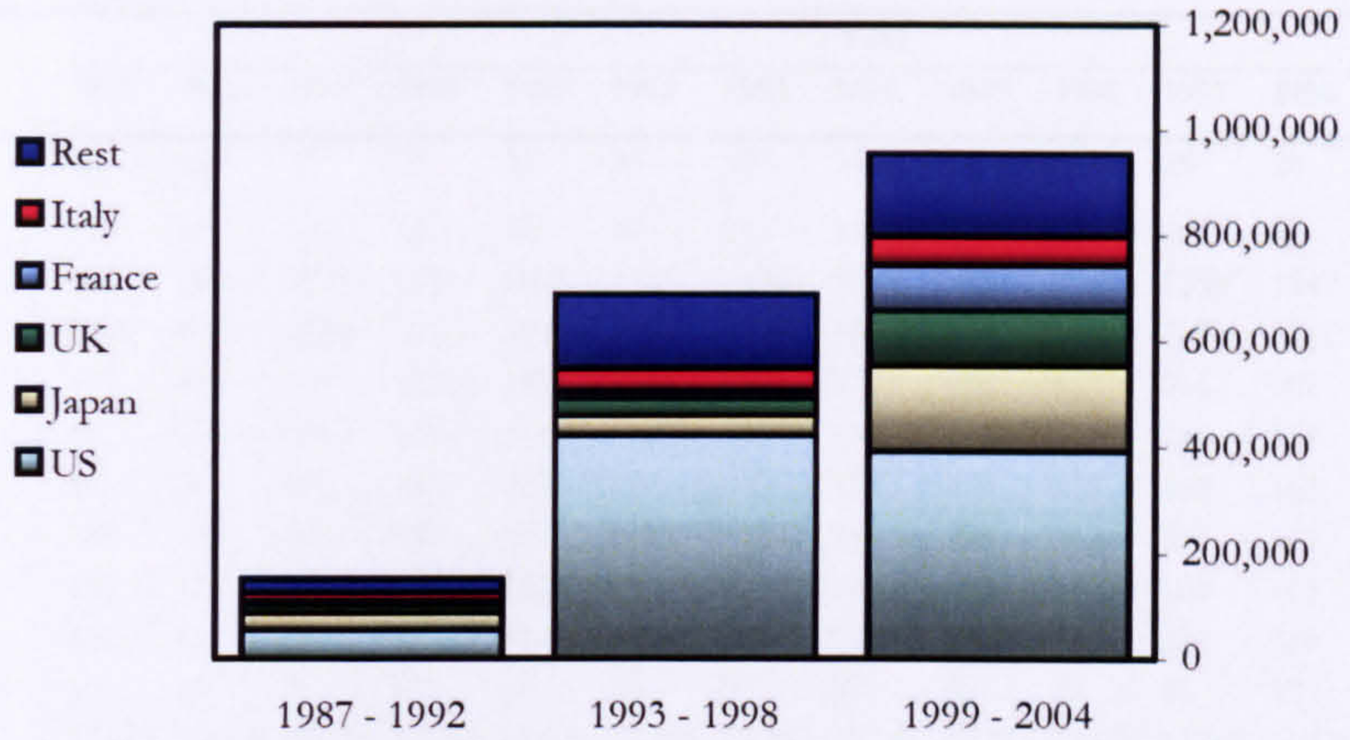


Source: Hagendorff et al. (2007a). Columns show global transaction values in billion USD by year. Deal values are reported in constant 2004 $ using the US CPI. The line represents the number of bank mergers by year. Transactions are reported with credit institutions as acquirers and credit institutions, life as well as non-life insurers, brokerage and asset management firms as targets. The announcement date of the transaction is employed as the year of the acquisition. Only acquisitions that involve at least 5% of the target and were completed as of May 2005 are included. Data are from Thomson Financial; Bureau of Labor Statistics (http://stats.bls.gov).

Figure 2-5 also indicates that total M&A values in the banking industry have been rising more sharply than the underlying volume of bank acquisitions. This is reflected in a narrowing gap between the line (representing the frequency) and the columns (representing total transaction values) in Figure 2-5. The rising column suggest increasing deal values over the last 20 years as previous bank M&A have rendered some retail banking markets more concentrated, leaving fewer attractive acquisition targets as a result.

In order to assess annual transaction values in greater detail, Figure 2-6 offers a break down of acquisition activity by target country for three five-year periods. In total, 1,869 transactions were reported for the G-10 countries plus Spain and Australia between 1987 and 2004. Further, while the US witnessed the largest value of bank merger activity worldwide, banks started to consolidate at an increased pace in a number of

Figure 2-6 Total Value of Bank M&A by Region for Selected Periods (mill USD)



Source: Thomson Financial. Reference countries are the Group of Ten countries plus Australia and Spain. Countries are referred to by nation of the acquisition target. All acquisitions where the acquirer is a credit institution and the target is a credit institutions as well or, alternatively, and insurance company, mortgage broker or securities firm are included. Announcement dates are used as years of the acquisition. All deals involve at least 5% of the value of the target and are completed by May 2005.

other countries during the latter half of the nineties. This is reflected in a decline of the US share of global bank M&A from roughly two-thirds in the period 1993 – 1998 to less than half between 1999 and 2004. Among the countries experiencing the sharpest increase in bank merger activity were Japan as well as the UK and France.

2.4.2 Bank Consolidation at the Nation-level

Turning to individual financial systems next, the high volumes of bank M&A outlined above have led to both a continuous decline in the number of credit institutions and an increase in the market share of the remaining institutions. As Table 2-1 indicates, the decline in the number of institutions is especially large in the US, Germany and France. The combined number of chartered banks, cooperatives, mutual and savings banks has roughly halved in these countries since 1987. With more than 9,000 institutions disappearing, the number of credit institutions has shrunk the most in the US during the

Table 2-1 Total Number of Credit Institutions in Selected Countries

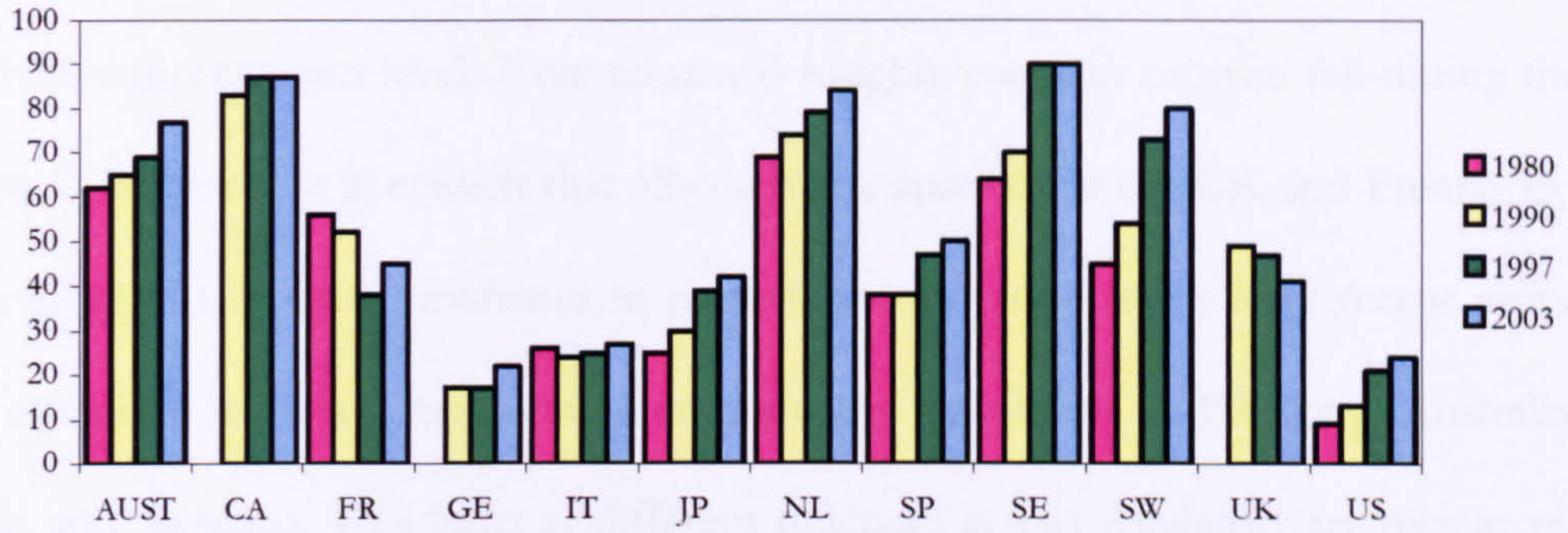
	Year														
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Australia	32	32	32	37	36	35	33	34	34	33	29	28	26	25	27
Canada	11	10	10	10	10	10	11	11	11	11	9	9	9	9	15
France	n.a.	2050	2021	1981	1823	1701	1635	1618	1453	1404	1288	1242	1168	1108	1067
Germany	4340	4223	4089	3913	3716	3517	3769	3613	3500	3392	3284	3111	2833	2575	2370
Italy	409	403	391	1138	1114	1088	1051	977	959	917	916	901	861	828	821
Japan†	90	158	158	156	154	152	151	151	150	146	145	139	136	136	131
Netherlands	85	86	170	180	173	177	175	173	174	172	169	162	85	87	84
Spain	346	334	333	327	323	319	316	316	318	313	307	300	290	281	281
Sweden	142	136	135	128	122	99	99	100	103	103	102	103	103	102	104
Switzerland	452	454	455	457	444	434	419	393	382	370	360	339	334	335	327
United Kingdom†	53	52	49	47	41	39	37	37	40	44	45	45	41	44	42
United States	17,427	16,668	15,915	15,285	14,611	13,985	13,363	12,741	12,113	11,600	11,067	10,599	10,363	8,461	8,230

Source: OECD, *Bank Profitability* (2002). Total number of credit institutions includes commercial banks, cooperative, mutual and savings banks. † Denotes only data on commercial banks are available.

reference period. Part of this decline was caused by a savings and loans crisis over the period 1986 – 1995 which led to the industry exit of more than a thousand institutions. However, the substantial fall in the number of credit institutions worldwide is largely due to industry consolidation which was witnessed by virtually all the reference countries on a comparable scale. Exceptions to this trend are Canada and, to a lesser degree, Australia which both traditionally had few institutions and where the number of institutions has, thus, remained constant over the reference period.

Table 2-1 also indicates that despite the ubiquitous decline in the number of banks, mutuals and cooperatives, the number of financial institutions continues to vary across countries. Countries with a high number of credit institutions like the US, Germany, France, and Italy can be found next to countries with relatively few like Australia, Canada, and the UK. A third group is situated somewhere between the two extremes and includes Spain, Japan, Switzerland, and Belgium. While some of the differences can be

Figure 2-7 Largest Five Banks' Assets as a Percentage of all Banks' Assets



Note: AUST=Australia, CA=Canada, FR=France, GE=Germany, IT=Italy, NL=Netherlands, SP=Spain, SE=Sweden, SW=Switzerland, UK=United Kingdom, US=USA. CA, GE, UK no data for 1980 available. *Source*: Bank for International Settlements, International Banking and Financial Developments (August 1999) for 1980, 1990; Bank for International Settlements, 74th Annual Report (2003) for 1997, 2003.

explained by the size of the domestic economy (i.e. large economies tend to have more banks than small ones), this may only explain some of the variation since substantial differences in the total number of credit institutions also exist for similar-sized economies (e.g. Germany and Japan, Spain and Italy).

As Figure 2-7 indicates, the share of bank assets held by the five largest credit institutions increased as the number of institutions was drastically reduced in most countries. Belgium, Sweden and, most notably, the US experienced the largest proportional increase in market concentration. Yet, by international standards concentration levels remain low in Germany and the US.[3] By contrast, in countries like Canada, Sweden and Switzerland the largest five credit institutions have reached dominating positions as their combined assets correspond to about 90% of those of the domestic banking industry. Consequently, the potential for future M&A is greatly restricted, not least by competi-

[3] While market share data are a rather crude measure of concentration, they tend to be readily available and comparable across countries and years. More refined measures of concentration such as a Herfindahl-index (=sum of squares of banks' market shares, based on total assets or sales) may be more appropriate to measure market concentration within countries, but the underlying data are not as readily available for non-listed firms.

tion policy. Finally, a third group of countries revolves around Austria, France, and the UK where concentration levels have remained roughly constant or even fell during the nineties. Collectively, it is evident that all countries, apart from the UK and France, experienced quite substantial increases in market concentration levels over recent years. Some countries, however, have started with already high levels in 1980 (e.g. Australia, Canada, and Sweden). This hints at different practices across regulatory regimes as regards concentration in the banking sector before consolidation had led to more concentrated market structures.

2.5 Concluding Remarks

This chapter outlines that domestic in-market mergers are the most common type of consolidation in the financial services industry, and that banks are spearheading the consolidation of the financial services sector across large part of the globe. While the M&A activities in the banking industry have been a worldwide phenomenon, the consolidation of industry assets has been particularly pronounced in the US, and more recently, in Europe.

There are two general issues with the data presented in this chapter. First, macro data cannot adequately stress differences in banking sectors between individual countries. For example, consolidation in the UK was primarily driven by commercial banks in the private sector, whereas much of the bank M&A activity in Germany was due to small public-sector institutions preparing for changes in EU law which affected their funding strategy after July 2005. Second, the descriptive statistics used in this chapter have been obtained from a multitude of different sources ranging from official government figures, commercial databases, to academic publications. Data from sources as diverse as this are difficult to compare across indicators, countries and (though to a lesser

extent) over time. In order to remedy issues arising from a purely quantitative analysis, Section 4 offers a discussion of a more qualitative nature and describes how deregulation has transformed the banking industry of the US, UK, Germany and Japan over the last two decades.

3
Research Methods & Data

3.1 Introduction

This chapter outlines different research methods used in the analysis of bank merger performance and introduces a sample of bank merger activity that will be analysed in subsequent empirical chapters. From the discussion below, it will become obvious that merger announcement returns as well as the financial (accounting) performance following bank mergers are particularly suitable to gauge the performance effects of bank M&A.

This chapter is organised as follows: The next section introduces four performance metrics that have been frequently employed in the applied literature and discusses their merits and disadvantages in the context of different research settings. Finally, this chapter also outlines how the dataset of bank mergers was compiled and filtered.

3.2 The Key Merger Performance Measures

Acquisitions are one of the most-widely studied types of corporate strategy. This overview outlines how the performance implications of bank M&A can be measured and under what conditions reliable inferences can be drawn about the extent to which per-

formance changes are linked to a merger. The applied literature employs four different metrics of acquisition performance:

(i) market reaction data

(ii) financial performance

(iii) divestiture data, and

(iv) subjective measures of performance

The discussion below reveals that each metric captures different types of performance and that there are certain benefits and drawbacks associated with the use of any of the measures listed above. As a result, this thesis employs a range of metrics to study bank merger performance. Chapter 5 examines the market reaction to M&A, Chapter 6 analyses corporate performance, and both the market reaction and corporate performance are studied in Chapter 7. It could, therefore, be argued that the present thesis analyses both short-term, expected performance (on the basis of market reaction data) and data of a more long-term nature that reflect realised performance. The use of divestiture data and subjective measures, on the other hand, has fundamental flaws and will, thus, not be employed in this thesis. While some divestitures are clearly performance-related, post-acquisition asset sales occur for other reasons as well, making divestiture rates an unreliable indicator of acquisition failure. Further, subjective measures, which are collected from questionnaires or interviews with decision-makers working for one of the merger parties, can be ambiguous to interpret and place undue emphasis on the skills of the researcher to collect this information.

3.2.1 Market Reaction Data

Event studies are based on the proposition that, in an efficient market, the wealth effects accruing to shareholders represent an unbiased estimate of the net present value of

future synergies generated by a merger (Lubatkin, 1983). For each sample security *i*, let e_{it} be the component of returns that is unexpected at point *t* given a particular model of 'normal' security price behaviour and the modifying conditions X_t.

$$e_{it} = R_{it} - E[R_{it} \mid X_t] \tag{3.1}$$

There are two main types of event-study methodologies that differ with respect to the exact estimation procedure employed to capture normal security performance (see for example, Brown and Warner, 1980; Campbell et al., 1997).

(1) Mean-adjusted return models predict a constant return $\bar{K}_i$ (e.g. mean daily stock returns before the event period) for every security *i* and calculate abnormal returns as the differences between the observed returns and predicted security price behaviour: $\hat{e}_{it} = R_{it} - \bar{K}_i$.

(2) The market-adjusted return model assumes a linear relationship between the expected return on any security *i* and the return on a market portfolio. Let R_{it} and R_{mt} denote the returns on security *i* and a market portfolio during period *t*, respectively: $\hat{e}_{it} = AR_{it} = R_{it} - \hat{a}_i - \hat{\beta}_i R_{mt}$. Accordingly, the abnormal returns, $\hat{e}_{it}$, are the prediction errors of the market model. These residuals are referred to as abnormal returns (AR_{it}) throughout this text and are typically assumed to have the usual Gaussian properties ($E[\hat{e}_{it}] = 0 ; Var[\hat{e}_{it}] = \sigma^2_{\hat{e}_i}$).

The market model has gained a much wider popularity in the applied literature than the constant returns model. This is mainly because the former's specification accounts for the variation in abnormal returns that is due to variation in the returns on the

market portfolio which reduces the variation in abnormal returns (Campbell and Wasley, 1993).

Standardised Test Statistics

In order to make reliable inferences about the impact of any event on the distribution of stock returns, well-specified test statistics are needed. Test statistics compare detected abnormal returns to their assumed distribution under the null hypothesis of zero abnormal returns. Patel (1976) and Dodd and Warner (1983) standardise each excess return by the square root of its estimation period return variance to ensure a uniform variance of the abnormal returns. This prevents securities with large variances from dominating the test. Further, by using the non-event window return variance, any issues with serial correlation between the AR and their corresponding variance terms during the event window are prevented. Let SAR_{it} denote standardised AR and $\hat{\sigma}_i$ the estimated AR variance obtained from market model regressions over the non-event period for security *i*.

$$SAR_{it} = AR_{it} \Big/ \hat{\sigma}_i \sqrt{1 + \frac{1}{L_i} + \frac{(R_{mt} - \bar{R}_m)^2}{\sum_{m=1}^{L_i} (R_{mt} - \bar{R}_m)^2}} \tag{3.2}$$

R_{mt} is the return to the market index and $\bar{R}_m$ the average market return over the L_i days included in the estimation period. For each security *i*, the SAR_{it} are aggregated across the time of the event window (i.e. d_{2i}-d_{1i}+1 days) to yield standardised cumulative abnormal returns ($SCAR$)$_i$,

$$SCAR_i = \sum_{t=d_{1i}}^{t=d_{2i}} SAR_{it} \frac{1}{\sqrt{d_{2i} - d_{1i} + 1}}. \tag{3.3}$$

To test for the significance of the average standardised cumulative abnormal returns, $\overline{SCAR_{it}}$, the following test statistic is computed for a sample of *n* securities:

$$z_1 = \overline{SCAR_i}\sqrt{n}\,, \tag{3.4}$$

$$\overline{SCAR_i} = \frac{1}{n}\sum_{i=1}^{n} SCAR_i\,. \tag{3.5}$$

Under the assumptions that $SCAR_{it}$ are independent across securities and that the expected value of SAR_{it} is zero, the test statistic z_1 will be distributed unit normal. While Brown and Warner (1985) argue that standardised event-study tests are powerful and well-specified, corporate events may cause an increase in the variance of security returns that leaves these tests misspecified if changes in the variability of returns are indistinguishable from abnormal security price performance (see for example, Beaver, 1968). Boehmer et al. (1991) introduce a test statistic that is similar to the standardisation procedure of Patell (1976) but, unlike Patell's approach, their test statistic uses variance information from both the event period and the estimation period. Crucially, there is only a small loss in power associated with using this method should there be no event-induced changes in variance. Thus, abnormal returns are standardised as in (3.2) and the standard deviation of the standardised abnormal returns are represented by:

$$\sigma_{SAR_t} = \sqrt{\sum_{i=1}^{n}\left(SAR_{it} - \sum_{i=1}^{n} SAR_{it}/n\right)^2 \Big/ n(n-1)}\,. \tag{3.6}$$

For multi-day events (T=event window duration), the test statistic is as follows:

$$z_2 = \frac{\frac{1}{T}\sum_{t=1}^{T}\left(\frac{1}{n}\Sigma_{i=1}^{n} SAR_{it}\right)}{\sum_{t=1}^{T}\sigma_{SAR_t}/\sqrt{n}}. \tag{3.7}$$

Non-Parametric Tests

The distribution of daily price returns (and, thus, the distribution of daily excess returns) deviates from the unit normal distribution assumed by parametric test statistics. In fact, daily excess returns are skewed to the right (Cowan and Sergeant, 1996; Corrado and

Zivney, 1992; Brown and Warner, 1985), which leaves parametric tests poorly specified as they normally assume that the expected probabilities of detecting positive and negative abnormal returns are both 0.5.

Corrado (1989) introduced the following specification for a rank test: The time-series of security *i*'s excess returns is transformed into their corresponding ranks (i.e. $k_{it} = \text{rank}(AR_{it})$, $AR_{is} > AR_{it} \Rightarrow k_{is} > k_{it}$) during the estimation period (L_i) and the event window (T_i). For $t=0$, the rank statistic $\overline{k}_0$ is the ratio of the mean deviation of the securities' ranks to the estimated standard deviation of the sample mean abnormal rank.

$$\overline{k}_0 = \frac{1}{n}\sum_{i=1}^{n} k_{i0} - \overline{k} \Big/ s(\overline{k}) \tag{3.8}$$

By construction, the expected rank under the null hypothesis is 0.5 plus half the number of security *i*'s non-missing ranks during the estimation period and the event window (i.e. $\overline{k}_i = 0.5 + (L_i + T_i)/2$). The standard deviation of the portfolio mean abnormal rank is estimated over the entire sample period (L_i+T_i),

$$s(\overline{k}) = \sqrt{\frac{1}{L_i + T_i}\sum_{t=1}^{L+T}\left(\frac{1}{n}\sum_{i=1}^{n}(k_{it} - \overline{k}_i)\right)^2}\,. \tag{3.9}$$

In the absence of cross-sectional correlation, the rank statistic is distributed unit normal. For multi-day event studies, if $\overline{k}_t$ denotes the average abnormal rank on day *t*, the rank statistic takes the following form:

$$z_3 = \sum_{t=1}^{T}\overline{k}_t \Big/ \sqrt{\sum_{t=1}^{T} s^2(\overline{k})} \Leftrightarrow \sum_{t=1}^{T}\overline{k}_t \Big/ s(\overline{k})\sqrt{T}\,. \tag{3.10}$$

Other non-parametric test statistics include the generalised sign test which examines whether the distribution of securities with positive CAR deviates from the number expected under the null hypothesis of no abnormal performance (see for example,

Cowan and Sergeant, 1996). However, Corrado and Zivney (1992) find that the rank test outperforms the sign test in detecting small levels of abnormal performance (less than ± 1% of abnormal performance). By the same token, Campbell and Wasley (1993) find the rank statistic is very robust across numerous event conditions.

Problems Associated with Event Studies

A number of drawbacks are associated with employing shareholder returns as a measure of post-acquisition performance.

(1) The CARs methodology relies on complete share price data. Conclusions about the performance of the firms involved in a merger can, thus, only be drawn for large publicly-listed companies. It is conceivable, however, that the results obtained from event studies do not hold for non-listed companies and, hence, may not be representative for all firms (see Rhoades, 1998).

(2) Despite the wide application of event study methods, it is important to point out that this method relies on asset prices to incorporate information in a timely and efficient manner in order to make inferences about merger outcomes on the basis of shareholder returns. In many cases, inferences about merger outcomes are drawn before acquisition benefits have actually materialised. These issues are further exacerbated in the face of information asymmetries between bidding managers and investors (who are essentially outsiders to a transaction). Hence, it may be questionable whether the market response to M&A always provides an accurate and unbiased estimate of the value-creating potential of acquisitions (Healy et al., 1997).

(3) If longer time periods are examined, other drawbacks emerge that lead Lyon et al. (1999) to refer to event studies with examination periods spanning over many months as 'treacherous'. Generally, the longer the event window, the

more likely it is that events other than the merger generate abnormal returns to shareholders. Fama (1998) reports the results of long-term event studies display anomalies and are often not robust. Further, Lyon et al. (1999) show that mis-specification is particularly common in non-random, single-industry samples (such as the one sought in this thesis). Also, there are issues with the use of a single-index model in multi-country event studies involving different stock markets that, inter alia, differ in terms of their sensitivity to news (see Park, 2004).

(4) Finally, even for short event windows, the duration of the event window is, essentially, arbitrary. The examination period around the announcement date of an acquisition varies across different studies. Outside narrow event window specifications of a few days surrounding the merger announcement, reported results are sensitive to the particular time period under examination.

3.2.2 Financial Performance

Measuring a firm's (long-term) financial performance following a merger or an acquisition is based on the proposition that by comparing the accounting data of the companies involved in an acquisition, before and after the transaction, gives an accurate measure of the synergies that are created when the assets of two firms are combined. Unlike the announcement returns methodology, which in many cases makes inferences about investors' expectations as to the various types of benefits accruing from a merger, operating performance measures capture the realised economic benefits of a merger as they materialise over a reference period of up to several years. Abnormal operating performance of firm i in year t (AP_{it}) is defined as realised performance minus expected performance.

$$AP_{it} = performance_{it} - E(performance_{it}) \tag{3.11}$$

When assessing post-acquisition performance, researchers typically calculate returns either on the book value of assets (Zollo and Singh, 2004; Houston et al., 2001; Ramaswamy, 1997; DeLong, 2003b; Akhavein et al., 1997), income or cost. A growing number of studies employ cash flow data rather than profits in order to prevent that either the choice of merger finance or accounting method may impact results (Healy et al., 1992; Ghosh, 2001; Healy et al., 1997).

Meaningful inferences about performance changes associated with M&A may only be made if corporate performance is assessed against the correct benchmark. Two types of benchmarks are suitable for such a comparison.

(1) Financial performance data may be measured against mean values of non-merging banks domiciled in the same region or country to yield market-adjusted returns. This has been the most commonly used method, arguably because of its intuitive appeal (e.g., Cornett and Tehranian, 1992; Pilloff, 1996; DeLong, 2003b; DeLong and DeYoung, 2007).

(2) A portfolio of firms that have been individually-matched on the basis of size and/or pre-merger performance may also be used as a benchmark. While the use of performance-adjusted returns is relatively new to the bank merger literature, this method of determining event-induced changes in performance enjoys a somewhat wider popularity in the corporate finance literature (e.g., Barber and Lyon, 1997; Loughran and Ritter, 1997). The method is based on the observation that, while bidding firms tend to outperform the general market before a merger, industry-adjusted performance reverts to zero in the years following a deal. Many studies mistakenly ascribe this mean reversion to M&A having negative performance effects (Morck et al., 1990; Ghosh, 2001). Knapp et al. (2006) find evidence of a mean reversion trend in industry-adjusted returns for a sam-

ple of bank mergers. The authors report performance losses when measuring post-merger profitability against average industry values and profitability increases after correcting for a reverting mean in the performance data.

Testing Procedures

To test the null hypothesis of no abnormal performance for a sample of n observations, a simple t-statistic is computed,

$$t = \frac{\overline{AP}}{\sigma(AP_{it})/\sqrt{n}}, \tag{3.12}$$

where $\overline{AP}$ is the sample average and $\sigma(AP_{it})$ the cross-sectional standard deviation of abnormal performance for a sample of n companies. This statistic follows a student t-distribution which converges to N(0,1) as n increases provided that abnormal performance measures are independent and identically distributed.

However, since accounting ratios are often skewed (Healy et al., 1992; Loughran and Ritter, 1997; Barber and Lyon, 1996), Wilcoxon signed-rank tests (T^*) which avoid the normality assumption in (3.12) are also calculated. This statistic is based on the rank order (i.e. magnitude) of differences between pre- and post-acquisition performance, rather than on the actual value of performance differences. To test the null hypothesis that median abnormal performance is equal to zero, the absolute values of $\overline{AP}$ for all i during t are ranked. D indicates the rank sum of the positive values of $\overline{AP}$.

$$\begin{aligned} T^* &= \frac{D - E(D)}{\sigma_D} \\ E(D) &= \frac{n(n+1)}{4} \\ \sigma_D^2 &= \frac{n(n+1)(2n+1)}{24} \end{aligned} \tag{3.13}$$

Drawbacks Associated with Profitability Measures

The two most severe drawbacks associated with the operating performance metric are as follows.

(1) Researchers studying the accounting effects of a merger have to take great care when choosing a performance metric. Many standard profitability measures (e.g. ROE, ROA) are influenced by both the method of takeover accounting (i.e. pooling *versus* purchase) and the financing of a merger (i.e. debt or equity). Pooling of interests accounting, whereby any premium paid for the target's equity is subtracted from the acquiring firm's equity, leads to higher post-acquisition profitability than purchase accounting that involves asset mark-ups following a merger. As regards merger finance, debt-financed acquisitions lead to lower net income resulting from increases in interest expenses (Healy et al., 1992).

(2) When determining the length of the event window, there is a trade-off between allowing the reference period to be long enough for merger-related synergies to materialise and maintaining a clean dataset which remains unaffected by changes in corporate strategy which may also impact firm profitability (such as subsequent mergers). By design, the accounting returns to M&A are estimated over a period of several years and the risk that confounding events drive the reported results is, thus, disproportionately high.

3.2.3 Other Performance Measures

For reasons of completeness, two more measures of acquisition performance—divestiture data and subjective measures of performance—are discussed here. However, due to the drawbacks associated with them, neither of these measures will be employed in this thesis.

Divestiture Data

Based on the rationale that an acquisition is ultimately failed if the bidder decides to sell off the target's assets completely, a small number of M&A studies have relied on divestiture data as a measure of post-acquisition performance. These studies define acquisition success in terms of whether the acquisition is retained (success) or divested (failure), given that management's dissatisfaction with the performance of an acquired firm will, sooner or later, prompt a sell-off.

Previous studies find divestiture rates ranging between 23.4%. (Montgomery and Wilson, 1986) and 50% (Porter, 1987). However, the basic issue with divestiture data is that post-merger asset sales may be motivated by reasons other than acquisition failure. Management, for instance, may decide to sell off an acquisition target to realise cash-flows following the successful restructuring of the acquired company.

Kaplan and Weisbach (1992) and Bergh (1997) report that a large number of divestitures are not performance-related. Bergh (1997) finds that the average divested unit has a net positive operating cash-flow in the years preceding divestment. Similarly, for a sample of 271 large acquisitions completed between 1971 – 1982, Kaplan and Weisbach (1992) find that only one-third of divested acquisitions can be classified as unsuccessful. The authors survey the business press coverage of each divestiture and find the two most commonly-cited reasons for divestitures are changes in corporate strategy and raising funds for further acquisitions. Capron et al. (2001) view acquisitions as a vehicle to achieve value-creating changes in a firm's portfolio of resources. Consequently, if mergers are viewed as 'a resource reconfiguration process' (see for example, Barney et al., 2001), they may create conflicts and redundancies with existing resources and prompt a sell-off of excess physical assets.

Subjective Measures

A considerable number of M&A performance studies—many of them in the management literature—rely on managers to evaluate their success in achieving various post-acquisition targets (see for example, Datta et al. 1992; Capron & Pistre, 2002). These subjective performance data tend to be collected either through interviews (e.g., Very and Schweiger, 2001), or questionnaires (e.g., Capron, 1999) sent to managers asking them to assess how well a merger has achieved a number of specified targets. Alternatively, to avoid the possibility that managers are subject to an 'upward bias' (Lubatkin and Shrieves, 1986) when assessing their own performance, security market analysts (e.g. Hayward, 2002) or journalists (e.g. Hitt et al., 1998) are surveyed instead. Generally, the resulting data permit a fine-grained analysis of the synergetic benefits of a merger, especially with regards to more complex processes such as due the diligence process or post-merger integration. Also, qualitative data can measure management's success in attaining multiple motives (Brouthers et al., 1998). However, there are a number of serious drawbacks associated with subjective metrics.

(1) Even though subjective measures of performance are applicable to the widest possible range of companies—that is, sample companies do not have to be listed or adhere to a particular method of accounting—they rely on participants' responding, which may introduce a non-response bias.

(2) By the same token, it is difficult for researchers to be able to talk to senior managers, i.e. those individuals that make key decisions. In reality, most interviewees are a compromise between those decision-makers directly involved in the acquisition and employees available for an interview.

(3) How reliable is the information source? If insiders (i.e. target or bidding firm management) are subject to upward bias, relying on certain groups of 'outsid-

ers' such as analysts or journalists instead, raises questions about the accuracy of the collected information. Lubatkin and Shrieves (1986) argue that, due to frequent and personal interactions between management, on the one hand, and journalists and security market analysts, on the other, any bias on the side of management may easily be transferred to outsiders and undermine the accuracy of their judgement.

(4) Finally, the skills of the interviewer in finding the relevant information and assessing their reliability plays a disproportionately large role when collecting qualitative data.

3.3 Data Collection: Bank Merger Sample

The dataset of bank M&A that will be analysed in various empirical chapters of this thesis is obtained from Thomson Financial.[4] Thomson Financial extract information on worldwide M&A transactions from hundreds of English and foreign language news sources as well as from company filings and M&A legal specialists. Fuller et al. (2002) lend support to the quality of the information supplied by Thomson Financial. The authors find in a random sample of 500 acquisitions that the announcement date supplied by Thomson Financial is correct in 93% of cases and that the remainder is correct within a time span of ±2 days.

The sample is subject to the following criteria.

(i) Both acquirers and targets are listed in the US or Europe (i.e. EU-15 countries plus Switzerland).

[4] The M&A component of Thomson Financial is sometimes also referred to as SDC Platinum in the applied literature.

(ii) Bank mergers are announced between 01.01.1992 and 31.12.2004 and completed as of 31 May 2005. Consequently, deals that were cancelled after their announcement or whose status Thomson Financial identifies as still pending by that date are excluded.

(iii) Acquirers are commercial banks, bank holding companies and credit institutions. Targets may also be insurance companies (life and non-life), mortgage bankers, and security brokers. This means that the performance effects of financial consolidation across different financial product markets may also be assessed.

(iv) While the terms merger and acquisition are used interchangeably throughout this study, only majority acquisitions which result in the acquirer having a stake of at least 50% in a target institution are included in the sample.

(v) Finally, for reasons of data availability, the sample is restricted to large transactions with an underlying deal value of at least $100 million in constant 2004 $.

3.3.1 Data Filtering

After collecting the dataset, the sample is filtered to identify erroneous observations. The sample is reduced after omitting cases for any of the following reasons. (Additional filters will be applied in the empirical chapters.)

- The target is a failing institution (data item: FBNK=yes). Failing targets suggest that the transaction is involuntary. (One deal was identified as a involving a failed target.)

- The announcement date supplied by Thomson Financial is inaccurate. Following Moeller and Schlingemann (2005), changes in the trading volumes of the

acquirer on the announcement date are analysed. If market-adjusted volumes increase significantly on t=0, this is interpreted as evidence of an accurately reported announcement date. (In the case of two deals, the accuracy of the announcement date could not be verified.)

3.3.2 Sample Description

The distribution of sample deals over time is given by Table 3-1. It is evident that a majority of the merger activity took place between 1997 and 2000 and that M&A activities resurged in 2004. Incidentally, both periods were also characterised by high M&A volumes in the non-financial sector (see Figure 1-1, pg. 2). Table 3-2 reports the geographical distribution of sample transactions. The sample is clearly dominated by US deals with 72% of all acquirers and 71% of all targets domiciled in the US. However, the dominance of US merger activity does not permit any conclusions as to the general pace of bank consolidation in Europe. As will be discussed in Chapter 4 in more detail, the consolidation of bank assets in countries like Germany, France and Italy over the period of this study largely involves non-listed public sector and cooperative institutions. These institutions face increasing pressures to consolidate as a result of declines in government ownership, the phasing out of public guarantees of their liabilities (CEPR, 2005), and growing monetary integration across most parts of the EU (Allen and Song, 2005; Goddard et al., 2007).[5]

Table 3-3 presents descriptive statistics for the subsamples of US and European bank acquirers. While this is a preliminary comparison between the European and US cohort (further analysis will follow in later empirical chapters), the statistics presented point to some differences in the nature and scale of M&A activities between both geo-

[5] For a general overview of the main forces which have driven consolidation in the EU, see CEPR (2005). Berger et al. (1999) provide an extensive discussion of similar issues for the US market.

graphic regions. The data presented indicate that average (median) deal values in Europe are larger than in the US (differences statistically significant at the 1% level).

The relatively smaller US deals are the legacy of regulatory restrictions on the geographic scope and product mix of local banks that had not been completely lifted before the mid-nineties (Group of Ten, 2001). Further, European acquirers are larger than their US counterparts (both in terms of assets and deposits; *t*-statistic and Wilcoxon rank sum test significant at 1%). Consistent with the extant literature (James and Weir, 1987; Jensen and Ruback, 1983; Becher, 2000), acquiring banks in both Europe and the US are larger than the targets they acquire. The variable relative size measures target assets in terms of the acquiring bank's assets. The coefficient is 0.3 in the US and 0.31 in Europe (differences are not statistically significant).

Further, cash finance (i.e. the percentage of deals that is financed by cash, rather than by a mix of cash and equity) is significantly higher in Europe (85%) than in the US (65%). This is consistent with Rossi and Volpin (2004) who observe that in countries with less sophisticated rights for minority shareholders (i.e. most European economies), there is a preference for all-cash bids. Further, the share of cross-border deals is larger in Europe reflecting already high market concentration levels in many European economies where further deals are likely to raise anti-trust issues and, cross-border consolidation may provide a viable alternative for further growth. Finally, deal values as a share of a target's net sales are higher in the US than in Europe (difference between means are significant at 5% and between median values significant at 1%). This is suggestive of US acquirers either having greater confidence to add value from an acquisition in the post-merger period or, alternatively, overpayment for targets and, thus, poor judgement of US bidders.

Table 3-1 Total Number and Value of Sample Deals per Year

Year	Number	Value ($ mil)	% Value
1992	22	13,511.50	1.2
1993	23	15,703.20	1.3
1994	25	12,056.00	1.1
1995	36	60,776.90	5.6
1996	18	13,501.40	1.2
1997	55	136,386.30	12.6
1998	44	242,007.60	22.3
1999	52	162,526.80	15.0
2000	41	132,168.80	12.2
2001	36	66,823.20	6.2
2002	19	43,851.40	4.0
2003	26	61,633.10	5.7
2004	22	123,136.10	11.4
Total	**414**	**1,084,082.30**	**100**

Source: Thomson Financial

Table 3-2 Frequencies of Sampled Bank M&A by Country

Acquirer Nation	Target Nation																	
	AU	BE	DE	FI	FR	GE	GR	IR	IT	LU	NL	PO	SP	SE	SW	UK	US	Total
AU	*3*																	3
BE		*4*			1						4						1	10
DE			*3*											1				4
FI				*1*														1
FR		1			*14*		1										1	17
GE	1					*4*										1	1	7
GR							*8*											8
IR								*1*										1
IT						1			*25*								1	27
LU					1													1
NL		1				1											4	6
PO												*3*						3
SP												1	*4*			1		6
SE			1	2										*3*				6
SW															*3*		1	4
UK					2			2		1						*7*	2	14
US																1	*295*	296
Total	**4**	**6**	**4**	**3**	**18**	**6**	**9**	**3**	**25**	**1**	**4**	**4**	**4**	**4**	**3**	**10**	**306**	**414**

Note: AU=Austria, BE=Belgium, DE=Denmark, FI=Finland, FR=France, GE=Germany, GR=Greece, IR=Ireland, IT=Italy, LU=Luxemburg, NL=Netherlands, PO=Portugal, SP=Spain, SE=Sweden, SW=Switzerland, UK=United Kingdom, US=USA. Domestic M&A deals are in italics.

Table 3-3 Selected Sample Descriptive Statistics for the US and Europe

The table presents sample descriptive statistics for US and European banking firms that have acted as acquirers in bank M&A valued at more than mill USD100 in constant 2004 USD between 1996 and 2004. The data are from Thomson Financial. Differences in means between the US and European cohort are based on two-sample *t*-tests and differences in medians on Wilcoxon rank-sum tests.

	US					Europe					Δ: Europe – US	
	N	Mean	Median	Min	Max	N	Mean	Median	Min	Max	Mean	Median
Deal Value ($ mill)	296	2195.35	268.72	100.42	72558.18	118	3651.38	1221.37	110.15	38524.64	1456.03**	952.65***
% of shares acquired	295	98.64	100	15	100	114	74.09	89.5	7.4	100	-24.55***	-10.5***
% financed with cash	187	65.21	51.96	1.67	100	74	84.52	100	0.3	100	19.31***	48.04***
Acquirer Total Assets ($ mill)	252	46668.45	15232.5	1173.8	252949	75	227465.6	140796.3	4576.7	610079.6	180797.1***	125563.8***
Target Total Assets ($ mill)	290	12476.32	1569.48	271.57	330414	109	59337.43	20587.1	275.7	344991.4	46861.11***	19017.62***
Acquirer Deposits ($ mill)	172	32436.72	8466.35	893.51	232338	61	96095.86	44763.29	2920.64	449835.2	63659.14***	36296.94***
Target Deposits ($ mill)	241	4255.38	1148.87	359.56	32191	84	25627.37	11405.84	346.74	159722.9	21371.99***	10256.97***
Acquirer Net Interest Income ($ mill)	242	546.86	146.22	10.17	3227	75	1238.34	766.33	16.2	4318.85	691.48**	620.11***
Target Net Interest Income ($ mill)	179	199.03	37.09	-7368	8149	101	167854.3	3519	-30140	4423000	167655.2***	3481.91***
Deal Value / Target Net Sales	287	2.57	2.34	0.56	12.22	111	1.98	1.35	0.26	8.14	-0.59**	-0.99***
Cross-border Dummy (1=yes)	296	0.01	0	0	1	118	0.3	0	0	1	0.29***	0***
Rel. Size (T.Assets / A.Assets)	246	0.3	0.14	0.01	1.37	69	0.31	0.19	0	0.88	0.01	0.05

Source: Thomson Financial. * (**,***) denotes significance at the 10% (5%, 1%) level.

3.4 Other Data Sources

In addition to Thomson Financial, data for this thesis were obtained from a number of other sources. Since these data sources are rather specific to the analysis performed in individual chapters, they are merely listed below. A more detailed explanation of the data collected, including a discussion of the filtering technique employed to verify the accuracy of the data, can be found in the chapters that use these data.

- *Worldscope* covers financial statement data of approximately 40,000 companies (representing 95% of global market capitalisation). The source was accessed via the Datastream Advance intranet.

- *Bankscope.* A database containing data from the financial statements of 25,000 banks (both public and private) by Fitch's Ratings. Some of the data items are specific to banks (e.g. capital adequacy or loan loss ratios) and are unavailable on Worldscope. The database was accessed via a CD-ROM (version 202.1).

- Other Sources: EDGAR Companies Filings Database, IMF – International Financial Statistics, Federal Deposit Insurance Corporation, Bank for International Settlements, European Central Bank Statistics (all available online.)

3.5 Tools of Analysis

For the statistical analyses, two software applications have been used. Univariate and multivariate analyses were completed using Stata (version 9). However, since files containing daily share price information over several years are rather large, data management tasks (e.g. transposing, sorting and matching data) could not be performed in a timely efficient manner using Stata. These tasks were performed with SAS (version 9.1).

3.6 Conclusions

This chapter introduces different methodologies to gauge post-merger performance changes. Based on the advantages and disadvantages associated with each of these metrics, two research methods are identified as particularly suitable to examine the performance effects of bank M&A: expected performance gains (i.e. merger announcement returns) and changes in realised accounting performance in the years following a merger.

Regarding the use of event studies, it is concluded that any testing procedure has to be chosen on the basis of the specific assumptions underlying it. However, non-parametric test specifications, which do not assume a unit normal distribution in the excess returns, appear to be most powerful when detecting abnormal security price performance. Further, in this thesis, the long-term performance following bank M&A is measured on the basis of accounting returns and not on the basis of event studies. This is because long-term event studies are prone to anomalies and serious misspecification, especially in single-industry studies. Also, there is a risk that differences in the sensitivity of stock markets to news may make the results of long-term event studies in multi-country settings difficult to interpret.

As for the use of accounting data, it is argued that a trend to mean reversion trend in performance data suggests that accounting performance should be adjusted by firms of similar pre-merger performance. This avoids a negative bias in merger performance studies that wrongly ascribes the reversion of above-industry performance of bidding banks to M&A having negative performance effects. Also, a number of other issues—including the impact of merger finance and merger accounting—should be considered when dealing with accounting data in order to make accurate inferences about whether changes in corporate performance are due to M&A.

Finally, this chapter also introduces the bank merger sample that forms the basis for analyses in Chapters 5, 6 and 7.

4
Bank Deregulation and Bank Consolidation in Selected Countries

4.1 Introduction[6]

Chapter 2 demonstrates an increase in both the number and value of bank M&A across developed countries. While the motivation behind M&A varies for individual deals, increases in M&A activity in various countries have largely been a response to changes in regulation. This chapter discusses the impact of bank deregulation on bank merger activity for selected countries in more detail. In doing so, this chapter also provides an overview of some banking sectors which will be useful when interpreting results in later chapters.

Since the extent to which individual banking sectors have consolidated to date varies considerably across countries (with important implications for the structure and efficiency of local credit institutions), it is difficult to draw generally applicable conclusions about deregulation and bank M&A from large cross-sections of countries (e.g., Barth et al., 2004). This chapter has less ambitious objectives. The chapter examines

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[6] A similar version of this chapter has been published as Hagendorff, J., Collins, M. & Keasey, K. (2007a), Bank Deregulation and Acquisition Activity: The Cases of the US, Italy and Germany. *Journal of Financial Regulation and Compliance.* Vol. 15, No .2, pg. 199-209.

four different banking systems in leading developed nations (US, Germany, Japan, and the UK) in order to highlight the different approaches that regulatory regimes have taken to facilitate the consolidation of national banking sectors. Additionally, specific policy recommendations that are conducive to further consolidation and more integrated financial systems are critically evaluated for each country.

Arguably, the US provides the clearest example of a causal link between relaxing regulatory restrictions and an unprecedented surge in M&A. Even so, bank supervisors could promote further merger activities, especially between large and medium-sized banks, by abolishing restrictions on the market share of retail banks and by adopting new capital regulations (i.e. Basel II). Germany, on the other hand, has maintained many legal obstacles to consolidation, especially consolidation between different types of institutions within its three-pillar banking structure (commercial, savings and cooperative banks). To date, there has been no attempt by regulators in Germany to privatise financial institutions in the public sector which still accounts for the majority of retail deposits. In Japan, regulators will increase competition in the banking sector through a gradual privatisation of Japan Post, but continue to maintain legal obstacles between banking and insurance. The UK market, which has been one of the earliest consolidators, is likely to experience further bank M&A amongst medium-sized institutions following the fall-out from the crisis caused by US subprime mortgage problems including the UK government bail-out of Northern Rock in 2007.

Further, this chapter highlights two themes that will be revisited in subsequent chapters of this thesis: First, the removal of demarcation lines between the activities that banks are permitted to engage in is an important driver behind the surge in bank merger activity, while differences between countries in the regulation of bank activities remain. Second, based on the importance of banks across countries, one may distinguish be-

tween different types of financial systems with far-reaching implications for the development of capital markets, the legal protection of different investor groups, and the functioning of the market for corporate control. Both these factors—bank activities and financial systems—may well have potential implications for the performance effects of bank M&A.

The next section briefly discusses the reasons bank regulators are promoting more consolidated banking sectors. This is followed by an analysis of the recent history of deregulation in the US, the UK, Japan, and Germany. For each of these banking sectors, there is a subsection containing suggestions on what regulators should do next in order to achieve an even more integrated banking sector. General conclusions are drawn in the final section.

4.2 Why Deregulate?

As a result of rising bank merger transaction values over much of the 1980s and 1990s, banking firms have grown larger and market an ever more diverse product range to clients in many more countries. While concerns have been raised about the risks that bigger and increasingly more complex financial institutions pose to financial stability and, in particular, to banks' ability to asses their own risk-taking (Bank for International Settlements, 2006), bank supervisors believe that consolidation provides net gains for a country's financial sector (Group of Ten, 2001). Part of the rationale is that M&A should let institutions exploit cost-based synergies (i.e. economies of scale and scope), leading to lower transaction costs, higher market liquidity and, ultimately, better risk diversification. Also, bank mergers can lead to the absorption of excess capacity in the banking system without the negative externalities associated with industry exits through bank failure (see for example, Wolgast, 2001; Berger et al., 1999).

More recently, the argument that bank ownership matters has also fuelled support among policymakers to promote further bank consolidation (CEPR, 2005). Specifically, supervisors have become concerned that more foreign bank ownership means a less stable credit supply when foreign banks react procyclicly to changes in their home country's economic environment possibly to the detriment of economic activity in the host country (de Haas and van Lelyveld, 2006; Molyneux and Seth, 1998).

4.3 Banking Structures and Financial Systems

The discussion in Chapter 2 demonstrated several similarities between G-10 countries in terms of the nature as well as the effects of financial consolidation. This is not surprising given that the countries surveyed exhibit highly-developed financial systems wherein banks play a vital role in the transfer of resources from surplus units (savers) to deficit units (borrowers) by economising on informational frictions between the two parties. While banks are the primary intermediators of credit risk in all developed economies, the exact extent to which capital markets compete with banks as dominant risk managers and providers of external finance varies by country (Levine, 2002; Allen and Santomero, 2001). It has become common in the literature to use a comparison between bank-oriented financial systems and market-oriented economies to conceptualise the degree of capital market development vis-à-vis the banking sector (Mallin et al., 2005).

(i) In a market-oriented financial system, banks face strong competition from debt and equity markets as well as from other non-bank financial intermediaries such as pension funds and mutual funds. Increased competition threatens the viability of many of the banks' traditional lines of business and, consequently, brings about a decline in traditional activities such as taking deposits and making out loans (Rajan and Zingales, 2003; Allen and Santomero, 1997).

(ii) Bank-based financial systems, by contrast, exhibit less developed financial markets which, in turn, permits banks to continue to act as the main intermediators of credit risk in these economies (Diamond, 1984; Collins and Baker, 2003, pp. 47-56). Among other things, this involves banks providing a much larger share of business and consumer finance than credit institutions chartered in financial systems with strong competition from non-bank intermediaries.

La Porta et al. (1998; 2000), Nenova (2003), Dyck and Zingales (2004), and others view cross-country difference in capital market development as a result of how well market investors are protected from expropriation by insiders. Roe (2005), by contrast, argues that the distinguishing feature between financial systems is not the general legal framework, but financial regulations and the political will to enact these regulations. However, the development of capital markets may well have repercussions for the frequency and performance of bank M&A. For instance, well-functioning capital markets that quickly and publicly convey information to investors are a prerequisite for efficient takeovers. This notion is embodied in the market for corporate control argument which posits that liquid capital markets minimise the private benefits of control by replacing management that fails to maximise shareholder value (Kini et al., 2004).

Figure 4-1 provides an organising framework for different types of banking systems. A 2×2 matrix organises the G-10 counties plus Spain and Switzerland according to the level of competition between banks, on the one hand, and competition between the banking sector and capital markets, on the other. Competition among banks is measured by the market share of the largest-five institutions (see Figure 2-7, pg. 31).[7] To

[7] Concentration ratios are more helpful to gauge competition than, say, the number of credit institutions, because they take into account both the size distribution of banks and the relative size of a geographically

distinguish between low and high market concentration levels, any country where the largest five credit institutions account for more than 50% of national banking assets is allocated to Groups II and III (and the remainder to Groups I and IV). Average stock market capitalisation to GDP ratios (taken from Barth et al., 2004) are used to proxy for the degree of competition that banks face as the major intermediators of credit risk from non-bank financial institutions—with higher ratios indicating more competition from capital markets. Countries with a stock market to GDP ratio above the cohort average during 1997 – 2001[8] are assigned to the 'high' category (Groups I and II), while countries exhibiting below-average competition from financial markets are in Groups III and IV. Consequently, the country matrix presented by Figure 4-1 distinguishes between four groups of financial systems:

(i) Low levels of market concentration with banks occupying a leading position in a country's financial system (i.e. Germany, Italy);

(ii) in Spain and the US, capital markets and banks compete at par, even though the market for banking services is relatively unconcentrated;

(iii) highly developed stock markets coupled with high levels of concentration in banking (e.g. UK, Australia);

(iv) Japan and France combine consolidated markets for banking services with bank-based economies.

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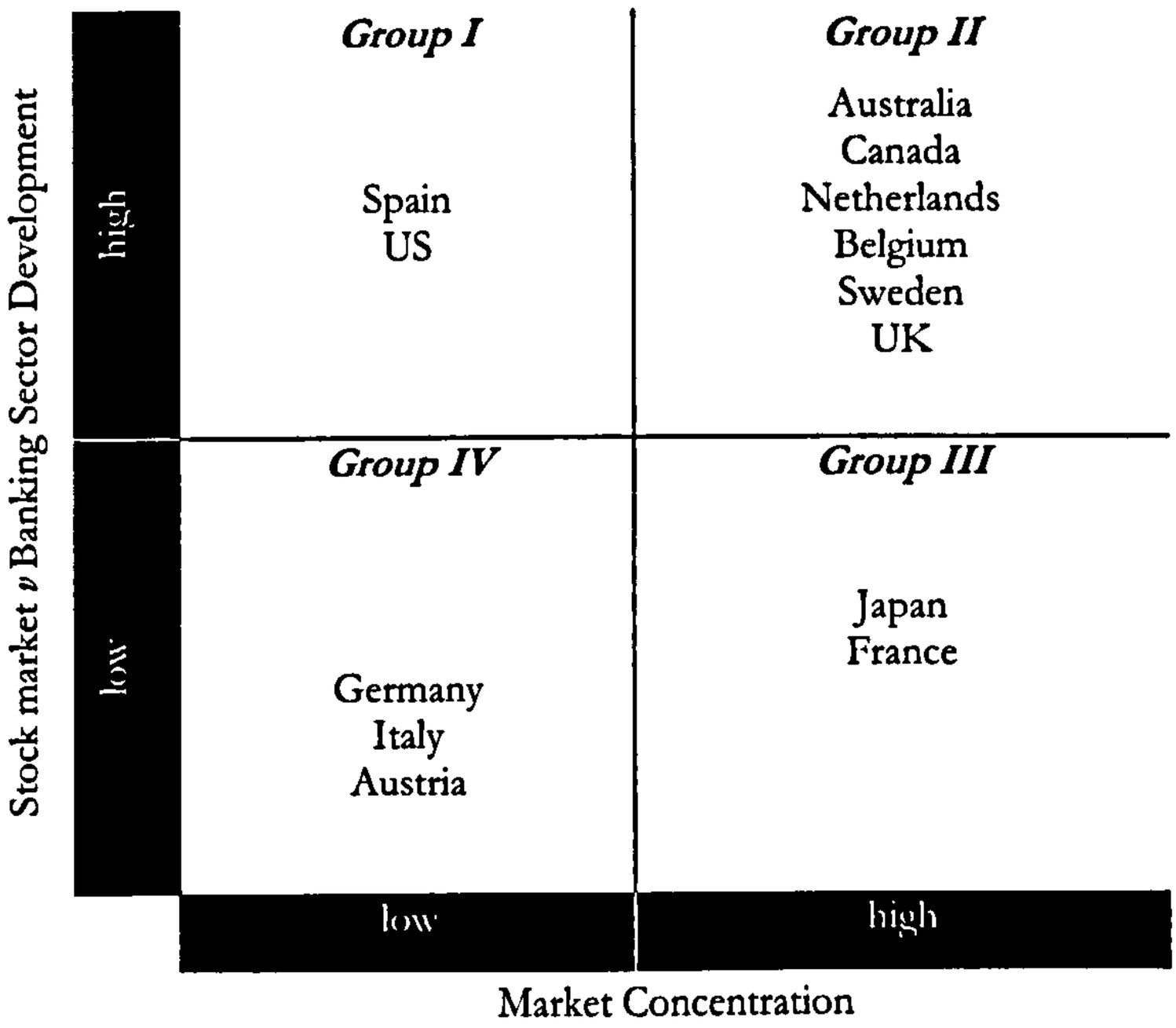
defined market. The link between market structures and competitive conditions is well-documented in the literature under the so-called structure-conduct-performance paradigm (see Bikker and Haaf, 2002).

[8] The cohort mean is 0.92. Values are averaged over a five-year period in order to ensure that short-term fluctuations in the combined value of a country's listed shares do not drive classifications.

Figure 4-1 Country Matrix: Financial Systems



The following section discusses how regulators have promoted M&A activities in different banking systems. The discussion below examines this issue for one country in each of the four groups of counties identified above: the US, the UK, Japan, and Germany.

4.4 The United States

4.4.1 Recent Deregulation and the Role of Bank Regulators

The US has witnessed the largest share of recent M&A activity in the financial sector.[9] Also, the US provides what perhaps is the clearest example of a causal link between the deregulation of the banking sector and financial consolidation. Both the unique structure of the US banking system that prevailed for much of the twentieth century and its

[9] The value share of US deals in terms of worldwide activity in the financial services industry stood at roughly 70% between 1993 and 1998 (Group of Ten, 2001, *Statistical Annex*).

subsequent restructuring—brought about by an unprecedented bank merger wave—can directly be attributed to regulatory changes in the financial sector.

The Banking Act of 1933, passed in the midst of the Great Depression, restricted both the product mix and the geographical scope of credit institutions. More specifically, the Glass Steagall sections (20, 32) of the Act imposed a strict separation of commercial and investment banking—with the only exception being municipal government debt that could still be underwritten by commercial banks. These measures were taken to prevent contagion between different types of institutions as well as to mitigate against conflicts of interest when banks hold equity in firms whose debts they underwrite.[10] Further, the Banking Act transferred branching regulations to the state level with the effect that each state had different degrees of restrictions. Legislation generally discouraged interstate branching and, in some cases, even *intra*state branching in order to limit concentration in the banking sector.

The introduction of bank holding companies (BHCs) in the sixties offered a loophole for most credit institutions to overcome the product and geographic specialisations that regulators had imposed on them. For instance, branches located in different states could be reorganised as individual bank subsidiaries under a 'multi-bank' holding company. While this led to the creation of a number of regional banks, nationwide branching did not emerge because of the considerable costs involved for banks which still had to capitalise each entity separately. Under the organisational framework of the

[10] The conflict of interest view posits that lenders and borrowers may collude when issuing corporate debt to the public. Banks may be inclined to back non-performing loans of problem borrowers by underwriting debt issues that capitalise on information asymmetries between them and the public regarding the creditworthiness of a borrower. However, the empirical evidence of this moral hazard problem is weak (Kroszner and Rajan, 1994).

Table 4-1 US Banking Structure, 2003

Categories	Number of Institutions	Number of Branches	Value of Accounts (USD billion)
Commercial banks	7,865	68,070	726.9
thrift institutions†	10,900	10,050	134.5
savings banks	1,970	n.a.	n.a.
savings and loan associations	396	n.a.	n.a.
total	18,765	78,120	861.4
branches of foreign banks	281	n.a.	10.7

Source: Bank for International Settlements, *Statistics on Payment and Settlement Systems in Selected Countries* (2004). Number of savings banks from FDIC, *Statistics on Banking* (2003). Number of savings and loan associations from OTS, *2003 Factbook* (2004). † Includes savings banks, savings and loan associations, cooperative and industrial banks, and credit unions.

BHC, banks could also diversify into credit card operations, mortgage lending, and due to a Supreme Court ruling in 1987, into a limited amount of securities activities.

The regulatory framework outlined above led to a banking system with an unusually high number of institutions operating in a market that is highly fragmented along regions and financial products (see Table 4-1). As this framework was increasingly abandoned by policymakers during the nineties, the US financial sector underwent a dramatic transformation that saw the emergence of both nationwide branching and universal banking. More specifically, the Riegle-Neal Interstate Banking and Efficiency Act of 1994 eliminated restrictions on interstate banking and the Gramm-Leach-Bliley Financial Modernisation Act of 1999 repealed the Glass-Steagall type restrictions and, thus, effectively introduced universal banking to the US. The next section outlines how bank regulators in the US are most likely to stimulate further M&A activities in the near future.

4.4.2 Bank Deregulation and Future M&A Activities

The US continues to have an unusually high number of credit institutions, with many thrift institutions[11] that are large in number, but small in terms of the combined value of their deposits. Consequently, the five largest banks owned less than 25% of the industry's assets in 2003. On the whole, banks with truly national branch structures are slow to emerge, even though two recent mega-mergers created institutions that, for the first time, are about to exceed limits set by regulators on the number of deposits held by any US bank.[12] Thus, retail banking in the US has remained what, essentially, is a local rather than a national industry—with high concentration ratios in the provision of banking services only in densely-populated areas (OECD, 2003).

In order to stimulate further M&A activity, regulators may consider lifting remaining restrictions on retail banking. In particular, the share of nationwide deposits that a single institution can hold (currently 10%) should be raised, while similar restrictions on the share of state deposits (currently 30%) may be kept intact. This would almost certainly spark further merger activities amongst large and very large commercial banks and make nationwide branching a reality. Should regulators not amend current deposit ceilings, it is almost inevitable that US top-tier institutions will start engaging in cross-border mergers to maintain the high growth rates of recent years. It is a peculiarity of the US system that almost all of its largest banks have little presence abroad.

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[11] Thrifts comprise institutions such as savings banks, savings and loan associations, cooperative and industrial banks, as well as credit unions.

[12] The mega-mergers are (i) the takeover of Bank One by JP Morgan Chase in 2004, which combined JP Morgan Chase's strengths in investment and retail banking in the northeast of the US with Bank One's commercial banking presence in the Midwest, and (ii) the Bank of America–Fleet Boston merger one year earlier.

Nonetheless, most bank US M&A activities in the near future will be targeted at US institutions and will, thus, mainly involve small commercial banks and thrift institutions. Any regulatory interference aimed at increasing M&A would have to be specifically targeted at these types of institutions. For example, in order to facilitate consolidation among small and medium-sized banks, the adoption of new minimum capital regulations in the US (i.e. Basel II) could play a crucial role. It is widely-expected that Basel II will result in somewhat lower regulatory capital requirements for large institutions that have the skills and resources to manage risk more effectively. If adopted, Basel II will act as an incentive for medium-sized banks to merge into larger institutions that are able to apply more advanced risk management and measurement techniques and free regulatory capital in the process.

4.5 United Kingdom

4.5.1 Historical Context

The UK market for banking services stands out from those of many other countries: First, retail banking is a fairly concentrated industry by international standards, with half of all private-sector deposits held in one of the three largest banks in 2004 (Reuters Business Insights, 2004, p. 54). Second, levels of market concentration fell slightly over the past twenty years owing to an influx of new entrants. Third, a majority of banking groups and building societies in the UK are controlled by foreign owners.

In the recent past, the UK implemented an array of regulatory changes with profound implications for the structure of the banking system in general and financial M&A in particular. Between 1970 and 1985, the amalgamation of Trustee Savings Banks (TSB) transformed a network of local savings banks with government-guaranteed liabilities into a large commercial bank. The TSB Group was privatised in 1985 and taken

over by Lloyds Bank in 1994. Similarly, the Building Societies Act of 1986 enabled the demutualisation of building societies and their subsequent transformation into listed banks. As a result, the number of building societies decreased from 190 in 1984 to 59 in 2006[13] and most of the ten largest building societies in 1986 had converted into bank plc status by the end of the year 2000. While converted building societies were protected from hostile takeovers for the first five years of their new legal status, they were soon actively involved in the merger activities of the UK's financial sector. As well as M&A amongst demutualised institutions, mergers between commercial banks and converted building societies became more frequent in the 1990s. This refers to both commercial banks acquiring former building societies (e.g. Cheltenham & Gloucester was taken over by Lloyds Bank in 1995) as well as building societies taking over long-established banks as the example of Halifax's acquisition of Bank of Scotland in 2001 shows. Table 4-2 indicates that building societies continue to be a key element of the UK banking structure since they account for approximately 15% of the total number of credit institutions and branches.

As well as the Building Societies Act, the Financial Services Act of 1986 was a major part of the financial sector reforms in the UK which are collectively known as 'Big Bang'. *Inter alia*, the Act eroded barriers of entry for banks into the brokerage business by abolishing hurdles to competition such as fixed commissions. The wave of mergers across different financial product markets that followed these changes led to many UK securities firms being acquired by local retail banks or foreign investors which desired a foothold in the London market.

[13] Building Societies Association, *www.bsa.org.uk*.

Table 4-2 UK Banking Structure, 2003

Categories	Number of Institutions	Number of Branches	Number of Accounts (thousands)	Value of Accounts (GBP billions)
Credit institutions	423	14,280†	127,995†	743.1
of which building societies	63	2,081	n.a.	n.a.
postal institution	1	16,500†	13,900†*	1.4†*
branches of foreign banks	186	n.a.	n.a.	n.a.

Source: Bank for International Settlements, Statistics on Payment and Settlement Systems in Selected Countries (2004). Figures for building societies from the FSA. †Estimated. *For the Post Office, National Savings Ordinary Accounts only. National Savings Bank facilities are available at UK post offices.

Owing to these recent regulatory changes, UK commercial banks can be characterised as 'restricted universal'. That is, while they may compete across traditional lines of business, banks are discouraged from owning commercial interests in non-banks. As in virtually all developed countries, the number of in-market bank mergers rose sharply during the nineties leading to a constant reshuffling of the UK's 'big four'—now HSBC, Royal Bank of Scotland, HBOS, and Barclays. By 2000, this had led to such high levels of market concentration in the provision of banking services to private customers and SMEs that the Treasury-sponsored Cruickshank Report (2000) found evidence of serious competition problems in these markets.

4.5.2 Future M&A and the Role of Regulators

While anti-trust concerns forestall large-scale bank mergers (for example, the Department of Trade and Industry vetoed a bid for Abbey National by Lloyds TSB in 2001), the UK is likely to play a prominent part in the pan-European and international consolidation of banks. For instance, Barclays, on the one hand, and a consortium of banks led by RBS, on the other, started a bidding war for Amsterdam-based ABN Amro in spring 2007. The group around RBS secured control over the Dutch lender later in 2007. By the same token, the mortgage lender Abbey, was acquired by Banco Santander, Spain's largest lender. Further, large UK banks are turning increasingly towards emerging markets (East Asia and Latin America in particular) to benefit from strong economic

growth and rising demand for banking services in these regions. HSBC has bought a number of minority stakes in Chinese, Indian and Latin American institutions and was rumoured to bid for Korea Exchange Bank in 2005.

Finally, there is scope for further consolidation among smaller banks in the UK. Pressures towards further merger activities may have intensified following a bank run on Northern Rock in 2007 that demonstrated the inadequacy of deposit insurance arrangements in the UK. At present, up to £35,000 per account and institution are guaranteed under the Financial Services Compensation Scheme (FSCS).[14] While the Government guaranteed all deposits held with Northern Rock before the bank run, some depositors may opt to deposit funds in larger and, arguably, safer banks in the future. Decisions as regards the future of deposit insurance arrangements in the UK, are likely to have an impact on bank M&A in the future. For example, should the present system of deposit insurance not be altered, there will be pressure for small and medium sized banks to consolidate further.[15]

4.6 Japan

4.6.1 Recent Deregulation and the Role of Bank Regulators

Japanese banks can be classified as commercial banks (i.e. wholesale city banks, long-term credit banks, trust, and regional banks), shinkin banks (local level institutions),

[14] Before October 2007 depositors' funds were insured up to £33,000 with sums over £2,000 paid out at a penal rate of 90%.

[15] In late December 2007, the governor of the Bank of England has expressed his support for system of deposit insurance covering 100% of deposits of a 'substantially increased and widely-understood limit' (www.bankofengland.co.uk/publications/speeches/2007/speech324.pdf; accessed 22 Jan. 2008). At the time of writing, the UK government was in support of a pre-funded deposit protection scheme similar to the FDIC in the US.

credit cooperatives, agricultural and fishery cooperatives or government-operated postal savings banks (see Table 4-3). After World War II, Japan's financial system was subordinated to the overall aim of post-war reconstruction. The Ministry of Finance—until recently, Japan's financial regulator—restricted competition by segmenting the banking system along product lines, regions, and client industries. In the same vein, the Ministry also regulated interest rates on deposits, obstructed foreign institutions from entering the domestic market, and discouraged the development of capital markets. In return for the banks' compliance, their liabilities were guaranteed under the so-called 'convoy system' which effectively socialised credit risk in Japan's post-war banking system. In a financial system that muted market forces between different types of financial services providers, banks became heavily-dependent on traditional lines of banking business.

Until recently, little consolidation took place in the Japanese banking industry and much of the M&A activity that eventually occurred was the direct result of a banking crisis that is rooted in the deregulation of interest rates during the 1980s as well as in other policy initiatives designed to introduce some degree of competition into Japan's financial sector. In response to eroding interest rate margins, banks aggressively increased their lending to riskier segments of the economy such as the real estate industry or SMEs and, as a result, were burdened by non-performing loans (NPLs) on an unprecedented scale when both real estate and equity prices plummeted at the beginning of the nineties. The number of high profile bank failures that followed prompted the Japanese government to either nationalise or merge ailing institutions in an attempt to prevent a systemic crisis.[16] As a result, the 21 largest depository institutions (by assets) operating in 1995 had consolidated into just four banking groups by 2001.

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[16] Among those banks that eventually failed were Hyogo Bank in 1995, Hokkaido Takushoku Bank, a city bank, in 1997, and Long-Term Credit Bank and Nippon Credit Bank in 1998.

Table 4-3 Number and Type of Japanese Credit Institutions, 2003

Categories	Number of Institutions	Number of Branches	Number of Accounts (thousands)	Value of Accounts (JPY billion)
Domestically licensed banks	154	12,539	337,650	252,591
cooperatives and rural banks[a]	1,799	22,885	79,432	32,001[b]
Post office	1	24,122	119,321	58,039
total	1,955	59,579	536,403	349,307
branches of foreign banks	72	107	n.a.	2,182

Source: Bank for International Settlements, Statistics on Payment and Settlement Systems in Selected Countries (2004). a Includes shinkin banks, Shinkin Central Bank, Norinchukin Bank, Shoko Chukin Bank, Shinkumi Federation Bank, National Federation of Labour Credit Associations, credit cooperatives, labour credit associations, agricultural cooperatives and fishery cooperatives. b Figures for shinkin banks only.

Thus, most of Japan's large banks have been created by the recent wave of mega-mergers. This M&A wave started in 1999 when Industrial Bank of Japan and Fuji Bank merged under a single bank holding company. Since most of these mega-mergers were primarily arranged to avert bank failures on a large scale and were, hence, ultimately politically-motivated, the resulting institutions suffered from chronically low levels of efficiency and profitability. Coupled with the effects of financial distress, this has led to a general decline of Japanese banks vis-à-vis their competitors in the US and Europe. Eight out of the ten largest credit institutions (by assets) were chartered in Japan anytime during the period 1988 – 1994, compared with only one in 1998.[17]

Japan's 'Big Bang' reforms of 1996 introduced more competition into the financial sector by combining short and long-term lending and by liberalising fees and commissions. Further, a restricted model of universal banking became permissible whereby Japanese banks could combine commercial banking with securities activities (albeit not with insurance). These reforms sparked some financial consolidation as banks began to diversify earning streams in order to limit their exposure to interest income.

[17] Figures from Group of Ten, *Statistical Annex* (2001, p. 457).

4.6.2 Bank Deregulation and Future Merger Activities

In 2004, all major Japanese banks reported profits for the first time after the crisis. Moreover, the merger announcement between Mitsubishi Tokyo Financial Group (MTFG) and UFJ in 2004—number two and four of Japan's banks, respectively—is widely interpreted as a signal that a new era of consolidation has started. Thus, future M&A will be less motivated by weak pre-merger performance of the institutions concerned, and more by potential increases in earning power and efficiency following a merger. Many large Japanese banks have already broadened their scope and diversified into fee and commission-based business. Mizuho Financial Group, for instance, following a number of small acquisitions increased the share of non-interest income to 36% in 2003 (*The Banker*, August 2004, pg. 20). Nonetheless, the profitability of Japan's banks remains low and many institutions continue to be burdened by high levels of bad debt.

Some banks have preferred strategic alliances (e.g. MTFG acquired a 15% stake in the consumer finance company Acom in 2004) or organic growth (e.g. Shinsei has developed a diversified investment banking business over the past five years) over mergers and acquisitions. Since this is likely to continue in the near future, merger activity in Japan will probably be dominated by few high-value deals; that is, financial consolidation will involve substantially larger transactions than in other countries. If banks improve their financial health through increases in profitability and the economy, after more than a decade of recession, enters a steady growth phase, further consolidation amongst Japan's giant banks is very likely.

In 2007, the government embarked on a ten-year privatisation programme of Japan Post, the world's largest bank by assets. The vast increase in competition that is likely to result from a privatised Post Bank will lead to further merger activity between mid-sized regional institutions. Finally, financial regulators have so far maintained strong

demarcation lines between banking and insurance underwriting. M&A in the financial sector as a whole are likely to increase markedly once the Bank of Japan permits banks to engage in insurance underwriting.

4.7 Germany

4.7.1 Historical Context

Germany's bank structure is multi-layered and exhibits a sizable public sector next to commercial and cooperative banks. Germany is the most fragmented banking market in Europe. As Table 4-4 reports, less than 20% of the number of credit institutions are classified as commercial banks, while cooperative and rural banks make by far the largest contribution to the overall number of credit institutions. The dominant role of the public sector is illustrated by the position of savings banks as market leaders in retail banking (by number of accounts).

Under German banking law, institutions have traditionally faced few restrictions on their cross-holdings with commerce and on the blending of commercial banking and securities activities. The only exception is a relatively strict institutional separation between banking and insurance which, however, can be easily circumvented through the use of strategic alliances and cross-shareholdings. Thus, the four big private sector banks (Deutsche Bank, Dresdner Bank, Hypo-Vereinsbank [now part of the Unicredit Group], and Commerzbank) are true universal banks.

M&A activity amongst private sector institutions was virtually non-existent during the last decade. By contrast, regulators sparked a wave of consolidation involving public sector institutions in 2005 when savings banks (*Sparkassen*) and their wholesale partners, the state banks (*Landesbanken)*, lost the public guarantees that have underpinned their

liabilities for decades.[18] Savings banks and state banks, thus, had to streamline their operations in preparation for a new era when the financial soundness of their institutions would determine their cost of finance in the credit markets. Particularly for savings banks with few branches, consolidation is inevitable to achieve much-needed cost savings by expanding their reach beyond what in many cases is not more than a small municipality.

At state-level, there has been some consolidation amongst Landesbanken when Landesbank Hamburg and Landesbank Kiel announced to merge into HSH Nordbank in 2004. Further, Stuttgart-based LBBW acquired Sachsen LB in 2007 which suffered heavy losses from investments in assets backed by US subprime mortgages. Similarly, WestLB is said to be interested in acquiring some of the smaller state banks like Bankgesellschaft Berlin or Bremer Landesbank. It is a widely-held view that, following the end of state-backed funding, the number of Landesbanken will be reduced from ten today to three or four over the next few years.

[18] These guarantees come in the form of *Anstaltslast* (obligation to maintain an institution's solvency) and *Gewährträgerhaftung* (statutory ultimate guarantee obligation). The guarantees were abolished in response to pressures from the European Commission that regarded them as a form of illegal state aid (see ECB, 2002, p. 49).

Table 4-4 Germany's Institutional Framework, 2003

Categories	Number of Institutions	Number of Branches	Number of Accounts (thousands)	Value of Accounts (EUR billion)
Credit institutions	2,295	46,693	84,265	631.5
of which:				
commercial banks†	397	16,254	16,765	265.8
savings banks	502	15,830	40,900	241.0
cooperative and rural banks	1,396	14,609	26,600	124.7
branches of foreign banks	121	144	n.a.	7.9

Source: Bank for International Settlements, Statistics on Payment and Settlement Systems in Selected Countries (2004). † Includes big banks, regional banks and other commercial banks, branches of foreign banks, mortgage banks and banks with a special function.

4.7.2 Deregulation and Bank Merger Activity in the Future

In the near future, acquisitions of savings banks by Landesbanken as well as mergers involving institutions in the private and the public sector are likely forms of consolidation. While public sector banking assets tend to be held by municipalities, many of which are reluctant to let go the political influence attached to them, local governments are feeling increasingly pressured to raise money through the privatisation of savings institutions. So far, two high-profile attempts to privatise a savings bank have been thwarted. The first was in 2003 when Stralsund City Parliament intended to sell its Sparkasse to private investors. The decision was later overturned by a state court which maintained that, because savings banks are committed to 'public welfare', they cannot be privatised. A second attempt to privatise a savings banks was made in 2007 when—following the EU Commission's approval of a public bailout package of Bankgesellschaft Berlin in 2004—the city of Berlin was coerced into selling the Landesbank and the savings bank it owned. As part of the agreement with the EU Commission, private sector bidders were also permitted to make offers. However, private sector suitors were eventually outbid by the Association of Savings Banks which was, perhaps, eager to prevent the precedent of a savings banks under private ownership.

Similar to experiences in the UK which privatised its savings bank sector, regulators in Germany could potentially bring about a massive wave of merger activity between commercial and savings banks should they embark on the privatisation of the Sparkassen sector. Commercial banks have repeatedly expressed interest in acquiring savings banks to bolster their small share of the retail market. However, any change to Section 40 of the German Banking Act requires an agreement between state governments (which own savings banks) and the federal government (that regulates them). At the moment, the federal government opposes privatisation for fears that access to bank finance for the economy's sizable SME sector might suffer as a result. Nonetheless, it is widely expected that these restrictions will fall in the medium-term.

Unlike their counterparts in the US, bank supervisors in Germany have never openly frowned upon consolidation and increasing concentration in the commercial banking industry. However, in order to encourage mergers in the private sector, which hitherto have almost been nonexistent, regulators should make it very clear that there is no alternative to M&A in order to form globally competitive credit institutions. In this context, regulators should signal their intention not to 'shield' banks from foreign takeovers. On the other hand, the substantial job cuts necessary to reduce the overcapacity in Germany's retail banking sector are likely to meet public resistance. This is one of the reasons why the type of large-scale bank mergers necessary to achieve meaningful cost savings will face additional obstacles in the near future. After all, the memory of the ill-fated merger attempt between Deutsche and Dresdner Bank in 2000 which failed, among other reasons, because of the trade unions' opposition to the substantial redundancies that had been announced, is still fresh.

4.8 Summary of the Findings and Concluding Remarks

This chapter examines the role of deregulation in stimulating M&A activities of banking firms. Over the last two decades, supervisors in the US, UK, Germany, and Japan have begun to deregulate parts of their banking industries, thus, sparking a process of consolidation in their national banking sectors that is still ongoing. Since deregulation has taken different forms across these countries, any future steps that regulators embark on have to be viewed against the light of existing differences in banking systems and regulatory practices. The conclusions are as follows.

- Germany has perhaps the greatest potential for bank M&A due to a largely unreformed public sector. The privatisation of the savings banks, in particular, would spark a wave of bank mergers between different types of credit institutions once demarcation lines between public and private sector banks have been demolished.

- The US still has potential for further consolidation should regulators adopt Basel II and lift restrictions on the share of national deposits that credit institutions can presently hold.

- The UK, one of the earliest consolidators, has mostly exhausted its potential for further domestic mergers on a large scale, but, following a run on a mid-sized bank in 2007, may well see further consolidation if the existing system of deposit protection is not overhauled. Present deposit insurance arrangements still penalise some depositors with funds in failing institutions relatively harshly and may lead to depositors preferring larger and, arguably, safer institutions. While such changes are likely to be implemented soon, the existing legislation had not been changed markedly at the time this thesis went to press.

- Japan, only just recovering from a banking crisis, will see some M&A activity in anticipation of a privatised and, hence, more competitive post bank. Also, should regulators permit mergers between insurance underwriters and banking firms, merger activities in the financial sector will increase substantially.

While this chapter highlights the role of regulators in increasing the volumes of bank M&A, it should not be left unmentioned that there are also limits to what regulators can achieve. Particularly in Germany, and to a lesser extent in many Continental European economies, the political context in which regulators operate (see Roe, 2003) means the redundancies associated with large-scale bank mergers attract hostility and obstruct many policy initiatives aimed at deregulating banking further. This problem is aggravated if, as in the cases of Germany, bank finance is a very important source of external finance and policymakers are concerned about the effects of a more concentrated banking sector on SME finance. In these countries, a public debate spelling out the advantages of a more integrated financial system will have to precede any drastic policy measures. It is in this role that bank supervisors, particularly in Germany, are most likely to make an impact, before they can lead the way to further bank consolidation.

Finally, this chapter identifies two themes behind M&A that will be revisited in later chapters. First, while the deregulation of activities that banks may engage in is one of the driving forces behind bank mergers, countries still vary in terms of the extent and type of bank regulation. Second, the role of banking firms relative to financial markets varies across countries. This has important implications for financial systems across countries, because capital market development tends to be associated with a functioning market for corporate control as well as with better protection for minority shareholders. For example, the bank-centred economies of Japan and Germany have relatively under-

developed capital markets, virtually no hostile takeovers and minority shareholders suffer a relatively greater risk of being expropriation by insiders. Both bank regulation and capital market development may have an important impact on the performance of bank mergers across countries. With this in mind, Chapter 7 examines the impact that the stringency of bank regulation between Europe and the US has on the effectiveness of bidding banks' governance arrangements. The next chapter examines whether the level of investor protection prevalent in the target country partly explains the market reaction to M&A in Europe and the US.

5
Investor Protection and the Value Effects of Bank Merger Announcements in Europe and the US

5.1 Introduction[19]

Recent empirical work has proposed that the legal and regulatory environment of a country can help explain different investor reactions to similar-type events (Rossi and Volpin, 2004; Moeller and Schlingemann, 2005). In an efficient market, where assets are priced rationally, the revaluation effects of bank merger announcements may serve as an accurate assessment of the net benefits that shareholders can extract from a proposed transaction. For a sample of 204 bank mergers between 1996 and 2004, this chapter compares the acquirer returns associated with US and European bank merger announcements and demonstrates that more sophisticated investor protection laws in the target country lower the returns that bidders earn in the takeover market. This chapter argues that systemic differences in law and regulation between countries, as encapsulated in investor protection regimes, partially determine investor expectations about the value-creating potential of a bank merger at the time of its announcement.

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[19] A version of this chapter has been accepted for publication as Hagendorff, J, Collins, M., Keasey, K Investor Protection and the and the Value Effects of Bank Merger Announcements in Europe and the US, *Journal of Banking & Finance* (forthcoming in 2008).

In two recent papers related to this chapter, Bris and Cabolis (2004) and Starks and Wei (2004) examine the value effects of cross-border mergers. Both papers find that changes in targets' investor protection regimes—the distinctive feature of cross-border M&A—generate statistically significant valuation effects. However, the approach taken in this chapter differs in two respects: First, the analysis is not restricted to cross-border deals. Hence, any effect of target firm protection laws on bidder returns exists independently of targets switching investor protection regimes in the post-merger period. For instance, a US acquirer seeking to bid for an Italian credit institution will be equally concerned about the target's governance arrangements (including the possibility of expropriation by insiders or bidding wars) as an Italian bidder when seeking acquisitions in Italy. Second, because the analysis is not concerned with target returns,[20] this chapter effectively examines the expected gains that bidders may extract from M&A in different economic environments. In this context, a target's level of investor protection (which may or may not be identical to that of the acquirer) proxies the overall benefits and costs associated with acquisition activities that bidding banks are likely to encounter in

[20] The analysis follows previous research (e.g., James and Weir, 1987; Rossi and Volpin, 2004; DeLong, 2003a; Campa and Hernando, 2006) by not examining the returns that target shareholders realise. However, on a theoretical level, one may expect target shareholders to realise higher abnormal announcement returns in more advanced investor protection environments where more developed capital markets, with more hostile takeovers and bidding wars (La Porta et al., 2002), drive up acquisition premiums (Moeller and Schlingemann, 2005). Also, one may expect wealth transfers from bidding to target bank shareholders to be more pronounced for acquisitions motivated by managerial hubris (i.e. when bidding managers overestimate the value creating potential of M&A) or, equally, by entrenchment (e.g. when managers favour corporate growth over profitability). Acquisitions are more likely to lead to lower value gains for target shareholders, on the other hand, when acquisitions are made in low protection environments (Bris and Cabolis, 2004) or are purely synergy-oriented.

different legal environments across which the effectiveness of governance and disclosure practices may vary greatly.

The following section offers a discussion of the findings of studies that examine the market reaction to bank mergers as well as a discussion of the literature on investor protection. Subsequently, the bank merger sample and research methodology are introduced. This is followed by univariate tests to gauge the market valuation effects of bank mergers in Europe and the US by deal type and by level of investor protection before the findings of cross-sectional analyses are discussed.

5.2 Background: The Value Effects of Bank Mergers and Investor Protection

5.2.1 The Market Valuation Effects of Bank M&A in Europe and the US

Table 5-1 presents the results of key bank merger performance studies that use either European or US data; ten studies report negative abnormal returns, seven studies cannot detect any abnormal share price performance and one study finds positive abnormal returns for acquiring banks. The overall results of two further studies (Becher, 2000; Pilloff, 1996) are ambiguous. James and Weir (1987), Houston and Ryngaert (1994), DeLong (2001), Cornett et al. (2003), Anderson et al. (2004), DeLong and DeYoung (2007), and others examine the investor reaction to bank merger announcements in the US and find bidding bank shareholders realise losses in the order of 2%. Lepetit et al. (2004), and Karceski et al. (2005) offer evidence that European bank M&A has no effect on firm value, while others report that bidder returns associated with bank acquisitions in Europe are only marginally negative (Campa and Hernando, 2006) or even positive (Cybo-Ottone and Murgia, 2000).

Table 5-1 Literature Overview: Announcement Returns to Bidding Banks

All data are from studies published in *Applied Financial Economics, European Financial Management, Journal of Banking & Finance, Journal of Finance, Journal of Financial Economics, Journal of Financial Intermediation, Journal of Financial Research, Journal of International Money & Finance, Journal of Money, Credit, and Banking, Journal of Political Economy* between 1987 and 2006 that examine the market performance of bank mergers. The table distinguishes between more recent (1990-) and older transactions (1970 – 1989) on the basis of which years most of the sample period falls into. Bidder returns are cumulative over the event window with 0 as the announcement date. Event windows are quoted in days with the exception of Madura and Wiant (1994) which is in months.

	Panel A: 1990s, 2000s					**Panel B:** 1970s, 1980s				
	Authors	**Period**	**Sample Size**	**Event Window**	**Bidder Return (%)**	**Authors**	**Period**	**Sample Size**	**Event Window**	**Bidder Return (%)**
US	Becher (2000)	1980 – 1997	558	(-5; +5)	-1.08	James and Weir (1987)	1972 – 1983	60	(-4; 0)	-1.77
				(-30;+5)	n.sign.				(-1; 0)	-1.07
	DeLong (2001)	1988 – 1995	140	(-10; +1)	-1.70	Trifts and Scanlon (1987)	1982 – 1985	21	(-200; +100)	-3.25
	Amihud et al.(2002)[a]	1995 – 1998	19	(-10: +1)	n.sign.	Hawawini and Swary (1990)	1972 – 1987	123	(0:+5)	-1.70
	Cornett et al. (2003)	1988 – 1995	423	(-1; +1)	-0.74	Cornett and De (1991)	1982 – 1986	152	(-2; +2)	-0.40
				(-1:0)	-0.70	Houston and Ryngaert (1994)	1985 – 1991	153	(-2; +2)	-2.30
	DeLong (2003)	1988 – 1999	397	(-10: +1)	-1.89	Madura and Wiant (1994)	1983 – 1987	152	(0m; +36m)	-27.10
	Kiymaz (2004)[a]	1989 – 1999	391	(-1;+1)	n.sign.	Zhang (1995)	1980 – 1990	107	(-2; +2)	n.sign.
				(-5:+5)	n.sign.				(-5; +5)	n.sign.
				(-10; +1)	n.sign.	Pilloff (1996)	1982 – 1992	48	(-2:+2)	n.reprt.
	Anderson et al. (2004)	1990 – 1997	97	(-5 ; +1)	-1.12					
	Delong and DeYoung (2007)	1987 – 1999	216	(-5, +5)	-3.15					
				(-10, 10)	-3.09					
Europe	Cybo-Ottone and Murgia (2000)	1988 – 1997	51(5)[b]	(-1; +1)	0.99					
				(-2; +2)	1.40					
	Beitel et al. (2004)	1987 – 2000	98(14)	(-1; +1)	n.sign.					
				(-10;+10)	n.sign.					
	Lepetit et al. (2004)	1991 – 2001	180(27)	(-7;+7)	n.sign.					
				(-15; 15)	n.sign.					
	Karceski et al. (2005)[c]	1983 – 2000	33(0)	(-3:0)	n.sign.					
	Campa and Hernando (2006)	1998 – 2002	172(33)	(-1; +1)	-0.87					
				(-30;+1)	-1.81					

n.sign = not significant, *n.reprt*=not reported, [a] Cross-border mergers only, [b] The number of acquisition with UK targets located are in brackets, [c] Norwegian banks only.

It has been suggested in the applied literature that the apparent differences in the market valuation effects of European and US bank mergers are caused by differences in the predominant method of takeover finance over time (Amel et al., 2004) or differences in deal characteristics such as transaction values (Cybo-Ottone and Murgia, 2000). This chapter argues that systemic differences in law and regulation between countries partially determine investor expectations regarding the value-creating potential of a bank merger at the time of its announcement. Consistent with this main hypothesis, Table 5-1 shows that Cybo-Ottone and Murgia (2000), the European study where the share of targets in the UK (arguably, one of the most advanced investor protection environment) is the lowest (10% of the sample), find positive abnormal returns, while Campa and Hernando (2006), who employ the highest share of UK acquisitions (23%), exhibit negative abnormal returns in the announcement period.

5.2.2 Investor Protection and the Expected Gains from Acquisitions

Investor protection regimes have been shown to partly explain why the same type of corporate event may attract different investor reactions across countries. Dyck and Zingales (2004) point out that investor protection creates and destroys opportunities for expropriation of outside investors (creditors and minority shareholders) by insiders (managers and majority shareholders). This is because investor protection determines the value of the private benefits of control that insiders may enjoy. Depending on the degree of agency conflict, expropriations by insiders can take forms of varying severity (La Porta et al., 2000; Morck et al., 1990)—ranging from asset stripping to wasteful behavior such as value-destroying acquisition strategies. However, when investors see their claims protected by the law and enforceable through the legal system, demand for certain types of financial assets is likely to increase (Hope, 2003), thus, facilitating the development of different governance systems. La Porta et al. (2002) find that countries

with more elaborate disclosure and accounting rules have more valuable stock markets and more IPOs (market-based governance), while countries with stronger creditor protection laws have larger credit markets (bank-based governance).

Rossi and Volpin (2004) provide a link between governance systems and the market for corporate control—a vital element of market-based governance which acts to replace failing management (Kini et al., 2004; James and Weir, 1987). The authors observe increased levels of takeover market activity and a higher propensity for bidding wars in countries with more elaborate shareholder protection rights, possibly because these regimes facilitate a more freely-operating market for corporate control. Moeller and Schlingemann (2005) find that acquisition targets operating within more liquid takeover markets diminish the announcement period returns that bidding shareholders realise. For a sample of cross-border deals involving targets in the UK, Canada, France and Germany, the authors show that acquisitions of UK companies attract the least favorable market reaction. They attribute the low bidder returns for UK acquisitions to lower agency conflict in markets where targets benefit from sophisticated shareholder protection rights as well to a higher likelihood of bidding wars for attractive targets causing merger-related gains to be bid away. By the same token, Starks and Wei (2004) argue that bidders have to pay higher premiums for targets located in relatively more sophisticated protection environments in an effort to compensate target shareholders for poorer governance practices following mergers.[21]

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[21] Rather than the negative value effect of investor protection in the target's country on bidder returns hypothesised in this chapter, the opposite effect is also conceivable. Dahlquist et al. (2003), for example, argue that bidders may be rewarded for acquisitions in high protection economies owing to the higher company disclosure standards as well as lower agency and transaction costs associated with M&A in these regulatory environments. While Bris and Cabolis (2004) find some evidence consistent with this in a sample of cross-border mergers—the authors detect higher bidder returns for M&A targeted at companies in

The evidence on the valuation effects of mergers in different investor protection regimes is rather limited for banking firms. DeLong (2003a), in an international sample of bank merger activity, finds higher abnormal returns for a portfolio of non-US acquirers (including Japanese and European banks) vis-à-vis bidding banks in the US. While the author suggests that this result is driven by underlying differences in financial systems, she does not control for the impact of investor protection on her findings. Similarly, Kiymaz (2004) reports that the wealth effects for bidding institutions vary with the location of the target. In a sample of cross-border acquisitions made by US financial firms, deals targeted at financial institutions in Latin America and East Asia lead to higher value gains for bidding firms. Again, differences in investor protection are not among the conditions examined by the author.

5.3 Data and Methodology

5.3.1 M&A Data

The bank merger sample was obtained from Thomson Financial's M&A database (SDC Platinum). Please refer to Section 3.3 (pg. 47) for a detailed discussion of the sample selection criteria. To briefly reiterate, sample deals were announced between 1996 and 2004 and both acquirers and targets are listed in the US or Europe (i.e. EU-15 countries plus Switzerland). While acquirers are commercial banks, bank holding companies and credit institutions, targets may also be insurance companies (life and non-life), mortgage bankers, as well as security brokers. Only majority acquisitions which resulted in the acquirer having a stake of at least 50% in a target institution were included. Finally, for reasons of data availability, the sample is restricted to transactions with an underlying deal value of at least $100 million in constant 2004 $.

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countries where corruption is less widespread—they do not find bidder returns to increase with more general measures of investor protection (such as creditor or shareholder rights).

The resulting sample is further reduced after omitting cases for one of the following reasons: (i) share prices are not available on Datastream or (ii) there are less than 90 trading days between separate merger announcements made by the same bidder. However, the sample contains serial acquirers over longer time periods. This is because a sizable share of M&A activities is due to a small number of serial acquirers whose exclusion would forestall opportunities to analyse this large and very relevant share of bank M&A.

Table 5-2 presents the final bank merger sample. Panel A shows that while the US was responsible for most of the M&A activity over the sample period, the mean value of acquisitions made by European banks was higher in almost every sample year. Accordingly, European banks account for 26% of the number of M&A deals, but for 35% of the overall value of M&A activity during the sample period. The smaller average deal values in the US are the legacy of regulatory restrictions on the geographic scope and product mix of local banks that had not been completely lifted before the mid-nineties (see Section 4.4).

The geographic composition of the sample is given by Panel B of Table 5-2. The US dominates the sampled transactions with 151 acquisitions, while 53 deals are of European origin. As previously mentioned, the dominance of US merger activity in the sample does not permit any conclusions as to the general pace of bank consolidation in Europe. The consolidation of bank assets in countries like Germany, France and Italy over the period of study has largely involved non-listed public sector and cooperative institutions (see Hagendorff et al., 2007a). These institutions face increasing pressures to

Table 5-2 Overview of M&A Sample

The table breaks down 204 bank M&A deals in the period 1996–2004 by transaction year and the bidder's country of origin. Deal values are measured in constant 2004 $ using the US CPI. Only majority acquisitions between publicly listed banks (as acquirers) and financial services firms (as targets) are included. Bidders and acquisition targets are from the US and Europe (EU-15 plus Switzerland). The value of the acquired equity is at least $ 100 million in constant 2004 $ and all mergers were completed by May 2005

Panel A: Distribution of Acquisitions by Year

	No. of Mergers			Total Value (mil $)			Ave Value (mil $)		
Year	Total	US	Europe	Total	US	Europe	Total	US	Europe
1996	11	9 (82%)	2 (18%)	10,317	4,825 (47%)	5,491 (53%)	938	536	2,746
1997	30	24 (80%)	6 (20%)	80,988	33,791 (42%)	47,198 (58%)	2,700	1,408	7,866
1998	32	28 (88%)	4 (12%)	258,122	237,615 (92%)	20,507 (8%)	8,066	8,486	5,127
1999	27	18 (67%)	9 (33%)	96,377	25,012 (26%)	71,365 (74%)	3,570	1,390	7,929
2000	29	14 (48%)	15 (52%)	83,818	38,156 (46%)	45,662 (54%)	2,890	2,725	3,044
2001	28	19 (68%)	9 (32%)	52,048	11,380 (22%)	40,668 (78%)	1,859	599	4,519
2002	14	11 (79%)	3 (21%)	26,545	9,952 (37%)	16,593 (63%)	1,896	905	5,531
2003	17	14 (82%)	3 (18%)	57,330	55,852 (97%)	1,477 (3%)	3,372	3,989	492
2004	16	14 (88%)	2 (13%)	93,899	78,001 (83%)	15,898 (17%)	5,869	5,572	7,949
All	**204**	**151 (74%)**	**53 (26%)**	**759,444**	**494,585 (65%)**	**264,859 (35%)**	**3,723**	**3,275**	**4,997**

Panel B: Distribution of Acquisitions by Country

	Target Nation													
Acquirer Nation	BE	DE	FR	GE	GR	IR	IT	NL	PO	SP	SW	UK	US	Total
Belgium	*2*							3					1	6
Denmark		*2*												2
France	1		*2*	1	1								1	6
Germany				*1*									1	2
Greece					*7*									7
Italy							*5*						1	6
Netherlands	1			1									3	5
Portugal									*2*					2
Spain									1	*2*		1		4
Sweden		1												1
Switzerland											*2*		1	3
UK			1			2						*5*	1	9
US													*151*	151
Total	**4**	**3**	**3**	**3**	**8**	**2**	**5**	**3**	**3**	**2**	**2**	**6**	**160**	**204**

Source: Thomson Financial, Bureau of Labor Statistics (http://stats.bls.gov). Domestic M&A in italics.

consolidate as a result of declines in government ownership and the phasing out of public guarantees of their liabilities (CEPR, 2005) as well as because of monetary integration across most parts of the EU (Allen and Song, 2005).

5.3.2 Investor Protection

The level of investor protection is proxied by two indexes developed by La Porta et al. (1998).

(i) An index of anti-director rights that are prevalent in the target institution's country and bolster the interests of shareholders against those of management. This measure revolves around voting procedures for the election of directors and the approval of major corporate issues (see Table 5-3). Based on six different anti-director rights, the index varies from 0 to 6 with higher numbers indicating better protection for shareholders from expropriation by management. Following Rossi and Volpin (2004), the anti-director index is multiplied by a measure of the rule of law which rates the law and order tradition in the target country (also taken from La Porta et al., 1998); the resulting variable is labeled 'shareholder protection'.[22]

(ii) The second index measures the quality of national accounting standards. This index reflects the inclusion of 90 accounting items in national practices and, thus, ranges from 0 to 90 where higher values indicate better investor protection. Accounting standards are at the core of corporate governance because they make company disclosures interpretable and contracts between investors and management (which tend to rely on some measure of company size or profitability) meaningful (La Porta et al., 2000).

Panel B of Table 5-3 presents the country scores for both investor protection measures. Out of the sample countries, common-law countries (the UK & the US) ex-

[22] While this index is static over time, it is reasonable to expect that the underlying variables do not vary greatly over the sample period. Relatively few deals occurred after the passing of SOX in 2002 which, if anything, only reinforced the position of the US as a high investor protection economy.

hibit very high standards of investor protection, while Italy, Germany and Belgium (civil-law countries) score relatively low in this respect. As for the quality of accounting standards, Table 5-3 suggests that Sweden, the UK and the US have leading positions, while corporate disclosure practices lack transparency in Portugal, Greece and Austria.

Although the two investor protection indices measure somewhat different institutional characteristics, there is a strong association between the two measures. First, this is evident in a strong correlation between shareholder protection and accounting quality (r=0.79; significant at 1%). Second, Table 5-4 classifies deals relative to the sample's median values of shareholder protection and accounting quality and shows that both measures consistently describe target countries' protection levels as either above- or below-median for most transactions (196 or 96%). Only in eight cases do the two measures come to a conflicting assessment when acquisitions that are targeted at above-median accounting environments are classified as below-median in terms of shareholder protection. For instance, this is the case for both Switzerland and Germany where there is a combination of relatively weak investor protection laws and the type of strong law enforcement that is common to civil-law countries and reflected in the high accounting standards measure.

Table 5-3 Investor Protection

Investor protection is proxied by two indexes from La Porta et al. (1998). Anti-director rights vary between 0 and 6 depending on the inclusion of six different voting rights as detailed below. This index is multiplied by an index of the rule of law (varying between 0 and 10) and called shareholder protection. Accounting standards vary from 0 to 90 depending on the inclusion of 90 accounting items in national accounting standards

Panel A: Index Composition

Anti-director rights	(1) What is the percentage of share capital required to call in an extraordinary shareholders' meeting? (2) Are proxy votes permissible or do shareholder have to be present (either personally or through an authorised representative) at shareholders' meetings? (3) Are there restrictions on selling shares around the time of meetings? (4) Is cumulative voting for directors permissible? Alternatively, are there other mechanisms in place by which minority interests name a proportional number of directors? (5) Do minority shareholders have legal mechanisms to fight perceived oppression? For example, can they insist on their shares being repurchased should they object key decisions taken by management? (6) Do shareholders have preemptive rights to new issues that protect their stake from dilution?
Rule of law	Assessment of the law and order tradition in the country produced by the rating agency International Country Risk and quoted by La Porta et al. (1998). Varies between 0 and 10 where lower scores indicate a lower tradition for law and order.
Accounting standards	Index constructed from company reports in different countries. Reports are examined and rated according to their inclusion or omission of 90 items. These items fall into seven categories (general information, income statements, balance sheets, funds flow statement, accounting standards, stock data, and special items).

Panel B: Country Scores

Country	Shareholder Protection (0-60)	Accounting Standards (0-90)
Belgium	0	61
Denmark	20	62
France	28.95	69
Germany	9.23	62
Greece	14.24	55
Ireland	31.2	n.a.
Italy	6.75	62
Netherlands	40	64
Portugal	26.04	36
Spain	31.2	64
Sweden	30	83
Switzerland	20	68
United Kingdom	42.85	78
United States	50	75

Table 5-4 Interaction between Shareholder Protection and Accounting Quality

Investor protection is proxied by two indexes from La Porta et al. (1998) and multiplied by an index of the rule of law. Accounting standards vary from 0 to 90 depending on the inclusion of 90 accounting items in national accounting standards

		Shareholder Protection		
		Below median	Above median	Total
Accounting Quality	Below median	36	0	36
	Above median	8	160	168
	Total	44	160	204

Pearson $\chi^2 = 158.96$ ($p = 0.00$)

5.3.3 Methodology

To analyze investor reactions to bank M&A, standardised market model abnormal returns (AR_{it}) are calculated as detailed in Section 3.2.1 (pg. 35). Specifically, the following model assumes a linear relationship between the expected return on security *i* (R_{it}) and the return on a market portfolio (R_{mt}):

$$AR_{it} = R_{it} - \hat{a}_i - \hat{\beta}_i R_{mt}. \tag{5.1}$$

Abnormal share price performance is estimated for different time periods surrounding the announcement date supplied by Thomson Financial. Market model parameters are calculated using 100-day daily return observations starting from 121 days to 21 days before the acquisition announcement. Market returns are based on national bank-sector indexes provided by Datastream. When determining statistical significance, Dodd and Warner (1983) standardise abnormal returns by the square root of their estimation period return variance ($\hat{\sigma}_i$):

$$SAR_{it} = AR_{it} \Big/ \hat{\sigma}_i \sqrt{1 + \frac{1}{L_i} + \frac{(R_{mt} - \bar{R}_m)^2}{\sum_{m=1}^{L_i} (R_{mt} - \bar{R}_m)^2}}. \tag{5.2}$$

This procedure prevents securities with large variances from dominating the test. Subsequently, abnormal return statistics reported in Boehmer et al. (1991) are used to correct for increases in the variance of abnormal returns that is common for merging parties at announcement. Failure to account for event-induced increases in variance leaves tests misspecified, while there is only a small loss of statistical power associated with using the following procedure if historic and event window variance are identical (Cowan and Sergeant, 1996),

$$\sigma_{SAR_t} = \sqrt{\sum_{i=1}^{n} \left(SAR_{it} - \sum_{i=1}^{n} SAR_{it}/n \right)^2 \Big/ n(n-1)}. \tag{5.3}$$

This yields the following test statistic:

$$z = \sum_{i=1}^{n} \frac{SAR_{it}/n}{\sigma_{SAR_t}}. \tag{5.4}$$

As a robustness test, the analysis also accounts for the non-normal distribution of security returns by using a sign test as suggested in Corrado (1989) to detect abnormal share price performance. The use of non-parametric test statistics makes inferences less sensitive to the effects of outliers.

5.4 Empirical Results: Bidder Abnormal Returns

Table 5-5 presents the cumulative abnormal returns (CAR) associated with different event window specifications during the announcement period of bank mergers. Bidding bank shareholders realise negative abnormal returns over the various event window lengths reported. For example, on the day of the acquisition announcement (t=0), mean abnormal returns are -0.93% against the national bank sector index (statistically significant at the 1%-level according to both the t-statistic and the rank test). Collectively, the results indicate that investors are sceptical about acquirers gaining from bank M&A even though the magnitude of abnormal share price performance is less pronounced over longer examination periods. Mean abnormal returns for the 3-, 5- and 11-day periods are -0.50%, -0.32% and -0.18%, respectively. The results for the 26-day CAR (-0.12%), by comparison, are ambiguous—with the rank statistic significant, but not the t-test.

Table 5-5 Bidder Abnormal Returns

The sample consists of 204 US and European bank acquirers between 1996 and 2004. All banks are publicly traded. Abnormal returns are calculated against national Datastream banks-only indexes using market model regressions that are averaged over each event window. Tests of statistical significance are based on standardised prediction errors, adjusted for increases in the daily return variance following merger announcements (Boehmer et al., 1991) and a non-parametric rank test (Corrado, 1989).

Event window	Ave CAR	Pos.	Neg.	*t*-Test	Rank test
(*t*-20; *t*+5)	-0.12%	66	138	-0.54	-3.42***
(*t*-10; *t*+1)	-0.18%	69	135	-1.66*	-2.99***
(*t*-2; *t*+2)	-0.32%	66	138	-5.67***	-3.75***
(*t*-1; *t*+1)	-0.50%	63	141	-13.55***	-4.61***
0	-0.93%	74	130	-53.45***	-5.61***

* (**,***) denotes significance at the 10% (5%, 1%) level.

Next, the value implications of bank merger activities in the context of different investor protection environments and different types of deals are considered. The following section presents preliminary findings on how the laws and regulation prevalent in target countries explain bidder returns in Europe and the US, before the specific effects of activity diversification, geographic diversification and takeover finance are considered.

5.4.1 Announcements Returns and Investor Protection

If investor protection regimes impact *a priori* expectations about the value-creating potential of a proposed transaction, one may expect bank merger announcements that target European credit institutions to elicit a different market reaction than merger announcements aimed at US banks. This is because the competitive bidding conditions associated with targets in high protection economies such as the US may severely restrict the ability of bidders to extract gains from acquisitions (see Rossi and Volpin, 2004; Moeller and Schlingemann, 2005). Consequently, it is hypothesised that US bidders (because they tend to target US institutions) realise abnormal returns that are negative on

Table 5-6 Abnormal Returns by Region and Investor Protection Levels

The sample consists of 204 US and European bank acquirers between 1996 and 2004. All banks are publicly traded. Abnormal returns are calculated against the Datastream bank sector index using market model regressions. Abnormal returns are averaged over each event window. Tests of statistical significance are based on standardised prediction errors, adjusted for increases in the daily return variance following merger announcements (Boehmer et al., 1991) and a non-parametric rank test (Corrado, 1989)

Panel A: Abnormal Returns for European and US Bank Acquirers

		(t-20; t+5)	(t-10; t+1)	(t-2; t+2)	(t-1; t+1)	0
EUR mergers	ave CAR	-0.03%	0.03%	0.08%	0.09%	0.36%
n=53	t-stat	-0.21	0.85	3.12***	6.15***	40.67***
	rank stat	-1.43	0.37	0.91	0.70	2.06**
US mergers	ave CAR	-0.14%	-0.25%	-0.47%	-0.70%	-1.40%
n=151	t-stat	-0.83	-2.82***	-10.17**	-24.09***	-98.18**
	rank stat	-2.85***	-3.04**	-3.95**	-4.72**	-6.96**
Mean Diff		0.12%**	0.28%***	0.54%***	0.80%***	1.76%***
$\Delta(CAR)_{EUR-US}$		(p= 0.03)	(p= 0.00)	(p=0.00)	(p=0.00)	(p=0.00)

Panel B: Target Investor Protection Measures by Deciles, ranked by $CAR_{(t-2;\ t+2)}$

D_i	ave CAR	n	Shareholder Protection	Accounting Quality
D_1 (low)	-2.22%	21	47.68	75.14
D_2	-1.15%	20	47.00	73.65
D_3	-0.73%	21	47.16	73.75
D_4	-0.45%	20	46.01	72.05
D_5	-0.32%	20	45.50	71.15
D_6	-0.18%	21	42.38	72.60
D_7	-0.04%	20	43.97	70.30
D_8	0.20%	21	38.23	69.75
D_9	0.47%	20	39.51	69.38
D_{10} (high)	1.31%	20	30.38	67.85
Differences in Investor Protection				
D_1-D_{10}			17.30***	7.29***
D_1-D_5			2.18*	3.99**
D_5-D_{10}			15.12***	3.30**

* (**,***) denotes significance at the 10% (5%, 1%) level. Paired t-tests are used to determine differences in mean returns and assume unequal variances.

average. Low investor protection environments, on the other hand, suffer from increased agency conflict and, thus, exhibit less liquid markets for corporate control (La Porta et al., 1998). European bidders are likely to benefit from subdued competition levels for attractive acquisition targets by gaining access to higher abnormal returns in the takeover market than those bidders that predominantly target high protection economies. Thus,

H1: The market reaction to European bank merger announcements will be more positive than to deals announced in the US.

In line with H1, Panel A of Table 5-6 documents a positive market revaluation for European bank acquirers and value losses for US bidders in the merger announcement period. Mean abnormal returns to European bidders are a positive and significant 0.36% on the announcement day and a smaller (yet according to the *t*-test still statistically significant) 0.09% and 0.08% over the 3- and 5-day period. While the insignificance of the rank statistic for 3- and 5-day CAR may be due to the fact that non-parametric tests often struggle to detect small levels of abnormal share price performance (Cowan and Sergeant, 1996), a major finding is that, in contrast to US transactions, bidding bank shareholders in Europe do not realise any statistically significant wealth losses as a result of bank M&A. The losses pertaining to US investors range from -1.40% on the announcement day to -0.14% for 26-day CAR (all significant at 1%). Most critically, the last row in Panel A of Table 5-6 confirms that the abnormal returns of European bank merger announcements are significantly higher than those associated with US acquisitions—a result which is significant for all event window specifications. While the positive CAR for European bidding banks are consistent with the findings of Cybo-Ottone and Murgia (2000), this study is the first to show that bidders in Europe realise higher announcement returns than US institutions using a direct comparison of the value effects of M&A activities in both geographic regions.

To explore the impact of investor protection applicable to targets on bidder wealth directly, Panel B of Table 5-6 ranks the full sample into ten portfolios based on the magnitude of the 5-day abnormal returns that bidders realise. Consistent with the notion that merger-related gains may easily be bid away in the type of competitive takeover markets prevalent in high protection environments, acquisitions in the lowest return decile occur in countries where targets enjoy one of the highest levels of investor

protection (as measured in terms of both shareholder protection and accounting quality). By the same token, bidder returns are especially pronounced where targets operate in low protection environments. In low protection environments, investors may demand compensation for lower governance standards and a higher risk of expropriation by insiders. Tests of the equality of means confirm statistically significant differences in both target protection measures between the top, middle and bottom return portfolio.

5.4.2 Product Diversification and Investor Protection

Recent regulatory changes in the US (above all, the Gramm-Leach-Bliley Act of 1999) repealed boundaries between different types of financial services such as banking and insurance as well as between retail and investment banking (Berger et al., 1999). Legal harmonisation within the EU—first in the form of national 'big bangs' (e.g. in Britain when commercial banks were permitted to acquire brokerage houses in 1986) and subsequently at EU-level (above all, the Second Banking Directive of 1989 which permitted universal banking throughout Europe)—encouraged financial conglomeration by allowing consolidation across different types of institutions (Allen and Song, 2005).

Previous research findings lead to two predictions. Investors will generally be sceptical about cost efficiencies resulting from product diversifying bank mergers. DeLong (2001), Ramaswamy (1997), and Beitel et al. (2004) find that diversifying bank M&A lead to value losses. It is commonly argued that, while diversification may yield gains from cross-selling different financial products (economies of scope), such gains are considerably smaller than the potential cost reductions and efficiency improvements associated with product focusing bank mergers (economies of scale). On the other hand, there are caveats to the negative view of product diversification. Very few studies have incorporated data after the deregulation of product diversifying bank mergers in Europe and the US and the type of large credit institutions that have formed recently may be

best suited to reap any merger-related benefits (see Berger and Mester, 1997). The second prediction is that bank shareholders will be especially wary of product diversifying bank mergers in low protection environments. It is conceivable that bidders find it more difficult to assess the true value of a target and the synergistic benefits of a proposed transaction if the disclosure practices of the target are weak. Additionally, diversification strategies bear an increased risk for bidding shareholders of expropriation by insiders (Morck et al., 1990; Denis et al., 1997). For example, in low protection economies, bidding bank managers may engage in empire-building strategies when committing to value-destroying bank mergers in order to lower both the variance of company returns and their employment risk (Cornett et al., 2003; Anderson et al., 2004). This can be summarised as:

H2a: Product diversification attracts a negative market reaction.

H2b: Investors will be especially sceptical about product diversification in low protection environments.

Following Campa and Hernando (2004) and Doukas and Kan (2006), deals are classified as diversifying if the first two digits of the SIC code of the main industry of the institutions involved in a deal are not identical. Accordingly, a bank (SIC 60_) acquiring a broker (SIC 62_) is regarded as a diversifying merger, while deals between state banks (SIC 6021) and commercial banks (SIC 6029) are classified as product-focusing.[23]

[23] While SIC codes do not always accurately reflect the activities of financial firms (see DeLong, 2001), each deal was carefully examined to avoid issues of misclassification. As a robustness check, a second measure of diversification was used that is, arguably, more suitable to account for the nature of some sample banks as integrated financial firms that engage in multiple activities and, hence, have more than one applicable SIC code. Following Sirower (1997), the number of industry classification codes shared between bidders and targets are examined. Deals are then classified as diversifying if bidders and targets

Table 5-7 reports abnormal returns for deals that are focusing and diversifying along product lines. Results are presented for the full sample as well as for the subsets of European and US deals. First, the results show that product diversification, generally, attracts negative abnormal returns—the only exceptions are European deals over the 1-, 3-and 5-day event window where the abnormal returns associated with diversifying M&A are positive (significant *t*-statistic, insignificant rank statistic).[24]

However, in contrast to H2a, the losses in bidder wealth following the announcement of diversifying mergers are smaller than the losses that result from focusing bank M&A. For the full sample, diversifying mergers lead to mean abnormal returns of -0.03% over the 3-day event window (significant *t*-statistic, insignificant rank statistic) compared with -0.61% for focusing deals (significant at 1%). This finding is consistent with bancassurance and other forms of cross-selling financial products having some performance-enhancing effect—albeit at a small level.

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do not share any SIC codes. The results when using this measure of diversification are practically identical to the results reported in this chapter.

[24] Studies such as Berger et al. (1999) and Berger and Mester (1997) suggest that recent changes in regulation and the increasing scale of credit institutions have made product diversification more profitable. In unreported tests, it is examined whether this holds for the present sample. There is no evidence that the value effect of diversification is more pronounced for M&A valued at more than $1 billion in either Europe or the US. On the other hand, it cannot be reliably tested whether product diversification creates bidder value before and after the passing of the Gramm-Leach Bliley Act (GLBA) as these transactions were extremely rare. While US banks could engage in securities activities through so-called 'section 20' subsidiaries during the pre-GLBA period of the sample (provided these activities did not exceed 25% of the BHC's revenue), there were only six diversifying deals in the US and five such deals in Europe before GLBA was passed.

Table 5-7 Abnormal Returns for Product-Focusing and Diversifying Mergers

The sample consists of 204 US and European bank acquirers between 1996 and 2004. All banks are publicly traded. Abnormal returns are calculated against national Datastream bank-sector indexes using market model regressions. Abnormal returns are averaged over each event window. Tests of statistical significance are based on standardised prediction errors, adjusted for increases in the daily return variance following merger announcements (Boehmer et al., 1991), and a non-parametric rank test (Corrado, 1989). Acquirers are commercial banks, bank holding companies, credit institutions, and savings banks. Targets are also insurance companies (life and non-life), mortgage bankers, as well as security brokers and flotation companies. Product-focusing mergers involve banks where the first two digits of the four-digit SIC code of their main product line are identical

	Full Sample (n=204)			**US** (n=151)			**Europe** (n=53)		
	Focusing	Diversifying	Δ(CAR)	Focusing	Diversifying	Δ(CAR)	Focusing	Diversifying	Δ(CAR)
n	164	40		130	21		34	19	
(*t*-20; *t*+5)	-0.12% (-0.5860) [-2.7936]***	-0.10% (-1.434) [-2.2154]**	0.02% p=0.76	-0.15% (-0.8758) [-2.3654]***	-0.11% (-2.6059)*** [-2.4769]**	0.04% p=0.59	0.01% (0.1640) [-1.2943]	-0.09% (-1.4482) [-0.4929]	-0.10% p=0.26
(*t*-10; *t*+1)	-0.20% (-2.0656)** [-2.9017]***	-0.08% (-1.961)** [-0.8463]	0.13% p=0.11	-0.27% (-3.1936)*** [-2.7772]***	-0.15% (-5.2912)*** [-1.8616]*	0.12% p=0.29	0.04% (1.6500) [-0.2257]	0.01% (-0.0127) [0.7459]	-0.03% p=0.85
(*t*-2; *t*+2)	-0.39% (-7.7265)*** [-3.8025]***	-0.04% (-2.161)** [-0.5211]	0.35% p=0.03**	-0.50% (-12.172)*** [-3.7528]***	-0.20% (-10.217)*** [-1.8484]*	0.31% p=0.10*	0.05% (4.4986)*** [0.0305]	0.14% (4.1068)*** [1.1834]	0.09% p=0.79
(*t*-1; *t*+1)	-0.61% (-18.868)*** [-4.8561]***	-0.03% (-3.716)*** [-0.1238]	0.57% p=0.01***	-0.79% (-29.468)*** [-4.7432]***	-0.17% (-16.090)*** [-1.3040]	0.61% p=0.02**	0.08% (10.413)*** [-0.1804]	0.12% (5.2516)*** [1.1359]	0.09% p=0.93
0	-1.16% (-70.450)*** [-5.8409]***	-0.03% (-29.07)*** [-0.5246]	1.14% p=0.04**	-1.60% (-124.09)*** [-6.0600]***	-0.15% (-21.54)*** [-1.9766]**	1.45% p=0.09*	0.50% (97.811)*** [1.3340]	0.11% (-65.61)*** [1.2966]	-0.39% p=0.68

* (**,***) denotes significance at the 10% (5%, 1%) level. Paired *t*-tests are used to determine differences in means and assume unequal variances. *t*-Statistics are in parentheses (…) and rank statistics in square brackets […].

Henceforth, the difference in abnormal returns between diversifying and focusing bank M&A shall be referred to as the 'value effect' of product diversification. For the full sample, the magnitude of this effect is 1.14% and 0.57% over the 1- and 3-day event window, respectively (all significant at less than 5%). The effect is even larger for US bidders over the same observation periods (1.45% and 0.61%, significant at 1%). Critically, however, no value effect of product diversification can be found when diversifying M&A are announced in European banking as none of the differences in abnormal returns between diversifying and focusing M&A are statistically significant.

Table 5-8 The Diversification Effect by Shareholder Protection Quality, $CAR_{(t-2;\,t+2)}$

Five-day abnormal returns (market model) are presented for three portfolios depending on the quality of shareholder protection (La Porta et al., 1998). Shareholder protection applies to targets and is based on an index of anti-director rights (varying between 0 and 6) multiplied by an index of the rule of law (varying between 0 and 10). Product-focusing mergers involve banks where the first two digits of the four-digit SIC code of their main product line are identical. Paired *t*-tests are used to determine differences in means and assume unequal variances

	Low Protection (0 – 20)			Medium Protection (21 – 40)			High Protection (41 – 60)		
	Focus	Divers.	Δ(CAR)	Focus	Divers.	Δ(CAR)	Focus	Divers.	Δ(CAR)
n	16	9		9	4		139	27	
Ave CAR	0.31%	0.13%	-0.18%	-0.24%	-0.10%	0.14%	-0.48%	-0.08%	0.40%**
t-Test			p=0.81	-		p=0.59			p=0.02
	26.51***	0.21		24.88***	-10.33***		-11.12***	-2.90***	
Rank test	2.21**	0.48		-0.25	-0.32		-3.89***	-0.73	

* (**,***) denotes significance at the 10% (5%, 1%) level.

While the absence of a positive value effect associated with product diversification in Europe is in line with H2b (investors are more sceptical about diversifying M&A targeted at low protection environments), this argument is examined in more detail. Table 5-8 presents 5-day CAR by tercile portfolios of the quality of shareholder protection that is prevalent in the target country. Consistent with prior expectations, investors value financial diversification over product focus only in the top protection tercile (i.e. only in the top tercile is the difference in abnormal returns between diversifying and focusing mergers significant at 5%). In lower protection environments, where investors are more likely to be expropriated, there is no value effect associated with product diversification.

5.4.3 Geographic Diversification and Investor Protection

Table 5-9 reports abnormal returns to bidding banks for domestic and cross-border deals. Almost half of all sampled merger activity in Europe involves geographic diversification. By contrast, there are no cross-border bids by US banks in the sample.[25] Whilst

[25] Some researchers have likened inter-state mergers in the US to cross-border M&A (see DeLong, 2001). In unreported tests, no differences in the market reaction to inter- and intra-state M&A in the US can be

the vast majority of cross-border mergers in Europe were aimed at other European institutions and frequently involved banks in closely integrated economic regions (e.g. the Benelux countries, Scandinavia, Germany & Austria), nine of the deals were cross-border mergers targeted at US banks.

Cybo-Ottone and Murgia (2000) document for financial firms and Goergen and Renneboog (2004) for non-financial firms that cross-border M&A generate value gains for acquiring firms in Europe. Alternatively, cross-border bank mergers do not offer the same potential for front- and back office rationalisations as domestic M&A where overlapping branch networks can be trimmed and administrative tasks streamlined in the aftermath of a deal (DeLong, 2001). Further, both the pervasive role of regulation (Kiymaz, 2004) and outright protectionism by some European governments (Allen and Song, 2005; Campa and Hernando, 2004) may cause cross-border bank M&A to attract a negative market reaction. Thus,

H3a: Cross-border bank mergers receive a negative market reaction.

In contrast to H3a, Table 5-9 presents evidence of relatively positive market revaluation effects following the announcement of cross-border bank M&A in Europe. Over the duration of the 1-, 3-, and 5-day event window, cross-border bids create shareholder value. More specifically, European cross-border deals attract a positive market revaluation of 0.55% on the announcement day (significant at 1% [*t*-test] and 5% [rank test]). The investor reaction to geographically focusing deals is less pronounced, but still a positive 0.21% (significant *t*-statistic, insignificant rank statistic). These findings are

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found. It is important to bear in mind, however, that there are legal, regulatory and cultural aspects associated with M&A across country borders—most notably, changes in the investor protection environment applicable to the target—that do not apply to mergers within the US.

Table 5-9 Abnormal Returns of Domestic and Cross-border Bank Mergers

The sample consists of 204 US and European bank acquirers between 1996 and 2004. All banks are publicly traded. Abnormal returns are calculated against national Datastream bank-sector indexes using market model regressions. Abnormal returns are averaged over each event window. There are no cross-border mergers by US acquirers. Tests of statistical significance are based on standardised prediction errors, adjusted for increases in the daily return variance following merger announcements (Boehmer et al., 1991) and non-parametric rank tests (Corrado, 1989). A merger is classified as domestic if both banks are chartered in the same country and cross-border if the acquirer and the target are based in different countries. (+) [(-)] indicates cross-border mergers where bidders have higher [lower] shareholder protection values than targets

	Europe				**US**				**Cross-border CAR: Target in Lower Protection Regime?**			
	domestic		**cross-border**		**domestic**		**cross-border**					
	Ave CAR	*t*-test rank test	Ave CAR	*t*-test rank test	Ave CAR	*t*-test rank test	Ave CAR	*t*-test rank test	**(+)**	**(–)**	**Δ(CAR) CAR(+) – CAR(-)**	**Δ(CAR) EUR_d-EUR_{cb}**
n	29		24		151		0		11	13		
(*t*-20; *t*+5)	-0.04%	0.0880 -1.2960	-0.02%	-1.42986	-0.14%	-0.8283 -2.8538***	–	–	0.01%	-0.02%	0.02% (p=0.68)	-0.04% (p=0.81)
(*t*-10; *t*+1)	0.03%	1.6677 0.0895	0.02%	0.5509 0.4060	-0.25%	-2.8205*** -3.036***	–	–	0.10%	-0.01%	0.17%* (p=0.07)	0.01% (p=0.7662)
(*t*-2; *t*+2)	0.08%	3.1734*** 0.3430	0.08%	6.2230*** 0.8441	-0.47%	-10.169*** -3.9482***	–	–	0.35%	-0.25%	0.60%*** (p=0.01)	0.01% (p=0.97)
(*t*-1; *t*+1)	0.07%	8.6403*** 0.2793	0.12%	8.8564*** 0.6309	-0.70%	-24.0877*** -4.7168***	–	–	0.42%	-0.23%	0.66%** (p=0.04)	-0.05% (p=0.90)
0	0.21%	56.7957** 0.6633	0.55%	58.0037*** 0.005**	-1.40%	-98.1771*** -6.0955***	–	–	1.34%	-0.28%	1.62%** (p=0.05)	-0.33% (p=0.73)

(**,***) denotes significance at the 10% (5%, 1%) level. Paired *t*-tests are used to determine differences in means assuming unequal variances.

replicated for 3- and 5-day CAR, but not for any broader event window specifications.[26]

However, an important aspect about cross-border mergers is that they tend to be 'cross-regime' mergers. Next to a transfer of legal ownership, cross-border mergers usually also entail a transfer of the corporate governance regime that is relevant to the target when the bidder's accounting and general disclosure laws are adopted by the acquired firm in the post-merger period (Bris and Cabolis, 2004). One may, thus, expect the market reaction to cross-border M&A to be influenced by differences in the quality of investor protection regimes between bidders and targets. Starks and Wei (2004) observe that bidders pay a lower control premium for acquisition targets domiciled in investor protection regimes that are less sophisticated than that of the bidder. Based on the idea that bidding shareholders have to be compensated for acquisitions in environments with less efficient internal and external control mechanisms, the following hypothesis is proposed:

H3b: If acquisitions are made in the context of protection regimes which are less sophisticated than that of the bidding bank, bidders will realise higher announcement period returns.

The argument that differences in investor protection laws between merging banks have market valuation effects in cross-border M&A is tested directly. Table 5-9 divides cross-border deals into two groups. The first group (n=11) contains acquisitions where the shareholder protection prevalent in the bidder's country is greater than that in the target country. The contrary is true for the control group (n=13), either because targets operate within a relatively more sophisticated regime or the transaction is not a

[26] In unreported tests, cross-border mergers within Europe (n=15) attract higher announcement returns than cross-border mergers between European and US banks (n=9). For 5-day CAR, mergers with US targets lead to bidder returns of -0.05% and bidders with targets in Europe to 0.28%. However, differences in announcement returns between the two groups are not statistically significant.

'cross-regime' merger. To assess whether cross-border mergers lead to a change in the target's effective protection regime, bidders with cross-listings in different investor protection environments are identified. If bidders have multiple listings, the highest protection environment in which the acquirer's shares are traded is the effective level of protection enjoyed by bidding bank shareholders.[27]

Table 5-9 shows that with the exception of 26-day CAR, abnormal returns associated with M&A in lower protection environments (+) are consistently higher than in high protection environments (–). On the announcement date, cross-border bids targeted at banks operating in lower protection regimes realise abnormal returns of 1.34%, while cross-border bids where targets operate under a relatively more sophisticated protection regime attract abnormal returns of -0.28%. The difference in announcement returns is statistically different (at the 5%-level) on the announcement day as well as for longer event window specifications. Consistent with H3b, this suggests that cross-border bank mergers create value only if deals are targeted at environments that offer less investor protection (i.e. 'cross-regime' M&A with targets in less advanced protection systems). Accordingly, bidding bank shareholders are compensated for acquiring equity in an environment where the private benefits of control are higher than in their own environment. No such gains exist if bidders target a higher protection regime, as bidding bank shareholders will not demand compensation for a higher risk of expropriation if the transparency practices by targets are more advanced in this type of environment.

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[27] For example, Germany's Deutsche Bank is listed on the NYSE and, thus, complies with US disclosure rules. If Deutsche acquires an institution in the US, this transaction is, strictly speaking, not 'cross-regime'. Only direct listings and, in the US, Level II and Level III ADR issues which subject bidders to stricter SEC disclosure rules qualify as cross-listings (see Bris and Cabolis, 2004).

Table 5-10 Method of Payment and Announcement Returns

The sample consists of 204 US and European bank acquirers between 1996 and 2004. All banks are publicly traded. Abnormal returns are calculated against Datastream bank sector indexes using market model regressions. Abnormal returns are averaged over each event window. Tests of statistical significance are based on standardised prediction errors, adjusted for increases in the daily return variance following merger announcements (Boehmer et al., 1991), and a non-parametric rank test (Corrado, 1989). Transactions that were completely paid for in cash are classified as all-cash bids with the remaining deals (equity, mixed finance) classified as 'not all-cash'. Relative bid size is the deal value divided by the bidder's market capitalization at the end of the fiscal year prior to the merger announcement. Bid sizes above and below the sample mean are examined separately.

		(*t*-20; *t*+5)	(*t*-10; *t*+1)	(*t*-2; *t*+2)	(*t*-1; *t*+1)	0
Panel A : European M&A						
A.1 All European Deals						
all-cash (*n*=26)		0.06%	0.03%**	0.32%***	0.42%***/†	1.33%***/†
not all-cash (*n*=27)		-0.11%	0.02%	-0.15%***	-0.22%***	-0.57%
	$\Delta(CAR)_{c-n}$	0.18%*	0.00%	0.47%	0.64%	1.90%*
A.2 Rel. bid size>*mean*						
all-cash (*n*=6)		0.34%	0.18%	0.81%†	0.91%	2.32%
not all-cash (*n*=21)		-0.12%	0.05%	-0.16%	-0.22%	-0.22%
	$\Delta(CAR)_{c-n}$	0.46%	0.13%	0.97%	1.13%	2.54%
A.3 Rel. bid size<*mean*						
all-cash (*n*=20)		-0.02%	-0.02%	0.17%	0.27%	1.04%
not all-cash (*n*=6)		-0.09%	-0.06%	-0.12%	-0.22%	-1.79%
	$\Delta(CAR)_{c-n}$	0.07%	0.04%	0.29%*	0.49%**	2.83%**
Panel B: US M&A						
B.1 All US Deals						
all-cash (*n*=19)		-0.15%**	-0.29%***	-0.27%***	-0.37%***	-0.19%***
not all-cash (*n*=132)		-0.15%***	-0.25%***/†	-0.49%***/†	-0.75%***/†	-
	$\Delta(CAR)_{c-n}$	-0.01%	-0.04%	0.21%	0.38%**	1.38%***
B.2 Rel. bid size>*mean*						
all-cash (*n*=4)		-0.01%	-0.57%	-0.09%	0.04%	0.70%
not all-cash (*n*=57)		-0.15%**	-0.24%***	-0.46%***/†	-0.76%***/†	-1.70%
	$\Delta(CAR)_{c-n}$	0.15%	-0.34%	0.37%	0.80%	2.40%
B.3 Rel. bid size<*mean*						
all-cash (*n*=15)		-0.19%	-0.21%	-0.32%	-0.48%**	-0.43%
not all-cash (*n*=75)		-0.14%***/†	-0.25%***/†	-0.50%***/†	-0.74%***/†	-
	$\Delta(CAR)_{c-n}$	-0.05%	0.04%	0.18%	0.26%	1.05%*

(**,***) denotes significance at the 10% (5%, 1%) level based on *t*-tests (assuming unequal variances) and † denotes significance of at least 5% according to a rank test.

5.4.4 Takeover Finance and Investor Protection

Table 5-10 presents evidence on how the mode of takeover finance (cash, equity, or a mixture of both) impacts upon merger announcement returns. As a percentage of total transactions, Europe has a substantially higher share of cash-financed takeovers (49%), compared with the US (19%). By the same token, the share of purely equity-financed deals is much smaller in Europe (34%) than in the US (68%). This is consistent with Rossi and Volpin (2004) who observe for a sample of cross-border mergers that there is a preference for all-cash bids in countries with less sophisticated rights for minority shareholders. Against the background of an increased risk of expropriation for minority

shareholders under a low protection regime, target shareholders are less likely to accept the bidder's equity as a transaction currency outside the US or the UK. The use of equity as acquisition currency is believed to signal to investors that the bidder's equity is overvalued and the proposed transaction, hence, less desirable at the financial terms offered (Becher, 2000; Anderson et al., 2004). Thus,

H4a: Cash-financed deals receive a more positive market reaction than other forms of takeover finance.

H4b: Any value premium associated with cash over other forms of acquisition finance is larger in low protection regimes.

The results in Table 5-10 show that abnormal returns associated with all-cash bids are positive and statistically significant in Europe (Panel A.1) and negative and significant in the US (Panel B.1). More fundamentally however, the results are broadly consistent with cash finance generating higher abnormal returns than non-cash finance in both Europe and the US (H4a). On $t=0$, the difference in mean abnormal returns associated with cash- and non-cash finance deals is 1.90% in Europe and 1.38% in the US (statistically significant at the 7%- and 1%-level, respectively). While differences in the market reaction to all-cash and non-cash finance are not statistically significant over longer examination periods, the positive value effect of cash finance tends to be more pronounced in Europe than in the US over most event windows (H4b).

Next, it is examined whether investor preference for cash-finance varies with the value of the proposed bank merger. Relative bid size is the ratio of deal value to the market value of the bidder's equity in the fiscal year before the merger announcement. Even though abnormal returns are statistically indistinguishable from zero and based on very small sample sizes for most subsamples, the positive value effect of cash-finance is among the strongest when European acquirers undertake low relative value M&A

(Panel A.3). Consequently, the value premium investors attach to cash finance appears to be more pronounced when European acquirers with high market valuations initiate M&A deals of low relative value. Moeller et al. (2004) proffer evidence that high-value bidding firms realise lower announcement returns than firms with lower market valuations and suggest that investors view the management of high valuation firms—because they are less likely to be subjected to a hostile takeover bid—as more entrenched.

5.5 Regression Analysis: Bank Merger Returns and Investor Protection

Cross-sectional regression analysis is used in this section to examine further the impact of the target's investor protection regime on the market reaction to bank merger announcements. In the preceding sections, univariate tests have demonstrated that bank bids targeted at low protection economies (Europe) elicit a more positive market revaluation than bank M&A aimed at high protection environments (the US). Also, a positive market revaluation associated with product diversification in the US and with cash-finance in Europe was found. The explanation put forward for these findings—a negative impact of target protection laws on bidder returns—is further strengthened by the regression results in this section. Further, the effects of various acquirer and deal characteristics on bidder abnormal returns are analysed. The model specification is as follows:

$$\begin{aligned} CAR_{(t-2;t+2)} = {} & \alpha + \beta_1 \text{ Investor Protection} + \beta_2 \text{ TargetEPS} + \beta_3 \text{ ProductFocus} \\ & + \beta_4 \text{ Rel.ROE} + \beta_5 \text{ CashDummy} + \beta_6 \text{ DealValue} + \beta_7 \text{ Crossborder} \\ & + \beta_8 \text{ NonInt.Inc.} + \beta_9 \text{ Acq.TotalCost} + \beta_{10} \text{ Acq.ROE} + \varepsilon \end{aligned} \tag{5.5}$$

The dependent variable is the estimated 5-day cumulative abnormal performance of acquiring banks around the announcement date of a merger. As indicated above, the level of investor protection that applies to targets is proxied by two indexes taken from

La Porta et al. (1998). An index of anti-director rights that captures the various rights that shareholders possess against management and a second index that measures the quality of national accounting standards. The control variables in (5.5) are from World-scope and include pre-merger earnings per share (EPS) of the target and relative ROE which is the ROE of the target divided by the ROE of the acquirer (all in *t*-1). Other variables are deal value (measured as the logarithm of the dollar value of the M&A transaction), a cross-border dummy (takes the value of 1 for acquisitions where target and acquirers are located in different countries and 0 otherwise), and product diversification (measured by a binary variable that takes the value of 1 if the first two digits of the four-digit SIC code of the companies in a merger are identical and 0 otherwise). The cash-only dummy is 1 if a merger is financed by 100% cash rather than by a mix of cash and equity (in which case the variable is 0). Total cost is expressed on a per-employee basis and non-interest income is measured as the share of non-interest income to the total of non-interest and interest income (both in *t*-1). The latter ratio indicates the significance of fee-generating activities versus more traditional loan activities for a bank..

Table 5-11 presents different specifications of the regression model. In Column 1, investor protection measures are excluded and the coefficients on various control variables are estimated instead. The results show that bids made by profitable banks (i.e. with a high return on equity) and takeovers targeted at relatively more profitable banks (as reflected by a high relative ROE) are associated with higher announcement returns. Further, consistent with the findings of the univariate analyses, there is a positive and significant association between abnormal returns and cross-border acquisitions, on the one hand, and all-cash bids, on the other.

Table 5-11 Regressions: Abnormal Returns and Investor Protection

The table reports least squares regressions of the effect of investor protection and control variables on bidders' 5-day cumulative abnormal returns in percentage points. The sample consists of 204 commercial banks in the US and Europe (EU-15 plus Switzerland) that announced majority acquisitions in the period 1996 – 2004. Abnormal returns are calculated against national Datastream bank sector indexes and averaged over (t-2;t+2) days surrounding the announcement date. The 5-day CAR are regressed against investor protection proxies in the target country and a vector of controlling variables. Shareholder protection is an index of anti-director rights multiplied by an index if the quality of law enforcement (both from La Porta et al., 1998) and accounting standards capture the quality of local disclosure practices of accounting information (also from La Porta et al., 1998). The control variables are from the Worldscope database. They include earnings per share of the target (EPS), return on equity (ROE); relative ROE is the ROE of the target divided by the ROE of the acquirer (all in t-1). Deal values are the logarithm of the dollar value of the M&A transaction; cross-border is a dummy variable that takes the value of 1 for acquisitions where target and acquirers are located in different countries; product focus is measured by a binary variable that takes the value of 1 if the first two digits of the four-digit SIC code of the companies in a merger are identical and 0 otherwise. The cash-only dummy is 1 if a transaction is 100% cash-financed and 0 otherwise. Total costs are expressed on a per-employee basis and non-interest income is measured as the share of non-interest income to the total of non-interest and interest income (in t-1).

	(1)	(2)	(3)	(4)	(5)
Shareholder Protection		-0.168***	-0.202***		
		(0.057)	(0.071)		
Accounting Standards				-0.025**	-0.031**
				(0.011)	(0.015)
Target EPS $_{t-1}$	-0.104*	-0.033**	-0.160**	-0.027*	-0.087
	(0.06)	(0.016)	(0.066)	(0.016)	(0.064)
Product Focus	-0.189	-0.328*	-0.268	-0.394**	-0.436
	(0.263)	(0.192)	(0.314)	(0.195)	(0.32)
Rel. ROE	0.911***		0.733**		0.783**
	(0.309)		(0.361)		(0.37)
Cash-only dummy	0.603**		0.468		0.773***
	(0.263)		(0.307)		(0.279)
Deal value	-0.039		0.043		
	(0.078)		(0.088)		
Cross-border dummy	0.706**		1.206***		
	(0.345)		(0.451)		
Non-interest income $_{t-1}$	-0.12e-7*		-0.3e-7***		-0.1e-7
	(0.07e-7)		(0.1e-7)		(0.1e-7)
Acquirer total cost $_{t-1}$			0.158		-0.035
			(0.256)		(0.253)
Acquirer ROE$_{t-1}$	5.819***				
	(1.911)				
Constant	-1.595**	0.748**	0.141	1.830**	1.816
	(0.657)	(0.298)	(0.782)	(0.79)	(1.479)
Observations	192	194	187	194	192
R-squared	19.70	7.00	24.60	5.40	15.80

Standard errors are heteroscedasticity-robust and reported in parentheses.
* Significant at 10%; ** significant at 5%; *** significant at 1%

The results in Column 2 of Table 5-11 present evidence that shareholder protection has a negative and statistically significant impact (at less than 1%) on bidder returns during the announcement period. Consequently, the better shareholders are protected from expropriation by managers, the lower the abnormal returns associated with bank M&A. One would, therefore, expect abnormal returns to be lower where targets operate under a high investor protection regime (such as the US) compared with countries

where higher information asymmetry and agency costs lead to a less competitive market for corporate control (many European economies). In the latter, bidders will find it easier to extract economic gains from their targets. Further, the results in Column 2 indicate a negative association between bidder returns and the product focus of the proposed transaction as well as between bidder returns and target earnings per share (significant at the 5% level). The former result confirms market confidence in diversifying bank mergers as demonstrated by the univariate tests, while the latter result suggests that underperforming targets offer opportunities for bidders to create value.

Next, the second index of investor protection is used as a robustness test. Shareholder protection as a proxy for the level of investor protection in Columns 4 and 5 of Table 5-11 is replaced with an index of the quality of accounting standards applying to target banks. The results are in line with the findings above. Lower levels of target protection are associated with higher bidder returns. Again, product diversification is associated with higher returns in Column 4, but the coefficient loses its significance in Column 5 when further control variables are added. The results of this regression confirm that, next to investor protection, relatively more profitable targets and all-cash bids translate into higher market expectations at the time of the bank merger announcement. Interestingly, the value of the announced deals has no effect on abnormal returns for any of the specifications. While deal size is somewhat a proxy for the degree of market power which newly-formed institutions are likely to enjoy, the sampled banks do not seem to benefit from this, possibly because the sampling criterion of deals no smaller than $100 million has led to a sample of large and very large institutions where the scope for significant economies of scale may be limited.

5.5.1 Robustness

It is conceivable that the main result—a negative impact of investor protection laws on abnormal bidder returns—is in fact driven by the negative impact of non-cash finance (which is more prevalent under high protection regimes) on abnormal returns. Thus, the sensitivity of the coefficient on shareholder protection for cash versus non-cash finance is examined. Regressions in Columns 2 - 5 in Table 5-11 are re-estimated for subsamples of cash and non-cash deals. The results are broadly similar; most importantly, the statistical significance of the investor protection variable remains at or below 5% for all specifications. Also, the multivariate analysis was performed using different event window lengths (3-day, 11-day CAR). The main results do not change; the conclusions are, thus, not contingent on the use of a particular event window specification.

Next, all bank acquisitions valued at more than $1 billion are classified as mega-mergers and the resulting mean abnormal returns compared with those of the rest of the sample. There are no differences in CAR between different deal values. This runs contrary to the view that mega-mergers—because they create banks that are 'too-big-to-fail' (TBTF) and, thus, entrench management and encourage post-merger risk taking—should lower the expected gains from M&A. The lack of an observable impact of mega-mergers on announcement returns can be interpreted as either suggesting that mergers valued at $1 billion are not large enough to cause TBTF concerns or that some bidders may have already crossed the critical asset threshold for TBTF considerations to become effective before the focal acquisition.

Due to the dominance of US transactions in the sample, it is important to verify that the negative relationship between both target protection measures and bidder abnormal returns, as identified for the entire sample in Section 5.3.2, also exists in a non-US context. Bidder performance of European deals is ranked by return quintiles and

shareholder protection for targets in the lowest quintile is found to be significantly higher (at 1%) than in the highest return portfolio.

Serial acquisitions form a sizable share of M&A activities in the banking industry. For transactions that are part of a merger program, the bidder's market valuation may partly reflect investor anticipation of future bidding activity before any announcements are made. This anticipation effect may potentially depress the announcement returns that serial acquirers earn vis-à-vis first-time bidders (see Song and Walkling, 2006). To account for this, a binary variable (zero for first bids and one for second or higher order bids) is added to the multivariate regressions. The merger program dummy does not enter the regressions at customary significance levels indicating the absence of anticipation effects on bank merger announcement returns.

While the multivariate regressions demonstrate that shareholder protection and accounting quality have comparable effects in the market for corporate control, the indices still measure somewhat different institutional characteristics. Section 5.3.2 identifies deals—mostly targeted at civil law-based countries like Switzerland and Germany that combine strong accounting regulations with a relatively weak form of investor protection—where the two measures point to different conclusions. It is, thus, opportune to examine whether the market reaction to M&A differs in cases where the two measures do not reach a conclusive assessment of the level of investor protection that is prevalent in the target country. A series of interaction terms between a binary variable that takes the value 1 if there is a discrepancy between the two measures and target eps, deal value, and acquirer cost is created. None of the interaction terms enter the regressions at customary significance levels. Consequently, there is no evidence of a modified investor reaction to bank merger announcements targeted at countries where the level of investor protection is relatively ambiguous.

5.6 Concluding Remarks

The analyses performed in this chapter indicate that the level of investor protection enjoyed by shareholders in the target country partly determines market expectations about merger-related performance gains at the time of large bank merger announcements. The results suggest that the positive bidder returns in European economies reflect an optimistic market assessment of the acquirer's ability to extract economic gains from targets in a low investor protection environment. By contrast, high investor protection regimes—characterised by market-based governance, a less pronounced manager-shareholder conflict and a much more competitive market for corporate control—make it more difficult for bidders to realise gains following an acquisition.

Two main implications arise from these findings. First, the positive value effects of European bank merger announcements are at odds with some regulatory practices in the EU which prevent the consolidation of national banking sectors.[28] The positive market reaction to European cross-border mergers, in particular, shows that there are gains to be reaped from the consolidation of banking assets. However, partly as a result of an openly hostile environment to cross-border bank M&A in many European countries, few banks have established retail networks across the EU. This is an important issue because it is widely believed consumers would benefit from the creation of a pan-European clearing and settlement system through substantially reduced fees for cross-border transactions.

Second, the negative market assessment of bank merger activity targeted at high investor protection economies (such as the US & UK) raises questions about the effi-

[28] For example, German law bars mergers between private sector and public sector banks and complex voting rights in Italy prevent the demutualisation and consolidation of the sizable mutual sector (branche popolari).

ciency of internal governance mechanisms. If bank mergers, on average, are to the detriment of shareholders, why are shareholders unable to prevent them? Chapter 7 of this thesis seeks to examine explanations for this paradox by concentrating on bank-specific forms of investor protection rather than on regulatory regimes at country-level. So far, research on the governance of banking firms and its value implications for M&A activities has only been able to identify executive compensation as a facilitator of value creating bank mergers (see Cornett et al., 2003; Hagendorff et al., 2007b), leaving the role of other important governance mechanisms, such as ownership structure and board composition, largely unexplored.

6
Acquiring Bank Performance in Europe and the US: Do Cost Reductions and Revenue Enhancements Materialise?

6.1 Introduction

The previous chapter has found different market reactions to bank M&A in Europe and the US. It remains to be seen whether differences in expectations of merger outcomes at the time of the acquisition announcement will actually translate into differences in the long-term post-merger performance between banks in Europe and the US. The purpose of this chapter is to analyse and contrast the performance implications of bank M&A in Europe and the US as they materialise over a time period of up to five years after a deal.

This chapter analyses the performance of a sample of US and European bank mergers while also attempting to make inferences about the motives behind M&A in either geographic region. Bidding banks' financial statements are analysed for post-merger strategies consistent with two of the most frequently-cited reasons behind M&A: the ability to cut costs (e.g. by economising on labour costs or branch networks) and the ability to increase revenue (e.g. by selling different types of financial products or by increasing lending). Overall, the performance effects of bank M&A are studied at three levels.

(i) The overall performance implications of different types of deals (e.g. European *versus* US, cross-border *versus* domestic M&A),

(ii) the underlying drivers of performance changes (i.e. cost rationalisations *versus* revenue enhancements), and

(iii) the time scale over which performance changes materialise.

Overall, the results point to European credit institutions realising profitability gains that are particularly pronounced for product diversifying and cross-border mergers. Also, there is some evidence consistent with European banks pursuing a cost-cutting strategy during the three years following a merger. Specifically, banks in Europe manage to reduce non-interest expenses and, to some extent, retreat from lending activities in the post-merger period. US banks, by contrast, manage to increase their on- and off-balance sheet activities, thus, pointing towards revenue-enhancement as a motivation behind M&A.

The remainder of this chapter is organised as follows. First, the findings of the extant literature that gauges the post-merger performance of banks are discussed and specific hypotheses developed. The sample and research strategy are introduced in a separate section, before the findings of univariate tests are discussed. This is followed by multivariate tests which analyse the drivers of M&A performance in different post-merger years. The final section concludes.

6.2 Bank Merger Performance in Europe and the US

Table 6-1 provides an overview of previous studies that examine the operating performance following bank M&A in the US and Europe over the last two decades. While the studies listed use various metrics, they tend to employ either profitability or cash-flow

based data.[29] The results of much of the empirical research on the financial performance of bank M&A are highly sceptical about any performance gains following bank mergers. There is no systematic evidence of merger-related profitability improvements as measured by ROA (Zollo and Singh, 2004; Houston et al., 2001; Ramaswamy, 1997; DeLong, 2003b), ROE (Altunbas and Ibanez, 2004; Akhavein et al., 1997) or operating income profitability (Lindner and Crane, 1993). On the other hand, both declines in operating performance following bank mergers (Kwan and Eisenbeis, 1999; Knapp et al., 2005) as well as performance gains (Houston et al., 2001; Cornett et al., 2006; Cornett and Tehranian, 1992; Knapp et al., 2006) are only rarely reported. Thus, a frequent conclusion drawn from the literature is that bank mergers are, at best, performance neutral (Lindner and Crane, 1993; Kwan and Eisenbeis, 1999; DeLong and DeYoung, 2007).

Only four studies listed in Table 6-1 analyse the performance effects of bank M&A in an European context (Altunbas and Ibanez, 2004; Vander Vennet, 1996; Campa and Hernando, 2006; Focarelli et al., 2002). While two of these studies document profitability gains for merged banks (Vander Vennet, 1996; Campa and Hernando, 2006), Altunbas and Ibanez (2004) cannot find any merger-related improvements in operating performance for a sample of European credit institutions. Further, the literature falls short of making any direct comparisons between the performance implications of bank M&A in Europe and the US.

There are two general issues concerning the studies presented in Table 6-1.

(1) The myriad of financial indicators employed makes it difficult to reach general conclusions about the post-acquisition performance effects of bank mergers.

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[29] Healy et al (1992) argue that only cash-flow performance measures control for merger finance (i.e. debt or equity), while Ramaswamy (1997) and Knapp et al. (2005) point to profitability metrics (e.g. ROA, ROE) having greater relevance of to market investors.

The use of various performance measures is even more concerning, given that, in some cases, findings vary with different performance indicators. Cornett and Tehranian (1992), for example, find evidence of increases in post-merger cash flows, but are unable to find improvements in profitability over the same time period. Similarly, Srinivasan and Wall (1992) observe that non-interest expenses decreased relative to an industry-wide control group, however, the authors cannot detect any operating efficiency gains.

(2) Performance data (which tend to be presented on an adjusted basis to distinguish between industry-wide and merger-specific effects on bank performance) are compared to different control groups. Data are either compared to historic performance (Altunbas and Ibanez, 2004; Houston et al., 2001), to average industry performance (Lindner and Crane, 1993; Zollo and Singh, 2004; DeLong and DeYoung, 2007), or to a portfolio of individually-matched banking firms (Knapp et al., 2006). Clearly, the choice of benchmark will affect any conclusions drawn of merger-induced performance changes. For example, when controlling for mean reversion, Knapp et al. (2006) find strong performance gains in most of the five years following M&A, but not if performance changes are reported vis-à-vis a general industry benchmark.

Another strand of the post-merger performance literature that is related to the studies listed in Table 6-1 measures changes in efficiency instead of changes in accounting performance. These studies examine efficiency as the difference between optimal and observed values in outputs, inputs or input-output combinations. Studies of merger-induced changes in output efficiency measure so-called X-efficiency, while studies of input efficiency are often referred to as measuring economic efficiency (for an overview, see Berger and Humphrey, 1997). The results of efficiency studies are broadly consistent

with those of the accounting studies presented in Table 6-1. Thus, Berger and Humphrey (1992) find no significant gains in X-efficiency for a sample of large US bank mergers between 1981 and 1989. Altunbas et al. (1997) examine the cost implications of a hypothetical sample of cross-border mergers between large European banks. Based on simulations of cost functions for more than 7,000 combinations of banks, the authors caution that cost inefficiencies following European cross-border M&A are more likely than post-merger increases in cost efficiency. Similarly, DeYoung (1997) employs cost frontier methodology to estimate the post-merger X-efficiency effects of a sample of 300 US bank mergers in the late 1980s and finds no statistically significant efficiency gains after bank mergers. Peristiani (1997), using a translog cost function, documents a 1.40% decline in X-efficiencies for US bank mergers between two and four years after a merger.

The next section presents expectations about bank merger outcomes in Europe and the US in the form of testable hypotheses.

Table 6-1 Literature Overview: The Operating Performance Following Bank Mergers

The table contains bank merger performance studies published in Academy of Management Journal, Financial Management, Journal of Banking & Finance, Journal of Economics and Business, Journal of Financial Economics, Journal of Financial Services Research, Journal of Money, Credit, and Banking, Strategic Management Journal, The Financial Review between 1987and 2007 by publication date. The duration of the event window is quoted in years where 0 is the year a deal is completed.

Authors	Time Period	Sample Size	Geography	Performance Measure	Performance Benchmark	Event Window	Finding
Rose (1987)	1970 – 1980	40	US	ROE, ROA, , etc.	Size, geography	-1; +5	No improvements in bidding bank's profitability, productivity or operating efficiency in up to five years after the acquisition.
Cornett and Tehranian (1992)	1982 – 1987	30	US	$\frac{\text{Pre-tax Cash Flow}^{b}}{\text{MV Equity + BV Debt}}$	industry	-3;+1	Operating pre-tax cash flow is 1.2% higher than that of the control group three years after a deal.
Healy et al. (1992)	1997 – 1984	50	US	$\frac{\text{Operating Cash Flow}}{\text{MV Equity + BV Net Debt}}$	industry	-5; +5	There are increases in operating cash flow profitability following bank M&A. Geographically-focusing mergers deliver the biggest improvement. Lending activities increase sharply in the post-merger period.
Lindner and Crane (1993)	1982 – 1987	47	US	$\frac{\text{Operating Performance}^{a}}{\text{Assets}}$	Industry, location	-1; +2	No improvement in operating performance.
Pilloff (1996)	1982 – 1991	48	US	$\frac{\text{Net Op Income}^{c}}{\text{Ave Assets [Ave Equity]}}$	Industry, size, location	-2; +2	Only ROE (adjusted for provisions) is 2% higher than that of peer group. There is a marginal improvement in the capital-to-assets ratio (0.5%); all other performance measures do not exhibit significant post-merger changes.
Vander Vennet (1996)	1988 – 1992	492	Europe	ROA, ROE	Industry, Country	-3; +3	Mergers of equals and cross-border mergers increase profitability.
Ramaswamy (1997)	1984 – 1990	46	US	ROA[e]	Historic	-3; +3	ROA increases by 4.36%; not tested for statistical significance.
Kwan and Eisenbeis (1999)	1989 – 1996	94	US	$\frac{\text{Net Op Income}^{c}}{\text{Ave Assets [Ave Equity]}}$, etc.	Industry	-2; +2	No significant post-merger improvement in ROA or ROE. Increases in the loans-to-assets ratio. Deterioration in expenses-to-assets ratio after M&A relative to peers.
Houston et al. (2001)	1985 – 1996	64	US	$\frac{\text{Pre-tax Profit}^{d}}{\text{BV Assets}}$	Historic	-1; +1	Profitability increases by 0.19% (statistically significant) one year following the acquisition.

continued overleaf

Authors	Time Period	Sample Size	Geography	Performance Measure	Performance Benchmark	Event Window	Finding
Focarelli et al. (2002)	1985 – 1996	109	Italy	ROA, ROE	historic	0; +3	Improvement in ROE, but not in ROA, possibly because of rigid labour markets and riskier post-merger loan portfolio
DeLong (2003b)	1991 – 1995	54	US	$\frac{\text{Non-interest expense}^a}{\text{Total revenue}}$, ROA[c]	Industry	-1; +3	No improvements in profitability for the entire sample, however, there is a 1.4-percentage point increase in cost efficiency. Activity-focussing mergers and deals that involve underperforming targets see a slight increase in ROA.
Altunbas and Ibanez (2004)	1992 – 2001	207	Europe	ROE[e]	Historic	-2; +2	No significant performance improvements in the two years following an acquisition.
Zollo and Singh (2004)	1985 – 1997	228	US	ROA[e]	Industry, geography	-1; +3	No performance improvements following bank mergers found.
Knapp et al. (2005)	1987 – 1998	80	US	ROE, ROA	Industry, size	-1; +5	Small performance losses due to BHCs being less effective in generating non-interest income after a merger and a deterioration in credit quality in year +5.
Cornett et al. (2006)	1990 – 2000	134	US	$\frac{\text{Pre-tax Op Cash Flow}^b}{\text{BV Assets}}$	Industry, geography, size	-2; +2	Profitability improvements, particularly after large mergers (1.07%), activity focussing (1.35%) and geographically focussing (1.30%) bank mergers.
Campa and Hernando (2006)	1998 – 2002	66	Europe	ROE, cost efficiency, etc.s	Industry, country	-1; +2	Improvement in target performance 2 years after M&A, with ROE increasing by an average of 7%. Small performance improvements for bidding banks owing to increase in more risky lending activities.
Knapp et al (2006)	1987 – 1998	80	US	$\frac{\text{Pre-tax Op Cash Flow}^b}{\text{BV Assets}}$, ROE	Industry, performance	-1; +5	Gains in cash flow and earnings profitability in almost every post-merger year when earnings data are adjusted for a mean reversion trend over time.
DeLong and DeYoung (2007)	1987 – 1999	216	US	ROA, ROE, interest margin, etc.	industry	-1;+3	For most measures, bank mergers were performance-neutral. There is some indication that mergers are more likely to improve performance if more banks have merged in the recent past hinting at a learning-based explanation for the success of bank M&A.

All data are from the relevant studies.

[a] operating performance is net income + non-interest income – non-interest expenses

[b] pre-tax operating cash flow = income before taxes, extraordinary items and interest on notes and debentures + interest income – interest paid on deposits

[c] net operating income = income before tax, extraordinary items and capital gains and scaled by assets, costs etc.

[d] pre-tax profit = capital gains - non-recurring income + loan loss provisions + amortization of intangibles (e.g. goodwill) + restructuring charges associated with mergers

[e] Not more closely defined.

6.3 Related Literature and Hypotheses Development

6.3.1 Performance Changes Following Bank Mergers

The literature surveyed in Table 6-1 includes studies that analyse the performance implications of bank M&A in both a US and a European market context. Collectively, the European evidence on merger-induced performance gains appears to be more optimistic than US-based studies. Vander Vennet (1996), Focarelli et al. (2002), and Campa and Hernando (2006) report improvements in corporate performance. Most US studies, by contrast, find that M&A has either no effect or a negative effect on post-merger profitability. While no direct comparison between the financial performance implications of bank M&A in Europe and the US can be found in the extant literature, the main hypothesis put forward in this chapter is that European deals outperform deals in the US.

The hypothesis that banks in Europe outperform their US competitors after M&A is based on two observations.

(1) European banks are more experienced in completing large and operationally complex deals owing to the existence of a more liberal regulatory environment for a longer period (Vander Vennet, 1996; Goddard et al., 2007). In large parts of Europe, the established practice of universal banking means that consolidation between different types of banks (e.g. investment and retail banks) as well as between banks and non-bank financial firms (e.g. insurers) have been a reality for many years. In the US, by contrast, integrated financial services firms have only been permitted following the passing of the Gramm-Leach-Bliley Act in 1999 (see Section 4.4). It may well be that European banks benefit from learning effects. For example, Delong and DeYoung (2007) demonstrate the effects of 'learning-by-observing' on merger performance in the US banking industry.

The authors proffer evidence consistent with spillover effects from completed bank mergers improving the long-run performance of combined banks. Specifically, the financial performance of deals improves if a substantial number of similar mergers have been completed in the preceding three years. Similarly, Zollo and Singh (2004) show that merger performance is partly determined by learning processes inside the bidding bank. European acquirers that actively increase their capability to learn from past M&A (e.g. through due diligence checklists and integration manuals) generate stronger post-merger performance.

(2) European deals may be expected to fare better than US merger activity owing to efficiency differences between banks in both geographic regions. Bos and Kolari (2005) show, in a comparison between large[30] European and US banking firms from 1995 to 1999, that European institutions exhibit lower cost efficiency and profit efficiency levels than their US competitors. While there is no clear evidence that these differences are due to non-listed (i.e. public, cooperative and mutual) banks in Europe being less efficient (Altunbas et al., 2001), there is some evidence that suggests that the presence of public banks decreases competition (Barth et al., 2004). In any case, banks in Europe have a higher potential to reap performance gains in the post-merger period compared with US banking firms which already operate at relatively high efficiency levels (Focarelli et al., 2002).

[30] Assets valued at more than 1 billion in constant 1995 US$.

The arguments above can be summarised in the following hypothesis.

H1: European bidders will, on average, generate higher financial performance gains in the years following M&A than US-chartered bidders.

Geographic Diversification. While economic theory predicts that multinational banks hold advantages in factor, product and capital markets (Focarelli and Pozzolo, 2001), cross-border deals *a priori* offer less scope for cost savings than domestically-oriented merger activity (Amihud et al., 2002). However, recent advances in IT and telecommunications technology (Berger and DeYoung, 2001) as well as various policy initiatives at EU-level designed to stimulate cross-border bank mergers (see CEPR, 2005) may well have reduced the inefficiencies associated with managing banking assets across borders. In Europe, Altunbas and Ibanez (2004) find that cross-border bank mergers generate higher performance improvements than domestic M&A. Similarly, Vander Vennet (1996) finds post-merger performance improvements following cross-border M&A in Europe. One further attraction of cross-border M&A is that it could give acquirers access to favourable regulatory regimes. This may be particularly beneficial to banks domiciled in European countries with rigid labour laws (e.g., Germany and Italy) which may gain access to more lightly regulated environments such as the US and the UK (Focarelli et al., 2002). Since the sample does not contain any cross-border deals initiated by US banks, the following hypothesis is made with respect to European cross-border deals.

H2: European cross-border deals outperform domestically-oriented mergers.

Activity Diversification. Cornett et al. (2006), Ramaswamy (1997), and Amihud and Lev (1981) find that performance improvements following product diversifying M&A are lower than those of activity focusing deals. When there is limited overlap between

the activities that both merging parties engage in, merger-related cost savings are markedly lower (Hughes et al., 2003) and the costs of integration disproportionately high (Berger and Mester, 1997). However, recent empirical work is challenging the view that diversification inevitably has detrimental performance effects (Campa and Kedia, 2002). Vander Vennet (1996) finds that financial conglomerate mergers in Europe display higher profit efficiency in the post-merger period than activity focussing mergers. For the US, Klein and Saidenberg (2005) argue that diversified BHCs are able to engage in more lending and pay lower capital charges as a result of internal capital market advantages. More specifically, diversified banking firms may deploy resources to subsidiaries with capital requirements or access to attractive lending opportunities based on information flows unavailable to external market participants (see Williamson, 1975, pg. 155-75). Thus,

H3: Activity diversifying mergers, on average, outperform activity focusing mergers.

6.3.2 Cost Synergies v Revenue Enhancements

While the rationale behind bank mergers varies for individual deals, motivations include raising market power (Berger et al., 1998; Bikker and Haaf, 2002), an optimal response to industry deregulation or technological progress (Group of Ten, 2001), executive hubris (Anderson et al., 2004; Hughes et al., 2003), or averting bank failure (Heffernan, 2005), the reason most frequently-cited by managers is to cut costs and to increase revenues in the post-merger period (Amel et al., 2004; Berger et al., 1999). Cost cutting will be targeted at interest and non-interest expenses and revenue enhancements tend to involve an expansion in lending as well as in off-balance sheet activities. Cornett et al. (2006) show that both revenue enhancement and cost reduction strategies improve banks' post-merger performance in the US. Although it is difficult to pinpoint either cost or revenue efficiencies as the dominant motivation behind individual bank mergers,

previous research findings make it possible to form general expectations about the importance of cost-oriented and revenue-oriented acquisition strategies in Europe and the US.

For the US market, it seems that while cost savings are a very important motivation behind bank consolidation, viable cost efficiencies resulting from M&A often turn out to be illusory. Houston et al. (2001) examine managements' *a priori* estimates of merger-related gains for a sample of US bank and find that cost savings are the primary source of projected gains. Market investors also deem cost savings a reliable source of performance gains, since the authors find that anticipated cost savings explain a larger share of the market reaction to M&A than anticipated revenue enhancements. However, in an analysis of nine case studies of large US bank mergers, Rhoades (1998) finds that cost efficiencies are realised in only four cases. Large reductions in non-interest cost were only achieved in the case of substantial branch overlap and mergers of equals. Similarly, Ramaswamy (1997) presents evidence that cost efficiencies only improve if merging banks follow similar strategies before a merger—as reflected in similar resource allocation patterns on banks' balance sheets. Using an analysis of profit efficiency for large US bank mergers in the 1980s, Akhavein et al. (1997) find that post-merger performance improvements are not linked to increases in cost efficiency, but to enhancements in revenue. Similarly, Cornett et al. (2006) observe a sharp increase in off-balance sheet activities, mainly due to an increase in derivatives underwriting. Akhavein et al. (1997) and Klein and Saidenberg (2005) find that M&A in the US are followed by sharp increases in lending activities as larger and more diversified BHCs hold advantages over

geographically-focused institutions in the form of, *inter alia*, lower regulatory capital charges and improved geographic risk diversification.[31]

While there are no systematic comparisons of revenue *versus* cost efficiencies in a European market context, some observations can be drawn from European banking studies. First, credit institutions in Europe tend to realise cost efficiencies following M&A. Consistent with this, Campa and Hernando (2006) and Vander Vennet (1996) show that the profitability gains of European bank M&A activities are driven by cost efficiency gains. This is further underpinned by studies that show relatively low levels of cost efficiency in Europe (Bos and Kolari, 2005), and, hence, more potential to increase efficiency in the post-merger period. Second, as regards revenue enhancements following bank mergers in Europe, only Altunbas and Ibanez (2004) examine the effects of M&A on off-balance sheet activities, but cannot find any increases.

Whilst this chapter does not analyse data on the motivation behind individual transactions (see for example Houston et al., 2001, who collect this information from the press coverage of M&A deals), inferences about *ex-ante* motivations behind M&A are made using *ex-post* merger results. Consequently, it is argued that differences in average post-merger performance between banks in the US and Europe, reflect different pre-merger motivations behind M&A deals. In this context, the results of previous research on the motivation behind M&A in Europe and the US (in particular on efficiency differences between US and European credit institutions) lead to the following expectation regarding the motivation behind M&A. Banks in Europe are more likely to seek efficiency improvements from M&A. US banks, on the other hand, are more likely to

[31] Increases in lending may also lead to performance losses should there be a loosening of lending standards and a deterioration in credit quality. Pilloff (1996) and Knapp et al. (2005) report increases in loan loss provisions in the years following M&A. The authors find loan losses are the most important source of weak post-merger performance for US banks.

engage in revenue-enhancing strategies that let them benefit from regulatory changes during the nineties, and in particular from the opening up of cross-industry consolidation following the Gramm-Leach-Bliley Act. This may summarised in the final hypothesis.

H4: Following bank M&A, US banks increase revenue and European banks realise cost efficiencies.

6.4 Data & Research Design

6.4.1 Sample Composition

This chapter examines the long-term performance effects of bank mergers on acquiring banks in Europe and the US. The sample of bank acquisitions was obtained from Thomson Financial following the data collection and filtering procedure outlined in Section 3.3 (pg. 47). Additionally, three data restrictions were made in this chapter.

(1) Acquiring banks have complete accounting data available on the Worldscope and Bankscope databases for the fiscal years -1 and +3 surrounding the completion year of a merger.[32]

(2) Accounting data are in local GAAP only. Two European banks for which data are only available in International Financial Reporting Standards (IFRS) are omitted from the sample to avoid confounding effects when credit institutions that have previously reported according to local GAAP start to report according to IFRS after 2004.

[32] For two cases, where the fiscal year-end is before 31 December and after the merger completion date supplied by Thomson Financial, the following fiscal year is employed as year 0.

Table 6-2 Number of Bank Acquisitions by Country and Year

M&A by Geographic Origin of the Acquiring Bank			Number of M&A by Merger Completion Years		
Acquirer country	Frequency	% of Sample	Year	Frequency	% of Sample
Belgium	6	5.31	1996	1	0.88
Denmark	1	0.88	1997	14	12.39
France	4	3.54	1998	11	9.73
Germany	2	1.77	1999	12	10.62
Italy	5	4.42	2000	19	16.81
Netherlands	2	1.77	2001	15	13.27
Spain	3	2.65	2002	15	13.27
Sweden	1	0.88	2003	5	4.42
Switzerland	1	0.88	2004	17	15.04
United Kingdom	8	7.08	2005	4	3.54
United States	80	70.8			
Total	**113**	**100**	**Total**	**113**	**100**

(3) Cases where acquirers completed more than one merger per fiscal year have been deleted. Serial acquisitions over different fiscal years, however, remain in the sample.[33] Serial acquirers account for a large part of bank M&A, especially in the US. Omitting these observations from the sample will, consequently, eliminate a sizable share of M&A activity and may even lead to biased findings if, say, serial acquirers have a different performance track record than the rest of the sample.

Table 6-2 reports the number of bank acquisitions by geographic origin of the acquiring bank and by merger completion year. Overall, 70% of deals have been initiated by banks in the US. The UK, Belgium and Italy each make a sizable contribution to the European bank merger sample. A high number of M&A deals were completed in the period 2000 – 2002 with a noticeable slowdown in 2003 that was subsequently followed by increases in merger activity.

[33] Collectively, 65% of sample deals involve banks that will act again as an acquirer during the sample period. One particular US institution, Washington Mutual, contributes a total of five deals to the M&A sample. The performance effects of merger programs are discussed in Section 6.6.

6.4.2 Bank Performance Data

To examine the performance implications of bank merger activities, cash flow profitability as well as various accounting ratios are analysed to study the components driving financial performance in the post-merger period. The cash flow measure used is operating cash flow return on assets (OPCFROA). Following Healy et al. (1992), Cornett et al. (1998), and Cornett et al. (2006), this metric is calculated as pre-tax operating cash flows divided by the book value of assets where pre-tax operating cash flows are income before taxes and extraordinary items plus debt expenses. Accounting data are obtained from the Worldscope database (data item numbers are in brackets).

$$\begin{aligned} \text{OPCFROA} = (&\text{income before taxes and extraodinary items } [WC01401] \\ &+ \text{interest expense on debt}[WC0125]) \,/\, \text{total assets}[WC02999] \end{aligned} \tag{6.1}$$

OPCFROA distinguishes between two types of interest expenses for banks: interest expenses resulting from (i) the financing decision and from (ii) financial intermediation (i.e. interest payments to depositors). By contrast, accounting measures that rely on earnings data (e.g. ROA and ROE) include general interest expenses which are influenced by both the method of takeover accounting (pooling *versus* purchasing) and takeover finance (cash *versus* equity)[34] and, thus, only allow limited inferences about changes in economic performance (Cornett et al., 2006).[35]

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[34] Debt finance—due to post-merger increases in interest expenses—lowers net income following M&A and the purchase method of accounting is associated with higher depreciation and goodwill expenses (Healy et al., 1992).

[35]Rhoades (1994) demonstrates the importance of including some interest expenses in performance metrics. For US banks, he shows that, while mergers lead to reductions in non-interest expenses as a result of branch closure programmes, interest expenses often increase in the post-merger period because financial institutions substitute low-interest retail deposits with higher-interest money market deposits.

Table 6-3 Performance Ratios around Bank M&A

The list of ratios below are used to analyse the financial components of acquiring bank's operating performance. The Bankscope Codes refer to the codes used for balance sheet and income statement items in *Fitsch's* Bankscope database. AVG denotes averages per accounting year.

Data Item	Bankscope Code	Explanation
Profitability		
Return on Average Assets (ROAA)	2115 / 2025AVG	
Return on Average Equity (ROAE)	2115 / 2055AVG	
Net Interest Margin	2080 / 2010AVG	net interest income/ int. earning assets
Net Int. Rev / Avg. Assets	4019	
non-interest income / tot assets	(6540+6570+6600+6630)/5670	
non-interest income / op income	(6540+6570+6600+6630)/6640	
other operat. income / assets	2085 / 2025AVG	
Cost Efficiency		
Cost to Income Ratio	2090 / (2080 + 2085)	overheads / net income
Employment cost / operating expenses	6650 / 6710	
Employment cost / non interest expenses	6650 / (6540+6570+6600+6630)	
Employment cost per employee	6650 / 7180	
Non-interest expenses / no of employees	(6550+6580+6610+6650+6660+6670)/7180	
Non-interest expense / operat. income	(6550+6580+6610+6650+6660+6670)/7470	non interest income= trading, commission, other operat. income
Asset Quality		
Net Loans / Total Assets	2000 / 2025	
Deposits / assets	2030 / 2025	
Loan loss prov. / net loans	6690 / 5330	
Loan Loss Reserve / Gross Loans	2070 / (2000 + 2070)	
Loan Loss Prov. / Net Int. Income	2095 / 2080	
Tier 1 Capital Ratio	7040	
Total Capital Ratio	7050	
Equity / Total Assets	4009	

This study also analyses financial performance in more detail using a number of accounting ratios. These ratios which cover the categories profitability, efficiency and asset quality are defined in Table 6-3. The data are from *Fitch*'s Bankscope a database which contains balance sheet and income statement data for individual banks compiled from bank regulatory bodies (many of these items are unavailable on Worldscope).

Three simple filters are applied to the raw data to ensure results are not driven by missing or extreme values. (Selected summary statistics for the resulting performance data variables are given in Table 6-4.)

Table 6-4 Summary Statistics for Bank Acquirers during Year -1, 1996-2005

The data are obtained from *Fitch*'s Bankscope database. Values are expressed in %, apart from employment cost, non-interest expenses and operating expenses, and non-interest expenses (all in USD per employee). Currency conversions from non-USD values are based on end-of-year exchange rates obtained from *IMF-International Financial Statistics*. The first and 99th percentiles of the distribution of ROA, loan to equity, non-interest income to operating income, and loan loss provisions over net interest revenue have been winsorised.

Variables (%)	N	Mean	P25	Median	P75	Min	Max
Return on Average Assets (ROAA)	113	1.14	0.70	1.15	1.49	-0.01	3.38
Return on Average Equity (ROAE)	113	14.51	11.19	14.83	17.77	-0.35	36.23
Net Interest Margin	113	3.40	2.64	3.46	4.31	0.22	6.88
Net Int Rev / Avg Assets	113	3.05	2.35	3.15	3.83	0.20	6.31
non-interest income / tot assets	113	1.67	0.94	1.39	2.28	0.18	5.35
non-interest income / operating income	113	36.61	23.91	34.39	46.72	6.29	79.89
Oth Op Inc / Avg Assets	113	1.84	0.98	1.51	2.53	0.17	6.06
Cost to Income Ratio	113	60.89	55.56	60.59	66.70	11.68	97.37
Employment cost / operating expenses	113	45.43	40.60	47.15	52.08	12.12	78.31
Employment cost / non interest expense	113	48.48	43.92	51.36	54.82	11.93	78.31
Employment cost per employee (mill USD)	100	0.07	0.04	0.05	0.10	0.03	0.27
Non-interest expenses / no of employees (mill USD)	100	0.13	0.09	0.10	0.11	0.05	1.00
Non Int Exp / Avg Assets	113	3.24	2.51	3.07	3.73	0.33	8.68
Net Loans / Total Assets	113	57.32	48.15	59.81	68.52	0.04	80.46
Deposits / assets	113	76.90	71.70	79.95	85.42	2.35	92.22
Loan Loss Reserve / Gross Loans	113	1.82	1.25	1.52	2.21	0.00	6.54
Loan loss prov / net loans	113	0.48	0.27	0.44	0.63	-0.01	1.78
Tier 1 Capital Ratio	96	9.76	7.80	8.95	11.10	5.80	25.30
Total Capital Ratio	100	12.42	10.90	11.80	13.30	8.20	26.60
Equity / Total Assets	113	8.48	5.84	7.83	9.64	2.32	84.97

(i) The consistency of the data obtained from Worldscope and Bankscope was examined. For each bidding bank, the value of total assets (Bankscope data item: 2025; Worldscope data item: WC02999) was compared and bidders omitted from the sample if there were marked differences between the values of this variable in years -2 to +3.[36]

(ii) For ratio variables, zero values were inspected and replaced with missing values if any of the underlying ratio components were missing and a value of zero was not justified.

(iii) To reduce the impact of outliers, the first and 99th percentiles of the distribution of the following variables have been winsorised: ROA, loan to

[36] In total, two Austrian and two Italian acquirers were omitted from the sample due to inconsistencies between the data available on Worldscope and Bankscope.

equity, non-interest income to operating income, and loan loss provisions over net interest revenue.

To isolate merger- and bank-specific effects on financial performance from phenomena that affect the entire industry or economy, bidding bank performance needs to be compared against an appropriate benchmark of expected performance. As discussed in Section 3.2.2, two benchmarks will be used for this purpose. First, financial performance data are measured against asset-weighted mean values of all non-merging banks listed on Worldscope in the bidder's country. This yields *market-adjusted* returns.[37] The market control group is restricted to listed banks, because non-US banking industries exhibit sizable non-listed sectors which tend to be characterised by lower efficiency and profitability levels than shareholder-controlled institutions (Barth et al., 2004). The second benchmark contains banks which have been matched on the basis of size and pre-merger performance. The matching procedure employed to assemble *performance-adjusted returns* is based on the following algorithm as used in Barber and Lyon (1996) and Loughran and Ritter (1997):

(i) geography (sample and control bank are listed on the same exchange),

(ii) industry (defined at the 2-digit SIC level),

(iii) size (control firms have 25% to 200% of the acquiring bank's assets during year 0), and

(iv) pre-merger profitability. The portfolio of control firms resulting from steps (i)-(iii) is ranked by OPCFROA in year 0. For every sample bank *i*,

[37] Weighting industry returns by the assets of constituent banks means that larger banks have a bigger impact on the benchmark return. This is appropriate given the sample of relatively large bank acquirers.

the credit institution closest in terms of its OPCFROA is selected as the matched institution.

(v) Finally, control banks must not have acted as acquirers themselves in any M&A deals valued at more than $100 mill up to five years before the focal transaction.[38]

6.5 The Performance Results of Bank M&A

6.5.1 Bank Merger Performance in Europe & the US

Table 6-5 presents evidence on the long-term operating performance of acquiring banks following bank mergers in Europe and the US. The returns associated with M&A are reported in market-adjusted form as well as in performance-adjusted form. In year -2, US bidders realise OPCFROA of 1.99% equalling 0.56% on an industry-adjusted basis (Panel A). Performance-adjusted OPCFROA are positive and statistically significant throughout the examination period.[39] Further, abnormal returns remain fairly constant over the examination period with no statistically significant differences between year -1 and year 3. Thus, the market-adjusted results in the US are consistent with earlier studies that show that bidders outperform the market control group in the years leading up to a merger, but there is no evidence of further improvements in financial performance three years after M&A (Houston and Ryngaert, 1994; Knapp et al., 2005).

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[38] Eliminating all banks that have acted as acquirers, regardless of the value of the underlying transaction, is likely to introduce a survival bias because of the scale of bank consolidation, especially in the US.

[39] The Wilcoxon signed rank test is not statistically significant for year +3.

Table 6-5 Post-merger Performance of European and US Banks

The sample consists of 113 publicly traded banking firms in Europe (EU-15) and the US that completed majority acquisitions worth at least $100 mill (in constant 2004 USD) between 1996 and 2005. Performance data are presented relative to the year of merger completion and measured against performance-matched banks and against asset-weighted industry averages. The performance metric is operating cash flows returns on assets (OPCFROA) which is pre-tax operating cash flows divided by the book value of assets (where pre-tax operating cash flows are income before taxes and extraordinary items plus debt expenses. Data are from the Worldscope database. Reported values are mean values.

		-2		-1		1		2		3	Δ performance -1 to+3
Panel A: ΔOPCFROA US Banks (n=80)											
	performance	1.99%		2.08%		2.04%		2.26%		2.33%	
Market adjusted	control	1.42%		1.55%		1.67%		1.61%		1.79%	0.01%
	abnormal	0.56%	***,†	0.53%	***,†	0.37%	***,†	0.65%	***,†	0.54%	**
Performance adjusted	control	2.21%		2.18%		2.29%		2.27%		2.25%	0.19%
	abnormal	-0.22%		-0.10%		-0.25%	**,†	-0.01%		0.09%	
Panel B: ΔOPCFROA European Banks (n=33)											
	performance	2.08%		2.07%		1.94%		1.75%		1.59%	
Market adjusted	control	3.88%		3.58%		2.97%		2.76%		2.84%	1.23% **,†
	abnormal	-1.80%	**,††	-2.51%	**,†	-1.03%		-1.01%		-1.28%	
Performance adjusted	control	3.22%		3.67%		2.37%		2.33%		2.20%	1.01% *,†
	abnormal	-1.15%	*,†	-1.60%	**,†	-0.43%		-0.58%		-0.60%	

***, **, and * denote statistical significance at the 1%, 5% and 10% levels, according to a two-tailed *t*-test.
† denotes statistical significance at least at 5% based on a Wilcoxon signed-rank test.

Examining changes in performance-adjusted returns instead of market-adjusted data does not alter the finding that US bank mergers, on average, are performance-neutral. Consistent with acquirers being superior pre-merger performers (Section 3.2.2, pg. 41), market-adjusted performance data point to bidders outperforming their peers in the pre-merger period, while the same is not true for performance-adjusted data. For instance, in year -1 merging banks' OPCFROA is 2.08% compared with 2.18% for the performance-matched control group (difference not statistically significant for years -2 and -1).

Panel B of Table 6-5 presents OPCFROA for European banks. There is evidence that European bidders display weak pre-merger performance vis-à-vis non-merging institutions. Performance-adjusted returns are -1.15% in year -2 (significant at 8% [*t*-test] and 4% [Wilcoxon rank test]) and industry-adjusted returns are -1.80% in the same year

(significant below 5% according to both test statistics). Although adjusted returns remain negative throughout the examination period, they lose their statistical significance in year 1 and thereafter, implying an improvement in financial performance following M&A. A *t*-test confirms H1 (European bank mergers exhibit higher post-merger profitability) by showing that both performance-adjusted and market-adjusted returns experience a statistically significant improvement between years -1 to 3.

It is interesting to note that, European banks owe reported post-merger performance gains to improvements from weak performance levels before they engage in M&A. While weak pre-merger performance of European banks is at odds with US-based findings, some studies present evidence consistent with European acquirers as weak pre-merger performers. Campa and Hernando (2006) find that bidders underperform non-bidding institutions in terms of efficiency and that bidders experience improvements in these measures in the post-merger period. Similarly, Vander Vennet (1996) does not find any evidence that European bidding banks are stronger performers than their industry peers in up to three years leading to a deal.

Finally, there is no evidence of a mean reversion trend in the market-adjusted return data of European banks. Bidding banks outperform on an industry-adjusted basis; however, market-adjusted returns do not revert to zero in the years following M&A. Consequently, while the use of performance-adjusted data is useful in determining that industry averages may not be entirely representative of bidding bank performance, the use of industry-adjusted data does not bias the conclusions for European M&A reported in Table 6-5.

6.5.2 Geographic Diversification and Bank Merger Performance

The long-term profitability implications of domestic and cross-border mergers are presented in Table 6-6. Panel A lists changes in financial performance following domestic

M&A in the US. Since all US deals were domestic,[40] the results replicate earlier findings about merger activities in the US (Panel A of Table 6-5). Accordingly, industry-adjusted returns point to bidders outperforming non-bidding banks before a merger, but there is no evidence of performance increases upon completion of M&A. Panel B of Table 6-6 presents performance data associated with domestic consolidation in Europe. While bidding banks' OPCFROA are lower than that of either the market or the performance-matched control group in all examination years, adjusted returns are not statistically different from zero at customary levels.[41] Further, comparing OPCFROA between year -1 and year 3 in Europe indicates there are no performance changes associated with domestic M&A. Thus, industry-adjusted return differences remain virtually identical over the examination period and performance-adjusted returns increase by a mere 0.19% (not significant at customary levels).

Panel C of Table 6-6 examines the effects of cross-border mergers on acquiring banks in Europe. Prior to cross-border deals, bidders display very noticeable levels of underperformance. For instance, in year -2, performance-adjusted and industry-adjusted returns are -1.03% (statistically significant at 5%) and -3.41% (statistically significant at 1%), respectively. Similar results apply to year -1, but not to the three years following a merger when adjusted returns are not statistically different from zero. Between years -1 and 3, European acquirers, on average, experience an increase of 1.68% in performance-adjusted OPCFROA (Wilcoxon-rank statistic significant at 5%, *t*-statistic at 8%) and of 1.31% in market-adjusted OPCFROA (Wilcoxon rank statistic significant below 5%).

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[40] Again, the sample does not contain cross-border M&A initiated by US banks. As noted in Section 4.4, the lack of US cross-border M&A points to continued levels of overcapacity in the US banking industry; consequently, the consolidation of the domestic banking system for most US banks takes priority over foreign acquisitions.

[41] One exception is year -2 where performance-adjusted OPCFROA are significant at the 10% level.

Consistent with H2, it can, thus, be argued that the profitability effects of European cross-border deals are more positive than those of domestic bank M&A. However, Table 6-6 also shows that the reported performance increases of cross-border M&A are due to European institutions reducing pre-merger levels of underperformance relative to the control groups. As highlighted in Section 6.5.1, this points to European banks (in contrasts to banks in the US) exhibiting weak pre-merger performance that subsequently reverses. This is consistent with Vander Vennet (1996) who also finds that European cross-border M&A lead to a convergence in profitability between bidding banks and the industry, but not to bidders outperforming non-merging banks. Altunbas and Ibanez (2004) show that European bidding banks which engage in cross-border M&A are less cost-efficient in the pre-merger period than domestically-oriented bidders.

In summary, bidders in European cross-border deals underperform before a transaction, but not in the years following M&A. Since performance gains cannot be observed for domestic M&A in Europe (Panel B), it appears that the performance gains for European bank mergers reported in the previous section (Section 6.5.1) are largely driven by the positive effects of cross-border activity.

Table 6-6 Post-Merger Performance of Cross-border and Domestic Bank Mergers

The sample consists of 113 publicly traded banking firms in Europe (EU-15) and the US that completed majority acquisitions worth at least $100 mill (in constant 2004 USD) between 1996 and 2005. Performance data are presented relative to the year of merger completion and measured against performance-matched banks and against asset-weighted industry averages. The performance metric is operating cash flows returns on assets (OPCFROA) which is pre-tax operating cash flows divided by the book value of assets (where pre-tax operating cash flows are income before taxes and extraordinary items plus debt expenses. Cross-border mergers involve bidders and targets being chartered in different countries. Data are from the Worldscope database. Reported values are mean values.

Years to merger	Bidding Banks	Control Group		ΔOPCFROA: bidder-control		ΔOPCFROA : -1 to +3	
		performance	market	performance	market	performance	market
Panel A: OPCFROA for domestic mergers in the US (n=80)							
-2	1.99%	2.21%	1.42%	-0.22%	0.57%***,†	0.19%	0.01%
-1	2.08%	2.18%	1.55%	-0.10%	0.53%***,†		
1	2.04%	2.29%	1.67%	-0.25%**,†	0.37%***,†		
2	2.26%	2.27%	1.61%	-0.01%	0.65%***,†		
3	2.33%	2.25%	1.79%	0.09%	0.54%**		
Panel B: OPCFROA for domestic mergers in Europe (n=12)							
-2	1.79%	3.09%	3.12%	-1.30%	-1.30%*	-0.01%	0.00%
-1	1.87%	3.09%	3.08%	-1.22%	-1.22%		
1	1.89%	2.40%	2.97%	-0.50%	-0.51%		
2	1.78%	2.45%	2.63%	-0.67%	-0.65%		
3	1.54%	2.76%	2.12%	-1.23%	-1.22%		
Panel C: OPCFROA for cross-border mergers (n=21, all European Acquirers)							
-2	2.29%	3.32%	5.70%	-1.03%**	-3.41%***	1.68%*,†	1.31%
-1	2.22%	4.08%	5.27%	-1.86%**,†	-3.05%**		
1	1.96%	2.35%	2.90%	-0.39%	-0.94%		
2	1.73%	1.92%	2.85%	-0.19%	-1.12%		
3	1.63%	1.81%	3.36%	-0.18%	-1.73%		

***, **, and * denote statistical significance at the 1%, 5% and 10% levels, according to a two-tailed *t*-test.
† denotes statistical significance at least at 5% based on a Wilcoxon signed-rank test.

6.5.3 The Performance Effects of Product Diversification

Financial conglomeration through M&A (e.g., when retail banks purchase institutions that underwrite debt, equity or insurance) has become more popular strategic move, not least as a result of the recent deregulation of such activities in most EU member states as well as in the US (see Chapter 4). Following Campa and Hernando (2004) and Doukas and Kan (2006), Table 6-7 divides transactions in the US and Europe depending on whether the first two digits of the four-digit SIC code of the institutions involved in a transaction are identical.

The expectation expressed in H3 is that product diversifying bank mergers will outperform focusing mergers as a result of internal capital markets efficiencies and advantages from cross-selling different financial products. The financial performance data for US banks (Panel A), however, are not in line with this expectation. The results indicate that US acquirers engaging in both product focusing and product diversifying deals exhibit positive and statistically significant market-adjusted returns, but insignificant performance-adjusted returns. US bidders systematically outperform national banking sectors, but not the portfolio of performance-matched credit institutions. However, because market-adjusted returns remain positive over the entire examination period (i.e. there is no mean reversion trend), conclusions about the performance effects of financial conglomeration are not contingent on a particular control group. Most importantly, there is no evidence of a post-merger increase in OPCFROA between years -1 and 3 in the US, irrespective of whether performance data are measured against national industry sectors or performance-matched institutions.

European acquirers, by contrast, experience performance gains following product diversifying bank mergers that are in line with H3. Thus, the performance-adjusted OPCFROA associated with diversifying M&A increase by 2.11% (*t*-statistic and Wilcoxon rank statistic significant at 5%) and industry-adjusted OPCFROA by 1.25% (*t*-statistic significant at 7%). Again, it appears that European banks engage in financial conglomeration after a period of sustained underperformance (in year -1, performance-adjusted OPCFROA are -4.41% and industry-adjusted OPCFROA are -3.61%). Accordingly, one of the reasons behind the performance gains following diversification in Europe is that banks manage to close the profitability gap to non-merging institutions in the post-merger period.

Table 6-7 Performance Implications of Product Focussing and Diversifying Bank M&A

The sample consists of 113 publicly traded banking firms in Europe (EU-15) and the US that completed majority acquisitions worth at least $100 mill (in constant 2004 USD) between 1996 and 2005. Performance data are presented relative to the year of merger completion and measured against performance-matched banks and against asset-weighted industry averages. The performance metric is operating cash flows returns on assets (OPCFROA) which is pre-tax operating cash flows divided by the book value of assets (where pre-tax operating cash flows are income before taxes and extraordinary items plus debt expenses. Product-focusing mergers involve banks where the first two digits of the four-digit SIC code of the main product line are identical. Data are from the Worldscope database. Reported values are mean values.

		-2	-1	1	2	3	ΔOPCFROA years -1 to +3	
Panel A: OPCFROA US Banks (n=80)								
focusing	Market-adjusted	0.60%***,†	0.48%***,†	0.47%***,†	0.64%***,†	0.52%***,†	0.06%	
(*n*=69)	Performance-adjusted	-0.25%**	-0.06%	-0.27%	-0.06%	0.01%	0.07%	
diversifying	Market-adjusted	0.33%*	0.76%**,†	0.59%***,†	0.78%***,†	0.42%*	-0.33%	
(*n*=11)	Performance-adjusted	-0.07%	-0.34%	-0.10%	0.28%	0.42%	0.76%	
Panel B: OPCFROA European Banks (n=33)								
focusing	Market-adjusted	-2.04%**	-1.83%**	0.83%	-0.95%*	-0.79%	1.04%	
(*n*=21)	Performance-adjusted	-1.26%**	-2.03%**,†	-1.34%**	-0.82%	-1.96%	0.07%	
diversifying	Market-adjusted	-2.88%**	-3.61%**	-1.30%	-1.13%	-2.35%	1.25%	*
(*n*=12)	Performance adjusted	-2.28%**	-4.41%**	-0.25%	2.86%	-0.17%	4.24%	**,†

***, **, and * denote statistical significance at the 1%, 5% and 10% levels, according to a two-tailed *t*-test.
† denotes statistical significance at least at 5% based on a Wilcoxon signed-rank test.

As previously noted, one possible explanation for why H3 can be confirmed for European banks, but not for credit institutions in the US is provided by Vander Vennet (1996) who argues that the established practice of universal banking in parts of Europe means acquiring banks are more experienced, and consequently more successful, in complex deals involving banks with different activity portfolios. After all, the challenges in integrating different types of financial firms are well-documented in the applied literature (see for example, Berger et al., 1999; DeLong, 2001).

6.6 Do Serial Acquirers Perform Differently?

So far, this chapter has not distinguished between single-M&A transactions and higher order deals that are part of the type of merger program which has been quite common in the banking industry. Serial acquisitions pose more complex challenges to bidding

banks, especially when it comes to integrating targets into the context of the acquiring bank's existing resources and operations in a value-creating manner.

Fuller et al. (2002) report market scepticism about the performance of higher order deals. In a sample of US multi-industry bids between 1990 and 2000, the authors show that serial acquirers realise lower announcement returns than acquirers that engage in M&A for the first time. Similar results are found by Song and Walkling (2006) who suggest that serial bidder's market valuation may partly reflect investor anticipation of future bidding activity before any announcements are made. Further, serial acquisitions are often referred to in the context of manifestation of managerial opportunism. For instance, Doukas and Petmezas (2007) find evidence consistent with CEOs being overconfident when initiating higher-order M&A deals. In a sample of 5,334 UK acquisitions in the period 1980 – 2004, successful deals tend to be followed by underperforming acquisitions. The authors attribute this to CEOs suffering from a self-attribution bias. Hence, for the purposes of this study, it is expected that first-order deals outperform serial acquirers as well as higher order deals.

Table 6-8 reports little evidence pointing to serial acquisitions having performance effects that are different from those of single bids. Only multiple acquisitions by European banks attract a significantly smaller increase in market-adjusted OPCFROA than single acquirers (statistically significant at the 5%-level). Similar results apply to Panel B where first bids by European banks lead to significantly higher profitability increases than higher order (i.e. five or more) deals (significant at 10%). While serial acquisitions have inferior performance implications compared with single or first order deals for most merger types, reported differences are not statistically significant at customary levels.

Table 6-8 Changes in Industry-adjusted Performance between Years -1 and 3 for Single *v* Multiple Acquirers, by Deal Characteristics

The table presents changes in industry-adjusted OPCFROA between years -1 and 3 relative to the completion year of a merger. Deals are classified by the country of the bidder, diversification is based on the first two digits of the four-digit SIC code between bidder and cross-border deals are transactions where bidders and targets are chartered in different countries. Differences in means are tested using a *t*-test assuming unequal variances.

	US	Europe	Product diversification	Product focus	Cross-border	Domestic
Panel A: Single v multiple acquirers						
single acquirers	0.62% 18	2.11% 10	-0.90% 5	-0.19% 26	4.46% 4	0.15% 33
multiple acquirers	0.861% 52	1.261% 22	-3.11% 20	-0.39% 64	0.92% 17	0.19% 59
Δ:single - multiple	-0.251%	0.85%**	2.151%	0.201%	3.54%	-0.041%
Panel B: 1st deals v 5th or more deals						
1st deal	0.741% 31	3.21% 18	-1.961% 13	-0.231% 37	5.651% 8	0.271% 42
5th or more deals	1.151% 7	1.671% 2	-2.201% 3	-0.31% 6	0.901% 1	-0.171% 8
Δ: 1st - 5th or more deals	-0.41%	1.54%*	0.24%	0.08%	4.75%	0.44%

* significant at 10%; ** significant at 5%; *** significant at 1%

6.7 What Drives Post-merger Performance Changes of European and US Banks? Cost Savings v Revenue Enhancements

The preceding analysis of OPCFROA has shown that European bank mergers, in particular cross-border as well as activity-diversifying M&A, are associated with small post-merger performance improvements. This section analyses a wider range of accounting measures to gain a more thorough understanding of the specific effects of and, somewhat relatedly, the different motivations behind M&A.

The accounting ratios employed for this analysis are defined in Table 6-3 (pg. 132). In order to ensure that findings may be compared across a large cross-section of previous studies, Table 6-9 reports market-adjusted returns with *t*-tests and Wilcoxon signed

rank tests determining the level of statistical significance associated with performance changes between year -1 and year 3 for European and US deals.

Table 6-9 shows that European bidders underperform national banking sectors in terms of pre-merger profitability in year -1. Market-adjusted values for ROAA, net interest margin and non-interest income are negative and statistically significant at 1%. Yet, European banks display above-industry levels of efficiency in year -1—pre-merger employment cost (scaled by operating expenses, non-interest expenses or the number of employees) are below the market control group. The fact that bidding banks, despite high cost efficiency levels, exhibit below-industry profitability suggests that bidding banks underperform their peers in terms of the revenue they generate prior to a merger. The negative market-adjusted non-interest income to assets ratio (significant at 1%) and the negative market-adjusted net loans to total assets ratio[42] (significant at 5%) is suggestive of a pre-merger weakness that affects European bidders' lending and non-lending activities.

In the years following M&A, ROAA and ROAE of European banks increase from -0.85% to -0.42% and from -0.59% to 4.10%, respectively (all performance changes are significant at least at 5% according to the *t*-statistic and Wilcoxon rank statistic). This is in line with H4 which posits that one of the primary motivations of European banks to engage in M&A is to cut costs following M&A. Unlike US institutions which have only recently been permitted to engage in universal banking, European banks have traditionally had more possibilities to diversify their earnings. Consistent with H4, European bidders manage to further widen the efficiency gap vis-à-vis their

[42] Lending at below-industry levels is also reflected in a negative market-adjusted loan-loss-reserves-to-loans ratio. However, the loan-loss-reserves-to-loans ratio, next to the scale of lending activities, also reflects the default risk (i.e. quality) of a bidder's loan portfolio with more risky portfolios attracting higher loss reserves.

peers in the post-merger period. Both employment cost and non-interest expenses are further reduced between years -1 and 3 (*t*-test significant at 5%). Additionally, while all other market-adjusted efficiency measures improve, changes in these measures are not significant at customary levels of statistical significance. Finally, European bidders further retreat from lending activities as reflected in a market-adjusted reduction in the loans-to-assets ratio of 3.17% (*t*-statistic significant at 8%).

In contrast to banks in Europe, there is no indication of US institutions underperforming in terms of pre-merger profitability. ROAA are not significantly different from the industry benchmark and industry-adjusted ROAE are even positive and significant at 1% before a deal. On the other hand, US bidders appear to display below-industry levels of cost efficiency prior to M&A (the industry-adjusted cost-to-income ratio and employment cost to operating expenses are positive and different from zero at low levels of statistical significance). Following bank M&A, US bidders increase their loans to assets ratio to a market-adjusted 2.89% (difference significant at 5% according to both a *t*-test and a Wilcoxon rank statistic). Despite the sizeable boost in lending activities, the market-adjusted increases in capital ratios following M&A remain relatively small (0.44% of Tier 1 capital and 0.22% of total capital). This suggests that the risk profile of bidding banks is not materially changed by M&A. Next to lending, non-interest activities also increase in the post-merger period. The latter is reflected in rising market-adjusted values for non-interest income and other operating income (changes significant at 7% and 8%, respectively). There is also some evidence consistent with US banks experiencing a deterioration in cost efficiency after completion of a merger. For instance, employment costs per employee increase to above-industry levels in the post-merger period (difference statistically significant at 5%).

In summary, the analysis of accounting ratios permits the following conclusions. As previously noted when examining merger-related changes in OPCFROA, the results of this section confirm that European banks experience post-merger profitability improvements, while no changes in profitability are reported for US institutions. The analysis in this section further reveals that European banks appear to pursue a cost-cutting strategy when they increase their cost efficiency levels and decrease post-merger lending vis-à-vis non-merging banks. US banks, on the other hand, expand both on- and off-balance sheet activities following M&A, but experience a deterioration in post-merger efficiency levels.

Table 6-9 Market-adjusted Accounting Data around Bank M&A, by Location of the Bidding Bank

The accounting ratios are compiled using *Fitch*'s Bankscope database. Data are measured against mean values of listed banks (net sample banks) that are domiciled in the same country as the acquirer. Values are expressed in %, apart from employment cost, non-interest expenses and operating expenses, and non-interest expenses (all in thousand USD per employee). Currency conversions from non-USD values are based on end-of-year exchange rates obtained from *IMF-International Financial Statistics*. Differences are computes as the difference between pre-merger (year -1) and post-merger (year 3) market-adjusted returns. The first and 99th percentiles of the distribution of ROA, loan to equity, non-interest income to operating income, and loan loss provisions over net interest revenue have been winsorised.

Performance Metric	Europe						US					
	Pre-merger		Post-merger		Difference		Pre-merger		Post-merger		Difference	
profitability												
Return on Average Assets (ROAA)	-0.85%	***	-0.42%		0.43%	**, †	0.05%		0.15%	***	0.1%	
Return on Average Equity (ROAE)	-0.59%		4.10%	***	4.69%	***, †	1.94%	***	2.65%	***	0.71%	
Net Interest Margin	-0.65%	***	-0.36%	*	0.29%		-0.01%		-0.06%		-0.05%	
Net Int Rev / Avg Assets	-0.59%	***	-0.28%		0.31%		0.06%		0%		-0.06%	
non-interest income / tot assets	-2.52%	***	-2.86%	***	-0.34%		-1.21%	***	-0.89%	***	0.32%	
non-interest income / operating income	-1.13%		-7.43%	*	-6.31%		1.95%		5.77%	***	3.82%	*
Oth Op Inc / Avg Assets	-2.55%	***	-2.76%	***	-0.21%		-1.19%	***	-0.85%	***	0.34%	*
cost efficiency												
Cost to Income Ratio	-1.25%		-4.31%		-3.07%	*	2.73%	***	4.41%	***	1.68%	
employment cost / operating expenses	-4.1%	**	-5.03%	**	-0.93%		2.95%	***	4.01%	***	1.06%	
employment cost / non interest exp.	-4.28%	**	-5.74%	***	-1.46%		3%	***	3.66%	***	0.65%	
employment cost per employee (000s)	-18.93	*	-29.15	*	-10.22	**	-1.00		1.02	***	2.02	**, †
non-interest expenses / no of employees (000s)	-40.94	***	-53.8	***	-12.86	**	-2.03		0.1		2.13	*
Non Int Exp / Avg Assets	-2.2%	***	-2.48%	***	-0.28%		-1.11%	***	-0.99%	***	0.12%	
asset quality												
Net Loans / Total Assets	-3.86%	**	-7.03%	***	-3.17%	*	1.71%		2.89%		1.18%	**, †
deposits / assets	1.77%		0.82%		-0.95%		0.89%		0.52%		-0.37%	
loan loss prov / net loans	0.02%		-0.63%		-0.65%		0.04%		0.08%		0.04%	
Loan Loss Reserve / Gross Loans	-1.18%	***	-1.29%	**	-0.11%		0.1%	*	0.06%		-0.04%	
Loan Loss Prov / Net Int Rev	3.96%	*	5.06%	*	1.1%		-0.18%		0.87%		1.04%	
Tier 1 Capital Ratio	-6.46%	***	-2.82%	**	3.64%		-2.85%	***	-2.41%	***	0.44%	
Total Capital Ratio	-4.9%	***	-1.97%	**	2.93%	**	-1.67%	***	-1.44%	***	0.22%	
Equity / Total Assets	-5.51%	**	0.91%		6.41%		-1.5%	***	-1.73%	***	-0.22%	

* (**, ***) significant at 10% (5%; and 1%) according to a *t*-statistic.

† denotes the Wilcoxon rank statistic is significant at 5%.

6.8 Regression Analysis: The Timing of Performance Changes

A final set of post-merger performance tests examines the relation between changes in market-adjusted OPCFROA and deal- as well as country-specific variables in a linear regression framework. Regressions coefficients are estimated for each of the five years following a deal to analyse annual performance changes, while controlling for the effects of different post-merger performance drivers. Also, the multivariate analysis will ensure that the drivers of post-merger success which have been identified using univariate tests in Sections 6.5 and 6.6 are robust when their effects are jointly estimated. Specifically, the following model is proposed.

$$\begin{aligned}\Delta\text{OPCFROA}_t = {} & \alpha + \beta_1 \text{ loans} + \beta_2 \text{ employment cost} + \beta_3 \text{ rel. size} + \beta_4 \text{non-int. inc.} \\ & + \beta_5 \text{ dealvalue} + \beta_6 \text{ loss provisions} + \beta_7 \text{ cash dummy} \\ & + \beta_8 \text{ cross-border dummy} + \beta_9 \text{ US dummy} + \beta_{10} \text{ target profit.} \\ & + \beta_{11} \text{ product focus} + \beta_{12} \text{ sector concentration} \\ & + \beta_{13} \text{ sector int.margin} + \beta_{14} \text{ pooling} + \varepsilon\end{aligned} \tag{6.1}$$

The dependent variable is the mean difference in performance-adjusted OPCFROA between the base year -1 and year *t* (the post-M&A years 1 to 5). On the right-hand side of (6.1), a cross-border dummy takes the value of 1 for acquisitions where target and acquirers are located in different countries (and 0 otherwise), and a US dummy is 1 for acquisitions by US banks (and 0 for deals by European bidders). Product focus is a binary variable that takes the value of 1 if the first two digits of the SIC code of the companies involved in a merger are identical and 0 otherwise. Further, control variables are estimated for *t*-1 and include the following (deal-specific variables [value, SIC code, etc.] are from Thomson Financial and bank as well as bank sector data [non-interest income, sector concentration, etc.] are from *Fitch*'s Bankscope database):

- *Loans-to-assets ratio.* Post-merger performance may vary with the type of strategies employed by bidders. The higher the share of loans of a bank's assets, the heavier its reliance on more traditional forms of banking business rather than on off-balance sheet activities.

- *Employment cost.* Total cost of employment is scaled by operating costs. It is conceivable that M&A activity leads to a temporary increase in employment cost. For example, during the integration period, there may be a merger-induced expansion in the newly-merged bank's workforce that will subsequently be scaled down.

- *Relative size* is measured as the ratio of target to bidder assets. Post-merger performance may be weaker in the case of 'mergers of equals' as a result of internal wrangling over which merger party is in control of the integration process. Alternatively, relatively larger targets may offer more opportunities to realise post-merger cost efficiencies.

- *Non-interest income.* The ratio of non-interest income to total operating income indicates the importance of fee-generating activities *versus* more traditional lending activities for a bank (Focarelli and Pozzolo, 2001).

- *Deal value.* Post-merger performance may be weaker for larger deals as a result of the increased complexity of higher value M&A deals (Akhavein et al., 1997). Deal value is measured as the logarithm of the dollar value of the M&A transaction.[43]

[43] The correlation coefficient between deal value and relative size is 0.30 (significant at 7%). Consequently, spurious regression results when both variables are included in the specification should be a negligible issue.

- *Loan loss provisions.* Lack of due diligence prior a deal as well as a post-merger expansion in lending activities may cause increased loan loss provisions to depress post-merger performance. This variable is expressed as a percentage of net interest revenue.

- *Cash-only.* This dummy variable is 1 if a merger is financed by 100% cash rather than by a mix of cash and equity (in which case the variable is 0). The use of equity as a transaction currency is believed to signal to investors that the acquiring party deems its equity to be overvalued (Shleifer and Vishny, 2003). Consequently, equity-only deals tend to be associated with non-performing M&A (Lubatkin, 1983; Kiymaz, 2004).

- With *sector concentration* and *net interest margin*, the regressions in (6.1) also control for two indicators of target market attractiveness. Market concentration captures the share of assets owned by the largest three banks. More concentrated markets are likely to lower bank profitability for most institutions (Bikker and Haaf, 2002). Net interest margin is the average net interest revenue that local credit institutions realise expressed as a percentage of total earning assets. It is expected that more profitable markets offer more opportunities for bank acquirers to generate above-market returns (Focarelli and Pozzolo, 2001).

- *Target profitability* is measured in terms of year -1 ROA. It is conceivable that acquiring more profitable targets leads to increased post-merger performance.

- *Pooling.* This binary variable takes the value 1 if acquirers use the pooling method of merger accounting and 0 if the purchase method is employed. Post-merger performance may vary with the type of merger accounting method that acquirers use (Ravenscraft and Scherer, 1989; DeLong, 2003a). Specifically, under the pur-

chase method, any difference between the purchase price and the market value of an asset is recorded as goodwill. No marking to market occurs and, consequently, no goodwill is recorded under the pooling method. As a result, merger-related expenses are likely to be lower under the pooling method.[44, 45]

Table 6-10 presents the results of the regression specifications for years 1 to 5. The results show that, consistent with prior expectations, more concentrated markets are associated with lower post-merger performance and more profitable banking sectors lead to gains in market-adjusted OPCFROA. The coefficients on both variables remain significant at the 1% level for each of the five years following M&A. Similarly, the US dummy enters the regressions with a negative sign in year 1 as well as in each of the following years (significant at 1%), thereby, lending further support to H1 that European bank mergers outperform US M&A activities in the post-merger period.

In contrast to the country-specific variables whose effect on market-adjusted OPCFROA becomes observable in year 1 and persists for all five years following M&A, the profitability effect of variables that control for the outcome of the post-merger integration process varies during post-merger years. For example, Table 6-10 shows that

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[44] Starting from 2001, all acquisitions under US GAAP must be accounted for using the purchase method of accounting. Similar rules apply under IFRS since 2005. However, even before 2005, pooling was very rarely applied outside the US and the conditions for its application were restricted. In Germany and the UK, for example, pooling was generally restricted to mergers where acquirers could not be clearly identified.

[45] Out of the 80 US transactions, 19 US institutions chose pooling accounting. The correlation coefficient between the pooling dummy and the US dummy is 0.35 (significant at 5%) and multicollinearity between the two variables, hence, a negligible issue.

Table 6-10 Regression Results: Performance Changes of Bidding Banks around Bank Mergers, Years 1 to 5

The dependent variable is mean market-adjusted OPCFROA (pre-tax operating cash flows divided by the book value of assets, where pre-tax operating cash flows are income before taxes and extraordinary items plus debt expenses). Unless stated otherwise, variables refer to bidding banks or the country of the bidder in the year before a deals was announced (*t*-1). Accounting data for banks are from *Fitch*'s Bankscope database. Deal specifics are from Thomson Financial. Relative size is defined as target over acquirer assets (in *t-1*). Deal value is the logarithm of the dollar value of the M&A transaction and cash finance is a dummy which is 1 if a transaction is 100% cash-financed and 0 otherwise. Cross-border is a binary variable that takes the value of 1 for acquisitions where target and acquirers are located in different countries; target profitability is ROA in *t*-1; product focus is measured by a binary variable that takes the value of 1 if the first two digits of the four-digit SIC code of the companies in a merger are identical and 0 otherwise. Concentration and is share of assets of the three largest credit institutions and net interest margin the average value of net interest revenue over total earning assets (both in the target country). The first and 99th percentiles of the distribution of ROA, loan to equity, non-interest income to operating income, and loan loss provisions over net interest revenue have been winsorised.

	Year 1	Year 2	Year 3	Year 4	Year 5
Net Loans / Total Assets	0.039**	0.040**	0.012	-0.016	-0.040
	(0.016)	(0.018)	(0.019)	(0.029)	(0.087)
Employment cost / operating expenses	-0.022**	-0.029*	-0.024	-0.011	-0.012
	(0.011)	(0.016)	(0.016)	(0.018)	(0.033)
Rel. Size	-0.512	-0.400	-0.624	-0.770	-0.947
	(0.446)	(0.443)	(0.432)	(0.604)	(0.907)
non-interest income / operating income	-0.003	-0.007	-0.006	0.009	0.012
	(0.011)	(0.012)	(0.012)	(0.016)	(0.027)
Deal Value	0.211*	0.199	0.181	-0.105	-0.145
	(0.114)	(0.170)	(0.166)	(0.244)	(0.517)
Loan Loss Provisions / Net Int. Rev	-0.047**	-0.040**	-0.042*	-0.034	0.040
	(0.022)	(0.021)	(0.023)	(0.029)	(0.095)
Cash finance	-0.660	-0.859*	-0.999**	-1.413**	0.009
	(0.422)	(0.456)	(0.453)	(0.685)	(1.342)
Cross-border dummy	1.136*	0.295	0.161	2.160**	7.036**
	(0.598)	(0.739)	(0.708)	(1.091)	(2.766)
US dummy	-3.953***	-3.163***	-3.225***	-4.964***	-3.210***
	(0.883)	(0.948)	(0.967)	(1.614)	(1.302)
Target Profitability (t_roa)	-8.196	-4.072	-6.539	-14.344*	-14.178
	(6.690)	(6.584)	(6.353)	(7.515)	(14.259)
Product Focus	0.105	0.164	0.274	-0.107	-0.313
	(0.400)	(0.430)	(0.415)	(0.563)	(0.954)
Bank Sector Concentration	-11.892***	-11.562***	-9.964***	-11.643***	-7.686***
	(2.089)	(2.297)	(2.206)	(2.878)	(2.625)
Sector Net Interest Margin	256.228***	269.152***	284.591***	219.409***	252.533***
	(48.396)	(49.639)	(48.605)	(60.085)	(65.211)
Pooling of interests dummy	-0.081	-0.111	-0.185	-0.137	-0.204
	(0.398)	(0.395)	(0.385)	(0.480)	(1.029)
Constant	-5.032*	-3.342	-5.107*	2.780	2.317
	(2.596)	(2.839)	(2.810)	(3.756)	(8.093)
Observations	104	94	90	87	51
R-squared	0.69	0.64	0.66	0.64	0.70

Standard errors are heteroscedasticity-robust according to White (1980) and reported in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%.

low loan-loss provisions are associated with improvements in market-adjusted OPCFROA in years 1 and 2 (statistically significant at 5%) and, to a smaller extent, in year 3 (significant at 10%). This is consistent with banks experiencing difficulties when adopting to post-merger increases in lending which often follow M&A (see Knapp et al., 2005). These lending increases appear to lead to higher loan loss reserves and lower per-

formance for some banks. However, in the years after a deal has been completed (once banks' loan approval procedures have adapted to increased lending activities) the negative influence of the loan loss variable on performance is no longer statistically significant. Similarly, employment cost exert a negative influence on market-adjusted returns only in year 1 (significant at 5%) and year 2 (significant at 10%), implying that merger-induced cost inefficiencies tend to be temporary. On the other hand, the coefficients on the loans to assets ratio and employment cost imply that it takes up to three years after M&A for employment cost to be sharply reduced and loan approval procedures to adjust.

The cross-border dummy does not enter any of the regressions at a customary level of statistical significance until years 4 and 5. The coefficients are positive—confirming earlier findings that cross-border M&A outperform domestic bank mergers (H2)—and significant at 5%. Accordingly, it takes up to three years for the performance gains of cross-border M&A to come into effect. Further, in years 1 to 3 the product focus variable has a positive sign. While a positive performance effect of product focussing mergers is intuitively appealing on the basis that there is a cost cutting potential for this type of deal, the result is in contrast to the findings of Section 6.5.3 where evidence consistent with the opposite effect of diversification is presented. Finally, the coefficient on the pooling method dummy is not statistically significant implying that the performance results are not influenced by the method of takeover accounting.

At more general level, it should be pointed out that the similar regression coefficients across the five post-merger years in Table 6-10 lend robustness to the conclusions drawn from them. The signs on the coefficients remain identical across years for almost all cases. Also, the high adjusted R-squared values indicate that the specifications used

explain a high share of the variation in performance-adjusted OPCFROA in the post-merger period.

6.9 Conclusion

For a sample of 113 bank mergers in Europe and the US, this chapter shows that bank M&A lead to performance gains for European banks in the years following a merger. In the US, by contrast, there is no evidence of M&A activity affecting the performance of acquiring institutions. Performance gains are particularly pronounced for cross-border and cross-industry mergers in Europe, albeit it takes up to three years for any gains to materialise. Banks in Europe, seek to raise efficiency levels in the post-merger period, while scaling back on lending activities. US banks, by contrast, adopt a strategy consistent with post-merger revenue enhancements by increasing on- and off-balance sheet activity and experience lower post-merger cost efficiency. It is argued that European banks, by and large, pursue a cost cutting strategy, while banks in the US attempt to capitalise on recent regulatory changes that permit the formation of integrated financial services providers by following a revenue-enhancement strategy.

The relatively positive performance effects of European bank mergers and European cross-border mergers in particular add legitimacy to policy initiatives at EU-level that are designed to facilitate the pan-European consolidation of credit institutions. These findings are similar to those reported in Chapter 5 where US bidding banks, on average, realise value losses, while shareholders in European banks realise positive abnormal returns. The fact that bank mergers in the US do not lead to performance gains raises possible governance explanations behind M&A (Morck et al., 1990; Becher and Campbell, 2004). If banks that engaged in M&A do not outperform those that did not, the question arises as to why shareholders and other stakeholders are exposed to the

substantial risk of value destruction or deterioration in corporate performance commonly associated with M&A bids. The next chapter examines one possible answer to this paradox by testing governance explanations of M&A. Specifically, the next section analyses the corporate governance of bidding banks and its effects on market and financial performance following merger announcements in different regulatory regimes.

7
Regulation, Board Monitoring and Bidder Performance

7.1 Introduction[46]

It is a widely-held view that regulated firms are not subject to the same contracting costs between managers and shareholders as other public companies (Baysinger and Zardkoohi, 1986; Kole and Lehn, 1999; Booth et al., 2002). The argument goes that, because regulators restrict managerial discretion and the extent to which the actions of managers may adversely affect shareholder wealth, regulators act as a substitute for monitoring by shareholders. As a result, banks are practically absent from governance research and, while it is recognised that banks exert governance over the firms which they finance (La Porta et al., 2000; Levine, 1997), the corporate governance of banking firms themselves is not well understood (Adams and Mehran, 2003). The purpose of this final empirical chapter is to provide new insights into the nature of the relationship between regulation and corporate governance using a sample of bank mergers in Europe and the US.

Fama and Jensen (1983) argue that the effectiveness of management monitoring is related to the degree to which the interests of managers and shareholders diverge. Con-

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[46] Sections of this chapter have been published in Hagendorff, J., Collins, M. & Keasey, K. (2007b). Bank Governance and Acquisition Performance. *Corporate Governance – An International Review*, Vol. 15, No. 5.

sequently, the performance and governance of bidding banks form a suitable background against which to examine whether certain types of governance structures safeguard shareholders from managerial opportunism. As has been repeatedly demonstrated, merger activities, on average, lead to wealth losses for bidding bank shareholders (James and Weir, 1987; Houston and Ryngaert, 1994; DeLong and DeYoung, 2007; Hagendorff et al., 2008),[47] while managers at the bidding firm are set to benefit from higher prestige and increased remuneration packages in the post-merger period (Anderson et al., 2004; Masulis et al., 2007; Bliss and Rosen, 2001).[48]

Essentially, the question at hand is whether regulation acts as a substitute or a complement to management monitoring by shareholders. If regulation acts as a substitute to governance, regulators that restrict managerial discretion (e.g. in terms of the activities that banking firms may engage in), will cause board monitoring to play a lesser role in reducing the contracting cost between managers and shareholders in listed banks. The results reported in this chapter, however, are inconsistent with this view and point to a complementary role between bank regulation and governance instead. Accordingly, stricter regulation is associated with more effective governance mechanisms at bidding banks, possibly, because more stringent bank regulation is accompanied by regulatory pressure to adopt effective monitoring mechanisms (see Booth et al., 2002).

Recent studies such as Adams and Mehran (2003) or Becher and Frye (2007) focus their analysis on the relationship between firm governance and industry regulation by comparing the prevailing governance mechanisms (such as the composition of com-

[47] The results of previous chapters of this thesis are also consistent with financial sector M&A in the US and Europe being frequently associated with wealth losses (Chapter 5) and deteriorating corporate performance (Chapter 6) for the acquiring party.

[48] Section 1.4 (pg. 9) discusses theories of agency conflict and non-performing M&A activities in more detail.

pany boards) in regulated versus unregulated industries. It could, thus, be argued that these studies examine potential monitoring capabilities. By contrast, this chapter is concerned with the impact of monitoring in the context of M&A and, hence, with the actual effectiveness of bidders' governance arrangements under different regulatory regimes.

The remainder of this chapter is organised as follows. The next section introduces the theoretic background to the analysis by discussing whether monitoring is a substitute or a complement to governance. Subsequently, the hypotheses are introduced; and the data and methodology are outlined. Section 7.5 presents the results of the empirical analysis. The final section briefly draws together the main conclusions.

7.2 Bank Regulation: Substitute or Complement to Governance?

7.2.1 The Substitution Hypothesis

The view that regulation and governance act as substitutes—*inter alia,* by diminishing managerial discretion and its potentially negative effects on shareholder wealth—underlies most studies on firm governance. The substitution hypothesis posits that, because monitoring is costly for shareholders (Shleifer and Vishny, 1997; Baysinger and Zardkoohi, 1986), shareholders will not duplicate efforts by bank regulators when mitigating against agency cost. This assumption has led to the *de facto* exclusion of banks and other closely regulated firms such as utilities from applied governance research (Adams and Mehran, 2003).

While the substitution hypothesis has not been extensively tested, some findings appear to back the notion that regulators act as a substitute for shareholder monitoring. Joskow et al. (1993) examine a sample of 2,000 US firms between 1970 and 1990 and find that CEOs in regulated industries receive smaller pay packages vis-à-vis unregulated

industries. The authors argue that any discount in CEO compensation reflects the extent to which regulators limit discretion and, ultimately, CEO productivity. By the same token, Kole and Lehn (1999) analyse changes in the governance system of the US airline industry over a 22-year period after its deregulation in 1978. The results show shifts in board structure and executive remuneration towards those of unregulated firms.

For the banking industry, Becher et al. (2005) study the executive pay packages of 14,000 US firms between 1992 and 1999 and find that director remuneration packages in the banking industry make less use of incentive compensation (i.e. exhibit a smaller share of equity-based pay) than unregulated industries. Adams and Ferreira (2006) find that directors in the US banking industry attend fewer board meetings than directors in non-financial industries. Subrahmanyam et al. (1997) provide evidence that the monitoring productivity of bank directors is lower compared with unregulated firms. For a sample of US bank bidders, the authors find a negative relationship between the abnormal returns accruing to the shareholders of bidding banks at the time of the merger announcement and the proportion of independent directors on the board of the same institution. This finding also points to directors in regulated industries engaging in functions other than monitoring. For example, bank directors may be selected on the basis of how well they may deal with regulators. The role of bank directors may, thus, involve a substantial 'public relations' element (Baysinger and Zardkoohi, 1986).

However, the results of an increasing number of studies are not consistent with the substitution hypothesis and, instead, point to a complementary role between regulation and corporate governance. Booth et al. (2002) analyse the boards of 300 large US companies in 1999 and find that regulated firms display more independent boards than unregulated firms. In the same vein, Adams and Mehran (2003) find that US BHCs have more independent boards, more committees and meet more frequently than the boards

of unregulated firms. Becher and Frye (2007) find for a sample of 400 initial public offerings (IPOs) in the US between 1993 and 1998 that regulated firms have more independent boards and do not use less incentive compensation than firms in non-regulated industries. These results clearly run counter to the notion that regulation and governance are substitutes—one would not expect regulated industries to exhibit governance mechanisms that appear more adept at mitigating agency conflict.

7.2.2 The Case for Complementarity

It can be easily observed that political institutions that support monitoring by shareholders (e.g. investor protection laws that promote transparency and disclosure and make contracts enforceable) are associated with more effective governance institutions (e.g. greater board independence, more active takeover markets). Corporate law theory posits that cross-country differences in company governance result from the varying degrees to which the legal and regulatory framework protects minority shareholders across countries (La Porta et al., 2000, 2002; Nenova, 2003). However, stricter laws and regulation alone do not necessarily increase the effectiveness of governance arrangements. Rajan and Zingales (2003) show that, at the beginning of the twentieth century, stock market capitalisations were higher in Germany and France than in the US, even though the legal and regulatory framework in the US favoured market-based governance. In the same vein, Dyck and Zingales (2004) show that the private benefits of control (a measure of contracting cost between managers and shareholders) vary across groups of countries with similar corporate disclosure and transparency regulations.

If laws alone cannot account for differences in governance systems, what ensures regulation is a complement to governance? Becher and Frye (2007) argue that even when regulators do not stipulate specific governance arrangements, their presence coerces regulated firms into adopting more productive governance structures. Roe (2003;

2005) explains that it is the political will behind governance laws (and not their design) which acts as the primary determinant of their effectiveness.[49] Similarly, Mahoney (2001) argues that legal frameworks and regulations should not be understood as a narrow set of rules, but, in a wider sense, as governments signalling intent about good practice and commitment to intervene (enforce). A complementary role between regulation and firm-level governance would, thus, be consistent with governance laws posing a 'threat of action' (see Booth et al., 2002). It is through this mechanism that stricter regulation may increase managerial compliance and, ultimately, the effectiveness of corporate governance arrangements at firm-level.

The 'threat-of-action argument' may be applied to conceptualise differences in the design and regulation of banking systems across developed countries. Generally, the US can be described as having a more stringent regime of bank regulation compared with most European economies. This assessment can be illustrated by reference to the following criteria (a more detailed list of regulatory differences is included in the Appendix to this chapter on pg. 191):

(i) *Activities.* Banks in the US have traditionally not been allowed to diversify into non-depository activities. While most of these restrictions have been repealed by the Gramm-Leach-Bliley Act in 1999, US banks still face restrictions in terms of M&A activities. For example banks are not allowed to take stakes in non-financial firms and any acquisition greater than 25% is subject to regulatory approval. Banks in many European counties had enjoyed a more lenient

[49] Roe (2003) outlines that a lack of political will has a serious undermining effect on the enforcement of governance laws. In some countries, breaches of insider trading laws are viewed as the wealthy harming the wealthy and existing legislation to restrict such activities are, hence, seldom enforced.

regime as embodied in the long-established universal banking model in some European countries.

(ii) *Discipline.* US bank directors face an increased risk of litigation. Following the savings and loan crisis in the early nineties, US regulators have introduced a 'prompt corrective action scheme'. While no study quantitatively compares the liability risk that bank directors face across countries, the 'duty of care' standards in the US appear harsher than anywhere else in the world (Fischer, 1992). Adams and Ferreira (2006) describe that US regulators can freeze directors' assets and impose civil fines of up to $1 million a day without trial or hearing.

(iii) *Capital regulation.* There is still some uncertainty when and in which form the new international capital adequacy standards (Basel II) will be adopted in the US. While the EU will adopt Basel II by 2008, the US regulatory authorities have delayed its adoption on the grounds that the proposed capital charges are too low and the regulatory regime too lenient.

Whether regulation acts as a substitute or a complement to corporate governance can be tested for a sample of bank merger announcements in Europe and the US using a simple hypothesis. In this chapter, monitoring productivity is measured as the effectiveness of bidder board characteristics in securing positive performance results for bidding shareholders. If regulation and governance are substitutes (complements), one may expect more stringent US regulation to be associated with a lower (higher) marginal monitoring productivity of boards. Consequently, the basic hypotheses to be tested in this chapter are:

H_N: The productivity of board monitoring is higher in Europe than in the US. (Substitution hypothesis)

H_A: The productivity of board monitoring is higher in the US than in Europe. (Complementarity hypothesis)

7.3 Hypotheses Development: Board Monitoring and Acquisition Performance

The board of directors of publicly traded companies is among the most important internal control mechanisms for promoting and protecting shareholder interests due to its role in providing expertise and monitoring managerial discretion (Fama, 1980). Boards have the authority to ratify or obstruct managerial initiatives, to assess the performance of top management, and to determine managerial compensation packages as well as career paths at a particular firm. Board monitoring of management could prove particularly effective in minimising agency cost for M&A activities, because acquisitions require board approval (or at least some form of consultation process) by statute in most countries (Hermalin and Weisbach, 2003).

The following board characteristics and their role in facilitating effective monitoring of management—in particular of acquisitions undertaken at the expense of shareholder wealth—are discussed below: board size, board activity, leadership structure, board independence, CEO age and tenure, and board diversity. The resulting hypotheses are presented null form.

7.3.1 Board Independence

One way to increase the monitoring productivity of a board is to maintain a balance between a company's own directors and members from outside the bank. In theory, the former are involved in the day-to-day running of the firm, while the latter draw on wider experience and expertise and may provide an outsider's, more objective evaluation of

managerial performance. Fama and Jensen (1983) argue that outside directors are incentivised to monitor diligently, because they seek to protect their reputation as effective monitors of managerial discretion.

Studies of non-financial firms have shown that a higher proportion of independent directors on the board is associated with a higher likelihood of CEO dismissal (Weisbach, 1988) and a positive market reaction to merger announcements (Byrd and Hickman, 1992). On the other hand, Hayward and Hambrick (1997) cannot find any evidence that the share of independent bank directors reduces the risk of CEOs overpaying for acquisitions. Consistent with this, Lehn and Zhao (2006) show that more independent boards are not more likely to replace CEOs after underperforming takeovers.

For the banking industry, Subrahmanyam et al. (1997) find a negative relationship between board independence and abnormal returns accruing to the shareholders of bidding banks at the time of the merger announcement. The authors interpret this as evidence that regulation and firm-level governance act as substitutes. By contrast, Cornett et al. (2003) examine the governance arrangements of bidding banks and find that more independent bidder boards increase the announcement period returns that bidding banks realise. This chapter tests the following hypothesis.

H1: Board independence has no effect on the performance of bank M&A.

7.3.2 Board Activity

Are busy boards more effective monitors? The argument posits that if boards meet more frequently and directors interact more often, board vigilance will increase and value-destroying acquisitions will become less likely. Vafeas (1999) and Fich and Shivdasani (2006) report a negative association between board meetings and corporate valuations for non-financial firms in the US. However, Vafeas (1999) also proffers evi-

mance. The author shows for a sample of 304 US firms between 1990 and 1994 that the frequency of board meetings increases sharply following declines in a firm's share price.

The literature has yet to study the effects of board activity on acquisition performance in the banking industry. Adams and Mehran (2005) investigate a related question by examining whether active boards increase market valuation, but cannot find any evidence consistent with this. Thus,

H2: There is no relationship between the frequency of BHC board meetings before an acquisition and M&A performance.

7.3.3 Board Size

While large boards are deemed less effective monitors of managerial discretion, there is little empirical evidence in support of this. Jensen (1993) argues that larger boards, by hindering communication, coordination and, ultimately, decision-making, can more easily fall under control of the CEO and, consequently, are more at risk to be driven by a non-value maximising agenda. Yermack (1996) finds for 452 US firms in the 1980s that smaller boards are associated with higher corporate values. By contrast, Masulis et al. (2007) examine a sample of 3,000 acquisitions between 1990 and 2003 and cannot detect that board size affects the returns that bidding bank shareholders realise in the announcement period. In the same vein, Lehn and Zhao (2006) find no evidence that smaller boards in the US exert more pressure on acquiring CEOs to resign following value-destroying acquisitions.

On the other hand, the special position of banking as a regulated industry may mean that size has a positive impact on merger performance. Research in a US-context clearly shows that banking firms have larger boards than non-financial firms. This is partly due to state-level stipulations on the composition of banks' boards (Adams and Mehran, 2003), and partly because board size is a function of organisational complexity

(Hermalin and Weisbach, 2003). It is conceivable that larger boards, with a larger number of outside directors, have more outside links to, say, regulators which can be very valuable in the context of merger approvals (Baysinger and Zardkoohi, 1986).

Examining the effects of board size on the market reaction to bank mergers in the US, Subrahmanyam et al. (1997) do not find evidence that board size affects the market reaction to bank M&A. However, Adams and Mehran (2005) find a positive association between board size and performance (as proxied by Tobin's *q*) in the US banking industry. The authors suggest that this result may be caused by an M&A-related endogeneity issue. If high *q* firms are more likely to engage in M&A, more M&A deals may lead to an increase in the number of directors in the aftermath of an acquisition. On the basis of the above findings, therefore:

H3: Board size will not affect bank acquisition performance.

7.3.4 Chairman / CEO Duality

Another important aspect of effective governance hinges on whether the positions of the CEO and the board chairman are separate or, alternatively, duality prevails. Jensen (1993) argues that consolidating the two positions in one person leads to a concentration of power and impairs effective board monitoring. On the other hand, Brickley et al. (1997) suggest that a separate CEO-chairman leadership structure generates agency costs based on informational inefficiencies between the two roles. Consequently, monitoring benefits associated with separating the roles of CEO and chairman are partly marginalised over the issue of 'who monitors the monitor'?

If keeping the duties of CEO and chairman separate increases the monitoring effectiveness of boards, one would expect such a leadership structure to be associated with better performance. Rechner and Dalton (1991) and Baliga et al. (1996) find that

firms perform better when the leadership structure is separated, while Brickley et al. (1997) cannot find any difference. Goyal and Park (2002) show that the CEOs of underperforming companies are less likely to be dismissed under a unified board leadership structure. As regards M&A, Masulis et al. (2007) show that separating the positions of CEO and chairman of the board leads to higher bidder announcement returns and may help thwart empire-building ambitions by CEOs. On the other hand, Hayward and Hambrick (1997) find that the separation of the roles of CEO and chairman fails to ensure that CEOs do not overpay for acquisition targets.

To date, the performance effects of a separated board leadership structure have not been examined in the context of banking firms. For the purpose of this thesis, the following is hypothesised:

H4: CEO / Chairman duality has no effect on bank M&A performance.

7.3.5 CEO Age & Tenure

Both CEO age as well as CEO tenure reflect the level of expertise accumulated by the top executive regarding the organisational as well as the wider economic environment of a bank. Longer-tenured and older CEOs have been found to be less likely to harm shareholders' interests. For example, Kosnik (1990) finds that older CEOs engage less frequently in greenmail transactions where CEOs privately repurchase equity from dissident shareholders at a premium.

For the US banking industry, Cornett et al. (2003) show that CEO age is positively and significantly related to the announcement period returns that bidding banks realise. However, with regards to the long-term performance of banks, Cornett et al. (2007) as well as Lehn and Zhao (2006) cannot find any evidence consistent with older CEOs improving the industry-adjusted profitability of a sample of US banks. Thus,

H5: CEO age and CEO tenure are not related to acquisition performance.

7.3.6 Board Diversity

Organisational outcomes are a consequence of fit between various processes within an organisation and how these are moderated by factors such as the environment, technology, and culture (Richard, 2000). Claims that more female or ethnic minority directors improve corporate performance have led to frequent calls from policymakers for greater diversity in the boardroom (see for example, *Financial Times*, January 6 2006).[50] It is commonly argued that, while heterogeneous groups are more prone to conflict (Blau, 1977), they also benefit from increased creativity and innovation, partly based on superior capabilities for learning and self-reflection (Ely and Thomas, 2001). Organisational scholars maintain that diverse groups, through interaction between the various group members, produce a variety of different perspectives that will ultimately improve the quality of decision-making (Maznevski, 1994). In this chapter, it is hypothesised that diverse boards are more activist and will, thus, raise issues that are less likely to be discussed by more homogeneous groups.

While the literature has yet to study the impact of board diversity on M&A performance, the proposition that diverse boards are more critical of the performance effects of bank M&A is based on a number of previous studies. Adams and Ferreira (2004) examine gender diversity in the boardroom of Fortune 500 firms and find evidence consistent with diversity improving the quality of board monitoring. Thus, boards with a higher share of female directors are associated with improved director attendance at board meetings, more frequent meetings, and executive remuneration that follows cor-

[50] For a sample of US Fortune 1000 firms in 1999, Carter et al. (2003) find that one in four companies do not have any female directors on their board and that more than half do not have a member of an ethnic minority on the board. For the UK, Conyon and Mallin (1997) examine the boards of FTSE 350 companies in 1995 and find that while 2.5% of directors are female, less than 0.5% of directors are female executive directors.

porate performance more closely. Research on the impact of board diversity by Shrader et al. (1997) in a US multi-industry setting finds a positive link between gender diversity and firm performance at the middle and upper management level, but not for female representation on boards. Erhardt et al. (2003) analyse the performance effects following the appointment of members of ethnic minorities for 137 US firms and find a positive relation between the number of board members that are either female or belong to an ethnic minority group and profitability measures such as return on investment or return on assets.

As regards the banking industry, Bantel and Jackson (1989) use survey data to examine the relationship between top management team diversity and the innovativeness of around 200 US banks in the 1980s. The overall results indicate that innovative banks are managed by teams that are more diverse with respect to their functional backgrounds, but not with respect to age or education. Specifically, culturally diverse teams are found to exhibit diversity in ideas and approaches to problem solving. In the same vein, Richard (2000) looks at how workforce diversity at banks affects employee productivity and management's self-reported measures of market performance for a sample of 574 US banks. The author finds that US bank managers perceive diversity to create value. Hence, the final hypothesis is:

H6: The diversity of the bidding bank's board does not improve bank merger performance.

7.4 Data and Methodology

7.4.1 Data Sources and Research Method

This chapter examines both market reactions and financial performance over three years following bank mergers. The sample consists of completed bank M&A announcements between 1996 and 2004 in Europe and the US (please refer to Section 3.3 for a discus-

sion of how the dataset was compiled). Bidding banks' announcement returns are measured by market model-adjusted returns. Cumulative abnormal returns (CAR) are calculated over an event window of (t-2, t+2) with 0 as the announcement date supplied by Thomson Financial. Market model parameters are estimated using 100-day daily return observations starting from 121 days to 21 days before the acquisition announcement (see Dodd and Warner, 1983). Share price data and value-weighted national bank-sector indices are from Datastream.[51]

Long-term performance changes are measured as pre-tax operating cash flows (=income before taxes and extraordinary items plus debt expenses) divided by the book value of assets. This measure is denoted OPCFROA. As outlined in Section 6.4.2 (pg. 131), one of the advantages of OPCFROA is that it is not sensitive to the method of deal finance (debt finance means lower post-merger profitability), while controlling for interest payments to depositors. Also, OPCFROA is a more precise measure of actual performance changes than Tobin's q—a metric routinely used in corporate governance research. As pointed out by Cornett et al. (2007), because Tobin's q controls for market valuation, this measure partly reflects growth opportunities. Consequently, poorly-performing firms may still deliver above-market returns to shareholders, for example on the back of speculation that a firm might become a takeover target. Financial statement data are obtained from the Worldscope database and adjusted by mean industry performance (based on an asset-weighted index of all banks available on Worldscope in the acquirer's country) to control for extraneous effects that affect the entire industry. Following Berger et al. (1999), who argue it takes three years for merger-related gains to fully materialise, performance changes are computed as changes in industry-adjusted OPCFROA from one year before the completion of a merger to three years afterwards.

[51] Section 3.2.1 (pg. 35) discusses the method used to calculate announcement returns in more detail.

Table 7-1 Variable Definitions: Bidder Boards

All variables are collected at the BHC-level of bidding banks and, unless stated otherwise, refer to the year of the acquisition announcement. In countries, where two-tier board structures prevail, data are collected for the executive board as identified in OECD (2004). Governance data on US banks are from proxy statements filed with the Securities and Exchange Commission (SEC). For European bidders, data were extracted from annual reports and other company publications such as corporate governance reports and press releases. Filings were collected for the year before a deal was announced.

Variable Name	Explanation
Board size	Number of directors.
Board independence	Proportion of the board that consists of independent directors. Directors are independent if they are not employees, former employees, or relatives of employees (see Hermalin and Weisbach, 2003).
Board activeness	Number of board meetings per annum (including extraordinary meetings).
CEO / chair duality	Dummy variable which takes the value 1 if the bidding CEO is also the chairman of the board and zero otherwise.
CEO age	Age of the CEO.
Mean age	Mean age of the members of the board of directors.
CEO tenure	Tenure of the CEO.
Mean tenure	Mean tenure of the members of the board of directors.
No. of women	Number of female directors on the board.
Mean outside directorships	Average number of outside board memberships held by members of the board.
Audit, remuneration, and appointment committee activeness	Number of committee meetings per year.
Occupational diversity	Based on Blau's (1977) measure of heterogeneity. Following Hillman et al. (2000), directors are categorised as insiders, outsider business experts (e.g., CEO or senior manager of for-profit firms), support specialists (such as law and accounting experts), or community leaders (e.g. politicians, clergy, academics). The following Herfindahl-type index is computed: $1-\Sigma p_i^2$, where p is the proportion of group members in i different categories. In the presence of these four groups, the diversity index varies between 0.75 (maximum diversity) and 0.25 (minimum diversity) depending on the distribution of group members across the board.
Finance background	Proportion of independent directors with independent directorships in financial services companies.
No. of indep. board committees	Number of board committees chaired by an independent director.
Age diversity	Mean age of directors on the board divided by the standard deviation of director age across the board.
Tenure diversity	Mean tenure of directors on the board divided by the standard deviation of director tenure across the board.
Gender diversity	Number of women on board divided by board size.
Expertise diversity	Mean number of outside directorships of directors on the board divided by the standard deviation of outside directorships across the board.

Source: SEC, company data

In order to assess the effectiveness of board monitoring variables in improving acquisition outcomes, a unique dataset on the size, composition and diversity of acquiring banks' boards was manually collected. Governance data on US bidding banks were obtained from proxy statements filed with the Securities and Exchange Commission (SEC). For European bidders, data were extracted from annual reports and other company publications such as corporate governance reports and press releases that contain information about a bank's board and its directors. In all cases, data are compiled using the last filing or publication before a deal was announced so as to analyse the board characteristics prevailing at the time of the deal announcement. Definitions of the board

variables that have been collected for the purpose of this study are provided in Table 7-1.

7.4.2 Sample Descriptive Statistics

Table 7-2 presents summary statistics on the board characteristics of bidding banks in Europe and the US. Board structure is a costly input into the monitoring of management. If regulation were a substitute to governance, one would expect to observe fewer board characteristics that are commonly associated with improved monitoring by shareholders in the US than in a European market context. However, the univariate tests reported in Table 7-2 for US and European banking firms are not consistent with our expectation.[52]

US boards are more independent than the boards of European banks. The average (median) percentage of independent directors on US boards is 81% (82%) compared with 70% (67%) in Europe (both *t*-statistic and *z*-statistic significant at 1%).[53] Further, US bank boards have significantly fewer members than European boards. For European boards, mean board size is 17.25 compared with 14.93 in the US, while median board sizes are 18 and 14 in Europe and the US, respectively (again, both *t*-statistic

[52] Arguably, recent regulatory changes such as the Sarbanes-Oxley Act in the US in 2002 may well mean that some board ratios presented for the US have become outdated. As a result of these regulatory changes, one may expect an increase in the share of independent board directors (see Wintoki, 2007).

[53] The relatively greater board independence in the US may also be due to labour market regulations in countries such as Germany, the Netherlands and Sweden that reserve a certain number of directorships for insiders such as employee representatives. According to the co-determination law in Germany, seats on supervisory boards of publicly-traded companies with more than 2,000 employees must be equally divided between the representatives of shareholders and employees.

and z-statistic significant at 1%).[54] Also, US bank directors are slightly older, longer-tenured and serve under a CEO who is also longer-tenured. The mean (median) number of outside directorships that bank directors hold is 0.89 (0.67) in the US compared with 1.69 (1.54) in Europe.[55] With respect to the computed diversity indices, European bank boards are more diverse in terms of director expertise (i.e. the number of outside directorships across the board). For US bank acquirers, mean (median) expertise diversity is 0.75 (0.92) and 1.05 (1.08) in Europe (differences significant at 1%). US boards, on the other hand, are more heterogeneous in terms of the gender and occupational background of directors (differences significant below 1%-level according to the *t*- and z-statistic). Interestingly, the already lower number of female directors on European boards is almost exclusively made up of union representatives. Not a single independent female director could be identified in Italy, Spain or Germany.

Boards can delegate some of their authority to committees which are responsible to the board in separate and narrowly-defined areas. Thus, if boards have many committees, committees become the main mechanism through which directors carry out their oversight duties (Klein, 1998). US banks have a significantly higher number of board committees, more of which are independent (i.e. chaired by an independent director), but which, with the exception of the remuneration committee, do not hold more meetings that board committees in Europe. The frequency at which acquiring bank's CEOs also serve as chairman of the board is significantly lower in the US than in Europe

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[54] The data on board size are comparable to Adams and Mehran (2003) who report an average board size of 18 in the US banking industry for a sample of 35 BHCs between 1986 and 1999.

[55] It could be argued that the higher number of outside directorships of European directors is reflective of the practice of cross-holdings whereby groups of companies maintain sizable equity holdings of each group member in order to gain representation on each others' boards.

Table 7-2 Descriptive Statistics: Bank Governance and Europe and the US

The table provides descriptive statistics for the sample of acquiring banks presented by the acquiring bank's country. *t*-Statistics correspond to differences in means and (a two-sample *t*-test assuming unequal variance) and z-statistics correspond to differences in medians according to a Wilcoxon two-sample test.

	US							Europe							Δ(EUR – US)	
	N	Mean	P25	P50	P75	Min	Max	N	Mean	P25	P50	P75	Min	Max	*t*-statistic	*z*-statistic
Board Size	95	14.93	12.00	14.00	18.00	6.00	31.00	42	17.25	15.00	18.00	20.00	8	27	3.07 ***	3.06 ***
No. of Indep Directors	95	12.23	9.00	12.00	15.00	5.00	27.00	42	11.89	10.00	12.00	14.00	5	18	-0.53	-0.33
Board Independence	95	0.81	0.75	0.82	0.88	0.55	0.94	42	0.70	0.61	0.67	0.75	0.45	0.93	-7.52 ***	-6.06 ***
Board Activeness	95	9.01	6.00	8.00	12.00	4.00	18.00	33	9.26	7.00	8.00	12.00	4	15	0.40	0.55
CEO / Chair Duality? (1=yes)	95	0.27	0.00	1.00	1.00	0.00	1.00	42	0.81	0.00	0.00	0.00	0.00	1.00	8.40 ***	7.36 ***
CEO Age (years)	95	55.54	52.00	56.00	59.00	41.00	68.00	42	53.98	48.00	54.00	59.00	40	65	-1.75 *	-1.27
CEO Tenure (years)	95	12.11	7.00	12.00	16.00	1.00	31.00	42	4.87	2.00	5.00	6.00	1	13	-6.95 ***	-6.85 ***
Director Age (years)	95	59.69	58.27	59.72	61.45	52.25	71.88	33	58.06	56.91	58.63	59.70	51.09	64.82	-2.99 ***	-2.80 ***
Director Tenure (years)	95	9.43	6.85	9.11	11.53	2.50	17.00	31	5.60	4.36	5.07	6.78	1.9	13.12	-6.37 ***	-6.06 ***
No of Women Directors	95	1.21	0.00	1.00	2.00	0.00	5.00	42	0.88	0.00	1.00	1.00	0	4	-1.94 *	-1.83 *
Mean Outside Directorships	95	0.89	0.20	0.67	1.44	0.00	3.00	30	1.69	1.00	1.54	2.65	0.19	4.07	4.67 ***	4.41 ***
Finance Background	95	0.19	0.10	0.15	0.25	0.00	0.89	27	0.24	0.14	0.23	0.31	0.08	0.6	1.44	2.55 **
No. of Board Committees	95	4.24	3.00	4.00	5.00	2.00	9.00	42	3.27	3.00	3.00	4.00	4	15	-3.84 ***	-3.31 ***
No. of Indep. Committees	95	3.76	3.00	4.00	5.00	1.00	8.00	42	2.31	1.00	2.00	3.00	0	5	-5.89 ***	-5.07 ***
Share of Indep Committees	95	0.87	0.80	1.00	1.00	0.17	1.00	42	0.68	0.50	0.71	1.00	0	1	-4.42 ***	-3.67 ***
Audit Committee? (1=yes)	95	0.99	1.00	1.00	1.00	0.00	1.00	33	0.70	0.00	1.00	1.00	0	1	-6.70 ***	-6.01 ***
Remuneration Committee? (1=yes)	95	0.95	1.00	1.00	1.00	0.00	1.00	32	0.63	0.00	1.00	1.00	0	1	-5.63 ***	-5.20 ***
Appointment Committee? (1=yes)	95	0.61	0.00	1.00	1.00	0.00	1.00	38	0.39	0.00	0.00	1.00	0	1	-2.44 **	-2.41 **
Audit Comm. Activeness	95	5.05	4.00	4.00	5.00	0.00	15.00	23	5.17	3.00	4.00	7.00	2	13	0.20	0.11
Remunerat Comm. Activeness	95	4.54	3.00	4.00	6.00	0.00	18.00	20	3.10	0.00	3.00	4.50	0	8	-2.30 **	-2.17 **
Appoint. Comm Activeness	90	3.13	1.00	3.00	5.00	0.00	11.00	15	2.67	0.00	3.00	4.00	0	8	-0.71	-1.00
Age Diversity	95	8.54	6.73	8.08	10.29	3.71	16.09	33	8.08	7.03	8.16	8.84	4.63	14.94	-1.00	-0.81
Tenure Diversity	95	1.40	1.10	1.28	1.48	0.79	4.69	33	1.44	1.22	1.40	1.63	0.73	3	0.38	1.35
Expertise Diversity	95	0.75	0.43	0.70	0.92	0.20	2.27	33	1.05	0.84	1.08	1.27	0.47	1.83	3.71 ***	4.11 ***
Occupational Diversity	95	0.54	0.45	0.57	0.66	0.13	0.76	42	0.50	0.42	0.49	0.58	0	0.69	-2.23 ***	-2.62 ***
Gender Diversity	95	0.08	0.00	0.08	0.13	0.00	0.29	42	0.05	0.00	0.05	0.08	0	0.2	-2.69 ***	-2.70 ***

*Significant at 10%; ** significant at 5%; *** significant at 1%

which is surprising given the statutory requirement to establish a two-tier board structure in some European countries (e.g. Germany, the Netherlands and Sweden).

Again, the findings that US bank boards are more independent, with more independent board committees and, by most measures, more diverse directors, are not consistent with the substitution hypothesis. If regulation were a substitute to monitoring by shareholders, one would expect shareholders in the US, where bank regulation has been more stringent over the sample period than in most European countries, to place less emphasis on board independence and diversity than their more lightly regulated competitors in Europe.

The next section examines the marginal monitoring effectiveness of the various board characteristics in the context of merger announcements—a corporate event frequently linked to managerial opportunism (Morck et al., 1990; Masulis et al., 2007).

7.5 Empirical Analysis

7.5.1 Corporate Governance and Bidder Announcement Returns

Table 7-3 presents preliminary tests of the monitoring effectiveness of bank boards in Europe and the US. The table presents expected performance gains (5-day CAR) and the board characteristics of bidding banks prevalent in the highest and lowest announcement return tercile.[56] In Europe (Panel A), there is only limited evidence pointing towards the governance of bidding banks as partly determining the market reaction to bank M&A. The only exceptions are board size and board activity (albeit differences are only significant at the 10%-level according to both *t*-tests and z-tests). First, for board size, the low return tercile is associated with a mean (median) number of directors of

[56] This test was also performed using longer event window specifications. The results are not markedly different for other narrow event-windows (up to [*t*-1, *t*+10]) surrounding the acquisition announcement.

17.45 (16), while the corresponding value in the portfolio of high returns is 15.3 (15.5). Second, more active boards are linked to higher announcement returns. European boards in the high return tercile, on average, have three more meetings per fiscal year than boards in the low return tercile.

Panel B compares governance arrangements in the highest and the lowest return portfolio of US banks. Older CEOs as well as boards with older directors are associated with higher announcement returns (all significant at 1% according to both the *t*-test and the z-test). Also, there is a positive association between occupational heterogeneity (*t*-statistic significant at 5%, insignificant z-statistic) as well as between age heterogeneity and announcement returns. There is also an indication that more independent boards are associated with higher 5-day CAR, albeit, this result is significant at 5% according to the *t*-test yet insignificant according to the z-test. By and large, the results for US bidding banks show that older CEOs and board members as well as, possibly, more independent boards exhibit a higher monitoring productivity. Also, the positive sign on the coefficients of the two diversity indices may be interpreted as pointing towards enhanced performance effects for decisions undertaken by more heterogeneous boards.

Collectively, the results of Table 7-3 provide a first indication that board monitoring has a role to play in preventing managerial opportunism at bank acquirers and, most importantly, that the productivity of board monitoring appears to be higher in the US. The results for US bidding banks show that older CEOs and board members as well as, possibly, more independent boards exhibit a higher monitoring productivity. Also, the positive sign on the coefficients of two diversity indices may be interpreted as market investors expecting enhanced performance effects for decisions undertaken by more heterogeneous boards. The next section analyses the market reaction to bank M&A announcements using regression analysis.

Table 7-3 Corporate Governance Variables by Terciles, Ranked by $CAR_{(t-2;\ t+2)}$

For a sample of 137 completed bank mergers between 1996 and 2004 in Europe and the US, the table presents descriptive statistics for board variables for the highest and the lowest one third of observations based on five-day abnormal returns (market model) around acquisition announcements. *t*-Statistics test for differences in means and z-statistics test for differences in medians (based in a two-sample Wilcoxon test).

	Lowest One Third					Highest One Third					Δ(Low-High)	
	N	Mean	Median	Min	Max	N	Mean	Median	Min	Max	Mean	Median
Panel A: European Banks												
Board Size	11	17.45	16	8	25	10	15.3	15.5	9	21	2.15*	0.50*
No. of Indep. Directors	11	12.45	12	5	18	10	9.8	10.5	6	13	2.65	1.50
Board Independence	11	0.72	0.71	0.45	0.92	10	0.66	0.63	0.55	0.91	0.06	0.08
Board Activeness	10	9.71	9	6	14	10	12.75	14.5	7	15	-3.04*	-5.50
CEO / Chair Duality? (1=yes)	11	0.91	1	0	1	10	0.8	1	0	1	0.11	0
CEO Age (years)	10	53.6	53	49	60	9	57.44	59	46	65	-3.84	-6
CEO Tenure (years)	10	5.4	5	1	13	9	4.71	3	1	10	0.69	2
Mean Director Age (years)	11	57.36	57.02	53.3	60.38	10	57.37	58.74	51.09	60.91	-0.01	-1.72
Mean Director Tenure (years)	8	4.88	5.22	2.2	6.78	10	5.38	5.14	4.36	6.64	-0.5	0.08
No. of Women Directors	10	1.1	1	0	2	10	0.8	0	0	4	0.3	1
Occupational Diversity	10	0.56	0.54	0.46	0.69	10	0.53	0.5	0.37	0.68	0.03	0.04
Audit Comm. Activeness	11	4.6	4	3	8	10	4	4	2	6	0.6	0
Remunerat. Comm. Activeness	10	2.2	3	0	4	10	7	7	7	7	-4.8	-4
No. of Board Committees	11	3.36	4	1	5	9	3	3	1	5	0.36	1
No. of Indep. Committees	10	2.6	2.5	0	5	9	1.67	1.5	0	4	0.93	1
Share of Indep. Committees	10	0.7	0.9	0	1	9	0.47	0.5	0	0.8	0.23	0.40
Age Diversity	11	8.87	8.75	5.78	12.4	10	10.04	9.98	5.26	14.94	-1.17	-1.23
Tenure Diversity	11	1.32	1.44	0.73	2	11	1.52	1.31	1.22	2.01	-0.2	0.13
Expertise Diversity	11	0.99	1.05	0.47	1.61	10	0.96	0.87	0.84	1.16	0.03	0.18
Gender Diversity	10	0.06	0.06	0	0.09	10	0.05	0	0	0.2	0.01	0.06
Panel B: US Banks												
Board Size	31	14.55	14	6	31	30	14.7	13.5	8	26	-0.15	0.50
No. of Indep. Directors	31	11.87	11	5	27	30	12.3	11	6	23	-0.43	0
Board Independence	31	0.80	0.79	0.56	0.94	30	0.83	0.84	0.55	0.94	-0.03**	-0.05
Board Activeness	31	9.77	10	4	16	30	9.37	9.5	4	15	0.4	0.50
CEO / Chair Duality? (1=yes)	31	0.26	0	0	1	30	0.37	0	0	1	-0.11	0
CEO Age (years)	31	53.03	53	42	61	30	56.23	57	46	66	-3.2***	-4***
CEO Tenure (years)	31	12.29	12	2	28	30	12.3	13	1	25	-0.01	-1
Mean Director Age (years)	31	58.34	58.33	53.75	61.89	30	60.54	60.07	52.25	71.88	-2.2***	-1.74***
Mean Director Tenure (years)	31	9.55	9.33	4.5	16.5	30	9.84	9.43	4	17	-0.29	-0.10
No. of Women Directors	31	1.26	1	0	4	30	1.2	1	0	4	0.06	0
Occupational Diversity	31	0.54	0.56	0.28	0.72	30	0.57	0.59	0.20	0.76	-0.03**	-0.03*
Audit Comm. Activeness	28	3.89	4	1	11	28	4.75	4	0	13	-0.86	0
Remunerat. Comm. Activeness	27	4.04	4	0	9	28	4	4	0	7	0.04	0
No. of Board Committees	31	3.9	3	2	8	30	4.4	4	2	7	-0.5	-1**
No. of Indep. Committees	24	3.71	3	2	7	27	3.52	3	1	5	0.19	0
Share of Indep. Committees	24	0.9	1	0.33	1	27	0.8	0.83	0.17	1	0.1	0.17
Age Diversity	31	7.62	7.45	4.51	13.49	30	8.54	7.60	4.51	13.49	-0.92**	-0.15*
Tenure Diversity	31	1.46	1.24	0.92	4.35	30	1.45	1.24	0.79	4.69	0.01	0
Expertise Diversity	27	0.69	0.71	0.2	1.59	30	0.76	0.65	0.26	1.9	-0.07	0.06
Gender Diversity	31	0.09	0.08	0	0.25	30	0.07	0.07	0	0.21	0.02	0.01

* significant at 10%; ** significant at 5%; *** significant at 1%

7.5.2 Regression Results: Bidding Bank Board Characteristics and Bidder Returns

Table 7-4 presents regression results examining whether board characteristics of the bidding bank impact expected merger gains as reflected in cumulative abnormal returns over a five-day event window, (t-2,t+2). The table shows that there are systematic differences in the effectiveness of board monitoring when it comes to preventing adverse announcement effects on shareholder wealth for US and European bidders.

Regression 1 reports few indications that board characteristics drive bank merger announcement returns for the sample of European bank mergers. The only variables that exert a statistically significant influence on bidder wealth are the log transformation of CEO age and age diversity (both at the 10%-level). The association between CEO age and 5-day CAR is positive suggesting that acquisitions made by more experienced CEOs carry higher credibility in terms of their value-creating potential. The negative coefficient on age diversity shows that boards which are homogeneous in terms of director age are associated with higher expected gains from a proposed deal (significant at 10%-level). However, age is the only diversity variable that enters Regression 1 significantly. Otherwise, there is no evidence that the diversity of the bidding bank's board impacts expected gains from bank mergers in Europe. Collectively, Table 7-4 indicates that, if any, board monitoring has only a negligible role to play in preventing value-destroying acquisition strategies in European banking. Section 7.5.4 explores some explanations for the apparent ineffectiveness of European governance mechanisms to increase post-merger performance.

The results for US banks (Regression 2), by contrast, identify a number of board characteristics which are related to bidder returns. Both the coefficients on board activeness and board independence have positive and significant signs and are significantly different from zero at the 5%-level. This indicates that boards that hold meetings more

Table 7-4 $CAR_{(t-2;\ t+2)}$ and Board Characteristics at the Time of M&A Announcements

The table provides results of general least squares regressions based on a sample of European and US bidding banks. The dependent variable is five-day abnormal bidder returns (market model) from 2 days before to 2 days after the acquisition announcement. Governance variables are defined in Table 7-1.

	(1) European Banks	(2) US Banks
ln(Board size)	0.320	-0.063
	(2.687)	(0.258)
ln(Board Activity)	-0.033	3.788**
	(0.220)	(1.202)
Chair / CEO duality	1.537	0.028
	(1.150)	(0.174)
% independent directors	-0.606	8.462**
	(0.372)	(2.839)
ln(CEO age)	9.441*	1.713*
	(4.957)	(0.948)
ln(CEO tenure)	-0.535	-0.040
	(0.663)	(0.105)
Occupational diversity	-1.949	1.366**
	(4.584)	(0.655)
Age diversity	-0.748*	0.010
	(0.402)	(0.038)
Gender diversity	0.074	-0.701
	(8.391)	(1.402)
Expertise diversity	0.199	0.897***
	(0.727)	(0.245)
Constant	-31.955	-7.184*
	(22.475)	(3.877)
Observations	31	94
R-squared (%)	2.20	9.52

Heteroscedasticity-robust standard errors are reported in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

frequently as well as boards that exhibit a higher share of independent directors inspire investor confidence in the value-creating potential of a deal. There is also evidence consistent with more heterogeneous boards generating higher announcement returns in the US banking industry. Thus, there is a positive association between occupational diversity and five-day CAR (significant at 5%) as well between expertise diversity and five-day CAR (significant at 1%). Expectations about merger-related gains following a deal are, consequently, greater if directors come from diverse backgrounds regarding their skills and links to other companies. Again, the positive sign on the diversity index reflects trust that market investors have in the quality of decisions made by heterogeneous groups.

The reported results show that far from substituting for governance, the US, despite its stricter form of regulatory supervision, exhibits boards that are more productive in monitoring manager's M&A strategies. The regression results, thus, point to a complementary role between bank regulation and bank governance.

7.5.3 Performance Results of Board Characteristics

Following the assessment of the value effects of board characteristics at the time of the acquisition announcement, this section examines whether board monitoring impacts upon changes in financial performance over a three-year period following the completion of a deal in Europe and the US. Table 7-5 presents regressions of board characteristics on changes in market-adjusted OPCFROA between years -1 and 3. The results are broadly in line with the findings above on the market reaction to bank merger announcements. Thus, monitoring plays virtually no role in determining the long-term performance of bank mergers in Europe, while various board characteristics impact upon post-merger performance changes. These results add further weight to regulation and board monitoring acting as complements. One would not expect the monitoring productivity to be relatively greater in the US if stricter bank regulation acted as a substitute to vigilance by shareholders.

Specifically, Regression 1 of Table 7-5 shows that, for the subsection of European deals, board characteristics such as size and activeness are not remotely significant. Further, heterogeneity measures such as tenure diversity and occupational diversity exhibit positive signs on their coefficients, but are not statistically significant either. In Regression 2, the effects of board monitoring on the post-merger performance of US deals are analysed. Board activeness enters the specification with a positive coefficient (significant

Table 7-5 Board Characteristics and Industry-adjusted Performance

The table provides results of general least squares regressions based on a sample of European and US bidding banks. The dependent variable is bidder's industry-adjusted OPFCROA from year -1 to year 2 relative to deal completion. Governance variables are defined in Table 7-1

	(1) European Banks	(2) US Banks
ln(Board size)	-0.201	0.037
	(0.380)	(0.296)
ln(Board activity)	-0.084	0.313*
	(0.228)	(0.178)
Chair / CEO duality (1=yes)	-0.026	-0.146
	(0.168)	(0.124)
% independent directors	-0.195	-0.053
	(0.396)	(0.306)
ln(CEO age)	-1.040	-2.469***
	(0.955)	(0.713)
ln(CEO tenure)	-0.060	0.110
	(0.119)	(0.109)
Occupational diversity	1.117	1.354**
	(0.832)	(0.614)
Age diversity	0.710	0.586
	(0.764)	(0.624)
Gender diversity	-5.241	-6.191
	(6.405)	(5.112)
Expertise diversity	0.745	1.216***
	(0.62)	(0.275)
Constant	4.806	8.745***
	(4.077)	(3.026)
Observations	31	94
R-squared (%)	6.41	14.51

Heteroscedasticity-robust standard errors (White, 1980) are reported in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

at 8%) confirming boards that meet more frequently—and are, presumably, more scrutineous—improve post-merger performance. The coefficient on the log of CEO age is negative and significant (at 1%) which suggests that younger CEOs are associated with stronger post-merger financial performance. Board size, board independence and leadership structure, on the other hand, have no significant bearing on industry-adjusted performance in the post-merger period.

For the performance effects of board diversity in the US, the results of Regression 2 echo earlier findings on the announcement returns of bank M&A. Thus, occupational heterogeneity enters the specification with a positive sign (significant at 5%). Fur-

ther, there is a positive association between expertise diversity and performance-adjusted OPCFROA. This result confirms that diverse groups of board members, possibly by improving the overall quality of decision making, have a positive bearing on post-merger performance. Yet, not all measures of board heterogeneity are associated with performance improvements. Age diversity enters Regression 2 with the expected positive sign, but is not statistically significant at customary levels. Gender diversity, which is not statistically significant either, exhibits a negative sign on the corresponding coefficient indicating more female directors are associated with weaker performance in the post-merger years.

7.5.4 Can Shareholders Forecast Post-merger Performance?

Since management monitoring by boards is found to partly determine both the short-term valuation effects as well as the long-term financial performance of US bank M&A, the question arises as to what extent can shareholders forecast the financial performance of M&A in Europe and the US at the time a deal is announced. The central proposition behind such an investigation is to test whether shareholders are able to distinguish *ex-ante* between bank mergers with favourable and unfavourable performance implications.

A number of US studies have examined whether the initial market reaction to merger announcements is a good indicator of performance changes associated with M&A. Cornett and Tehranian (1992) discover a positive correlation between announcement returns and financial performance. Pilloff (1996) and DeLong (2003b), by contrast, find initial market reactions are unreliable predictors of post-merger performance. More specifically, DeLong (2003b) observes that investors' initial reaction form a credible assessment of the eventual performance implications of a deal only when the sources of post-merger performance improvements are rather obvious (e.g. geographic

or activity overlap). DeLong and DeYoung (2007) show that shareholders' ability to forecast financial performance increases with the number of completed deals in the three-years preceding a deal. This suggests the presence of information spillovers from completed M&A into the public domain which help investors to evaluate the value-creating potential of bank mergers more accurately at the time of their announcement.

As aforementioned, visual inspection of Table 7-4 and Table 7-5 reveals that a number of variables enter both the regressions on (*t*-2,*t*+2) as well as on industry-adjusted OPCFROA with similar coefficients. This is the case for the log transformation of board meetings, occupational diversity, and expertise diversity. If some of the drivers of short-term and long-term performance of M&A are identical, this supports the notion that shareholders, at least in part, may forecast post-merger at the time of an acquisition announcement.

For other variables, the signs on the coefficients vary depending on whether 5-day CAR or industry-adjusted OPCFROA is employed as dependent variable. For instance, younger CEOs in the US are associated with stronger financial performance (significant at 1%), while the initial market reaction is more favourable to US bank mergers announced by older CEOs (significant at 9%). Similarly, board independence (i.e. the share of outside board directors) has a positive bearing on announcement returns (significant at 5%), but no effect on long-term performance is reported. Apparently, investors misinterpret the performance implications of both age and board independence when a deal is announced.

Table 7-6 tests the predictability-of-performance argument for European and US banks directly by including the market reaction (CAR) as well as interaction terms between the different heterogeneity indices and CAR in regressions on industry-adjusted

OPCFROA. Including CAR provides a test of the ability of shareholders to forecast post-merger performance, while the interaction terms between CAR and the heterogeneity indices hint at whether board diversity makes it easier or more difficult for investors to anticipate the long-term financial implications of bank M&A.

Table 7-6 reports broad evidence consistent with shareholders' ability to forecast the performance of bank mergers in the US, but not in a European market context. For US banks (Regressions 2, 4 and 6), the coefficient on the market reaction to M&A is positive and statistically significant at the 5%-level indicating that the initial market reaction to US bank merger announcements is, indeed, a good indicator of eventual performance changes. Further, the interaction term between occupational diversity and 5-day CAR in Regression 2 is -141.053 (statistically significant at the 1%-level). In conjunction with the positive coefficient on the market reaction variable, the negative coefficient on the interaction term indicates that, while market investors may identify performance-enhancing bank mergers *a priori*, they find it more difficult to do so in the presence of boards that exhibit a high degree of occupational background diversity. Similar results apply to the interaction effect between expertise diversity and announcement returns (Regression 4) which enters the specification with a negative sign as well (significant at 5%). By contrast, the coefficient on the interaction term between CAR and age diversity (Regression 6) is not statistically significant at customary levels (albeit the sign is negative as well). It is conceivable that age diversity does not affect the predictability of bank merger outcomes in the same way as expertise or occupational diversity, because, out of the heterogeneity measures examined, age diversity is the metric most readily observable by outside investors. Consequently, the relatively higher observability of age characteristics may leave investors less uncertain about the performance effects associated with this form of diversity.

Table 7-6 Regressions on Industry-adjusted Performance with Interaction Terms

The table provides results of general least squares regressions based on a sample of European and US bidding banks. The dependent variable is bidder's industry-adjusted OPFCROA from year -1 to year 2 following the bank merger completion years. Market reaction data (CAR) are based on (t-2,t+2) around the announcement date of deal (market model).

Diversity index	Occupational diversity		Expertise diversity		Age diversity	
	(1) EUR	(2) US	(3) EUR	(4) US	(5) EUR	(6) US
ln(Board size)	-0.213	-0.220	-0.490	-0.180	-0.328	-0.050
	(0.394)	(0.283)	(0.385)	(0.302)	(0.367)	(0.307)
ln(Board activity)	-0.075	0.305*	0.109	0.308*	0.006	0.293
	(0.244)	(0.163)	(0.226)	(0.172)	(0.226)	(0.190)
Chair / CEO duality (1=yes)	-0.030	-0.169	-0.056	-0.150	-0.074	-0.135
	(0.173)	(0.115)	(0.163)	(0.121)	(0.162)	(0.125)
% independent directors	-0.180	-0.121	-0.405	-0.142	-0.354	-0.092
	(0.414)	(0.282)	(0.393)	(0.299)	(0.385)	(0.310)
ln(CEO age)	-1.041	-1.844**	-0.630	-1.878**	-0.792	-2.096***
	(1.042)	(0.700)	(0.999)	(0.744)	(0.983)	(0.763)
ln(CEO tenure)	-0.062	0.050	-0.096	0.076	-0.104	0.098
	(0.124)	(0.112)	(0.117)	(0.106)	(0.117)	(0.109)
Occupational diversity	1.179	1.582**	0.971	1.290**	0.671	-1.177*
	(0.914)	(0.592)	(0.804)	(0.610)	(0.813)	(0.629)
Age diversity	0.706	0.765	0.875	0.744	0.416	0.871
	(0.800)	(0.575)	(0.647)	(0.574)	(0.247)	(0.607)
Gender diversity	5.133	-7.083	9.298	-7.971	6.840	-6.884
	(6.723)	(4.711)	(6.535)	(4.999)	(6.311)	(5.152)
Expertise diversity	0.742	1.234***	0.856	1.265***	0.630*	1.166***
	(0.60)	(0.252)	(0.552)	(0.268)	(0.350)	(0.288)
Market reaction, CAR	0.059	0.619**	0.491	0.355**	0.710	0.311***
	(0.333)	(0.257)	(0.310)	(0.267)	(0.375)	(0.161)
Diversity index × CAR	-9.689	-141.053***	34.832	-55.301**	-1.682	-10.427
	(54.057)	(48.265)	(19.209)	(22.166)	(4.455)	(5.905)
Constant	4.891	7.435**	3.967	7.025**	4.367	7.496**
	(4.399)	(2.900)	(4.158)	(3.069)	(4.116)	(3.170)
Observations	31	94	31	94	31	94
R-squared (%)	5.81	24.62	5.24	23.50	4.84	24.77

Heteroscedasticity-robust standard errors (White, 1980) are reported in parentheses.
* significant at 10%; ** significant at 5%; *** significant at 1%

For European banks (Regressions 1, 3, and 5), neither the market reaction (CAR), nor the interaction terms between the diversity measures and CAR enter the specifications with a statistically significant coefficient. Thus, in the European banking industry, there is no evidence of either shareholders forecasting financial performance or, alternatively, shareholders' ability to forecast being moderated by board diversity.

7.6 Robustness

The virtual absence of effective board monitoring in Europe in the context of M&A raises questions about whether alternative governance mechanisms that have not been controlled for in this chapter drive the reported results. For example, product market competition is a principal monitoring mechanism (Masulis et al., 2007; Shleifer and Vishny, 1997; Roe, 2003). With the exception of Germany and, perhaps, Italy, most European markets for retail banking services are considerably more concentrated than the US market (CEPR, 2005). Consequently, it is conceivable that in the face of increased competitive forces, European banks choose their governance optimally such that more vigilant boards have no marginal effect on merger outcomes. In order to test the argument that market concentration acts as a substitute to shareholder monitoring, a Herfindahl index[57] for each country is calculated and the regressions in Table 7-4 and Table 7-5 are run separately for the tercile of high and low market concentration. There are no statistically meaningful differences in the monitoring effectiveness of board variables between the resulting portfolios. Consequently, the results reported are not driven by cross-country differences in market concentration levels.

Do the reported results hold over time? Following the passing of the Gramm-Leach Bliley (GLBA) Act in 1999, one of the differences in bank regulation between Europe and the US—the activities that banking firms are permitted to engage in—has become less pronounced. Consequently, it may be the case that the results are weaker for the period that follows the deregulation of banking activities in the US. Consequently, the regressions in Table 7-4 and Table 7-5 are run separately for US bank mergers completed before 2000 (pre-GLB) and afterwards (post-GLB). There are only mar-

[57] Herfindahl indices are computed as the sum of squares of the market shares of all banks available on Worlscope for a given country. Market shares are based on total assets.

ginal differences between the regression results in separate time periods and results for the complete sample period. In this context, it is important to bear in mind that there are other dimensions across which the regulatory environments in Europe and the US differ. For example, US regulators still impose higher libel risks on directors and that any company stake exceeding 25% is subject to regulatory approval.

Serial acquisitions form a sizable share of M&A activities in the banking industry. For transactions that are part of a merger program, there may be an anticipation effect that potentially depresses the announcement returns that serial acquirers earn vis-à-vis first-time bidders (see Song and Walkling, 2006). Alternatively, the long-term performance effects of frequent acquirers may also be different. To account for this, a binary variable (zero for first bids and one for second or higher order bids) is added to the regressions on 5-day CAR and industry-adjusted OPCFROA. The merger program dummy does not enter the regressions at customary significance levels indicating that serial acquirers do not have different performance implications.

7.7 Concluding Remarks

Questions over the relationship between regulation and governance are linked to the wider debate of causality between regulation and the emergence of economic institutions that promote shareholder value. The scale of value-destroying bank M&A in Europe and the US suggests an analysis of bank merger activities in an agency cost-type framework. For a sample of large bank mergers in Europe and the US, this chapter analyses the marginal monitoring productivity of bidding boards in preventing value-destroying M&A under different bank regulatory regimes. The results presented point to a number of linkages between US bidding bank governance at the time of an acquisition announcement and the value effects as well as the profitability effects of M&A. For the

subset of European deals, however, there is a virtual absence of observable empirical relationships between the governance mechanisms examined and bidding bank performance. Thus, monitoring by shareholders has little effect on the returns that bidding banks realise in the market for corporate control, and practically no effect on the profitability outcomes of bank M&A in Europe.

On the basis that the US exhibits and, by most measures, continues to exhibit the more stringent regulatory regime for banks compared with most European countries, these results are not consistent with the view that regulation and firm governance are substitutes. Rather, the findings reported in this chapter hint at a complementary relationship between regulation and governance. This is an important issue since the view that regulation is a substitute to shareholder monitoring underlies most applied governance research and has led to the *de facto* exclusion of banking firms from most governance studies. While banks are different from non-financial firms on many accounts, the findings of this chapter suggest that the empirical basis for excluding banks from governance research, on the basis that regulators substitute for shareholder monitoring, is not well-founded. More research that examines the effectiveness of established monitoring mechanisms in regulated and unregulated industries is clearly needed. Should future studies confirm the result of a complementary role between shareholder monitoring and corporate governance, there is a strong case for including banks and other highly regulated industries into multi-industry governance research.

This chapter has not examined executive pay as a device to mitigate against contracting cost in the context of M&A. Accurate data on incentive pay (including stock options) for executives are not available for a number of European countries over the sample period. However, following recent corporate governance initiatives in countries such as Italy and Germany, research into the effectiveness of board monitoring across

regulatory regimes should be able to incorporate the effects of executive pay in the future. In the light of the main findings of this chapter, one would expect incentive pay to be less effective in curbing value-destroying bank mergers in Europe vis-à-vis the US.

7.8 Appendix

See next page.

Table 7-7 Bank Supervision in Europe and the US, 1998-2000

	Activities			Ownership		Disclosure		Discipline			
	Securities	Insurance	Real estate	Bank ownership of nonfinancial firms	Max of capital that related parties may hold in bank	Are directors legally liable for erroneous information?	Have penalties been enforced?	Does the law establish levels of solvency deterioration which forces automatic intervention?	Can supervisory agency remove and replace management?	Can supervisory agency remove and replace directors?	Can supervisory agency forbear certain prudential regulations?
Panel A: US											
United States	restricted†	restricted†	restricted	restricted	25	yes	yes	yes	yes	yes	no
Panel B: Europe											
Belgium	permitted	permitted	restricted	permitted	n.a.	yes	no	no	yes	yes	yes
Denmark	unrestricted†	permitted	restricted	restricted	n.a.	yes	no	yes	no	no	no
France	unrestricted	permitted	unrestricted	permitted	n.a.	yes	no	no	no	yes	yes
Germany	unrestricted	unrestricted	unrestricted	permitted	n.a.	no	n.a.	no	no	yes	yes
Greece	permitted	restricted	permitted	permitted	n.a.	yes	no	no	yes	yes	yes
Italy	unrestricted	permitted	prohibited	restricted	n.a.	yes	yes	no	yes	no	yes
Netherlands	unrestricted	permitted	unrestricted	permitted	n.a.	no	no	no	yes	yes	yes
Portugal	unrestricted	permitted	restricted	restricted	n.a.	yes	no	no	yes	yes	yes
Spain	unrestricted	permitted	restricted*	unrestricted	n.a.	yes	yes	yes	yes	yes	yes
Sweden	unrestricted	permitted	restricted	restricted	n.a.	yes	yes	no	yes	yes	yes
Switzerland	unrestricted†	unrestricted	unrestricted	permitted	n.a.	yes	yes	no	yes	yes	yes
United Kingdom	unrestricted	permitted	unrestricted	unrestricted	n.a.	yes	yes	no	yes	yes	yes

† permitted in 2004
* unrestricted in 2004

unrestricted = full range of activities can be conducted directly in the bank;
permitted = full range of activities can be conducted, but some or all must be conducted in subsidiaries;
restricted = less than full range of activities can be conducted in the bank or subsidiaries;
prohibited = the activity cannot be conducted in either the bank or subsidiaries.

Source: Barth et al. (2006), Worldbank : http://go.worldbank.org/SNUSW978P0

8
Conclusions

8.1 Background to the Thesis

In recent years, the value M&A activities have continually reached new heights. This is particularly true for banking firms which have been consolidating at a faster pace than any other economic sector. While rising M&A levels can be observed worldwide, the acquisition activities of banks were particularly pronounced in the US and Europe over the last decade. This follows a series of stimuli including industry deregulation, technological advances, increasing competition from non-bank financial institutions and, relatedly, overcapacity in many national banking sectors.

A large and increasing body of empirical literature examines the performance effects of bank mergers. The focus of these studies on a single industry is justified given the importance of banking for the wider economy and the fact that the sheer scale of bank M&A lets researchers analyse a sizable share of M&A activity while controlling for industry-specific factors. Indeed, there are good reasons to believe that banking is different from the provision of other goods and services, and that the M&A activities of banks warrant a related but separate discussion. Differences between banking and non-banking firms are rooted in (i) the role of informational efficiencies between borrowers and lenders as well as (ii) interference by regulatory authorities which, among other

things, restrict bank ownership. Both aspects have implications for the performance of M&A activities.

Further, the extant literature on the performance of bank mergers is largely based on US evidence with few studies examining the performance effects of M&A in a different market context. However, given differences in the structure of the banking systems between Europe and the US as well as differences in the regulation of banking activities in both geographic regions, there are good reasons to believe that the performance implications of M&A may be different outside the US.

By examining the performance implications of bank M&A in different market contexts, it is possible to study the following questions: Are the performance implications of bank M&A different for Europe and the US? Are there different motives behind bank mergers in Europe and the US? How do the legal and regulatory environments impact on the returns that bidding banks realise? In this context, do differences in regulatory practises across countries raise issues about the nature of the relationship between governance and regulation? It is with these issues that this thesis has engaged and, in doing so, it is suggested that the study has deepened the understanding of bank M&A.

8.2 Summary of Findings

8.2.1 A Comparison of Bidder Performance in a US and non-US Context

Chapters 5 and 6 offer a direct comparison between the performance implications of bank mergers in Europe and the US. Specifically, Chapter 5 examines the market reaction to bank merger announcements. The main finding of this chapter are negative market announcement returns to US bidders, while European bidders realise positive abnormal returns. Also, the results show that bidding bank losses in the context of activ-

ity-diversifying bank mergers are more prevalent when targeted at European rather than at US institutions. Further, cash-financed deals in Europe receive a particularly positive market reaction and cross-border M&A creates bidder wealth if acquisition targets are located in less sophisticated investor protection environments than their acquirers.

The findings regarding the market reaction to M&A overlap to a great extent with results on the long-term performance of bidding banks as reported in Chapter 6. Specifically, Chapter 6 finds that European bank mergers produce small performance gains for acquiring banks in the post-merger period, while US banking firms do not experience any changes in performance as a result of M&A. The results also show that gains from operationally more complex deals such as cross-border mergers take more than three years to materialise. The profitability gains of European credit institutions are particularly pronounced for product diversifying and cross-border mergers. Also, the results show that European banks underperform their peers in the year before an acquisition. This result is in stark contrast to findings on US institutions which documents that bidders are strong pre-merger performers.

8.2.2 Motivations behind Bank Mergers in Europe and the US

Chapter 6 also examines the motivation behind M&A. Thus, financial statements are analysed for, what possibly are, the two reasons most frequently-cited by bank managers for engagement in M&A: the ability to cut costs, and the ability to increase revenue in the post-merger period. Chapter 6 finds some evidence consistent with European banks pursuing a cost-cutting strategy during the three years following a merger. Specifically, banks in Europe manage to reduce non-interest expenses and, to some extent, retreat from lending activities in the post-merger period. US banks, by contrast, manage to increase their on- and off-balance sheet activities, thus, pointing towards revenue-

enhancement as a motivation behind M&A. However, US banks experience a slight deterioration in cost efficiency in the post-merger period.

Since the results of Chapter 6 point to slightly negative performance implications for US bank M&A, the following question arises. If banks that engaged in M&A do not outperform those that did not, why are shareholders exposed to the substantial risk of value losses associated with M&A? Such a question fundamentally concerns the nature and effectiveness of the governance structures of bidding banks, and implies that better monitoring by shareholders could have a positive impact on the post-merger performance of bank M&A. It is with regard to such governance issues that this thesis also seeks to make a contribution as detailed below.

8.2.3 The Role of the Legal and Regulatory Environment

Some of the most important findings of this thesis are presented in Chapters 4, 5, and 7 which examine the role of laws and regulations—some applicable to banking, others to the wider financial industry—in facilitating bank mergers and explaining differences in the performance implications.

Chapter 4 presents a survey of the banking sectors in Germany, Japan, the US and the UK. It is argued that the deregulation of banking activities, and of acquisition activities in particular, have led to a sharp increase in M&A. The link between deregulation of banking and M&A is clearest for the US, while Germany's banking sector has been left largely unreformed with many dividing lines between public sector and private sector institutions still in tact. The UK, which may offer some policy lessons for Germany in terms of how to privatise a sizable savings bank sector, has largely exhausted its potential for large-scale domestic M&A and should, hence, play in important role in the cross-border consolidation of bank assets. Regulators in Japan are set to introduce additional competition, and possible pressures for banks to further consolidate, into the

banking sector due to the eventual privatisation of Japan Post—the world's largest bank by assets.

Chapter 5 offers evidence that the laws and regulations governing shareholder protection rights in the target's country partly explain bidder announcement returns in Europe and the US. The main finding of this chapter is of a negative market reaction to bidders in acquisitions valued at more than $100 million that target high investor protection regimes (i.e. the US and UK), while bidders targeting low protection environments (i.e. most European economies) realise positive abnormal returns. One may interpret negative bidder announcement returns to deals where targets operate under a high investor protection regime as evidence of acquirers finding it difficult to capture acquisition-related gains from a target in the liquid (and, hence, competitive) takeover markets associated with this type of corporate governance system (see La Porta et al., 2002; Moeller and Schlingemann, 2005). Also, bidding bank losses in the context of activity-diversifying bank mergers are more prevalent when mergers are targeted at European rather than at US institutions. It is suggested that this is because financial conglomeration increases investor concerns over their ability to assess the true value of a target and the synergistic benefits of a proposed transaction if the target's disclosure practices are weak. Further, investor preference for cash-financed bank mergers is particularly strong in Europe, thus, reflecting the higher risk of expropriation associated with equity in a low investor protection environment. Also, this chapter finds evidence that European cross-border M&A creates shareholder wealth for bidders if acquisition targets are located in a less a sophisticated protection environment than the acquirer.

Chapter 7 examines the regulatory environment in the bidder's country and its effects on governance and post-merger performance. Specifically, the effectiveness of bidding bank governance is examined under bank regulatory regimes of different strin-

gency. Effectively, this addresses the question of whether bank regulation acts as a substitute or a complement to corporate governance. The main findings of Chapter 7 are as follows. Evidence is presented that shows that improved board monitoring increases both the announcement returns and the long-term financial performance of bidding banks in the US, but not in Europe. Similarly, US boards that meet more frequently, are more independent, and employ directors who are more diverse in terms of their occupational backgrounds receive higher announcement period returns. However, the same does not hold for Europe where board monitoring is practically irrelevant in bringing about better performing M&A.

Since bank regulation in the US market, by many measures, may be viewed as more restrictive vis-à-vis most European economies (e.g. US authorities restrict mergers between financial and non-financial companies, impose high libel risks on directors and, until recently, have not allowed universal banking), the near irrelevance of board monitoring is not consistent with bank regulation substituting for shareholder monitoring. Instead, the results presented in Chapter 7 points to a complementary role between internal governance mechanisms and exogenous industry regulation.

8.3 Policy Implications

Because of banks' importance to economic growth and development and the negative externalities associated with their failure, the stability of a country's banking system is viewed as a public good and, as such, of considerable interest to policymakers. At a general level, the special role of banks is demonstrated by the fact that banking is a regulated industry. More specifically, policymakers' interest in bank M&A is evident in, among other things, stipulations that require regulatory approval for takeover approaches of banks in many countries.

While a degree of regulatory intervention is justified, there are examples of bank regulators unduly inhibiting the market for corporate control relative to non-banking firms. In the US, non-financial firms cannot hold interests in banks; German law bars mergers between private sector and public sector banks; and recently, the Bank of Italy engaged in outright protectionism when thwarting two foreign takeovers of Italian credit institutions in 2005. The results reported in this thesis (Chapter 5) as well as evidence involving non-financial firms (Rossi and Volpin, 2004; Starks and Wei, 2004) imply that the development of the market for corporate control has value effects for shareholders. For example, it is conceivable that restrictions on a freely-functioning market for corporate control shield managers from market discipline when hostile takeovers involve complex bargaining with regulators or, in some cases, are vetoed from the start. In particular, the evidence reported in this thesis shows that, at least from a performance perspective, attempts to discourage European bank M&A appear unjustified. On average, bidding shareholders in European bank mergers realise positive and statistically significant abnormal returns (Chapter 5) as well as long-term profitability gains (Chapter 6). Consequently, based on the findings reported in this thesis, the first policy conclusion is that regulators should take a more favourable view of bank consolidation provided competition levels are high enough not to hurt consumer interests.

Relatedly, this thesis finds positive value effects and long-term performance gains for product diversifying bank mergers. It could, thus, be argued that the results point to benefits associated with financial conglomeration. Events in the money markets in 2007/2008 (the so-called 'credit crunch') support this view. Banks that failed as a result of either investments in US asset-backed securities (IKB and SachsenLB in Germany) or because of liquidity problems (Northern Rock in the UK) were small to medium-sized and undiversified institutions. Diversified large banks, by contrast, proved to be in a better position to absorb investment losses and to deal with increasing funding costs in the

money markets. Hence, while regulators ought to be concerned about the threats that large financial conglomerates pose to financial stability as well as about moral hazard problems when these institutions become too big too fail, the results presented in this thesis support the notion that diversifying bank mergers and financial conglomeration have net benefits to the stability of the financial system as a whole.

The results of Chapter 7 document a potential role of US bank boards (and, arguably, a smaller role for boards in Europe) in preventing value losses and financial underperformance in the context of bank mergers. It may, thus, be an opportune time for regulators to strengthen board monitoring of acquisition strategies by incorporating M&A committees (along the lines of, say, remuneration and audit committees) into national corporate governance codes. Details would have to be worked out, but it is conceivable that M&A committees are part of banks' boards and are made up of independent directors. These committees could oversee the due diligence process, approve potential transactions and report on the post-acquisition performance of deals at regular intervals. It is likely that such M&A committees would put additional pressure on senior management to consider the value effects of acquisitions more carefully. While this suggestion might, arguably, be applied to any economic sector, it has particular appeal in the banking industry where mergers have been more widespread than in any other sector.

Finally, Chapter 7 also presents evidence consistent with industry regulation and bank governance acting as complements. An important policy implication resulting from this finding is that for corporate governance initiatives aimed at improving European bank governance to be effective, they ought to be accompanied by stricter bank regulation in general. It is, thus, conceivable that, say, stipulations separating the positions of the chairman and CEO will only be effective in curbing managerial opportun-

ism in Europe, if bank regulation became more stringent. While no conclusions regarding the desirability of stricter bank regulation (e.g. by restricting banking activities or by increasing the libel risks that bank directors face) can be drawn from the results presented in this thesis, the findings of Chapter 7 imply that governance rules *per se* will be ineffective in increasing the monitoring effectiveness of boards.

8.4 Constraints of the Thesis

Based on the analyses conducted in four empirical chapters, a number of shortcomings of this thesis can be identified.

The conclusions of Chapters 5 and 7 rely extensively on the accuracy and relevance of the event study method. While this methodology is one of the 'workhorses in empirical finance' (Khotari and Warner, 2005) which has been intensively used in hundreds of studies, it is important to bear a few caveats in mind. On a fundamental level, event studies, due to their high degree of standardisation, have a tendency to oversimplify underlying economic relationships (see for example, Frankfurter and McGoun, 1993). More specifically, cross-country event studies do not control for differences in the way markets react to news. The analysis in Chapters 5 and 7 implicitly assumes that that capital markets in the US have a similar sensitivity to news than European markets. However, differences in the sensitivity to news could, at least in part, explain some of the variations in market reactions reported across countries. It may, thus, be more appropriate to use an event study model that, next to changes in national indexes, also controls for changes in a 'world market index' (see Park, 2004). On the other hand, there is some uncertainty as to whether world market models lead to results that are more robust than standard market models for short event windows such as the ones employed in this thesis (Fama, 1998).

Many of the variables used in Chapter 7 to depict board characteristics are, indeed, crude. For example, CEO age and tenure (quantitative variables) are used to capture experience (a qualitative variable). Whilst such simple proxies are ubiquitous in the corporate governance literature, it is important to point out that they do not necessarily convey an accurate description of the complexities of board characteristics and the processes that facilitate monitoring effectiveness. By the same token, director independence in the banking industry may be impaired by the presence of loan relationships between outside directors and banks. Regulatory stipulations in the US ensure disclosure of these relationships only above a certain threshold.[58] Hence, more sophisticated measures of director independence as well as other director qualities would greatly enhance the analysis.

Further, board characteristics and performance changes are examined at the BHC-level and not at the level of individual subsidiaries. The reason for this is that performance and governance data tend to be less readily available for lower organisational tiers. However, when relying on BHC-level data, variables such as board activity may understate the true level of interaction between bank directors. For example, members of the BHC board may also be present at board meetings of subsidiaries.

This thesis examines the impact of laws and regulation on performance (Chapter 5) and monitoring effectiveness (Chapter 7). On a general level, the question arises as to what extent do the indices of investor protection developed by La Porta et al. (1998) apply to corporate governance systems that are substantially different from the shareholder-oriented US/UK model? Many Continental European companies (and companies in emerging markets) operate in governance systems with concentrated ownership

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[58] In the US, Regulation O of the Federal Reserve Board stipulates that credit extensions to insiders must be disclosed if they, in aggregate, equal or exceed $500,000 or 5% of bank's capital, whichever is less.

(by founding families, banks or governments) and weakly-functioning markets for corporate control. Yet, the assumptions that La Porta et al. (1998) base their indices on derive from the Berle-Means-type corporation that is diffusely-held and traded in competitive capital markets. Consequently, while La Porta et al. (1998) assume the main conflict of interest lies between management and shareholders (because investor protection indices measure how well the latter are protection from expropriation by managers), outside the US and the UK, the main conflict of interest may well lie between different groups of stakeholders (e.g. between the controlling shareholder and minority shareholders (Goergen, 2007)). While La Porta et al.'s (1998) indices are likely to impact expectations that investors hold about the value-creating potential of M&A of deal announcements across countries and governance systems, it is worth bearing in mind that that these indices capture difference in investor protection regimes that are not applicable to all sample countries in the same way.

Also, many changes occurred during the eight-year sample period over which data are collected. Thus, some of La Porta et al.'s (1998) investor protection indices have changed slightly. While it can be argued that these changes (e.g. the passing of SOX in 2002) may only have strengthened the position of the US as a high investor protection regime vis-à-vis Europe, specific changes in bank regulation in Europe and the US (e.g., the passing of GLBA, the Second European Banking Directive) are more difficult to account for in this thesis. While steps have been taken to control for regulatory changes over the sample period, it is not always possible to make meaningful inferences when the resulting subsamples (before and after changes were implemented) become very small. Thus, whether or not the reported results hold over time cannot always be completely resolved in this thesis.

Finally, diversification in banking is more difficult to measure than in general industry studies. Chapters 5, 6 and 7 control for diversification in banking on the basis of SIC codes. However, SIC codes do not always accurately reflect the activities of financial firms. In the US, for example, SIC codes for banking firms partly reflect regulatory responsibilities and are, thus, to some extent, a matter of choice for regional banks. Further, Citigroup and Bank of America are more than commercial banks, and yet both share the SIC code 6021 with pure retail banks. As outlined in footnote 23 (pg. 98), one may control for this by examining the number of SIC codes shared between bidder and target (as opposed to examining whether the industry classifications of the main industry of bidders and targets are identical). However, different diversification measures introduce different kinds of issues. For example, if one were to gauge the relatedness of activities between bidder and target banks from their balance sheets (e.g. through the share of non-interest to interest income for bidders and acquirers), this would lead to a reduction in the number of observations. Thus, if this method were used, 25% of observations in Chapter 5 and 20% of observations in Chapter 6 would be lost due to missing or non-sensual values.

8.5 Directions for Further Research

The constraints identified above indicate that further research in the area of bank merger performance would benefit from changes in research methods and, to a lesser degree, some advances in theory development.

More research needs to be directed at the non-listed sector. In Europe in particular, non-listed banks (savings banks, cooperatives and mutuals) play a large role and, in several countries, are the market leaders in retail banking. In the same vein, most European bank M&A is expected to involve non-listed banks in the near future. Germany's

banking sector, for example, exhibits thousands of small public sector banks, most of which only operate within the boundaries of small municipalities. Yet, the bulk of bank merger research continues to examine the performance and stability implications of M&A on listed banks. Differences in ownership and corporate governance structures my well mean that important differences exist between listed and non-listed banks. Further, regulatory interest in the performance and, above all, the stability effects of consolidation is particularly strong when it comes to the non-listed sector.

Also, as more data become available in the period following changes in bank regulation (e.g. GLBA) or investor protection laws (e.g. SOX), it should be examined whether the results reported in this thesis regarding the effects of law and regulations and on bidding bank performance hold over time.

This thesis makes valuable contributions by showing that the performance implications of M&A differ outside the US, owing partly to legal and regulatory differences (applicable to both the target and bidding bank's country). Future research should attempt to gain a better understanding of differences in the performance effects of M&A between banking and the non-financial sector. To date, no detailed comparison exists that could show whether banking is more prone to value-destroying (underperforming) M&A than other industries. If shareholders in the banking industry are more likely to see their wealth diminished following M&A, this in turn could lead to interesting advances in theory development. Despite the general acknowledgement that 'banks are special', theories of M&A in banking do not differ markedly from those used for M&A in other industries. Thus, the notion of synergy continues to play very a large role in describing what motivates mergers. Even though the results presented in this thesis partly back synergetic explanations behind M&A (i.e. European banks tend to engage in cost cutting after M&A and there are, indeed, some performance gains in the post-merger

period), the findings also hint at non-value maximising motives behind M&A. In future research, the notion that overcapacity in the banking industry is one of the main motivators behind M&A should play a more important role. Given the considerable externalities associated with banks' failure, M&A provides what often is the only viable alternative to reduce capacity in 'over-banked' markets.

This thesis examines the relationship between industry regulation and firm governance for the banking sector. However, if the main finding that governance is a complement to regulation holds, the same empirical relationship should also exist in regulated non-financial industries such as utilities. Hence, future research should examine the effectiveness of board monitoring for regulated firms other than banks across regulatory regimes that vary in terms of how stringent they are. Relatedly, there is still uncertainty as to what causes regulation and governance to be complements. More should be done to understand the linkage between what in Chapter 7 is referred to as 'political will' to enforce best practice corporate governance and the productivity of governance devices in curbing managerial opportunism.

Finally, following the comment above that some of the quantitative measures are relatively simplistic and do not necessarily capture the complexities of the board characteristics they mean to proxy, future research should turn to qualitative data to complement the vast body of quantitative studies. It would, thus, be advisable for future studies to collect more primary data or, alternatively, to combine different performance metrics. Such data may be collected through interviews or questionnaires. If collected and interpreted carefully (see Section 3.2.3, pg. 44), the resulting data may enable a more fine-grained analysis of the motivation behind M&A and benefits of a merger, especially with regards to complex processes such as due diligence or post-merger integration. Another benefit of collecting data of a more qualitative nature is that board member

characteristics such as experience and independence may be more accurately described. In this context, a criticism sometimes rightfully levelled against research in finance is that data relevance is soemtimes sacrificed over data availability. ❑

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