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Banking Globalization: International Consolidation and Mergers in Banking

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Banking Globalization: International Consolidation and Mergers in Banking*

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Abstract

This paper surveys recent literature on international mergers and acquisitions in banking. We focus on three main questions. First, what are the determinants of cross-border mergers of commercial banks? Second, do cross-border mergers affect the efficiency of banks? Third, what are the risk effects of international bank mergers? We begin with a brief summary of the stylized facts, and we conclude with implications for policymakers.

Keywords: mergers and acquisition, international banking, survey

JEL-classification: F23, G21

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1 Motivation

The internationalization of the financial services industry has become a buzzword and almost a synonym for the globalization process. Cross-border capital flows have risen ten-fold in the past two decades,[1] and financial institutions are among the largest multinational companies worldwide.

Still, observers have long been puzzled by the relatively small number and frequency of cross-border mergers and acquisitions in banking. Compared to the number of domestic mergers, cross-border mergers have been relatively few, suggesting that implicit or explicit barriers to the integration of markets exist. Political and regulatory barriers are a natural candidate, as the banking industry is typically considered of strategic importance for the real economy and for financial stability. Yet, there has been a growing awareness that non-political obstacles such as cultural barriers might be holding back bank mergers as well. These barriers, in turn, could affect the risk and efficiency effects of bank mergers.

In this paper, we want to provide an overview of research on the causes and effects of international bank mergers. Considering the vast number of issues at stake, we naturally have to be selective. See Kose at al. (2006) for an encompassing overview of financial globalization, including macroeconomic aspects. Berger et al. (1999, 2000) review earlier literature on the consolidation and globalization of financial institutions. Our focus is on three main questions: First, what are the determinants and driving forces of cross-border

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[1] These data refer to the periods 1980-84 versus 2000-04 and are taken from Kose et al. (2006).

bank mergers? Second, what are the effects of cross-border bank mergers on the efficiency and competitiveness of financial institutions and the financial system? Third, what are the implications of bank mergers for risks in banking? Our focus is on empirical studies of the commercial banking industry. We begin with a brief review of the stylized facts on international bank mergers.

2 International M&As in banking: Still the rare animal?

International mergers between financial institutions, it may seem, are one feature of the globalization of financial markets. Headline cases – such as the take-over of the German bank Bayerische Hypo- und Vereinsbank by the Italian bank Unicredito in 2005, the inroads of U.S. investment banks into Europe, or the presence of foreign banks in many emerging markets – show that the banking industry is currently operating at a global scale. Yet, a more careful examination of the numbers suggests that international mergers of financial institutions are relatively recent phenomena and tend to occur mainly and between in certain countries.

Graph 1 shows how domestic and international bank mergers have evolved over time. We examine cross-border mergers that were announced *and* completed between 1985 and 2006 where at least one of the partners was a commercial bank and the other partner was any type of firm. Usually, the other partner was in financial services, that is, commercial banking, securities, or insurance. We define a cross border merger as any merger whereby the headquarters of the target are not located in the same country as the ultimate parent of the acquirer. We obtain the names of merger partners from Thomson Financial Securities Data. Up to 1992, the database includes all deals with values of at least $1 million. After 1992, deals of any value are covered. Also included are transactions with undisclosed values as well as public and private transactions. Thomson Financial Securities Data identifies 3,131 mergers that meet our criteria.

Graph 1 shows that the number of international bank mergers has steadily increased over time, but the percentage of bank mergers that are cross-border has been small. The percentage climbed during the late 1980s to reach a plateau around 15 percent in the early 1990s. Between the mid-1990s and 2000, the share grew steadily to reach almost 30 percent in 2000. After a dip between 2001 and 2003, the percentage of cross-border mergers grew to over 35 percent in 2006.

Table 1 looks further into the regional structure of cross-border M&As in banking. It shows that Europe and the Americas experienced a significant growth in the share of cross-border bank mergers in the years 1996 to 2006 compared with to the years 1985 to 1995. Asia, Africa/Middle East, and Australasia, saw no significant change in the percentage of bank mergers represented by cross border transactions. Table 1 also shows that cross-border mergers increasingly occurred *between* continents. This increase is different from the results of Buch and DeLong (2004), who compared cross-border mergers from 1985 to 2001. When they compared mergers during the two halves of their study – 1985 to 1993 versus 1994 to 2001 – they found banks chose targets within their continents more during the second half. Banks tended to acquire firms in neighboring countries when countries in Eastern Europe and Latin America first opened their markets. That is, banks in Western Europe and North America tended to acquire institutions in their own continents as opposed to traveling across oceans to find a merger partner. The up-dated results suggest that as banks polish the skills needed for cross-border mergers, they venture farther from their homes.

Evidence from the UNCTAD's World Investment Report[2] supports the finding that banks from advanced market economies dominate the global banking industry. Ranking the top 50 multinational firms in the financial services sector by an index based on the number and the location of their foreign affiliates shows that 10 out of 50 firms were headquartered in the US in 2004. Only a handful of firms were headquartered outside the EU or the US. The uneven degree of internationalization of banks from different continents is also supported by a recent empirical study of Schoenmaker and van Laecke (2007). Interestingly, they find that economic integration does not only stimulate integration within the region but also beyond.

What explains the relatively modest increase in cross-border M&A activity, the regional concentration, and the dominance of a few large countries? And what are the implications for efficiency and risks in banking. These are issues to which we turn next.

3 Determinants of Cross-Border Bank Mergers[3]

Why should banks merge across border? The theoretical literature on the determinants of international banking has taken a fairly eclectic approach to answer this question. Traditionally, this literature distinguishes between location- and ownership-specific factors (Sagari 1992, Williams 1997). There has been relatively little formal theoretical work providing an encompassing model of the international banking firm. (See textbooks covering banking theory such as Allen and Gale (2000) or Freixas and Rochet (1998).)

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2 http://www.unctad.org/sections/dite_dir/docs/wir2006top50_spreadindex_en.pdf

3 This section partly draws on Buch and DeLong (2004) and Berger et al. (2004).

Typically, theoretical work focuses on specific aspects of international banking such as regulatory consequences (Repullo 2000, Harr and Ronde 2003, Dalen and Olsen 2003) or the determinants of entry into markets in Eastern Europe (Claeys and Hainz 2007). Gray and Gray (1981) and Berger et al. (2004a) thus suggest borrowing from the literature on cross-border foreign investment of non-financial firms to explain cross-border banking activity. Goldberg (2004) also discusses whether multinational activities of banks and of non-financial firms can be treated in parallel. While she identifies parallels in the two literatures, she also notes differences between FDI in financial services and manufacturing, especially with respect to the implications for local institution building and business cycles.

In the remainder of this section, we review the empirical literature on the determinants of cross-border bank mergers more carefully. We structure the discussion around the main determinants – information costs, regulations, bank-specific variables, and other mostly macroeconomic factors. From a policy perspective, the distinction between efficiency barriers caused by regulations and by information costs is important. While the former can eventually be removed, the latter will remain even in (legally) integrated markets.

Most of the studies we review make use of a gravity-type model, which essentially relates bilateral economic activities between two countries to the size of markets and geographic distance. Studies using bank-level data additionally take into account the entry decision by estimating limited dependent variable models of banks’ foreign expansions.

3.1 Information Costs

Operating a financial institution in a foreign country raises a number of performance challenges for financial institution managers (Berger et al. 2004a). Managers must grapple with differences in languages, laws, social practices, regulations, and customer expectations, as well as the sheer geographic distance between the home and host countries. These cross-border managerial challenges add to the usual difficulties of operating an acquired institution during the post-merger transition period. Hence, Berger et al. (2001a) argue that “efficiency” barriers such as distance as well as differences in language, culture, currency, and regulatory or supervisory structures could inhibit cross-border bank mergers.

One important impediment to cross-border bank mergers could thus be information costs. These can be proxied by geographical distance, a common language, or a common legal system. The motivation for the use of the distance variable is related to a strand of the literature that applies gravity-type models to international investment decisions. In this literature, distance is typically considered to capture transportation costs. In contrast, international finance literature interprets distance in terms of information costs. Empirical applications by Ahearne et al. (2000), Buch (2003, 2005), Buch and Lipponer (2006, 2007), or Portes and Rey (1999) show that distance influences international capital flows and investment decisions of banks in a similar way as it influences international trade. Besides geographic proximity, sharing a common language is likely to lower the costs of melding two corporate cultures. Information needs to be communicated in only one language, and, more indirectly, sharing a common language can be seen as a proxy for common cultural links. Also, the presence of a common legal system should have a positive impact on cross-border M&As.

Buch and DeLong (2004) use bilateral data on the number of bank mergers between countries and find that information costs and regulations in fact impede cross-border mergers. At the same time, large, efficient banks located in countries with developed banking markets can overcome these barriers and tend to be the banks that expand abroad. Alibux (2007) uses more recent data (1995-2005) and confirms the importance of information costs and regulations as impediments to cross-border mergers. Focarelli and Pozzolo (2001b) look at where banks expand their cross-border shareholdings and find the most important determinants are potential profit opportunities as well as regulatory environments. The paper uses bank-level data on foreign investment for a representative sample of 260 large banks from the OECD countries. Cross border shareholdings in their analysis include both mergers and greenfield investment.

Another barrier may be preferences for domestically-owned institutions due to the "concierge" services that they can provide in terms of knowledge of the local conditions and information about local nonfinancial suppliers and customers. Berger et al. (2003) find that foreign affiliates of multinational corporations operating in European countries usually choose domestically-owned banks for cash management services, consistent with the "concierge" effect.

3.2 Regulations[4]

While information costs measure indirect, implicit barriers to the integration of banking markets, regulations of banking activities can erect direct, explicit barriers. The empirical literature on the determinants of bank mergers generally supports the hypothesis that deregulation has a substantial impact on merger decisions. Jayartne and Strahan (1998) and Saunders (1999) discuss the influence of deregulation in a domestic setting. Obviously, the presence of an international financial center in the target country makes countries more attractive destinations for international mergers (Choi et al. 1986, Ter Wengel 1995). Also, foreign banks have often found it easy to make inroads into domestic banking systems that have undergone major privatization programs. Guillén and Tschoegl (2000) show that privatization has paved the way for many Spanish banks into Latin America, and Bonin and Abel (2000) show that privatization has been one of the reasons for the high market shares of foreign banks in the transition economies of Central and Eastern Europe. Generally, evidence on the experience with foreign banks in transition economies can be found in de Haas and Ilko Naaborg (2006), de Haas and Lelyveld (2006) or Haselmann (2006). Claeys and Hainz (2007) study the effects of different modes of entry for lending rates. Berger (2007b) supports this finding and adds net comparative advantages for foreign banks, coupled with low government entry

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[4] A detailed database on banking regulations around the world can be found at http://www.worldbank.org/research/interest/2003_bank_survey/2003_bank_regulation_database.htm. See Barth et al. (2001) for a description of these data.

barriers, as explanations for high ratios of foreign bank ownership in some emerging markets.

Buch and DeLong (2004) provide evidence for the importance of the regulatory environments for cross-border bank mergers. They find that national banking regulations affect the probability of being an acquirer or target in cross-border bank mergers. Looking at changes in merger characteristics over time, they find that regulatory changes made to encourage regional integration produced mixed results. The number of cross border bank mergers within the European Union following the EU's Single Market Program in 1992 did not increase significantly, but the number of cross-border bank mergers among Canada, Mexico, and the United States did increase after the implementation of the North American Free Trade Agreement in 1994.

The integration of banking markets in Europe indeed provides an interesting case study for the effects of regulations (see also Berglöf et al. 2005). While official restrictions to the cross-border entry of banks have largely been abolished, implicit barriers through the 'misuse of supervisory power' (European Commission 2005: p. 4) remain prevalent. According to a survey by the European Commission (2005), savings of fixed costs resulting from cross-border mergers are relatively small compared to those that can be achieved through domestic mergers, and in particular smaller financial institutions find it difficult to sell the same product in different markets. Hence, cross-border consolidation may be deterred by political factors, differences in institutions and cultures, the use of different payment and settlement systems, and remaining differences in capital markets, taxes, and regulations across countries (Giddy et al. 1996, Lannoo and Gros 1998, Boot 1999, Blandon 2000, Goddard et al. 2001).

Fecht and Grüner (2006) provide an alternative explanation for a relative limited degree of pan-European bank mergers. In a theoretical model, they argue that the allocation of liquidity shocks may constitute a natural limit to the merger of banks. In their model, benefits from diversification and the costs of contagion may be traded off optimally when banks from some but not all regions merge. Carletti et al. (2006) propose a theoretical model discussing the liquidity effects of bank mergers focusing on the trade-off between an internalization and a diversification effect

3.3 Bank-Specific Factors

Bank-specific characteristics that increase the likelihood of entering into a merger include efficiency, experience in a competitive environment, economies of scale and scope, and domestic clients that have international operations. Using various measures of efficiency and profitability, studies find that stronger banks take over weaker ones in that acquirers tend to be more cost efficient (Berger and Humphrey 1992), more profitable (Peristiani 1993), or better capitalized (Wheelock and Wilson 2000) than their targets. For European banks, Vander Vennet (1998) confirms that acquiring banks tend to be larger and more efficient than their targets. Acquirers in cross-border mergers are generally large institutions from countries with developed financial markets (Focarelli and Pozzolo 2001a, 2001b).

3.4 Macroeconomic Factors

Macroeconomic factors such as a high growth potential of host countries (so-called pull-factors) or lagging growth in the home country (push factors) affect cross-border capital flows and foreign direct investments of banks. Also, the demand for differentiated financial services tends to increase with the level of economic development. The heightened demand increases the incentives for banks to form cross-border alliances and to jointly provide financial services. A high GDP per capita and large market size could also generate economies of scale and hence create motives for international mergers (Berger et al. 1993, Benston et al. 1995, Berger et al. 2000). Consistent with these hypotheses, empirical literature finds a positive effect of market size and GDP per capita on cross-border bank mergers (Buch and DeLong 2004, Focarrelli and Pozzolo 2001b).

In addition to standard push and pull factors, literature on international banking has also borrowed possible determinants of the foreign expansion of banks from the theory of multinational firms (Goldberg 2004). One implication of these theories is that, as two countries become more similar in size, relative factor endowments, and technical efficiency, foreign direct investment will increase relative to trade between the two countries (Markusen and Venables 1995). Moreover, trade literature predicts that in industries like banking for which intangible, firm-specific, and knowledge-based assets are important, international firms are more likely to export their management expertise via foreign direct investment rather than exporting the goods and services themselves. Thus, trade theory would predict significant cross-border financial institution M&As primarily between country pairs with similar national characteristics.

Berger et al. (2004a) test the relevance of the new trade theory and the traditional theory of comparative advantage for explaining the geographic patterns of international M&As of financial institutions between 1985 and 2000. Their data provide statistically significant support for both theories. They also find evidence that the U.S. has idiosyncratic comparative advantages at both exporting and importing financial institutions management. Claessens and van Horen (2007) use data on foreign direct investments of banks and confirm the importance of comparative advantages and institutional familiarity.

In Section 3.3, we review literature stressing the importance of relative efficiency at the *bank*-level for the probability of becoming an acquirer in an international bank merger. Literature also shows the importance of profitability at the *country*-level. Focarelli and Pozzolo (2001a) study the pattern of cross-border M&As in the banking industry relative to the non-financial sector. Using data on almost 2,500 banks from 29 OECD countries, they find that banks tend to expand into countries where banking systems are inefficient.

A large literature on FDI in banking has dealt with the question whether trade and finance are linked. According to this literature, banking organizations engage in a "follow-your-customer" strategy of setting up offices in countries where their home country customers have foreign affiliates (Goldberg and Saunders 1981, Brealey and Kaplanis 1996). However, other researchers point out that foreign-owned banks lend mostly to borrowers other than customers from the home country, which suggests that follow-your-customer may not be the dominant motivation behind cross-border M&As (Stanley et al. 1993, Seth et al., 1998). Focarreli and Pozzolo (2001b) support the "follow-your-customer" hypothesis, especially for branches. However, they also find that other factors such as institutions and profit opportunities are relatively more important. Ultimately, however, firm- or bank-level evidence would be necessary to disentangle causality between the foreign expansions of banks and non-financial firms and thus to ultimately resolve the "follow-your-customer" hypothesis.

3.5 Summary

The determinants of international bank mergers and cross-border banking in general are one of the most intensively research areas in the context of international bank mergers. A couple of stylized facts stand out. At the bank-level, the probability of becoming an acquirer in an international merger is positively linked to size and profitability. At the country-level, mergers are more frequent between large and developed market economies and countries with similar cultural background. In addition, regulatory entry barriers deter entry. The fact that implicit regulatory and cultural entry barriers into foreign markets still prevail is likely to have implications for the efficiency and risk effects of bank mergers. This is an issue to which we turn next.

4 Effects of Cross-Border Bank Mergers: Efficiency and Competition

Cross-border bank mergers can affect the efficiency of banks through a number of channels. The merged entity could be able to exploit economies of scale and scope, or management and corporate governance practices could be improved. At the same time, however, managing an increasingly large and complex organization operating in several countries may also lead to managerial inefficiencies and lower performance – the largest multinational banks operate affiliates in up to 70 host countries, according to data collected by the United Nations Conference on Trade and Development. Which of the two effects dominates has been the subject of a large body of empirical literature.

Studies on the efficiency effects of cross-border bank mergers fall into two main groups. A first set of studies uses event studies to address the impact of mergers on banking performance. A second set of studies compares the efficiency of domestic versus foreign-owned banks. Since foreign ownership is often the result of mergers and acquisitions, these studies provide indirect evidence on efficiency effects of mergers. These studies also incorporate insights into the effects of foreign entry on competition in banking, thus addressing the potential trade-off between higher efficiency in the banks involved in cross-border mergers and the competitive structure of the banking system. (See Boot and Marinc (2006) for a theoretical study of the trade-off between competition, efficiency, and the effectiveness of bank regulation.)

4.1 Event Studies

Research on cross-border acquisitions of financial institutions in developed countries suggests, at best, mediocre post-merger financial performance. A study of cross-border M&As in Europe found that the associated combined bidder and target value changes were generally zero or negative, compared with domestic mergers, where combined values were positive on average (Beitel and Schiereck 2001). Similarly, a study of U.S. domestic M&As found that mergers that combine two firms from different geographic areas create less shareholder value, consistent with fewer benefits from cross-border M&As (DeLong 2001). Cybo-Ottone and Murgia (2000) found that for 54 inter-European bank mergers between 1988 and 1997, the acquirers' abnormal returns were insignificantly different from zero.

DeLong (2003) goes one step further and compares market reactions to U.S. bank mergers and to cross-border mergers. She examines abnormal returns of publicly-traded partners upon the announcement of 41 non-U.S. bank mergers and compares the returns with a U.S. control group. She finds acquirers of domestic bank mergers outside the

United States earn more on average than acquirers of domestic mergers in the United States. Moreover, non-U.S. targets tend to earn less than their U.S. counterparts. However, for the subset of mergers in countries with relatively well developed stock markets, she finds that partners both inside and outside the United States earn similar returns.

Ayadi and Pujals (2005) study bank M&As in Europe. They find that domestic mergers help cut costs but fail to achieve revenue synergies. Cross-border mergers, in contrast, generate revenue synergies, possibly due to improved geographical diversification.

Carletti et al. (2007) analyze the impact of regulations on the effects of mergers. Using a new and unique dataset, they identify events that strengthen competition policy for 19 countries and for the years 1987-2004. They find two positive effects of a more competition-oriented regime for merger control. First, the stock price increases for banks but not for non-financial firms. Second, targets of bank mergers become larger and more profitable.

4.2 Comparisons of bank efficiency

Whereas event studies compare the performance of merged banks before and after the merger, several studies also compare the efficiency of domestic and foreign-owned banks. (See Berger (2007b) for an encompassing survey.) Since mergers and acquisitions are a key channel for banks to enter foreign markets, these studies provide indirect evidence on the efficiency effects of bank mergers. In terms of the *host* country effects of mergers and acquisitions, we focus on competition and efficiency effects in the following. Other aspects such as the impact on lending to small and mid-sized firms are addressed, inter alia, in Berger et al. (2001b, 2004a), or Goldberg et al. (2000). Garcia Herrero and Simon (2003) survey the determinants and impact of financial sector FDI for the home economy.

Most of the efficiency studies of foreign-owned versus domestically-owned banks within a developed country found the foreign-owned banks to be less efficient with the possible exception of U.S. banks operating abroad (DeYoung and Nolle 1996, Chang et al. 1998, Berger et al. 2000). However, a few studies found that foreign institutions have about the same efficiency on average as domestic institutions (Vander Vennet 1996). Peek et al. (1999) argue that the poor performance of foreign bank subsidiaries is mainly due to pre-existing conditions. At the same time, foreign owners are also unable to turn around the banks they acquire.

Many of the alleged benefits of cross-border bank mergers are more prevalent for developing countries than for advanced market economies. Through foreign entry, emerging host countries can benefit from technology transfer, competition, and demonstration effects (BIS 2004). Research on foreign banks in developing countries in fact finds results different from those in developed countries. For example, one study of foreign banks in over 80 countries found that foreign-owned banks in emerging markets have a relatively high profitability (Claessens et al. 2001). This is consistent with disadvantages in financial institution management for local banks in these countries. Evidence in Demirgüç-Kunt and Huizinga (1999) supports the finding that foreign banks in emerging markets tend to outperform domestic banks.

Bank mergers that have a positive effect on efficiency at the bank-level may have a negative effect on the competitive structure of the banking system. To assess the overall welfare implications of bank mergers, we must examine the impact of mergers on market power as well.

Huizinga et al. (2001) show that the trade-off between efficiency and competition need not be steep. Using a sample of 52 horizontal bank mergers in Europe and studying the pre-Euro period, they find evidence for unexploited scale economies and X-inefficiencies in European banking. To some extent, these inefficiencies are reduced through cross-border mergers. However, the authors do not find evidence for a greater market power of the merged banks.

4.3 Summary

The influence of foreign banks on a country's banking system is not well established. Theoretically, the added competition should increase efficiency and lower costs. Empirically, foreign-owned banks have been found to be less efficient than domestic banks in developed countries, suggesting they do not add much competition. In contrast to these general findings, banks from developed countries expanding into developing countries tend to be more efficient than their domestic counterparts. While operating in a developing country may add to a bank's risk, there may be benefits both to the bank and to the host banking system. We now look at aspects of that risk.

5 Effects of cross-border bank mergers: Risk[5]

A large set of studies looks at the determinants of risks in banking, but only a handful of these addresses the impact of the internationalization of banks (Nier and Baumann 2003, De Nicolò 2001, González 2005, Buch et al. 2007). Yet, there is a growing awareness that cross-border banking activities could affect the risk and thus the stability of the domestic banking system.

A common argument in banking is that cross border (geographic) mergers have the potential to reduce bank (and thus regulators') risk of insolvency (Segal 1974, Vander Vennet 1996, Berger 2000). This conventional wisdom is based on the notion that it is better for a bank not to put all its "eggs in one basket" and thus geographic diversification is a naturally risk reducing activity.

However, offsetting these perceived benefits are at least two potential costs that may well enhance the risk of bank insolvency and ultimately the risk exposure of bank regulators. The first risk increasing effect comes from the incentives banks have to shift risk when the regulatory "safety net" and its associated implicit and explicit guarantees are underpriced. As discussed by John, John, and Senbet (1991) and John, Saunders, and Senbet (2000), banks have incentives to increase their risk exposure beyond the level that would be privately optimal in a world in which there are no safety net guarantees or the safety net – deposit insurance, capital requirements, and implicitly, bank closure – is fairly priced. One way in which the safety net might be exploited is for a bank to acquire other (risky) banks by cross border expansion. If the risky investment pays off, then the

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[5] This section draws partly on Amihud, DeLong, and Saunders (2002).

acquiring bank has the potential to keep any upside returns. If the acquisition of the foreign target fails and the domestic bank's (acquirer's) solvency is threatened, then the acquiring bank may be bailed out either by its own home or domestic regulator or perhaps by the host regulator (the regulator of the target bank). As a result, cross border mergers may increase the insolvency risk exposure of either one or both the domestic (acquirer) and host (target) bank regulators.

A second reason why cross border acquisitions may increase an acquirer's risk concerns "who is watching the eggs in the basket" (Winton 1999). Specifically, by extending its operations into new overseas markets, the (domestic) bank is confronted with potentially new and risk increasing monitoring problems related to the loan customer base, the operating cost structure, etc., of the target bank. If monitoring costs are high, these problems may also increase the insolvency risk of the domestic acquiring bank and implicitly the risk of domestic (and foreign) regulators.

The question is whether and to whom cross border mergers are net beneficial. For example, if cross border mergers do not raise the risk of acquiring banks relative to other domestic (home country) banks, or indeed, reduce their risk, then domestic regulators may encourage domestic banks to expand abroad. By contrast, if cross border mergers increase the relative domestic riskiness of the acquiring bank, then domestic regulators may wish to scrutinize such mergers more carefully and may even seek to restrict them in an effort to reduce safety net subsidies and to reduce risk shifting behavior.

To gain insight into these issues, Amihud et al. (2002) examine risk effects of cross-border bank mergers. They analyze the change in total risk of an acquiring bank as a result of a cross border banking merger, changes in the systematic risk of acquiring banks relative to home, foreign, and world market bank indexes, and the reaction of stock prices to news about the acquisition and examine the relationship between this stock price reaction and changes in risk brought about by cross-border bank mergers. They find that, on average, cross border bank mergers do not change the risk of acquiring banks in any significant way. This finding has important regulatory policy implications in that the effect of an overseas acquisition is highly bank dependent or idiosyncratic. On average the risk decreasing effects of cross border bank mergers are offset by risk increasing effects, and the nature of the merging partners' operation changes in a way so as to leave the acquirer's risk unchanged. In a follow-up study, Buch and DeLong (2007) look further into the determinants of risk following bank mergers. They find that strong bank supervision is associated with banks reducing risk after mergers. The results suggest banks subject to strong supervision use cross-border mergers to diversify risk rather than to shift risk to banks in countries with weaker supervision.

Whereas the focus in Amihud et al. (2002) is on the exposure of banks to market risks, recent research has also addressed the exposure of banks to macroeconomic risks. Méon and Weill (2005) study the impact of mergers among large banks in Europe on the banks' exposure to macroeconomic risk. They find that loan portfolios of European banks provide a sub-optimal risk-return trade off. Hence, there are potential gains in risk diversification from cross-border mergers even within the EU due to imperfect correlations of business cycles.

A quite comprehensive theoretical literature also deals with the risk and regulatory consequences of international bank mergers. Repullo (2001), for instance, has a theoretical model in which a foreign bank becomes a branch of the domestic banks. Each bank is initially supervised by the domestic supervisory agency. Under home country control, the takeover moves responsibility to the domestic agency. The model shows that while cross border bank acquisitions may reduce risk due to diversification, they also shift responsibility for supervision and deposit insurance to the domestic regulatory agency. Harr and Ronde (2003) study the regulatory implications of banks' organizational choice between branch and subsidiary, which fall under home and country supervision, respectively. Their results do not show incentives for regulators to engage in a "a race to the bottom" by relaxing banking regulations. Dalen and Olsen (2003) show that the link between multinational banking and risk-taking is not clear cut. On the one hand, a lack of international coordination of supervisory towards subsidiaries of foreign banks tends to lower capital requirements. On the other hand, regulators respond by increasing incentives to improve asset quality.

Questions of supervisory responsibility are becoming more urgent as banks form more complex cross-border mergers. Dermine (2006), for instance, details the regulatory treatment and challenges presented by the Scandinavian bank Nordea, which was formed by banks from four different Nordic countries. Nordea adopted the *Societas Europaea*, a corporate structure that is governed by EU law. The structure allows banks in the European Union to branch across national borders. Nordea is incorporated in Sweden, and Swedish supervisors are responsible for the supervision and deposit insurance of the entire entity. The result is that a branch operating in Finland, Denmark or Norway has different supervisory and deposit insurance systems than host country banks with which they are competing.

6 Conclusions

In this paper, we have reviewed the empirical literature on determinants and effects of cross-border mergers in banking. Our results can be summarized as followed.

First, the determinants of international banking activities are relatively well understood. Implicit and explicit barriers to the integration of markets can hold back cross-border merger activity. Implicit barriers include information costs as well as regulations impeding the market access of foreign banks. As explicit, direct barriers to the integration of markets have been lowered significantly in developed market economies, these indirect barriers have gained in relative importance. Also, bank mergers tend to take place mostly between large and developed countries, between countries in close regional proximity, and between countries which share a common cultural background. Considering the bank-level determinants of cross-border bank mergers, there is clear evidence for larger and more profitable banks to be the acquirers.

Second, several studies have looked into the effects of international bank mergers in terms of competition and efficiency. One common finding of this literature is that foreign-owned banks – which are often the result of mergers and takeovers – outperform domestically-owned banks in developing countries. The comparative advantages of foreign banks in developed countries are less evident.

Third, despite the growing recognition that international banking can have an important impact on (international) financial stability, relatively few studies analyze the risk effects of bank mergers. At the bank level, studies find little evidence for a systematic change in risk following bank mergers.

In terms of future research in the field, we see three main gaps in the literature.

First, testing the determinants of mergers and acquisition in banking based on a full-fledged model of the international bank would be desirable. Applying the literature on multinational firms to international banking while taking into account that 'banks are special' seems a potentially fruitful avenue for future theoretical work. The empirical banking literature provides ample evidence on the stylized facts that such a theoretical model should be able to match.

Second, improving our understanding of the risk-return-trade offs in international bank mergers requires the more extensive use of bank-level data. Looking into the portfolio structures of internationally active banks and assessing the impact of foreign activities on risks and returns could provide important insights into the effects of cross-border mergers.

Third, in the theoretical literature, there is a number of papers which analyze the regulatory consequences of multinational banking. At the bank level, these papers focus on the organizational choice between branched and subsidiaries; at the supervisory level, the focus is on the costs and benefits between home and host country control. To the best of our knowledge though, few of these papers have been put to an empirical test. This would be the natural next step.

Ultimately, linking empirical and theoretical work on international bank mergers more closely together and making use of new bank-level datasets is not only of academic interest. It will also pay in terms of improved information for policymakers. The increase in cross-border financial institutions raises some important policy issues, such as the transmission of systemic risk across borders, the governance and supervision of multinational financial institutions, and the extent to which foreign-owned institutions will provide sufficient services in times of local crises. Reacting to these challenges in an appropriate way is particularly important for developing countries. These countries enjoy relatively great benefits of foreign bank entry in terms of efficiency but they may also encounter potentially greater risks. Supervisory must react via adjustments in the supervisory framework, information sharing among supervisors, developing supervisory skills.

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Graph 1

Bank mergers by year 1985–2006

The study consists of 3,131 completed cross-border mergers announced between 1985 and 2006 where at least one partner is a commercial bank. The graph shows the number of international merges as well as the total number of bank mergers announced by year. This graph has been updated from Buch and DeLong (2004).

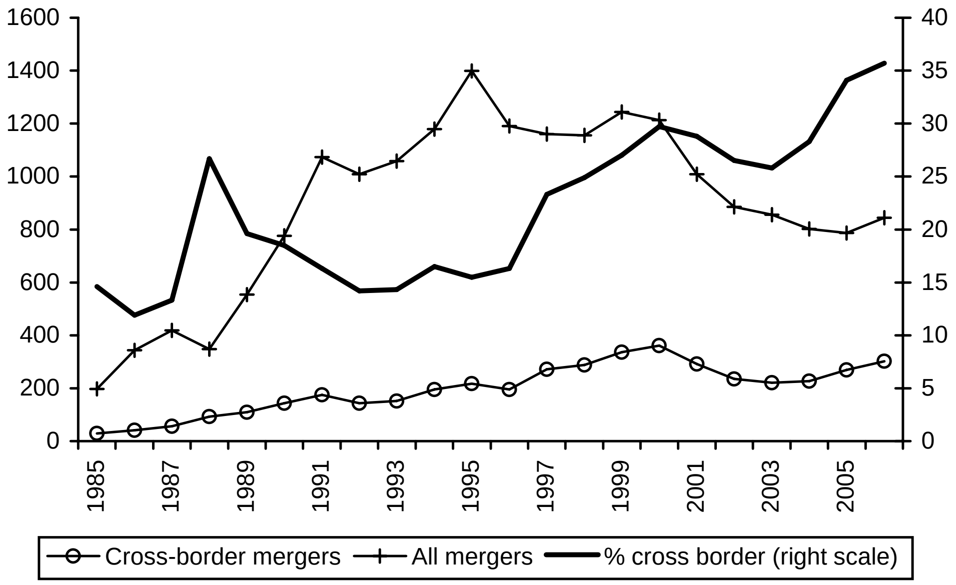

Table 1

Cross-border bank mergers by continent

The table shows the number of cross-border mergers announced and completed between 1985 and 2006 where at least one partner is a commercial bank. It also reports results of splitting the sample according to year of announcement. The first time period is from 1985 to 1995, and the second is from 1996 to 2006. The statistical significance of the difference between the two time periods is measured using the following statistic: $z = \hat{\pi}_1 - \hat{\pi}_2 \Big/ \sqrt{\hat{\pi}(1-\hat{\pi})(\frac{1}{n_1}+\frac{1}{n_2})}$ where $\hat{\pi} = \frac{x_1 + x_2}{n_1 + n_2}$ and where $\hat{\pi}_1$ and $\hat{\pi}_2$ are the sample proportions, n_1 .and n_2 are the total number of observations in each sample, and x_1 and x_2 are the number of observations that possess the characteristic. Worldwide figures are less than the sum of the continents due to mergers between banks headquartered in two nations that are located on the same continent. *** = Statistically significant at the 1% level. This table has been updated from Buch and DeLong (2004).

	Europe	Americas	Africa/ Middle East	Asia	Austral-Asia	Total
	Panel A: 1985 to 2006					
Number of bank mergers	7,774	10,318	514	1,737	413	19,506
Cross-border mergers	3,131	1,347	266	784	220	5,748
Cross-border as % of total	40.3	13.1	51.8	45.1	53.3	29.5
Intra-continental as % of total	59.6	91.6	61.1	72.1	63.0	81.6
	Panel B: 1985 to 1995					
Number of bank mergers	3,064	5,082	137	440	158	8,356
Cross-border mergers	1,005	442	65	221	90	1,823
Cross-border as % of total	20.7	2.8	12.5	16.7	15.3	10.5
Intra-continental as % of total	87.0	94.0	57.7	65.7	57.0	70.5
	Panel C: 1996 to 2006					
Number of bank mergers	4,710	5,236	377	1,297	255	11,147
Cross-border mergers	2,216	905	201	563	130	3,925
Cross-border as % of total	27.1	5.6	15.1	13.7	17.2	15.9
Intra-continental as % of total	84.5	89.2	62.3	74.3	66.7	89.9
	Differences between Panels B and C					
Cross-border as a percent of total (z-statistic)	6.4*** (6.58)	2.8*** (7.01)	2.6 (0.76)	-3.0 (-1.47)	1.9 (0.51)	5.4*** (11.24)
Intra-continental as % of total (z-statistic)	-2.5*** (-3.07)	-4.7*** (-8.72)	4.7 (0.95)	8.6*** (3.37)	9.7** (1.97)	-4.6*** (-12.21)

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