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Consolidation and efficiency in the financial sector: A review of the international evidence ☆

Dean Amel [a], Colleen Barnes [b], Fabio Panetta [c], Carmelo Salleo [c,*]

[a] *Federal Reserve Board, Washington, DC, USA*
[b] *Department of Finance, Ottawa, Canada*
[c] *Research Department, Bank of Italy, Via Nazionale 91, 00184 Roma, Italy*

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Abstract

In response to fundamental changes in regulation and technology, the financial industry is undergoing an unprecedented wave of consolidation. A growing body of empirical literature measures the efficiency gains from mergers and acquisitions; however there is little sense of how the results might depend on the country, industry and time period analyzed. In this paper we review critically works that cover the main sectors of the financial industry (commercial and investment banks, insurance and asset management companies) in the major industrialized countries over the last 20 years, searching for common patterns that transcend national and sectoral peculiarities. We find that consolidation in the financial sector is beneficial up to a relatively small size, but there is little evidence that mergers yield economies of scope or gains in managerial efficiency.

JEL classification: G21; G34; L1
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* Corresponding author. Tel.: +39-06-4792-4386; fax: +39-06-4792-3723.
E-mail address: salleo.carmelo@insedia.interbusiness.it (C. Salleo).

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1. Introduction

The last 15 years have witnessed an unprecedented number of mergers and acquisitions (M&As) in most countries, in mature and innovative sectors alike, from retailing to telecommunications. According to Thomson Financial, in the main industrialized countries there were 34,147 M&As between 1996 and 2001, compared with 19,996 between 1990 and 1995 (see Table 1). The total value of transactions rose from $1390 billion in the first six-year period to $8135 billion in the latter period.

M&A activity was especially pronounced in the financial sector. Over 10,000 financial firms were acquired in the major industrial countries from 1990 to 2001, including 246 deals in which the acquired firm had a market value greater than $1 billion. The level of activity increased toward the end of the decade for all types of acquisitions: there were 93 deals worth more than $1 billion from 1990 to 1996 and 153 between 1997 and 2001. Both within-industry and cross-industry deals increased in intensity. The rate of consolidation has soared both domestically and internationally, but the great majority of M&A activity still involves firms from the same country. [1]

The main motivations for this unprecedented wave of consolidation in the financial sector are common to most countries. In response to fundamental changes in regulation and technology, financial institutions have attempted to improve their efficiency and attract new customers by increasing their geographical reach and the range of products they offer. The desire to preserve falling margins by increasing market share and attracting new customers is often fulfilled by way of M&As that allow financial institutions to increase rapidly their size and to improve their knowledge of new products and markets. Furthermore, mergers might help financial institutions diversify their portfolios or increase their market share.

There are several ways in which M&As can improve efficiency. First, the larger firms resulting from consolidation may gain access to cost-saving technologies or spread their fixed costs over a larger base, thus reducing average costs. Efficiency gains may also derive from the exploitation of economies of scope: the deal may allow the merging parties to enter new markets and cross-sell their products to a wider customer base. Finally, consolidation may improve managerial efficiency. However, the extent of exploitable scale and scope economies might be smaller than commonly thought, and efficiency gains resulting from better management might be elusive in large, complex institutions.

Social costs arising from M&As can take three forms. First, for some financial products (in particular deposits and small business lending) markets are mainly local; therefore, M&As among operators with large market shares might cause adverse price changes, harming consumers. Second, M&As might contribute to diverting the focus of some participants from small business lending, which relies on soft information at the local level, to less custom-made products that are more easily manageable within large organizations. Third, consolidation can increase the risk of the

[1] See Group of Ten (2001, pp. 31–42).

Table 1
Mergers and acquisitions in the main industrial countries[a]

	All mergers and acquisitions						Mergers and acquisitions in the financial sector[b]											
	1990–1995			1996–2001			1990–1995						1996–2001					
							Banks[c]		Insurance companies		Other financial firms		Banks[c]		Insurance companies		Other financial firms	
	Number	Total value		Number	Total value		Number	Total value ($ billions)	Number	Total value ($ billions)	Number	Total value ($ billions)	Number	Total value ($ billions)	Number	Total value ($ billions)	Number	Total value ($ billions)
		$ billions	% of GDP		$ billions	% of GDP												
Australia	628	29.5	1.5	1423	91.7	4.0	53	2.4	23	1.1	60	0.9	91	13.2	22	3.3	155	8.7
Belgium	251	7.1	0.5	354	57.8	3.9	21	0.8	18	2.7	28	1.0	34	28.1	12	1.0	24	3.7
Canada	1421	41.6	1.2	2888	287.4	7.3	52	1.6	19	0.9	85	1.4	112	15.0	42	8.8	167	12.2
France	1663	81.9	1.0	1563	269.6	3.2	148	11.8	21	2.9	145	10.7	96	44.6	42	21.0	89	8.1
Germany	1913	37.3	0.3	3039	437.0	3.5	123	2.4	39	6.2	72	2.5	229	68.6	46	12.7	104	1.3
Italy	852	55.0	0.8	1048	198.2	2.9	147	19.2	33	4.9	71	0.7	138	80.4	44	13.4	54	3.8
Japan	216	56.1	0.2	2291	234.5	0.9	29	44.4	2	0.2	15	0.8	236	119.1	48	15.3	207	3.7
Netherlands	565	25.6	1.3	635	127.2	5.5	36	10.9	38	3.3	49	0.3	24	5.9	22	21.9	42	6.1
Spain	510	25.6	0.8	1042	99.3	2.8	66	5.9	35	2.3	19	0.1	67	31.2	42	1.1	44	2.0
Sweden	473	33.8	2.4	793	126.0	8.9	44	2.8	7		33	1.3	38	16.9	6	2.8	37	1.5
Switzerland	412	14.6	1.0	485	85.9	5.6	81	3.3	9	1.2	21	0.4	43	24.2	14	9.7	30	1.2
United Kingdom	2349	170.9	2.7	4484	848.6	10.3	140	33.0	77	2.0	169	6.4	279	114.4	141	76.0	330	35.6
United States	8743	811.2	2.1	14,102	5272.3	9.7	1691	156.6	275	25.6	375	23.1	1796	754.9	364	192.5	742	190.8
Total main industrial countries[d]	19,996	1390.2	1.3	34,147	8135.5	6.1	2631	295.1	596	53.3	1142	49.7	3183	1316.6	845	379.4	2025	278.9
Euro Area	6767	256.0	0.7	9696	1310.3	3.4	655	59.6	227	24.1	435	16.1	700	302.8	249	79.2	457	30.3
World	26,062	1570.3		50,787	8960.2		3363	340.3	773	62.1	1589	58.5	4781	1494.9	1328	418.7	3668	319.4

Sources: Thomson Financial and SDC Platinum.

[a] Mergers and acquisitions involving majority interests.

[b] The sectors refer to the company being acquired.

[c] Includes: commercial banks, bank holding companies, saving and loans, mutual savings banks, credit institutions, real estate; mortgage bankers and brokers.

[d] G10 countries, Australia and Spain.

operators involved, both at the individual level (from diseconomies of scale) and at the systemic level. Therefore, quantifying efficiency gains from M&As for the financial sector becomes extremely important as a first step towards analyzing the trade-off between these gains and the potential adverse effects. [2]

In this paper we organize what is by now an established body of research on M&As and efficiency in the financial sector along industry and country lines, in order to shed light on common features and understand the main differences. This review differs from others [3] in that, while not pretending to be exhaustive, it attempts to reach a level of generality by covering most industrialized countries (the US, Europe, Japan, Australia, and Canada) and financial industries (commercial banks, insurance and asset management companies and investment banks). In this way, we are able to confirm that some patterns are independent of institutional features and measurement techniques, while others may be industry- or country-specific. While all research methodologies have shortcomings, examination of a variety of imperfect approaches across countries and industries gives the clearest possible picture of the effects of consolidation on efficiency. Differences in regulations, institutions and market structure across countries mean that conclusions drawn from the analysis of one country should be generalized to others only very carefully. [4] On the positive side, this means that common patterns that emerge from an international comparison are particularly informative for a policy debate.

The rest of the paper is organized as follows: in Sections 2–4 we gauge the impact of consolidation on the efficiency of commercial banks, insurance companies, and investment banks and asset management companies. In Section 5 we describe briefly the impact of cross-border and cross-industry transactions. Section 6 concludes.

2. Commercial banks

Before analyzing research on its efficiency, we note three facts about the commercial banking industry. First, the industry really consists of at least two product markets: retail and wholesale banking. Retail banking is oriented towards households and small firms, while wholesale banking caters to larger firms and other financial institutions. Of course, many banks provide both types of services, but this only adds to the complexity of any empirical analysis. In general, research has not distinguished explicitly between retail and wholesale banking, although the focus is implicitly on retail banking, where policy issues regarding competition, regulation and consumer protection are more relevant. The remainder of this section is mainly concerned with retail banks.

[2] See Andrade et al. (2001) for a general discussion of benefits and costs of mergers, Prager and Hannan (1998) and Focarelli and Panetta (2003) for effects of mergers on deposit rates, Sapienza (2002) for effects on loan rates, Berger et al. (1998) and Berger et al. (2002) for effects on small business lending and Chapter III of Group of Ten (2001) for the effects of consolidation on risk.

[3] See, e.g., Berger et al. (1999).

[4] See Dietsch and Lozano-Vivas (2000).

Second, in countries with a heavily bank-oriented financial system, the banking industry may evolve differently than in countries where there is more scope for securities markets activities, in terms both of products offered and risk management. For example, in countries with well-developed financial markets, banks provide more services and are better able to offload risks, thus maintaining more liquid balance sheets.

Finally, because of differences in regulation, in some countries commercial and investment banks have been strictly separated, while in others they can operate jointly as universal banks and even have cross-shareholdings with industrial companies. For example, until the passage of the Gramm–Leach–Bliley Act in 1999, the United States largely barred commercial and investment banks from competing with each other while most European countries have long allowed universal banks, a power granted to all European Union members since 1992. These differences make for different market structures and internal organizations, again hampering international comparisons. All these warnings notwithstanding, the banking industries in the main industrialized countries share some structural features that emerge from a careful analysis.

2.1. Cost and profit efficiency

Efficiency is almost always measured relative to a domestic benchmark; international comparisons of efficiency levels are problematic because the best banks of each country operate with different technologies that are not directly comparable. For the US and Europe, most studies of cost efficiency find that retail banks operate on average at between 10% and 25% below the efficient cost frontier, i.e., their costs are higher by 10–25% than those of the best institutions. [5]

For Japanese banks, the gap between the best and the average practice institution (the average cost inefficiency) is around 5–7%. This means that M&As are likely to bring about smaller efficiency improvements in Japan than in banking systems with a higher dispersion of efficiency scores, i.e. with a greater difference between the best practice banks (potential acquirers, that could transfer their superior management skills) and the others. The reduction of this gap relative to the 1980s (when it was estimated to be approximately 14%) indicates that after the crisis of the 1990s Japanese banks operate closer to their efficient frontier. [6] However it is important to bear in mind that efficiency indicators are relative measures of performance, and say nothing about the efficiency of the industry as a whole compared to banks of other countries.

The average efficiency of Australian banks is low (58% in 1996) compared to best-practice banks. Once more, this only means that the distance of Australian banks from their efficient frontier is higher than elsewhere, and does not imply that they

[5] See, for example, Berger and Humphrey (1999) for the US and Altunbas et al. (2001), Altunbas et al. (1997) and Schure and Wagenvoort (1999) for Europe.

[6] See Altunbas et al. (2000) for recent evidence and Fukuyama (1993) for 1980s results.

are less efficient in an absolute sense, as it is impossible to compare directly industries that have production functions with different shapes. The efficiency ratios of Australian credit unions have been found to be 80–90%. However, taking into account the subsidies received by some credit unions, such as volunteer labor, free office space, etc., efficiency ratios drop to around 60%. [7]

Estimates of banks' profit efficiency are more dispersed. Their average is around 50%: the average bank could be twice as profitable. [8] However, these estimates are more sensitive to the specification used to measure them than are estimates of cost efficiency and are thus less robust. In general, their dispersion suggests that profits are more driven than costs by firm-specific factors such as management quality or unobservable characteristics of local demand. Therefore, there seems to be more potential for improving the overall performance of an inefficient target by increasing revenues than by reducing costs.

A caveat to this conclusion comes from the fact that the cost and profit functions are both duals of the production function – i.e., under certain rather general conditions there is a univocal relationship between the production function and the cost or profit function. In fact, given the complexity of a bank's production function (a multiple input–multiple output firm with unobservable quality of some inputs and outputs and a degree of endogeneity in the determination of prices), efficiency estimates based on manipulation of regression residuals are subject to both specification and measurement error. Berger and Mester (1997) find very little correlation between cost and profit efficiency measures. This may reflect endogenous output prices: banks may differ in their market power either because they operate in different markets or because they specialize in some product niche. In this case, they might have higher-than-average profits (thus seeming profit efficient) but also some slack in cost control (thus seeming cost-inefficient). Alternatively, banks with (unobservable) high-quality products may have higher profits but also higher production costs. In any event, further joint analysis of cost and profit efficiency would shed some light on estimation issues.

2.2. M&As and cost efficiency

Studies that analyze the direct effect of M&As on banks' efficiency have used both balance sheet ratios and multivariate cost and profit functions. The evidence on the effects of acquisitions on cost efficiency varies by country. For the US, there is little evidence of any improvement in cost efficiency following a merger. In particular, there seems to be no decrease in non-interest expenses or total costs and no improvement in operating income; cost efficiency also shows very little improvement. [9]

The evidence for European banks is broadly consistent with these results: domestic mergers among banks of equal size improve cost efficiency, but this result does

[7] See Sathye (2001) for banks and Esho (2001) for credit unions.
[8] See, for example, Berger and Humphrey (1999) and Demsetz and Strahan (1997).
[9] See Pilloff (1996) and DeYoung (1997).

not hold for all countries. Simulation evidence suggests that cross-border acquisitions may be associated with a reduction in the costs of the target, while little effect is found for domestic M&As. The difficulties in improving cost efficiency may be related to the obstacles encountered, especially in continental Europe, to reducing banks' labor force. In fact, personnel reductions, one of the main sources of savings, are hardly an option in countries with rigid labor markets. [10] Studies of Australian mergers find little efficiency gains. Avkiran (1999) finds that Australian bank acquirers tend to be more efficient than target firms, but that efficiency levels may fall after an acquisition. Two studies of credit union mergers find some post-acquisition service improvements in target firms, but no change, on average, among acquirers. They find that about 50% of acquirers and 20–50% of targets suffer a decline in service after a consolidation. [11]

The evidence from studies that use more recent data is mixed. Some studies for the US find that mergers produce no improvement in banks' cost efficiency, especially for deals that involve very large banks. This may be due to the organizational diseconomies of operating larger enterprises – disruptions from the M&A process may offset most potential efficiency gains. However, Houston et al. (2001) find cost reductions from mergers, including those involving very large US banks. For the UK, significant productivity gains stemming from reduced inefficiency are associated with mergers; these results are consistent with the transfer of assets to more productive management. In any case, the benefits of M&As seem to accrue only after a few years: probably some time is needed in order to restructure a target and integrate it with the acquirer's operations. [12]

2.3. M&As and profit efficiency

Akhavein et al. (1997) find little change in cost efficiency but an improvement in profit efficiency of large US banks after M&As, especially if both merger participants were relatively inefficient prior to the merger. [13] They find that, after merging, banks shift their portfolios to take on more loans and fewer securities. Their measure of profit efficiency does not account for changes in risk likely to result from such a portfolio switch; they assume that equity markets would recognize and account for any such change. They attribute gains in profit efficiency to the benefits of risk diversification: larger banks have more diversified loan portfolios and lower equity-to-total

[10] See Focarelli et al. (2002), Vander Vennet (1996) and, for simulations, Altunbas et al. (1997). In a study of German cooperative banks, Lang and Welzel (1999) find no evidence of efficiency gains from mergers.

[11] See Fried et al. (1999) and Ralston et al. (2001).

[12] See Peristiani (1997), Berger (1998), Rhoades (1998), Akhavein et al. (1997) and Berger (2000) for the US, Haynes and Thompson (1999) for the UK, Focarelli et al. (2002) for Italy and Cuesta and Orea (2002) for Spain.

[13] Other relevant studies include Berger (2000), Berger et al. (1996), Berger and Mester (1997) and Clark and Siems (1997).

assets ratios. [14] These results may come from using a sample of US banks from 1980 to 1990, a period that coincided with the gradual lifting of the ban on interstate transactions, which allowed banks from different states, each with geographically concentrated portfolios, to merge and thus diversify their holdings. [15] In addition, their findings that there is little effect on market power from large bank mergers may not translate from the United States to countries with different antitrust regulations. Berger (1998) finds similar results in a study that includes all US bank mergers, both large and small, from 1990 to 1995.

The evidence for Europe suggests that more efficient banks tend to acquire institutions in worse shape. Vander Vennet (1996) finds that domestic mergers of equals in EC countries have a positive impact on profitability, mainly driven by improvements in operational efficiency. However, he does not find performance improvements in full or partial domestic acquisitions of one bank by another. Vander Vennet's analysis does not control for the correlation of many of the balance sheet variables that he examines. Huizinga et al. (2001) find an improvement in cost efficiency for merging European banks, but only marginal effects on profitability. Focarelli et al. (2002) find that Italian deals that consist of the purchase of the majority (but not all) of the voting shares of the target appear to result in significant improvements, mainly due to a decrease in bad loans. For full mergers, they conclude that Italian banks aim to change their business focus towards providing financial services, and thus increase their non-interest income, rather than to obtain efficiency gains. After the merger, they observe an increase in profitability in the long run that is related also to a more efficient use of capital.

2.4. Scale and scope economies

Perhaps the most commonly quoted source of potential gains from M&As is the exploitation of scale economies. Most research on the existence of scale economies in retail commercial banking finds a relatively flat U-shaped average cost curve, with a minimum somewhere below $10 billion of assets, depending on the sample, country and time period analyzed. This result is fairly robust and holds for the US, Europe and Canada (even though there are some studies that find economies of scale for larger banks, such as Berger and Mester (1997)). For the US, the minimum optimal size seems to be below half a billion dollars of assets for studies conducted on samples containing mainly small banks and between two and ten billion dollars of assets for studies conducted on samples with mostly large banks or that also consider risk as one of the relevant factors (see Berger et al., 1993). Larger banks are more diversified and therefore less risky, which increases the minimum optimal size. For

[14] This paper has an unusual sample: it excludes M&As in which the banks involved remained separate corporate entities after the consolidation, but includes mergers between banks that are subsidiaries of the same holding company.

[15] Consistent with this view, Berger and DeYoung (2000) find that some banking organizations are efficiently managed on a cross-regional basis.

Europe, there is evidence of scale economies both for very small banks (below 200 million dollars of assets) and for medium-sized banks, with assets between one and five billion dollars (see Altunbas et al. (2001) for an empirical study of a sample of European banks that broadly confirms the results for single countries described in their literature review). This result, which is analogous to what is found for the American banking system, suggests that smaller banks operate with a different technology than larger ones and that economies of scale are exhausted by larger banks at a relatively early stage.

Most of these studies suggest that efficiency gains from the exploitation of scale economies disappear once a certain size is reached and that there might be diseconomies of scale above some threshold, presumably due to the complexity of managing large institutions or to the difficulties that arise when a bank's geographical coverage increases. However, this result relies mainly on data from the 1980s and early 1990s and, because of the small number of very large banks, relies on data from firms mostly below the size of the average bank in many countries. Also, this result might have to be revised due to recent technological changes that imply large fixed costs and thus have the potential for scale economies even for larger banks. [16]

Studies of Japanese banks show the importance for the results of the period analyzed. Papers based on data from the 1980s and early 1990s (before the full emergence of the country's banking crisis) find increasing returns to scale for banks of all sizes, including the largest banks. Fukuyama (1993) finds that inefficiency in Japanese banks stemming from operating below minimum efficient scale is less than 2% on average. Roughly 93% of Japanese banks exhibit non-constant returns to scale – 81% of them operate with increasing returns to scale (the rest shows decreasing returns to scale). As for different size classes, the majority of the small and medium-sized banks exhibit increasing returns to scale and anywhere from one-third to one-half of larger banks in the survey still display increasing returns to scale. McKillop et al. (1996) find no evidence of economies of scope in Japanese banking, but find that Japan's largest banks exhibit "appreciable scale economies". This result may be attributable to extensive cross-shareholdings between banks and other financial firms in Japan, which provide banks with lower monitoring costs for their lending portfolios because of their direct participation in the ownership of many Japanese commercial businesses. On the other hand, Drake and Hall (2003) analyze a sample of banks for the year 1997 and find that there are economies of scale for smaller banks but not for the large ones (which also seem to have limited problems of efficiency); they question the logic of the large-scale mergers that swept the country in the late 1990s.

Hughes et al. (2001) argue that most research finds no economies of scale because it ignores differences in banks' capital structure and risk taking. [17] They find evidence

[16] For the US, see Berger and Mester (1997), Hughes and Mester (1998), and Noulas et al. (1990). European references include Altunbas and Molyneux (1996), Drake (2001), Lang and Welzel (1996), Mendes (1999), Salleo (1999) and Schure and Wagenvoort (1999). For Canada, see Breslaw and McIntosh (1997). Berger et al. (2000b) study an international sample.

[17] Mester (1996) is an exception.

that small banks hold more capital than the cost-minimizing level, a result that they attribute to the protection of their charter values, while large banks have less than the cost-minimizing level of capital, perhaps because they exploit government subsidies to banks that are "too big to fail". The authors find that scale economies are positively associated with bank size and diversification and negatively associated with balance sheet measures of risk. They argue that scale economies are present if risk is held constant, but that these economies are masked by increased costs associated with the greater risk of larger banks.

Evidence for Japan also suggests that controlling for risk reverses the more traditional results on the existence of scale economies in banking. Controlling for risk and quality factors, Altunbas et al. (2000) find that the optimal bank size actually decreases, suggesting that advantages can be realized if the largest banks become smaller. [18] This result probably reflects the fact that larger banks have seemingly lower costs but (at least in Japan) they take on proportionally more risk; once this is accounted for, scale diseconomies may appear.

The different results obtained for the US and Europe on one side, and Japan on the other are perhaps not surprising given the great differences between their regulatory frameworks and financial conditions in the late 1990s. During this period, American and European banks were in good financial condition and were exploiting legislation that expanded opportunities to diversify geographically and across product lines. At the same time, most Japanese banks were in severe financial straits and were in no condition to expand into new activities, even after the 1999 "Big Bang" reforms that allowed true universal banking in Japan.

Probably the second most quoted reason for M&As is the exploitation of synergies, or economies of scope. Measuring the existence and extent of economies of scope is especially difficult given that, in theory, the benchmark should consist of single-product firms. The lack of such firms casts doubts on the reliability of results in this particular field.

The analysis of universal banking, conducted on European data, searches for complementarities between loans and investment-related services. No strong evidence has been found in favor of or against the joint provision of different services, but this might be due to measurement problems involving economies of scope. Lang and Welzel (1996) have, however, identified scope economies in smaller institutions. Research using American data has found little or no revenue scope economies between bank deposits and loans. Some research has suggested that financial conglomerates are more revenue efficient than specialized institutions; universal banks appear to be more cost and profit efficient than non-universal banks. [19] The true test might be about to come, when specialized and universal banks compete against each other throughout a fully unified European market that allows firms to choose whether to specialize in a given segment or to build a financial conglomerate.

[18] See also Drake and Hall (2003).

[19] See Allen and Rai (1996), Lang and Welzel (1998) and Vander Vennet (1996) for Europe and Berger et al. (1996) for the US.

2.5. Shareholders' value

The last indicator of efficiency gains is the stock market performance of merging banks. The main finding of US event studies that look at share prices around the time that a deal is announced is that, on average, total shareholder value (i.e., the combined value of the bidder and the target) is not affected by the announcement of the deal since, on average, the bidder suffers a loss that offsets the gains of the target. Therefore, M&As cause a transfer of wealth from the shareholders of the bidder to those of the target. These results are similar to those for non-financial firms and point in the direction of a more general problem associated with the corporate governance of M&As. The evidence for the 1990s is more favorable. Compared to the 1980s, average abnormal returns have been higher for both bidders and targets. [20]

One problem with event studies is that the announcement of a deal mixes information concerning the proposed merger with information on its financing. Because investors consider the announcement of a stock issuance as "bad news", [21] the negative returns to the bidding bank could reflect the fact that mergers tend to be financed with stocks. Consistent with this notion, Houston and Ryngaert (1997) find that the returns to bidders are significantly higher when mergers are financed with cash rather than with new equity. A greater percentage of acquisitions in the 1990s than in the 1980s was financed with cash rather than with stock of the acquiring firm, which may explain the relatively better results from more recent mergers that was noted above.

Some studies have examined the stock market reaction to different types of deals. However, even these papers find no clear-cut evidence on the efficiency effects of M&As. Houston and Ryngaert (1994) find that the combined gains tend to be greater when the bidding firm is unusually profitable or there is significant overlap between institutions. The first result is consistent with a market for corporate control favoring competent over incompetent managers; the second result is consistent with a market power hypothesis, according to which higher market share leads to higher profits. De Long (2001) finds that mergers that focus banks geographically or in product space create value while those that diversify them do not; in a somewhat similar vein, Cornett et al. (2003) find no abnormal returns for bidder banks focusing acquisitions and negative returns for diversifying acquisitions. On the other hand, Zhang (1995) finds results consistent with a diversification hypothesis, according to which geographical diversification leads to a lower variability of income; he finds that out-of-market transactions create value for shareholders.

Higher market concentration created by consolidation is likely to lead to an increase in prices for retail financial services, leading in turn to an increase in profits. However, Berger and Hannan (1998) find that firms operating in more concentrated markets are generally found to be less efficient. This might offset the gains

[20] See Rhoades (1994), Pilloff and Santomero (1998), Houston and Ryngaert (1994) and Houston et al. (2001). For results of non-financial mergers, see Andrade et al. (2001).

[21] See, e.g., Myers and Majluf (1984).

from an increase in market power and thus leave unchanged the market value of the bank.

In their study of mergers in European banking markets, Cybo-Ottone and Murgia (2000) find positive and significant gains in shareholder value from domestic bank mergers, but not from cross-border deals. They find gains both from a subsample of 54 bank–bank combinations and from a subsample of 18 mergers of banks and non-banks. However, their positive abnormal returns do not necessarily mean that mergers improve efficiency; in fact, one possible explanation for the difference between the European and American markets is that weaker antitrust enforcement in some European countries allows gains in monopoly power from in-market mergers. Campa and Hernando (2002), on the other hand, find that gains for M&A targets are larger in countries with less regulated banking industries and smaller for cross-border transactions; this is consistent with the existence of national barriers to the propagation of efficiency gains. Finally, for a sample of M&As performed within the European Union, Lepetit et al. (2003) find a positive market reaction to transactions that involve either cross-product diversification or geographic specialization. All of these results go in the direction of showing that markets do not value cross-border consolidations.

2.6. Discussion of the main results

The empirical evidence suggests that commercial bank M&As do not significantly improve cost and profit efficiency and, on average, do not generate significant shareholder value. There is evidence in favor of exploiting scale economies, but only up to a size well below that of the most recent large deals. Economies of scope are harder to pin down; there is no clear-cut evidence of their existence.

These results seem to contradict the motivations given by practitioners for consolidation – motives largely related to issues of scale and scope economies and to improvements in management quality – and could indicate that expected efficiency gains cannot be achieved: organizational diseconomies of scale could offset any gains in scale efficiencies arising from technologies or scope economies from diversification. However, there are other possible explanations for the divergence between the econometric evidence and bankers' beliefs.

One possibility is that the deals done in the past might have suffered from stricter regulation. For example, the limitations imposed by the Glass–Steagall Act on the range of US banks' financial activities up to 1999 could have impeded the realization of gains from cross-selling. Similarly, restrictions on US bank branching or on geographic expansion that existed until passage of the Riegle–Neal Act of 1994 could have hampered the exploitation of scale economies. This view suggests that the deregulation of banking under way in all major countries might increase the potential for scale and scope economies. The evidence available for the 1990s is consistent with this view.

A second possibility is that the lack of clear-cut results on the effects of M&As could reflect difficulties in measuring the improvements in efficiency. As noted by Calomiris and Karceski (2000), the construction of a satisfactory control sample

of non-merging banks – which serves as a benchmark for comparison – could be very difficult during a merger wave: in any given year there could be only a handful of banks not involved in mergers in the previous of following years. Moreover, even if such a control sample could be constructed, the performance of the non-merging banks might be influenced indirectly by the consolidation of their competitors. The former could react to M&As of their rivals by improving their efficiency or by widening the range of products offered to their customers. Thus, measured gains from mergers relative to the control sample could understate actual gains. Also, mergers may be associated with a redistribution of resources among various stakeholders. If M&As are associated with an increase in competition – as was the case in many countries in the 1990s – consumers could reap most of the benefits from consolidation. [22] This distributional change implies that profitability ratios or stock returns would not increase even when the efficiency of the consolidating banks improves. [23] Given the difficulties in measuring efficiency gains, a promising line of research could consist of analyzing case studies of merging banks in great detail, in order to select carefully the representative deals and the control sample and to capture industry-specific or firm-specific idiosyncrasies. [24]

A third alternative that has not been fully analyzed in the previous literature is that the gains from mergers only emerge fully after some time. This means that studies restricted to a short post-merger period might fail to account for the efficiency gains of consolidation. Long lags in the improvement of performance may reflect difficulties in refocusing lending policies, rationalizing branches, integrating data processing systems and operations, and training the personnel of the target to market the new owner's products. [25] Moreover, culture clashes may be especially harmful in banking, [26] as relationships with customers depend heavily on soft information, which is more difficult to transfer than such objective information as balance sheet data (the seminal paper in this area is Rajan (1992)). The resignation of key executives or the emergence of morale problems due to reassignments or employee turnover may cause loss of information, especially when the new management has little time to develop customer information.

Yet another possibility is that – in the presence of agency problems between managers and shareholders – M&As could be mainly driven by non-value maximizing motives (such as managerial hubris). Non-value maximizing motivations for

[22] See Angelini and Cetorelli (2003) for Italy, Shaffer (1993) for Canada and Jayaratne and Strahan (1997) for the US.

[23] On the other hand, mergers could also be associated with a redistribution of resources from the employees to the bank through lower wages (see Shleifer and Summers, 1988) or from consumers to banks, owing to an increase in market power (see Prager and Hannan (1998) for the US and Focarelli and Panetta (2003) for Italy). In this case, profit ratios of merged banks could improve even when efficiency is unchanged.

[24] See Frei and Harker (1996), Calomiris and Karceski (2000) and Rhoades (1998).

[25] See Focarelli and Panetta (2003), Berger et al. (1998), Calomiris and Karceski (2000), Rhoades (1998) and Houston et al. (2001).

[26] See Group of Ten (2001).

M&As have been analyzed in recent papers that examine the relationship between executive compensation and M&A activity. According to these studies, the motivations for M&As could be traced back to managers' desire to increase their compensation (CEOs of larger institutions earn higher compensation). There is some evidence that CEOs with higher levels of stock-based relative to cash-based compensation are less likely to lead their institutions into making acquisitions or, if they do, to engage in non-value-destroying acquisitions (i.e., focusing ones, as opposed to diversifying ones – see Cornett et al. (2003)). Moreover, managers without a large stake in their banks are more likely to get involved in non-value maximizing mergers. On the other hand, Hughes et al. (2003) find that banks run by managers who are less entrenched tend to profit more from acquisitions. Managerial hubris may be an important reason for the lack of conclusive evidence on the benefits of M&As among banks. [27]

3. Insurance companies

The insurance industry remains heavily regulated in both its life and property/casualty segments. This could be a restraining factor for the consolidation process, decreasing the possibility of reaping economies of scale and of diversification by discouraging cross-border deals. Differences in social security systems could also contribute to the international segmentation of the life insurance industry, if countries differentiate themselves in such key variables as the age of retirement or the model of funding (defined benefits or defined contributions). Furthermore, despite a trend towards deregulation, "cross-border trade in insurance services is limited by differences in culture, consumer protection laws, taxation, and the need to establish a local presence to process claims and handle administration". [28] However, in Europe there has been greater cross-border integration in the insurance sector than in commercial banking, suggesting that European insurance managers may be capable of dealing with cross-border barriers and operating efficiently in many nations.

At least within domestic markets, there is a potential for economies of scale and scope, in particular with other financial products, such as those offered by banks. These benefits may be obtained through joint ventures or through the combination of banks and insurance companies, which is a growing trend, especially in Europe. The proposition that there could be efficiency gains by letting the best firms take charge of others is especially relevant to a sector protected, at least to an extent, from outside competition. The following sections discuss the available evidence on the insurance industry, distinguishing between the two main lines of business, life and property/casualty.

[27] See Bliss and Rosen (2001), Gorton and Rosen (1995), Ryan (1999), and Pilloff and Santomero (1998).

[28] OECD (1998). See also Berger et al. (2001).

3.1. Cost and profit efficiency

The increase in productivity observed for insurance companies in all countries has been attributed to technical progress. [29] However, efficiency scores vary widely by country, with US firms being on average the most efficient, i.e. with the least dispersion – the usual caveat applies on the non-comparability of efficiency scores obtained from different cost (or profit) functions from different countries. Efficiency seems positively correlated with the reinsurance rate and negatively correlated with the share of life insurance; this might be explained by the national characteristics of the life insurance market, which deter foreign entry and thus decrease competition, allowing domestic firms to grow complacent.

US property/casualty insurance companies operate at an efficiency level that varies from 80% of the best practice firms for medium-sized companies to 90% for large ones, suggesting that competition keeps them from becoming too inefficient and that significant improvements from M&As are likely only for the firms in the worst condition. The average inefficiency level in the life segment of the insurance industry is higher, between 35% and 50%. [30]

Cummins et al. (1999) find that M&As improve the efficiency of target insurance firms. Because there is no evidence of increases in concentration in insurance product lines, they argue that market power is unlikely to be a motivation for mergers. Thus, the foreseeable consolidation process could benefit the industry by, for example, rationalizing the agency distribution system. As noted by Ferrier (1999), however, their use of data envelopment analysis commingles inefficiency with all other sources of error in their estimation, and their estimates of efficiency differences lack standard errors that would allow them to measure the significance of their results.

The evidence for other countries points toward a larger gap between the best practice firms and the rest of the industry: the average efficiency level is around 50% for France and Belgium, around 50% and growing in Germany and a little higher in the British life insurance industry. [31] Given that efficiency seems to be higher in countries where the regulatory burden is lower, deregulation could help close the efficiency gap by introducing more competition. Mahlberg and Url (2000) find that productivity increased in the German insurance industry after deregulation (although they attribute the increase to technical progress rather than to efficiency); Cummins and Rubio–Misas (2001) find that deregulation in the Spanish industry led to consolidation with small, inefficient firms as the main targets. Both studies underline the importance of regulation in shaping the insurance sector.

[29] See Donni and Fecher (1997).

[30] See Cummins and Weiss (1993) and Gardner and Grace (1993) for property/casualty results and Yuengert (1993) for life insurance results.

[31] See Delhausse et al. (1995) for France and Belgium, Mahlberg and Url (2000) for Germany and Rees and Kessner (1999) for the UK.

3.2. Scale and scope economies

Scale economies in the US insurance industry have been studied extensively. Property/casualty insurance companies show evidence of scale economies for small and intermediate-size firms, suggesting that consolidation among them may reduce average costs. On the other hand, larger firms exhibit diseconomies of scale. There is no evidence of scope economies at any size level. As for the life insurance industry, scale economies are found up to $15 billion of assets, but it is unclear whether the result holds for larger firms. [32]

The evidence for European markets is more mixed, but in general it is in favor of the existence of scale and scope economies. Scale economies for life insurance have also been found for Japanese and Canadian companies. [33] However, most studies use data from the early 1990s; the sweeping changes in regulation and technology that took place in recent years might have affected deeply the cost and revenue structure of the industry. As in other financial industries, evidence of scope economies is elusive; the coexistence of specialized life and property/casualty insurance companies within insurance conglomerates probably means that neither diversifying nor specializing is the single winning strategy. Diversification between life insurance and property/casualty insurance produces, on average, scope diseconomies and is more suited to large insurers emphasizing personal lines of business and with vertically integrated distribution systems than it is for small insurers specializing in commercial lines of business. [34] These results may be related to the preference of those buying personal lines of insurance for the convenience of buying multiple products from one supplier, but measures of convenience are not included in estimated profit efficiency equations.

4. Investment banks and asset management companies

M&As involving investment banks, as well as joint ventures and strategic alliances, are increasingly common, especially between British and American investment banks and continental European commercial banks that are trying to establish a global presence. Cross-industry M&As involving investment banks and securities dealers have been plentiful, because within the financial services sector the latter is perceived to be a growth business. Japan and Europe are expected to be growth areas in the future because they have lagged behind the US institutional asset management industry. [35] This wave of consolidation has been attributed to round-the-clock trading, the Internet, globalization, and other technology-driven advances and to consumers' desire for the convenience of one-stop shopping. Unfortunately, there are

[32] For property/casualty results, see Hanweck and Hogan (1996). For life insurance results, see Cummins and Zi (1998).

[33] See Focarelli (1992) for Italy, Fecher et al. (1991) for France, Mahlberg and Url (2000) for Germany, Kaye (1991) for the UK, Fukuyama (1997) for Japan and McIntosh (1998) for Canada.

[34] See Berger et al. (2000a) and Cummins and Weiss (2000).

[35] See Barbash (1998).

no studies that examine rigorously the cost and profit performance of investment banks or asset management companies before and after mergers. [36]

A survey of corporate strategies in the 1990s suggests that globalization is the main force underlying consolidation of investment banking. Managers cite synergies in product offerings, product development, distribution and service; earnings growth; the need for global industry knowledge and distribution; and the need for size to lead or participate in large loan syndications and equity and debt underwriting, as important reason for mergers. [37]

Limited analytical research on scale and scope economies is available for the securities industry. In the US, economies of scale seem to exist among smaller securities firms, but they are exhausted at moderate size levels, with larger firms demonstrating scale diseconomies. The limited evidence available for British firms is broadly consistent with the US results, suggesting that there are economies of scale up to a certain size, while diseconomies of scale set in for larger firms. In contrast, mid-sized Italian securities firms are less efficient than either small or large firms. One study of the Japanese industry found that Japan's four largest securities firms were more cost efficient than the smaller firms. [38]

One possible explanation for these divergent results is national institutional differences. For example, in Italy and Japan investment companies are typically part of conglomerates that include a commercial bank; this might allow them to reap the benefits of economies of scale by expanding geographically or integrating back office functions. In contrast, investment firms in the US and the UK might better focus on their core business, which may not require a very large size, and let other intermediaries handle other financial services. However, given that Italian and Japanese securities firms are, on average, much smaller than their American and British counterparts, an alternative hypothesis is that these results indicate the existence of a relatively small optimal size of investment firms that holds across countries.

Research suggests that smaller specialty firms exhibit economies of scope while large multiproduct firms exhibit diseconomies. Overall, however, economies of scope do not appear to be important in the securities industry. Neither diversified nor specialty firms above the minimum optimal scale seem to operate at a cost disadvantage.

For mutual funds, scale economies have been recorded in portfolio management and shareholder servicing. However, economies are evident only if asset growth is not accompanied by a large increase in either the variety of securities in the portfolio or the number of accounts. [39] Operational economies of scale are offset by the complexity of dealing with a larger number of securities or customers.

For both US and French mutual funds, economies of scale at the management group level are significant, especially for smaller groups. [40] However, scale

[36] For a more detailed survey of the available evidence, see Amel et al. (2002).

[37] See Pearson (1998) and Merrill Lynch (2000).

[38] See Goldberg et al. (1991) for the US, Beccalli (2002) for Italy, and Fukuyama and Weber (1999) for Japan.

[39] See Baumol (1995).

[40] For the US, see Latzko (1999) and Rea et al. (1999). For France, see Bonanni et al. (1998).

economies are far smaller if a fund's number of accounts is increased, holding assets per account constant. In general, the average cost curve of a typical mutual fund is downward sloping over the entire range of fund assets. For the US, the ratio of operating expenses to fund assets, a proxy for the managerial and administrative efficiency of a fund, declines steadily as assets grow. Many operating costs of asset management companies are fixed and therefore offer the possibility of exploiting scale economies. This might explain why, in general, companies with more assets under management given a fixed number of accounts or of funds offered to customers have higher margins. [41] However larger companies suffer from a subtle diseconomy. As the size of a fund grows, it becomes less liquid and less flexible: the average trade increases in size and becomes costlier, and it becomes harder to avoid revealing valuable information to the market. This will affect negatively the portfolio performance and thus reduce the appeal of the fund to customers. [42]

There is also some limited econometric evidence on the presence of economies of scope in mutual funds. These results are qualitatively the same as those presented above for scale economies, with the exception that economies of scope were found to be significant for both small and large firms among French open-end mutual funds. This evidence squares with the common practice of distributing asset management services jointly with other types of financial products, in order to reap the benefits from cross-selling. In order to gain access to distribution, fund management expertise and a greater international presence, a number of cross-border M&As and strategic alliances involving asset management firms have occurred in recent years. [43]

5. Cross-industry and cross-border consolidation

Research on the efficiency effects of M&As across national boundaries and across financial industries is scarce, largely because there have been relatively few such acquisitions to date. Most studies are, therefore, based on simulations and indirect evidence, such as differing efficiency levels across countries.

Vander Vennet (2002) conducts one of the few studies that compares traditional commercial banks to financial conglomerates, defined as banks with significant insurance or securities activities. Using data on banks from 17 European countries, he finds that the two groups of banks are equally cost efficient in producing traditional bank services, but that conglomerates are more efficient when their entire range of activities is taken into account.

The importance of national institutions and market structure in an international perspective is underlined by Fecher and Pestieau (1993), who compare efficiency for

[41] See Djelic and Sumpter (2001) for Europe and Investment Counseling, Inc., as cited in Strategic Insight (2001), for the US.

[42] See Beckers and Vaughan (2001).

[43] See Bonanni et al. (1998) and Walter (1999).

the financial sector (banks and insurance companies) in OECD countries; measures of competition and regulation are found to be correlated with both efficiency levels and changes. This implies that efficient bidders active in cross-border acquisitions might find it difficult to replicate their domestic success in a different setting. Abraham and Van Dijcke (2002) find that banks focusing on domestic M&As perform better than those either involved in transnational deals or not actively acquiring other firms; they conclude that cross-border deals are best seen as a complement to domestic activity, rather than as a strategic alternative.

Ruthenberg and Elias (1996) find a U-shaped average cost curve for European banks and a dispersion of efficiency measures that suggest possible gains from M&As (at least up to a certain size threshold); no distinction is made between (potential) domestic and cross-border deals. Changes in market structure, deriving from deregulation and consolidation, seem likely to affect mainly institutions operating in markets with low concentration and low barriers to entry; once more, national differences are shown to affect the potential effects of consolidation. In a somewhat more narrow international framework, a study of banking efficiency in the Nordic countries (Finland, Norway and Sweden) by Berg et al. (1993) decomposes individual productivity scores into a within-country and an across-country part. Based on data from 1990, Swedish banks (in particular the larger ones) seem the most efficient and Finnish banks the least efficient; consolidation among Nordic banks could thus improve the productivity of their banking systems. However the countries considered are relatively more similar than larger groups of countries (e.g., the members of the European Union) and therefore cross-country transactions may be more likely to succeed.

A comparison by Beccalli (2002) of Italian and British investment firms (mainly brokerages and asset management firms) shows the importance of differences in the national environment. When estimated jointly, firms from both countries have similar levels of efficiency. However, once cross-country differences are allowed, British firms seem significantly more efficient than their Italian counterparts. This is more indirect evidence that theoretical gains from cross-country consolidation should be carefully evaluated in the light of how national differences influence cost and revenue structures.

Amihud et al. (2002) examine the effect of 214 cross-border mergers on the acquiring firm's risk and returns. They find no change in firm risk, on average, but a decline in return on equity for the acquiring firm. They could not discern any patterns whereby the subset of mergers for any one region performed significantly better or worse than any other subset. Dìaz Dìaz et al. (2002) in a study of acquisitions (they do not consider mergers) find that deals increase the acquirer's profitability, whether the target is another bank or a non-bank financial firm, but domestic acquisitions perform better than cross-country acquisitions within the European Union (where the financial sector has reasonably harmonized rules), and that intra-EU acquisitions perform better than those outside Europe.

There are several factors that may cause the efficiency consequences of international consolidation to be different than those for domestic M&As. First, there may be some barriers that inhibit foreign financial institutions from operating

efficiently and competing against domestic institutions. These barriers may include differences in language, culture, and regulatory or supervisory structures, and explicit or implicit rules against foreign competitors. Moreover, even if some competitors appear to have organizational advantages at home, they are unlikely to be able to apply them fully abroad. For example, small business lending is highly information-sensitive and local practices rely heavily on informal mechanisms; in order to avoid adverse selection problems, foreign banks would have to rely on local expertise, often losing their competitive advantage. In some cases, the organizational diseconomies of operating or monitoring from a distance may be exacerbated by having to manage institutions many time zones away. [44]

Second, the market conditions and policies of the home nation may affect cross-border efficiency. In particular, the home market conditions (e.g., the degree of competition, the market for corporate control, or securities market development) and home market policies (e.g., banking powers, prudential regulation and supervision, and safety net guarantees) condition the environment within which institutions operate. To the extent that these differ across countries, institutions will have to adapt or they may find that the differences affect their efficiency in these international markets. Studies of cross-border efficiency usually have found that domestic banks are significantly more efficient than foreign-owned banks. [45] In the most exhaustive study comparing the efficiency of domestic and foreign banks, Berger et al. (2000b) look at profit and cost efficiency differences in five countries. They find that domestic banks are generally more efficient than foreign banks, but differences are significant only in the US. When foreign banks are broken down by their country of origin, there are a number of instances in which foreign banks appear to have an efficiency advantage in some countries, with US and German banks more often found to be more efficient in other countries (however, such comparisons are based on very small samples – between four and fourteen firms – with the results for German banks being sensitive to the exclusion of one company).

The primary difference between within- and across-industry M&As is the greater possibility of scope economies in mergers across industry lines – for example, through sharing physical inputs, information systems, or databases, or through consumption complementarities. There is also greater room for scope diseconomies – for example, from senior management straying far from its area of core competence.

The evidence on the possible impact of cross-industry consolidation is mixed. Lown et al. (2000) compute hypothetical pro forma mergers between the 10 largest US bank holding companies and the 10 largest of three other types of financial institutions: life insurance companies, property/casualty insurance companies and securities firms. They find that bank-life insurance mergers lead to lower profits but also to substantially lower risk and conclude that such mergers have the greatest diversification benefits. This finding is compatible with the view that the risk of fail-

[44] See Berger and DeYoung (2000) and Berger et al. (2001).

[45] See, for example, DeYoung and Nolle (1996), Mahajan et al. (1996), Berger et al. (2001) and Berger and DeYoung (2000).

ure of bank holding companies is likely to decline and stability to increase if they can expand into non-bank financial activities. [46]

However, this conclusion does not hold for all combinations between banks and non-bank financial firms: Lown et al. (2000) find that bank mergers with securities firms lead to slightly higher profits and slightly greater risk and that bank combinations with property/casualty insurers would lead to lower profits and higher risk. Moreover, while these results reflect the small number of firms that dominate the financial sector, they may not reflect the results of combinations among the large number of smaller firms in these industries. As with all simulations, they cannot anticipate changes in firm behavior that might result from the combinations. In fact, other studies have found little diversification gains from bank-securities firms combinations and increased volatility of returns and increased risk of failure. [47]

The little research that exists on the efficiency effects of actual universal-type consolidation finds evidence of organizational diseconomies in universal and international integration but notes that gains from diversification can be higher than those that result from within-country and within-industry integration. [48]

6. Conclusions

There is a general consensus that consolidation in the financial sector is beneficial up to a certain (relatively small) size in order to reap economies of scale; this holds in particular for commercial banks and insurance companies. There have been few studies on economies of scope due to a lack of data and to measurement problems; results are inconclusive as to whether scope economies exist and whether they have been exploited by mergers.

As for improvements in managerial efficiency, there is no clear evidence that M&As result in cost reduction. The most recent studies suggest that consolidation may enhance revenues, although results vary with the countries and deals analyzed; moreover, gains appear limited in magnitude. Stock markets also seem skeptical of M&As: on average, at the announcement of a transaction, the combined value of the firms involved does not vary much, as it should if significant benefits were expected. Cross-border consolidation is relatively new and little studied; so far there is no evidence of significant gains.

However, these results are subject to an important caveat due to the importance of innovation in shaping firms and markets. On the one hand, innovation may reduce the cost of accessing new technology and thereby decrease the need for larger size in order to make its adoption profitable, so that even small intermediaries could handle tasks that today are out of their reach. On the other hand, there might be cases in which new systems are profitable only if applied on a large scale, as in the

[46] See also Boyd et al. (1993) and Santomero and Chung (1992).
[47] See Boyd and Graham (1998).
[48] See Berger (2000).

field of risk management; in the latter case, the differences between large and small institutions might increase. [49]

Ex post results of M&As seem to contradict the motivations given by practitioners for consolidation, which are largely related to issues of economies of scale and scope and to improvements in management quality. However to a certain extent this puzzle might be only apparent. The lack of clear-cut results on the effects of M&As could reflect difficulties in measuring efficiency improvements. Further, studies restricted to short post-merger periods might fail to detect value gains that only emerge slowly, after some years. Moreover, deals done in the past might have suffered from stricter regulation that prevented firms involved in M&As from reaping all the benefits of their deals. Finally, the fact that mergers often happen in waves makes it hard to separate the effect of single deals from transformations undergone by the industry as a whole.

More detailed data at the firm level are needed to measure accurately scale and scope economies and to gauge the effects of changes in management. International comparisons are difficult due to differences in regulation and technology, and the consequent differences in markets for financial products. However, changes in regulation and technology within countries have been going on for long enough that it should be possible to study their impact on the industry.

One issue that deserves more attention in future research is how M&As affect the risk of the institutions involved and of the industry. Most studies have dealt with the potential gains from M&As in terms of operating costs and profits, but, given the nature of financial institutions, the trade-off with risk is crucial for a general assessment of the effects of consolidation. Finally, an international analysis that would apply broadly similar methodologies to a wide range of countries for a sufficient time span would help distinguish what are the deep parameters that govern the evolution of the financial industry from characteristics that stem from national practices or regulations.

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