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Gauging the efficiency of bank consolidation during a merger wave

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Abstract

By many measures, bank consolidation waves, historically and currently, produce substantial efficiency gains associated with reduced operating costs, enhanced diversification, and the enrichment of bank-customer relationships. These gains may be hard to discover in panel or cross-sectional analyses of individual banks because merger waves pose special econometric pitfalls for event studies of stock returns and bank performance comparisons. We review these problems and summarize lessons from nine case studies of individual merger transactions which offer qualitative evidence that potential econometric pitfalls can be important. Those conclusions suggest placing greater weight on cross-regime comparisons for measuring gains during bank merger waves. © 1999 Elsevier Science B.V. All rights reserved.

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How are economists to judge whether the consolidation wave of the 1990s (which is a continuation, with some important differences, of the consolidation wave of the 1980s) is efficient? The literature answering this question is usefully divided into three broad areas: (1) cross-regime comparisons (which contrast

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the performance of banking systems under regulatory regimes that permit or prohibit consolidation), (2) analysis of the causes of consolidation (which bear upon the likely benefits of consolidation), and (3) studies of the consequences for individual bank performance of consolidations. The latter category includes event studies of stock price responses, as well as studies of post-merger performance based on income statement and balance sheet information.

These literatures are vast and methodologies and conclusions sometimes differ, but in general, studies in the third category have been relatively pessimistic about mergers, while studies in the first two categories generally have concluded that consolidation is the child of competition and the mother of efficiency. Within the third category, post-merger performance studies have found small average benefits from mergers (revenue synergies seem to be more pronounced than cost savings in most studies). Event studies of stock price reactions are even more pessimistic – they uniformly find negative average price reactions to merger announcements (although there is substantial variation across events).

How can these differences be reconciled? Is it possible that methodological problems of performance or stock price event studies make it hard to measure efficiency gains from consolidation even though (as the other literatures suggest, and as bank industry experts like McCoy et al. (1994) believe) efficiency gains are large? Calomiris and Karceski (1998) consider possible problems with the empirical literature on bank merger efficiency gains, and develop nine case studies to shed light on the efficiency gains from mergers and the potential for those gains to be unrecognized by conventional approaches to measuring market perceptions or post-merger performance.

Our critique considers four methodological problems. First, with respect to stock price event studies, market reactions to announcements of mergers may be poor measures of market perceptions about the efficiency of mergers. The market may have already anticipated a merger prior to the announcement (an especially likely possibility during a merger wave). Or the market may take the announcement of an unexpected (efficient) merger as an indication that an even better potential transaction is now less likely to occur. This is also a distinct possibility during a merger wave, if acquiring banks disappoint market expectations that they would become acquirees. Thus negative market reactions may indicate dashed expectations of even more efficient mergers, rather than the inefficiency of the announced merger.

Second, post-merger performance evaluations must specify counterfactual benchmarks of comparison (estimates of what a merging bank's performance would have been if no merger had taken place), and such benchmarks are very difficult to construct, especially during a merger wave. Two difficulties arise in constructing such benchmarks: selectivity bias, and uncertainty regarding the time horizon over which gains are realized. Selectivity bias refers to the fact that observed mergers and non-mergers are not random events. If banks that

merge are different from those that avoid mergers, then non-merging banks' performance is not a good measure of the counterfactual performance of merging banks. Furthermore, banks differ in their organizational (chartering) structure in ways that are unlikely to be random, and which complicate inferences about merger transactions. Some merged banks retain independent local charters, while others are absorbed into regionally chartered institutions. This complicates comparisons, since the frame of reference for the counterfactual varies depending on whether the merged entity is a local, regional, or national institution. When NationsBank acquires a bank, for example, it is absorbed within a nationwide charter, making it virtually impossible to detect the influence of that (local) transaction on the performance of the merged (national) entity.

Constructing a proper counterfactual also requires an assumption about the timing of the realization of gains from consolidation. If mergers are few and far between, this issue does not arise, since one can postulate long potential delays in the realization of benefits. But during a merger wave like the current one – where roughly 10–15 percent of bank assets are involved in arms-length mergers or acquisitions every year (i.e., not including transactions within bank holding companies) – the necessity of a sufficiently large benchmark cohort of non-merger-influenced banks leads researchers to assume short periods of gain realization (typically three years). Thus, for example, banks that merged five years in the past typically become included in the non-merger cohort. If some gains from mergers continue to accrue several years after mergers take place (e.g., gains in relationship building associated with new cross-selling synergies), and if one-time costs complicate the measures of the benefits of mergers in the first two years after the merger, assumptions that limit the time horizon of gains can lead to substantial underestimation of the gains from mergers.

A third category of problem runs even deeper, to the meaning of success or failure. Even if the gains to banks from individual mergers were properly captured by post-merger analysis, the proportion of successes, or the average gain or loss per year after a merger, are not the right data for judging the long-run gains from consolidation. Of greater interest is whether inefficient transactions are permanent. For example, if 60 percent of all mergers result in post-merger losses, but successes persist while failures are very short-lived (and result in further, *successful* mergers), then mergers on average should be deemed successes. The failure to think about merger activity over time within the same bank, and to consider the fate of failed mergers, makes it hard to interpret existing panel studies of the consequences of mergers.

Fourth, bank performance (measured as some version of profitability, revenue growth, or bank risk reduction) is not a sufficient measure of economic efficiency, and (again) especially in the midst of a merger wave may give a false impression of true efficiency gains. If mergers enhance competition, and if competition erodes bank interest rate margins, for example, then mergers may

be associated with reductions in bank profitability, but increases in consumer surplus. Jayaratne and Strahan (1997) find substantial gains to consumers from mergers – gains that performance studies of individual banks fail to take into account.

These criticisms suggest that cross-regime comparisons, or analyses of the motives behind merger activity may be at least as valuable as measures of individual bank performance when gauging the efficiency consequences of mergers. Some of those cross-regime comparisons can be striking (see Calomiris (1993) for an historical review). For example, Table 1 contrasts the average return on equity for the banks of Illinois and North Carolina prior to the relaxation of Illinois branching restrictions. North Carolina's branching system had both higher profits and less volatile profits than Illinois' restricted banking system. Looking at the aggregate effects of the accelerated deregulation of branching and banking powers in the 1990s also provides striking evidence of improvements in bank performance. Deregulation has been the single most important influence on the merger wave of the 1990s. The improvements in aggregate bank performance (by virtually any measure) have been dramatically positive in the wake of bank consolidation, as shown in Table 2.

Successful banks like NationsBank, First Bank (now US Bancorp), First Union, and BancOne have pursued aggressive strategies expanding the scope of their products, the reach of their networks, and the scale of their activities, and they have maintained some of the most impressive performance records in the industry. They have provided incontrovertible, tangible examples of what I call successful "universal banking American-style" (Calomiris, 1998) – an organizational arrangement in which bank holding companies serve as a platform for customer relationship development along a variety of dimensions, and via a variety of separate corporate entities. Universal banking involves the creation of value through relationship enhancement. Banks today enjoy little of the

Table 1
Bank performance in Illinois and North Carolina

	Number of banks		Return on assets (%)		Return on equity (%)	
	IL	NC	IL	NC	IL	NC
1984	1240	63	−0.11	0.97	−1.76	16.47
1985	1233	63	0.63	0.98	9.55	16.82
1986	1218	65	0.71	1.07	10.70	18.22
1987	1209	68	−0.23	0.92	−3.88	15.38
1988	1149	71	0.99	1.06	15.66	16.86
1989	1119	78	0.88	0.97	13.53	15.62
1990	1087	78	0.68	0.85	10.05	13.77
1991	1061	81	0.67	0.74	9.40	10.99
1992	1006	78	0.72	1.03	9.32	15.24

Source: Division of Research and Statistics, Federal Deposit Insurance Corporation, cited in McCoy et al. (1994).

Table 2
Analysis of sources of US bank income, all insured banks

	ROE	Net interest margin	Non-interest income/assets
1982	12.10	3.82	0.96
1983	11.24	3.78	1.03
1984	10.60	3.80	1.19
1985	11.32	3.93	1.32
1986	10.23	3.81	1.40
1987	1.29	3.91	1.43
1988	11.61	4.02	1.50
1989	7.33	3.99	1.62
1990	7.29	3.94	1.67
1991	7.71	4.10	1.79
1992	12.66	4.42	1.95
1993	15.34	4.42	2.13
1994	14.64	4.38	2.00
1995	14.71	4.31	2.02
1996	14.60	4.33	2.19

Source and definitions: Calomiris and Karceski (1998 Table 3), ROE is return on book equity. Net interest margin is interest income less interest expense, divided by total earning assets.

economic "rent" they were granted in the past by entry barriers. Instead, they compete vigorously to create value for customers (and "quasi rents" for banks) that flow from rich long-run, multi-dimensional relationships, and which provide a stable and diverse source of income for banks.

The nine case studies analyzed in Calomiris and Karceski (1998) provide illustrations of the value creation that mergers can entail, and also examples that lend credence to the methodological pitfalls of empirical studies outlined above. The cases – all of which were initiated in the early 1990s – also provide graphic illustrations of the sense in which the banking environment is different, and significantly more competitive, in the 1990s than it was previously.

In several of the cases there is clear evidence that managerial entrenchment (an important source of "x-inefficiency" in banking prior to deregulation) has been lessened in the 1990s. In one case, the most inefficient bank management in the Chicago area stepped aside in the face of mounting competition, and allowed Boulevard Bank to be sold at auction to a high-efficiency acquirer.

The cases illustrate the variety of motives for consolidation in today's nationwide, universal banking system – including cross-selling synergies, cost reductions, and improvements in managerial skill. In one apparently successful case, the anticipated gains (and the only possible gains) involved cross-selling and up-selling of products; other aspects of the two banks' organizational and cost structures remained unchanged. In other cases, cost savings was the exclusive motive. In still others, cost savings and revenue enhancement both played a role.

For the most part, the gains that were advertised in advance were credible ex ante and realized ex post. In two cases, Calomiris and Karceski argued that mergers may have been inefficient, and arguably were driven by the ambitions of inefficient managers. But in both cases (one of which was First Chicago's acquisition of Lake Shore Bank), inefficient acquirers themselves have become acquired by relatively efficient institutions. Those cases illustrate the importance of looking at the longitudinal history of cases, rather than tallying up the ratio of successes to failures.

In two of the nine cases (both involving acquisitions by Firstar), stock price reactions to acquisition announcements were highly negative, even though Firstar had a record of achieving stated goals in acquisitions, and was a better-than-average performing bank. Calomiris and Karceski (1998) argue that the market reaction reflected disappointment over the reduced likelihood that Firstar would itself soon become acquired, rather than any expected inefficiency resulting from Firstar's acquisitions. Consistent with that argument, recently Star Banc announced its acquisition of Firstar at a substantial premium. As competition has increased, even relatively efficient, middle-size banks like Firstar have been encouraged to step aside in favor of extremely efficient franchises. Referring to the transaction, the *Wall Street Journal* wrote that: "Star Banc has been growing fast in recent years with unusually low operating costs, pushing its stock up rapidly. Firstar, while highly profitable, too, has relatively higher operating costs and hasn't grown much in the past two years" ("Star Banc and Firstar Agree to Merge...", 2 July 1998). The case studies of Firstar illustrate how negative market reactions to mergers can provide misleading signals of efficiency gains in the midst of a merger wave.

One advantage of case studies is the greater flexibility they afford to tailor-make, on a case-by-case basis, the relevant benchmark comparison group. The cases also illustrate the difficulty of constructing appropriate standardized benchmarks for large samples when measuring the gains from consolidation, owing to problems in defining comparison groups, identifying the timing of the gains from mergers, and coping with differences in the internal organizational structure (i.e., charter structure) of merging institutions.

In summary, these case studies have made me skeptical of much of the empirical literature used to measure the average gains from the consolidation wave in banking. Of course, case studies of bank mergers are not enough to generate firm conclusions; ideally, these cases will help to inform future empirical work about likely sources of gain and methodological pitfalls. In the meantime, they also encourage us to place greater weight on cross-regime studies, studies of the causes of consolidation (which emphasize increasing competitive pressure), analyses of the benefits for consumers from consolidation (Jayaratne and Strahan, 1997), and professional opinion within the industry itself, all of which offer a relatively optimistic view of the current merger wave.

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