FEDERAL RESERVE BANK OF NEW YORK

CURRENT ISSUES IN ECONOMICS AND FINANCE

August 2000 Volume 6 Number 9

Explaining the Rising Concentration of Banking Assets in the 1990s

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In recent years, the nation's largest bank holding companies have sharply increased their market share of assets. Have these institutions achieved their dominance by expanding their existing subsidiaries or by merging with other bank holding companies? A study of industry data for 1990-99 suggests that the increased market share of the largest companies is attributable almost entirely to external growth through mergers and acquisitions.

The U.S. banking industry looked remarkably different in 1999 than it did in 1990. Over the decade, the number of commercial banks fell one-third while average asset size nearly doubled as banks adapted to deregulation, technological change, and new market pressures.[1] This dramatic evolution reflected considerable activity among the largest institutions, with the top bank holding companies (BHCs) consolidating operations and becoming increasingly dominant in size and market share of banking assets.

In this edition of *Current Issues*, we investigate how this concentration of assets among the nation's largest BHCs came about. Specifically, we wish to know whether large BHCs increased their market share primarily through internal growth—the expansion of existing subsidiaries—or through external growth, by way of mergers and acquisitions (M&As). By assessing the relative importance of each of these sources of growth, we gain a better understanding of the underlying strategies of the institutions. External growth through mergers and acquisitions is consistent with a goal of consolidating overlapping operations and eliminating inefficiencies—what economists call removing excess capacity. But if internal growth has been a more important factor, then big banks might be getting bigger because they have a competitive advantage.

To explore the sources of increased concentration, we identify the fifty largest BHCs in 1999 (based on total assets held by the BHCs' domestically chartered commercial bank subsidiaries) and track the changes in their asset size and market share over the decade. Our analysis uses two types of data—unadjusted data and *pro forma* data. The unadjusted data for 1990-99 show changes in asset size stemming from both external and internal growth. The pro forma data are artificial figures constructed as if all the BHC's mergers and acquisitions occurred at the beginning of the decade—an adjustment that enables us to isolate those changes in asset size that stem from internal growth. By comparing pro forma and unadjusted data for the large BHCs, we can quantify the contributions of internal and external growth to the rising concentration of bank assets.

Our analysis reveals that the rise in concentration in the 1990s is due almost entirely to external growth through M&As. Indeed, on a pro forma basis, we find that the market share of the current fifty largest BHCs was *lower* in 1999 than in 1990. This finding implies that the increased concentration reflects a transfer of bank assets as ownership changed through consolidation, rather than internal growth of existing subsidiaries. Over the same period, these BHCs also dramatically restructured their operations, reducing the number of subsidiary banks nearly 90 percent on a pro forma basis.

These results are consistent with the "excess capacity hypothesis." As the industry evolves from a fractured national banking system, large bank holding companies are choosing a different—and likely more efficient—industry structure by consolidating operations and removing excess capacity.

The Evolving U.S. Banking Industry

The 1990s witnessed vast structural change in the U.S. banking industry. The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 capped a long deregulation trend and effectively completed the breakdown of intrastate and interstate barriers to banks' geographic expansion.[2] The changes sparked an era of rapid consolidation and rising concentration in the industry.

Banking Consolidation

Consolidation activity in the 1990s produced a 30 percent decline in the number of domestically chartered commercial banks, even as industry assets rose 30 percent. This activity was especially pronounced among the largest BHCs: four of the nation's ten biggest M&As of all time in any industry, as measured by the deals' market value, occurred in the banking industry in 1998 (Berger, Demsetz, and Strahan 1999). These megamergers and the subsequent creation of truly nationwide banks helped transform the banking landscape radically. Consider the fate of the fifty largest BHCs in 1990: only twenty-three of these institutions were still independent entities by 1999, with the assets of the twenty-seven others largely transferred to these surviving BHCs.[3]

Many BHCs have also fundamentally changed their structures by consolidating separately chartered commercial bank subsidiaries. Among the fifty largest holding companies in 1999, the number of subsidiaries fell from 628 in 1990 to only 362 in 1999. When one considers the large increase in bank size and the rapid acquisition pace over this period, the decline is striking.[4]

Asset Concentration

The steady rise in the market share of the largest BHCs during the 1990s highlights the increased concentration of U.S. banking assets.[5] In 1999, the fifty largest BHCs held 68.1 percent of all commercial bank assets, while the fifty largest in 1990 held only 55.3 percent (Table 1).

The distribution of the largest BHCs by asset size has also changed dramatically in the 1990s (Chart 1). In the lower panel of the chart, which shows the distribution at the end of the decade, BHC assets are more dispersed and the relatively large holding companies appear farther to the right. The altered distribution indicates that the variation among the top fifty BHCs grew markedly over the period and that the very largest—the top ten BHCs—increased their relative size. Indeed, as a result of recent megamergers and the emergence of

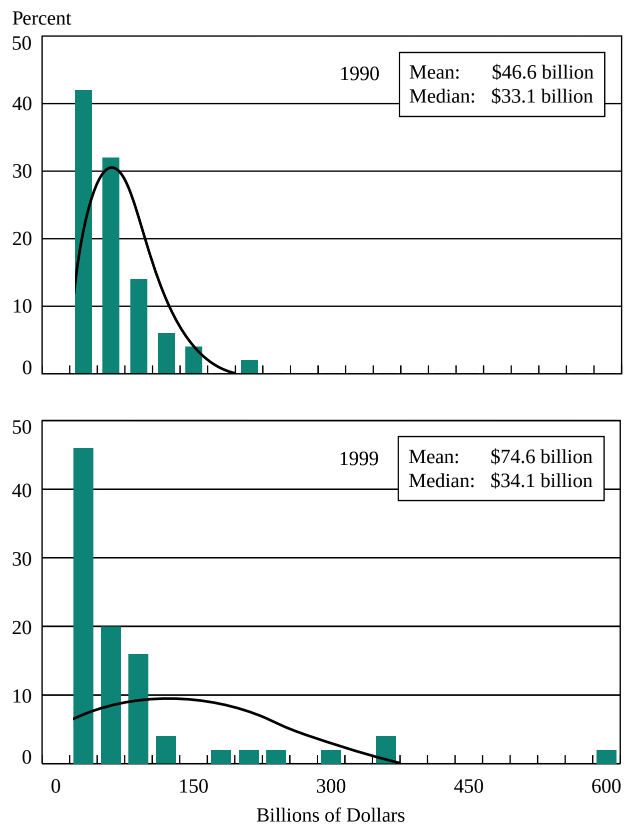
Table 1
The Increased Concentration in U.S. Banking

	1990	1993	1996	1999
Number of banks	12,370	11,001	9,576	8,698
Total assets (trillions of 1999 dollars)	4.22	4.23	4.80	5.47
Percentage held by fifty largest BHCs	55.3	59.7	66.6	68.1
Percentage held by ten largest BHCs	25.6	31.6	38.5	44.8
Total domestic deposits (trillions of 1999 dollars)	2.93	2.76	2.85	3.08
Percentage held by fifty largest BHCs	48.0	51.4	56.9	58.2
Percentage held by ten largest BHCs	17.3	22.0	26.2	33.6

Source: *Consolidated Reports of Condition and Income*, 1990-99.

Notes: The fifty largest and ten largest bank holding companies (BHCs) vary each year; they are determined by total assets held by their domestically chartered commercial bank subsidiaries in each year. Data are as of year-end except for 1999 data, which are as of the third quarter.

Chart 1
Distribution of the Fifty Largest Bank Holding Companies by Asset Size



Source: *Consolidated Reports of Condition and Income*, 1990-99.

Notes: The fifty largest bank holding companies (BHCs) are determined by asset size in 1990, measured in 1999 dollars. Data for 1990 are through year-end; data for 1999 are through the third quarter. Each distribution plots the relative frequencies of BHCs of different sizes.

truly giant BHCs, the ten largest BHCs now hold nearly half of all industry assets, as well as a larger share of assets of the top fifty BHCs (Table 1).

Possible Explanations

These figures clearly point to a rise in consolidation and concentration in U.S. banking that is quite intense among the very largest institutions. It is less clear, however, why this trend is occurring. Although we do not explain its precise causes or test the relative importance of competing theories, a brief discussion of the possible forces underlying the trend is useful.[6]

The large-scale deregulation that unfettered the country's banking markets has contributed to the increase in consolidation and concentration. In the 1980s, the easing of restrictions on intrastate and interstate banking opened new markets and created the potential for larger institutions. If previous regulations led to a fractured market structure with excess capacity, then deregulation would be expected to accelerate consolidation to remove inefficiencies. Although existing regulations still restrict the size of banks and limit some market concentrations, the enormous size of the largest BHCs in the late 1990s clearly is predicated on the ability to form truly nationwide banks. Indeed, several of the megamergers in recent years would have been prohibited earlier.

Rapid technological innovation may also have made larger BHCs more viable than they were and hence induced greater industrywide consolidation and concentration.[7] Information technology potentially favors large BHCs by enabling them to develop new distribution networks such as ATMs and on-line banking and to devise complex financial products and risk-management techniques. In addition, this technology may allow large BHCs to generate scale and scope economies by leveraging huge information technology investments across many products and customers; it could also create informational advantages and enhance cross-selling opportunities for BHCs with sizable customer bases. If technology provides a competitive advantage through scale, then consolidation and concentration would be natural outcomes.

Sources of Growth for Large BHCs

By examining the evolution of large BHCs in the 1990s, we can identify how the institutions' dominance increased. To do so, we track changes in asset size and market share for a fixed set of the fifty largest domestic BHCs in 1999, where size rankings are based on total assets held by all domestically chartered commercial bank subsidiaries. The object of our analysis is to distinguish the external growth effects of mergers and acquisitions from the effects of internal growth strategies.

Why Examine Bank Holding Companies?

We begin with the BHC, as opposed to the subsidiary banks, as the focal point for our analysis because the BHC represents ownership and control of bank assets and liabilities.[8] Presumably, bank managers maximize performance over the entire institution, rather than by subsidiary bank. Likewise, if deregulation and technological change provide scale benefits, these benefits would likely be exploited across the entire institution.

The recent elimination of bank charters provides another reason to focus on the BHC. In the post-deregulation era, BHCs have removed many subsidiary bank charters by collapsing subsidiaries into a single primary bank in the hope of reaping efficiency gains from common systems and back-office operations as well as reducing regulatory burdens. A primary bank subsidiary might appear to be growing rapidly, when in fact assets have merely been transferred within the same holding company.

Calculating Unadjusted and Pro Forma Data

To investigate the sources of BHC growth, we define two different types of historical data for each BHC: an unadjusted series and a pro forma series (see box). The unad-

Box: Data and Methodology

To construct the unadjusted historical series, we used the l999 group of the fifty largest BHCs as holding company identifiers in each year from 1990 to 1999 and consolidated the commercial bank subsidiary data. We excluded BHCs held by foreign corporations or BHCs with only nonbank subsidiaries.

To construct pro forma historical data, we used the National Information Center's transformations table, which documents merger and acquisition activity for banks and BHCs. We identified all commercial banks that were acquisition targets of the 1999 group of fifty largest BHCs at any point between 1990 and 1999. We also identified targets of those targets; for example, if an acquiring institution in the early 1990s was acquired by one of the fifty largest BHCs in 1999, then both that acquiring institution and all of its earlier targets were linked to the most recent acquirer.

For both historical series, we then aggregated data for all commercial bank subsidiaries into a single "top fifty BHC" observation for each quarter. We also created an "industry" classification, with all observations in each quarter. Assets of nonbank subsidiaries were not included.

justed series includes actual data on assets from each earlier quarter for all commercial banks that were subsidiaries of the BHC in that earlier quarter. The pro forma series includes data in each earlier quarter for all commercial banks that were part of the BHC in the third quarter of 1999. Unadjusted data amount to consolidated financial data for a given BHC as originally reported, while pro forma data represent an artificial series, constructed as if all M&A activity during the observation period occurred at the beginning of the period.

Why calculate both series? First, unadjusted and pro forma data are appropriate in different situations and for different purposes. For example, if one is interested in estimating scale or scope economies from a cross section, it would not be appropriate to use pro forma data, because the benefits from the internal consolidation of operations are precisely what are relevant. However, it would be appropriate to compare pro forma data before and after a merger to quantify the merger's efficiency effects.[9]

Second—and more important for our analysis—a comparison of unadjusted and pro forma data provides a natural way to gauge the relative importance of internal and external growth. The unadjusted figures capture asset growth stemming from both the expansion of existing subsidiaries and the addition of new subsidiaries through M&A activity. The pro forma series, by contrast, allows us to isolate and measure the contribution of internal growth to changes in a BHC's asset size.[10] Thus, by calculating and comparing the two series, we can quantify the contributions of internal and external growth to the increased concentration of assets in the 1990s. We emphasize that, in contrast to our results in Table 1, this time-series comparison holds the sample of fifty BHCs constant over time and tracks the evolution of a fixed set of institutions.

The comparison of unadjusted and pro forma data also sheds light on the motivations of the large BHCs in the sample. If external growth through M&As accounts for most of the rise in asset concentration, then the elimination of excess capacity is more likely to have been the key motivation for the BHCs. Alternatively, if internal growth was the primary source of concentration, then the BHCs may have been seeking to use a competitive advantage to expand their existing operations.

Finally, a comparison of internal and external growth allows us to determine whether the increased market share of the largest BHCs came at the expense of smaller competitors, which could be a source of concern for regulators, or whether it merely reflects the transfer of existing assets between an acquirer and its target. If the increased market share reflects only external growth, as existing assets are moved between firms, the remaining institutions would retain their relative market share. However, if the increased market share reflects internal growth, smaller competitors could be forced from the industry as their market share declines.[11]

Table 2
A Comparison of the Fifty Largest Bank Holding Companies: Pro Forma versus Unadjusted Data

	1990	1993	1996	1999
Total assets (trillions of 1999 dollars)				
Industry	4.22	4.23	4.80	5.47
Fifty largest: Pro forma	2.99	2.95	3.32	3.73
Fifty largest: Unadjusted	1.28	1.70	2.45	3.73
Number of commercial bank subsidiaries				
Industry	12,370	11,001	9,576	8,698
Fifty largest: Pro forma	2,655	1,857	972	362
Fifty largest: Unadjusted	628	668	486	362

Source: *Consolidated Reports of Condition and Income,* 1990-99.

Notes: The fifty largest bank holding companies are determined by total assets held by their domestically chartered commercial bank subsidiaries in 1999; this list is fixed for all earlier periods.

External Growth Drives Increased Concentration

Market Share Changes

A comparison of the unadjusted and pro forma data shows that external growth through mergers and acquisitions was the dominant factor behind the rising market share of the largest BHCs.

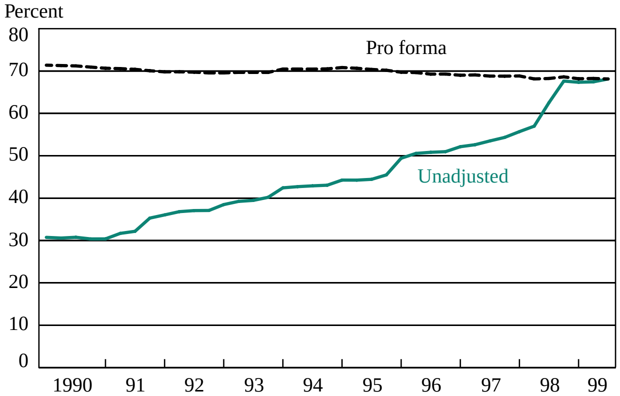
On an unadjusted basis, total assets held by the 1999 group of fifty largest BHCs increased from $1.28 trillion in 1990 to $3.73 trillion in 1999, while pro forma assets increased only from $2.99 trillion to $3.73 trillion over the period (Table 2). In terms of growth rates, unadjusted assets increased 11.0 percent per year, while pro forma assets rose only 2.3 percent. By comparison, total assets for all commercial banks increased 2.7 percent per year.

On a pro forma basis, the market share of the fifty largest BHCs actually *declined*—from 71 percent in 1990 to 68 percent in 1999—reflecting the BHCs' relatively slow internal growth (Chart 2).[12] In contrast, the market share of the top fifty in unadjusted terms increased steadily during the 1990s and underwent a particularly large jump in 1998 after a series of megamergers dramatically increased the size of several of the largest BHCs. These figures indicate that the largest BHCs achieved market share gains through M&As and that internal growth was an inconsequential factor.

Chart 2

Share of Commercial Bank Assets Held by the Fifty Largest Bank Holding Companies

Pro Forma versus Unadjusted Data



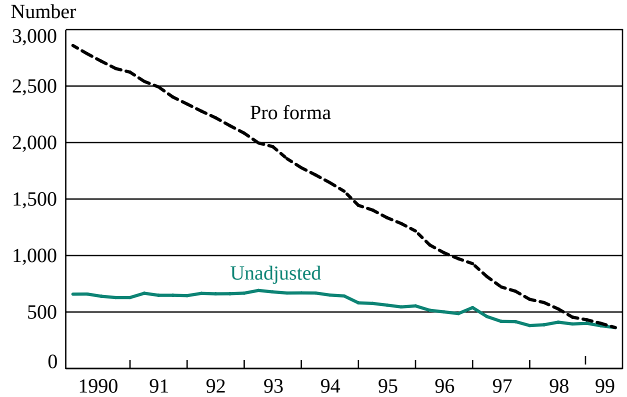
Source: *Consolidated Reports of Condition and Income*, 1990–99.

Note: Data are for the fifty largest bank holding companies in 1999, determined by total assets held by their domestically chartered commercial bank subsidiaries.

Chart 3

Number of Commercial Bank Subsidiaries of the Fifty Largest Bank Holding Companies

Pro Forma versus Unadjusted Data



Source: *Consolidated Reports of Condition and Income*, 1990–99.

Note: Data are for the fifty largest bank holding companies in 1999, determined by total assets held by their domestically chartered commercial bank subsidiaries.

One explanation for this slow internal growth, consistent with a goal of reducing excess capacity, is that consolidating banks shed overlapping operations and deliberately became smaller on a pro forma basis in the short run. In the long run, this restructuring may lower costs and increase efficiency, enabling the banks to outgrow competitors and increase market share. Alternatively, these BHCs may have placed less emphasis on internal growth so that they could focus scarce resources such as managerial talent on their external growth strategies. In either case, lack of internal growth in the past by no means precludes it from becoming an important factor in the future.[13]

Consolidation of Subsidiaries

We arrive at similar results when we examine the number of separately chartered subsidiary banks. On an unadjusted basis, the number of these banks fell more than 40 percent, from 628 to 362, as institutions restructured their operations by combining subsidiary banks (Chart 3). The pro forma decline is even more striking: the number of banks fell nearly 90 percent. Although these banks were owned by different institutions in the early years, this massive restructuring provides strong support for the excess capacity view of consolidation in U.S. banking. Since so many separate bank charters were voluntarily eliminated after deregulation, we conclude that BHCs prefer a consolidated structure and were inefficiently constrained in earlier periods.

Conclusion

The increased concentration of banking assets among the largest bank holding companies in the 1990s reflects the steady stream of mergers and acquisitions that so dramatically changed these firms. Although these large BHCs control a growing market share, our results show that the institutions actually grew more slowly than smaller institutions, after we account for the shifting of existing assets between institutions. Internal growth therefore was not an important part of the strategies of the largest BHCs.

Our findings raise the issue of whether we can expect rising concentration to continue for the largest BHCs. Barring continued mergers among the largest institutions, these BHCs will likely have to change their focus toward internal growth if market shares are to rise in the future. This shift may be possible if the restructuring of the 1990s has created a set of large BHCs with a competitive advantage or if management refocuses on internal growth. However, evidence from the last decade suggests that internal growth was a secondary goal, so such a change would represent a fundamental departure from the experience of the 1990s.

Notes

1. The number of U.S. commercial banks declined from 12,370 in 1990 to 8,698 in 1999 while average bank size rose from $341,000 million in assets to $628,000 million in assets (in inflation-adjusted 1999 dollars).

2. See Berger, Kashyap, and Scalise (1995) for details on deregulation and consolidation trends and Berger, Demsetz, and Strahan (1999) for alternative explanations.

3. We focus throughout on total assets of domestically chartered commercial banks. All BHC figures refer to the sum across the subsidiaries of the holding company.

4. This consolidation trend supports our use of bank holding companies for analysis. Although a BHC's lead bank could increase in size as subsidiaries are consolidated, this change would not affect the assets of the holding company as a whole.

5. We base market share on aggregated data obtained from the 1990-99 *Consolidated Reports of Condition and Income*. Our analysis encompasses the traditional commercial banking industry by including all separately chartered domestic commercial banks in our definition of the market in each year. We exclude nontraditional activities in insurance or securities subsidiaries. All dollar estimates are in inflation-adjusted 1999 dollars.

6. See Berger, Demsetz, and Strahan (1999) and Berger and Mester (1997) for details and references.

7. There is some support in recent academic literature (Berger and Mester 1997; Hughes and Mester 1998) and among industry participants for the theory that technology favors large banks and is spurring consolidation.

8. See Stiroh (forthcoming) for details on the evolution and performance of BHCs and Berger, Kashyap, and Scalise (1995) for additional reasons to examine BHCs.

9. Kwan and Eisenbeis (1999) and Peristiani (1997) perform this type of analysis.

10. For example, if BHC "A" acquired BHC "B" in the course of the 1990s, the pro forma data would measure the asset growth of A over the decade as the difference between A's assets in 1999 and A and B's combined assets in 1990. This calculation essentially factors out the increase in A's assets resulting from the acquisition of B; what remains is the change in A's assets attributable solely to the expansion of existing subsidiaries.

11. Of course, if one is interested in market power concerns, or size and "too-big-to-fail" issues, then it is largely irrelevant how an institution attained its size. Rather, absolute size at a point in time is the relevant factor.

12. The relevant comparison is actually the growth rate of the pro forma fifty largest BHCs and the growth rate of all other banks. This comparison, which can be derived from Table 2, reveals that all other banks grew 3.6 percent per year, compared with only 2.3 percent for the pro forma fifty largest BHCs.

13. Other explanations for slow internal growth include possible diseconomies of scale, run-offs of dissatisfied customers, or self-imposed output restrictions to exploit market power.

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Current Issues in Economics and Finance is published by the Research and Market Analysis Group of the Federal Reserve Bank of New York. Dorothy Meadow Sobol is the editor.