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the Federal Reserve Bank  
of Chicago

JULY/AUGUST 1988

**Banking 1987: A year of reckoning**  
Bank risk from nonbank activities

## **ECONOMIC PERSPECTIVES**

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# Banking 1987: A year of reckoning

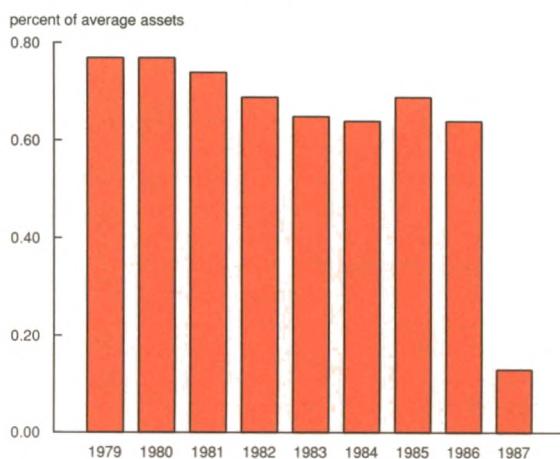
George Gregorash and Theresa Ford

The banking industry garnered more than its share of headlines in 1987. Latin debt provisions by the multinational banks proved by far to be the biggest story, but a host of other issues added drama to an eventful year. Among them were: stresses in the energy-dominated Southwest, the continuing evolution in bank structure (with hostile takeover attempts and growing interstate expansion), and the intensifying debate on expanded banking powers in the face of a volatile stock market. The financial results for the industry were decidedly negative, but the actions taken by bankers and policymakers during the year addressed difficult structural issues that had been building over many years.

Aggregate banking profitability continued a decade-long decline that has been interrupted only in 1985. The U. S. commercial banking industry recorded a return on assets of 0.13 percent in 1987, the lowest rate of return since the Great Depression (see Figure 1).<sup>1</sup> Credit quality was once again the driving force behind earnings performance for all bank size groups. Less Developed Country (LDC) provisioning dominated the earnings picture at large banks. In the smaller bank groups, intensifying difficulties in the Southwest overshadowed improving Midwestern agricultural banking conditions. Bank closings exceeded the record level set in 1986 and remained extraordinarily high by historical standards. The burgeoning growth at banks of off-balance-sheet holdings and a complex array of derivative securities continued unabated.

Given the preponderance of negative financial news reported by banks in 1987, the reaction of shareholders and depositors was reassuringly measured and implied that the year's financial difficulties were already well known and anticipated among the investing public. Though share prices of actively traded bank holding companies generally underperformed overall market indexes, neither the large second and fourth quarter LDC provisions nor the October market break inordinately punished the share values of banking institutions (see Box).

Figure 1  
Return on assets—all U.S. commercial banks



## Latin trauma

Latin American debt difficulties intensified throughout 1987, beginning with the moratorium on interest payments declared by Brazil and Ecuador in the first quarter of the year. LDC debt holders responded by placing large portions of this debt on nonperforming status. Such difficulties were reflected with a vengeance in bank income accounts in the second quarter when massive loan loss provisioning triggered losses at the larger banks. A second round of provisioning for Latin debt occurred at some money center banks in the fourth quarter.

Even in the absence of Latin debt provisions, large bank earnings in 1987 were at best lackluster. Increased Latin nonperforming assets reduced net interest income. Pressure on net interest margins was further increased through the first three quarters of the year, as increases in benchmark lending rates trailed rising funds costs. The decline in interest rates following the October market break relieved some margin pressure in the fourth quarter but

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for the year as a whole net interest margins at the banks with assets in excess of \$10 billion languished at 2.86 percent of assets, slightly below the 2.91 percent rate registered in the prior two years (see Table 1).

Despite the much publicized cost cutting drives at major banks, aggregate overhead costs at these large banks continued their upward spiral. Overhead costs as a percent of assets rose 20 basis points to 3.10 percent in 1987, paralleling the rise in 1986 over 1985. Cost cutting and overhead reallocation is, however, a longer-term investment and the immediate costs incurred to effect this transition—while expensive in the short run—may well prove ultimately beneficial.

Although margin pressure and overhead growth limited large bank profitability, both considerations were overshadowed in 1987 by credit provisions. Loan loss provisions taken by the banks with assets in excess of \$10 billion totalled slightly over 2 percent of assets in 1987, dwarfing the 0.75 and 0.70 percent provisions of 1986 and 1985. Overall, nearly two-thirds of the nation's banks with assets over \$10 billion recorded net losses for the year. The return on assets in 1987 for the group plummeted to  $-0.67$  percent from  $0.54$  percent in 1986 (see Figure 2). Because banks of this size hold 37 percent of total U.S. banking assets, the large bank losses heavily weighted the aggregate performance of the industry.

### Traders and underwriters

One bright spot in large bank performance was the continuing increase in revenues generated through fees and trading profits. Noninterest income at the banks over \$10 billion in assets rose to 1.77 percent of assets, up 30 basis points from 1986, continuing an upward trend evident throughout the decade. But the growth of this form of income has radically altered the revenue and expense sources

**Table 1**  
Income and expenses, as a percent of assets  
Banks with over \$10 billion in assets

	1987	1986	1985
Net interest margins	2.86	2.91	2.91
Overhead expense	3.10	2.90	2.70
Loan loss provisions	2.05	0.75	0.70
Noninterest income	1.77	1.48	1.28

**Figure 2**  
Return on assets—by asset size



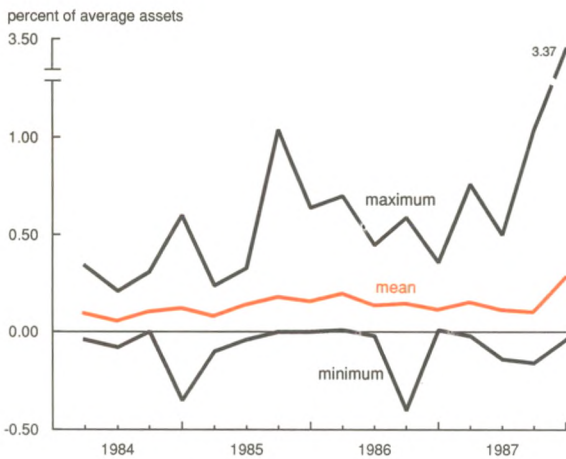
at these firms, increasingly diluting traditional financial analysis measures such as net interest margins and returns on assets. Thus, the assessment of risks and risk-adjusted returns at banking firms has become an increasingly difficult task for regulators and securities analysts.

From a performance perspective it is clear that some rethinking is in order. Trading income has grown rapidly, approaching a level equal to the total normalized bottom line profits at large commercial banks. But rates of profitability must be considered in conjunction with the variance of that profitability, and clearly trading profits are more variable than traditional intermediation margins (see Figures 3 and 4). Not only is there a wide variance of profitability in trading among firms but such variance is significant at an individual firm from quarter to quarter.

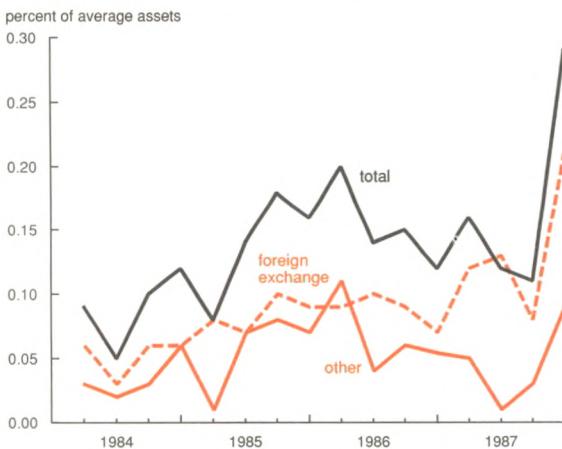
The growth of revenues and the risk implications associated with trading off-balance-sheet derivatives has not been lost on policymakers. Banking regulators in the major industrialized countries responded to this growing trend by proposing uniform risk-adjusted capital standards in 1987.

The standards recognize some overriding realities in contemporary finance. First, the present system of capital standards based on total asset holdings greatly discourages the holding of low-risk assets at banks. As the direct capital markets have captured an increasing share of high-grade corporate financings, banks have become increasingly noncompet-

**Figure 3**  
Trading income—banks with over \$10 billion in assets



**Figure 4**  
Average trading income—components



itive in providing funds for these low-risk customers. Conversely, the lack of capital accountability on off-balance-sheet financings at banks has not explicitly taken into account the risks of these revenue-generating activities. Finally, increased global competition in financial services requires that harmonization in regulatory standards among major countries be obtained to insure fair competition.

By far the most fundamental recognition of necessary change has come at the legislative level, where Congressional proposals have been made to reshape the configuration of previously separate investment and commercial banking

activities. The costs of this separation in terms of forgone synergies and competitive fairness have become increasingly serious in the integrated and technologically advancing financial services field. Although final legislation is certainly not assured, the recognition by legislators of the blurring distinctions between financial service providers is a fundamental element of long-term competitive and safe banking.

### Distinction by size

Profitability measures by bank size groups showed that not all banks shared, or shared equally, in the 1987 earnings plunge. In 1986, smaller banks had the most prominent profit declines and the larger banks had more modest declines in profitability. This situation reversed itself in 1987.

Profitability at community banks that have less than \$100 million in assets rose, as measured by a return on assets (ROA) of 0.57 percent in 1987, up from 0.50 percent in 1986. Net ROA (ROA net of securities gains) for these banks increased 20 basis points from 1986 to 0.54 percent (see Figure 5). Securities gains were less prominent in 1987 small-bank earnings. However, in the fourth quarter, these banks, along with most banks, recognized securities losses. For banks with \$100 million to \$1 billion in assets, ROA remained flat at 0.68 percent, but net ROA rose from 0.55 percent in 1986 to 0.62 percent in 1987. Loan pro-

**Figure 5**  
Net return on assets—U.S. by size





vision reductions, most notably in the smaller banks, led to the improved profitability.

Although the levels of securities gains waned in 1987 from the previous two years, use of these gains to augment income for the entire year was still considered high by historical standards. Gains occurred primarily in the beginning of 1987. Securities losses were widespread among sectors and bank size groups under \$10 billion in assets during the fourth quarter. These losses reduced the year-end gains. Banks with over \$10 billion in assets recognized securities gains in the fourth quarter.

In contrast to the gains of the first nine months, the most profitable banks recognized large securities losses in the fourth quarter of 1987, which resulted in securities losses for the year (see Table 2). With the relative rise in interest rates during the year, the remaining appreciation of their securities portfolios was reduced. On the other hand, the least profitable banks recognized slight securities gains in the fourth quarter and throughout the year. However, unlike the most profitable banks, their remaining securities portfolios or "income cushions" depreciated. These banks may be more vulnerable to interest rate rises.

The fourth quarter also registered above-normal growth in loans for the largest banks and an inflow of deposits for all size banks following the stock market plunge. Aggregate deposits grew at an annualized rate of 19 percent during the fourth quarter, while growing only 5 percent for the year. Most of the growth was in transaction deposits which grew at an

annualized rate of 30 percent as opposed to nontransaction deposits which grew at an annualized rate of 14 percent. The Southeast and Midwest regions enjoyed the highest growth rates during the quarter and the year.

### Regional variation: The Midwest

Midwestern agricultural banks, supported by the improved farm economy, rebounded in 1987 from the poor performance of past years.<sup>2</sup> Government price supports, lower operating costs, the lower value of the dollar, recovering land values, and the reduction in the use of marginal farmland contributed to the improvement in the farm economy. Improved earnings, asset quality, and capitalization were recorded in 1987 at agricultural banks. The higher earnings were primarily driven by smaller loan loss provisions.

ROA jumped to 0.66 percent in 1987 from 0.29 percent in 1986 for ag banks in the Midwest, which includes the Federal Reserve Districts of Chicago, St. Louis, Minneapolis, and Kansas City (see Figure 6). Net ROA rose to 0.64 percent from 0.07 percent in 1986 (see Figure 7). For the nine states in the Midwest with over 100 ag banks or where ag banks represent more than 25 percent of total banks, ROA increased 36 basis points on average and net ROA increased 53 basis points on average for ag banks (see Figures 8 and 9). The drop in provisions from 1.46 percent of average assets in 1986 to 0.75 percent in 1987 primarily contributed to the improved ROAs. In addition to the lower provisions, ag banks reduced overhead costs slightly and net charge-offs fell nearly 50 percent from 1986. Overall, the number of ag banks with net losses fell from 504 a year ago to 265 in 1987.

Asset quality measures also improved. The ratio of nonperforming loans to total loans dropped from 5.1 to 3.6 percent in 1987 (see Figure 10). In addition, capital was less encumbered by nonperforming loans in 1987, as shown by the ratio of nonperforming loans to primary capital which declined to 14.9 from 22.1 percent in 1986. Capitalization strengthened at Midwestern ag banks, from 10 percent of total assets in 1986 to 10.3 percent in 1987.

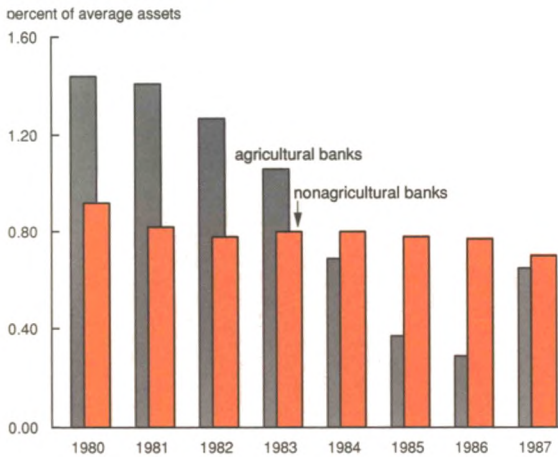
Based on ROA and net ROA, Midwestern ag banks' earnings rebounded in 1987, but their net interest margins fell from 3.94 percent of average assets in 1986 to 3.88 percent. The

Table 2

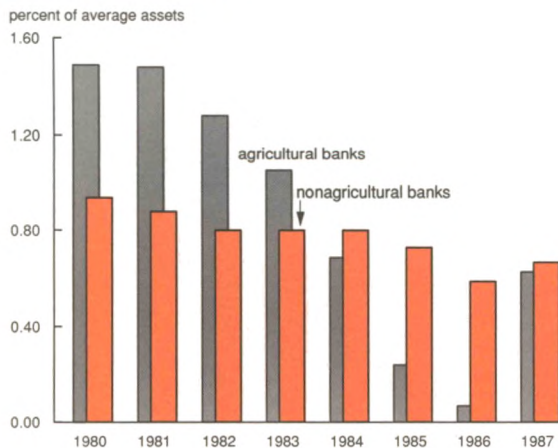
Securities portfolios appreciation/depreciation  
as a percent of average assets  
(unweighted averages by groups)

By decile of net ROA	1986	4Q87	1987
1 (lowest 10%)	0.22	-0.25	-0.30
2	0.38	-0.21	-0.33
3	0.48	-0.21	-0.33
4	0.59	-0.23	-0.28
5	0.69	-0.21	-0.18
6	0.78	-0.15	-0.17
7	0.88	-0.15	-0.13
8	0.97	-0.09	-0.04
9	1.23	-0.01	0.02
10 (highest 10%)	1.66	0.01	0.23

**Figure 6**  
Return on assets  
(Districts 7-8-9-10)



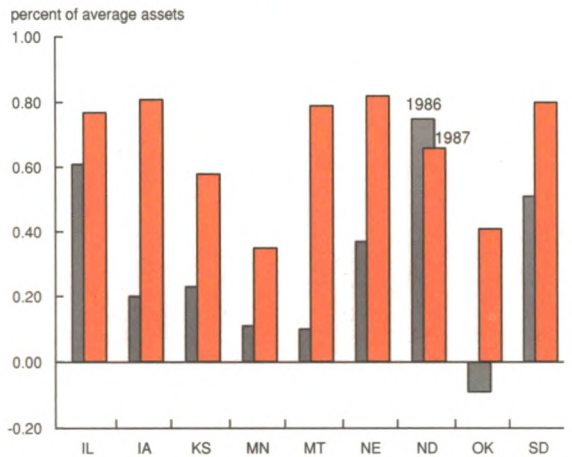
**Figure 7**  
Net return on assets  
(Districts 7-8-9-10)



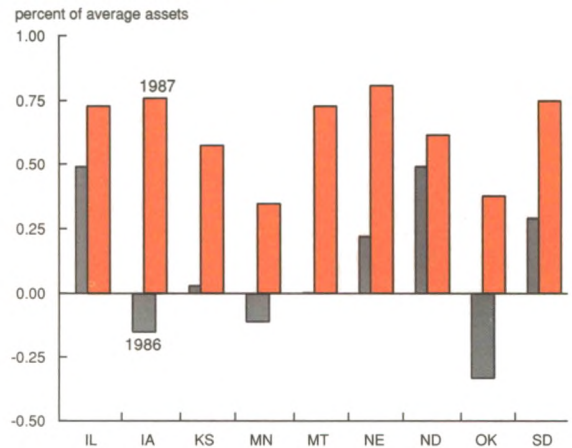
decline in margins was influenced by changing asset portfolios for ag banks. Agricultural banks have been reducing their share of loans in the asset portfolio and increasing their share of securities. These are a less risky, lower yielding form of asset.

In 1980, securities and loans made up 83 percent of total assets for ag banks. There was little change in 1987 with 84 percent of the asset portfolio made up of securities and loans. However, in 1987 securities grew to account for 42 percent of all assets from 30 percent in 1980

**Figure 8**  
Return on assets—ag banks  
in top 10 ag bank states



**Figure 9**  
Net return on assets—ag banks  
in top 10 ag bank states

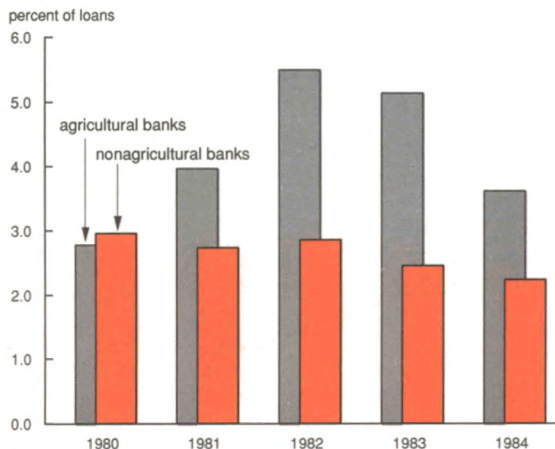


(see Figure 11 and Table 3). Loans accounted for 53 percent of total assets in 1980 and fell to 42 percent in 1987. Loan growth in 1987 remained modest at 2.2 percent.

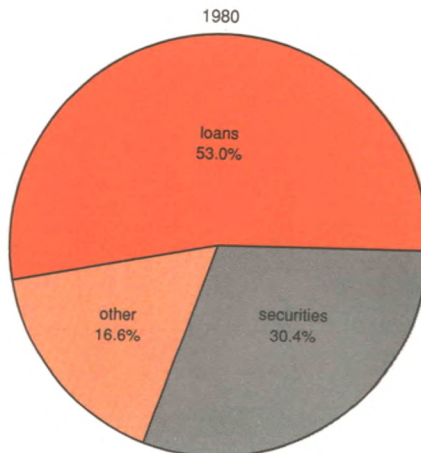
As expected, Midwestern ag banks made seasonal adjustments to their balance sheets during the fourth quarter of 1987. Fourth quarter net charge-offs doubled from the previous quarter but were only half of the fourth quarter a year ago. Similar movements were found with provisions. Securities losses also dampened earnings, in addition to the normal



**Figure 10**  
**Nonperforming assets**  
**(Districts 7-8-9-10)**

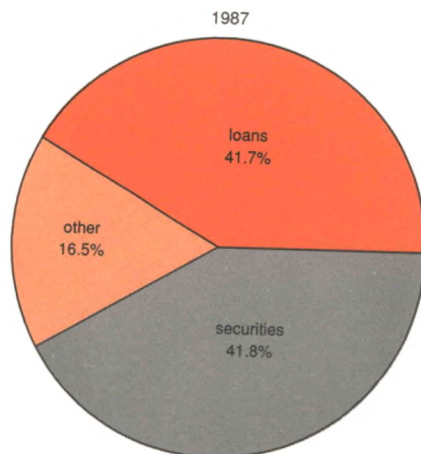


**Figure 11**  
**Asset portfolio changes—ag banks**  
**(Districts 7-8-9-10)**



**Table 3**  
**Asset portfolio changes**  
**Districts 7, 8, 9, 10 ag banks**

	percent of total assets		
	Loans	Securities	Other
1980	52.95	30.40	16.65
1981	50.43	32.18	17.39
1982	50.40	32.91	16.61
1983	50.50	35.03	14.47
1984	48.64	37.68	13.68
1985	46.36	35.29	18.35
1986	41.72	38.81	19.44
1987	41.71	41.77	16.52



seasonal adjustments during the final quarter of 1987.

**The Southwest**

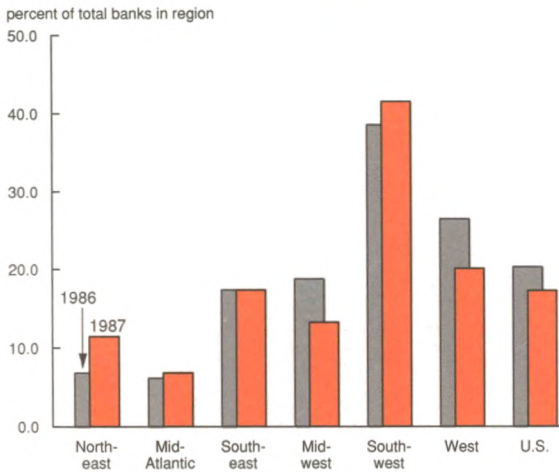
The gains recorded by Midwestern ag banks were more than offset by the losses recorded by banks in the Southwest. Banks in Texas and portions of Louisiana and New Mexico continued to struggle with impaired asset quality, as the energy and real estate sectors remained depressed. Over 40 percent of the region's banks reported net losses in 1987 (see Figure 12). A third of all unprofitable U.S. banks were located in this region, which ac-

counted for 14 percent of all U.S. banks and almost 7 percent of all U.S. bank assets.

Although aggregate loan loss provisions declined for the region, ROA continued to decline to -1.00 percent, down from -0.46 percent in 1986. Negative ROAs were common across bank size groups in the region. Overhead expense also contributed to poor earnings, increasing to 3.16 percent of average assets compared to 2.91 percent a year ago. Although relatively low, noninterest income rose slightly from 0.91 percent of average assets in 1986 to 0.94 percent in 1987. Net interest margins continued to shrink, down from 3.46 percent in 1985, and 3.19 percent in 1986, to 3.11 percent in 1987.



**Figure 12**  
**Banks with net losses—by region**



Asset quality also deteriorated further for banks in the Southwest. Nonperforming loans equalled 6.6 percent of total loans and nearly 50 percent of primary capital.

In the Southeast and Mid-Atlantic regions, profitability remained high and credit

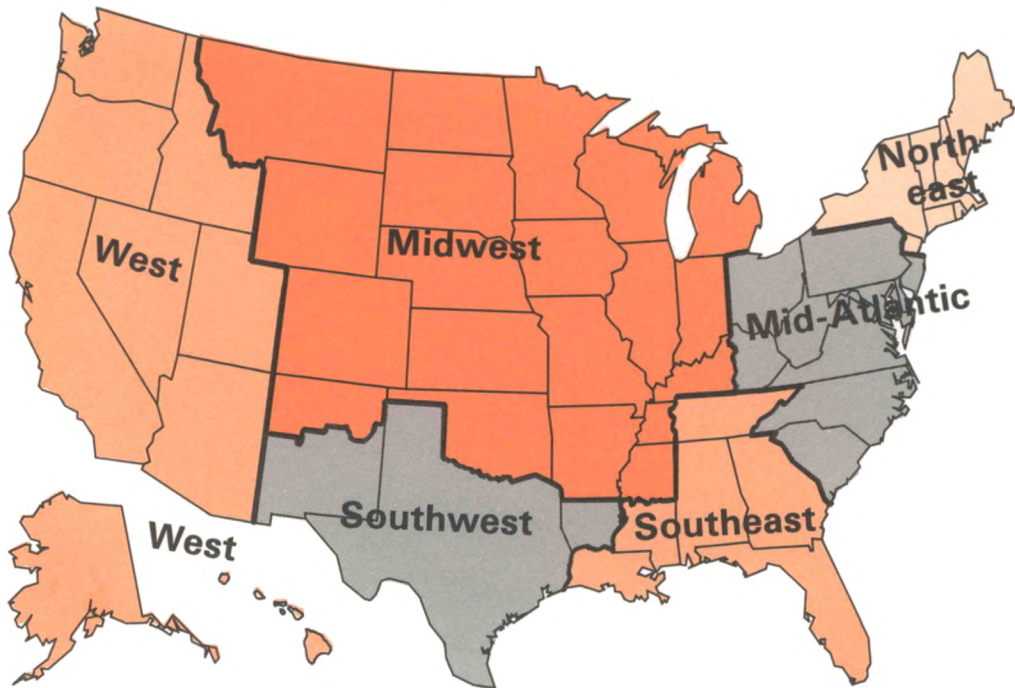
quality strong, even with the loan loss provisions of the regions' larger banks (see Figures 13 and 14). In the Northeast and West, aggregate performance was dominated by the lower profitability of the larger banks. However, in the Northeast, banks with under \$10 billion in assets reported strong earnings and credit quality. In the West, banks of this size had relatively weak earnings and credit quality, but showed improvement over 1986 performance.

**Seventh District in review**

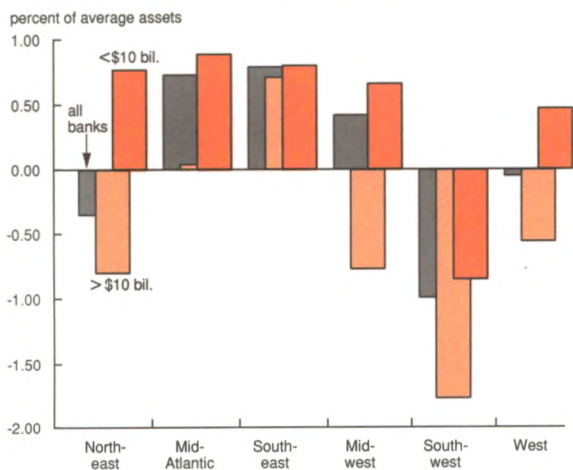
Banking performance improved in the Seventh Federal Reserve District, made up of Iowa and portions of Illinois, Indiana, Michigan, and Wisconsin. Excluding the largest banks, District banks reported higher profits for 1987. The disparity in performance between ag and nonag banks narrowed and the number of banks with net losses declined sharply. In Iowa alone, the number of banks with net losses decreased by 63 percent (see Figure 15).

Aggregate ROA for the Seventh District fell slightly from 0.87 percent in 1986 to 0.81

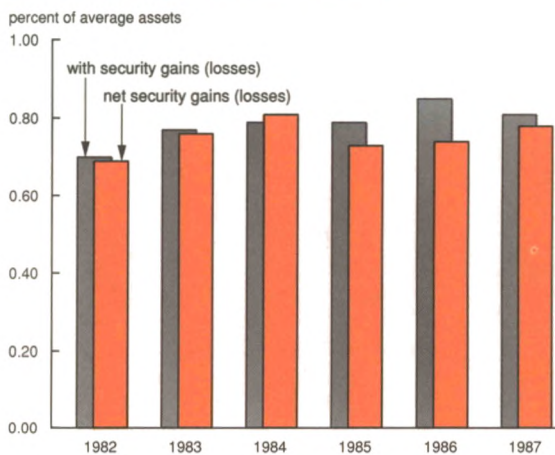
**Figure 13**  
**Regions in the U. S.**



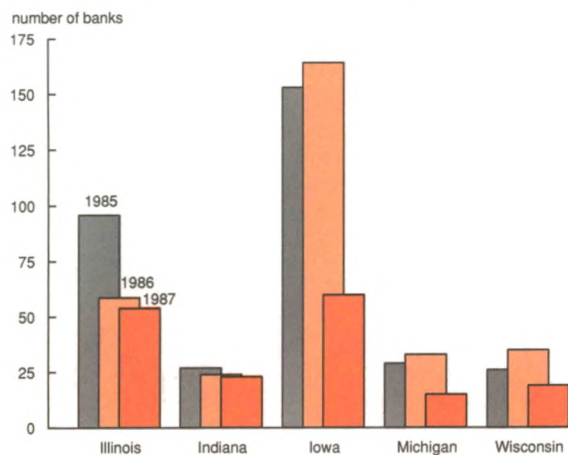
**Figure 14**  
Return on assets—by region and size



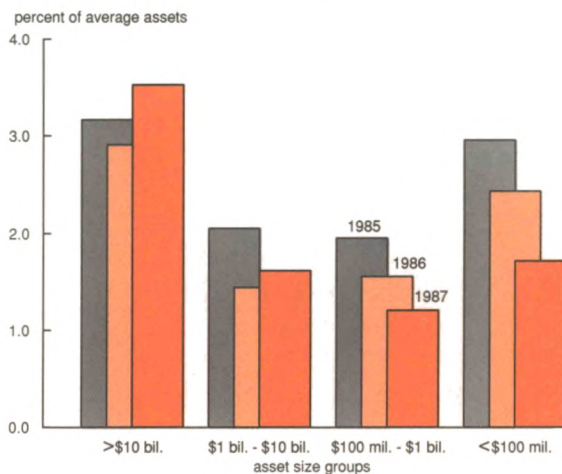
**Figure 16**  
Return on assets—Seventh District



**Figure 15**  
Banks with net losses—Seventh District



**Figure 17**  
Nonperforming assets by asset size—Seventh District



percent in 1987, reflecting the higher provision levels of the larger District banks (see Figure 16).<sup>3</sup> Net ROA rose from 0.74 to 0.79 percent. The most profitable banks were those with assets between \$100 million and \$1 billion, with an ROA of 1.05 percent. Banks with less than \$100 million in assets showed the most improvement in earnings with an ROA of 0.87 percent as compared to 0.68 percent in 1986.

In addition to earnings, credit quality for the smallest banks was much improved. Nonperforming loans as a percent of total loans

dropped from 3 percent in 1985 and 2.4 percent in 1986 to 1.7 percent in 1987 (see Figure 17). The sharp decline in net charge-offs, to 0.6 percent of total loans from 1.3 percent in 1986, also demonstrated the improved credit quality of the smaller District banks. In addition, only half of the 1986 level of loan loss provisions were set aside in 1987.

As with the rest of the nation, Seventh District banks relied less on securities gains to boost income. However, the least profitable of the banks in the Seventh District had greater



## A market view

In a year marked by tremendous volatility in the stock market, bank stocks had a lackluster year. Continued concerns about the valuation of LDC debt, uncertainty about foreign exchange fluctuations, and the potential effect of the October stock market break on the ongoing debate about expanding bank powers all contributed to a general sense of unease about the future performance of the largest banking firms in the United States.

By using a two-factor capital-asset-pricing model (CAPM), the effects of the changes in the market's perception of the individual firms can be separated from the effects of the changes in the market's perception of the value of the stock market as a whole and of the financial industry (made up of finance, insurance, and real estate) specifically. That is to say, the two-factor CAPM abstracts from the volatility in the stock market in 1987 and statistically evaluates the performance of individual firm share values relative to the market and to the rest of the financial industry.

Technically, the model is as follows:

$$R_i = a + b_1 R_m + b_2 R_f + e$$

where

$R_i$  = daily return on stock of firm  $i$

$R_m$  = daily return on the S&P 500 (market return)

$R_f$  = daily return on the NY Financial Index

$a$  = constant factor (intercept point)

$b_1$  = relationship between firm and market returns

$b_2$  = relationship between firm and industry returns

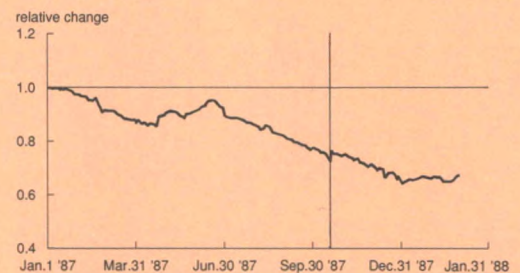
$e$  = error term

This model is estimated using actual firm and market returns for successive six-month periods to determine the  $a$ ,  $b_1$ , and  $b_2$  parameters. These values are then used to calculate expected values for the firm's returns in each succeeding six month period, by solving for  $R_i$ . This calculated  $R_i$  is then compared to actual observed  $R_i$  to determine the deviation of the actual performance from the expected levels. These deviations are then cumulatively summed over the period and graphed to show firm-specific performance over time.

As the figure below indicates, the average performance of the share values of the largest 12 bank holding companies (BHCs) deteriorated during the year, relative to the market and the industry. A slight improvement in performance during the middle of the second quarter, apparently due to the banks' recognizing the lessened values of LDC debt and taking of large provisions for this debt, was eventually nullified or overwhelmed by the effects of other problems during the year. The market break of October 19th did not have significant persistent effect on the relative performance of these firm's shares.

Within this group of twelve BHCs, there is significant disparity in performance. The banking firms viewed by the

**Firm specific stock value changes—  
portfolio of 12 largest BHCs**





marketplace as being weakest deteriorated further and faster than the average represented in the graph. Those firms with very strong links to the equity markets were much more affected by the events of mid-October, although they seemed to recover much of the lost ground fairly quickly. In addition, those few BHCs viewed as very low-risk firms with high credit standings actually benefited, on a relative basis, from the October experience, possibly as a result of a general flight to quality within the stock market.

It is particularly interesting to note that although the large banking firms' accounting earnings were severely battered by loan loss provisions during the second and fourth quarters, the decline in their shares' relative performance was fairly smooth during the year. The accounting recognition of the losses

on the books of these firms did not seem to cause much of a stir in the market's valuation of these firms, suggesting that the reduced value of LDC assets was already recognized by the investing public. This analysis indicates that the large provisions were viewed primarily as the accounting data merely catching up to what the market already knew.

Although not shown here, the shareholders of large regional BHCs' shares fared much better than those of the largest BHCs. Many large regional BHC shares showed steady relative improvement during the course of 1987. Not surprisingly, the share values of those large regional firms in the oil patch states did not mirror other regional bank trends and declined, even on a relative basis, by the end of the year.

Don Wilson

depreciation of their remaining securities portfolios than the national average and the most profitable District banks had less remaining appreciation in their portfolios than the national average. Thus, in the Seventh District, the remaining investment securities portfolios may be more vulnerable to upward movements in interest rates and the ability to use securities as an income cushion may lessen.

### **Iowa revived**

The improvement in Iowa, where half of the banks are agriculturally oriented, was the most dramatic of all the District states. The large metropolitan banks, unaffected by provisioning for LDC debt, and the rural banks, supported by the improved farm economy, reported higher earnings and improved asset quality in 1987. Lower loan loss provisions and overhead costs directly supported the higher earnings. The marked improvement in asset quality also helped to raise earnings.

ROA more than doubled to 0.85 percent in 1987 from 0.39 percent in 1986 in Iowa. Net ROA jumped 72 basis points to 0.80 percent in 1987. Loan loss provisions, deducted from the income stream, dropped from 1.16

percent of average assets to 0.45 percent in 1987 and overhead costs fell 9 basis points to 2.76 percent of average assets in 1987. Enhanced asset quality also supported the rise in earnings. Nonperforming loans as a percent of total loans declined from 3.45 percent in 1986 to 2.04 percent in 1987.

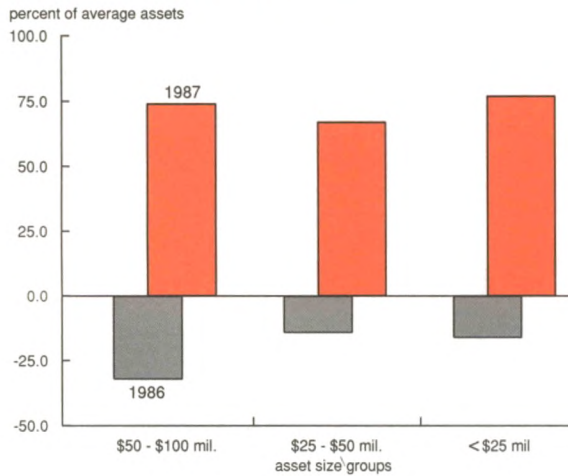
Iowa banks with under \$100 million in assets had the most notable improvement in performance. These banks make up over 90 percent of the state's banks. Banks of this size registered net losses and poor credit quality in 1986. However, as Figures 18 and 19 illustrate, improvement was widespread among these smaller banks in 1987. Another measure showing the improvement in credit quality was the reduction in net charge-offs. As a result of increases in loan recoveries and decreases in loan charge-offs, net charge-offs fell from 3.31 percent of total loans to 0.95 percent in 1987.

### **Big District banks have hard year**

Unlike in Iowa, some of the largest banks' earnings in the other District states were negatively influenced by additional provisions for LDC debt. ROA for Seventh District banks with over \$1 billion in assets was -0.50 per-



**Figure 18**  
**Net return on assets—lowa**  
**(91.6 percent of Iowa's banks)**



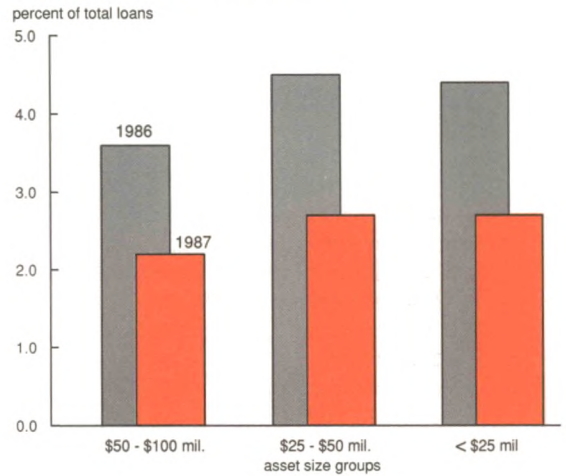
cent in 1987. On the other hand, Seventh District banks with under \$1 billion in assets reported an ROA of 0.97 percent in 1987.

Excluding the largest banks in the District, the improvement in earnings, credit quality, and capitalization was widespread among the states. Agricultural bank performance in the District approached that of its nonagricultural counterparts, and 1987 performance was much improved over 1986.

### **The bottom line**

Credit quality was the driving force behind earnings for all sizes and sectors of U.S. banks in 1987. The multinational banks realized and accounted for their credit problems with high-risk debtor nations. The improvement in credit quality at Midwestern ag banks helped the region's earnings in 1987. On the other hand, the persistent problems with energy and real estate loans primarily contributed to the poor earnings at banks in the Southwest.

**Figure 19**  
**Nonperforming loans—lowa by size**  
**(91.6 percent of Iowa's banks)**



The year 1987 will go down as a dismal year in the financial record books. But significant progress was made in addressing fundamental issues whose impact on the banking industry will extend well beyond this year of reckoning.

<sup>1</sup> All data is derived from the Quarterly Reports of Condition and Income filed by all banks with their Supervisory Agency. Ratios are calculated as weighted averages.

<sup>2</sup> Ag banks are defined as those with ag loans equal to or exceeding 30 percent of total bank loans. Ag loans in this study are loans to farmers and do not include real estate loans secured by farmland.

<sup>3</sup> Because Continental Illinois National Bank and Trust Company and First National Bank of Chicago hold 19 percent of Seventh District banking assets, and therefore strongly influence performance measures, their results have been excluded from the data.

# Bank risk from nonbank activities

*Elijah Brewer, III, Diana Fortier, and Christine Pavel*

Banking organizations are permitted to engage in more than 50 nonbank activities, including commercial and consumer finance, mortgage banking, and leasing. However, they are precluded from engaging in some other financial activities. These include insurance, securities underwriting and real estate, which many believe are essential to banking firms if they are to compete effectively in the financial services industry (see Table 1).<sup>1</sup> However, it is feared that the removal of the legal barriers that prevent the entry of banks and bank holding companies (BHCs) into these activities will increase bank risk.

This article reviews previous studies and presents new information on the riskiness of various permissible and impermissible nonbank activities. The first section discusses the issues concerning nonbank risk. The second section describes the current regulatory framework within which banking firms must operate in expanding their nonbank activities. The third section reviews the various economic and methodological issues that arise when analyzing the risk implications of nonbank activities. The fourth section examines the track record of regulators by looking at the risk implications of currently permissible nonbank activities of bank holding companies. The fifth section looks to the future and examines the risk implications of currently impermissible activities. New evidence, as well as previous research, regarding the riskiness of nonbank activities are presented in the latter two sections. A summary and the policy implications are presented in the final section.

In brief, we find that the potential for bank holding companies to reduce overall risk through diversification into individual nonbank activities is limited. We also find that regulations and laws have permitted BHCs to engage in activities that are likely to increase BHC risk, while they have not permitted BHCs to engage in a few activities that would likely reduce BHC risk or at least not increase it as much as some currently permissible activities.

But, the regulatory process is designed to control the risk of nonbank activities. The impact of this process can only be judged by ex-

amining actual nonbank activities that have been undertaken by BHCs. We find that overall investment in nonbank activities has reduced the volatility of BHC returns even though the potential for risk reduction seems limited when individual nonbank activities are examined separately.

## Issues concerning nonbank risk

Banks and other federally insured depository institutions have access to a unique “safety net.” The safety net has three components: the ability to borrow on a collateralized basis from the Federal Reserve’s discount window; the ability to issue federally insured deposits; and occasional eligibility for open bank assistance and forbearance programs. These elements of the safety net give banks an advantage in holding risky assets and can, in some instances, create incentives for banks to take on undesirable amounts of risk.

New powers for banking organizations can be granted either to the bank itself or to an affiliate of the bank under the umbrella of a BHC. The concern about risk is quite clear when the question is whether to grant additional powers to banks. Granting additional powers directly to banks can result in an increase in the risk of the bank and in the FDIC’s exposure.

When the issue is whether to grant powers to a subsidiary of a BHC, the reasons for concern about risk are less clear. If the bank can be financially insulated from the rest of the holding company, then the risk of the holding company should not be an issue. However, there are several reasons why this insulation may be less than perfect.

It may be difficult to financially insulate the bank from activities elsewhere in the holding company.<sup>2</sup> Problems may arise if high-risk assets of a nonbank are transferred to a bank affiliate or if a bank provides an excessive amount of funds to its affiliate. Problems also

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**Table 1**  
**Status of nonbank activities\***

Permissible Activities

By regulation

Mortgage banking  
 Finance company: general, consumer, commercial,  
 insurance premium, mobile homes, agriculture  
 Factoring  
 Industrial banking  
 Investment, financial, and economic advisory services  
 Leasing  
 Community development  
 Data processing  
 Insurance agency or broker per Garn St. Germain  
 Insurance underwriting for credit life, credit  
 accident, and health  
 Fiduciary and trust  
 Courier services  
 Management consulting for depository institutions  
 Travelers checks, issuance or sale  
 Payment instruments, issuance or sale  
 Real estate and personal property appraisals  
 Arranging equity financing  
 Discount broker  
 Underwriting government and other securities  
 Arrange and advise foreign exchange transactions  
 Futures commission merchant  
 Consumer financial planning  
 Tax planning and preparation  
 Collection agency  
 Credit bureau

By order

Savings and loan (limited)  
 Savings bank  
 Pool reserve plan  
 Precious metal (buy and sell for customers)  
 Securities agent  
 Offshore commercial banking  
 New York investment company  
 Employee benefits consulting  
 Nonbank bank  
 Cash management services  
 Underwrite and deal in commercial paper  
 Underwrite and deal in municipal revenue bonds,  
 commercial paper, mortgage related securities,  
 and consumer receivable related securities  
 Other

Impermissible Activities

Not closely related

Travel agency  
 Sale or underwriting of insurance other  
 than the seven exemptions under  
 Garn St. Germain  
 Contract key entry services  
 Property and casualty insurance  
 Commodities dealing  
 Independent actuarial services

Closely related but not  
proper incident

Savings and loan  
 Foreign exchange options specialist  
 Underwriting mortgage guarantee insurance  
 Investment note activity

Not closely related and  
not proper incident

Management consulting  
 Pit arbitrage  
 Public credit ratings on bonds, preferred stock,  
 and commercial paper  
 Real estate brokerage, investment, development,  
 and syndication  
 Life insurance  
 Equity funding  
 Property management, generally

\*Prohibited activities are those proposed or those applied for but denied as not being closely related to banking and/or not being a proper incident thereto (as of November 1987). Additional information on specific *Federal Reserve Bulletin* citations and applications may be found in Special Reference Section: "Permitted and Prohibited 4(c)(8) Activities." *Bank Expansion Quarterly*. Golembe Associates, Inc., Washington, DC.

may develop when a nonbank is a major provider of services to its affiliated banks; if the nonbank fails, services to the banks may be disrupted. Furthermore, loss of public confidence in affiliated banks and consequent social costs may occur when a bank's affiliated nonbank firm fails.<sup>3</sup>

In addition to the risk implications of nonbank activities, regulators must also be

careful not to confer unfair competitive advantages on the nonbank activities of bank holding companies. By allowing banking firms to engage in nonbank activities that compete with nonbank firms, BHCs may be given a competitive advantage over other financial services providers through deposit insurance and the discount window. In that case, the playing field has not been leveled; the bumps have

merely been moved from one side of the field to the other.

### **The regulation of nonbank activities**

The rationale for restricting nonbank activities of bank holding companies centers on three concerns: 1) safety and soundness of the banking system; 2) undue concentration of financial power and conflicts of interest; and 3) extensions of deposit insurance and the discount window to banks' uninsured affiliates.

The Bank Holding Company Act of 1956 and its 1970 amendments, as well as the Glass-Steagall Act of 1933, which separates investment from commercial banking, are the primary laws that prescribe permissible nonbank activities for banking organizations. The intent of these laws seems to be to limit concentration of power and conflicts of interest more than to ensure the safety and soundness of the banking system.<sup>4</sup>

Sections 5(c), 16, 20, 21, and 32 of the Glass-Steagall Act prescribe what securities activities are permissible for banks and bank holding companies. The sum of these sections, in brief, is that a bank that is a member of the Federal Reserve System and any affiliate of such a bank cannot be "principally engaged in" the dealing or underwriting of "ineligible" securities.<sup>5</sup>

Section 4(c)(8) of the Bank Holding Company Act defines and regulates all nonbank activities in which BHCs may engage, including securities-related activities, directly or indirectly through a subsidiary. For the Federal Reserve Board to deem a new activity permissible either by regulation or Board order, it must be proven to be "closely related to banking or managing or controlling banks as to be a proper incident thereto."<sup>6</sup> That is, it must pass 1) the closely related and 2) the proper incident (public benefits) tests.

In finding an activity to be closely related to banking, the Board considers three criteria: 1) banks engage in the proposed activity; 2) banks generally provide services that are operationally or functionally so similar to the proposed activity as to equip them particularly well to provide the proposed activity; or 3) banks generally provide services that are so integrally related to the proposed activity as to require their provision in a specialized form. The Board also has the discretion to consider

other criteria when evaluating an activity. This provides a reasonable basis for determining whether a particular nonbank activity has a close relationship to banking.<sup>7</sup>

Using the proper incident test, the Board considers whether or not the performance of the activity by the BHC can reasonably be expected to produce benefits to the public. The Board looks for benefits such as greater convenience, increased competition, and gains in efficiency that outweigh possible adverse effects, such as undue concentration of resources, decreased or unfair competition, conflicts of interest, and unsound banking practices. Because the BHC is to serve as a source of strength to its banking subsidiaries, the Board also takes into account the financial and managerial resources of the BHC, its affiliates, and, in the case of an acquisition, the company to be acquired, as well as the effect of the proposed acquisition on those resources.<sup>8</sup>

Many of the activities in which bank holding companies would like to engage have already been found to be "closely related to banking" (Table 1). We concentrate here on one aspect of the "proper incident" test for nonbank activities. Specifically, we focus on the riskiness of nonbank activities.

### **Economic and methodological issues**

In analyzing the implications of nonbank activities for BHC risk, two questions must be addressed. First, is banking less risky than nonbanking activities? Second, does the combination of a nonbanking activity with banking, or with banking and other nonbanking activities in which BHCs currently engage, significantly increase BHC risk?

If the returns from banking are perfectly correlated with the returns from a particular nonbank activity, then banking and that nonbank activity are identical based on rates of return. In such a case, risk will be reduced only if the nonbank activity is less risky than banking. Otherwise, the BHC would be, in effect, putting more eggs in one basket: diversification would be decreased and risk increased. The "closely related to banking" test seems to imply that any nonbank activity deemed permissible would be highly, although not necessarily perfectly, positively correlated with banking. But, an activity might be riskier than banking, and reduce the overall risk of the



**Table 2**  
**Review of selected studies of the risk of nonbank activities\***

<u>Study</u>	<u>Time Period</u>	<u>Methodology**</u>	<u>Do nonbank activities reduce BHC risk?</u>
<u>Accounting Industry data</u> Heggstad(1975)	1953-67	COV	Yes. Impermissible activities: insurance agents, and brokers and real estate agents, brokers, managers, holdings and investment companies, and lessors of R.R., oil and mining properties. Banking is among the riskiest activities based on the coefficient variation in profits. (Studied activities of one-BHCs prior to 1970 BHC Act amendments.)
Johnson and Meinster(1974)	1954-1969 (annual data)	COV and portfolio analysis	Yes. Impermissible activities: insurance agents and brokers, holding and investment companies, and real estate agents, brokers and managers. Studies 13 activities. Portfolio analysis based on earnings and cash flow conclude there are diversification benefits into nonbank activities but that the benefits are sensitive to the percentage of assets in each activity.
Wall and Eisenbeis (1984)	1970-80	COV	Yes. Impermissible activities: S&Ls, security brokers and dealers, life insurance, general merchandise stores, lessor of R.R. property. Permissible activities: personal and business credit agency. Banking neither highest nor lowest risk based on coefficient of variation. Results are sensitive to time period.
<u>Firm data</u> Jessee and Seelig (1977)		COV	No. Risk reduction is not related to share of nonbank investment.
Meinster and Johnson(1979)	1973-77	ROF	Yes. BHCs effectively diversified but slightly increased probability of capital impairment with debt financing. (Sample of only 2 BHCs in 7 permissible activities of leasing, consumer finance, mortgage banking, bank management consulting, financial services, and foreign bank services.)
Litan(1985)	1978-83	COV	As likely to reduce volatility of BHC income as to increase it. (Sample of 31 large BHCs.)
Wall(1986)	1976-84	ROF	Nonbank activity either decreases BHC risk slightly or has no impact. The positive relationship between nonbank risk and BHC risk, BHC leverage, and bank risk is consistent with the possibility that management preferences influence the riskiness of the BHC's subsidiaries and determine the use of leverage to influence overall risk.
Boyd and Graham (1986)	1971-83, (1971-77 and 1978-83)	ROF	Entire period: no significant relationship between nonbank activity and any risk or return measures. Less stringent policy period (1971-77): no, nonbank activity is positively related to risk. More stringent policy period (1978-83): weak negative relationship between nonbank activity and risk.
Boyd and Graham (1988)	1971-84 (annual data)	COV/ROF/MS	Study covers six impermissible activities. Yes for life insurance. The standard deviation and bankruptcy risk measures indicate risk is likely to increase for real estate development, securities firms, and property/casualty insurance activities, and increase slightly for other real estate and insurance agency and brokerage activities. BHC is lowest risk activity.
Brewer(1988)	1979-1985	COV	Yes. One standard deviation increase in investment in nonbank subsidiaries leads to 6 basis point drop in BHC risk (approximately 7 percent).

**Table 2 (cont'd)**  
**Review of selected studies of the risk of nonbank activities\***

<u>Study</u>	<u>Time Period</u>	<u>Methodology**</u>	<u>Do nonbank activities reduce BHC risk?</u>
<u>Industry and firm data</u> Stover(1982)	1959-68	Wealth maximization; debt capacity	Yes. Impermissible activities: S&Ls, investment banking, land development, fire and casualty insurance. Measures equity returns and diversification benefits of 14 permissible and impermissible activities in wealth maximization model.
Boyd, Hanweck and Pithyachariyakul (1980)	1971-77	COV/ROF	Yes, but limited. Permissible activities: mortgage banking, factoring, consumer finance, credit card, loan servicing, investment advisors, leasing(except auto), community welfare, data processing, credit life, accident and health insurance agents and underwriters, and management consulting.  No (any investment increases probability of bankruptcy). Permissible activities: commercial and sales finance, industrial banks, trust services, auto leasing. (Study only covered permissible activities.)
<u>Market data</u> <u>Industry data</u> Eisemann(1976)	1961-68 (monthly data)	Industry (portfolio) selection model (COV)	Yes. Banking is minimum risk activity. Lowest risk BHC includes permissible activity of sales finance and impermissible activities of insurance investment banking. Highest risk BHC includes permissible activity of data processing. Studies 20 activities.
<u>Firm data</u> Wall(1984)	Select dates	Bond returns	No significant effect.
Wall and Eisenbeis(1984)	Select dates (monthly data)	Bond returns	No. (Study only covered permissible activity of discount brokerage).
Boyd and Graham (1988)	1971-84 (annual data)	COV/ROF/MS	Studies six impermissible activities. Yes for life insurance, insurance agency and brokerage, and property/casualty insurance. Risk likely to increase for real estate development and securities firms, and increase slightly for other real estate. Based on standard deviation, bankruptcy, and beta risk measures BHC is not lowest risk activity. Insurance agency and brokerage, and property and casualty insurance are lowest risk activities.
Brewer(1988)	1979-85 (daily data)	COV	Yes. One standard deviation increase in investment in nonbank subsidiaries leads to an 8-11 percent basis point drop in BHC risk. Results are sensitive to the time period studied.
Brewer, Fortier and Pavel(1988)	1980, 1982 and 1986 and 1979-1983	COV/MS	Yes. Impermissible activities of insurance agents and brokers, property and casualty and life insurance underwriting. Investment of 5 percent or less for any of the tested activities would not increase the variance of the BHC significantly, but investment of 25 percent or more for all but the above listed activities would increase the riskiness of the BHC significantly. Examination of the impact of total investment in nonbank activities regardless of the specific activities finds increases in nonbank activity tends to lower BHC risk significantly.

\* Permissible activities refer to those nonbank activities currently permissible (May 1988), whether or not they were permissible at the time of the study. Impermissible activities also include activities not yet ruled upon by the Board at the time of the study.

\*\* COV—analysis of coefficient of variation of rates of return of banking and nonbanking activities, ROF—risk of failure (bankruptcy) analysis; MS—simulated merger analysis.



organization when combined with banking if the correlation between the returns is negative or imperfect.

Numerous studies have addressed the question of the riskiness of selected nonbank activities (see Table 2).<sup>9</sup> A review of these studies indicates that the methodology, type of data (i.e., accounting or market), level of aggregation (i.e., firm or industry), and the sample period significantly affect the results. Nevertheless, most of the studies conclude that diversification of risk through nonbank activities is limited.

In addition, studies on nonbank risk generally do not account for synergies from BHC affiliations. There may be systematic differences in the operations of certain nonbank activities as conducted in unaffiliated firms and BHC-affiliated companies.<sup>10</sup> Additionally, the impact of financing alternatives for acquisitions and the managerial and financial characteristics associated with specific acquisitions have been ignored. While it may be difficult to account for these factors, it is important to note that failure to consider their effects may influence the results.

Previous studies have employed different methods to analyze the impact of nonbank activities on BHC diversification. The two most frequently used statistical methods are variance/covariance analysis and risk-of-failure analysis. Variance/covariance studies use the variability of returns from banking and various nonbank activities and the correlations among those activities to assess risk-return characteristics of nonbank activities alone and in combination with each other and with banking. BHCs may benefit from diversification into nonbank activities if they can increase their returns while decreasing the variability of those returns. Risk-of-failure studies analyze the impact of engaging in nonbank activities on the variability of the BHCs' cash flow. A reduction in cash flow variability should improve debt capacity and reduce failure probabilities.

Although various methods have been used in prior studies, they have all employed one of two types of data to measure the riskiness of activities—accounting data and market data. Either type of data has its problems.

Stock market returns as a measure of BHC value are limited to a relatively small sample of banking firms. Such returns are not available for smaller, untraded or less

frequently-traded, BHCs. In addition, most of the stock data available are for holding companies that are involved in activities other than banking, and it is not possible to obtain data on many bank stocks alone. Using these data leads to upwardly biased correlations between the returns to permissible activities and those of bank holding companies that already engage in the permissible activities. The variances of the BHC returns will also be biased—upward if the nonbank activity increases risk and downward if it decreases risk. Another problem with using stock data is that SIC classifications may not allow sufficient disaggregation of activities. This problem also arises with accounting data.

Other problems arise from the use of consolidated accounting data for BHCs and their subsidiaries. Accounting data reflect historical costs and values, rather than current market values. Furthermore, the pricing of interaffiliate transactions, which may or may not be at market prices, affects the reported income of both the bank and the nonbank affiliates. In addition, for subsidiaries acquired by the purchase method of accounting, the reported income and equity may not be the same on the books of the parent BHC and subsidiaries. BHC double leverage policies and BHC parent activities will also influence reported consolidated income and equity, leading to accounting data with reduced volatility of returns.<sup>11</sup> In using these data, studies make an explicit or implicit assumption that reported income is a true reflection of the organization's economic income.

Using either accounting or market data, the choice between data at the individual level or industry level is also important. Industry data reveal cyclical variations in profitability but conceal intra-industry variability, whereas firm-level data capture firm-specific profit variations. Industry data almost always lead to underestimation of the riskiness of activities by biasing the variance of returns downward and the correlation between returns away from zero. Several authors have also found that correlations of returns were substantially different when firm and industry data were used.<sup>12</sup>

Almost all of the studies using accounting data conclude that investment in some nonbank subsidiaries tends to reduce BHC risk. The few studies using market data generally find no significant discernible impact of prod-



**Table 3**  
**The relationship between BHC risk and**  
**BHC nonbank activity**  
**(1979-1983)**

	<u>Market data</u> (Cross-section time series)	<u>Accounting data</u> (Cross-section)
Intercept	0.0141 (2.889)	0.0239 (4.521)
Capital	-0.0595 (2.581)	-0.0960 (2.810)
Total Assets	0.0005 (1.716)	-0.0010 (3.936)
Nonbank <sup>a</sup>	-0.0175 (2.217)	-0.0138 (2.093)
1979*	-0.0059 (5.139)	—
1980*	-0.0030 (2.572)	—
1981*	-0.0039 (3.411)	—
1982*	-0.0009 (0.818)	—
	$R^2 = 0.2174$ N = 200	$R^2 = 0.3216$ N = 40
Sample mean	0.1173	0.1173
Sample standard deviation	0.0494	0.0417

\*Dummy variable.

uct diversification by BHCs into nonbank activities as measured by the market's perceived value of the BHC or the level of BHC risk.

No previous study using market data was so similar to an accounting data study as to make it clear whether or not the results were driven solely by the choice of data. However, a recent study by Boyd and Graham (1988) as well as our own research used both accounting data and market data to examine the effects of investments in nonbank activities on BHC risk.

We examined the impact of total investment in nonbank activities, regardless of the specific activities involved. We pooled data on 40 large bank holding companies for the years 1979 through 1983. Using these pooled data, we first estimated the relationship between the standard deviation of stock returns and the proportion of a BHC's assets devoted to nonbank activities, controlling for the BHC's capital-to-asset ratio. The results, shown in

Table 3, indicate that increases in nonbank activity tend to lower BHC risk significantly

We also estimated our model after replacing the dependent variable, the standard deviation of returns on assets. This second model was virtually identical to that employed by Boyd and Graham (1986).<sup>13</sup> Unlike the other authors, we found, a strong negative correlation between nonbank activities and bank holding company risk.

A more recent study by Boyd and Graham (1988) used both annual accounting data and market data for the 1971-1984 period to discern the impact of individual nonbank activities on BHC risk. They conducted a simulation study of hypothetical mergers of banking and nonbank organizations over the period 1971 to 1984. Their results were similar but not identical when accounting data were used and when market data were used. For example, their results from both accounting data and market data indicate that BHC diversification into life insurance would reduce BHC risk. However, their market data results also indicate that property and casualty insurance underwriting would also reduce BHC risk, while the accounting data indicate quite the contrary.

The merits of accounting data relative to market data in assessing the likely impact of nonbank diversification, therefore, are still undetermined. Our results suggest that when total nonbank investment is analyzed, both data sources produce similar results. Boyd and Graham (1988), however, indicate that this is not the case when individual nonbank activities are considered.

### Track record

In attempting to predict the impact of further expansion of bank powers, it may be useful to examine the track record of regulatory policy on existing bank powers. If activities that are likely to increase BHC risk have been approved, then BHC risk would be expected to increase unless supervision and regulation of those activities minimized the impact, or economic efficiencies that were not considered in assessing the impact of nonbank activities were significant.

As shown in Table 2, several studies examined whether or not bank holding company



**Table 4**  
**Riskiness of banking vs.**  
**nonbank activities: 1980, 1982, and 1986**

	Variances of average daily returns	Correlations of average daily returns
Banking	0.220	1.000
Permissible nonbank activities		
Consumer finance	2.068	.345
Commercial finance	1.510	.380
Mortgage banking	4.575	.245
Consumer credit reporting	1.918	.379
Leasing	1.367	.457
Impermissible nonbank activities		
Savings and loan associations	1.409	.647
Securities brokers and dealers	9.449	.296
Insurance agents and brokers	0.654	.419
Life insurance underwriters	1.392	.274
Health and accident insurance underwriters	3.671	.284
Property/casualty insurance underwriters	0.659	.668
Real estate	1.515	.477
Management consulting	1.711	.445

diversification into permissible activities reduced risk. While these studies differ with respect to methodology, data, and sample period, they all generally conclude that there is limited potential for risk reduction via diversification into nonbank activities. In addition, those that found risk-reduction opportunities generally did not find them in the same places. Nevertheless, more than one study found that consumer credit and commercial finance reduced BHC risk.

To determine which nonbank activities are likely to reduce risk and which are likely to increase it, we examined the variances of market returns, the correlations of those returns with banking returns, and the impact of hypothetical mergers on BHC risk. Our study differs from that of Boyd and Graham (1988) in that we used only daily stock market data for individual BHCs and nonbank firms; we examined 13 nonbank activities, whereas Boyd and Graham examined only six; our hypothetical mergers are between a "representative BHC" and a "representative nonbank firm" rather than between actual BHCs and actual nonbank firms; and we analyzed the impact of a BHC engaging in more than two nonbank activities at a time.

The data used are from Interactive Data Services, Inc. for an average of 325 nonbank firms and 170 banking firms, which were ac-

**Table 5**  
**Ranks of nonbank activities according**  
**to risk and correlation with banking:**  
**1980, 1982, and 1986**

	Risk	Correlation
Permissible nonbank activities		
Consumer finance	4	9
Commercial finance	8	7
Mortgage banking	2	13
Consumer credit reporting	5	8
Leasing	11	4
Impermissible nonbank activities		
Savings and loan associations	9	2
Securities brokers and dealers	1	10
Insurance agents and brokers	12	6
Life insurance underwriters	10	12
Health and accident insurance underwriters	3	11
Property/casualty insurance underwriters	13	1
Real estate	7	3
Management consulting	6	5

tively traded, for each of three time periods (1980, 1982, and 1986).<sup>14</sup> These time periods were chosen to represent different phases of the business cycle. Each nonbank firm is categorized into one of 13 activity categories. (If a firm engaged in more than one activity with no one dominating, then the firm was excluded.) Daily stock market returns were calculated for each firm.<sup>15</sup> The daily returns were then averaged across firms within each category to yield average daily returns for each activity group.

Of the nonbank activities studied, five are currently permissible. As shown in Table 4, all five permissible nonbank activities are riskier than banking. Risk is defined as the variance of the average daily returns. The riskiness of banking, however, reflects the fact that banks are federally insured and, therefore, the riskiness of banking firms is biased downward. The same is true for the results for savings and loan associations.

As mentioned earlier, an activity can be riskier than banking, but when combined with banking it could, depending on the proportions, reduce the overall riskiness of the organization if the correlation between the returns is less than unity. Some activities that are risky have very low correlations with banking and could therefore increase the diversification of the bank holding company enough to reduce its risk (Tables 4 and 5). For example, mortgage banking is the riskiest among the five permissible nonbank activities, but it has the lowest correlation with banking.

**Table 6**  
**The risk effects of hypothetical nonbank acquisitions**

	Variance w/ 5% nonbank	Variance w/ 10% nonbank	Variance w/ 25% nonbank
Permissible nonbank activities			
Consumer finance	.226	.241	.340
Commercial finance	.223	.233	.300
Mortgage banking	.233	.268	.502
Consumer credit reporting	.227	.242	.336
Leasing	.226	.237	.303
Impermissible nonbank activities			
Savings and loan associations	.236	.257	.347
Securities brokers and dealers	.263	.350	.874
Insurance agents and brokers	.217	.217	.231
Life insurance underwriters	.216	.219	.268
Health and accident insurance underwriters	.232	.261	.449
Property/casualty insurance underwriters	.224	.231	.260
Real estate	.227	.240	.315
Management consulting	.229	.244	.333

Leasing is the least risky of the permissible activities, but it is more highly correlated with banking than mortgage banking is.

Table 6 gives the variances that would result if the representative BHC were combined with each of the representative nonbank firms in our sample. If the correlation of the returns between banking and a given nonbank activity is greater than the ratio of the standard deviations of the returns to banking and the nonbank activity, then even very small proportions of the nonbank activity will increase the riskiness of the banking firm. Only one permissible nonbank activity—commercial financial—does not fall into this category. Nevertheless, as shown in the first column of Table 6, an acquisition of any of the average permissible nonbank firms that would result in nonbank activity accounting for 5 percent or less of the equity of the resulting organization would not increase the variance of the bank holding company to any significant extent. Similarly, an acquisition of any of the permissible nonbank firms would not appreciably increase the banking firm's risk even if the nonbank activity accounted for 10 percent of the resulting organization. At 25 percent, all of the permissible nonbank activities would increase the riskiness of the new banking organization considerably.

One problem with hypothetical-merger studies is that they do not recognize the possibility that managers and regulators may be biased towards choosing and approving acquisitions that are risk-reducing. For in-

stance, it is probably possible to find a combination of a bank and a securities firm that would be risk-reducing, and it is probably also possible to find such a combination that would be risk-increasing. Managers and regulators would be more likely to choose the risk-reducing combination; therefore, hypothetical random or "representative" combinations may overstate the potential for increased risk. Furthermore, current regulatory and supervisory policies may affect the way that a BHC manages its nonbank activities such that increases in risk are minimized.

A recent study by Brewer (1988) deals with this problem by examining the impact of total investment in nonbank activities, regardless of the specific activities involved. Using a market-based measure of risk and pooled cross-section and time series data on 40 large BHCs for the 1979-1985 period, Brewer finds that increases in nonbank activity tend to lower BHC risk. His results indicate, as did ours using a different time period, that BHCs with above-average investments in nonbank activities will have below-average risk. Furthermore, the implied differences in risk are not trivial. A one-standard-deviation increase in a BHC's investment in nonbank subsidiaries would translate into a 8 to 11 basis point drop (about 5 to 7 percent) in BHC risk. Therefore, even though some permissible activities, when examined in isolation, seem likely to increase BHC risk, they appear, in reality, to have actually decreased risk. Whether the drop in risk can be attributable to regulation, management,



efficiency gains, or pure diversification is not clear.

### **A look ahead**

Some previous studies have assessed the risk-reduction potential of allowing bank holding companies to engage in currently impermissible activities. These studies do not concur that allowing BHCs to enter new activities would reduce risk. However, those studies that do find potential for risk reduction find it most often with insurance agency and brokerage, real estate, life insurance, and securities activities.

The reasons for this finding can be seen from data on the average returns for nonbank financial firms engaged in the eight activities that are currently impermissible for BHCs. Using the variances of market rates of return as our measure of risk, we find that banking is less risky than at least eight impermissible nonbank activities. However, as shown in Table 4, for every permissible activity, there exists an impermissible one that is less risky. Securities activities are the riskiest of all nonbank activities, but securities activities are not as highly correlated with banking as are several other less risky activities (Table 5).

As shown in Table 4, of the permissible activities, leasing has the highest correlation with banking. Five impermissible activities had lower correlations during the three periods studied. These include securities brokerage and dealing, life insurance, health and accident insurance, insurance agents and brokers, and management consulting.

Among the eight impermissible activities listed in Table 6, life insurance underwriting and insurance agency and brokerage would reduce BHC risk when combined with the representative BHC in our sample. A combination of a BHC and any of the other six activities would likely increase risk, although not significantly as long as the nonbank activity accounted for less than 5 percent of the resulting organization. An investment in securities activities of 10 percent would increase BHC risk significantly, and an investment of 25 percent or more would increase BHC risk drastically.

BHCs will not necessarily engage in only one nonbank activity, and large BHCs usually operate many nonbank subsidiaries that engage in many permissible activities. Correlations

among activities, therefore, are as important to BHC risk as the correlations between banking and nonbank activities.

We analyzed the impact on risk when a BHC engaged in more than one nonbank activity. We allowed a BHC to engage in all 13 of the nonbank activities we studied. Using the variances and covariances of the average nonbank firm in each category, we solved for the least risky bank holding company over the years studied. This holding company would invest 87.6 percent of its equity in banking, an additional 7.5 percent in insurance agents and brokers, and 4.9 percent in life insurance underwriting. This would reduce the risk of the BHC by about 3 percent. At the same time, the average return would fall by 3 percent.

### **Summary and policy implications**

Banks claim that they are gradually losing market share in their traditional areas of lending and deposit taking and therefore need to expand into several nonbank activities that are currently impermissible. One of the concerns of the regulators, however, is that these nonbank activities would increase the riskiness of bank holding companies and therefore expose their bank affiliates as well as federal deposit insurance and the discount window to increased risk.

Previous research has been inconclusive on the impact that nonbank subsidiaries have on the overall riskiness of the BHC. Furthermore, prior studies have not been entirely consistent in determining the relative risk of banking and individual activities. Recent research, however, indicates that individual nonbank activities either have no or little impact on risk. We found that a very small investment in a few nonbank activities—insurance agents and brokers and property and casualty and life insurance underwriting—would reduce risk. Further, a 10 percent investment in most activities, other than securities-related activities, would not increase risk significantly.

Most researchers have concluded that some permissible activities are riskier than some impermissible ones. We found this also. If the riskiness of permissible activities reflects the risk tolerance of regulators, then it can be argued that BHCs should be allowed to engage in all impermissible activities that are less risky than



permissible ones. The potential costs and benefits from competitive effects and efficiency gains and losses must also be weighed. We found that investment in nonbank activities reduces BHC risk overall; therefore, regulation, efficiency, or diversification must be at work. Nevertheless, careful consideration must be made before permitting BHCs to engage in new activities even if they are less risky than some permissible ones.

We found, as have others, that some nonbank activities could reduce BHC risk, but we found that there is limited potential for risk reduction via diversification into nonbank activities when activities are considered separately. However, an important element in risk determination is the percentage of BHC assets devoted to each nonbank activity. This implies that, by restricting the relative size of nonbank investments, regulators could expand the laundry list of permissible activities without fear of significantly increasing BHC risk.

Previous studies, as well as our own research, have examined the risk associated with investing in nonbank activities, but they do not consider the potential synergies or the potential drains on banking subsidiaries that may result from interaffiliate transfers. Therefore, in addition to the restrictions on the size of investments in nonbank activities, restrictions on transactions between banks and nonbank affiliates would probably be necessary, but such restrictions should not destroy potential synergies. Although additional regulatory reform may be needed to ensure that deposit insurance and the discount window are not indirectly used to protect nonbank subsidiaries, the current system may be able to handle much of the impact of increased bank holding company risk and potential concentration of financial power.

Sections 23A and 23B of the Federal Reserve Act place restrictions on banks' transactions with affiliates. Section 23A limits the amount any member bank can lend to an affiliate to 10 percent of the bank's capital, and the sum of all extensions to affiliates by a member bank cannot exceed 20 percent. In enforcing Section 23A, the Fed has the ability to initiate cease-and-desist orders and cash penalties and to remove directors if it feels the organization is operating in an unsafe and unsound manner. However, these measures are not currently used to the fullest extent.

Regulators, therefore, will actually need to impose the penalties that they have at their disposal now. Further restrictions, such as limits on the relative size of nonbank investments, may also be needed before BHCs are allowed to engage in new activities.

<sup>1</sup> It should be noted that the banking industry is divided on the issue of expanded powers. The Independent Bankers Association has opposed such expansion, due in part to the issue of functional regulation and the preemption of states rights regarding activities of state-chartered nonmember banks. For another view on nonbank activities, see also Robert E. Litan. "Taking the Dangers out of Bank Deregulation." *The Brookings Review* (Fall 1986).

<sup>2</sup> For a general discussion of this issue, see Robert A. Eisenbeis. "How should bank holding companies be regulated?" *Economic Review*, 69, Federal Reserve Bank of Atlanta, (January 1983) pp. 42-47.

<sup>3</sup> Anthony Cornyn, and others. "An Analysis of the Concept of Corporate Separateness in BHC Regulation from an Economic Perspective." *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago, 1986, pp. 174-212.

<sup>4</sup> Larry D. Wall, and Robert A. Eisenbeis. "Risk Considerations in Deregulating Bank Activities." *Economic Review*, Federal Reserve Bank of Atlanta, (May 1984) p. 9.

<sup>5</sup> Recently, there has been much debate over what constitutes "principally engaged in" and "eligible" securities.

<sup>6</sup> See Bank Holding Company Act, Section 4—Interests in Nonbanking Organizations, (12 USC 1843); and Regulation Y, Section 225.24—Factors Considered in Acting on Nonbanking Applications.

<sup>7</sup> These guidelines were established in *National Courier Association v. Board of Governors*, 516 F.2d 1229 (D.C. Cir., 1975); *Securities Industry Ass'n v. Board of Governors*, 468 U.S. 207, 210-11 n.5 (1984); *Board of Governors v. Investment Company Institute*, 450 U.S. 46, 56-58 nn. 20-23 (1981); and *Association of Data Processing Service Organizations, Inc. v. Board of Governors*, 745 F.2d 677 (D.C. Cir. 1984).

<sup>8</sup> See, for example, Security Pacific Corporation, Vol. 73 *Federal Reserve Bulletin* (1987) p. 815. It is also noteworthy that eighty-six percent of the 11,162 4(c)(8) applications and notifications filed from January 1, 1971 to June 30, 1987 have been *de novo* notifications (9,686), and the remainder have been applications for acquisitions of existing concerns (1,476). (Numbers are unofficial estimates



from *Bank Expansion Quarterly*, Second Quarter 1987, Vol. XXXVII Num.2, Golembe Associates, Inc., Washington, DC.)

<sup>9</sup> Most early studies analyzed the activities of one-bank holding companies. One-bank holding companies were not covered under the original Bank Holding Company Act, thus they were able to engage in activities that were impermissible for multibank holding companies under Regulation Y, until the 1970 amendments to the BHC Act.

<sup>10</sup> See, for example, Stephen A. Rhoades, and Gregory Boczar. "The Performance of Bank Holding Company-Affiliated Finance Companies." *Staff Economic Studies*, Board of Governors of the Federal Reserve System, 1976; Stephen A. Rhoades. "The Performance of Bank Holding Companies in Equipment Leasing." *Staff Economic Studies*, Board of Governors of the Federal Reserve System, 1978; and Samuel H. Talley. "Bank Holding Company Performance in Consumer Finance and Mortgage Banking." *The Magazine of Bank Administration* (July 1976) pp. 42-44.

<sup>11</sup> Larry D. Wall. "Nonbank Activities and Risk." *Economic Review*, Federal Reserve Bank of Atlanta (October 1986) pp. 19-33.

<sup>12</sup> See Arnold A. Heggstad. "Riskiness of Investments in Nonbank Activities by Bank Holding Companies." *Journal of Economics and Business*, Vol. 27 (Spring 1975) pp. 219-223; and John H. Boyd, Gerald A. Hanweck, and Pipat Pithyachariyakul. "Bank Holding Company Diversification." *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago, 1980 pp. 102-121.

<sup>13</sup> In our study the values of the financial variables for each year were obtained by averaging quarterly Reports of Condition data. These estimated dollar amounts were then averaged over the 1979-1983 period. The financial ratios were calculated from these averages. In the Boyd and Graham (1986) study, the data were averaged only over the annual observations.

<sup>14</sup> An "actively traded" stock is defined as one that traded, on average, at least 3 times per week.

<sup>15</sup> Daily market return is the percentage change in price after correcting for dividends and stock splits.

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