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The Changing Landscape of the Financial Services Industry: What Lies Ahead?

The financial services industry has experienced significant changes over the past two decades. Hundreds of banks have been consolidated, restructured, or newly formed. In addition, deregulation of where banks can operate and what they can do has encouraged both geographic and product diversification. The most recent aspect of this transformation trend is the passage of the Gramm-Leach-Bliley (GLB) Act, which loosens restrictions on banks' abilities to engage in the previously restricted activity of underwriting securities and permits banks to underwrite insurance policies.

This paper examines some of the potential consequences of GLB for the structure of the U.S. financial services industry. In it, we ask how the industry may evolve as this new legislation interacts with the consolidation trend already under way, what types of mergers are most likely to occur, and how profitable and risky the resulting firms might be.

We begin by reviewing the consolidation trend that has occurred within the U.S. banking industry over the past ten years. We explore reasons for the trend, focusing on the factors responsible for the recent pick-up in its pace. Consolidation accelerated following the 1980s deregulation of restrictions that prohibited bank expansion across geographic markets and into other financial services. If history is any guide, we ought to see further consolidation following the passage of GLB. Stock price reaction to its passage suggests that market participants also anticipate more financial consolidation, especially in the life insurance business.

We then test whether better diversification post-GLB can improve the risk-return trade-off faced by financial companies. We do so by constructing hypothetical, pro-forma mergers between bank holding companies (BHCs) and firms in each of the other three major financial services industries: life insurance, property and casualty insurance, and securities. The results suggest that, ceteris paribus, mergers between BHCs and life insurance firms will produce firms that are less risky (and no less profitable) than those in either of the two individual industries. Mergers between BHCs and either securities firms or property and casualty firms raise BHCs' risk measures only slightly. Similar to the analysis of stock returns, these results point most strongly to combinations of banks and life insurance companies.

As a final step, we review how the financial services industry has evolved in Europe. A European bank's ability to expand into other financial activities, unlike that of a U.S. bank, is relatively unrestricted. In recent years, these banks have made significant inroads in the life insurance industry. By examining these advances, we can better understand the role of scope economies in the banking industry's evolution, something we cannot infer from the pro-forma data analysis.

Overall, our findings point to continued consolidation among financial firms. The consolidation trend within the banking industry will likely continue as banks respond further to the elimination of prior restrictions. Moreover, the recent elimination of barriers preventing banks from engaging fully in

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The authors thank Arturo Estrella, João Santos, and Kevin Stiroh for helpful comments and David Fiore for excellent research assistance. The views expressed are those of the authors and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.

securities underwriting and insurance will allow them to take advantage of both diversification and economy-of-scope benefits as they expand into these industries.

Recent Consolidation Trends in a Decade of Change

Several hundred bank mergers and acquisitions (M&As) have occurred each year over the past two decades. However, during the past decade, megamergers—M&As between institutions with assets of more than $1 billion each—have occurred much more frequently. Most recently, M&As in the United States and elsewhere have increased dramatically in size; such activity between institutions with assets in excess of $100 billion has become almost commonplace. Based on market value, nine of the ten largest M&As in U.S. history were announced during 1998, and four of these—Citicorp-Travelers, BankAmerica-NationsBank, Banc One-First Chicago, and Norwest-Wells Fargo—occurred in banking (Moore and Siems 1998). In 1999, the pace of these megamergers slowed considerably (not one was announced in the United States), perhaps because market participants were waiting for resolution of the debate on financial services modernization.

As a result of the rapid M&A activity, the number of banks and banking organizations (stand-alone banks and top-tier bank holding companies) each fell by about 40 percent between 1989 and 1999 (Table 1). The share of total nationwide assets held by the eight largest banking organizations nearly doubled over this period, rising from 21.3 percent to 41.5 percent.[1] At the same time that large banks' market share was increasing, the market shares and profitability of very small and small banking organizations—defined as having total assets of less than $50 million and between $50 million and $300 million, respectively—fell sharply. As Table 1 indicates, over the 1989-99 period, the share of domestic assets held by small banking organizations fell from 12.3 percent to 9.0 percent, while the share of assets held by very small banking organizations dropped from 3.3 percent to 1.6 percent. The decline in market share may have occurred because small banks' profits relative to those of their larger competitors declined. Before 1992, for example, the largest 100 banks (ranked by assets) consistently earned lower returns per dollar of equity than banks outside the top 100. After 1992, the largest 100 banks consistently outperformed smaller banks (Bomfim and Nelson 1999).[2] Similarly, after 1992, banks ranked between the 100th and

Table 1
Concentration, Ownership, and Number of Firms in the Commercial Banking Industry

				Asset Share (Percent)		
Year	Number of U.S. Bank Charters	Number of Banking Organizations	Number of Offices in Banks Plus Thrifts	Eight Largest Banking Organizations	Very Small Banking Organizations	Small Banking Organizations
1989	12,728	9,620	84,388	21.3	3.3	12.3
1990	12,370	9,391	84,375	21.3	3.3	12.5
1991	11,950	9,167	83,484	23.7	3.2	12.8
1992	11,495	8,871	81,204	23.6	3.1	12.9
1993	11,001	8,445	80,758	24.8	2.8	12.4
1994	10,488	8,017	81,677	26.3	2.6	11.6
1995	9,983	7,680	81,900	30.0	2.3	11.1
1996	9,576	7,415	83,052	31.3	2.1	10.7
1997	9,216	7,225	84,291	35.2	1.8	10.0
1998	8,846	6,943	85,190	35.0	1.6	9.1
1999	8,698	6,852	86,527	41.5	1.6	9.0

Sources: Reports of Condition and Income; National Information Center (1989-99); *FDIC Historical Statistics on Banking*.

Notes: A banking organization is a top-tier bank holding company or a stand-alone bank. The figures for 1999 are as of the second quarter; all other figures are as of year-end. A very small banking organization is one with total banking assets of less than $50 million in 1997 dollars; a small banking organization is one with assets between $50 million and $300 million in 1997 dollars.

1,000th largest consistently outperformed banks outside the largest 1,000.

One can point to four key factors that contributed to the fast pace of M&A activity. First, profitability and high stock prices in banking during the mid-to-late 1990s may have relaxed financing constraints on this activity. Second, banks have been losing market share to competing financial institutions on both sides of the balance sheet since the end of the 1970s. Consolidation provides an efficient way to eliminate the excess capacity that has arisen in response to the emergence of nonbank financial institutions. Third, sophisticated financial technologies such as derivatives contracts, off-balance-sheet guarantees, and risk management may be more efficiently produced by larger institutions. Finally, the deregulation of restrictions on banks' ability to expand geographically was relaxed in the 1980s and early 1990s. With a series of removals of restrictions on intrastate and interstate banking, concluding with the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, interstate branching was permitted in almost all states.[3] The removal of these constraints allowed some previously prohibited M&As to occur.[4]

Expansion of Bank Powers Prior to Gramm-Leach-Bliley

Regulatory restrictions in the United States had prohibited bank involvement in underwriting, insurance, and other "nonbank" activities since the Banking Act of 1933, sections of which became known collectively as the Glass-Steagall Act.[5] Subsequent measures in 1956 and 1970 strengthened the demarcation between banks, insurance companies, and securities firms. BHCs were allowed to underwrite certain eligible securities, including general obligation bonds, U.S. government bonds, and real estate bonds, which were exempted from the original Act. But it was not until the mid-1980s that the Federal Reserve and the Office of the Comptroller of the Currency (OCC) began loosening restrictions on greater bank participation in investment banking and in insurance. (See Table 2 for an historical summary of recent deregulatory efforts.)

The Federal Reserve began the deregulatory push for BHC activity in securities with a decision in 1987 to allow subsidiaries of a small group of holding companies to underwrite certain previously prohibited securities—such as municipal revenue bonds, commercial paper, and mortgage-related securities—on a limited basis. The Federal Reserve derived legal authority for the decision from a clause in Section 20 of the 1933 Banking Act that prohibits banks from affiliating with a company "engaged principally" in underwriting or dealing securities. The Federal Reserve contended that the "engaged principally" clause allowed BHC subsidiaries to underwrite these "ineligible securities" as long as the revenue from such underwritings did not exceed 5 percent of the subsidiary's gross revenue.

In January 1989, the Federal Reserve also allowed the "Section 20 subsidiaries" to underwrite corporate debt and equity securities contingent on the 5 percent revenue limitation. The Federal Reserve continued its incremental lifting of restrictions by increasing the revenue limit on

Table 2
Summary of Important Dates Prior to the Passage of Gramm-Leach-Bliley

Date	Description
April 30, 1987	Federal Reserve authorizes limited underwriting activity for Bankers Trust, J. P. Morgan, and Citicorp, with a 5 percent revenue limit on Section 20 ineligible securities activities.
January 18, 1989	Federal Reserve expands Section 20 underwriting permissibility to corporate debt and equity securities, subject to revenue limit.
September 13, 1989	Federal Reserve raises limit on revenue from Section 20 ineligible securities activities from 5 percent to 10 percent.
July 16, 1993	Court ruling in *Independent Insurance Agents of America v. Ludwig* allows national banks to sell insurance from small towns.
January 18, 1995	Court ruling in *Nationsbank v. Valic* allows banks to sell annuities.
March 26, 1996	Court ruling in *Barnett Bank v. Nelson* overturns states' restrictions on banks' insurance sales.
October 30, 1996	Federal Reserve announces the elimination of many firewalls between bank and nonbank subsidiaries within bank holding companies (BHCs).
December 20, 1996	Federal Reserve raises limit on revenue from Section 20 ineligible securities activities from 10 percent to 25 percent.
August 22, 1997	Federal Reserve eliminates many of the remaining firewalls between bank and nonbank subsidiaries within BHCs.
April 6, 1998	Citicorp and Travelers Group announce merger initiating a new round of debate on financial reform.

Sources: Mester (1996); Bhargava and Fraser (1998); Boyd and Graham (1986, 1988); Ely and Robinson (1998, 1999).

Section 20 subsidiaries to 10 percent in September 1989 and to 25 percent in December 1996. Also in 1996, the Federal Reserve began contemplating the elimination of previously instituted "firewalls" between bank and nonbank activity within the subsidiary structure of a BHC. The firewalls had been instituted originally to insulate bank subsidiaries from more risky nonbank subsidiaries.[6] In 1997, the majority of the barriers were removed.

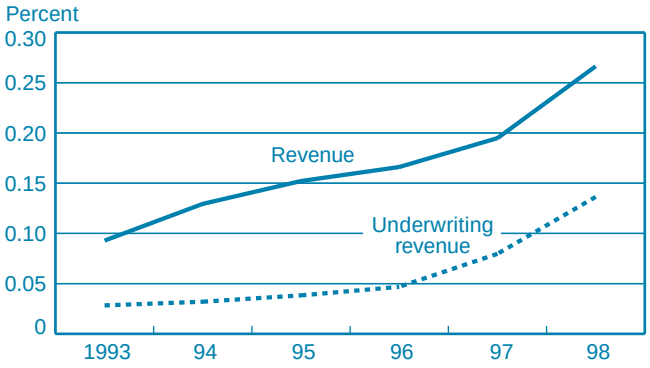
While the Federal Reserve oversaw BHC expansion into securities, OCC rulings backed by the federal courts loosened restrictions on national banks' insurance activity. Prior to 1986, state insurance regulators imposed limitations on national banks' insurance sales and underwriting. That year, the OCC argued that a previously overlooked section of the 1917 National Bank Act (Section 92) allowed a national bank to sell insurance anywhere under the condition that one of its branches be located in a town with less than 5,000 people. In 1993, a U.S. Court of Appeals ruling upheld the OCC decision. State regulators continued fighting the Court decision until a 1996 U.S. Supreme Court ruling upheld it. The decision forced state legislatures to level the playing field by passing new laws allowing both national and state-chartered banks to sell insurance through subsidiaries or directly through bank branches. National banks won another victory in an unrelated 1995 U.S. Supreme Court decision, when the Court ruled that state law could not prohibit the sale of annuities by national banks. The Court maintained that both fixed and variable annuities were analogous to activities of savings banks and therefore were not subject to the state's jurisdiction over insurance.

As the regulations were modified, banks began a notable expansion into nonbank financial products. BHCs, through their Section 20 subsidiaries, began to capture a significant portion of the securities market. In fact, BHCs increased their share of the securities industry's total revenue from 9 percent to more than 25 percent in just six years (Chart 1). Section 20 subsidiaries also made significant inroads in underwriting, especially after the 1996 loosening of the "ineligible" underwriting revenue restriction. Bank annuity sales also increased rapidly (Chart 2), and evidence from a study by the Association of Banks-In-Insurance (ABI) suggests that banks accounted for approximately 15 percent of the total annuities sales nationwide (Table 3). This same study indicates that banks still represent a small portion of insurance sales, however, it also suggests that an increasing number of banks will begin marketing insurance products over the next two years.

Despite increasing revenue for BHCs in nonbank financial products, the regulatory environment prior to GLB continued to impose limitations on expansion across financial sectors. The passage of the Gramm-Leach-Bliley Act therefore was a major event in the deregulatory process, removing almost entirely the remaining barriers separating banks, securities firms, and insurance companies.

Chart 1

Section 20 Subsidiaries of Bank Holding Companies: Share of the Securities Industry

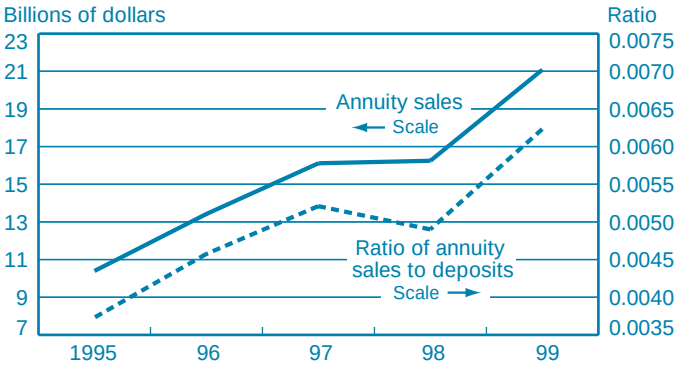


Sources: *Securities Industry Factbook* (1999); Federal Reserve Y-20 reports.

Notes: The numerator represents the total revenue and underwriting revenue reported by Section 20 subsidiaries. The denominator represents the total revenue and underwriting revenue of the securities industry. The denominator is calculated from annual revenue data of New York Stock Exchange (NYSE) member securities firms, and then expanded by dividing by the percentage of total industry revenue held by NYSE members. These firms represent on average 68 percent of the total industry over the sample period. We assume that the NYSE member firms' percentage of underwriting revenue approximates the percentage of total revenue.

Chart 2

Annuity Sales by Banks



Source: Authors' calculations, based on Reports of Condition and Income.

Note: Annuity sales were not reported prior to 1995.

Table 3
Insurance and Annuity Sales by Banks
Percent

Category	Banks Currently Marketing	Banks Planning on Marketing: Within Two Years	Banks Planning on Marketing: Within One Year	Total	Current Market Share
Annuities					
Variable	28.3	15.2	8.6	52.1	~15
Fixed	28.3	14.5	8.8	51.6	
Life insurance					<1
Term	27.8	20.7	11.8	60.3	
Whole	23.1	21.4	11.3	55.8	
Universal	21.1	21.1	11.5	53.7	
Variable	17.4	21.1	11.1	49.6	
Personal property and casualty					<2
Homeowners	18.7	21.9	12.0	52.6	
Auto	17.7	21.9	12.0	51.6	
Commercial property and casualty	16.7	19.4	9.6	45.7	<2

Source: Association of Banks-In-Insurance, *Annual Study of Leading Banks-In-Insurance* (1999).

Market Reaction to the Gramm-Leach-Bliley Act

On October 22, 1999, President Clinton announced that his administration had reached a compromise with Congress on GLB that guaranteed its eventual passage. The legislation allows the formation of financial holding companies under which subsidiaries can engage in insurance, securities, and banking activities.[7] Although the long-term implications of GLB still are unclear, the response of financial sector stock prices on October 22 suggests that shareholders took a positive view toward a continuation of BHC expansion into nonbank financial products and financial consolidation in general. As Table 4 shows, among the most notable performers were "top financial advisors," defined as companies—either securities firms or BHC subsidiaries—with strong M&A advisory records in the financial sector. Their performance suggests a widespread expectation that future financial consolidation will generate fee-based revenue for top financial advisors. BHCs with Section 20 subsidiaries also experienced significant excess returns; shareholders appeared to favor BHCs that had begun exploring the broadened opportunities in securities underwriting prior to the passage of GLB.

Insurance company shareholders also reacted favorably to the compromise. In particular, the response of the share prices

Table 4
Summary Returns by Structural Characteristics: October 22, 1999

Industry Category	Number of Observations	Single-Day Return	Excess Return[a]
Sample	558	0.021	0.007
Top financial advisors[b]	12	0.079	0.065
Bank holding companies	290	0.011	-0.003
With Section 20 subsidiaries[c]	25	0.033	0.019
Top financial advisors	5	0.049	0.035
Top twenty by assets	20	0.037	0.023
Securities companies	76	0.048	0.034
Top financial advisors	7	0.100	0.086
Top twenty by assets	20	0.090	0.076
Insurance companies[d]	156	0.029	0.015
Health	27	0.008	-0.006
Life	26	0.063	0.049
Property and casualty	74	0.027	0.013
Top twenty by assets	20	0.068	0.054
Insurance brokers/agents	36	0.019	0.005
Memo:			
Market return measurements			
Dow Industrials		0.017	
S&P 500 Index		0.014	
S&P Bank Index		0.041	

Sources: Sample and structural data are from Standard and Poor's Compustat database for the end of 1998; stock return information for October 22, 1999, is from Bloomberg Financial Services.

Notes: Asset rankings are based on total assets as reported by Compustat at the end of 1998. All companies included in the rankings are publicly traded with significant equity in the U.S. markets.

[a]Excess return is the single-day return less the S&P 500 Index return.
[b]A top financial advisor is a bank holding company (BHC) or securities firm that is one of the top fifty companies based on the total deal value of advised mergers in the financial sector in 1998 (see *American Banker*, February 2, 1999, p. 18A).
[c]BHCs with Section 20 subsidiaries are those with subsidiaries that underwrite ineligible securities.
[d]Health insurance companies are defined as those companies with a Standard Industrial Classification (SIC) code of 6321 (Accident and Health Insurance) or 6324 (Hospital and Medical Service Plans). Life insurance companies include those companies with a SIC code of 6311. Property and casualty insurance companies have a SIC code of 6331 and brokers/agents have a two-digit SIC code of 64.

of life insurance firms—a single-day average excess return of 4.9 percent—suggests that investors believe that life insurance firms are among those companies that have the most to gain from the legislation. Shareholders may believe that life insurance companies can be more profitable if they offer both bank and insurance products. In addition, they may perceive certain life insurance companies to be attractive candidates for mergers with BHCs that want to expand their available insurance operations. The shareholder response to the announced compromise on GLB might reflect a confirmation of the past expansion by BHCs into nonbank financial products; it might also reflect optimism for the new opportunities owing to consolidation across the banking and life insurance sectors.

Consequences of Financial Consolidation

It is interesting to know that stock market participants reacted favorably to the passage of GLB, but without further research we can only hypothesize as to why they reacted this way. For example, did the positive reaction occur because mergers between BHCs and other types of financial firms will create more profitable firms? Are there synergies between firms that can be taken advantage of? Will these firms have a smaller risk of bankruptcy?

To varying degrees, prior research has examined these questions. Only limited research has been conducted on the efficiency gains of combining commercial banks and other types of financial service firms, because little data have been available to examine this issue. However, one study of the cost-scope efficiency of German universal banks found mostly diseconomies associated with producing loans and investment-oriented services within the same institution (Lang and Welzel 1998). More research has evaluated the risk-reduction potential of combining banking and nontraditional financial activities.[8] Kwast (1989) analyzed the correlation between banks' eligible trading and nontrading assets and found that banks' engagement in eligible securities activities offers limited potential for diversification gains. More recently, Kwan (1998) found that combining a Section 20 subsidiary with a bank subsidiary can improve a BHC's risk-return trade-off.[9]

Taking a somewhat different approach, Boyd and Graham (1988) explored the risk-reduction potential of merging BHCs with other financial firms by simulating cross-industry mergers. Using U.S. data from the 1970s and 1980s, the authors considered whether diversification benefits from these mergers were significant enough to lower the riskiness of the resulting firm. They concluded that mergers between BHCs and life insurance firms would likely decrease BHC bankruptcy risk, while mergers with all other types of financial firms would likely increase this risk.[10] We are not aware of any work that has considered whether the results reported by Boyd and Graham are robust across time periods, and in particular robust to the last decade. Hence, the goal of our study is to fill this void.[11]

Using data from the 1984-98 period, we present the risk-return characteristics for all of the major financial services industries: bank holding company, securities, property and casualty insurance, life insurance, insurance agent/broker, investment advice, real estate development, and other real estate firms. We then compute these same statistics for simulated mergers over the 1990s between BHCs and firms from a *subset* of the remaining financial services industries: securities, property and casualty, and life insurance. The idea behind examining this subset of industries is to focus on the most likely cross-industry mergers with firms large enough to affect a BHC's risk-return profile. We use data from the 1990s because the number of bank mergers throughout the period makes it difficult to have consistent data over the entire period. In addition, the recent data are more likely to be insightful about future mergers.

As with the earlier simulation studies, there are, of course, caveats to this analysis. Economies of scale or scope cannot be taken into account, for example. Nor can we account for the fact that we do not have a crystal ball: we cannot focus on mergers that are actually going to occur. Nevertheless, we think our results provide an upper bound on what is likely to happen, since taking into account particular synergies between firms should serve to improve on the risk calculations that we do report.

Data and Methodology

We begin by examining annual year-end balance-sheet data on all publicly traded financial firms in Standard and Poor's Compustat database over the 1984-98 period. The industries we examine and the number of firms within each industry are reported in Table 5, along with statistics on firm size in each industry. As we can see from the table, with the exception of the "other real estate" category, we have a meaningful number of firms in each industry to use for our calculations.

We calculate one measure of profitability and two measures of risk for each firm and report the median value for each industry. We also compute these same statistics for

Table 5

Number and Size of Sample Financial Firms, 1984-98

Industry Category	Number of Firms	Assets (Millions of Dollars)			
		Median	Smallest	Largest	Mean
Bank holding company	462	2,169	1.00	617,679	10,175
Securities	57	261	0.45	317,590	14,421
Life insurance	48	2,463	6.42	105,107	7,320
Property and casualty insurance	101	1,243	0.15	194,398	7,159
Insurance agent/ broker	45	54	0.31	19,736	821
Real estate development	23	26	0.18	1,151	80
Other real estate	9	37	2.34	800	85
Investment advice	26	98	0.33	3,480	324

Source: Standard and Poor's Compustat Services, Inc.

hypothetically merged firms. In order to compute meaningful statistics, we require that firms in the sample report at least five years of data. Thus, we include firms that may have failed during the period as long as they meet this criterion. The measure of profitability we calculate is the rate of return on average accounting equity, R:

$$R_t = 2\pi_t / (E_t + E_{t-1}),$$

where π_t is net income after taxes, E_t is total equity, and t denotes the year. Hence, average equity is the average of year-end equity in years *t-1* and *t*. Profits are a flow, earned over year *t*.

The first measure of risk we report is the standard deviation on the rate of return on equity, S:

$$S = \left(\sum_{t=1}^{T} (R_t - \bar{R})^2 / (T-1) \right)^{1/2},$$

where $\bar{R}$ is the mean of the R_t and T is the number of periods in which the firm is in the sample. The standard deviation allows us to consider whether there are diversification benefits from mergers, which reduce the volatility of the rates of return.

The second measure of risk we report is the Z-score, an indicator of the probability of bankruptcy. The Z-score begins with the idea that bankruptcy arises when profits are sufficiently negative to eliminate equity. The Z-score (or Z), then, is the number of standard deviations below the mean by which profits must fall to bankrupt the firm. Z is defined as:

$$Z = \left[\left(\sum_{t=1}^{T} [2\pi_t / (A_t + A_{t-1})] \right) / T + \left(\sum_{t=1}^{T} [(E_t + E_{t-1}) / (A_t + A_{t-1})] \right) / T \right] / S_r ,$$

where A_t is total assets in period t and $2\pi_t / (A_t + A_{t-1})$ is the return on assets in year t. S_r is the estimated standard deviation of the return on assets. As the formula indicates, the higher the mean rate of return on assets and the higher the ratio of equity to assets, the higher Z is. Hence, higher values of Z are associated with lower probabilities of failure. The more volatile the asset returns, the lower the Z-score. Thus, calculating this measure allows us to consider whether any increase in the volatility of returns resulting from a BHC merging with another firm is offset by increases in the level of returns, producing a lower risk of bankruptcy. Moreover, if returns are normally distributed, then Z can be mapped simply into the probability that a firm experiences insolvency over a one-year horizon.[12]

To consider how BHC risk and return would be affected by BHCs merging with other financial firms, we construct pro-forma mergers between the ten largest BHCs and the ten largest firms in each of the other three financial services industries. Using all of the combinations, we create 100 mergers for each of the three cross-industry combinations, and we report the results for the median firm.

Results

We first present the profitability and risk statistics for each of the industries in Table 6 in order to obtain a sense of the industries' relative standings. As the first column of the top panel indicates, investment advice firms were the most profitable over the 1984-98 period, followed by bank holding companies and securities firms. Insurance companies follow, while the least profitable firms were those engaged in real estate. Both measures of risk rank the industries in roughly the same order. BHCs are the least risky, followed by life insurance and property and casualty insurance firms. Securities and investment advice are in the middle of the group, and real estate firms are the most risky. Given the highly regulated nature of the banking industry, it perhaps makes sense that this industry proves to have the lowest risk among the group. Regulators often encourage mergers when a banking firm is weak and hence there is likely less recorded evidence of firms close to failure than would otherwise appear in the data. Life

insurance and property and casualty insurance are also fairly highly regulated, and this factor could account for their relatively low risk ranking as well.

As a check on the robustness of our results, we also compute these same statistics over the 1992-98 period. This subsample exploration allows us to consider whether the results vary when the 1980s and the early 1990s are excluded, a period in which many firms were in poor financial health. As the second column of Table 6 shows, there are a few differences in relative industry profitability, with securities firms and insurance agent/broker firms somewhat more profitable in the 1990s. However, there are virtually no differences in the relative risk rankings in the 1990s compared with the entire period. The overall level of risk is lower when the 1980s are excluded, a result consistent with the idea that these firms were in weaker financial health over the early part of the sample.

Our findings also accord well with those originally reported by Boyd and Graham (1988). The last column of Table 6 reproduces their statistics, indicating that the relative profitability and risk rankings over the 1970-84 period are very similar to our findings. Two points are worth noting in comparison. First, as they were in the 1990s, insurance agent/broker firms were quite profitable in the 1970s. Thus, this industry's performance in the 1980s appears to be the outlier to an otherwise profitable performance record. Second, the level of risk recorded over the 1970-84 period is closer to the levels experienced in the 1990s, suggesting that the late 1980s were clearly a difficult period for many financial services firms.

Table 6
Profitability and Risk Measures by Industry

	Profitability		
	Median $\bar{R}$ (Percent)		
Industry Category	1984-98	1992-98	1971-84[a]
Bank holding company	12.98	13.28	13.12
Securities	12.98	16.45	16.52
Life insurance	10.58	11.23	12.82
Property and casualty insurance	11.17	11.73	13.44
Insurance agent/broker	7.80	14.75	19.98
Real estate development	2.29	8.94	10.03
Other real estate	2.82	5.12	0.65
Investment advice[b]	20.13	18.59	

	Risk					
	Median					
	1984-98		1992-98		1971-84[a]	
Industry Category	*S*	*Z*	*S*	*Z*	*S*	*Z*
Bank holding company	0.0271	33.87	0.0173	53.93	0.0245	43.36
Securities	0.1049	10.44	0.0781	14.50	0.0909	13.33
Life insurance	0.0453	19.09	0.0245	31.58	0.0261	36.79
Property and casualty insurance	0.0691	14.82	0.0449	20.04	0.0467	24.56
Insurance agent/broker	0.1468	8.49	0.0699	13.56	0.0554	15.97
Real estate development	0.2892	3.47	0.1408	7.36	0.1382	8.66
Other real estate	0.3642	2.31	0.3899	2.14	0.0925	12.98
Investment advice[b]	0.1655	9.48	0.1106	11.37		

Sources: Standard and Poor's Compustat Services, Inc.; authors' calculations.
[a]The 1971-84 period reflects the results from Boyd and Graham (1988).
[b]In Boyd and Graham (1988), the "investment advice" category is included in the "securities" category.

Mergers

The risk measures from combining a BHC with another financial firm cannot be gleaned merely from the two firms' standard deviations; the calculation also depends on the covariance of returns. Hence, to obtain the statistics for combined firms, we merge the balance-sheet data and calculate the risk-return statistics for the pro-forma merged firm. As we noted, we conduct mergers between BHCs and firms in the life insurance, property and casualty insurance, and securities industries. To prevent the outcome from being determined by the larger firm's size, we examine mergers between the ten largest BHCs and the ten largest firms in each of the other industries. The size characteristics of the firms used in the mergers are reported in Table 7.[13]

The risk-return measures for the pro-forma mergers with the ten largest BHCs are presented in Table 8. As we can see, mergers between BHCs and life insurance firms lower the risk of both firms. The top ten BHCs have a median standard deviation of 0.0212, while that of the life insurance firms is 0.0220. The median of the merged firms is 0.0176. Thus, there are clearly diversification benefits to BHC-life insurance mergers. The Z-score also rises with these mergers, indicating that the barely lower profitability (16.26 profitability for the merged firms, compared with 16.77 for the BHCs) is offset by the benefits of the lower risk.

Table 7
Number and Size of Sample Financial Firms, 1992-98

	Assets (Millions of Dollars)			
Industry Category	Median	Smallest	Largest	Mean
Top ten bank holding companies	147,522	40,776	617,679	171,706
Top ten securities firms	92,085	2,111	317,590	103,269
Top ten life insurance companies	21,805	5,067	105,107	29,744
Top ten property and casualty companies	41,912	13,252	194,398	54,915

Source: Standard and Poor's Compustat Services, Inc.

Mergers with securities firms and property and casualty firms barely change BHC risk, from 0.0212 to 0.0222 and to 0.0221, respectively, although the probability of bankruptcy as indicated by the Z-score is higher (a lower Z) for mergers with property and casualty firms. The lower relative rate of return recorded by property and casualty firms serves to lower Z when these firms merge with BHCs.[14] These findings clearly suggest that mergers between BHCs and life insurance companies are likely to produce firms with less risk than either of the two separate entities, while mergers with securities and property and casualty firms will raise BHC probability of bankruptcy modestly. The latter findings stand in contrast to those reported by Boyd and Graham (1988). Their simulated mergers created firms with lower Zs, and higher standard deviations, leading the authors to recommend against mergers between BHCs and either securities firms or property and casualty firms.

Our contrasting findings likely result from the fact that we examined mergers between the largest firms in each industry while the earlier study examined random mergers. Random mergers almost surely generated some combinations of a large securities or property and casualty firm and a small bank holding company, such that the former, typically riskier, firm received the bulk of the weight in the calculations. The different time period could also play a role because, generally speaking, financial firms were in better shape in the 1990s than they were in the 1980s.[15]

Lessons from Europe

Recent data on M&A activity in Europe provide further insight into how the Gramm-Leach-Bliley Act might influence consolidation. Europe provides a good model for comparison because most European countries permit banking, securities, and insurance activities to occur in the same company or

Table 8
Profitability and Risk Measures if a BHC Had Merged with a Nonbank Financial Firm

	Profitability (Percent)		Risk			
	Median	B&G Median[a]	Median		B&G Median[a]	
Industry Category	$\bar{R}$	$\bar{R}$	S	Z	S	Z
Top ten BHCs	16.77	13.12	0.0212	52.08	0.0245	43.36
BHCs-securities firms	16.90	14.06	0.0222	48.41	0.0480	24.93
BHCs-life insurance companies	16.26	12.95	0.0176	56.83	0.0201	49.30
BHCs-property and casualty companies	15.17	12.97	0.0221	41.18	0.0432	25.28
Top ten securities firms	18.48	16.52	0.0471	17.57	0.0909	13.33
Top ten life insurance companies	13.29	12.82	0.0220	36.66	0.0261	36.79
Top ten property and casualty companies	11.84	13.44	0.0304	24.34	0.0467	24.56

Sources: Standard and Poor's Compustat Services, Inc.; authors' calculations.

Notes: Each hypothetical industry includes 100 firms created by merging each top ten bank holding company (BHC) with each top ten nonbank financial firm from our 1992-98 sample of publicly traded firms. A top ten firm is defined as a firm ranking in the top ten of total assets within an industry, defined by the Standard Industrial Classification code, as of year-end 1996.
[a]The column refers to Boyd and Graham's (1988) profitability and risk measure results over the 1971-84 period.

holding company. Table 9 reports the flows of M&A activity within the European Community (EC) and within the United States. The values shown are the sum of the market values of all target institutions over 1985-99, and the percentages of the European or U.S. activity these represent.

As the table shows, over the past fifteen years, there was a little more than $775 billion in consolidation activity in Europe, of which 49 percent came from banks consolidating with other banks. Consolidation across sectors (the off-diagonal elements) has also been fairly common in Europe, accounting for about 24 percent of M&A activity. By comparison, there was $873 billion in consolidation activity in the United States, of which 56 percent involved only banks. Consolidation across segments has been relatively uncommon in the United States, however, as a result of the restrictions on bank activities during most of the period. Only 3.7 percent of total M&A activity occurred between banks and securities firms and about 17 percent of all financial M&As occurred across segments.[16] If the U.S. financial sector begins to evolve similarly to the European sector, we will likely see a substantial increase in M&A activity across the three main segments.

Since few legal barriers prevent European banks from entering the insurance business, many of these banks reacted to the intensified competitive environment of the 1980s and 1990s by entering aggressively into insurance. In the process, they created a model of combined banking and insurance now called "bancassurance." We review the bancassurance model here, since the European experience may suggest how the banking and insurance industries are likely to evolve in the United States post-GLB.[17]

Origins of Banks' Interest in Insurance

In recent decades, banks abroad faced many of the same competitive pressures as banks in the United States. Traditional banking in most EC countries had not grown robustly, and profitability had fallen, prompting banks to explore new business opportunities.[18] At the same time, the life insurance business was doing quite well. Between 1986 and 1991, life insurance premiums grew more than 10 percent per year in eight of the twelve EC countries, and growth exceeded 12 percent per year on average across all countries (Hoschka 1994). Moreover, growth in life insurance seemed likely to be sustained, since it could be traced to long-run phenomena such as rising income and wealth and a rising share of older people. Life insurance also looked attractive to banks because most EC countries promote it through advantageous tax provisions, in order to encourage individuals to provide for their retirement. As of 1994, tax deductibility for life insurance premiums was offered in nine of the twelve EC countries, while tax-free status for some or all of the proceeds of life insurance policies was offered in a different group of nine countries (Hoschka 1994).

Table 9
Values of the Targets of Financial Institutions' M&A Activity, 1985-99

	Europe: Acquiring Institution				United States: Acquiring Institution			
Target Institution	Commercial Bank	Securities Firm	Insurance Company	Total	Commercial Bank	Securities Firm	Insurance Company	Total
Commercial bank	377.4	33.2	49.4	460.0	489.2	6.7	73.5	569.4
	(48.6)	(4.3)	(6.4)	(59.2)	(56.1)	(0.8)	(8.4)	(65.3)
Securities firm	22.8	50.8	11.5	85.1	23.5	114.3	16.1	153.9
	(2.9)	(6.5)	(1.5)	(11.0)	(2.7)	(13.1)	(1.8)	(17.6)
Insurance company	40.2	33.0	159.0	232.2	0.6	31.2	117.4	149.2
	(5.2)	(4.2)	(20.5)	(29.9)	(0.1)	(3.6)	(13.5)	(17.1)
Total	440.4	116.9	219.9	777.3	513.3	152.2	207.0	872.5
	(56.7)	(15.0)	(28.3)	(100.0)	(58.8)	(17.4)	(23.7)	(100.0)

Source: Securities Data Company.

Note: Top figures are the sum of all target institutions' market value of equity just before being acquired, in billions of dollars; figures in parentheses are the percentage of the total.

Table 10 shows that combinations of banks and life insurance companies constituted more than 10 percent of the total M&A activity in financial services. By contrast, European banks and property and casualty insurance companies almost never combined. This may be explained by the fact that the average growth in property and casualty premiums over the same period, although an attractive 8 percent per year, was nevertheless slower than the growth in life insurance premiums.

In short, at the same time that banks in Europe were pushed to consider additional sources of revenue by competition in their traditional product lines, they were pulled toward life insurance by the industry's sustained rapid growth and tax-advantaged status. In addition, banks were, and still are, drawn to life insurance because of substantial cost advantages. We briefly discuss each advantage, drawing heavily on a joint study published in 1999 by the Bank Administration Institute and the Boston Consulting Group (BAI/BCG).

The first cost advantage that banks have over traditional independent life insurance sales agents is that their sales personnel, with fixed salaries, are less expensive than traditional brokers, who receive commissions (p. 22). This cost advantage is bolstered by economies of scope based on bank branch systems, customer information, administration, and trust. The first two economies of scope provide banks with advantages in the cost of selling insurance, the third provides advantages in the cost of underwriting, and customer trust serves to increase demand. For example, bank branches can provide space for life insurance activities as well as frequent opportunities for pursuing sales contacts. As a result, the productivity of bank personnel in selling life insurance can be relatively high. According to the BAI/BCG study, the sales productivity of a successful bancassurance agent can be three to five times higher than that of a traditional insurance agent (p. 23). Furthermore, banks can use their customer information to tailor their sales approach or to target products to individuals, which minimizes the chance of a wasted sales effort. Banks can also enjoy cost advantages in insurance underwriting by tapping their existing resources in areas such as administration, investment management, and human resources. Again, according to the study, it is not necessary for banks to add employees, systems, or other resources in order to generate and mail out premium notices. Instead, they can automatically debit payments from customers' checking or savings accounts, which avoids bill generation and mailing as well as check processing (p. 9). Finally, banks can capitalize on the trust individuals typically have in their banks by extending their customer relationships to include insurance.

Successful Strategies

European banks have put substantial effort into entering the life insurance business during the past few decades and they have had substantial success. The BAI/BCG study estimates that leading European bancassurers typically generate a return

Table 10
European Financial Institutions' M&A Activity by Industry Segment,1990-99
Percent

	Acquiring Institution					
Target Institution	Commercial Bank	Securities Firm	Life Insurance Company	Property and Casualty Insurance Company	Insurance Brokerage	Total Financial
Commercial bank	51.1	6.8	5.0	0.0	0.2	63.2
Securities firm	2.4	6.7	0.8	0.2	0.0	10.2
Life insurance company	5.4	3.9	12.9	0.3	0.2	22.6
Property and casualty insurance company	0.1	0.2	0.5	0.5	0.0	1.3
Insurance brokerage	0.3	0.1	2.3	0.0	0.1	2.7
Total financial	59.2	17.7	21.5	1.0	0.5	100.0

Source: Securities Data Company.

Note: Figures are based on the sum of all target institutions' market value of equity just before being acquired.

on sales and on capital of 20 percent to 30 percent and derive one-quarter to one-third of their retail profits from insurance and investment sales (p. 22). Moreover, European banks have penetrated the life insurance markets to a substantial degree: their share of the markets averages more than 20 percent, and exceeds 50 percent in France. Finally, European banks' sales of life and pension insurance continue to grow at more than 20 percent per year, substantially more rapidly than overall sales in their local markets.

Banks have actually transformed parts of the life insurance business in Europe. Historically, individuals with relatively high incomes or high net worth have purchased life insurance. Individuals with low or moderate incomes—who are traditional bank customers—have been "underinsured." Thus, banks have access to a customer base, distinct from that of conventional independent insurance agents, that has substantial potential for fueling growth.

Banks have found that the ideal life insurance product for mass-market clients is much simpler than the products typically available through independent agents. Consequently, banks have tended to sell a limited range of life insurance products that are relatively simple to understand. Banks have also found that their customers prefer streamlined application and claims processes, and have developed such procedures. For example, the BAI/BCG study indicates that "in Europe, banks pursuing bancassurance strategies sell young customers simple life insurance policies valued up to $60,000 after only a fifteen-minute interview at a branch, and no medical exam. By comparison, most big insurance companies require a medical exam and often take weeks to process a policy" (p. 2).

The European experience suggests that banks perform best in the life insurance business when they tightly integrate their banking operations with both insurance sales and insurance underwriting. Initially, when many banks entered marketing alliances with multiple insurance underwriters, these efforts met with mixed success. Even when successful, these ventures were generally not as profitable as more recent efforts with fully integrated production, perhaps because banks were not able to control the products they offered to ensure that they were appropriate for their client base.[19]

A final pattern to note from the European experience concerns the entry of insurance firms into banking. Bancassurance, in which banks enter insurance, has generally had a larger presence in Europe than "assurebanking," in which insurance firms enter banking.[20] This asymmetry can be traced in part to the legal barriers that prevent nonbanks from entering banking in most EC countries (Hoschka 1994). It could also stem from the fact, noted earlier, that insurance has grown more robustly than banking in recent decades. Nonetheless, as our tables indicate, insurers now appear to be expanding into banking.

In sum, if the European experience is any guide, we could observe banks in the United States entering more aggressively into the life insurance business. This is consistent with both the event study evidence and the diversification benefits discussed earlier. Over time, it is possible that banks entering the life insurance business will integrate both sales and underwriting operations into their banking business, and that they may very well develop simpler life insurance policies and procedures appropriate for a mass market.

Conclusion

By allowing financial holding companies to own banks, securities underwriters, and insurance companies, Gramm-Leach-Bliley sets the stage for another round of financial consolidation. Our evidence points most strongly to combinations of banks and life insurance companies. When the compromise on GLB was reached, the stock prices of banks, securities firms, and insurance companies all increased. Particularly sharp increases occurred at bank holding companies and securities firms that act as advisors in financial M&As as well as at life insurance companies. Moreover, our simulated mergers across the financial services industries indicate that the largest diversification benefits would result if bank holding companies combined with life insurance firms.

One explanation for the positive reaction of financial firms' stock prices could be the recognition by shareholders that diversification benefits may allow these firms to expand into somewhat riskier activities or to operate with less capital. Our study also suggests, in contrast to earlier findings, that mergers between bank holding companies and either securities firms or property and casualty firms would likely raise BHC risk only modestly. Furthermore, the recent expansion of banks into the life insurance business in Europe, where few legal barriers to cross-industry activity have been in place, also supports the argument that banks are likely to acquire life insurance firms.

Endnotes

1. Concentration in local markets changed very little, however, suggesting that market power in banking has not increased (see Berger, Demsetz, and Strahan [1999]).

2. This calculation omits the ten largest banks from the comparison because these institutions are engaged in a very different set of activities than medium-size and small banks.

3. See Berger, Kashyap, and Scalise (1995) for year-by-year details on the changes in state laws.

4. Of course, deregulation is not strictly exogenous. The emergence of new technologies in both deposit taking and lending also may have encouraged deregulation (Kroszner and Strahan 1999). Another impetus may have been the rash of bank and thrift failures in the 1980s, which increased awareness of the advantages of geographically diversified institutions (Kane 1996).

5. The history of reform efforts on nonbank bank activity is compiled from work by Boyd and Graham (1986, 1988), Boyd, Graham, and Hewitt (1993), Ely and Robinson (1998, 1999), McGuire (1996), Mester (1996), and Thomas (1997).

6. For a discussion of the history and issues surrounding these firewalls, see Boyd and Graham (1986).

7. For a further explanation of the legislation and its meaning, see Barth, Brumbaugh, and Wilcox (2000).

8. Morgan (2000) argues that diversification across geographic and product lines within banking can help explain the large number of mergers over the past decade.

9. For a more comprehensive review of the research on these topics, see Berger, Demsetz, and Strahan (1999), Kwan and Laderman (1999), and Santos (1998).

10. In a subsequent study, Boyd, Graham, and Hewitt (1993) explore these same issues by allowing the portfolio weights for each bank-nonbank pair to vary. Because their main conclusions were virtually identical to those of the earlier study, we focus on the earlier findings, which can be compared directly with our results.

11. A recent exception is the work of Laderman (2000). She found that over the 1987-97 period, risk is likely to be reduced when BHCs invest in life insurance, property and casualty insurance, and securities firms. Saunders and Walter (1994) simulated cross-industry mergers using daily stock return data over the 1984-88 period. They concluded that risk reduction is most likely to occur from banks' expansion into insurance, rather than into securities activities.

12. Normality is a strong assumption for the distribution of rates of return. Nevertheless, Z is useful in providing a relative risk ranking across firms and industries.

13. Although it might also be interesting to analyze mergers across medium-size and small firms, mergers across the largest firms would have the biggest effect on the financial services industries as a whole. For this reason, we focus our analysis on the largest firms.

14. Note that with the exception of the 1996 Chase Manhattan-Chemical merger, we did not construct pro-forma balance-sheet data for mergers prior to the time that they occurred. The pro-forma Chase-Chemical data are reported in the database, hence we use them in our study. When we recalculated our statistics—treating banks that merged during the period as a single bank throughout the entire period—we saw that the results were similar and our conclusions remained the same.

15. We also examined mergers between the second largest BHCs and the top ten firms in the other industries. The results were similar to those reported in Table 8, although mergers with securities firms produced a Z-score of 34.17, somewhat lower than the 48.41 reported in the table. Securities firms in our sample typically are larger than this second group of BHCs, a factor that gives the risk of these firms greater weight in the calculation.

16. In the Citigroup merger, the acquirer (Travelers) is categorized as an insurance company, even though about half of its business is in securities through its holdings of Salomon-Smith Barney.

17. We do not mean to imply that the regulation and supervision of these industries are identical across Europe; rather, with some variation in structure and practice, these activities typically are allowed to coexist. See Barth, Nolle, and Rice (1997) for a discussion of differences in bank structure and regulation across the European countries.

18. European banks' return on equity declined from an average of roughly 13 percent in 1982 to less than 10 percent in 1991 (authors' calculations, based on Organization for Economic Cooperation and Development [1993]).

19. For example, Credit Agricole of France began with a loose alliance with two insurance companies that lasted from the 1950s to the early 1970s. Subsequently, it aligned more closely with a single firm, Soravie, but the firms could not agree on how to share profits. Finally, Credit Agricole established its own life insurance company in 1986; since then, business has grown at double-digit rates (Bank Administration Institute and Boston Consulting Group 1999, pp. 32-3).

20. This asymmetry is not apparent in Tables 9 and 10 because the M&A statistics do not reflect de novo entry of banks into insurance.

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