FEDERAL RESERVE BANK OF ST. LOUIS
SUPERVISORY POLICY ANALYSIS WORKING PAPER

Working Paper 2004-05

The Financial Modernization Act:

Evolution or Revolution?

Dr. Timothy J. Yeager
Federal Reserve Bank of St. Louis
P.O. Box 442
St. Louis, MO, 63166
(314) 444-8837
(314) 444-8740 (fax)
Timothy.J.Yeager@stls.frb.org

Dr. Fred C. Yeager
Saint Louis University
John Cook School of Business

Dr. Ellen Harshman
Saint Louis University
Dean, John Cook School of Business

First release: December 2004

This version: June 2005

The Financial Services Modernization Act: Evolution or Revolution?*

Dr. Timothy J. Yeager*
Federal Reserve Bank of St. Louis

Dr. Fred C. Yeager
Saint Louis University

Dr. Ellen Harshman
Saint Louis University

Abstract

The Gramm-Leach-Bliley Act (GLBA) removed the barriers that separated commercial banking from investment banking, merchant banking, and insurance activities. Did this legislation revolutionize the financial services industry by allowing Financial Holding Companies (FHCs) to exploit revenue efficiencies and cost economies, or did it merely formalize an evolutionary process of deregulation that was already well underway? Our evidence refutes the notion that the GLBA was a revolutionary event, at least in the short run. Using a combination of accounting and market data, we find that, to date, FHC status has had little effect on bank performance. We do find, however, limited evidence that FHCs that were Section 20 affiliates before passage of the GLBA were able to further exploit the synergies between investment banking and commercial banking.

JEL Codes: G1, G2

Key Words: Financial holding companies, Bank holding companies, Gramm-Leach-Bliley Act, Financial Services Modernization Act, Glass-Steagall Act

* Dr. Timothy J. Yeager, Federal Reserve Bank of St. Louis, P.O. Box 442, St. Louis, MO, 63166, (314) 444-8837, (314) 444-8740 (fax), Timothy.J.Yeager@stls.frb.org

1. Introduction

In late 1999, Congress enacted the Gramm-Leach-Bliley Act (GLBA), which deregulated the financial services industry by expanding the powers of financial institutions in the United States.[1] As of March 12, 2000, the effective date of the legislation, the GLBA, also known as the Financial Services Modernization Act, allowed for the formation of financial holding companies (FHCs), which were permitted to engage in "any activity that is financial in nature." FHCs can now engage in activities including, but not limited to, loan making and deposit taking, insurance underwriting and other insurance activities, merchant banking, investment banking, brokerage services, and other securities activities.[2]

The biggest potential benefit of the GLBA is that it allows financial institutions to exploit the revenue efficiencies and scale and scope economies that were unavailable before deregulation. These so-called "universal banks" can capture revenue efficiencies, for example, by cross-selling business products such as commercial loans and securities underwriting, or they can cross-sell retail products such as certificates of deposit, brokerage services, and insurance protection. Economies of scale might result from consolidating back-office functions such as information technology and managerial overhead. Economies of scope could accrue because the universal bank can transfer the costly information obtained on a given loan customer to its

[1] We thank Andy Meyer for his data assistance. We also thank Tom King, Ken Spong and seminar participants at Saint Louis University, the Federal Reserve Bank of St. Louis, and the Federal Reserve System Committee on Financial Structure and Regulation for their comments. Any errors or omissions are solely the responsibility of the authors. The views expressed here are those of the authors, not necessarily those of the Federal Reserve Bank of St. Louis or the Federal Reserve System.

[2] In this analysis, investment banking includes all securities activities and brokerage services.

brokerage department when underwriting securities for the same customer. (Kanatas and Qi, 2003) By capturing these economies, financial institutions can pass the benefits on to consumers in the form of lower prices or improved services. Upon signing the legislation, President Clinton declared that it would save consumers billions of dollars a year.[3] Of course, the realized magnitude of these benefits is an empirical issue.

Other analysts argue that the GLBA will have only minor effects on the financial industry because revenue efficiencies and scale and scope economies across financial services are small. To the extent that these economies exist, banking organizations had already found ways to exploit them before March 2000. The legislation simply made it easier for organizations to continue to engage in the activities they had already undertaken. From this perspective, financial services modernization was a rubber stamp on an evolutionary process well underway.

The GLBA has also been criticized for potentially harming consumers and taxpayers. Some worry that the legislation concentrates too much market power in just a few firms, leading to higher prices.[4] Others criticize the legislation for going too far in lifting the barriers between financial industries, exacerbating the risks to the deposit insurance fund (Heller, 2002). Should an FHC non-bank subsidiary suffer significant losses, the holding company may drain equity from the commercial bank to offset the losses, threatening the solvency of the commercial bank and putting the Federal Deposit Insurance Corporation on the hook to cover losses to insured depositors. Still others point to the inherent conflicts of interest that financial institutions face when providing certain combinations of financial services, arguing that tying arrangements and

[3] Anason, Dean, "Clinton Enacts Glass-Steagall Repeal," *American Banker*, November 15, 1999.

[4] See Anason, Dean, "Senate Passes Reform Bill; Gramm Calls for a Sequel," *American Banker*, November 5, 1999. Senator Paul D. Wellstone argued that the GLBA could hurt consumers because the concentration of economic power would lead to higher fees and decreased lending in low-income areas.

other anti-competitive practices now are easier to conduct. Indeed, the role of large financial institutions in fueling the boom-and-bust Enron episode highlights the conflicts of interest that existed between traditional loan activity, investment banking, and equity analysis even before the passage of GLBA (Fortune, 2003). Bankers at some of the largest U.S. financial institutions allegedly engaged in questionable financing arrangements with Enron in return for a promise to receive Enron's investment banking business. In addition, an equity analyst at one financial institution allegedly was fired for giving unfavorable equity ratings to Enron. Three firms—JPMorgan Chase, Citigroup, and Merrill Lynch—recently paid a total of $366 million in fines for their roles in the Enron scandal.

In this paper, we look for evidence that the GLBA led to a financial revolution—defined as significant gains in revenues, or large reductions in costs or risks—by comparing the performance of FHCs before (1996 to 2000) and after (2000 to 2003) passage of the GLBA. Previous studies of the GLBA have found significant risk and return effects, but these studies have relied exclusively on market returns from event studies surrounding passage of the legislation (Al Mamun, Hassan, Son Lai, 2004; Akhigbe, Whyte, 2004).[5] Event studies measure the *ex-ante* returns that rational investors expect the firm to accrue. We are the first to track *ex-post* changes in accounting income and balance sheet ratios. If the short-run gains to profitability and risk are large, they should appear in the banks' bottom line. We supplement accounting data with stock market returns pre- and post-GLBA. Evidence supported by equity returns, however, are suggestive at best because of the evidence that markets priced in equity gains before passage of the GLBA. In addition, returns from event studies over such long windows are likely to be influenced by many factors besides passage of the GLBA.

[5] Carow and Heron (2002) find that bank stock prices were not materially affected by the legislation.

The weight of the evidence suggests that, to date, the GLBA has had little effect on bank revenues, costs, or risks. Although FHCs have expanded somewhat into their newly permissible activities, most FHCs still derive their earnings from traditional banking activities. Synergies between commercial banking, insurance activities, and merchant banking appear to be small. Although synergies between investment banking and commercial banking appear to be larger, many FHCs were already conducting considerable securities activities well before passage of the GLBA, authorized by so-called Section 20 exemptions. It is too early to assess the long-term impacts of the financial modernization legislation; however, early indications suggest that the legislation will have modest effects on the financial services industry.

2. Financial Modernization in Historical Perspective

To place the GLBA in historical context, it is helpful to examine the major legislative developments that influenced the evolution of the U.S. financial sector in the 20th century. The National Banking Act of 1864 permitted banks to engage only in activities that were "incidental" to the business of banking. Insurance activities were excluded from the list of permissible activities. Securities activities, however, were permissible as long as banks conducted these activities in affiliates (White, 1986). Investment banking grew quickly in the 1920s, fueled by the explosion in bond underwriting to finance World War I and a booming economy and stock market in the 1920s.

The stock market crash of 1929 ushered in the Great Depression. Between 1929 and early 1933, over 5,000 banks—20 percent of the total—failed. Because of the perception that banks' involvement in securities activities facilitated the Depression, Congress passed the Glass-Steagall Act of 1933, which prohibited banks from issuing, underwriting, selling, or distributing any type of securities with the exception of U.S. Government and Government Agency

securities, and certain municipal bonds.

Some banks sought to circumvent bank regulations by forming holding companies to which the bank would be sold. The holding company might acquire nonbank subsidiaries such as investment banks and insurance firms and use bank resources to engage in these activities. To close that loophole, Congress passed the Bank Holding Company Act of 1956 which provided that nonbank companies owned by bank holding companies must be engaged in activities "closely related to banking." Such activities were to be decided and defined by the Federal Reserve System. The Douglas Amendment to the Holding Company Act reinforced the geographic restrictions on banks (imposed by states and the McFadden Act) by prohibiting BHCs from controlling banks located outside of their home states unless states explicitly allowed out-of-state holding companies (Kane, 1996).

The Bank Holding Company Act of 1956 also placed strict limits on merchant banking activities by establishing so-called "5 percent subs." BHCs could make passive equity investments in nonfinancial companies up to a limit of 5 percent of the voting shares and 25 percent of the total equity of companies in which they invested. In 1958, the Small Business Investment Act authorized BHCs to provide equity to small businesses through Small Business Investment Corporations (SBICs). BHCs could invest up to 5 percent of their banks' capital in SBICs (Craig, 2001).

By the 1970s, Depression-era conditions had faded from the minds of the American public. Federal deposit insurance and government regulation had restored confidence in financial institutions and reduced the number of depository institution failures to a fraction of their former

numbers.[6] In turn, the rationales for the geographic restrictions imposed on banks and for the compartmentalization of the financial sector were questioned. A number of government-mandated studies were released calling for deregulation and greater reliance on market forces.[7] In addition, several studies argued that securities activities of commercial banks were not significant factors leading to the banking crises during the Great Depression (White, 1986; Ang and Richardson, 1993; Kroszner and Rajan, 1994 and 1997).

Geographic restrictions on banks and BHCs were removed first. These restrictions were relaxed state-by-state in the 1980s and early 1990s, culminating in the Riegle–Neal Interstate Banking and Branching Efficiency Act of 1994. This Act ushered in widespread interstate branch banking by permitting bank holdings companies to acquire banks in other states and, beginning in 1997, to consolidate bank charters.

Like the geographic restrictions, Glass-Steagall provisions were lifted gradually. Under Section 20 of the Act, banks were prohibited from affiliating with other financial institutions that were "engaged principally in the issue, floatation, underwriting, public sale, or distribution of financial assets." Over the years however, the term "engaged principally" became subject to re-interpretation. Through a series of court rulings and Federal Reserve Board interpretations, the type of securities and the proportion of assets that bank affiliates could devote to these securities were broadened. By 1996, bank affiliates were allowed to underwrite up to 25 percent of revenue in corporate bond and equity issues. Virtually all large bank holding companies had subsidiaries that were termed "Section 20 Securities Affiliates." By late 1999, with passage of

[6] In 1934, the number of bank failures declined to 61. Beginning in 1943, and for the next three decades, the number of bank failures was less than ten per year.

[7] See, for example, Bentson (1972).

the GLBA imminent, the number of Section 20 Banks stood at 45. Table 1 lists these organizations.

Given the gradual breakdown of Glass-Steagall and the merger-led growth of BHCs in the mid-1990s, the largest banking organizations pressed for Congressional action to repeal fully Glass-Steagall and other barriers in the hopes of further exploiting revenue efficiencies and economies of scale and scope. Indeed, Citigroup received a temporary exemption in September 1998 from the Federal Reserve to purchase Travelers Insurance, with the expectation that Congress would act before the exemption expired. On November 12, 1999, laws separating commercial banking, investment banking, merchant banking, and insurance activities for U.S. institutions were effectively removed with the enactment of the Gramm-Leach-Bliley Act. Banking organizations are now allowed to form FHCs and engage in any activity that is financial in nature.

To become an FHC, a banking organization must notify the Federal Reserve of its intention. To be eligible, each depository institution controlled by the company must be well capitalized and well managed as of the date the company submits its declaration, and it must have a satisfactory Community Reinvestment Act (CRA) rating. An election to become an FHC is effective on the 31st day after the date that the declaration was received unless the Board of Governors notifies the company prior to that time that the election is ineffective.

3. Comparison of FHCs and BHCs

To gain an understanding of the similarities and differences between financial holding companies (FHCs) and bank holding companies that have not elected to become FHCs (BHCs), we compare various performance and condition measures.[8] Our dataset includes all top-tier

[8] Although FHCs are technically also BHCs, we treat these groups as mutually exclusive.

domestic banking organizations (whether they are FHCs or not) that file the Federal Reserve's FR Y-9C—the Consolidated Financial Statements for Bank Holding Companies. By including only top-tier organizations, we avoid double counting parent companies and their subsidiaries. Mandatory Y-9C reporters include all domestic BHCs and FHCs with total consolidated assets of at least $150 million. Our sample consists of quarterly data between March 1996 and December 2003. This sample excludes several large foreign banking organizations that do not have domestically chartered BHCs, and it excludes most small domestic BHCs with consolidated assets less than $150 million. The post-GLBA sample includes 29,043 quarterly observations, 5,692 of which are for FHCs. In addition to the FR Y-9C and its supplement, the FR Y-9CS, we utilize the Federal Reserve's FR Y-12—the Consolidated Bank Holding Company Report of Equity Investments in Nonfinancial Companies—to obtain merchant banking information. Finally, we obtain monthly equity returns of publicly traded BHCs over the sample period from the Center for Research in Securities Prices (CRSP) data set.

We begin by describing the growth in the number of FHCs since the passage of the GLBA. As Figure 1 illustrates, the number of top-tier Y-9C filers increased rapidly from 94 in March 2000 to 442 in December 2003. Since their formation, FHCs have accounted for a significant share of total banking assets because most large banking organizations elected to become FHCs shortly after passage of the GLBA. In March 2000, FHCs accounted for 46 percent of all domestic BHC assets; their share in December 2003 was 57 percent.

Summary statistics show that FHCs are distinct from BHCs in several ways. Of course, such comparisons are simply descriptive with no implications for causality because they do not control for the endogenous decision by an organization to become an FHC nor for the effects of other variables that effect performance such as size. Table 2 lists equally-weighted quarterly

balance sheet, income, and performance ratios for all FHCs and BHCs between January 2000 and December 2003. Not surprisingly, FHCs are much larger than BHCs. FHCs have average total assets of nearly $16.9 billion while BHCs have average total assets of just over $1 billion.

Balance sheet ratio differences between FHCs and BHCs are statistically significant but economically small. FHCs have an average loan-to-asset ratio of 64.0 percent, just 1.2 percentage points less than BHCs. FHCs have slightly fewer securities and deposits, but relatively more trading assets and liabilities.[9] Equity at FHCs is 18 basis points higher than at BHCs.

On average, FHCs are more profitable than BHCs, and they rely more heavily on noninterest revenue sources. Quarterly annualized return on equity (ROE) is 12.55 percent at FHCs, 91 basis points higher than ROE at BHCs, and the difference is statistically significant at the one percent level. FHCs earn 17 basis points less in net interest income than BHCs; however, they more than make up this difference through higher noninterest income. Specifically, FHCs earn an average 1.79 percent of assets in noninterest income, compared with noninterest income of 1.19 percent at BHCs. This difference undoubtedly reflects the more diverse activities of FHCs as brokers and underwriters, compared with the more traditional lending activities of BHCs. Noninterest expense, however, is also higher at FHCs by 36 basis points, which dampens profitability.

Despite having greater net income than BHCs, FHCs do not appear to be more cost efficient. The efficiency ratio is defined as noninterest expense divided by the sum of net interest income and noninterest income. Intuitively, this ratio indicates the overhead expense

[9] Trading assets and liabilities primarily are securities held for short-term gain or for market-making purposes.

necessary to generate $1 in operating income.[10] Lower efficiency ratios, therefore, indicate better performance. The average efficiency ratio at FHCs is 64.6 percent, nearly identical to the BHC efficiency ratio.

Two measures of credit quality show little difference between FHCs and BHCs. Net chargeoffs (total chargeoffs less recoveries) to total loans are nearly identical, and nonperforming loans (loans 90 days or more past due or non-accruing) to total loans at FHCs are just 5 basis points lower than the same ratio for BHCs.

Stock market data fail to reveal statistically significant differences between FHCs and BHCs. To calculate returns, we obtained the 36 monthly stock returns between January 2000 and December 2002 for each publicly traded organization in our sample. Firms were classified as either FHC or BHC depending on their status as of December 2002; organizations without all 36 observations were excluded. We calculated the three-year holding-period geometric return, including dividends. FHCs earned a three-year average annual return of 15.4 percent compared with a 17.1 percent return for BHCs. The difference, however, is statistically insignificant.

Of course, one explanation for the similar stock returns is that the gradual deregulation of financial services before passage of the GLBA allowed many banks that eventually became FHCs to exploit the synergies. Indeed, Carow and Heron (2002) find that the stock prices of both small and large banks were unaffected by the legislation because the major benefits to banks from product-line diversification were already impounded into bank stock prices before passage of the legislation. Other researchers have found evidence that bank stocks benefited from pre-GLBA securities events. Cyree (2000) studied the market reaction to the 1996 Federal Reserve Board announcement that increased the permissible revenue limit that BHCs could earn

[10] Operating income measures earnings from core activities. It excludes securities gains, extraordinary gains, and income taxes.

from previously ineligible securities activities to 25 percent. He found that banks, especially large banks and Section 20 banks, had positive and significant abnormal returns following this announcement. Bhargava and Fraser (1998) studied the market response to four Federal Reserve Board decisions to allow bank holding companies to engage in investment banking through Section 20 subsidiaries. They found positive abnormal returns for commercial banks from the initial powers granted by the Federal Reserve, but subsequent expansions of these powers produced negative abnormal returns. Comparison of post-GLBA stock market returns, therefore, may be misleading because they fail to incorporate the gradual process of deregulation before implementation of the GLBA.

In addition to comparing returns directly, we utilize equity returns to estimate firm betas. Lower betas imply lower systematic risk, all else equal. FHC activities may help to reduce overall firm risk by allowing firms to diversify to an extent not allowed beforehand. Conversely, FHCs are able to enter into riskier business lines such as investment and merchant banking, which may increase overall risk. FHC betas, then, may be higher or lower than BHC betas. To calculate betas, we regress, by firm, monthly equity returns (relative to the risk-free rate) on the S&P market index over the January 2000 to December 2002 time frame. We then average the FHC betas and the BHC betas, respectively. The results appear in Table 2. On average, FHC betas are slightly higher than BHC betas; FHC betas average 0.31 while BHC betas average 0.27.[11] The difference, however, is statistically insignificant. In sum, the stock market evidence suggests either that the market already factored in the gains to firms becoming FHCs before implementation of the GLBA, or the market did not expect FHC status to boost firm profits or reduce risk significantly.

One indication of the weak response of the banking industry to the GLBA is that, to date, FHCs are involved only modestly in their new universal banking powers to conduct investment banking, insurance underwriting, and merchant banking. On average, FHCs are more heavily involved in investment banking than in insurance and merchant banking. On an equally-weighted basis, as Table 2 illustrates, the percentage of assets in securities subsidiaries was 0.95 between 2000 and 2003; the percentages of assets in insurance and merchant banking subsidiaries were just 0.24 and 0.10, respectively. In addition, income from these expanded activities is modest. FHCs earned 0.28 percent of assets in investment banking activities, but just 0.10 percent of assets from insurance activities, and 0.04 percent of assets from equity investments.

A possible explanation for the similar condition and performance of FHCs and BHCs is that the cost of becoming an FHC is extremely low. The process does invite additional regulatory scrutiny because each depository institution in the organization has to be consistently well managed and capitalized. However, banks on average have been in remarkably good shape since 1993. Many organizations that became FHCs may have had no intention of becoming universal banks in the short run. Indeed, of the 524 distinct FHCs in our sample, 151 (28.8%) of them derived no income from, nor held any assets in, insurance underwriting, merchant banking, and investment banking activities.

Because only a handful of the largest FHCs are involved significantly in investment banking, insurance underwriting, and merchant banking activities, it makes sense to examine these activities on an asset-weighted basis. On this basis, FHC involvement in new activities is more significant. Figure 2 plots FHC investment banking subsidiaries, insurance underwriting

[11] Although these market betas seem low, they are similar to estimates from other sources. For example, Fidelity Investments (Fidelity.com) reports a beta of 0.6 for Bank of America and 0.2 for Wells Fargo between 2002 and

subsidiaries, and merchant banking investments as a percent of total assets. Investment banking subsidiaries—those that underwrite or deal in securities—are the largest cohort, accounting for between 9 and 14 percent of assets over the 2000 to 2003 time period. As of December 2003, FHC assets in investment banking subsidiaries totaled $626 billion. Three organizations—Citigroup, Bank of America, and JPMorgan Chase—account for 73 percent of those assets, and another six organizations account for an additional 22 percent of assets. Forty-seven FHCs in total report at least some involvement in investment banking.

Insurance underwriting subsidiaries make up the next largest category of FHC-expanded activities. These subsidiaries account for an average of more than 4 percent of assets, although the insurance activity increased significantly in the first quarter of 2002 when MetLife became an FHC. Concentration in this industry is even higher than in the investment banking industry. As of December 2003, just two firms—MetLife and Citigroup—account for 97 percent of the $408 billion in insurance assets. In all, 25 FHCs are engaged in at least some insurance underwriting.

Merchant banking is the newly expanded activity that FHCs have utilized the least. Indeed, as Figure 2 illustrates, merchant banking investments as a percent of total FHC assets are tiny, never exceeding 0.3 percent. As of year-end 2003, merchant banking investments across FHCs summed to just $10.5 billion. Five organizations account for 80 percent of these assets. Fifteen FHCs in total are engaged in merchant banking activity.

FHC revenues from insurance activities, investment banking, and merchant banking have been modest. Figure 3 depicts asset-weighted revenues of BHCs and FHCs by source in 2003. As we would expect, BHCs earned very little revenue (25 basis points as a percent of assets) from these three activities. FHCs, on the other hand, earned 111 basis points in revenue,

---

2005.

primarily from investment banking (60 basis points) and from insurance activities (51 basis points). The last column in Figure 3, however, puts this investment banking and insurance revenue into context. In 2003 FHCs earned total revenues equal to 7.20 percent of assets. Revenues from FHCs' newly permitted activities, therefore, constitute only 15.4 percent (1.11 / 7.20) of total FHC revenues.

In sum, FHCs to date are not that different from more traditional banking organizations. FHCs are larger and slightly more profitable than BHCs, and they earn a higher portion of revenues from noninterest income sources. Their balance sheets, however, are quite similar to BHC balance sheets, along with credit quality, efficiency ratios, and stock market returns. Finally, the reach of FHCs into investment banking, insurance underwriting, and merchant banking is limited. Only a handful of the largest FHCs have engaged significantly in these new activities.

4. FHC Performance Before and After Financial Modernization

A key rationale for the GLBA was to give financial institutions the ability to capture additional revenue and cost economies. In this section, we look for evidence that FHCs have been able to achieve these economies by comparing accounting ratios before and after passage of the GLBA.[12] Specifically, we select only those banking organizations that became FHCs by the end of 2003 and existed in each quarter between 1996 and 2003. We run fixed-effect panel regressions of the following form:

[12] In theory, a two-stage least squares procedure could be used to examine the effects of FHC status in the post-GLBA era. To do so requires instrumental variables that influence the decision to become an FHC but are uncorrelated with bank performance. Such instruments are not available. Instead, we explore the effect of FHC status on a given organization using a fixed-effects regression approach.

$$BP_{it} = \alpha_i + \beta\, FHC_{it} + \gamma\, LogTA_{it} + \sum_{t=2}^{N} \eta_t\, Date_t + e_{it} \qquad (1)$$

where *BP* is the bank performance variable; *FHC* is the indicator variable equal to one if the firm is an FHC and zero otherwise; *LogTA* is the log of total assets; and *Date* is a vector of quarterly time dummies that controls for business cycle influences.[13] The bank-level coefficients, α_i, control for firm-specific time-invariant factors such as location and managerial talent that influence bank performance both before and after passage of the GLBA. The *FHC* coefficient is the one of primary interest. A statistically significant coefficient would suggest that FHC status has a discernable effect on FHCs' condition or performance.

Regression results in Panel A of Table 3 show that FHC status has little effect on holding company performance. The *FHC* coefficients for three of the six balance sheet dependent variables—securities, trading assets, and equity—are statistically significant at the five and ten percent levels, respectively, but the economic significance of the coefficients is small. The 52 basis-point increase in the ratio of securities to assets at FHCs is just 2.3 percent of the average amount of securities held by FHCs. In addition, the 17 basis-point increase in equity to assets at FHCs represents just 1.8 percent of the average equity to asset ratio. The *FHC* coefficients for the income variables are statistically insignificant, although they move in expected directions. Interest income declines by 4 basis points at FHCs while noninterest income increases 9 basis points. ROA and ROE decline by 2 basis points and 34 basis points, respectively. Other performance indicators tell a similar story. Although statistically insignificant, the efficiency ratio is 18 basis points higher for FHCs, suggesting that cost economies are small. Credit risk measures—chargeoffs and nonperforming loans—are essentially unchanged at FHCs. These

[13] The first time dummy is excluded to avoid multicollinearity with the firm-level intercepts.

results suggest that banking organizations that ultimately became FHCs in the post-GLBA era showed little change in performance or risk relative to their pre-FHC performance.

We would expect that banking organizations are responding to the GLBA provisions gradually over time. Equation (1), however, does not control for the length of time a firm is an FHC. To do so, we replace the *FHC* variable with *FHCAGE*, where *FHCAGE* is the number of quarters that the firm has been an FHC.[14] Results are reported in Panel B of Table 3.

As expected, the balance-sheet coefficients on *FHCAGE* are more statistically and economically significant than the coefficients on the *FHC* indicator variable. For example, the ratio of loans to assets drops by 28 basis points for each quarter that a firm is an FHC. The average firm that is an FHC for the entire 16 quarters in the post-GLBA sample would experience a drop in the loan-to-asset ratio of 4.5 percentage points. In addition, a four-year FHC would experience an increase in security-to-asset ratio of 2.7 percentage points, and the equity-to-asset ratio would rise by 48 basis points.

The regressions with dependent income variables show that the length of time a firm was an FHC had little effect on earnings. Interest expense falls by 1 basis-point, noninterest expense increases by 2 basis-points, provision expense increases by 1 basis-point, and return on equity decreases by 10 basis points for each quarter a firm is an FHC. Because earnings changed little after a firm became an FHC, the lower ROE must be driven by the higher capital held at FHCs. Finally, efficiency ratios and nonperforming loans to total loans increase 14 basis points and 3 basis-points, respectively, each quarter a banking organization is an FHC. Again, the evidence refutes the notion that FHCs are more cost-efficient than they were before becoming FHCs.

[14] We also experimented with the squared value of *FHCAGE*—in place of and in addition to the *FHC* variable—to control for the possibility that the age effects are nonlinear. The results were not sensitive to the specification used.

Stock market returns, reported in Table 4, show that FHC returns declined in the post-GLBA era, even when compared with peer returns. Between 1996 and 1998, three-year average annual equity returns at firms that eventually became FHCs registered 28.4 percent, exceeding equity returns at other BHCs by 3.3 percentage points. From 2000 to 2002, however, three-year returns at FHCs fell to 15.4 percent, 1.7 percentage points lower than returns at BHCs. The inter-period change in average annual returns relative to BHCs, then, is -5.0 (-1.7 – 3.3) percentage points, a statistically significant decline.

A decline in systemic risk at FHCs cannot account for the lower FHC returns because relative FHC betas did not change significantly after passage of the GLBA.[15] As Table 4 shows, the average beta at future FHCs was 0.85 between 1996 and 1998, 0.23 higher than the beta at BHCs that did not become FHCs. In the 2000 to 2002 period, FHC betas were 0.31, 0.05 higher than BHC betas. The inter-period difference relative to BHCs of -0.18 is statistically insignificant. Again, the lower post-GLBA returns are consistent with two stories. Either FHCs experienced abnormal positive returns in the pre-GLBA era, or market participants did not anticipate stronger earnings potential at FHCs relative to BHCs.

In sum, banking organizations that ultimately became FHCs in the post-GLBA era showed little change in condition and performance relative to the pre-GLBA era. Balance sheet and income measures changed little, equity returns declined, and changes in betas did not reflect significant changes in firm risk. These results, combined with the low levels of insurance and merchant banking activities in FHCs described in the previous section, suggest that either the

[15] Akhigbe and Whyte (2004) find that all banking organizations experienced an increase in idiosyncratic risk as measured by an increase in the variance of stock returns following passage of the GLBA. However, they fail to find evidence that FHCs increased risk by more than BHCs.

synergies between commercial banking, insurance underwriting, and merchant banking are modest, or these synergies take longer than four years to materialize. The synergy between commercial banking and investment banking requires additional analysis for reasons we describe below.

5. Performance Analysis of Section 20 vs. Non-Section 20 FHCs

In this section, we examine separately the effects of the GLBA on Section 20 FHCs and non-Section 20 FHCs to isolate better the synergies between commercial banking and investment banking. We define Section 20 FHCs as those organizations that had Section 20 powers prior to passage of the GLBA and subsequently chose to become FHCs. Non-Section 20 FHCs are organizations that became FHCs but did not have Section 20 exemptions before passage of the GLBA.

There are three possible explanations for the regression results above that examined FHCs as a single cohort and found few synergies between commercial banking and investment banking. First, synergies between investment banking and commercial banking may be small. A second possibility is that Section 20 FHCs may have already exhausted the synergies before passage of the GLBA by utilizing their investment banking powers granted by the Federal Reserve beginning in 1986. These explanations suggest either that the GLBA was unimportant or it formalized a process already well underway. However, a third possibility is that the non-Section 20 FHCs in the regressions may have masked more significant changes within the Section 20 FHCs because just 20 of the 198 banking organizations in the sample were Section 20

organizations.[16] It could be the case that only those firms with previous securities activities (through Section 20 exemptions) were in a position to take immediate advantage of the new universal banking powers. If so, a separate analysis of the effect of the GLBA on Section 20 banks should reflect better the synergies between investment banking and commercial banking.

There is some evidence that banking organizations responded favorably to Section 20 exemptions before passage of the GLBA. Cornett, Ors, and Tehranian (2002) found that Section 20 status boosted the performance of BHCs between April 1987 and December 1997. The authors found that in the three years after the establishment of a Section 20 subsidiary, pretax cash flow performance increased significantly relative to non-Section 20 banks and investment banks. They concluded that the changes in regulation allowing commercial banks to diversify their activities into investment banking have resulted in increased performance relative to the risk being undertaken. We explore whether any performance advantage materialized after passage of the GLBA.

Summary statistics shown in Table 5 reveal significant differences between Section 20 and non-Section 20 banks in the post-GLBA era. The table contains equally-weighted quarterly income and balance sheet ratios for the years 2000 through 2003 for each group of banks. Section 20 FHCs enjoy a tremendous size advantage; they have, on average, $177.7 billion more in assets than their counterparts. In addition, they hold fewer loans, deposits, and equity. Net interest income is 89 basis points lower, and noninterest income is 1.20 percentage points higher than the same ratio at non-Section 20 banks. In addition, efficiency ratios are higher and loan

[16] Out of 45 firms that had Section 20 exemptions as of December 31, 1999, 20 are included in our regression sample, 15 are foreign banking organizations without a domestic holding company, 3 merged out of existence, 2 never became FHCs, and 5 did not exist in each quarter between 1996 and 2003.

quality is lower at Section 20 FHCs. The average annual stock market return between 2000 and 2002 was just 3.1 percent for Section 20 FHCs, compared with a 17.2 percent return for non-Section 20 FHCs. This result is consistent with Carow and Heron (2002) who fail to find significant abnormal returns from Section 20 banks upon passage of the GLBA. They conclude that firms with Section 20 subsidiaries prior to the GLBA will not retain important first-mover advantages in the post-GLBA era.

Summary statistics do not control for the influence that pre-GLBA Section 20 status had on the condition and performance of FHCs. To control for this effect, we run the following fixed-effects panel regression on quarterly data between 1996 and 2003:

$$BP_{it} = \alpha_i + \beta\, FHCAGE_{it} + \omega(FHC_{it}\ x\ S20_{it}) + \gamma\, LogTA_{it} + \sum_{t=2}^{N} \eta_t\, Qtr_t + e_{it} \qquad (2)$$

where the familiar variables are the same as described above and *FHC x S20* is an interactive term that is equal to a value of one if the firm is an FHC in a given quarter and was a Section 20 bank in December 1999, and zero otherwise.[17] The bank sample includes the same 198 banking organizations from the equation (1) regression. The interactive term is the variable of interest. Statistically and economically significant coefficients would suggest that FHCs that were previously Section 20 banks responded differently to the GLBA than FHCs that were not previously Section 20 banks. Regression results are in Table 6.

The results in Table 6 provide some indication that Section 20 FHCs reacted differently to the GLBA than other FHCs, but there is no evidence to support profit or cost advantages. Section 20 FHCs sharply reduced their loan holdings by 6.9 percentage points and they increased securities holdings by 3.1 percentage points. In addition, the ratio of equity to assets increased

[17] A section 20 indicator variable is not included in equation (2) because the effects of that variable are captured completely by the fixed-effects intercepts.

by 42 basis points. All of these changes are statistically significant at the one percent level. Interest income decreased by a statistically significant 51 basis points, although noninterest income increased by just 16 basis points, a statistically insignificant change. ROA was 6 basis points lower for Section 20 FHCs, also a statistically insignificant change. ROE at Section 20 FHCs, however, was 1.90 percentage points lower than other FHCs. Finally, the efficiency ratio at Section 20 FHCs was a statistically insignificant 52 basis points lower than the ratio at non-Section 20 FHCs, suggesting that the Section 20 FHCs did not experience significant cost advantages relative to other FHCs following passage of the GLBA.

In sum, our analysis suggests that the effects of the GLBA on Section 20 FHCs were modest, but certainly larger than the effects on non-Section 20 FHCs. Although Section 20 FHCs do not appear to be more profitable or cost effective than other FHCs, they do appear to be repositioning themselves to exploit presumed synergies between investment banking and commercial banking. Some anecdotal evidence indicates that these synergies are developing. A recent *New York Times* article documented the relative decline of two stand-alone investment banks—Merrill Lynch and Morgan Stanley—relative to the investment banks that are part of banking organizations such as Citigroup and JPMorgan Chase.[18] Interestingly, Kanatas and Qi (2003) assert that the economies of scope that promote the universal banking structure will simultaneously reduce investment-banking innovation. They argue that a failed securities offering by a universal bank will not harm the bank as much as it would harm a specialized investment banker because the universal bank's knowledge of the customer allows it to make the

[18] Thomas, Landon, "The Incredible Shrinking Investment Bank," *New York Times*, October 17, 2004. The animation studio DreamWorks proved a specific example of how JPMorgan Chase was able to use its bank relationship with the firm to win the investment banking business.

customer a loan with competitive terms. In contrast, a specialized investment bank has more to lose if the security offering fails. Whether the GLBA affects innovation in the long run is not clear. What is clear is that the GLBA to date has not caused a financial revolution; rather, it has contributed to the deregulation of financial markets and institutions within the U.S. with remarkably little impact.

6. Conclusion

One justification for the Gramm-Leach-Bliley Act of 1999 was to provide new opportunities to financial institutions to exploit revenue efficiencies and economies of scale and scope by becoming universal banks. We fail to find evidence, however, that FHCs were able to capture significant and immediate benefits from this legislation. A comparison of FHCs and BHCs between 2000 and 2003 reveals few differences in key performance ratios. Moreover, FHCs do not seem to have improved performance significantly in the post-GLBA era relative to the pre-GLBA era. This evidence supports the view that although the GLBA was a further step in the evolutionary process of financial deregulation, it did not revolutionize the financial services industry. Indeed, our results are consistent with that of Santomero (2001), who argues that financial modernization is not a single event or law, but rather a relentless process of eroding the constraints placed on the financial marketplace during the Great Depression.

One partial explanation for banks' reluctance to enter the insurance, investment banking, and merchant banking arenas could be the unfortunate series of three events following passage of the GLBA. First, the NASDAQ index dropped precipitously beginning in the Spring of 2000. Second, the economy slipped into recession in March of 2001. Finally, the terrorist attacks on the World Trade Center occurred on September 11, 2001. Each of these events could have negatively affected banks' appetite for engaging in new activities. Although it is impossible to

conduct a counterfactual analysis in an environment without these events, we believe that if synergies were strong enough, FHCs would have acted to exploit them despite these negative shocks.

A key implication of this study is that consumers are not likely to benefit significantly in the short term from lower prices or improved services offered by FHCs because revenue and cost efficiencies appear to be small. The financial services industry is slowly evolving and adjusting to the new legislation; therefore, products and prices are likely to change slowly as well.

This study, like many others that study cost economies and revenue efficiencies in financial services, continues to pose the paradox that banking organizations are growing and financial deregulation is occurring despite the inability of researchers to identify clear benefits. A key task for future research is either to identify the benefits or to understand better why the demand for expansion and deregulation in financial services is so strong if the gains to banking organizations are modest.

References

Akhigbe, Aigbe and Ann Marie Whyte, "The Gramm-Leach-Bliley Act of 1999: Risk Implications for the Financial Services Industry," *The Journal of Financial Research*, Vol 27(3), (2004) 435--446.

Al Mamun, Abdullah, M. Kabir Hassan, and Van Son Lai, "The Impact of the Gramm-Leach-Bliley Act on the Financial Services Industry," *Journal of Economics and Finance*, Fall 2004, Vol. 25(3), pp. 333-347.

Ang, James S. and Terry Richardson, "The Underwriting Experience of Commercial Bank Affiliates Prior to the Glass-Steagall Act: A Reexamination of Evidence for Passage of the Act," *Journal of Banking and Finance*, 1994, Vol 18, pp. 351-395.

Ben-Amos, Omni, "A Decade later, Section 20s Attract Wider Range of Banks," *American Banker* Vol. 162, Issue 216, (November 1997), p. 7.

Benston, George J., "Discussion of the Hunt Commission Report," *Journal of Money, Credit & Banking* November 1972, Vol.4 (4).

Bhargava, Rahul and Donald Fraser, "On the Wealth and Risk Effects of Commercial Bank Expansion Into Securities Underwriting: An Analysis of Section 20 Subsidiaries," *Journal of Banking and Finance* 22 (1998) 447--465.

Carow, Kenneth and Randall Heron, "Capital Market Reactions to the Passage of the Financial Services Modernization Act of 1999," *Quarterly Review of Economics and Finance* 42, (2002), 465--485.

Cornett, Marcia, Evren Ors, and Hassan Tehranian, "Bank Performance around the Introduction of a Section 20 Subsidiary," *The Journal of Finance* Vol. LVII, No. 1, (February 2002) 501--522.

Craig, Valentine V., "Merchant Banking: Past and Present," FDIC Banking Review, Federal Deposit Insurance Corporation, 14-1 (2001) 29--36.

Cyree, Ken, "The Erosion of the Glass-Steagall Act: Winners and Losers in the Banking Industry," *Journal of Economics and Business* 52 (2000) 343--363.

Heller, Michele, "'03 Regulatory Outlook Suddenly Unsettled," *The American Banker* (November 2002).

Kanatas, George and Jianping Qi, "Integration of Lending and Underwriting: Implications of Scope Economies," *Journal of Finance*, June 2003, Vol. 63(3), pp. 1167-1191.

Kane, Edward J. "De Jure Interstate Banking: Why only now?" *Journal of Money, Credit & Banking*; May 1996, Vol. 28(2).

Kroszner, Randall S. and Raghuram G. Rajan, "Organization Structure and Credibility: Evidence from Commercial Bank Securities Activities before the Glass-Steagall Act," *Journal of Monetary Economics*, August 1997, V. 39(3), pp. 475-516.

Kroszner, Randall S. and Raghuram G. Rajan, "Is the Glass-Steagall Act Justified? A Study of the U.S. Experience with Universal Banking before 1933," *American Economic Review*, September 1994, V. 84(4), pp. 810-832.

McLean, Bethany and Peter Elkind, "Partners in Crime," *Fortune* Vol. 148 Issue 9 (October 2003) 78--100.

Santomero, Anthony, "The Causes and Effects of Financial Modernization," Speech to Pennsylvania Bankers Association (May 2001).

White, Eugene, "Before the Glass-Steagall Act: An Analysis of the Investment Banking Activities of National Banks," *Explorations in Economic History* 23 (1986) 33--55.

Table 1
Section 20 Banking Organizations as of December 31, 1999

ABN AMRO BANK, N.V.
BANCO BILBAO VIZCAYA, S.A.
BANCO SANTANDER CENTRAL HISPANO
BANK OF AMERICA
BANK OF MONTREAL
BANK OF NEW YORK COMPANY, INC.
BANK OF NOVA SCOTIA
BANK ONE CORPORATION
BANQUE NATIONALE DE PARIS
BARCLAYS BANK PLC
BB&T CORPORATION
BOK FINANCIAL CORPORATION
CANADIAN IMPERIAL BANK OF COM
CHASE MANHATTAN
CITIGROUP
COMMERCE BANCORP
CULLEN/FROST BANKERS, INC.
DEUTSCHE BANKS AG
DRESDNER BANK AG
FIFTH THIRD BANCORP
FIRST SECURITY CORPORATION
FIRST UNION CORPORATION
FLEETBOSTON FINANCIAL CORPORATION
HSBC HOLDINGS PLC
HUNTINGTON BANCSHARES, INC.
J.P. MORGAN & CO.
KEYCORP
MELLON BANK CORPORATION
NATIONAL CITY CORPORATION
NATIONAL WESTMINSTER BANK PLC
PNC FINANCIAL SERVICES GROUP
ROYAL BANK OF CANADA
SABAN/REPUBLIC NEW YORK CORP.
SAN PAOLO-IMI SPA
SANWA BANK LTD.
SOCIETE GENERALE
SOUTHTRUST CORPORATION
STATE STREET CORPORATION
SUNTRUST BANKS, INC.
TORONTO-DOMINION BANK
U.S. BANCORP
UMPQUA HOLDINGS CORPORATION
UNION BANK OF SWITZERLAND
WACHOVIA CORPORATION
WELLS FARGO & COMPANY

Source: Federal Reserve Board of Governors

Table 2
Summary Statistics and Differences in Means Between FHCs and BHCs
2000 through 2003

	FHCs		BHCs		Difference in Means Test
Size	N	Mean	N	Mean	Difference
Total assets (000s)	5692	16,854,370	23,351	1,044,447	15,809,924 ***
Balance Sheet (percent of total assets)					
Loans	5691	63.95	23,351	65.18	-1.23 ***
Securities	5691	22.20	23,351	23.20	-1.00 ***
Trading assets	5634	0.57	22,771	0.03	0.54 ***
Deposits	5692	76.39	23,351	80.97	-4.57 ***
Trading liabilities	5632	0.24	22,716	0.00	0.24 ***
Equity	5692	9.30	23,351	9.12	0.18 **
Income (percent of average assets)					
Interest income	5611	6.25	22,910	6.61	-0.36 ***
Interest expense	5611	2.53	22,910	2.72	-0.19 ***
Net interest income	5611	3.72	22,910	3.89	-0.17 ***
Noninterest income	5611	1.79	6,140	1.19	0.60 ***
Noninterest expense	5611	3.62	22,910	3.27	0.36 ***
Provision expense	5602	0.30	22,838	0.34	-0.04 ***
Net income (ROA)	5611	1.17	22,910	1.09	0.08 ***
Return on equity (ROE)	5611	12.55	22,910	11.64	0.91 ***
FHC Expanded Activities (percent of assets)					
Securities subsidiary assets	5509	0.95	10,942	0.00	0.95 ***
Insurance subsidiary assets	5504	0.24	10,948	0.00	0.24 ***
Investments held under merchant banking authority	2439	0.10	51	0.00	0.10 ***
Property & casualty underwriting assets	3349	0.06	11,679	0.00	0.06 ***
Life and health underwriting assets	3340	0.28	11,676	0.00	0.28 ***
Inv banking, advisory, brokerage, underwriting fees &commissions	4727	0.28	16,980	0.03	0.25 ***
Underwriting income from insurance and reinsurance activities	1726	0.03	16,666	0.00	0.03 ***
Income from other insurance and reinsurance activities	1732	0.07	6,115	0.04	0.04 ***
Impact on net income from all equity investments	198	0.04	80	-0.02	0.06
Performance (percent)					
Average annual stock market return (2000-2002)	92	15.4	165	17.1	-1.7
Stock market betas (2000-2002)	110	0.31	272	0.27	0.04
Efficiency ratio	5601	43.6	22,910	41.7	1.91 ***
Net chargeoffs to total loans	5593	0.34	22,856	0.35	-0.01
Nonperforming loans to total loans	5688	0.90	23,331	0.95	-0.05 ***

*, **, *** statistically significant at the 10, 5 and 1 percent levels, respectively.

Table 3
Fixed-Effect Regression Results of FHC Status on Bank Performance

Key independent variable:	Panel A: FHC Status					Panel B: Number of quarters bank is FHC				
Balance Sheet (percent of total assets)	FHC	T-value	Pr > |t|	N	R^2	FHCAGE	T-value	Pr > |t|	N	R^2
Loans	-0.17	-0.61	0.543	6335	0.05	-0.28 ***	-6.81	0.000	6335	0.06
Securities	0.52 **	1.98	0.05	6328	0.10	0.17 ***	4.48	0.000	6328	0.11
Trading assets	0.09 *	1.88	0.060	6276	0.01	0.05 ***	6.26	0.000	6276	0.02
Deposits	-0.34	-1.61	0.108	6335	0.26	0.08 ***	2.72	0.007	6335	0.26
Trading liabilities	-0.01	-0.39	0.693	6272	0.01	0.02 ***	4.43	0.000	6272	0.01
Equity	0.17 *	1.88	0.060	6335	0.11	0.03 **	2.37	0.018	6335	0.11
Income (percent of average assets)										
Interest income	-0.04	-0.91	0.363	6328	0.65	0.00	-0.37	0.708	6328	0.65
Interest expense	-0.01	-0.67	0.500	6328	0.82	-0.01 **	-2.05	0.041	6328	0.82
Net interest income	-0.02	-0.83	0.409	6328	0.18	0.00	1.12	0.262	6328	0.18
Noninterest income	0.09	1.21	0.225	6328	0.03	0.01	0.94	0.346	6328	0.03
Noninterest expense	0.08	1.16	0.247	6328	0.01	0.02 *	1.8	0.072	6328	0.01
Provision expense	0.01	0.47	0.638	6326	0.05	0.01 ***	3.47	0.001	6326	0.05
Net income (ROA)	-0.02	-0.47	0.640	6328	0.03	-0.01	-1.23	0.220	6328	0.03
Return on equity	-0.34	-1.13	0.261	6335	0.02	-0.10 **	-2.16	0.031	6335	0.02
Performance (percent)										
Efficiency ratio	0.18	0.43	0.671	6335	0.04	0.14 **	2.27	0.023	6335	0.04
Net chargeoffs to total loans	-0.01	-0.23	0.818	6324	0.05	0.01	1.57	0.116	6324	0.05
Nonperforming loans to total loans	0.04	1.52	0.130	6335	0.04	0.03 ***	6.22	0.000	6335	0.05

*, **, *** statistically significant at the 10, 5 and 1 percent levels, respectively.

Table 4
Equity Performance Indicators

Average Annual Stock Market Returns (percent)	FHC	BHC	Difference
Pre-GLBA (1996-19999)	28.4	25.1	3.3
Post-GLBA (2000-2003)	15.4	17.1	-1.7
Difference (post-GLBA less pre-GLBA)			-5.0 **

Stock Market Betas (average)	FHC	BHC	Difference
Pre-GLBA (1996-19999)	0.85	0.62	0.23
Post-GLBA (2000-2003)	0.31	0.27	0.05
Difference (post-GLBA less pre-GLBA)			-0.18

*, **, *** statistically significant at the 10, 5 and 1 percent levels, respectively.

Table 5
Summary Statistics and Differences in Means Between Section 20 FHCs and non-Section20 FHCs
2000 through 2003

	Section 20 FHCs		Non-section 20 FHCs		Difference in Means Test
Size	**N**	**Mean**	**N**	**Mean**	**Difference**
Total assets (000s)	456	177,377,206	6,656	3,071,012	174,306,194 ***
Balance Sheet (percent of total assets)					
Loans	456	52.8	6,655	65.2	-12.37 ***
Securities	456	18.5	6,655	22.6	-4.07 ***
Trading assets	456	5.5	6,554	0.1	5.37 ***
Deposits	456	57.7	6,656	78.2	-20.52 ***
Trading liabilities	456	2.8	6,552	0.0	2.82 ***
Equity	456	8.1	6,656	9.3	-1.18 ***
Income (percent of average assets)					
Interest income	454	5.44	6,558	6.49	-1.05 ***
Interest expense	454	2.55	6,558	2.70	-0.15 **
Net interest income	454	2.89	6,558	3.79	-0.90 ***
Noninterest income	454	2.87	6,558	1.61	1.26 ***
Noninterest expense	454	3.75	6,558	3.55	0.19 **
Provision expense	454	0.42	6,545	0.28	0.14 ***
Net income (ROA)	454	1.07	6,558	1.15	-0.09 **
Return on equity	454	12.4	6,558	12.5	-0.07
FHC Securities Activities (percent of assets)					
Securities subsidiary assets	436	7.43	5,370	0.38	7.06 ***
Inv banking, advisory, brokerage, underwriting fees & commissions	332	0.70	5,018	0.23	0.47 ***
Performance (percent)					
Market return (2000-2002)	13	3.10	79	17.20	-14.10
Efficiency ratio	444	45.20	6,558	42.67	2.53 ***
Net chargeoffs to total loans	454	0.70	6,533	0.30	0.40 ***
Nonperforming loans to total loans	456	1.26	6,652	0.86	0.40 ***

*, **, *** statistically significant at the 10, 5 and 1 percent levels, respectively.

Table 6
Regression Results of FHC Effect on Section 20 Banking Organizations

Balance Sheet (percent of total assets)	FHC Age	Pr > |t|	FHC * S20	Pr > |t|	N	R^2
Loans	-0.11 ***	0.008	-6.85 ***	0.000	6335	0.10
Securities	0.09 **	0.017	3.11 ***	0.000	6328	0.12
Trading assets	0.01	0.282	1.47 ***	0.000	6276	0.09
Deposits	0.07 **	0.031	0.62 **	0.040	6335	0.26
Trading liabilities	0.00	0.208	0.47 ***	0.000	6272	0.04
Equity	0.02	0.125	0.42 ***	0.001	6335	0.11
Income (percent of average assets)						
Interest income	0.01 *	0.083	-0.51 ***	0.000	6328	0.66
Interest expense	0.00	0.834	-0.29 ***	0.000	6328	0.82
Net interest income	0.01 **	0.014	-0.22 ***	0.000	6328	0.18
Noninterest income	0.01	0.567	0.16	0.149	6328	0.03
Noninterest expense	0.02 *	0.056	-0.07	0.490	6328	0.01
Provision expense	0.01 ***	0.009	0.07 ***	0.002	6326	0.05
Net income (ROA)	-0.01	0.333	-0.06	0.353	6328	0.03
Return on equity	-0.05	0.297	-1.90 ***	0.000	6335	0.03
Performance (percent)						
Efficiency ratio	0.16 **	0.016	-0.52	0.393	6335	0.04
Net chargeoffs to total loans	0.00	0.699	0.17 ***	0.000	6324	0.06
Nonperforming loans to total loans	0.02 ***	0.000	0.23 ***	0.000	6335	0.06

*, **, *** statistically significant at the 10, 5 and 1 percent levels, respectively.

Figure 1
Number of Top-Tier FHCs that File Y9-Cs

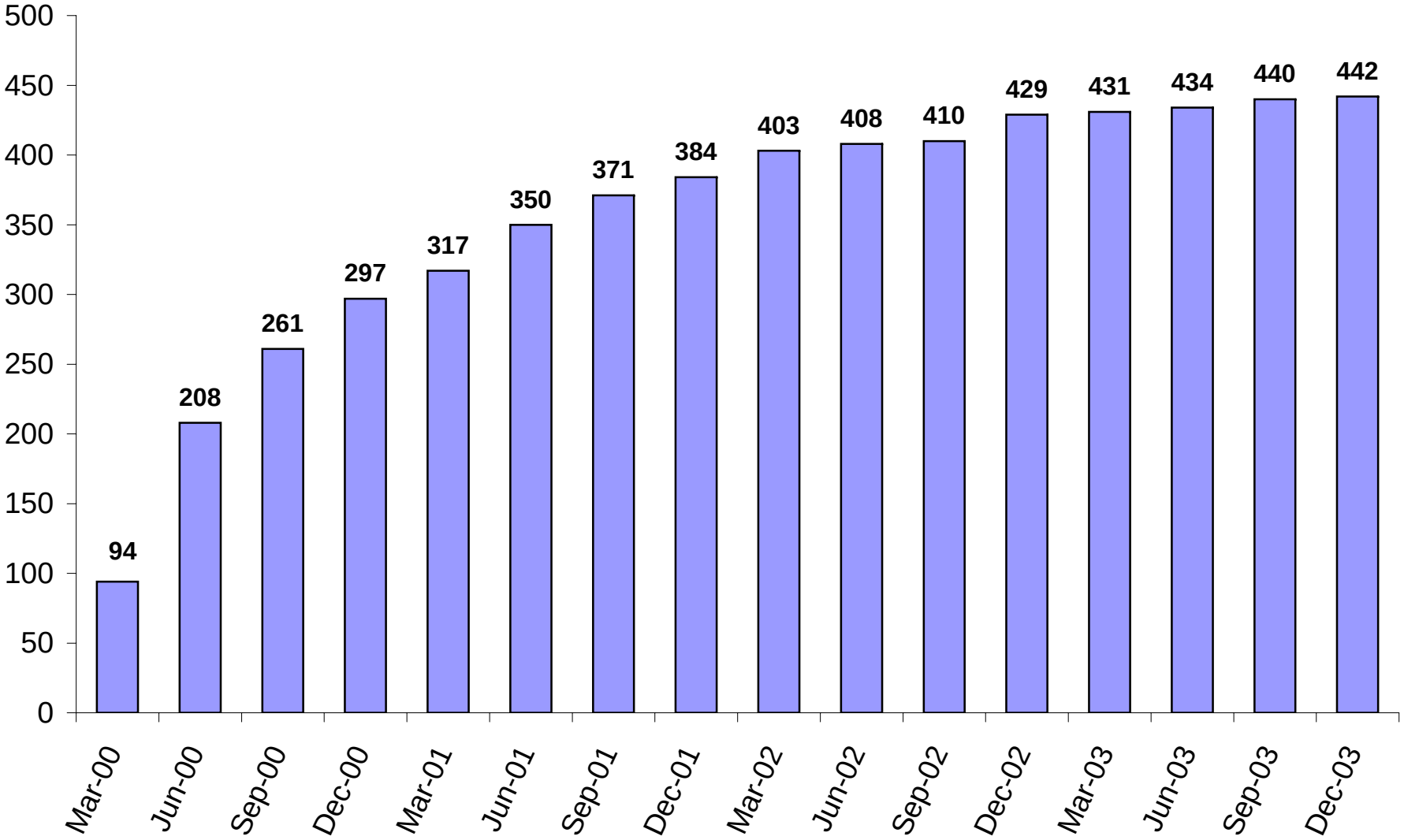

Figure 2
FHC Expanded Activities as a Percent of Assets

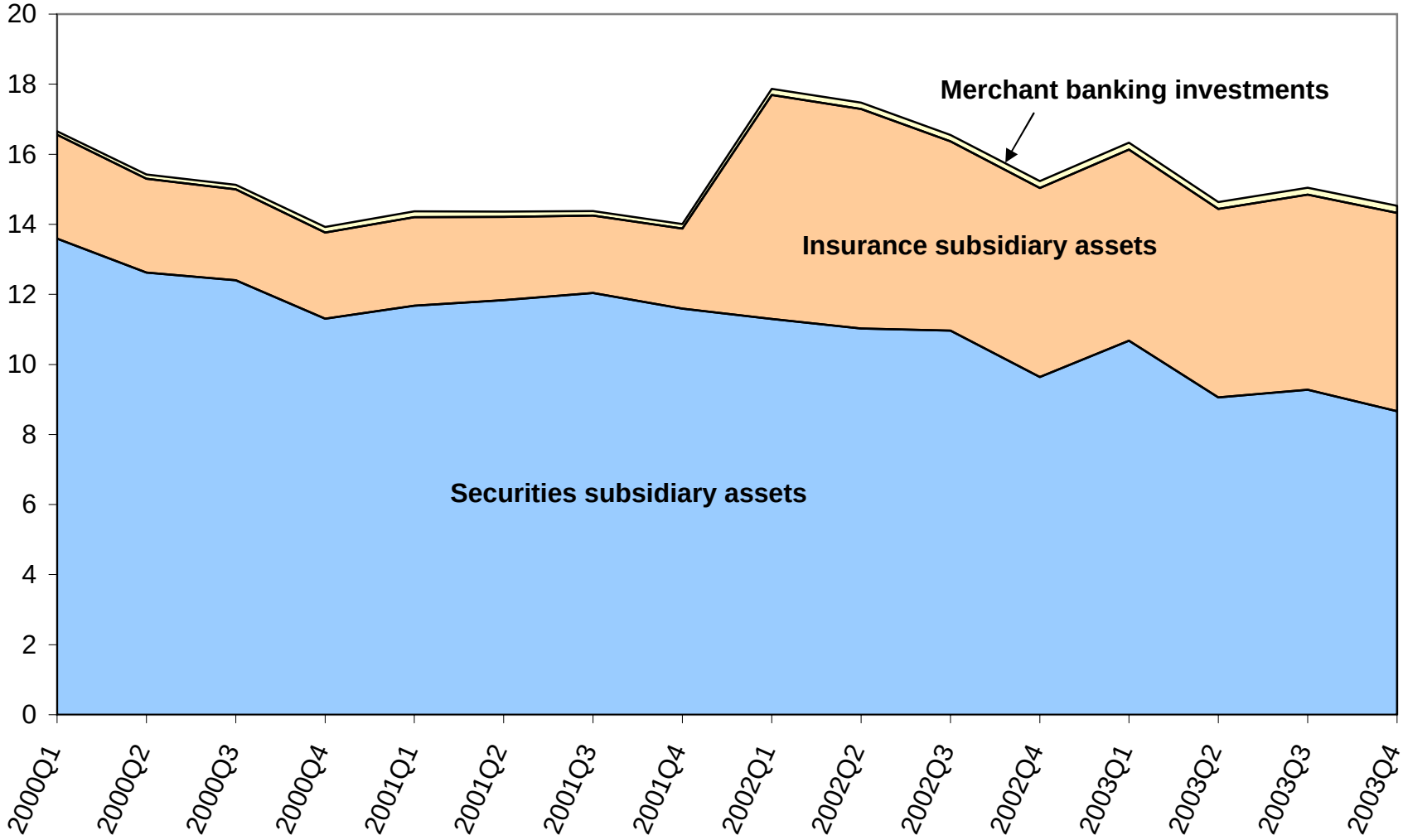

Figure 3
Asset-Weighted Revenue by Organization and Activity in 2003 (percent of assets)