

“The financial performance of U.S. commercial banks 2001-2010”

AUTHORS	Robert A. Weigand Robert Irons
ARTICLE INFO	Robert A. Weigand and Robert Irons (2011). The financial performance of U.S. commercial banks 2001-2010. <i>Banks and Bank Systems</i> , 6(3)
RELEASED ON	Monday, 10 October 2011
JOURNAL	"Banks and Bank Systems"
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

© The author(s) 2025. This publication is an open access article.

Robert A. Weigand (USA), Robert Irons (USA)

The financial performance of the US commercial banks (2001-2010)

Abstract

The paper examines the financial performance, risk, changing revenue and asset mix, prospects for future shareholder value creation and executive compensation of the 15 largest commercial banks in the US from 2001-2010. Aggregate revenue for large commercial banks in the US reached all-time highs in 2009 and 2010. Growth has slowed in traditional sources of revenue such as interest income from loans and investments, while revenue from trading activities, fees on credit cards, and service charges on deposits has grown in recent years. Charge-offs from non-performing loans and other assets continue to weigh on bank profits, however. Aggregate dividends declined by 80% from 2008-2010. The Tier 1 capital held by the banks in the sample has more than doubled in 2009-2010. Despite persistent quality problems with their loan portfolios, flagging profitability, a dramatic reduction in dividends and poor stock price performance, the total salaries and bonuses earned by executives at our sample of banks grew by 33% from 2008-2010. Executives have also been taking more of their compensation in the form of salaries (vs. bonuses) since 2005. The authors find that banks that received more TARP (Troubled Asset Relief Program) funds actually reduced their loan portfolios by greater amounts, which refutes the idea that the TARP had a positive impact on bank lending.

Keywords: commercial banking, bank capital, regulation.

JEL Classification: G18, G21.

Introduction

Commercial banking in the US is an industry in transition. Many believe that commercial banks face their greatest challenges since the Great Depression, including navigating the new regulatory framework imposed by the Dodd-Frank Act and dealing with the remaining repercussions of the global financial crisis. Some argue that the need for more than \$1 trillion of assistance afforded the industry since the fall of 2008 – via programs such as the Troubled Asset Relief Program (TARP) and Quantitative Easing (QE1 and QE2) – is symptomatic of an industry that may require further regulatory intervention to avoid a relapse into financial distress. On the other hand, 7 of the 15 largest commercial banks in the US posted record-setting revenues in 2010, with 3 of these also earning record profits, leading others to argue that banks are well on their way to recovery and do not require further regulatory support (or interference, depending on your point of view).

In this paper we assess how banks are responding to the new regulatory mandates and the extent to which they have recovered from the events of 2008-2009. We examine the financial performance, risk, changing revenue and asset mix, prospects for future shareholder value creation and executive compensation of the 15 largest commercial banks in the US from 2001-2010. We focus on these 15 banks because they are most likely to have the resources to respond quickly to the new regulatory framework mandated by the Dodd-Frank Act, and, as dominant players in their industry, also receive a disproportionate amount of regulatory scrutiny. As

commercial banking continues adapting to the new environment, early signs of significant change are most likely to be evident in banks of this size and scope.

1. Motivation and literature review

The academic literature suggests that, when it comes to banks, size matters. Filbeck et al. (2011) find that size plays a significant role in a bank's ability to outperform the S&P 500, particularly during an economic contraction. Additionally, the Dodd-Frank Act designates bank holding companies with \$50 billion or more in consolidated assets as systemically significant (14 of the 15 banks in our sample meet this criterion, shown in Table 1 below). The banks featured in our study can therefore be viewed as industry bellwethers, as they have the resources and stability to respond quickly to changes in the regulatory landscape.

Although some argue that the Dodd-Frank Act is complex and confusing, one thing is clear: the Act will require large financial firms, bank holding companies (BHCs) and savings and loan holding companies (SLHCs) to significantly increase their balance sheet capital (Price, Waterhouse, Coopers, 2010). The new capital requirements are based on the risk these banks pose to the stability of the US financial system, which is determined as a function of their size. Furthermore, the Act prohibits any mergers or acquisitions that result in a new entity whose consolidated liabilities exceed 10% of the aggregate liabilities of all financial companies (Murphy, 2010). Clearly, the US lawmakers also believe that size matters when it comes to banks.

Numerous academic studies, including Jackson et al. (1999), Santos (2001), Stolz (2002), and VanHoose (2006; 2007), find that higher capital standards act

as constraints that are likely to reduce total lending by banks, with accompanying substitutions of alternative assets for loans on banks' balance sheets. This shift to alternative assets is further being driven by global private sector deleveraging, resulting in a reduction in aggregate demand and slower loan growth (Keen, 2009). These studies also find that capital regulation leads to higher capital ratios. We therefore examine the asset, revenue and profit mix of our banks, and their capital holdings, from 2001-2010.

As holding more capital makes less capital available for lending, we expect to see a decrease in the amount of loans relative to banks' total assets as their capital ratios rise. Requiring banks to hold more capital is also likely to limit their ability to earn sufficient returns for shareholders. This should lead to banks investing in alternative assets with

higher expected returns and higher risk. We therefore expect to find an increase in the market risk of these banks as they increase their capital holdings.

2. Data and descriptive statistics

Data for this study are obtained from Standard & Poor's Capital IQ, EVA Dimensions, and the Federal Reserve Economic Database (FRED). The 15 largest commercial banks in terms of market capitalization are identified from Capital IQ. The identity of these banks and descriptive statistics are presented as Table 1 below¹. The median market capitalization of these banks is \$8.7 billion; they hold median assets of over \$91 billion, median total deposits of over \$60 billion, and median total loans of over \$52 billion. Collectively, these banks make 63% of all the commercial loans in the US and employ over half a million of people.

Table 1. Descriptive statistics

Bank	Market cap (mm)	Total assets (mm)	Total deposits (mm)	Total loans (mm)	% of all comm. loans	Total employees
Wells Fargo	145,239	1,258,128	847,942	752,267	21.6%	272,200
US Bancorp	47,627	307,786	204,252	197,061	6.9%	60,584
PNC	29,948	264,284	183,390	150,595	6.5%	47,793
BB&T	18,261	157,081	107,213	103,567	1.7%	31,400
SunTrust	13,905	172,874	123,044	115,975	4.0%	29,056
Fifth Third	11,640	111,007	81,648	77,941	3.4%	20,354
M&T Bank	11,056	68,021	49,805	52,316	2.5%	12,698
CIT Group	8,677	50,958	4,536	24,501	1.0%	3,778
Regions Financial	7,916	132,351	94,614	82,864	3.9%	27,829
KeyCorp	7,854	91,843	60,610	50,107	2.7%	15,610
Comerica	6,116	53,667	40,471	40,236	2.6%	9,001
Huntington Bank	5,526	53,820	41,854	38,107	1.6%	11,341
First Republic	4,388	19,941	17,182	19,452	0.3%	1,366
Zions Bancorp	4,292	51,035	40,935	36,868	2.1%	10,24
Marshall & Ilsley	4,186	50,832	38,259	36,861	1.9%	9,137
Mean	21,775	189,575	129,050	118,885	Total:	Total:
Median	8,677	91,843	60,610	52,316	62.7%	562,671

Our empirical findings are presented in the sections that follow. We focus on the commercial banking subsector, reporting either aggregate results (for items such as assets, revenues and profits) or means (for items such as profitability and capital ratios).

3. Revenue sources and asset mix

Figure 1 presents aggregate total revenue and interest income from loans and investments for our sample of commercial banks from 2001-2010. Surprisingly, the only year in which the aggregate total revenue of these banks declines is 2008. The average annual growth rate in total revenue is 8.9% from 2001-2010, with these banks' aggregate total revenue reaching an all-time high in 2009 and again

in 2010. Interest income displays a different pattern, however, growing only 5.0% and 7.8% per year from loans and investments, respectively. With slower growth in these more traditional revenue sources, it must be the case that banks have been developing alternative sources of revenue.

¹ We focus on the commercial banking subsector, omitting many of the large banks in the diversified financials subsector. Some of these entities (Goldman Sachs, Morgan Stanley) applied for banking charters during the unusual circumstances of 2008, and most have a significantly different business model, focused more on investment banking vs. traditional bank activities such as gathering deposits and extending credit.

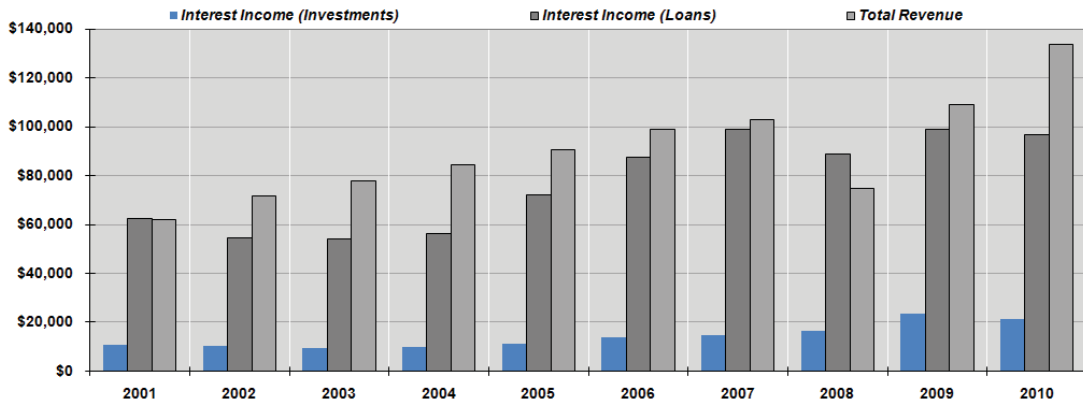


Fig. 1. Total revenue and interest income (millions)

Figure 2 presents trends in alternative revenue sources for our sample of commercial banks, all of which have grown at a faster annual rate than interest income,

including: trading activities (95.4%), credit card fees (17.4%), mortgage banking activities (22.0%), and service charges on deposits (8.4%).

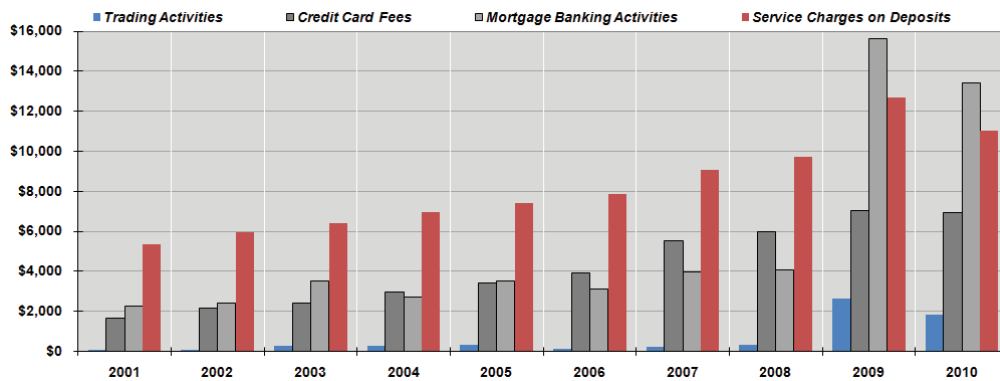


Fig. 2. Other revenue sources (millions)

The changes in revenue sources depicted in Figure 2 are, of course, a function of the assets held by banks. Figure 3 presents aggregate bank assets for our sample. We see steady growth in gross loans through 2008, with the contraction in loan volume predicted by previous research occurring in both

2009 and 2010. While the average annual rate of loan growth equaled 10.5% per year from 2001-2010, other asset classes all display faster annual growth, including: trading assets (28.4%), investment securities (15.5%) and mortgage-backed securities (11.3%).

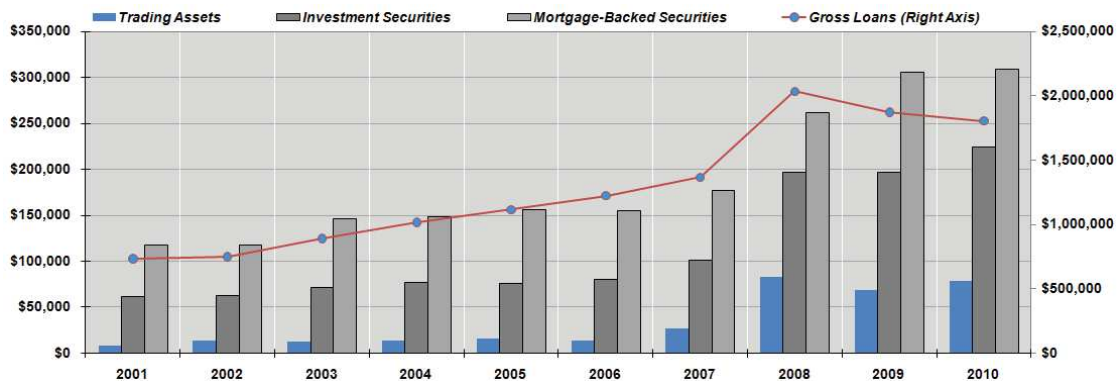


Fig. 3. Commercial bank assets (millions)

Summarizing the results of this section, we find the following:

1. Aggregate revenue for the 15 largest commercial banks in the US reached all-time highs in 2009 and 2010. Seven of the 15 banks reported record revenues in 2010.
2. Growth has slowed in traditional sources of revenue such as interest income from loans and investments.
3. While total loans outstanding contracted in 2009 and 2010, banks have diversified into other asset categories, including trading assets, investment securities and mortgage-backed securities.

4. Diversification into other assets has resulted in banks generating more revenue from trading activities, fees on credit cards and deposits, and mortgage banking activities.

4. Profitability, dividends, loan losses, taxes and capital

Figure 4 presents aggregate bank profits and dividends for our sample. Aggregate net income is negative in 2008 only, driven mainly by the smaller banks in the sample. Larger banks such as Wells Fargo, US Bancorp, PNC and BB&T all reported positive net income in the crisis year of 2008

albeit at much lower levels than in previous years. Profits rebounded sharply for the larger banks in 2009, and all but the 2 smallest banks in our sample (Zions and Marshall & Ilsley) reported positive profits in 2010. Although aggregate revenue reached an all-time high in 2010, aggregate bank profits rebounded only to their 2004 level as banks continue to struggle with a variety of challenges, elaborated on in greater detail below. It is interesting to note that Wells Fargo, PNC and First Republic all reported record earnings in 2010, suggestive of continued recovery for the banking sector in 2011-2012.

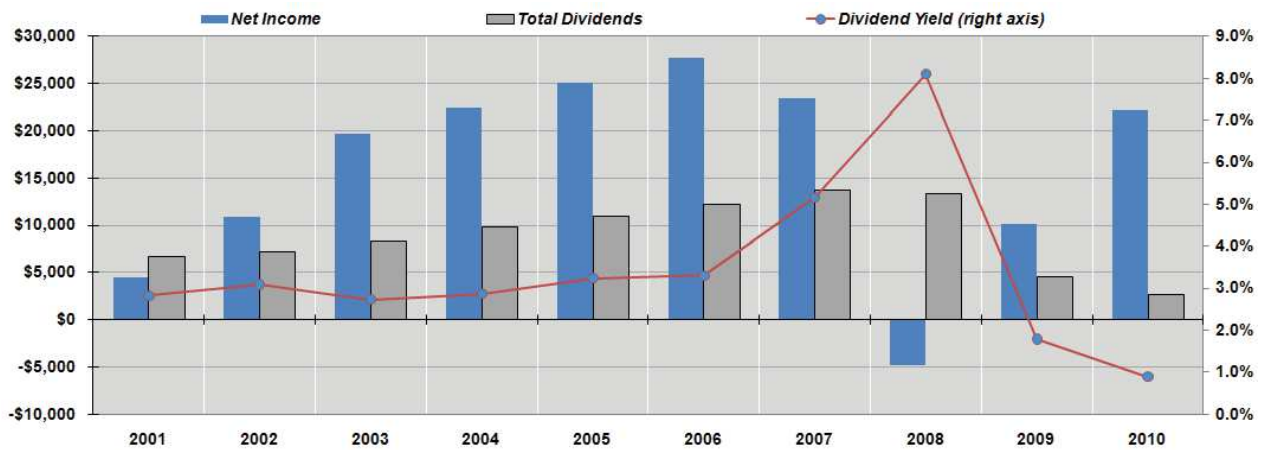


Fig. 4. Aggregate bank profits and dividends (millions)

Despite the volatile operating environment, our sample of banks experienced average annual growth in profits of 19.5% from 2001-2010 – a performance that few industries ever achieve. Aggregate dividends display a different pattern, however. The banks in our sample paid total dividends of \$6.6 billion in 2001 (which was also a recession year); this number has fallen to \$2.6 billion in 2010, an average annual reduction of 9.8% per year (although most of the decline occurs between 2008-2010, as total dividends

contracted by 80%). If banks are successful at further increasing profitability in 2011, analysts and shareholder activists may begin asking for (and perhaps demanding) a return to higher dividend payouts.

Figure 5 presents aggregate loan loss provisions and allowances for our sample. The dramatic surge in loan loss provisions and allowances from 2008-2010 explains much of banks’ struggles to regain their former levels of profitability.

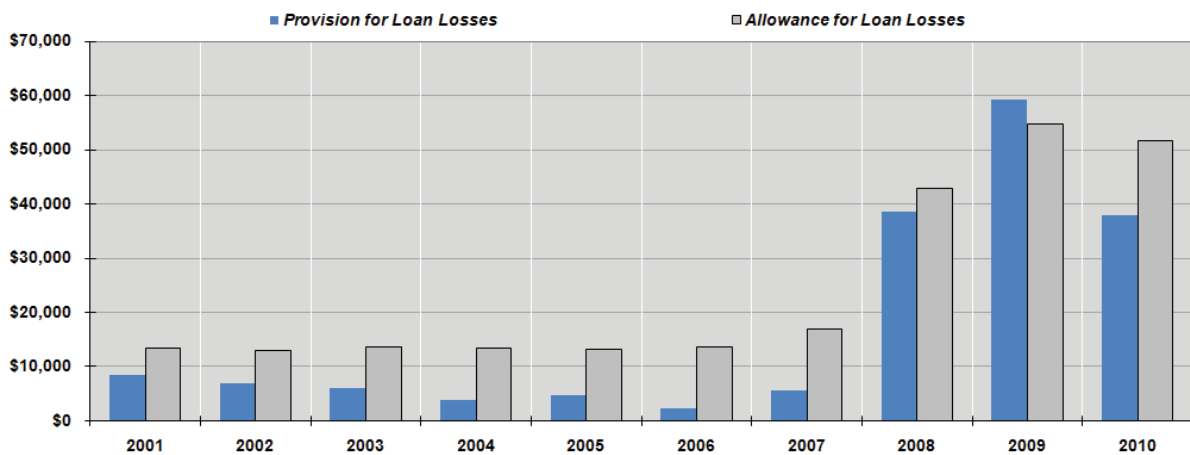


Fig. 5. Loan loss provisions and allowances (millions)

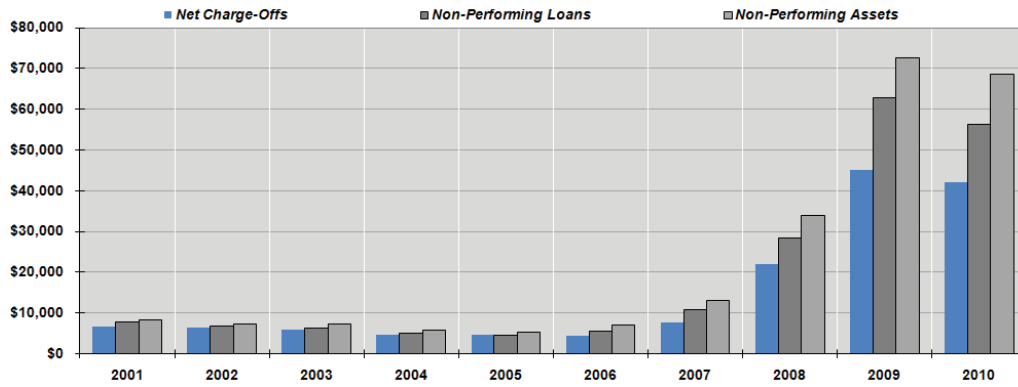


Fig. 6. Net charge-offs and non-performing loans and assets (millions)

Figure 6 depicts aggregate loan charge-offs and the level of non-performing loans and assets. The trends in these variables further account for banks' flagging profitability. Non-performing loans exhibit a downtrend from 2001-2006, and the aggregate level of non-performing assets is constant over the same period. From 2007-2010 non-performing loans and assets increase approximately ten-fold, however,

with net charge-offs increasing to 6 times their pre-crisis levels. The quality of banks' loan portfolios remains a key issue that must be resolved before bank profitability can fully recover. VanHoose (2007) argues that risk-based capital regulation should result in banks holding less risky portfolios. The surge in charge-offs and non-performing assets should also contribute to stricter loan standards.

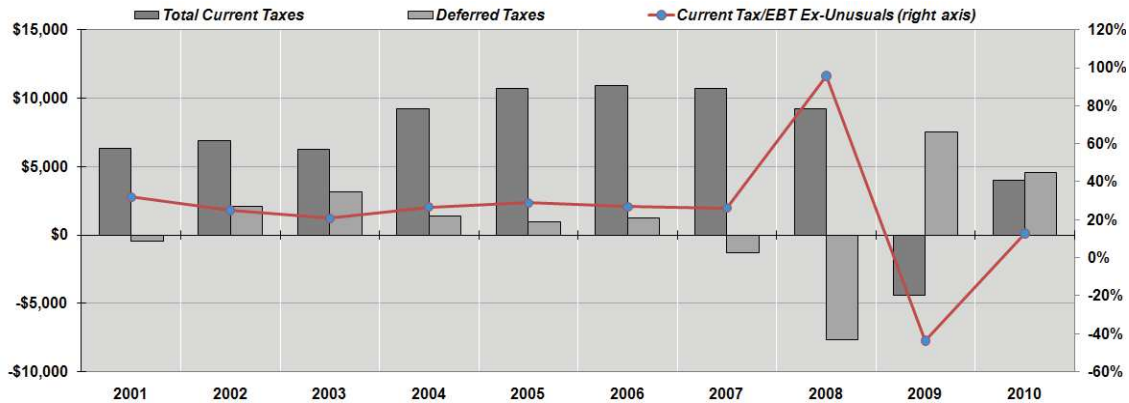


Fig. 7. Aggregate taxes (in millions) and banks' effective tax rate

Figure 7 depicts banks' current and deferred taxes and banks' effective tax rate (computed as current taxes/EBT ex-unusual items). Banks enjoyed a stable average effective tax rate of 26.6% from 2001-2007. Beginning with the financial crisis in 2008, however,

banks have paid dramatically lower taxes and deferred a much higher level of taxes. The ability to defer taxes has undoubtedly helped bank profits in 2010, although profits in 2011 may face headwinds if banks are required to catch up on these deferred tax obligations.

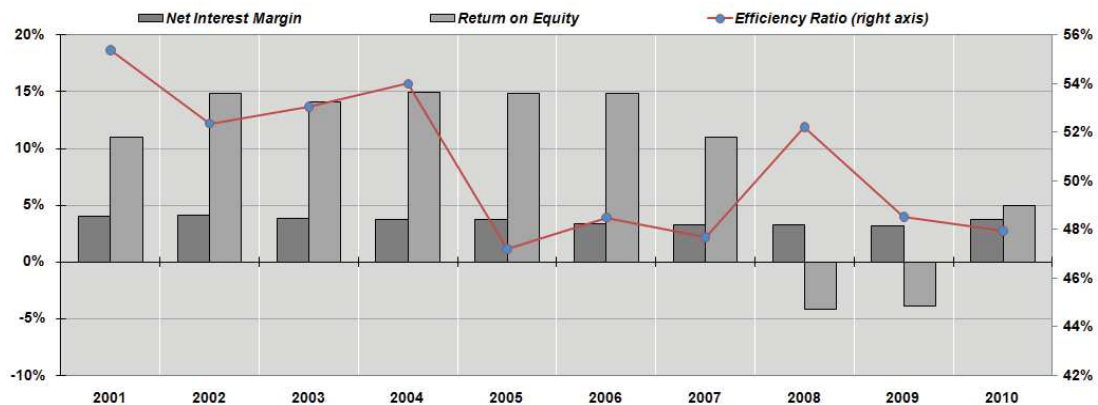


Fig. 8. Net interest margin, return on equity and banks' efficiency ratio

Figure 8 presents banks' average net interest margin (NIM), return on equity (ROE) and efficiency ratios (the ratio of expenses to revenues). Banks enjoyed a

stable average NIM from 2001-2010 of 3.6%, due to large part in a decade of monetary easing by the Federal Reserve, which has kept short-term interest rates

at historic lows. Despite the stable NIM, banks' mean ROE was negative for 2008-2009, rebounding to only 5% in 2010, less than half its average of 13.7% from 2001-2007. Banks' mean efficiency ratio remains competitive at 48%, however, significantly lower than its average of 55% from 2001-2004. Banks' focus on maintaining cost efficiency remains another positive note for 2011 and beyond.

The Collins Amendment to the Dodd-Frank Act requires banks to significantly increase balance sheet capital, particularly Tier 1 capital holdings (primarily common stock, disclosed reserves or retained

earnings, and non-redeemable preferred stock). Figure 9 presents the aggregate Tier 1 and total capital held by the banks in our sample, along with their mean capital/assets ratio. The chart reveals that large commercial banks were quick to respond to the call for higher capital. Aggregate Tier 1 and total capital held by the banks in our sample has more than doubled since 2007, and their mean capital/assets ratio has increased from 6.6% to 12.3% over the same period. Fourteen of the 15 banks in our sample had capital/assets ratios greater than 10% in 2010 (with First Republic being the exception at 8.0%).

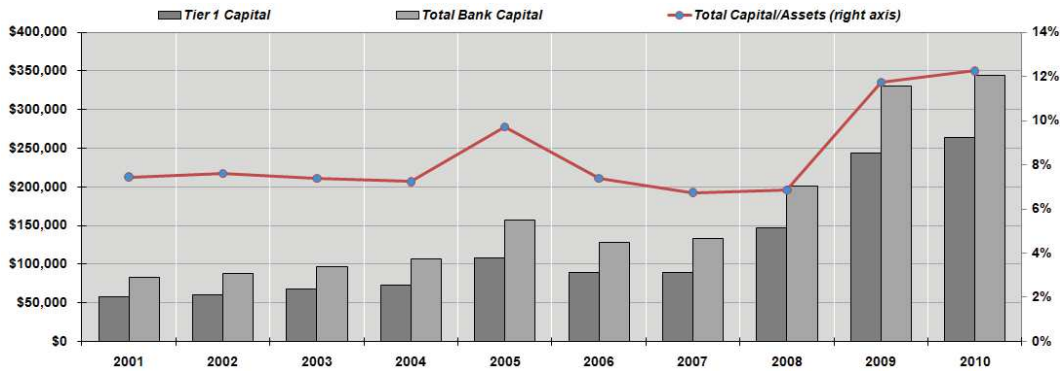


Fig. 9. Bank capital (in millions) and capital/assets ratio

Summarizing the results of this section, we find that:

1. Aggregate net income was positive in 2009, and in 2010 recovered all the way back to its 2004 level. Three of the 15 banks in the sample reported record profits in 2010.
2. Aggregate dividends are lower than they have been in the last 10 years, however.
3. Charge-offs from non-performing loans and other assets continue to weigh on bank profits.
4. Banks have a large backlog of deferred taxes that may further hamper bottom-line profit growth in 2011.
5. Banks' net interest margin was stable from 2001-2010, but average ROE in 2010 was less than half its historical average. Banks' efficiency ratios are favorably low, however, indicative of continued recovery in the banking sector.

6. Aggregate Tier 1 capital has more than doubled in 2009-2010, and the average capital/assets ratio for the banks in our sample equals 12%. All but one of the banks in our sample has a capital/assets ratio greater than 10%.

5. Shareholder value creation and executive compensation

In this section we examine bank stocks' performance and risk, and the prospects for future shareholder value creation¹. Do commercial bank CEOs pay as close attention to their shareholders as CEOs in other industries? Apparently so. US Bancorp CEO Richard Davis was recently quoted as saying "Our shareholders don't deserve for us to take a blip that we can't repeat and they can't predict" (Cocheco, 2011, p. 28).

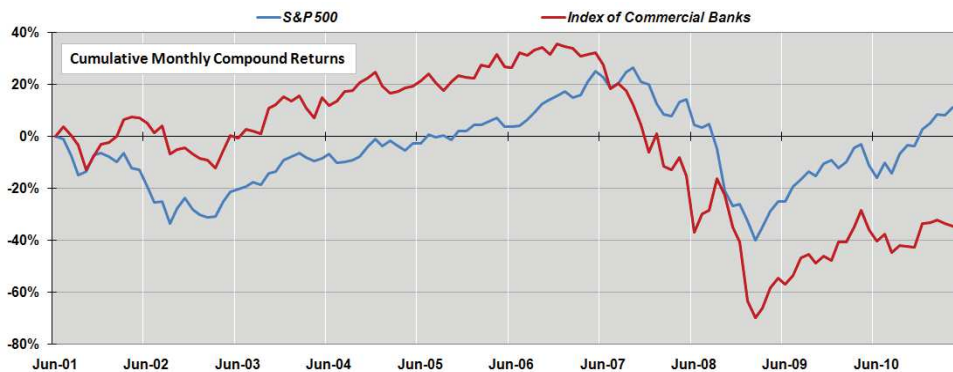


Fig. 10. Bank stock returns.

¹ The data in Figures 12-14 are provided by EVA Dimensions, LLC.

As shown in Figure 10, commercial bank stocks experienced a bit more than a blip in 2007-2008 before recovering off the market's lows in March 2009. Bank stocks have not performed well in 2010-2011, as slower-than-expected economic growth and lingering uncertainties have created industry headwinds (uncertainties include contradictions inherent in the Dodd-Frank Act, the possibility of additional regulatory changes, and Federal Reserve monetary policy, which has been volatile and opaque in recent years). Moreover, these low returns would look even worse if they were adjusted

for the increase in bank stocks' betas over the past 3 years, depicted in Figure 11. Each bank's beta is calculated vs. the S&P 500, using monthly returns for the trailing 36 months. Through 2007, the mean market beta of the stocks in our sample ranged between 0.2 and 0.8, but then abruptly shifted to a new higher range of 1.2 to 1.4. The graph shows that the systemic shocks from 2008 have not diminished, which is consistent with the idea that banks' shift away from loans and into riskier activities is contributing to the increase in bank stocks' betas.

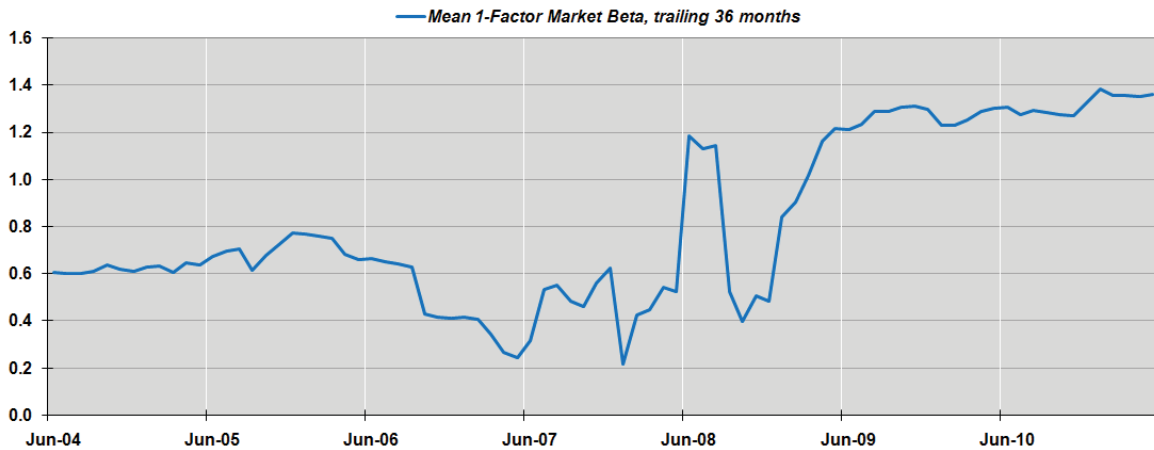


Fig. 11. Bank stocks' average market beta

Figure 12 depicts the aggregate market value-added (MVA) and economic value-added (EVA) of the banks in our sample. Market value-added measures the difference between the market capitalization of the firm's securities and the total capital invested in the firm. Companies thought to have stronger future prospects have higher MVA because investors are willing to pay larger premi-

ums above invested capital to own the firm's securities. Figure 12 shows that commercial banking has been a negative MVA industry for three consecutive years – the market value of bank stocks and other securities is less than total invested capital, indicating that commercial banks have destroyed a significant amount of shareholder value.

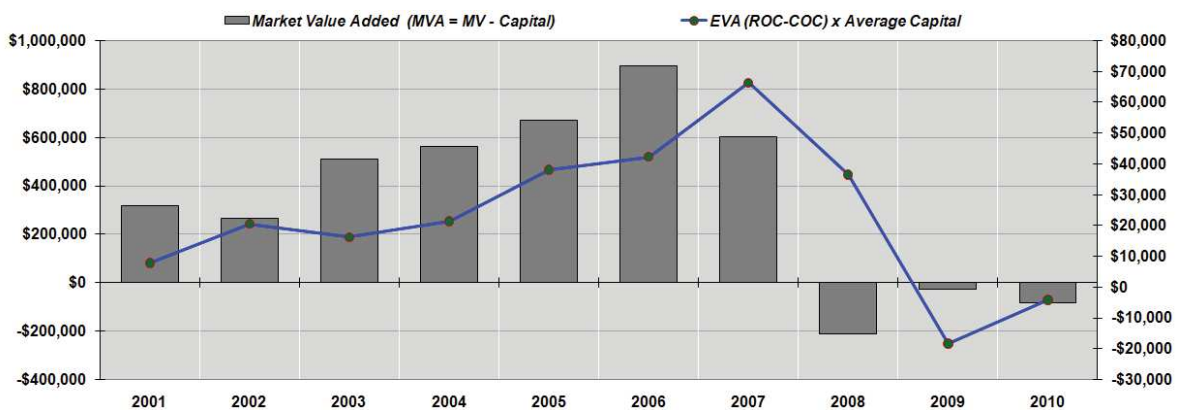


Fig. 12. Market value-added and economic value-added (EVA), in millions

Figure 12 also shows banks' aggregate EVA, measured as invested capital multiplied by the spread between banks' return on capital and cost of capital. Commercial banks' EVA declines precipitously begin in 2008. Figure 13 provides greater detail regarding the key drivers of banks' EVA. Although

banks' cost of capital has been in a downtrend for 10 years, their return on capital falls below their cost of capital in 2009 and 2010, resulting in negative EVA. Banks' negative EVA and MVA indicate the extent to which bank stocks have been poor investments in recent years.

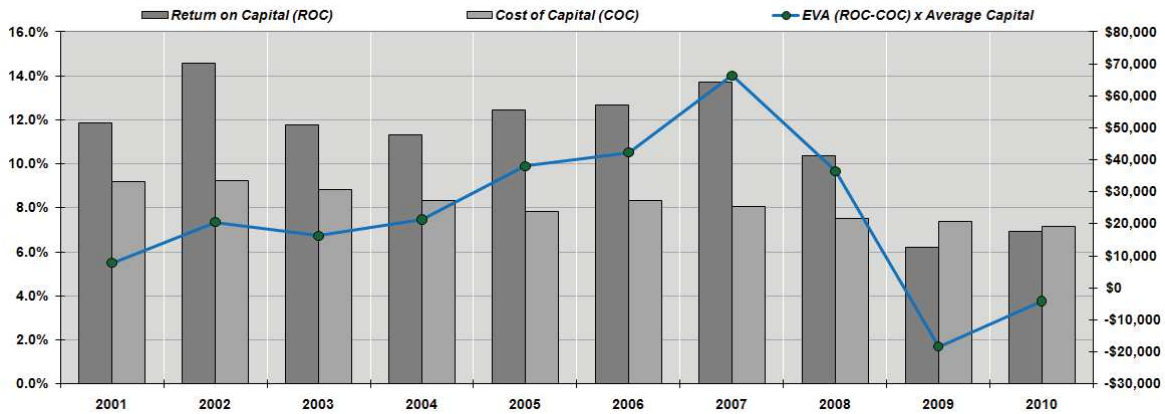


Fig. 13. Return on capital, cost of capital, and EVA (in millions)

From a value creation perspective, the new regulatory requirements for banks to hold more capital are reflected in the two metrics depicted in Figure 14, financial earning assets/revenue (FEA/Rev) and asset yield. FEA/Rev measures the total capital a bank has to hold to generate \$1 of revenue. Everything else equal, higher capital intensity raises the profit margin hurdle rate at which value is created. FEA/Rev offers another perspective on commercial banks’ declining ROE and EVA, despite improved efficiency ratios. Whenever more capital is added to the balance sheet but does not “pay for itself” in terms of higher net income (in the case of ROE), higher net operating profit after tax (in the case of EVA), or higher revenues (in the case of FEA/Rev), bank profitability and performance will suffer. Higher FEA/Rev indicates that more capital is available to cushion business risk – it can be inter-

preted as the level of risk insurance on the balance sheet. The second variable, banks’ average asset yield, is computed as the ratio of bank net revenues to financial earning assets, and is thus a measure of the net yield earned on the financial assets. A lower yield translates into a higher capital charge. Figure 14 shows that banks’ FEA/Rev has more than doubled to over 140% since 2004, when it averaged 64%. Similarly, banks’ asset yield has been in a general downtrend, rebounding to above 3.0% in recent years. Metrics such as these reflect analyst warnings that imposing higher capital requirements on banks can be harmful to the economy (Oprita, 2011). Even as revenues and profits recover, banks cannot attain the same levels of profitability and value creation and hold significantly higher capital at the same time.

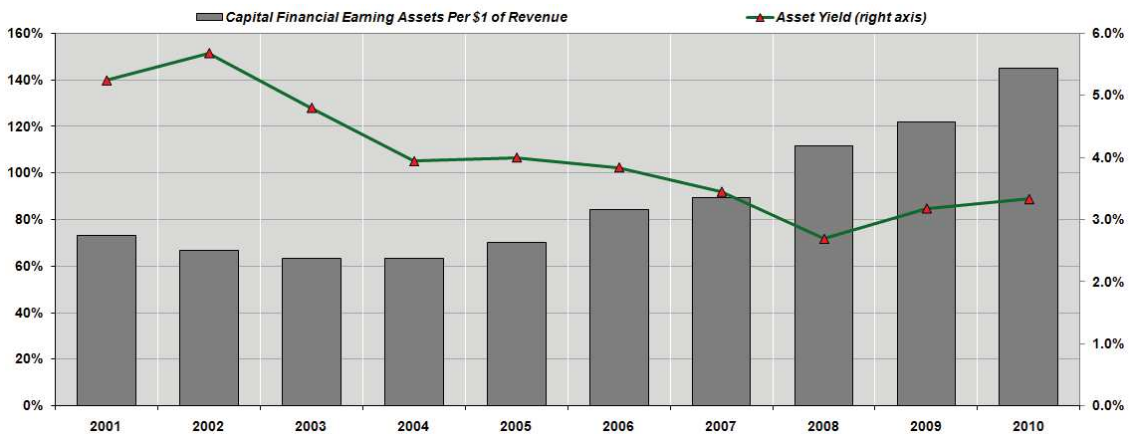


Fig. 14. Financial earning assets/revenue and asset yield

Figure 15 explores banks’ future prospects as investments based on two additional value creation metrics, future growth reliance (FGR) and implied EVA momentum. FGR equals the percentage of the firm’s total market value that is dependent on future EVA generation (newly-deployed capital expected to earn a return above the cost of capital). A large positive FGR can indicate one of 3 things:

1. Investor confidence that the firm will grow its EVA in the future.

2. That a significant rebound in EVA is expected, as in a turnaround situation.
3. Overvaluation relative to the company’s true future prospects.

On the other hand, a stock with an FGR of zero would be fairly valued based on current EVA, even if no growth is expected. A negative FGR is the most conservative valuation condition, indicating that the stock’s capitalization is less than the present value of its current EVA.

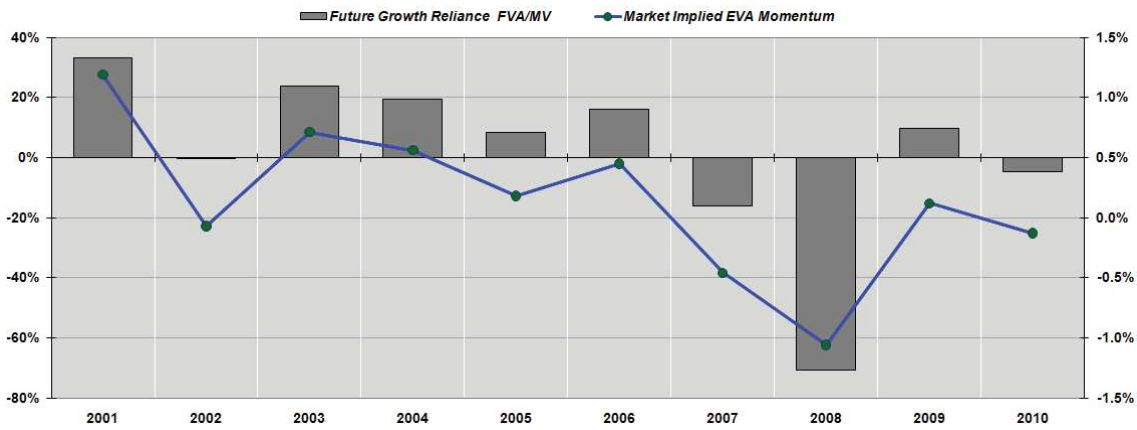


Fig. 15. Future growth reliance and market implied EVA momentum

Implied EVA momentum, also shown in Figure 15, is an estimate of the average annual rate of change in EVA over the next decade that would be required for a stock to be fairly valued. The higher is the FGR, the higher the EVA momentum implied by the firm’s valuation, as greater future growth in EVA is required to justify current valuations. Figure 15 shows that the commercial banking stocks in our sample have had negative future growth reliance and implied EVA momentum for 3 of the last 4 years. This is actually good news regarding bank stocks’ future prospects as investments, because it suggests that all the bad news regarding bank stocks is priced in, and that even with no future growth in EVA, these stocks are fairly valued. In light of banks’ declining return on equity,

return on capital, EVA and MVA, however, it may very well be the case that bank stocks are fairly valued for a lackluster trajectory over the coming decade.

We close out this section with a look at value creation for another key constituency of banks – executives. Figure 16 presents the total salaries and bonuses paid by banks to currently-employed executives as of the year-end depicted on the x-axis. The results are sobering. Despite persistent quality problems with their loan portfolios, flagging profitability and poor stock price performance, the total salaries and bonuses earned by executives at our sample of banks grew by 33% from 2008-2010, a period during which shareholder dividends fell by 80%.

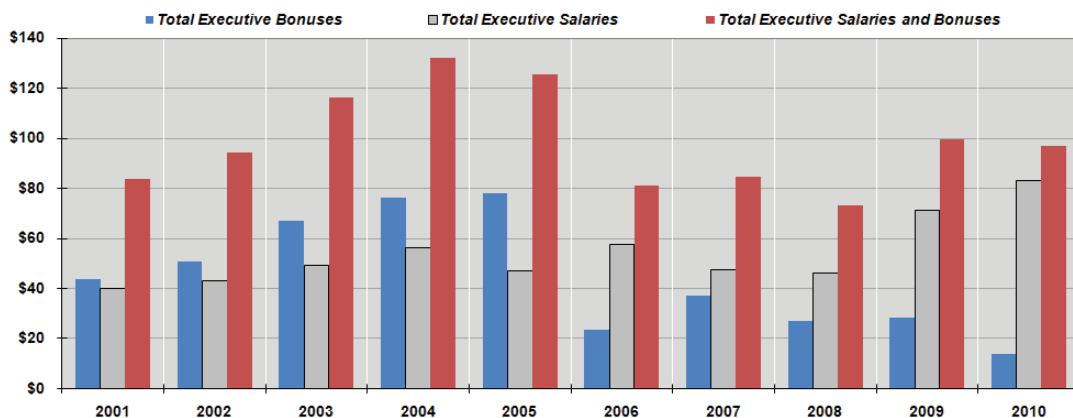


Fig. 16. Executive salaries and bonuses (millions)

Interestingly, as shown in Figure 17 below, executives have been increasing the percentage of the compensation they take in the form of salaries vs. bonuses. This behavior is consistent with industry insiders properly anticipating prolonged financial turmoil and taking steps to reduce the risk of the total future compensation they expected to receive.

Executive compensation has not only risen from 2008-2010, but the volatility of their expected future compensation has been falling since 2005. This seems to be a mildly pessimistic referendum on the prospects for commercial banking, as executives want less of their compensation based on pay-for-performance.

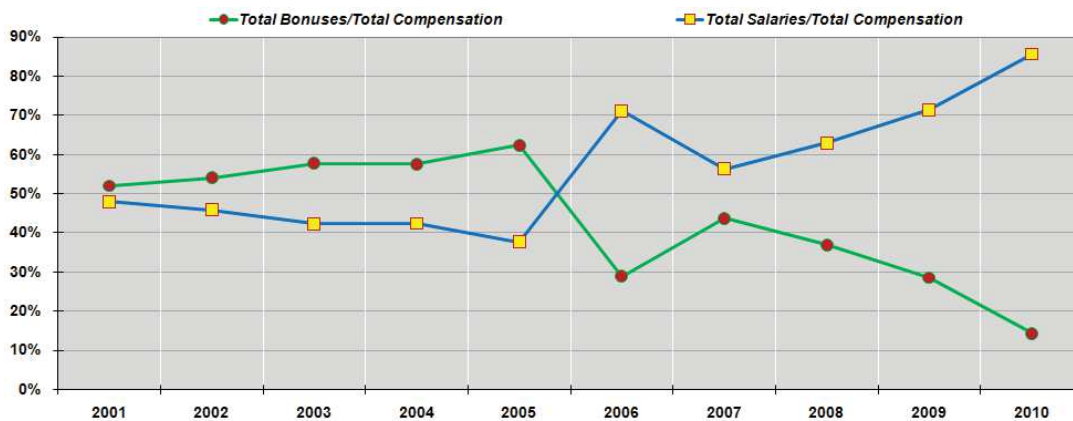


Fig. 17. Percentage of total compensation from salary vs. bonus

Summarizing the results of this section, we find that:

1. Bank stocks have lagged behind the S&P 500 since the market lows of March 2009.
2. Average bank market betas shifted to a significantly higher range of 1.2 to 1.4 in 2009-2011.
3. Aggregate MVA for commercial banks has been negative for 3 consecutive years, and aggregate EVA has been negative for the last 2 years. Despite a 10-year downtrend in banks' cost of capital, their mean return on capital remains below their cost of capital.
4. Banks remain challenged to post profits and other performance metrics that investors will find appealing while adapting to new regulations requiring them to hold significantly higher levels of capital.
5. Banks' future growth reliance (FGR) and implied EVA momentum suggest that bank stocks were fairly valued as of year-end 2010, but in light of banks' declining ROE, EVA momentum and asset yield, they are probably fairly priced for a lackluster trajectory.
6. The total salaries and bonuses earned by executives at our sample of banks grew by 33% from 2008-2010, a period during which shareholders saw their dividends reduced by 80%.
7. Since 2005, executives have been taking more of their compensation in the form of salary instead of performance-based bonuses.

6. TARP funds and lending

The last item we investigate is whether there is a relation between TARP funds received and total lending by banks. One of the main justifications for the wildly-expensive TARP bailout program was that it would increase bank lending. Figure 18 graphs the total TARP funds received by the banks in our sample (expressed as a percentage of their total assets) vs. the percentage change in their gross loans from 2008-2010. The graph shows that, on average, banks that reduced their lending by a greater amount received *more* TARP funds. Without the

Citigroup outlier, regressing the percentage change in loans on TARP funds/assets is statistically significant ($t = -2.20$, adjusted $R^2 = 24\%$)¹. This refutes the idea that the TARP program had a positive impact on credit creation.

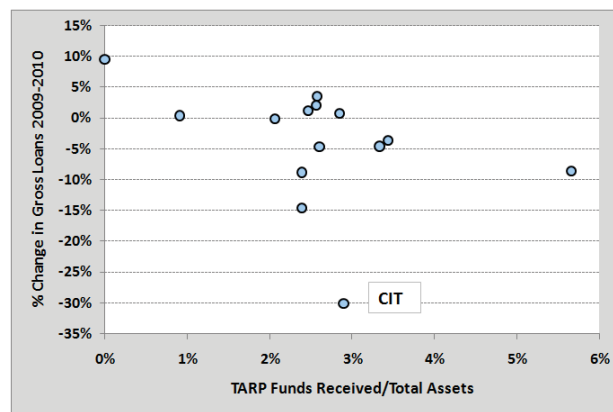


Fig. 18. TARP funds/total assets vs. percentage change in gross loans

Summary and conclusions

We examine the financial performance, risk, changing revenue and asset mix, prospects for future shareholder value creation and executive compensation of the 15 largest commercial banks in the US from 2001-2010. We focus on these 15 banks because they are most likely to have the resources to respond quickly to the new regulatory framework mandated by the Dodd-Frank Act, and, as dominant players in their industry, also receive a disproportionate amount of regulatory scrutiny. As commercial banking continues adapting to the new environment, early signs of significant change are most likely to be evident in banks of this size and scope.

Aggregate revenue for the 15 largest commercial banks in the US reached all-time highs in 2009 and 2010, with 7 of the 15 banks reporting record reve-

¹ CIT contracted their loan portfolio by more than twice as much as any other bank (-30%). The large CIT outlier thus increases the standard error of the regression and reduces the t-statistic to -1.69.

nues in 2010. Growth has slowed in traditional sources of income such as interest income from loans and investments, reflecting banks' diversification into other asset categories, including trading assets and investment securities. Revenue from trading activities, fees on credit cards and deposits and mortgage banking activities has grown in recent years as total loans outstanding have declined. The aggregate net income of the 15 banks was positive in 2009, and in 2010 recovered all the way back to its 2004 level. Three of the 15 banks in the sample reported record profits in 2010. Charge-offs from non-performing loans and other assets continue to weigh on bank profits, however, and banks also face a large backlog of deferred taxes that may further hamper bottom-line profit growth in 2011-2012. Aggregate dividends are lower than they have been in the last 10 years, as total dividends paid declined by 80% from 2008-2010. Banks' net interest margin was stable from 2001-2010, but average ROE in 2010 was less than half its historical average, despite declining efficiency ratios (reflecting improvements in cost control).

The aggregate Tier 1 capital held by the banks in our sample has more than doubled in 2009-2010, and banks' average capital/assets ratio now equals 12%. All but one of the banks in our sample has a capital/assets ratio greater than 10%. Although bank stocks have recovered from their 2009 lows, they continue to lag behind the performance of the S&P 500 in 2010-2011. Bank stocks have not only posted poor performance, but they have become riskier as well: the mean beta of the banks in our sample shifted to a significantly higher range of 1.2 to 1.4 in 2009-2011.

Aggregate market value-added (MVA) for commercial banks has been negative for 3 consecutive years, and aggregate economic value-added (EVA) has been negative for the last 2 years. Despite a 10-year downtrend in banks' cost of capital, their mean return on capital remains below their cost of capital. Banks remain challenged to post profits and other performance metrics that investors will find appealing while adapting to new regulatory requirements that require them to hold significantly higher levels of capital. Value creation metrics such as banks' future growth reliance (FGR) and implied EVA momentum suggest that bank stocks were fairly-valued as of year-end 2010, but banks' low asset yield probably indicates they are simply priced for poor performance for an extended period of time. Despite persistent quality problems with their loan portfolios, flagging profitability, a dramatic reduction in dividends and poor stock price performance, the total salaries and bonuses earned by executives at our sample of banks grew by 33% from 2008-2010. Executives have also been taking more of their compensation in the form of salaries (vs. bonuses) since 2005, which has reduced the volatility of their expected future compensation. This sounds a mildly pessimistic note for commercial banking, as executives desire to tie less of their compensation to pay-for-performance standards. Finally, banks that received more TARP funds actually reduced their loan portfolios by greater amounts, which refute the idea that the TARP program had a positive impact on bank lending.

References

1. Buch, C. and Neugebauer, K. (2011). "Banks-Specific Shocks and the Real Economy", *Journal of Banking and Finance*, 35, pp. 2179-2187.
2. Cocheo, S. (2011). "Number Five and Feeling Good", *ABA Banking Journal* (May), pp. 26-30, 46.
3. Filbeck, G., Preece, D. and Zhao, X. (2011). "Top Performing Banks: Size Effect and Economic Cycles", *Journal of Investing*, 20, pp. 19-32.
4. Goss, A. and Roberts, G. (2011). "The Impact of Corporate Social Responsibility on the Cost of Bank Loans", *Journal of Banking and Finance*, 35, pp. 1794-1810.
5. Jackson, P., Furfine, C., Groeneveld, H., Hancock, D., Jones, D., Perraudin, W., Radecki, L., and Yoneyama, M. (1999). "Capital Requirements and Bank Behavior: The Impact of the Basel Accord", Basel Committee on Banking Supervision, Working Paper No. 1.
6. Keen, S. (2009). "The Global Financial Crisis, Credit Crunches and Deleveraging", *Journal of Australian Political Economy*, 64, pp. 18-32.
7. Kretschmar, G., McNeil, A., and Kirchner, A. (2010). "Integrated Models of Capital Adequacy – Why Banks are Undercapitalised", *Journal of Banking and Finance*, 34, pp. 2838-2850.
8. Murphy, M. (2010). "The Dodd-Frank Wall Street Reform and Consumer Protection Act: Titles III and VI, Regulation of Depository institutions and Depository Institution Holding Companies", Congressional Research Service Report for Congress.
9. Oprita, A. (2011). "Extra Bank Capital Means Global Recession: Bove", CNBC.com, June 27, 2010, available at <http://www.cnbc.com/id/43377170>.
10. Price, Waterhouse, Coopers (2010). "Impact On Banks, Thrifts, and Their Holding Companies", in the *A Closer Look at the Dodd-Frank Wall Street Reform and Consumer Protection Act* series.
11. Santos, J. (2001). "Bank Capital Regulation in Contemporary Banking Theory: A Review of the Literature", *Financial Markets, Institutions, and Instruments*, 10, pp. 41-84.

12. Stolz, S. (2002). "The Relationship Between Bank Capital, Risk-Taking, and Capital Regulation: A Review of the Literature", Manuscript, Kiel Institute for World Economics.
13. VanHoose, D. (2008). "Bank Behavior Under Capital Regulation: What Does The Academic Literature Tell Us?" Networks Financial Institute Working Paper (2006-WP-04).
14. VanHoose, D. (2007). "Theories of Bank Behavior Under Capital Regulation", *Journal of Banking and Finance*, 31, pp. 3680-3697.