



Too Big To Ignore

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Since the summer of 2005, Epoch has been wary of large financial stocks, in particular banks. Leading up to and throughout the crisis, in various papers we highlighted the red flags visible in the space: unsustainably high leverage; poor underwriting and lack of transparency on the asset side; and the equity that would disappear when those assets inevitably crashed. Subsequently, between May 2007 and March 2009, financials in the MSCI World Index lost 79% of their value. Well-known, generations-old banks collapsed, while remaining titans survived with the help of timely government capital infusions and the accommodative policies of central banks.

Since that time, while we have invested in an array of non-bank financials, we have continued to avoid the large banks. But imbalances eventually correct and, more recently, the share prices of these banks have risen faster than the broader market. Throughout, we have asked ourselves: is it safe to get back in? Can we find companies that have sustainable free cash flow and use it to shareholders' advantage in an industry that housed the most epic destroyers of shareholder capital ever seen?

A SUMMARY

The answer, which may come as a surprise to our long-time followers, is a qualified yes. We're still taking a pass on the big banks of Europe, which have lagged far behind their U.S. counterparts in recapitalizing their balance sheets. But in the U.S., we no longer can rule out the industry as a whole. This is not because the macro factors that drive bank return on equity (ROE) — the most important measure of profitability — are particularly promising. As we will show, they are not. Loan growth, the most vital element necessary for ROE expansion, is slow and may be hindered by new regulations. Leverage will likely never return to its ROE-maximizing heights. Costs have already been cut, new opportunities for non-interest income are few, and the release of loss reserves, which has inflated earnings, will soon run its course.

That said, U.S. banks are extraordinarily liquid, well capitalized and well positioned for an upturn in the economy and an increase in interest rates. Until then, banks will perform like other mature, highly competitive industries, with slow top-line growth, a focus on expense control, perhaps increased M&A (though not among or by the largest banks) and a focus on return of capital to drive shareholder returns.

It is this last element that we believe shows the most promise, and for this we have to thank the Federal Reserve and its stress test. (This is in contrast to the European Banking Authority's stress test, which is widely seen as far less rigorous. In fact, the two main Cypriot banks, which collapsed in March, easily passed these tests in 2010 and 2011.) Beginning in February 2009 (a month before the market's bottom), the Fed began implementing a series of annual stress tests that the largest banks would have to pass by a

wide margin to first demonstrate their viability and eventually to obtain permission for dividend payouts and share repurchases. The banks' increasingly strong performance on these tests, which have grown more refined and granular with each year, along with decent operating results have given us confidence that banks can generate excess capital — i.e., free cash flow — and priced correctly are worthy, potentially lucrative investments for our clients.

WHAT IS A BANK . . . A GOOD BUSINESS?

What would one pay for a business with an 86% gross margin in its main business line and a 38% pre-tax cash operating margin? That is what the U.S. banking system in its entirety earned in 2012.¹ There are myriad reasons, mainly leverage and credit risk, why the answer to that question is “a lot less than a comparable non-bank business.” The market bears this out, as the XLF (an S&P financials ETF) trades at 13x forward earnings while the SPY (an S&P 500 ETF) trades at nearly 15x. But that doesn't mean one can't make money in bank stocks, especially since a repeat of the 2008-2009 credit disaster has been taken off the table by the stress test.

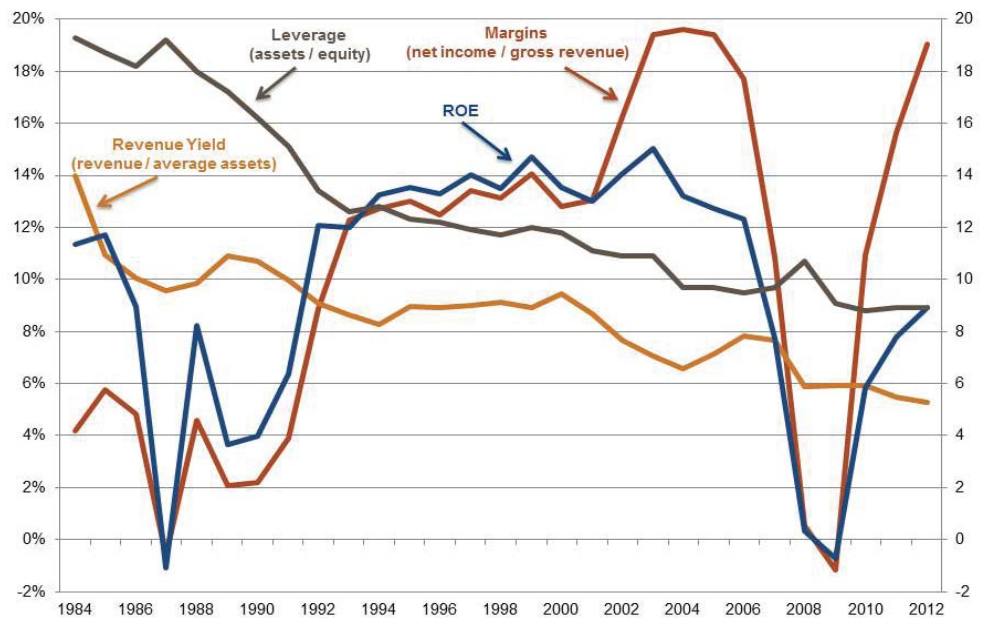
At its roots, a bank is a leveraged aggregator of diverse credits funded by low- to no-cost deposits. The leverage and low- to no-cost funding distinguish it from, say, a fixed-income mutual fund. It buys money, marks it up and resells it. There is no other business, not even Warren Buffett's beloved insurance, where customers line up to warehouse their money in an enterprise with little expectation of return, and in the case of checking accounts, full knowledge of no return! Banks do pay for the privilege of housing these deposits via the FDIC insurance wrapper: in 2012, U.S. banks paid assessments of \$12.4 billion, on average insured deposits of \$7.2 trillion (17 bps). Considering banks earned nearly 4% on earning assets (loans and bonds) in 2012, at an overall interest cost of 54 bps (not including the FDIC assessment), insured deposits are still a very attractive source of funding available only to banks. And we haven't even included interchange income, wire fees and overdraft fees earned in the course of allowing the customer to access his or her funds on a regular basis. It is true banks spend a fair amount of money in gathering and servicing these deposits, be it on large branch networks or IT systems. This is captured, however, in the non-interest expense, with the net result showing a “cash” pre-tax margin of 38%. So far, so good.

The flip side of gathering all of these deposits is that they, by definition, make banking a highly asset-intensive business relative to other industries. The clearest way to demonstrate this is to look at the revenue generated by the financial and non-financial businesses of GE. In 2012, GE Capital generated \$46 billion of revenue from average assets of \$560 billion, while the rest of GE generated a little over \$100 billion of revenue, on average assets of \$140 billion. In other words, GE's broad portfolio of industrial and other businesses generated over twice the revenue on a quarter of the assets. So a bank has a portfolio of assets that doesn't turnover very rapidly yet when it does it generates a decent return.

The last component of the classic DuPont ROE model is leverage, and here lies the “good” and the “ugly” of the basic bank model (we skip the “bad” because the effect of leverage on bank performance is almost always ugly, especially during the most recent crisis). Figure 1 depicts system-wide assets to equity of all FDIC banks since 1984, the earliest date for which we have complete combined data for commercial banks and thrifts.

¹ Source: FDIC Quarterly Banking Profile, Fourth Quarter 2012

FIGURE 1: PROFIT MARGINS HAVE RECOVERED, BUT LEVERAGE, REVENUE YIELDS AND ROE HAVE NOT
 FDIC insured commercial & savings banks: margins, revenue yield, ROE (left scale) and leverage (right scale)



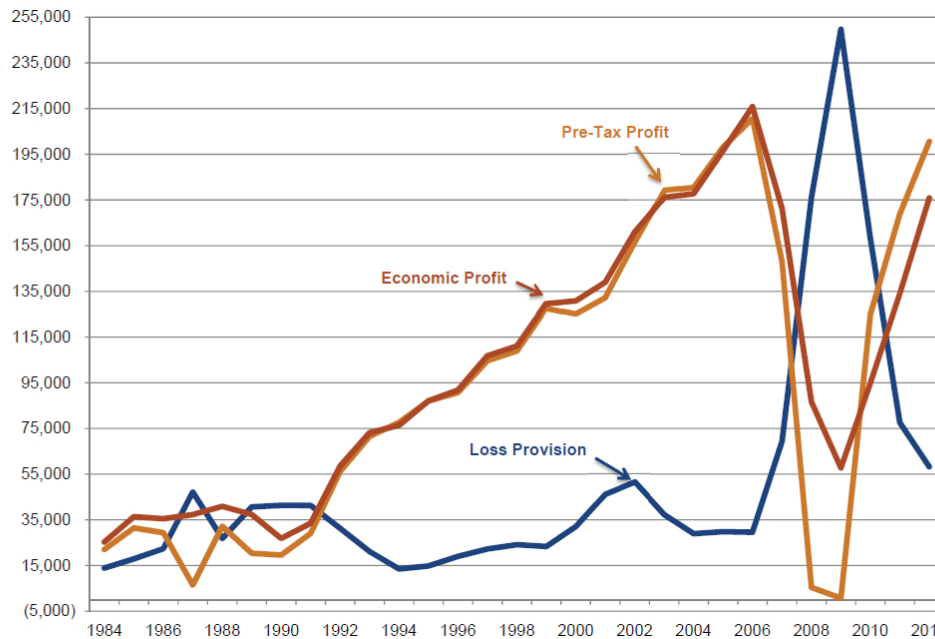
Source: FDIC Quarterly Banking Profiles, Epoch Investment Partners. For a complete data set of net income, gross revenue, assets, equity, net income/gross revenue, revenue/average assets, average assets/equity, industry ROA, industry ROE, goodwill and intangibles, tangible assets, tangible equity and TA/TE, 1984-2012, please see Table 4 in the appendix.

It is easy to see that while banks' profit margins have returned to pre-crisis levels, the decline in leverage (due to debt pay-downs of over \$1 trillion as well as write-downs of goodwill) and revenue yield (a function of lower rates, lower investment banking revenue and the regulatory driven reduction in traditional sources of fee income) has led to a sharp decline in ROE compared to pre-crisis levels. The profit margin component rapidly recovered over this time period, surprisingly, for a number of reasons. The most obvious is the decline of interest expense (i.e., cost of goods sold), which more than offset the drop in interest income (which feeds into gross revenue) in absolute dollar terms. Another offshoot of the continuing low-rate environment has been a refinancing boom, which engendered notable increases in gains-on-sale of loans and securities, as well as fixed-income trading profits. The remaining driver of improved profit margin is perhaps the most unpredictable component of the profitability and valuation of banks: credit. Credit losses on highly leveraged assets have been the downfall of many banks through time, as was vividly captured during the recent crisis. Figure 2 shows the historical trajectory of loan loss provisions and charge-offs, and their impact on bank profitability.

Banks over-earned on an accounting basis during the past three years due to the release of reserves, so we focus on what we call economic profit. Economic profit accounts for the wealth lost due to charge-offs — money lent that will never return, and gives banks no credit for reserve releases. Similarly, in years, where banks reserved in excess of actual charge-offs, banks are given credit for the actual economic loss to shareholders in that period. When adjusting for this, ROE in 2012 was 7.79%, compared to a reported ROE of 8.92%. On this basis as well as on reported ROE we see bank ROE improving but still not anywhere close to what was earned prior to the crisis.

FIGURE 2: ACCOUNTING PROFITS INFLATED BY RESERVE RELEASES

FDIC insured banks: Pre-tax profits, loss provisions and economic profit (in \$millions)



Source: FDIC, Epoch Investment Partners' estimates. To determine economic profit, reserve releases (additions) are removed from pre-tax profit and the resulting amount is taxed at that year's effective tax rate. For a complete data set of pre provision operating profits, loss provisions, pre-tax profits, charge-offs, net charge-offs, LLP-NCO, X/O items, economic profit, stated ROE, adjusted ROE and over (under) statement of ROE, 1984-2012, please see Table 5 in the appendix.

Figure 2 also shows significant cyclicality in reserves: under-reserving followed by large losses which lead to over-reserving. Over time, banks have come reasonably close in their estimates of ultimate net charge-offs. Since 1984, cumulative bank provisions were \$1.5 trillion, while cumulative net charge-offs were \$1.3 trillion. Granted, provisions are forward looking, so losses contemplated by provisions today have not fully materialized, whereas realized charge-offs have, and banks were woefully under-reserved heading into the crisis. FASB put out an exposure draft in late 2012, proposing a new method of bank reserving that contemplates losses over the life of the loan on day one as opposed to delaying loss recognition until it is probable, at which point an additional reserve is typically taken. Ostensibly this should reduce somewhat the cyclicality of bank earnings and lower their risk premium in the stock market. However, the proposed process presents its own complications (which are beyond the scope of this paper) with the ratings agency Fitch predicting increased volatility should it go through as planned. The banks we've spoken to indicate fears over the complexity of the exposure draft, but do have an interest in reducing the wild swings in provisions and are likely to counter FASB's proposal with one of their own. Now that we've touched on credit, we turn our attention to net interest margin.

NIM . . . NOT IMPROVING (EVEN) MILDLY?

Net interest margin measures the yield on an asset less the cost to fund that asset. Bank net interest margin is a key driver of profitability and revenue yield on assets and hence has a significant effect on ROE. Sustained low interest rates, while generally helpful to bank capital markets operations, have nonetheless had a negative effect on banks' much larger lending operations. Table 1 shows banks' historical revenue yield, cost of funding, and net interest margin.

TABLE 1: HIGHER RATES DO NOT EQUATE TO HIGHER NET INTEREST MARGINS
FDIC-insured banks net interest margin

	Earning Assets (\$ millions)	Yield on Earning Assets	Cost of Funding Earning Assets	NIM	
1984	3,182,705	11.42%	7.74%	3.68%	
1985	3,486,170	11.11%	7.84%	3.27%	
1986	3,783,867	10.01%	6.75%	3.26%	COMPARABLE ROE YEAR
1987	3,967,061	9.55%	6.29%	3.26%	
1988	4,168,125	9.95%	6.69%	3.26%	
1989	4,170,284	10.98%	7.70%	3.28%	
1990	4,092,845	10.68%	7.25%	3.43%	
1991	4,023,766	9.71%	6.00%	3.71%	
1992	4,036,586	8.44%	4.34%	4.10%	
1993	4,221,805	7.72%	3.55%	4.17%	
1994	4,413,478	7.57%	3.46%	4.11%	
1995	4,697,702	8.30%	4.29%	4.01%	
1996	4,916,245	8.15%	4.09%	4.06%	
1997	5,274,547	8.12%	4.09%	4.04%	
1998	5,687,326	7.98%	4.08%	3.91%	
1999	6,010,848	7.70%	3.80%	3.89%	
2000	6,503,097	8.20%	4.43%	3.77%	
2001	6,786,535	7.31%	3.57%	3.78%	
2002	7,287,824	6.15%	2.19%	3.96%	
2003	7,854,548	5.35%	1.62%	3.73%	PEAK ROE YEAR
2004	8,806,316	5.02%	1.49%	3.53%	
2005	9,499,800	5.73%	2.24%	3.49%	
2006	10,338,271	6.45%	3.13%	3.31%	
2007	11,304,655	6.76%	3.47%	3.29%	
2008	11,747,077	5.36%	2.18%	3.16%	
2009	11,267,338	4.75%	1.28%	3.49%	TROUGH ROE YEAR
2010	11,554,978	4.70%	0.93%	3.76%	
2011	12,073,705	4.32%	0.72%	3.60%	
2012	12,682,469	3.96%	0.54%	3.42%	MOST RECENT

Note: Banks exited 2012 with a 4Q yield on earnings assets of 3.81%, a cost of funds of 0.49% and NIM of 3.32%

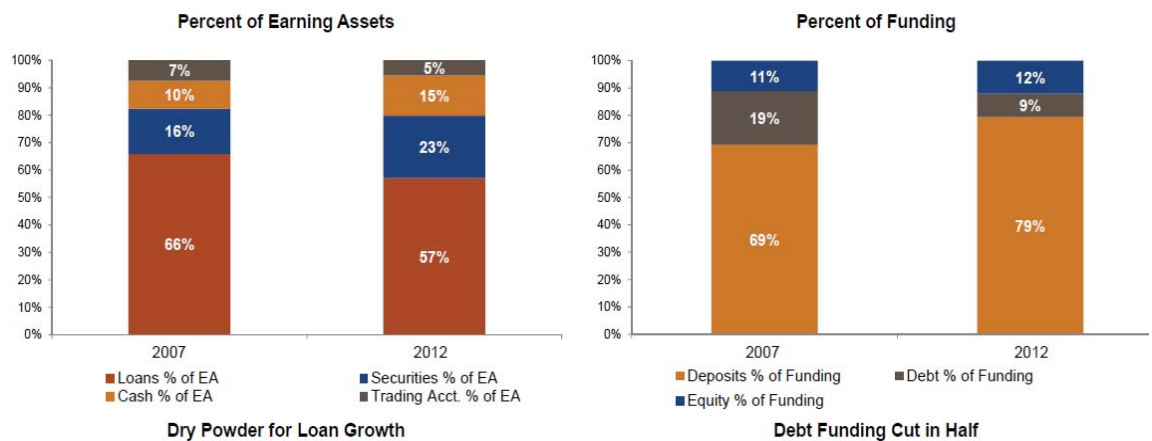
One can see that while asset yields and cost of funds are both at historically low levels, the gross profit margin as measured by NIM is not markedly below historical levels (average of 3.6% since 1984). Thus, higher rates in and of themselves won't create higher ROE. This can be viewed most vividly by comparing the industry's stated ROE in 2012 with that of 1986. In both years, banks on average reported ROEs of nearly 9% though the asset turnover component of ROE, driven in large part by yields on earning assets, was substantially higher in 1986, as was leverage. The flip side of this is that profit margins in 2012 were notably higher than in 1986 due to a combination of lower "cost of goods sold" via lower interest expense and the aforementioned reserve releases, which were enough to overcome a large decrease in leverage. The fact that lower rates aren't uniformly bad for ROE can also be seen in the mortgage market, where banks have realized record-high gains-on-sale in the secondary market due to Fed buying of mortgage-backed securities.

It is true banks' profit margins and thus ROE will benefit from the deliberate lag in the re-pricing of deposits versus a corresponding increase in asset yields (which improves gross profit margin) when interest rates increase. The timing of such an increase is difficult to predict given the Fed's and other central banks' determination to keep both short-term and long-term rates low. It is also difficult to ascertain how quickly the lag will be competed away by other banks and intermediaries such as money market funds. With bank net interest margins not particularly low by historical standards, higher rates, while definitely a positive for the group, would not by themselves improve ROE. In addition to the shape of the yield curve, a lot will have to do with the composition of current bank balance sheets, which we will touch on next.

WHY ARE YOU SO (ASSET) SENSITIVE?

In his recent letter to shareholders, J.P. Morgan Chase CEO Jamie Dimon made a pointed statement in regards to his bank's ability to benefit from higher rates: "As we are currently positioned, if rates went up 300 basis points, our pre-tax profits would increase by approximately \$5 billion [around 15% of J.P. Morgan's 2012 pre-tax income] over a one year period." He is likely referring to a parallel shift in the yield curve whereby all points would go up 3%. This is unlikely, and he admits in the same letter that this is if "all things are equal," which wouldn't be the case. There would be dislocations in the market should such an increase occur over such a short period of time. For example, J.P. Morgan would likely face significant markdowns on its inventory of trading and available-for-sale securities. But it does point out that JPM has a lot more assets with short maturities than it does liabilities, making it a so-called "asset sensitive" bank. We have reason to believe most banks of all sizes are in this position. Figure 3 shows the composition of banks' collective balance sheets over time.

FIGURE 3: DEPOSIT RICH, LOAN POOR
FDIC-insured banks' balance sheet composition



Source: FDIC. For a complete data set of FDIC-insured banks' balance sheet composition, 1984-2012, please see Table 6 in the appendix.

Three trends are visible since the crisis: 1) bank loans as a percentage of earning assets declined sharply; 2) cash and securities increased sharply; 3) deposits and equity now make up a larger share of bank funding than at any time in our data series (going back to 1984). We believe number three is permanent. Regulators worldwide have embraced the higher capital requirements embodied in Basel III (discussed later). Debt funding is frowned upon; in a recent speech Chairman Bernanke flatly stated "Notably, supervisors will continue to press banks to reduce further their dependence on wholesale funding [i.e. debt], which proved highly unreliable during the crisis." Thus the cost of funds should decline at any given point of the cycle (debt financing is more expensive than deposits). As for the other two trends, we see nascent signs of loan growth (discussed below), and believe the huge amount of money parked in cash and shorter-term securities provide ample "dry powder" for banks to improve their ROE when redeployed into loans at a higher net interest margin. Looked at another way, were banks simply to move back to 2011's collective NIM on their existing earning assets (i.e., an 18 bp increase in the yield on assets relative to the cost of funds), close to \$15 billion of after-tax income would accrue to the industry and push its collective ROE close to 10%.

It is worth noting that a provision in Basel III (a global regulatory framework for mandating minimum levels of capital and liquidity) known as the Liquidity Coverage Ratio (LCR), calls for increased amounts of cash and short-term liquid assets to be held on bank (particularly internationally active bank) balance sheets. The minimum LCR calls for enough liquidity to ensure “that banks have an adequate stock of unencumbered high-quality liquid assets (HQLA) that can be converted easily and immediately in private markets into cash to meet their liquidity needs for a 30-calendar-day liquidity stress scenario.” Banks are required to achieve 60% of the target LCR by 2015 and 100% by 2019. Thus, it is unlikely cash and securities will return to the low level they were pre-crisis, as banks begin to hoard liquidity. That said there is considerable excess in the system. For example, Citigroup (which we will discuss later in this paper), disclosed it ended the year at 118% of its 2019 LCR, which equates to \$55 billion of excess liquidity over the 100% target, and roughly \$31 billion over Citi’s internal 110% target. Citi’s estimates redeploying the \$31 billion in higher-yielding assets or debt reduction would boost annual earnings by 2%, which implies an increase in ROE of nearly 20 bps. Keep in mind, Citi is an extreme example as it is perhaps the most internationally active of the big U.S. banks, but with 50% of domestic assets concentrated in the top five U.S. banks, the LCR (if it is applied in its current form) will play a role in the migration of funds back into lending. Domestic competitors will be less inhibited by LCR, but it is hard to imagine their not being required to hold some kind of liquidity buffer in excess of what they’ve held historically.

It is clear that banks are fairly liquid, and the right side of their balance sheet is in terrific shape. It is also clear, judging by Mr. Dimon’s comments, there is a tremendous amount of earnings leverage to higher rates. A widening NIM boosts ROA. Whether and how quickly this takes place will depend not just on interest rates but on loan growth.

LOAN GROWTH

Let’s assume the banking system in the aggregate has excess liquidity similar to Citi and could redeploy it to the same effect. The reported ROE in 2012 would have exceeded 9% and the economic ROE 8%. Better than crisis levels, yes, but likely not enough to exceed their cost of capital and create long-term value. In the absence of higher rates aiding asset sensitive entities, banks must reclaim the left side of their balance sheets by growing loans, i.e. “volume” rather than relying on “price.” Contrary to what some governments may think, banks exist to efficiently make loans to profitable endeavors, not to channel deposits into government securities. With further economic improvement the table is set for a meaningful improvement in bank balance sheet efficiency, which we define as yield per dollar of risk-weighted earning assets, i.e., the most “bang” per “buck” of funding. So how are we doing post crisis?

Banks grew loans at a 2% CAGR over the past three years. In the first quarter, U.S. banks grew loans by 3.6% compared with the first quarter of 2012. Is this cause for celebration? Perhaps, but we are chastened by the fact deposits grew at a 5% CAGR (9% YOY through March) and were deployed into securities (6% CAGR, 5% YOY through March), as well as cash (11% CAGR, 19% YOY through March) at a faster rate and in higher absolute dollars versus loans. On a positive note, debt declined by an 11% CAGR (12% YOY), mitigating some of the decline in net interest margin. The liquidity buffers mentioned above, residual fear post-crisis, higher potential risk weightings, write-downs and regulatory headwinds in the mortgage market all likely played a role in addition to global deleveraging. All are likely to continue to weigh on loan demand and prevent

large scale repositioning of bank balance sheets in the absence of substantial economic improvement. So things are better, but not good enough.

OUT OF LEVERS

What other levers could banks pull to boost ROE? Cost-cutting is one option, which large organizations such as Citi, Bank of America, and KeyBank are pursuing. They could also seek more asset efficient and potentially (but not always) higher margin revenue not directly tied to net interest margin, i.e., non-interest income. They could purchase or develop higher ROA businesses (including asset managers, which carry ROAs well into the double digits with little leverage). However, as mentioned earlier, many avenues of non-interest income generation have been closed or narrowed, perhaps permanently. By and large, as shown in Table 2, the industry is neither particularly “fat” when it comes to expenses, and is already earning a historically normal amount of non-interest income, especially considering regulatory scrutiny on non-interest income (Durbin, Volcker, forced-placed insurance, etc.).

TABLE 2: COSTS HAVE BEEN CUT AND GROWTH IN NON-INTEREST INCOME MAY BE LIMITED
FDIC-insured banks non-interest income & expenses 1984-2012

	Non-Interest Income / Average Assets	Non-Interest Expense / Average Assets	Non Int. Expense / Net Revenue	Non Int. Income / Net Revenue
1984	1.08%	2.70%	73.9%	30%
1985	1.14%	2.89%	72.2%	29%
1986	1.19%	3.08%	76.1%	29%
1987	1.21%	2.95%	72.3%	30%
1988	1.19%	2.84%	69.8%	29%
1989	1.28%	2.95%	70.4%	31%
1990	1.33%	3.08%	70.7%	30%
1991	1.45%	3.31%	69.9%	31%
1992	1.59%	3.45%	65.9%	30%
1993	1.77%	3.58%	65.2%	32%
1994	1.69%	3.43%	64.6%	32%
1995	1.73%	3.31%	63.0%	33%
1996	1.86%	3.43%	63.4%	34%
1997	1.92%	3.29%	60.7%	35%
1998	2.13%	3.49%	63.1%	39%
1999	2.33%	3.44%	60.5%	41%
2000	2.31%	3.39%	60.4%	41%
2001	2.22%	3.28%	59.8%	40%
2002	2.27%	3.26%	57.4%	40%
2003	2.31%	3.18%	57.7%	42%
2004	2.12%	3.07%	59.4%	41%
2005	2.13%	3.03%	58.7%	41%
2006	2.10%	2.90%	58.2%	42%
2007	1.88%	2.97%	62.7%	40%
2008	1.55%	2.74%	65.1%	37%
2009	1.95%	3.03%	61.7%	40%
2010	1.78%	2.95%	58.9%	35%
2011	1.69%	3.03%	63.1%	35%
2012	1.76%	2.98%	62.8%	37%
Avg. 1984-2012	1.76%	3.14%	64.4%	35%

Source: FDIC

ONLY ONE THING LEFT

Thus far we've pointed out that bank performance has rebounded since the crisis, due largely to a favorable credit environment and lower cost of funds. Leverage is lower, thus ROE is not likely to come anywhere near pre-crisis levels. Gross margins industry-wide are on the low side but not abnormal, bank expenses are reasonably lean, and banks are performing reasonably well generating non-interest income in a tough regulatory environment. Balance sheets are positioned for loan growth and higher rates, but loan growth has been meager and it is unclear when rates will rise and if they will do so in a manner favorable to banks (i.e., a steepening yield curve). In summary, with some exceptions, there are not many levers they can pull to improve the "R" absent a rapid economic expansion. There is one element of ROE — the denominator — we have not discussed and herein lies the key to improved bank returns, aided and abetted by the Fed's "stress test." In the next section we will discuss how higher returns of excess capital — accumulated and ongoing free cash flow — can boost returns to acceptable levels and make bank stocks worthy investments.

THE STRESS TEST

On February 10, 2009, less than a month before the S&P 500 bottomed at 666, Treasury Secretary Tim Geithner announced a Financial Stability Plan that included a comprehensive stress test for the 19 largest banks. The test would aim to quantify what at the time seemed to be an infinite amount of losses at the largest banks and increase confidence in the banking system, the lack of which was paralyzing the economy. Alongside the stress test, Geithner announced the Capital Assistance Plan, which would act as a backstop for banks deemed under-capitalized following the adverse scenario contemplated by the stress test that could not raise equity capital on their own. The market yawned and the S&P 500 dropped another 4.5% to 828 that day and another 20% until its beastly bottom on March 6, 2009. While the dates did not exactly overlap (the test results were not announced until April 24, 2009 when the market was well on its way to recovery), we believe the initial stress test was the single most important catalyst for the market as a whole and financials in particular. SCAP (the catchy acronym of the initial stress test) and its subsequent iterations (the CCAR and DFAST) have grown increasingly granular and stringent the past five years and in addition to banks' improving performance each year have given us confidence that the space can no longer be deemed "un-investable." Table 3 shows iterations of the stress test through the years (note that 2011's results for individual banks were not published).

Clearly the health of the industry has improved: pre and post-stress capital ratios are up, projected stressed loan losses are down, and the industry has gone from needing \$75 billion of fresh capital to being permitted to return over half of its earnings to shareholders through either dividends or buybacks (though dividends are restricted to 30% of earnings). Equally important is the stress test's methodology. The test has broadened the number of macro parameters it considers when assessing bank capital from a purely domestic framework focused on home prices (except for the six large banks with international trading activities) to one that encompasses market volatility, consumer inflation, and the health of all key global economies. All bank holding companies with greater than \$50 billion of assets are now tested as opposed to only the 19 largest, which subjects an additional 11 institutions to scrutiny. Beginning in 2014 non-bank systematically important financial institutions (SIFIs) such as insurance companies will be added to the list. The assumptions embedded in these parameters have also grown more stringent: the 2013 test (DFAST)

contemplates a 6% drop in GDP (vs. 2% in the 2009 SCAP), 12% unemployment (vs. 10.3% in 2009), a 20% drop in home prices from then current levels (vs. 10% in 2009), a 1.2% rate on the 10-year Treasury (vs. ~2.5% in the 2011 CCAR) and a 50% drop in the DJIA (vs. 28% in the 2011 CCAR). Banks have also reportedly been asked to consider a scenario of rapidly rising interest rates.

TABLE 3: U.S. STRESS TESTS HAVE BECOME MORE RIGOROUS
A history of bank stress tests 2009-2013

	<u>2009 SCAP</u>	<u>2011 CCAR</u>	<u>2012 CCAR</u>	<u>2013 CCAR/DFAST</u>
Participating Banks	19	19	19	18
"Failing" Banks	10	NA	4	2
Pre-Stress T1C	5.8%	NA	10.1%	11.1%
Post-Stress Tier 1 Common	NA	NA	6.8%	7.7%
Post-Stress w / Cap. Dist.	NA	NA	6.3%	6.6%
Required Post-Stress T1C	4.00%	5.00%	5.00%	5.00%
Loan Losses	(599)	NA	(341)	(317)
LL / Beginning Loans	-9.1%	NA	-8.1%	-7.5%
Projected Loss (\$ billions)	NA	NA	(222)	(194)
Macro Parameters	US GDP	<u>2009 Plus</u>	<u>2011 Plus</u>	
	Unemployment	DJIA	Disposable Income	
	Home Prices	10-Year Treasury Rate	CPI VIX	
	Loan Loss Ranges Prescribed	3 Month T-Bill Rate	CRE Prices	
		BBB Corporate Rate	EU, Japan, Asia, UK GDP, FX, CPI	
Other Changes		"Qualitative" Aspect Added	BHC's >\$50B submit test	Banks' internal results published
		Capital Dist. Considered	Losses For Operational Risk	Banks get 1 "mulligan" to re-request cap. dist.
		30% Limit on Dividend Payout	Losses For Mortgage Putbacks	Fed evaluates BHC's > \$50 Billion
Capital (Required) / Paid Out	(\$75 Billion)		42% of Forward 12M Net Income	53% of Forward 12M Net Income

Source: Federal Reserve, Evercore Partners

There is also less of a "take home test" aspect to the stress test. In 2009, regulators were admittedly "under great time pressure" and "it was not possible to produce completely independent estimates," according to Chairman Bernanke. Banks were given an acceptable range of predicted losses by loan category and told not to submit any estimates outside of that range unless they had good reason. Ten entities failed. Fast-forwarding to 2013, banks still submit their own assumptions of stress test losses using the Fed's parameters, but the Fed also runs their own stress test for each bank using its own models, which are not made available to bank management. Both publish their results. Shockingly (!) most banks' estimates of their post stress capital levels came in substantially higher than the Fed's, sometimes embarrassingly so as in the case of Goldman Sachs (8.6% vs. the Fed's 5.8%). Guess who won that argument? Interestingly, Citigroup, which under the 2009 test required a \$5.5 billion capital infusion on top of earlier infusions of \$45 billion and later massive government guarantees of its balance sheet, emerged with a post-stress Tier I Common ratio 130-250 bps higher than Wells Fargo, Bank of America, J.P. Morgan Chase and Goldman, and on par with U.S. Bancorp.

The Fed estimates it reviewed individual loan and account level data on over two-thirds of the \$4.2 trillion of loans and leases in the 18 bank holding company portfolios over the course of the 2013 stress test and in Chairman Bernanke's words are "close to the point at which we will be able to estimate, in a fully independent way, how each firm's loss, revenue, and capital ratio would likely respond in any specified scenario." In other words, no more take home test. And the Fed also put even the perceived-to-be strongest

institutions such as J.P. Morgan and Goldman on notice by only conditionally approving their capital plans, and in the case of American Express, rejecting it (AXP did use its mulligan to get a less aggressive plan approved). In our view, the increased granularity and independence embedded in the stress test is another milestone and heralds increased transparency into the “black box” nature of large bank holding companies. We now have reasonable estimates of worst case, capital consuming credit losses. The question we can now ask is the same we ask for all the companies we invest in: do these businesses generate free cash flow, how much do they generate and how are they using it on behalf of shareholders?

FREE CASH FLOW FOR BANKS

Those are two terms that aren’t usually paired. Unlike most businesses, one can’t calculate free cash flow for a bank by simply subtracting capital expenditures from cash flow from operations. For example, a loan charged off is a “non-cash” event but it is absolutely an economic loss for the shareholder. A provision matched to this loss is an add-back to net income in cash flow from operations but represents a real, regulatory-mandated cost of business and is at least temporarily capital that cannot be distributed. Similarly, when a bank makes a loan (technically a cash outflow) equity capital must be held against that loan, depending on its risk level. This does not show up as a capital expenditure on the cash flow statement but it is capital that is not available to the shareholder until the loan is paid down. There are also regulators to answer to, that, most visibly in the stress test, dictate how much the bank is permitted to return to shareholders.

Yet there are ways to estimate how much of a bank’s net cash earnings may be distributed. There are three important inputs: 1) required capital (Basel III Tier I Common) level to be maintained; 2) capital generated (net income in its simplest form); and 3) asset growth (risk-weighted). See Figure 4 for a simple model.

FIGURE 4

$$\text{Free Cash Flow}_{\text{Bank}} = \text{Capital Generated} - ((\Delta \text{ Risk Weighted Assets}) * (\text{Required Capital \%}))$$

$$\text{Less}$$

$$\text{Ending RWA} * (\text{Required Capital \%} - \text{Beginning Capital \%})$$

Note the top term does not take into account the current capital adequacy of the institution or its relationship with its regulator, which if strained can lead to substantially higher capital requirements and thus lower distributions. Nor does it take into account the capital structure of its holding company, which may require earnings to fund any operating and interest expenses not borne by subsidiaries (thus free cash flow for the holding company, which is the entity we own, would be free cash flow from the bank and other subsidiaries less any holding company requirements). It only addresses the incremental free cash flow generated by the next dollar of earnings. Capital adequacy is captured in the second part of the equation. If the bank or holding company is undercapitalized, that free cash flow must be held to fortify capital. Similarly, if the entity is overcapitalized or very well capitalized, 100% of that free cash flow (plus some excess capital) may be used to fund buybacks and dividends. For example, American Express has received permission to pay out over 100% of its projected earnings in 2013 in this way. As with any model, the degree of accuracy and conservatism in the inputs are vital. For a bank, as with other companies, the first step is to estimate net income, which will make up the lion’s share of capital generated. Change in risk weighted assets is

extraordinarily difficult to estimate, especially with final Basel III risk weightings yet to be agreed upon and the uncertainty regarding the mix of asset growth. Simplistically, if the bank's business model isn't changing significantly, we can assume the existing relationship between risk-weighted assets and GAAP assets will stay the same. Given tepid loan growth, but rapid deposit growth which is deployed into lower-risk cash and government securities, risk-weighted assets will in almost all cases grow less rapidly than GAAP assets, which ironically improves banks' capital position and frees up capital, all else equal. On-balance sheet loan growth has averaged 0.5x the growth of nominal GDP since 1984, and almost exactly that (around 2% annually) in the 2010–2012 period. Thus, low-single-digit loan growth is the best we can expect from any large bank in the near term.

The most critical governor of bank free cash flow will be its Basel III Tier I Common Ratio. This is a ratio computed using a framework set by the Basel Committee on Banking Supervision, a regulatory group consisting of representatives of global central banks. It is expressed as Tier I common equity divided by risk-weighted assets, adjusted to exclude from equity: intangible assets, certain pension plan assets and a portion of a BHC's deferred tax assets (which may never be realized), mortgage servicing rights (a kind of intangible asset) and stakes in other financial companies. The minimum ratio to be achieved is 7% but complex, internationally active banks (G-SIFIs) must hold B3T1C as high as 9.5%. Individual country regulators have some leeway in setting risk-weightings as well as additional capital surcharges.

At this point it may be helpful to show an example of how this would work in practice. Citigroup ended 2012 with B3T1C of \$105 billion and risk-weighted assets of \$1.2 trillion, for a B3T1C ratio of around 8.75%. It is required to reach a 9.5% ratio by 2019, though in actuality investors and regulators are demanding they get there yesterday. For conservatism's sake, we've assumed Citi must build up to a 10% ratio by year-end (and 11% by 2016). Thus, there is an extra claim on Citi's free cash flow to boost its capital, i.e., this money is not available for shareholder distributions. Morgan Stanley has projected that Citi will earn over \$13 billion in 2013 (we have not assumed any "mitigating" balance sheet actions banks may take to further boost capital). Due to the ongoing sale and wind-down of different business units, Citi's risk-weighted assets are actually projected to fall by \$57 billion. In Figure 5, plugging these numbers into our equation yields free cash flow of \$3.6 billion.

FIGURE 5

$$\begin{aligned}
 \text{Free Cash Flow}_{\text{Citi}} &= \$13.2 \text{ billion} - ((\$57 \text{ billion}) \cdot (.10)) \\
 &= \$18.2 \text{ billion} \\
 \text{Less} \\
 &\quad \$1.15 \text{ trillion} \cdot (.10 - .0873) \\
 &= \$3.6 \text{ billion}
 \end{aligned}$$

Thus, regulator permitting, we think Citi could safely distribute \$3.6 billion, or roughly 27% of its estimated net income for 2013. In future years, if we held the capital requirement at 10%, Citi could distribute a level of earnings comparable to peers, including J.P. Morgan and U.S. Bancorp (70-75%). Assuming Citi must build to 11% capital by 2016, Citi could distribute 50-55% of earnings to shareholders, similar to Wells Fargo. It's

worth pointing out that Citi could free up additional capital for distributions should it begin to utilize its massive U.S. deferred tax asset (admittedly generated by massive losses), which as it stands, is punitive from a Basel III perspective. This is likely, in our view, as loss-making operations in Citi Holdings, which contains its remaining stake in retail brokerage plus detritus from the crisis era, are wound down. Citi Holdings generated a \$6 billion loss in 2012 compared to a \$14 billion profit for the rest of the company. Every dollar distributed is no longer part of the “E” in ROE. Should Citi be permitted by the Fed to distribute earnings using the 11% threshold, ROE could exceed 9% and return on tangible equity of 10% by 2016, at which point book value per share and TBV/share could approach \$85 and \$73, respectively. Holding capital to the 10% threshold would boost returns by an additional 50 bps. A 30% payout ratio at that time would produce a \$2.25 cash dividend. The two other traditional uses of free cash flow are less likely to be utilized by Citi. They almost certainly will not be permitted to buy another bank. And while they have de-levered similar to other banks, it is possible they will have to take on more expensive forms of debt under provisions of Dodd-Frank still to be determined.

While Citi faces the same NIM and fee income pressures as its peers, its vast international presence (60% of 2012 profit, excluding Citi Holdings) and exposure to emerging markets, plus outsized exposure to credit cards (higher loan yields, plus fees and interchange make this a relatively high revenue turnover business) should enable it to generate better-than-peer loan growth moving forward. It also lags peers such as J.P. Morgan and Wells Fargo in its expense ratio, giving it an additional lever to pull to enhance ROE. Citi’s is the house being remodeled in a not-quite-bad neighborhood that used to be a lot nicer.

It is our opinion that despite a mediocre environment, banks can still generate free cash flow and be solid investments. The stress test has increased transparency and reserves could become less volatile if banks and FASB can come to an agreement on a more forward looking reserve process. There are, however, still regulatory and political risks.

RISK REMAIN . . .

The biggest risk to banks’ free cash flow, particularly the large banks, is regulatory. While Basel III and the stress test seem to firmly set a floor of capital, the question is: will that be enough? Recently, a bipartisan bill floated in the U.S. Senate proposed to raise required common equity to 15% of consolidated assets (not risk-weighted) for banks holding greater than \$500 billion of assets. For banks below this threshold, the ratio would be 8%. The smallest community banks would be unaffected. If implemented (highly unlikely given the deleterious effect it would have on lending), this would eliminate distributions by large banks for the foreseeable future and reduce distributions by medium-sized banks. Our free cash flow framework would be broken. The intent of the bill is likely driven by a desire to, if not break up large banks, prevent them from getting bigger and prevent medium-sized banks from having aspirations of becoming large banks. Politicians’ intents may be (ahem) noble but we doubt they want to stymie the flow of credit. We believe the Basel III process is well on its way to making banks more sound, and additional legislation is by and large unlikely and unnecessary. The Consumer Financial Protection Bureau’s Qualified Mortgage rules could slow down the growth of mortgage lending, the single largest category of lending on bank balance sheets (25% of loans). Here too, we think politicians’ good intentions will give way to the desire to expand the availability of credit. The Orderly Liquidation Authority (OLA) provision of Dodd-Frank could, perversely, encourage banks to take on more high cost (but not total) debt by mandating more “bail-in-able” capital at the bank holding

company level, in the form of subordinated debt (which would likely be used to reduce more senior forms of debt). This would hurt net interest margins. Rating agencies, particularly Moody's, have discussed lowering holding company credit ratings should the OLA succeed in disabusing market participants of the notion the U.S. government will support large banks in a crisis and not dismantle them. In short, banks and their investors face a regulatory wall of worry.

. . . BUT WE'RE LESS "STRESSED"

We posit that while banks are still paying for the excesses that led to the financial crisis and the current macro environment is mediocre, banks are well positioned for the next upturn, and the stress test has addressed much of our concern relating to transparency. Valuations in the sector are not stretched, with many banks trading below both stated and tangible book value, and should ROE increase there is potential for multiple expansion in certain stocks. Due to higher capital levels and less leverage, banks will become more utility-like and less risky. Ample dry powder exists on bank balance sheets, even after accounting for new regulations such as LCR. Much will depend on how quickly the economy grows, which should drive increased lending, and vice versa. In the absence of loan growth, banks will rely more on return of capital to drive adequate returns, not necessarily a bad thing in our investment framework. Provided banks continue to earn an adequate return on whatever balance sheet growth they generate — and judging by performance post-crisis and 1Q results to date, they are — they should generate excess capital, or free cash flow by another name. There are unique opportunities to play simultaneous increases in profit margins and capital distributions. Among the smaller and mid-sized banks, consolidation will take place to reduce costs, presenting a rich opportunity set in small- and mid-cap products. We note that even the acquirers' stocks have been going up when recent deals have been announced.

Our colleague John Reddan aptly titled a prescient report on financial stocks in 2005 "The Wheels Are Coming Off." In the U.S., the wheels have since been repaired, and there is now a governor in place to prevent banks from exceeding their speed limit. They are now boring, but potentially functional entities for investors focused on free cash flow.

APPENDIX

Table 4 depicts system-wide assets to equity of all FDIC banks since 1984, the earliest date for which we have complete combined data for commercial banks and thrifts.

TABLE 4: FDIC INSURED COMMERCIAL & SAVINGS BANKS LEVERAGE & TANGIBLE EQUITY 1984-2012
(Income, revenue, assets, equity, in \$millions)

	Net Income	Gross Revenue (a)	Assets	Equity	Net Income / Revenue	Revenue / Assets (b)	Assets / Equity	Industry ROA (c)	Industry ROE (c)	Goodwill & Intangibles	Tangible Assets	Tangible Equity	TA / TE
1984	16,654	399,121	3,652,996	189,157	4%	-	19.3	0.59%	11.36%	28,118	3,624,878	161,039	22.5
1985	23,508	417,804	3,993,326	213,899	6%	0.11	18.7	0.62%	11.71%	30,628	3,962,698	183,271	21.6
1986	20,253	418,897	4,327,565	237,916	5%	0.10	18.2	0.49%	8.96%	31,425	4,296,140	206,491	20.8
1987	(2,538)	422,258	4,502,060	234,405	-1%	0.10	19.2	-0.06%	-1.07%	34,482	4,467,578	199,923	22.3
1988	20,104	454,688	4,737,285	262,543	5%	0.10	18.0	0.44%	8.21%	32,652	4,704,633	229,891	20.5
1989	9,992	515,499	4,726,874	274,194	2%	0.11	17.2	0.21%	3.65%	24,679	4,702,194	249,514	18.8
1990	11,268	501,838	4,648,668	286,151	2%	0.11	16.2	0.24%	3.98%	24,950	4,623,718	261,201	17.7
1991	18,774	459,213	4,543,684	300,327	4%	0.10	15.1	0.41%	6.37%	23,116	4,520,568	277,212	16.3
1992	38,682	412,109	4,536,385	337,817	9%	0.09	13.4	0.85%	12.09%	22,820	4,513,566	314,998	14.3
1993	49,885	399,684	4,707,980	375,025	12%	0.09	12.6	1.09%	11.98%	24,033	4,683,947	350,993	13.3
1994	50,986	402,951	5,020,675	392,161	13%	0.08	12.8	1.05%	13.24%	29,755	4,990,920	362,406	13.8
1995	56,395	463,964	5,340,917	435,847	13%	0.09	12.3	1.09%	13.55%	37,084	5,303,833	398,763	13.3
1996	59,349	488,446	5,611,184	461,432	12%	0.09	12.2	1.10%	13.31%	52,947	5,558,237	408,485	13.6
1997	67,948	523,925	6,044,718	507,378	13%	0.09	11.9	1.18%	14.03%	72,674	5,972,044	434,704	13.7
1998	72,034	572,898	6,531,025	556,755	13%	0.09	11.7	1.16%	13.50%	94,432	6,436,592	462,322	13.9
1999	82,403	597,810	6,883,659	574,637	14%	0.09	12.0	1.26%	14.71%	112,879	6,770,780	461,757	14.7
2000	81,500	676,041	7,462,898	633,276	13%	0.09	11.8	1.14%	13.53%	120,792	7,342,107	512,485	14.3
2001	87,413	664,841	7,869,067	706,895	13%	0.09	11.1	1.14%	13.02%	143,730	7,725,337	563,165	13.7
2002	104,683	624,375	8,435,712	776,007	16%	0.08	10.9	1.30%	14.08%	153,127	8,282,585	622,880	13.3
2003	120,621	618,915	9,075,307	830,657	19%	0.07	10.9	1.38%	15.05%	189,492	8,885,815	641,164	13.9
2004	122,222	628,559	10,105,923	1,039,324	20%	0.07	9.7	1.28%	13.20%	316,016	9,789,907	723,308	13.5
2005	133,815	750,729	10,878,229	1,118,757	19%	0.07	9.7	1.30%	12.73%	344,597	10,533,632	774,160	13.6
2006	145,224	888,622	11,860,296	1,248,124	18%	0.08	9.5	1.28%	12.30%	413,440	11,446,856	834,683	13.7
2007	99,945	954,830	13,033,935	1,347,365	11%	0.08	9.7	0.81%	7.75%	461,743	12,572,192	885,622	14.2
2008	4,500	791,676	13,841,148	1,291,063	1%	0.06	10.7	0.03%	0.35%	421,606	13,419,542	869,457	15.4
2009	(9,164)	796,262	13,086,777	1,444,552	-1%	0.06	9.1	-0.08%	-0.73%	408,029	12,678,748	1,036,523	12.2
2010	86,167	781,252	13,318,948	1,511,394	11%	0.06	8.8	0.65%	5.85%	393,721	12,925,227	1,117,673	11.6
2011	119,255	743,964	13,892,115	1,569,225	16%	0.05	8.9	0.88%	7.79%	368,028	13,524,087	1,201,197	11.3
2012	141,915	745,341	14,450,671	1,629,272	19%	0.05	8.9	1.00%	8.92%	366,326	14,084,345	1,262,946	11.2

(a) Gross Interest Income plus Non-Interest Income

(b) Uses average quarter end asset balances from 4Q of previous year through 4Q of current year.

(c) For 1984-1995, uses quarter end balances from note (b) to calculate, as FDIC did not publish a single consolidated number for commercial banks and savings banks.

Source: FDIC Quarterly Banking Profiles, Epoch Investment Partners' estimates.

TABLE 5: FDIC INSURED BANKS CREDIT ADJUSTMENT INCOME 1984-2012
(In \$millions)

	Pre-Provision Op. Profit (a)	Loss Provision (Inc. Statement)	Pre-Tax Profit	Net Chargeoffs	LLP - NCO	X/O Items (b)	Economic Profit (c)
1984	35,940	13,884	22,056	10,883	3,001	237	25,294
1985	49,436	17,954	31,482	13,349	4,605	324	36,411
1986	51,773	22,378	29,395	16,718	5,660	432	35,487
1987	53,648	47,170	6,478	16,638	30,532	279	37,289
1988	59,033	26,835	32,198	18,989	7,846	861	40,905
1989	61,055	40,682	20,373	24,044	16,638	344	37,355
1990	60,941	41,354	19,587	34,815	6,539	744	26,870
1991	70,331	41,313	29,018	37,675	3,638	831	33,487
1992	87,469	31,263	56,206	29,589	1,674	715	58,595
1993	92,694	21,161	71,533	21,571	(410)	2,066	73,189
1994	91,132	13,508	77,624	14,358	(850)	(438)	76,336
1995	101,810	14,817	86,993	14,408	409	(295)	87,107
1996	109,728	19,005	90,723	17,737	1,268	(158)	91,833
1997	126,926	22,263	104,663	20,105	2,158	14	106,835
1998	133,038	24,142	108,896	22,369	1,773	424	111,093
1999	151,080	23,366	127,714	21,563	1,803	174	129,691
2000	157,180	32,058	125,122	26,322	5,736	(35)	130,823
2001	178,414	46,200	132,214	38,791	7,409	(649)	138,974
2002	207,962	51,474	156,488	46,984	4,490	(49)	160,929
2003	216,467	37,322	179,145	40,788	(3,466)	425	176,104
2004	209,430	28,954	180,476	32,019	(3,065)	294	177,705
2005	227,938	29,805	198,133	31,591	(1,786)	252	196,599
2006	240,223	29,578	210,645	27,016	2,562	2,669	215,876
2007	217,354	69,280	148,074	44,252	25,028	(1,735)	171,367
2008	181,643	176,218	5,425	100,381	75,837	5,360	86,622
2009	250,415	249,695	720	188,891	60,804	(3,787)	57,737
2010	283,009	157,975	125,034	187,625	(29,650)	(450)	94,934
2011	246,434	77,512	168,922	113,233	(35,721)	926	134,127
2012	258,825	58,244	200,581	82,784	(24,540)	(142)	175,899

(a) GAAP Pre-Tax Profit plus Loan Loss Provision

(b) Extraordinary items per FDIC Income Statement

(c) Reserve releases (additions) are removed from pre-tax profit and the resulting amount is taxed at that year's effective tax rate.

Source: FDIC, Epoch Investment Partners' estimates.

TABLE 6: FDIC INSURED BANKS BALANCE SHEET COMPOSITION 1984-2012

	Loans % of EA	Securities % of EA	Cash % of EA	Trading Acct. % of EA	Deposits % of Funding	Debt % of Funding	Equity % of Funding
1984	66%	20%	13%	1%	83%	12%	5%
1985	66%	20%	13%	1%	81%	13%	6%
1986	64%	21%	14%	1%	80%	14%	6%
1987	64%	23%	12%	1%	79%	15%	5%
1988	66%	22%	12%	1%	79%	16%	6%
1989	66%	21%	12%	1%	79%	15%	6%
1990	66%	21%	12%	1%	80%	13%	6%
1991	64%	22%	12%	2%	81%	12%	7%
1992	62%	24%	12%	2%	80%	13%	8%
1993	62%	25%	11%	3%	77%	15%	8%
1994	62%	24%	10%	4%	77%	15%	8%
1995	63%	22%	10%	4%	76%	15%	9%
1996	65%	20%	10%	5%	75%	16%	9%
1997	64%	20%	11%	5%	75%	16%	9%
1998	64%	20%	11%	5%	73%	17%	9%
1999	65%	21%	10%	4%	71%	20%	9%
2000	66%	20%	10%	4%	71%	20%	9%
2001	65%	20%	11%	4%	71%	19%	10%
2002	64%	21%	10%	5%	72%	18%	10%
2003	64%	21%	9%	5%	71%	19%	10%
2004	65%	20%	9%	6%	70%	19%	11%
2005	67%	19%	9%	5%	70%	19%	11%
2006	66%	18%	10%	6%	71%	18%	11%
2007	66%	16%	10%	7%	69%	19%	11%
2008	62%	16%	15%	8%	72%	18%	10%
2009	60%	21%	12%	6%	75%	14%	12%
2010	60%	22%	12%	6%	75%	13%	12%
2011	58%	23%	14%	6%	78%	10%	12%
2012	57%	23%	15%	5%	79%	9%	12%
Avg. 1984-2012	64%	21%	11%	4%	76%	16%	9%

Source: FDIC