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# Large American Banks and Economic Recovery: A Look at 2009 and 2014

Robert Bonilla

*University at Albany, State University of New York*

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Large American Banks and Economic Recovery:  
A look at 2009 and 2014

An honors thesis presented to the  
Department of Accounting,  
University at Albany, State University Of New York  
in partial fulfillment of the requirements  
for graduation with Honors in Accounting  
and  
graduation from The Honors College.

Robert Bonilla

Research Advisor: Raymond Van Ness, Ph.D.  
Second Reader: Mark Hughes, CPA, MST

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## **Abstract**

I analyzed the financial performance and stock performance of the largest four banks in the United States after the banking crisis of 2008. By using 2009, the year that recovery for the financial sector began, as a benchmark, I could determine the level of success each of the four banks reached in 2014 in relation to themselves and to one another. Using simple, but effective ratios and equations I could compare the efficiency with which upper management in each company has made use of asset, debt, and equity accounts. My results support the fact that larger accounts do not necessarily project more efficient outcomes. There appears to be more than a quantitative aspect involved in company performance and efficiency on the financial statement.

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# **1. Introduction**

## ***1.1 Methodology***

Banks are central to the success and flow of the American economy. They come in many types and sizes and serve special functions in order to keep the economy afloat. Banks are responsible for storing the liquid wealth that people accumulate and for loaning money to citizens, businesses, and the government in order to fund projects (American Banking Association). The various sizes of banks allow them to deal loans of different amounts. A small bank operating in a single town or city may not be able to offer loans as large as an internationally operating bank such as J.P. Morgan Chase & Co. can offer.

I selected to research the performance of banks because of how central they are to the economy's performance as a whole. A positive correlation between economic performance and bank performance may open doors to research that could help explain how banks can positively stimulate the economy, or in what ways the economy positively or negatively affects bank growth. My emphasis is J.P. Morgan Chase & Co., Bank of America Corporation, Citigroup Inc., and Wells Fargo & Company. These four banks have the largest asset totals, each reaching over \$1.6 trillion in the year 2014; the next highest bank in America has assets less than \$500 billion. The significance in these banks lies in their size and capability to engage in certain transactions that normal banks could not. This allows me to analyze the performance of a large portion of assets in the banking industry by conducting research on four companies.

In this paper, I measure the banks' financial performances after the financial sector collapse of 2008 using a quantitative analysis based on the companies' ability to manage key performance aspects of their balance sheets and income statements. Through the implementation of equations and ratios, I can use the 2009 financial performances as a benchmark for the 2014

performance of each bank. By comparing the two years, I gain insight as to how each bank was able to recover from the collapse of the banking industry.

I analyzed the key performance aspects from Section 2 in order to determine the degree of success that each bank experienced as the American economy slowly recovered from 2009 to 2014. In Section 3, I discuss my findings and explain patterns within each bank's balance sheets and income statements. In their balance sheets most banks in the United States do not differentiate between current and long-term assets, although the method I use to measure performance uses current assets in some areas. I separate current assets from long-term assets using a model created by Dr. Raymond VanNess, which he uses in his capstone course at the University at Albany, BMGT 481W. The appendices provide graphical representations of my analysis and comparisons of the firms.

## ***1.2 Overview of the Financial Crisis***

The year 2008 saw hardships for the United States and eventually made global impact as financial markets over the world saw a downward economic spiral. Recession devastated the market in the United States, with the Dow Jones Industrial Average dropping a steep 33.8% on the year. Large American economic hits included:

1. The investment banking industry;
2. The largest insurance company (AIG);
3. Two government enterprises (Fannie Mae and Freddie Mac) chartered to facilitate mortgage lending;
4. The biggest mortgage lender (Countrywide Financial Corp);
5. The largest savings and loan (Washington Mutual); and
6. Two of the largest commercial banks (Lehman Brothers and Merrill Lynch).

These hits directly damaged the financial sector, but their effects were felt in numerous industries which relied on loan-giving institutions in order to maintain cash flows and perform daily business operations (Havemann).

The housing crisis helped fuel the collapse of the banking and financial services industries in 2007 and 2008 because customers could not afford loans big enough to buy and sustain payments on houses. The ratio of individuals' mortgage debt to income peaked in the 4<sup>th</sup> quarter of 2007, which corresponds to the Great Recession (Gelain, Lansing, and Natvik). The prices of houses increased, inflation took effect, and people were not earning money at the same rate as inflation was taking place. Furthermore, when the interest rates that banks and lending institutions must charge on loans largely outgrows the interest rates they pay to members of the bank, fewer people can afford to take out loans, because they are not earning enough to pay the loan interest. In many cases, people were accepted for loans at low rates in the early years, but those rates grew out of control in later years, when they hit double-digit figures (Havemann). The inability of mortgage owners to pay off these debts led to a build-up of penalties to institutions that could not collect payments because debtors had no money. Banks rely largely on these loan payments as a means of earning income. The lack of loan interest income hurts the financial sector and significantly decreases profits that banks and other money-lending companies earn. As a result of the slumping housing market, banks across the nation missed out on asset and equity increases, which initiated the Great Recession of the modern era.

A combination of "predatory loans," "predatory borrowers," and problems with government regulation has been blamed for the housing bubble (Havemann). Loan institutions knowingly offered predatory loans to inexperienced mortgage buyers who were not able to pay. These buyers were enticed by low initial rates that grew to unmanageable percentages over the

course of years. Lenders were willing to offer these loans because mortgage insurance companies protected them from defaults. However, these companies were not capable of maintaining the number of defaults when the housing bubble popped.

The number of unqualified people searching for home mortgage loans was very high in the years before the housing bubble burst. With income that could not support consistent payments toward a mortgage, people searched for other means of paying a mortgage, such as taking out loans. These predatory borrowers accepted loan terms they could not pay, in order to live in houses they could not afford. Those in favor of stricter government regulation on financial instruments argued that companies giving predatory loans were the problem. They argued that the government should have strict rules to stop lending institutions from taking advantage of loan seekers who would not be able to afford these loans. People in favor of government deregulation believed that predatory borrowers were the main cause of the financial crisis. Issues existed when people who had insufficient income searched for loans, even though they could not afford to purchase a house.

### ***1.3 Suggested Solutions to the Problem***

Banks in the United States are making attempts to return to a state of normalcy through the sale of short-term loans to one another. After the financial collapse, banks grew increasingly skeptical and refused to deal loans out to each other for fear of payment failure or bankruptcy (Lynch). As soon as 2010, banks returned to numbers of loans made from bank to bank that were reminiscent of 2000-2007, before the crisis began. Although loans to other banks are returning to normal, banks are making safer decisions about private loans to individuals seeking mortgages.

In recent years, banks have changed their policies regarding excess capital, from loaning it out blindly to storing it at the Fed (Lynch). Earnings are returning to normal and banks could be using the money to make more loans and increase revenue, but many banks are choosing to maintain safe lending options. Increases in lending to large and medium- sized clients and small businesses are taking place, but there is still excess cash. A large problem that led to the 2008 banking crisis was granting mortgages to people who had little income, no jobs, and nothing to exchange. Banks are making the healthy decision to steer away from lending money to these types of people and are storing the excess cash with the Fed.

Particularly large banks in the United States, such as J.P. Morgan Chase, Bank of America, Citigroup, and Wells Fargo, have made an increasing presence in foreign markets. The result of such actions increases the availability of profits outside of the U.S., while lowering the risk of loss of value in the long term through foreign investments.

“Financial markets in the United States are the largest and most liquid in the world. In 2012, finance and insurance represented 7.9% (or 1.24 trillion) of U.S. gross domestic product” (SelectUSA). Financial services aid the United States by helping to finance its exports of manufactured and agricultural goods. Projections show that, by 2018, the potential exists for an increase in employment of 12% in the securities subsector of financial services alone. By the end of 2012, 818,000 new people were employed in the subsector. Furthermore, in 2012, at least 132 of Fortune Magazine’s Global 500 chose to establish their headquarters in the United States to take advantage of the “creative, competitive, and comprehensive financial services sector” (SelectUSA). This fact shows the availability of opportunities that banks across America have to work with other companies who have succeeded on a global scale.

## **2 Bank Performance Measurements**

The measurements I made represent different forms of financial management of the balance sheet and income statement. The four types of management I measured are cash, equity, asset, and share value. Each represents the company's ability to make efficient use of the respective account balance or value.

The ratios and equations I used can also be broken down into one of three categories. Liquidity ratios indicate the company's ability to pay its financial obligations when they are due. Profitability ratios give an indication as to how much profit a company can make with the available resources. Capital-market ratios "indicate a company's ability to win the stock market (Ledgers Canada).

### **2.1 Working Capital**

Working capital is a cash management ratio which measures liquidity. It is a measurement of the theoretical assets available to management after all current liabilities are covered. After paying all of its short-term obligations by using short-term asset accounts, the amount that would be left over is considered working capital:

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities.}$$

In order to compute working capital, current liabilities must be subtracted from current assets on the balance sheet. Current assets is a measurement of the total assets under a company's control which can be easily converted into cash or another liquid form in less than one year. Current liabilities are obligations of a company that are due to be paid to another company, person, or organization in less than one year.

## **2.2 Current Ratio**

The current ratio is another cash management ratio measuring liquidity. It represents a firm's ability to pay bills as they are currently falling due and is often considered a dependable assessment as to the company's risk of insolvency. Also referred to as bankruptcy risk, insolvency risk is the risk associated with a company's ability to pay the debts that it may owe in both short-term and long-term periods (Harvey):

$$\text{Current Ratio} = \text{Current Assets} \div \text{Current Liabilities.}$$

Assuming a firm continues to see a trend of increasing assets and/or decreasing liabilities, then the current ratio should see increases in the future.

## **2.3 Return on Equity**

Return on equity is an equity management ratio for the profitability of a company. This measurement represents the rate of earnings for each dollar of owner investment and how efficiently money is spent. Return on equity can be improved by cutting spending and increasing sales:

$$\text{Return on equity} = (\text{Net Income} \div \text{Sales}) \times (\text{Sales} \div \text{Total Assets}) \times (\text{Total Assets} \div \text{Equity}).$$

Return on equity is comprised of three different subsections which get multiplied together. The first is Net Profit Margin:

$$\text{Net Profit Margin} = \text{Net Income} \div \text{Sales.}$$

Net profit margin is computed using the income statement by dividing the net income of a company by its sales. It gives financial statement readers an indication of a business's profitability by showing the percent of sales that become net income in the income statement.

The second portion of return on equity is asset turnover:

$$\text{Asset Turnover} = \text{Sales} \div \text{Total Assets.}$$

Asset turnover takes the sales in a year and divides them by the total assets in the company's books at the end of the year. This ratio looks at figures in both the income statement and balance sheet to demonstrate the effectiveness of management's use of assets in creating a profit for the company. The previous two quantities are multiplied together, and then by the equity multiplier, in order to calculate return on equity:

$$\text{Equity Multiplier} = \text{Total Assets} \div \text{Book Value of Equity.}$$

The equity multiplier measures the amount of a business's asset total that is financed by the shareholders of the company ("Equity Multiplier"). A lower ratio indicates that the investors are more in control of the assets and is more favorable, while a higher ratio shows that the company's management may have needed to borrow more money, giving control of assets to creditors.

The components which comprise the three sections of return on equity are net income, sales, total assets, and equity. Net income and sales are both income statement items. Sales is income generated through the selling of inventory or performance of services. Net income is the total profit after removing expenses and taxes. Total assets and equity are both balance sheet accounts. Assets are economic resources owned by a company that are expected to be used to generate income of some sort. Equity is the difference between assets and liabilities and represents the amount of owner related interest.

## **2.4 Return on Assets**

Return on assets is an asset management ratio. Similar to return on equity, this ratio measures profitability:

$$\text{Return on Assets} = \text{Net Income} \div \text{Total Assets.}$$

Return on assets is generated by dividing net income on the income by total assets. It quantifies asset productivity or asset utilization, highlighting the profit gained for each dollar invested into the business. Companies can create a better return on assets by improving the amount of net income received per dollar in total assets. If a business makes use of its assets to productively generate income or reduces its expenses during the year, it can create a better ratio for its return on assets.

## **2.5 Price-Earnings Ratio**

The price-earnings (PE) ratio is a share value management figure which measures capital-market information. Analysts and investors use it to confidently quantify whether a share price is reasonable (Ledgers Canada):

$$\text{Price-Earnings Ratio} = \text{Stock Price Per Share} \div \text{Earnings Per Share}$$

The price-earnings ratio is determined by dividing each share's stock price by the earnings generated per share. The stock price of a publicly-traded company can be researched for any given day by finding a stock quote on a website such as Yahoo Finance, an application, or a widget. Earnings per share is an income statement item which is produced after determining net income, by dividing net income by the number of common shares outstanding.

## **2.6 Dividend Yield Ratio**

Similar to the price-earnings ratio, the dividend yield ratio is a capital-market ratio which tells us about share value management. This equation shows the return to stockholders that is being provided by each share:

$$\text{Dividend Yield Ratio} = \text{Dividends Per Share} \div \text{Stock Price Per Share}$$

Dividend yield ratio is computed by dividing the amount of dividends paid to stockholders by the cost of each share. Stockholders who receive larger dividends have more incentive to invest in a company's shares, especially if the company is performing well and it appears that the stock price will continue to increase. Dividend yield ratio, and thus incentive to purchase a stock, can be increased by increasing the amount of dividends paid to shareholders for each share. The board of directors would be more inclined to increase dividend amounts if a company is increasing profit while selling shares at a constant rate.

### 3 Quantitative Analysis

#### 3.1 J.P. Morgan Chase & Co.

Headquartered in Manhattan in New York City, New York, J.P Morgan's first predecessor was first opened in 1799 ([www.jpmorganchase.com](http://www.jpmorganchase.com)). Today, the company operates in more than 60 countries with 260,000 employees worldwide. The board of directors, responsible for declaring dividends, consists of eleven members from different backgrounds. In J.P. Morgan Chase & Co.'s Board of Directors, many members come from Bank One Corporation because of a merger between J.P. Morgan and Bank One in 2004.

Table 1: J.P. Morgan Chase & Co. Accounts and Equations

<b><u>J.P. Morgan Chase &amp; Co.</u></b>	Stock Price	Revenue*	Expenses*	Net Income/(Loss)*	Working Capital*
2009	\$41.67	\$115,632.00	\$67,550.00	\$11,728.00	\$244,965.00
2014	\$62.58	\$102,102.00	\$69,171.00	\$21,762.00	\$334,543.00
Value increase/decrease	\$20.91	\$(13,530.00)	\$1,621.00	\$10,034.00	\$89,578.00
Percentage increase/decrease	50.18%	-11.70%	2.40%	85.56%	36.57%

\*Revenue, Expenses, Net Income/(Loss), and Working Capital values are written in millions of dollars

Table 2: J.P. Morgan Chase & Co. Valuation Ratios

<b><u>J.P. Morgan Chase &amp; Co.</u></b>	Current Ratio	ROA	ROE	PE Ratio	Dividend Yield Ratio
2009	1.1531	0.5772%	7.093%	18.44	0.4800%
2014	1.1621	0.8457%	9.378%	11.72	2.2480%
Value increase/decrease	0.0090	0.269%	2.285%	-6.72	1.7680%
Percentage increase/decrease	0.78%	46.52%	32.21%	-36.44%	368.33%

Table 1 and Table 2 are used to compare the performance measures of J.P. Morgan Chase & Co. from 2009 and 2014. A look at the stock prices shows that the company is headed in a positive direction, up 50.18% in 5 years. An interesting pattern exists in the income statement with revenues, expenses, and net income. Revenues decreased while expenses increased, but J.P. Morgan still experienced a substantial increase in its net income. This trend is possible because of gains and losses on the income statement which are not considered to be revenues or losses; these include gains and losses on the sale of long-term assets, lawsuits, and extraordinary gains and losses, among others. J.P. Morgan also saw its working capital rise a sizeable amount, allowing financial statement users to see a large availability of current assets, given full payment of current liabilities.

The current ratio shows slight improvement in liquidity, although it does not show a very significant change. Growth in return on assets and return on equity portray efficient use of the two balance sheet sections. Assets and equity remained relatively constant between 2009 and 2014, but the surge in net income increased the two ratios and gave evidence to J.P. Morgan's efficiency in using assets and equity. A decline in the price-earnings ratio is a positive sign for investors. Even though the price of J.P. Morgan stock increased by more than \$20 per share, the rate at which its earnings increased on each share was greater. Investors feel more confident in a

stock's potential to increase when a company's earnings grow faster than its stock price.

Dividend yield ratio for J.P. Morgan experienced a 368% increase, more than any other large company by far. Investors who see a large increase in dividend yield know that they will receive a larger dividend in proportion to the growth or decline in stock price. From 2009 to 2014, the dividend paid to investors grew more than three times as much as the stock price.

### 3.2 *Bank of America Corporation*

Although Bank of America's (BAC's) roots began in Boston in 1784, headquarters are currently located in Charlotte, North Carolina ([www.bankofamerica.com](http://www.bankofamerica.com)). There are now 290,000 employees across 40 countries in its more than 200 years of existence. Bank of America has 13 members of the board.

Table 3: Bank of America Corporation Accounts and Equations

<b><u>Bank of America Corporation</u></b>	Stock Price	Revenue*	Expenses*	Net Income/(loss)*	Working Capital*
2009	\$15.06	\$150,450.00	\$97,520.00	\$6,276.00	\$219,374.00
2014	\$17.89	\$95,818.00	\$86,051.00	\$4,833.00	\$181,862.00
Value increase/(decrease)	\$2.83	\$(54,632.00)	\$(11,469.00)	\$(1,443.00)	\$(37,512.00)
Percentage increase/(decrease)	18.79%	-36.31%	-11.76%	-22.99%	-17.10%

\*Revenue, Expenses, Net Income/(Loss), and Working Capital values are written in millions of dollars

Table 4: Bank of America Corporation Valuation Ratios

<b><u>Bank of America Corporation</u></b>	Current Ratio	ROA	ROE	PE Ratio	Dividend Yield Ratio
2009	1.1412	0.2823%	2.712%	-51.93	0.2656%
2014	1.1124	0.2297%	1.985%	49.69	0.6708%
Value increase/(decrease)	(0.0288)	-0.053%	-0.727%	101.62	0.4052%
Percentage increase/(decrease)	-2.52%	-18.63%	-26.79%	195.69%	152.56%

Table 3 and Table 4 compare Bank of America’s performance from 2009 to 2014. BAC stock had the smallest percentage increase of all the large banks in the United States. While the increase was miniscule, the positive direction is still a sign of improvement since economic recovery began. Bank of America saw a decline in revenue, expenses, and working capital. It was also the only company of the largest four to experience a decrease in net income when comparing 2009 and 2014.

A decrease in the current ratio tells financial statement users that Bank of America has fewer liquid assets left after paying current debts, but a ratio greater than 1.0 is still a good sign of liquidity. Return on assets and return on equity both declined from 2009 to 2014, indicating that Bank of America was not as efficient with assets and equity in 2014 as it was in 2009. Bank of America’s PE ratio was negative in 2009 because of negative earnings per share. While an increase in this ratio is typically a negative sign for investors, the transition from negative to positive is a signal of forward progress. More positive light exists in the dividend yield ratio, as the board of directors feels more confident increasing the dividend paid to investors. This is evidence of the board’s belief that Bank of America is headed in a positive direction, moving forward.

### 3.3 Citigroup Inc.

Similar to J.P. Morgan, Citigroup Inc. is headquartered in New York City, New York (www.citigroup.com). After more than 200 years of operation since Citigroup's opening in 1812, the company operates in more than 160 countries. The Board of Directors is composed of 12 members.

Table 5: Citigroup Inc. Accounts and Equations

<b><u>Citigroup Inc.</u></b>	Stock Price	Revenue*	Expenses*	Net Income/(loss)*	Working Capital*
2009	\$32.97	\$108,006.00	\$75,543.00	\$(1,606.00)	\$395,484.00
2014	\$54.11	\$90,572.00	\$68,741.00	\$7,313.00	\$367,699.00
Value increase/(decrease)	\$21.14	\$(17,434.00)	\$(6,802.00)	\$8,919.00	\$(27,785.00)
Percentage increase/(decrease)	64.12%	-16.14%	-9.00%	555.35%	-7.03%
*Revenue, Expenses, Net Income/(Loss), and Working Capital values are written in millions of dollars					

Table 6: Citigroup Inc. Valuation Ratios

<b><u>Citigroup Inc.</u></b>	Current Ratio	ROA	ROE	PE Ratio	Dividend Yield Ratio
2009	1.3145	-0.0865%	-1.036%	-41.21	-
2014	1.2781	0.3969%	3.447%	24.48	-
Value increase/(decrease)	-0.0364	0.483%	4.484%	65.69	-
Percentage increase/(decrease)	-2.77%	558.84%	432.65%	159.40%	-

Table 5 and Table 6 represent the mix of growth and decline Citigroup experienced in its performance from 2009 to 2014. Stock price saw a large increase of 64.12%, increasing investor profit by about \$21 per share. Citigroup was the only one of the four to have a net loss in 2009, which hurt many of its ratios for that year. In a similar trend to Bank of America, Citigroup had decreases in both revenue and expenses from 2009 to 2014, but saw an increase in net income of

almost \$9 billion. While working capital also saw a slight decrease, this figure is insignificant considering Citigroup’s working capital is still greater than the other three large banks.

A decrease in the current ratio is irrelevant for Citigroup because a current ratio of 1.2781 is a good statistic since it is greater than 1.0. As the only company of the four in my paper to experience a net loss in 2009, Citigroup had negative return on assets and return on equity. In 2014, upper-level management completely turned around the productivity of assets and equity to create positive ratios. Like Bank of America, Citigroup had negative earnings per share in 2009, which meant a negative price-earnings ratio. In 2014, the company had positive earnings per share, thus creating a positive PE ratio. Citigroup does not pay dividends to its shareholders so the dividend yield ratio is nonexistent.

### 3.4 Wells Fargo & Company

Headquartered in San Francisco, California, Wells Fargo & Company was created in that same city with the purpose of serving the growing West in 1852 (www.wellsfargo.com). After more than 150 years, Wells Fargo has expanded to serve over 35 countries with about 265,000 employees. Consisting of 16 members, Wells Fargo’s board of directors is particularly large when compared to the other large banks in the United States.

Table 7: Wells Fargo & Company Accounts and Equations

<b><u>Wells Fargo &amp; Company</u></b>	Stock Price	Revenue*	Expenses*	Net Income/(loss)*	Working Capital*
2009	\$26.99	\$98,636.00	\$58,970.00	\$12,275.00	\$161,369.00
2014	\$55.67	\$88,372.00	\$53,062.00	\$23,057.00	\$221,720.00
Value increase/(decrease)	\$28.68	\$(10,264.00)	\$(5,908.00)	\$10,782.00	\$60,351.00
Percentage increase/(decrease)	106.26%	-10.41%	-10.02%	87.84%	37.40%
*Revenue, Expenses, Net Income/(Loss), and Working Capital values are written in millions of dollars					

Table 8: Wells Fargo & Company Valuation Ratios

<b><u>Wells Fargo &amp; Company</u></b>	Current Ratio	ROA	ROE	PE Ratio	Dividend Yield Ratio
2009	1.1744	0.0987%	10.734%	16.16	1.8155%
2014	1.1682	1.3666%	20.162%	13.35	2.4250%
Value increase/(decrease)	-0.0062	1.268%	9.429%	-2.81	0.6095%
Percentage increase/(decrease)	-0.53%	1284.60%	87.84%	-17.39%	33.57%

Table 7 and Table 8 display the performance measures associated with Wells Fargo from 2009 and 2014. Company stock price increased over 106% as Wells Fargo prospered on the New York Stock Exchange (NYSE). Similar to Bank of America and Citigroup, Wells Fargo saw revenues and expenses decline, which could indicate a decrease in activity. An 87.84% increase in net income is a positive sign that Wells Fargo is making good transactions and can see continued growth if the company continues doing business with the same clients. Increased working capital gives management more room to use excess assets to create more value for the company.

Wells Fargo shows another decrease in the current ratio, but is still performing well in the category. It may be a good idea for management to be careful with this ratio because a year with an unexpected sharp decline in current assets or increase in current liabilities could bring the current ratio very close to 1.0. Return on assets and return on equity are strong aspects of Wells Fargo's business performance. In 2014, Wells Fargo has made the most efficient use of its assets and equity out of the four largest banks in the United States. An impressive 1284.6% increase in return on assets from 2009 to 2014 is the most significant increase that any of these banks has experienced. Furthermore, a decline in the price earnings ratio helps investors feel confident about the stock because even with a 106% increase in stock price, the earning for each share sold

has increased by a greater percentage. Dividends to shareholders are also increasing at a rate that is greater than the increase in stock price, according to the dividend yield ratio comparison from 2009 to 2014.

## **4 Further Research**

It is important to note that my research does not intend to analyze each year between 2009 and 2014, but rather to determine if there was an overall increase or decrease in key performance areas for each large bank. Additional information lies in the years between 2009 and 2014. This information would be beneficial to see if there were years of great performance or years of lag and what may have caused these differences in performance. National or international news may play a role in American banking performance and further research between 2009 and 2014 may uncover that forces outside of the United States could have a strong pull on banking performance.

After the banking collapse in 2008, the banking industry saw much hardship in the closure of 511 banks between 2009 and 2015 (FDIC). Most of the banks included on this list are much smaller banks that were either absorbed by larger institutions or permanently removed. Research can continue in the direction of considering the performances of medium and small sized banking firms during the recovery period, to determine if there is any relationship between the size of a bank and its ability to recover after the crisis. It would also be interesting to calculate the performance of financial institutions which absorbed the firms that were forced to close.

## 5 Conclusion

Many banking professionals could argue that the banking industry is the most liquid industry and that measurements of liquidity are irrelevant because of the availability of liquid assets. They should be careful to put an equal emphasis on liquidity in order to have cash available in the case of a financial crisis or extraordinary circumstance. In 2009, Citigroup experienced difficult times with a net loss even after being bailed out by the government. Bank of America was forced to settle a lawsuit in 2014, which hurt the company's liquid assets and turned what should have been increased ratios sour.

The experiences of a diverse Board of Directors can add to the quality of performance and decisions of a company. In each board of directors, members come from a wide array of industries with degrees from numerous majors and concentrations. These different points of view combine to help the decision-making process become more efficient.

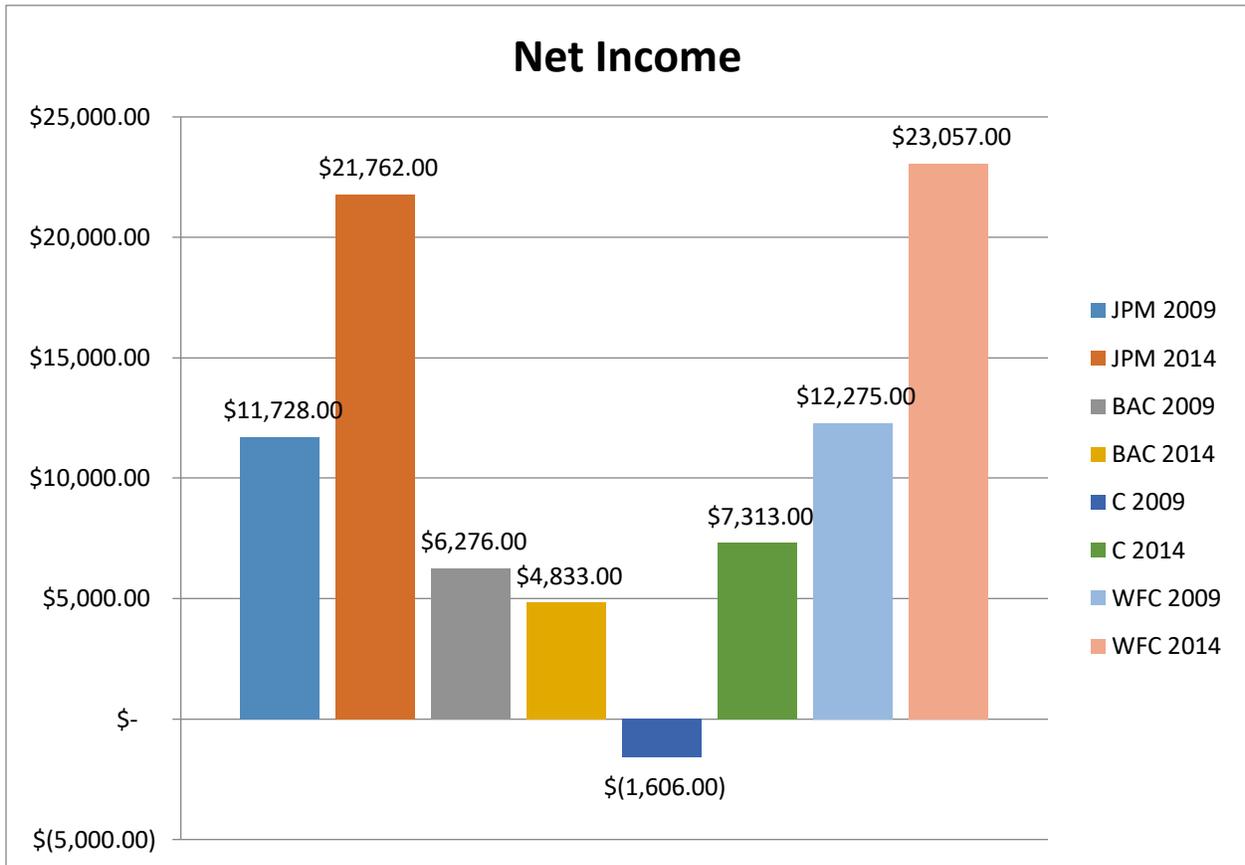
Economic recovery has had a generally positive effect on the large banks in the financial sector of the United States. The only outlier is Bank of America, which experienced declines in multiple areas, but also saw some increases. The decline can probably be attributed, in part, to the \$16.65 billion penalty that Bank of America was required to pay in order to resolve allegations that it sold bad mortgage-backed securities leading up to the financial crisis. It was "the largest civil settlement ever between a single firm and the U.S. government" (McCoy and Johnson). If the \$16.65 billion penalty is put into assets and the accounts are readjusted so the loss from the lawsuit did not exist, then Bank of America would have had a much better year in 2014. Rather than experiencing decreases in most of its ratios and equations from 2009 to 2014, Bank of America would have seen increases in net income, current ratio, return on assets, and return on equity. The exclusion of this penalty for Bank of America shows that through

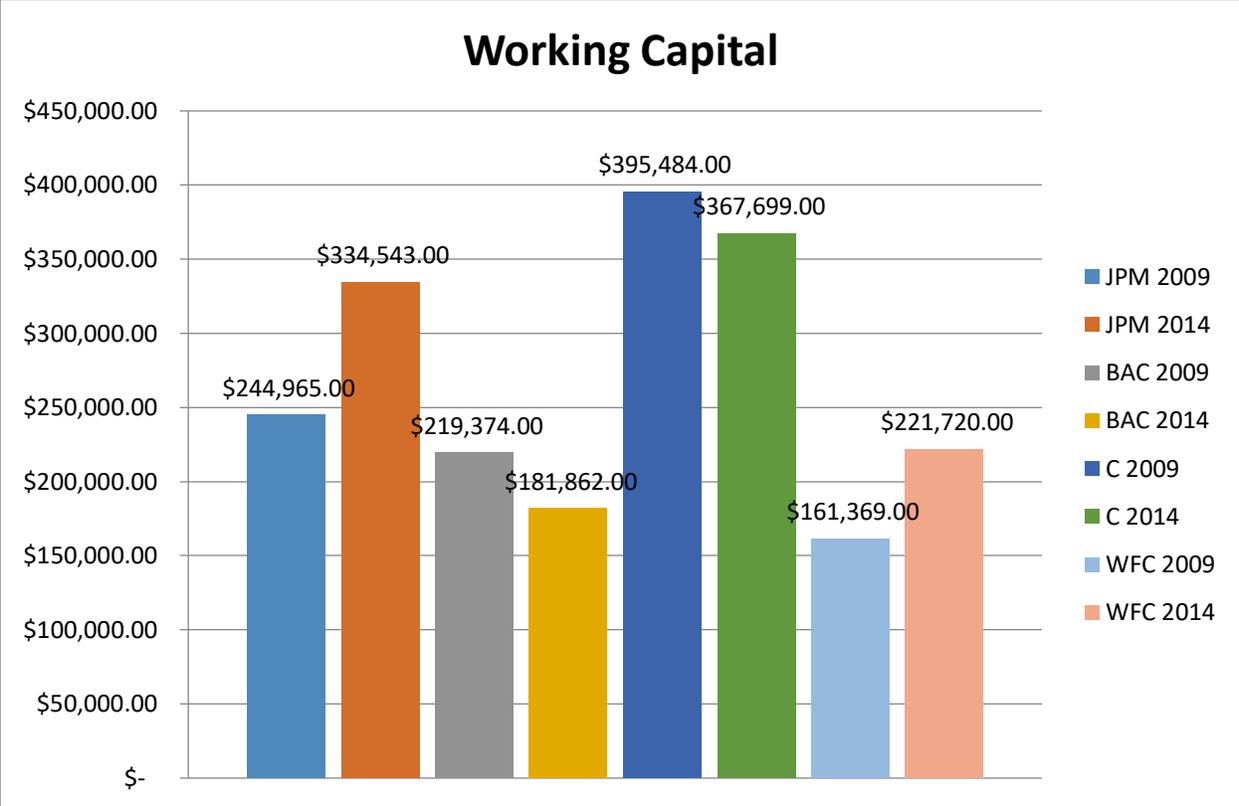
economic recovery, the four largest banks in the United States in 2014 have outperformed their initial year of recovery in 2009.

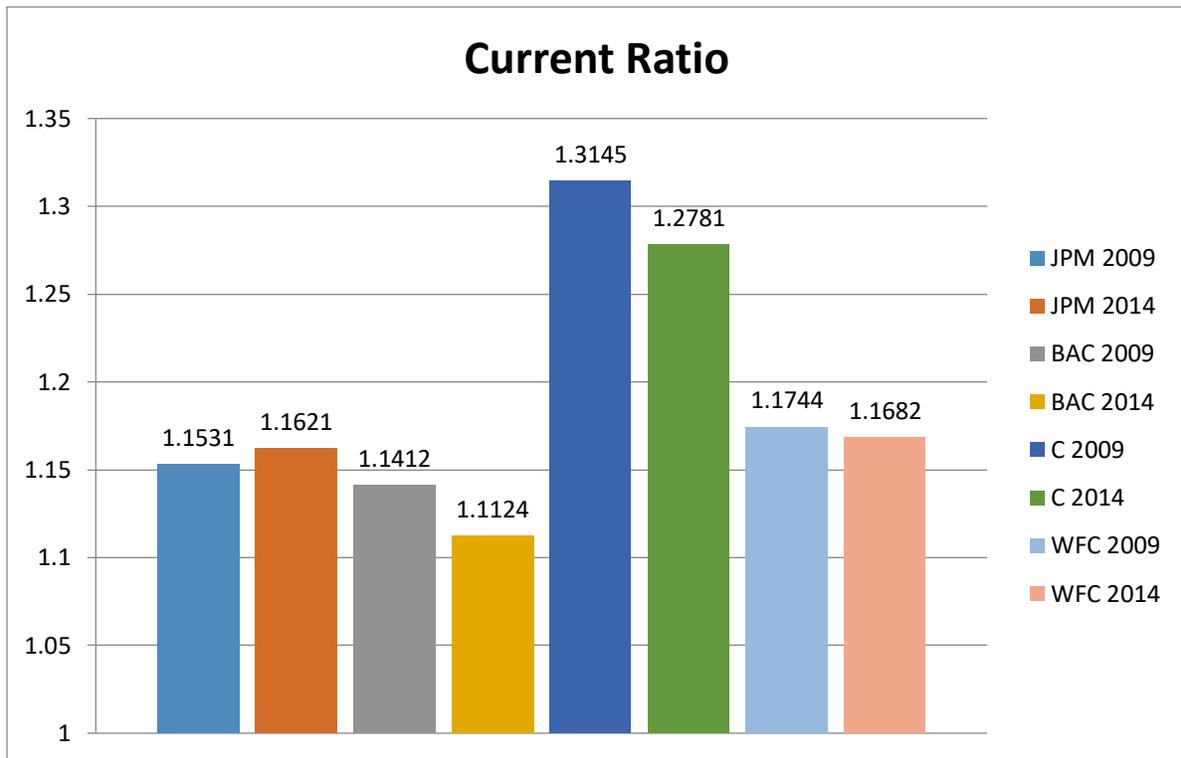
## 6 Appendix



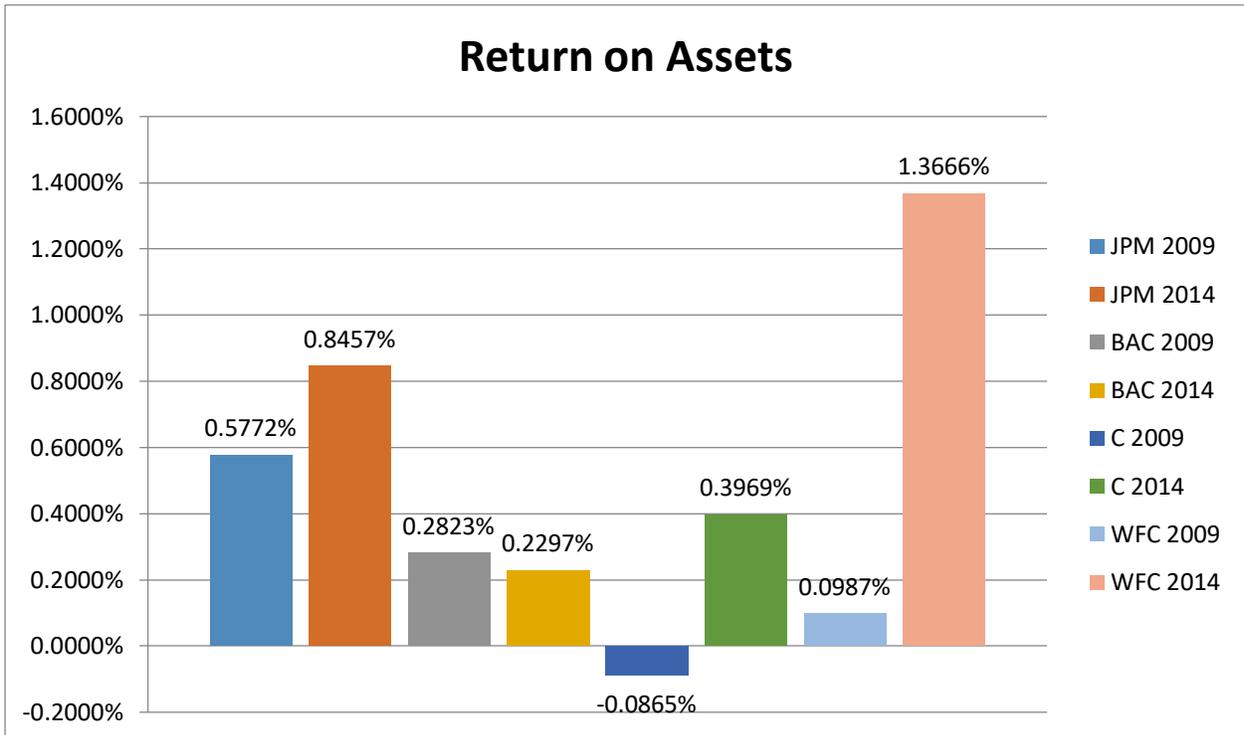
## Net Income



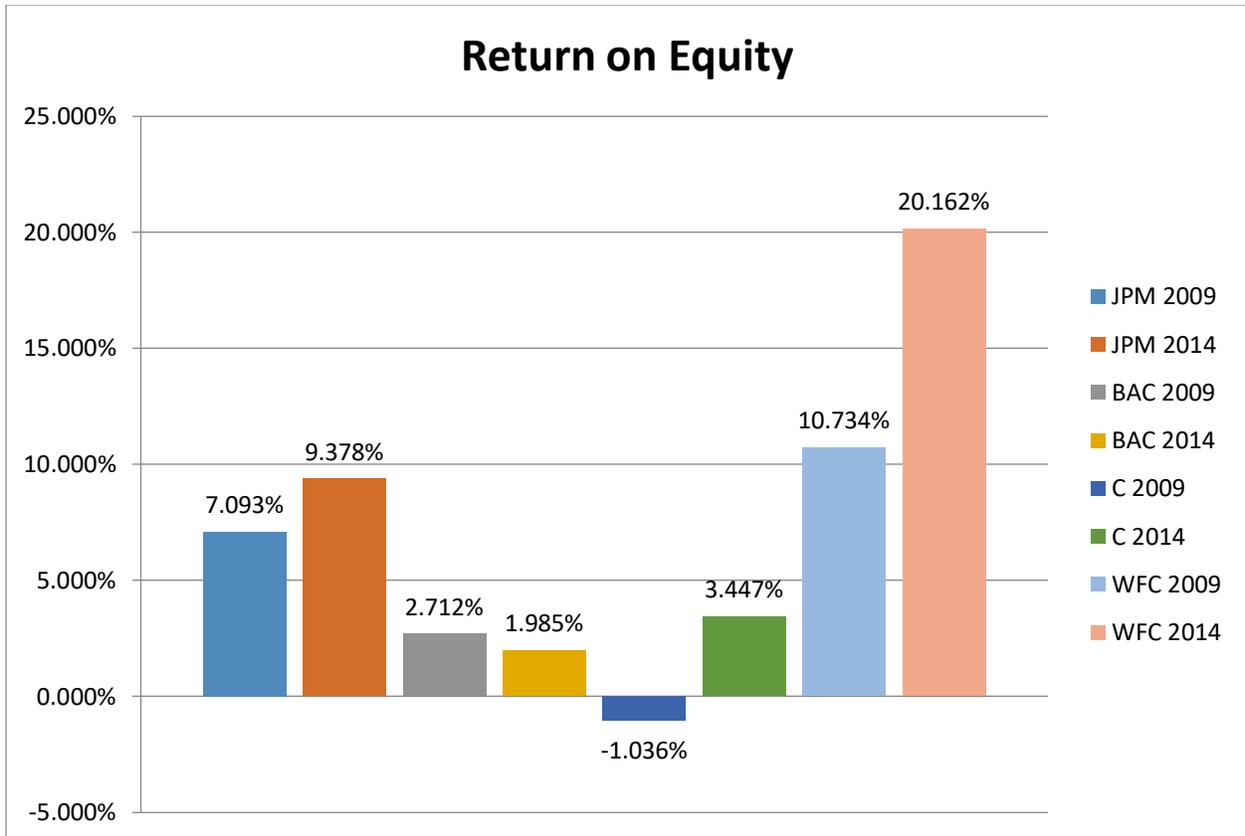




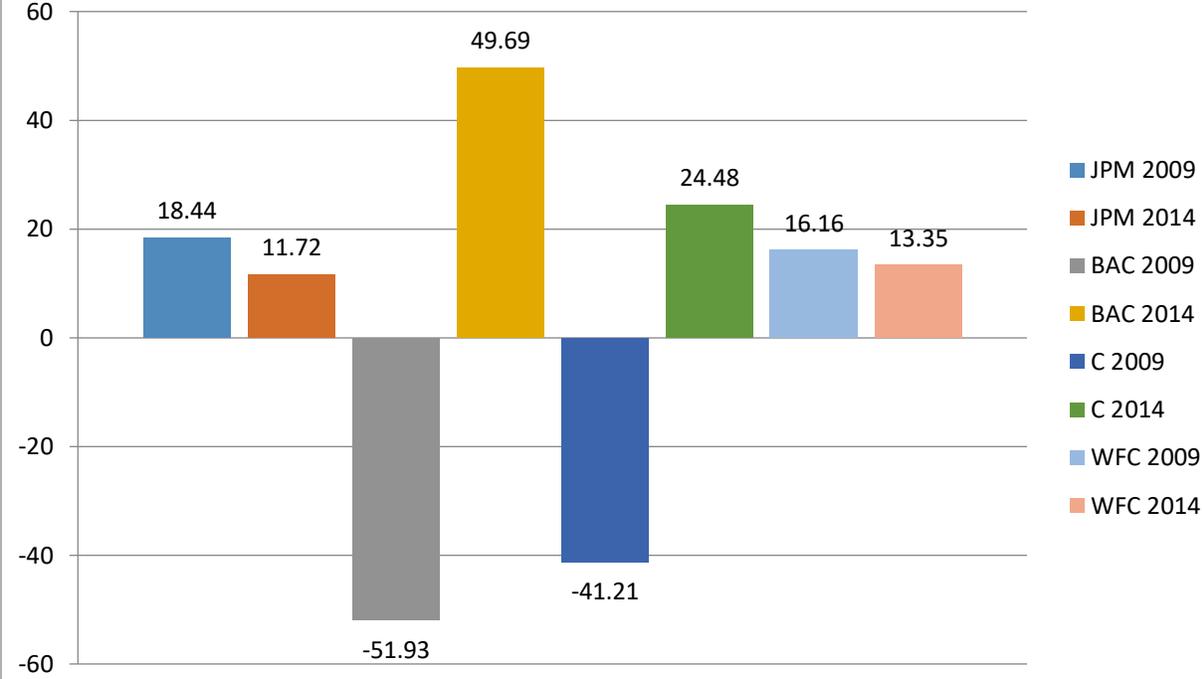
## Return on Assets

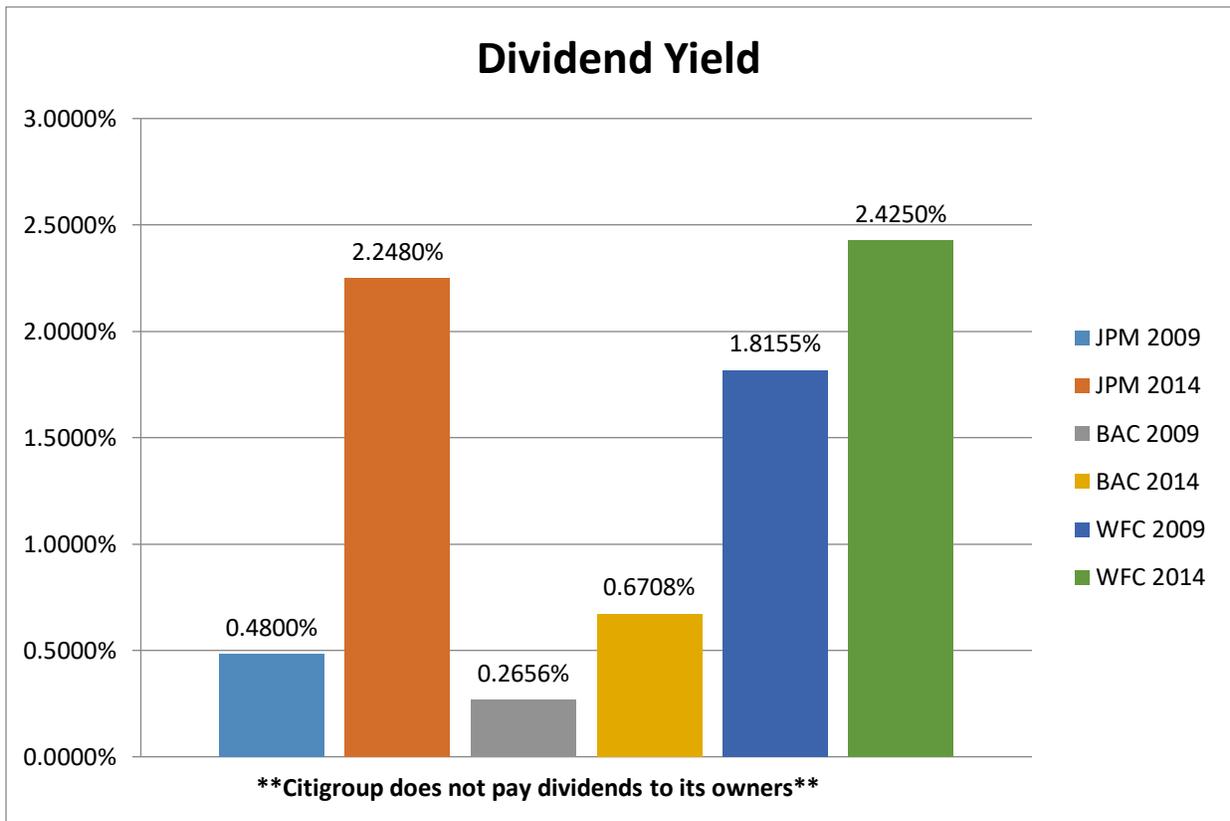


## Return on Equity



### Price-Earnings Ratio





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