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An analysis of US financial companies before and after the financial crisis of 2008

Bachelor's thesis

Supervisor: Assoc. Professor Karin Jõeveer

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I declare I have written the bachelor's thesis independently.

All works and major viewpoints of the other authors, data from other sources of literature and elsewhere used for writing this paper have been referenced.

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ABSTRACT

This paper concentrates on the U.S financial markets and the changes occurred in the behavior of financial companies after the crisis of 2008. Within the paper, banking industry is introduced and the principles of banking are explained. This provides background for the research. The financial crisis of 2008 lead to banking panics and government takeovers. It drove several banks into bankruptcy alone in the U.S and the whole global economy was drift to severe recession. Hence, the research problem is to find out whether there are any observable changes in the behavior of financial companies after the crisis of 2008. The method used is comparative ratio analysis and cross-sectional between bank holding companies and financial holding companies. The study was conducted for 10 U.S financial companies for ten-year period from 2006 to 2016. The objective is to reveal any observable trends in the financial companies' behavior in order to make conclusion whether the severe difficulties in the industry has pushed these companies towards more stable and less risky business as well as whether the behavior financial holding companies and bank holding companies differ from each other in terms of chosen ratios.

Key words: Financial crisis, U.S financial markets, banking, investment banking, comparative analysis, ratio analysis, cross-sectional analysis.

INTRODUCTION

A massive amount of jobs and trillions dollars of wealth were destroyed in the burst and in the aftermath of the financial crisis of 2008. (Werner De Bondt, pp.145) Almost 1200 banks ended up being subject to regulatory intervention. (Wenling Lu, David A. Whidbee, pp. 316) Approximately 707 of these banks later on received bailout funds whereas 468 banks eventually failed.

The banking panic started in the fall of 2008, driving economies all over the world into severe recession. (Victoria Ivashina, David Scharfstein, pp. 319) The roots of the crisis go back to mid-2007 when the credit boom peaked in the United States. Peak of credit boom was followed by the meltdown of both subprime mortgages and all types of securitized products. Asset securitization was seen as one of the most prominent financial tools in modern economies. (Dov Solomon pp. 859) The solvency and liquidity of financial institutions started to raise questions after the melt-down. Concerns about the condition of these financial institutions subsequently turned into full-blown banking panic. Failures of Lehman Brothers and Washington Mutual followed together with government takeover of Fannie Mae, Freddie Mac and AIG. After government had, through variety of actions, promoted liquidity and the solvency of the financial sector, the panic eased down in the first half of October. However, the prices of most asset classes and commodities fell significantly and in the same time the cost of corporate and bank borrowing increased drastically. The financial market experienced volatility that have rarely been seen.

It is still an ongoing argue, who initially is to blame for the crisis. Since the economy heavily relies on financial institutions to execute the role of specialists in risk measurement and risk management, the shock to the whole economy was tremendous when key banks lacked the necessary knowledge how market behavior actually hid risk, and, in some cases, even compounded it. (John Holland, pp. 92) This incapability to execute this critical role resulted in worldwide breakdown in credit markets in addition to remarkable volatility in equity markets. (Allen N. Berger, Philip Molyneux, John O.S Wilson, pp. 106) The inability for banks to execute their critical task of risk measurement and risk management, contributed a crisis of confidence: crisis that paralyzed the whole economy. Credit market seized up and banks no longer wanted to lend to other banks due to the prevailing suspense about their counterparts' financial condition. Liquidity hoarding caused by reluctant lending disabled banks from providing the fundamental credit required to keep economy thriving and businesses going. When commercial paper and other debt markets stopped performing their important functions of credit provision, even creditworthy firms were left without source of investment or working capital. Hence, these firms were lacking the necessary capital required to do business. This is how the contagion was transferred to the real economy causing loss of jobs and decline in overall economic activity.

It has been argued, however, that there was prior knowledge regarding the bank intermediation and risk management and the problems related to these mechanisms. (John Holland, pp.88) Additionally, much was known about the risk spreading as well as sharing capabilities of wholesale markets and general principles of market efficiency. There was also knowledge regarding causes of previous crisis in banking markets: freezing of interbank markets and problems of so called toxic loans. It's been argued that indeed all this prior knowledge would have reduced the chances of yet another bank failure during the financial crisis.

Thus, it seems that banks did not learn the lessons from previous failures and crises and indeed repeated the same mistakes. Board directors and top management were unable to understand the risks related to their rapid growth models, emphasis on sales and trading culture or growth based incentive and payment schemes. All these aspects mentioned contributed to the creation of very risky organization operating with very risky and complex new instruments.

Thus, the focus of this paper is on the U.S financial markets; banks and other financial intermediaries, as their huge contribution to the well-being of the economy nor the impacts of their actions to the real economy cannot be denied. Given the context, it is crucially important to understand the fundamental functions of banks: what they do and how they do it.

The research problem set by the author is, whether U. S banks have changed towards more stable direction in the aftermath of financial crisis 2008. As discussed earlier, there have been similar types of crisis before, but it seems like financial industry keep repeating the same mistakes in their operations. Are there any observable changes in the banks' and other financial institutions' behavior that would indicate more stable financial condition? Is there a difference between banks and non-banks, such as investment banks? Have they both moved to the same direction or have they chosen different paths?

The objective of the research is to evaluate, whether banks and financial institutions chosen have indeed moved to more stable direction and whether both groups have developed in the same way or not. This objective is reached by investigating the reported financial data of the chosen companies, including balance sheets and income statements for the 10-year time period and conducting a comparative ratio analysis and cross-sectional analysis. Carefully chosen and relevant ratios are calculated for each financial company for each year.

In the first chapter, this paper is devoted to principles of banking. The first chapter consists of introduction to banking; history of U.S banking, general roles that banks have in our society, tasks they are performing and how they are actually generating their profit. In addition to traditional banks, different banking models are discussed: bank holding companies, financial holding companies and universal banking.

The second chapter is dedicated to methodology. In this chapter, author describes the methodology used in the research as well as introduce the data that will be applied in the research. Second chapter includes also the description of research objects consisting of 10 financial institutions. These financial institutions are shortly introduced to give an overview of the companies.

Third chapter deals with the actual results and findings of research. Figures and tables are provided for illustration purposes and these results are analyzed. The last part of the paper is dedicated for conclusions.

1. INTRODUCTION TO FINANCIAL MARKETS

1.1 Shift from traditional banking to universal banking

Banks can’t be established just by buying a premises and putting up a sign, instead starting a bank requires a permission in the form of a bank charter. (Stephen Cecchetti, Kermit Schoenholtz, pp. 329) The era of modern commercial banking industry began in 1782 when the Bank of North America was chartered in Philadelphia. (Frederic S. Mishkin, pp. 247) Following the success of this forerunner, other banks opened for business and so the American banking industry was created. As there was no national currency in the US until 1863, banks issued banknotes that circulated in the economy. These bank notes were promised to be redeemed in gold. (Stephen Cecchetti, Kermit Schoenholtz, pp. 329) Notes of Bank of North America were eventually perceived as too inflated in comparison with the specie, leading to depreciation of these notes. Only after one year, the Bank of North America was converted back to private bank. (Murray N. Rothbard, pp. 63)

Issue in the early days of American banking dealt with the question whether chartering banks should be in responsible of the federal government or the states. (Frederic S. Mishkin, pp. 247) Due to the efforts of federalists, governmental control advocators, the Bank of the United States was established being not purely a central bank but combining elements of both private and central banks. It was responsible for supplying money and credit in the economy. However, opponents of centralized banking existed and indeed their resistance over the federal bank resulted in elimination of Bank of the United States in 1811. Eventually, need for central bank was recognized in order to raise funds for the federal government during the war of 1812 and in response to the abuses by state banks. The second Bank of the United States was recreated in 1816. The conflicting interests of advocates and opponents of centralized banking continued as a theme until the election of Andrew Jackson who advocated state’s rights. He was the one to veto the rechartering of the Second Bank of United States which lead to a situation in which, until 1863, there were banking commissions in each state and all commercial banks in the United States were chartered by the banking commission of the state in which they operated. In that state, there were no national currencies and funds were obtained through issuing currency that could be redeemed for gold. The regulations were varying between different states and in many states they were extremely lax. This resulted in frauds and shortage of sufficient bank capitals. Thus, in 1863, in order to prevent state banks from further funds, prohibitive tax on state banks' banknotes was imposed whilst bank notes of federally chartered banks were left untaxed. This National Bank act of 1863 enabled the creation of new banking system. These federally chartered banks, national banks, were supervised by department of U.S Treasury. However, finally this act didn't manage to dry up the state banks' funds, as they started to acquire funds through deposits. Today banks supervised by the federal government and banks supervised by the states operate side by side forming a dual banking system.

Later on, in order to create a safer banking system, Federal Reserve System was created in 1913. By having all national banks as members, banking system got more regulated. However, most state banks didn't become members due to high costs. The great depression (1930-1933) gave rise to yet another set of regulations. As commercial banks practicing investment banking were seen as major contributors to the bank failures, Glass-Steagall Act was created to separate commercial banks and investment banks. Interesting enough, this act was subsequently refuted in 1999, nine years before the burst of most severe financial crisis after the great depression.

The most crucial changes in the history of banking business, however, have occurred during the last 30 years. (Barbara Casu, Claudia Girardone, Philip Molyneux, pp. 50) They have experienced a shift from practicing basic activities to full servicing financial firms.

The majority of banks' business traditionally consisted of taking deposits and making loans, deriving most of their income from lending business. Banks profitability was driven by the difference between interest revenue and interest costs. In order to enhance profitability in this traditional environment, banks aim to maximize interest margins and control operating costs, such as staff costs.

Until 1990s, banks used to be highly regulated and for instance competition was restricted. It was allowed commercial banks to acquire stockbroking firms in 1986 in Britain after several reforms. Before that, commercial banks weren't allowed to practice securities and investment bank business. The implementation of EU's 1988 Second Banking Directive in 1992, 7-years prior the Glass-Steagall act in the United States, introduced the concept of universal banking model also to the continental Europe. Within this model, banking includes all sectors of financial service activity, such as securities operations, insurance, pensions, leasing and so on. This directive allowed banks throughout the European Union to undertake a broad range of financial services activity.

Allowing commercial banks to expand their business to securities and insurance business has had an impact on global banking business. Additionally, number of other factors have, in part, changed the banking business, such as outgrowing from the capital restrictions that long restricted the free flow of funds across different countries. Demolishing capital restrictions occurred throughout the 1980s enabling the growth of international operations. Privatization has diminished the role of state-owned banks. Additionally, balance sheet restrictions have also been lowered in order to enable greater freedom for banks in the financial management of their activities. Simultaneous development in technology has complemented these global trends. The development of technology has blurred the lines of specialization in different financial intermediaries. For instance, internet and computing technology has enabled banks to provide services online. Banking business has indeed moved from being relatively restricted and uncompetitive to a much more competitive and dynamic business. The transformation from traditional banks to full-service financial firms has expanded the banks' customer field in a way that has enabled customer relationships to become a strategic objective for banks. Whereas banks used to regard their business as supply led, broadening of services provided has led the business being regarded by demand led where creating value to the customer is emphasized.

Another aspect that banks need to reconsider is their strategic focus. Whereas in the uncompetitive and relatively restricted banking markets banks confronted less pressure to actually generate high profits to enhance their profits and thus keep their shareholders happy, in present day the returns to shareholders and creating value to them is emphasized. Traditionally, however, banks preferred solely asset based growth. Nowadays this practice is no longer working, as shareholders are more demanding than they used to be. In addition, the banks' need for capital has grown as capital is banks' resource available that they use to finance expansions as well as protect themselves against potential losses. Balance sheet of a commercial bank consists traditionally of assets such as loans, securities and fixed assets, and liabilities plus capital such as shareholder's equity and retained profits. This capital is regulated by minimum capital requirements in order to ensure that banks have sufficient resources to bear potential losses due to bad loans et cetera. Thus, in order to increase their equity in value and attract new shareholders, banks need to maintain sufficient performance. This is why strategies that seek to increase the overall value of the bank and are expected to boost the banks' stock price are prioritized.

1.2 Principles of banking

Generally, a bank is a financial intermediary of whom key activity is to provide loans to borrowers and to collect deposits from savers. (Barbara Casu, Claudia Girardone, Philip Molyneux, pp.4) The most distinguishable element that separates banks from other type of financial intermediaries is the banks' provision of deposit and loan products. (Shelagh Heffernan, pp.1) Deposits act as liabilities for banks as they pay out money on demand, thus these deposits require managing in order for bank to maximize its profit. Assets, on the other hand, are in the banking industry created by lending. Generally, profits within the banking industry are made by assets transformation. Assets transformation starts with selling liabilities of different combinations of liquidity, risk, size and return and subsequently using the proceeds to buy assets with yet another set of characteristics.

Hence, for banks the core activity is to perform as intermediaries between depositors and borrowers. By performing as intermediaries, banks create a mechanism which enables the flow of funds to their most productive opportunities. (Barbara Casu, Claudia Girardone, Philip Molyneux, pp.4) This is also the key element that separates banks from other financial firms, such as stockbrokers which again act intermediaries between buyers and sellers of shares. Taking deposits and the granting of loans singles out a bank although there are several businesses offering financial services.

Banks are playing a key role in financial intermediation in the society. (Deborah K. Dilley, pp. 4) Their role includes creating financial products and services that benefit businesses and consumers as well as facilitating the creation of money and being involved in the transfer or funds. Fulfilling the role of financial intermediators, banks act as the go-between for both private and non-private persons that either have extra money or are lacking it and are willing to borrow. Having funds from one particular source and using the money to make loans or other investments, banks create money with each set of transaction. The intermediation is practiced by three transformation functions which are size, maturity and risk transformations. (Barbara Casu, Claudia Girardone, Philip Molyneux, pp. 7)

Size transformation is relevant as depositors are usually willing to lend smaller amounts of money than they require when borrowing. Thus the small-size deposits are collected by banks and repackaged into larger size loans. The size transformation is basically banks exploiting the economies of scale since banks have access to a larger number of depositors than individual borrowers could.

The objective of maturity transformation is to transform short-term loans into long-term loans. This function enables banks to convert deposits such as demand deposits, in which funds can be withdrawn on demand, into residential mortgages maturing in 30 years or so. Usually banks' liabilities, consisting of, i.e., funds collected from depositors, are repayable in relatively short time period. In contrast, banks' assets, funds lent to borrowers, are normally repayable in the medium to long term. Maturity transformation is a tool to avoid the problems of borrowing short and lending long.

Risk transformation, again, is a function to minimize the risk of individual loans. Individual borrowers carry a credit risk, a risk that they will not be able to repay the borrowed amount of money. Banks, however, are able to minimize this risk by monitoring and screening potential borrowers. In addition, holding capital and reserves, diversifying investments and pooling risks protects banks from unexpected losses.

Also, banks have another set of roles. Firstly, enhancing the flow of information between investors and borrowers. This is performed by monitoring investors and ensuring the proper use of investors' funds. Additionally, risk which cannot be diversified at given point in time is smoothed intertemporally. (Franklin Allen, Elena Carletti, pp. 1) Intertemporal smoothing consists of averaging risks over time in a manner which declines their impact on individual welfare, as an insurance to depositors against unexpected consumption shocks. Banks are open to systemic risk and possibility of bank runs, as the maturity incongruity between banks' assets and liabilities exists. Systemic risk consists of the possibility that a company level event might trigger an industry or economy level collapse. The existence of systemic risk was substantial contributor to the financial crisis which burst in 2008.

One of the roles that banks have in the economy is also to promote the economic growth. Although the importance of these roles may vary related to different times and countries, banks are still an important element in the financial system.

Bank governance has raised a lot of discussion after the latest financial crisis. It made the flaws throughout financial markets visible and prompted investigation on how banks work. (Hamid

Mehran, Alan Morrison, Joel Shapiro, pp. 1) Over the years, banks have become remarkably more complex and invisible in their business. Their size has increased and in general, banks have expanded into other businesses since passage of the Gramm-Leach-Bliley act in 1999. This act intended to modernize the financial market by removing barriers which separated banking companies from insurance and securities companies. Act enabled different level combinations of an investment banks, commercial banks and insurance companies. This intensified the complexity of banks. During years 2000-2007, more and more complex and innovative securities were traded. (John Holland, pp. 89) Transactions became increasingly difficult to understand. This issue along with the organizational change, where investment and commercial bank functions were combined, made it challenging for the combined bank group and their managers to monitor bank traders and know what fund managers and corporate finance advisers were doing. Additionally, measuring the exposure and the risk created, got more difficult.

Universal banks, combinations of retail and wholesale banks, started to emerge from the 1980s onwards. They made mistakes enough during their 25-year period before the 2008 financial crisis to contribute to a live experiment as bankers tried to find an effective organizational solution. This refers to an indication that major knowledge over understanding limitations existed when the Universal bank- model was developed. Additionally, there was considerable public knowledge about the previous banking crisis in the markets. During syndicated loan markets crisis during 1982-1990, toxic, syndicated loans were causing problems to several international banks. To conclude, it’s been argued that during the past 200 years banking crisis have been both endemic and remarkably similar when it comes to causes and sequencing. In most typical cases, there has been a period of high optimism and increasing asset values, combined with excessive us of leverage prior to crisis. This is followed by overpriced and volatile asset values, unforeseen events combined with fragile banking system, accelerate the bursting of the bubble, consequent panic and eventually rush for liquidity and credit squeeze.

1.3 Different banking types

Commercial banking includes retail and wholesale banking services. (Shelagh Heffernan, pp. 24) Wholesale banking deals with offering intermediary, liquidity and payment services to large customers such as corporations and governments. Business current accounts, commercial loans and syndicated lending are offered by wholesale banks. Wholesale markets are increasingly competitive due to global integration, technological advances and financial reforms. However, most US commercial banks have also retail customers. In retail markets banks offer the same services to several personal banking customers as well as to small businesses.

Bank holding companies, on the other hand, are defined as any firm that held at least 25% of the voting stock of a bank subsidiary in two or more banks by the Bank Holding Company act (1956). Bank holding companies are commercial banks and they are also regulated by the Federal Reserve Bank. Each Bank holding company owns banking subsidiaries which are legally separate as well as individually capitalized.

Financial holding companies, in contrast, can own, in addition to subsidiary commercial banks, investment banks and insurance firms. The underlying differences are also illustrated in the figure 1 below.

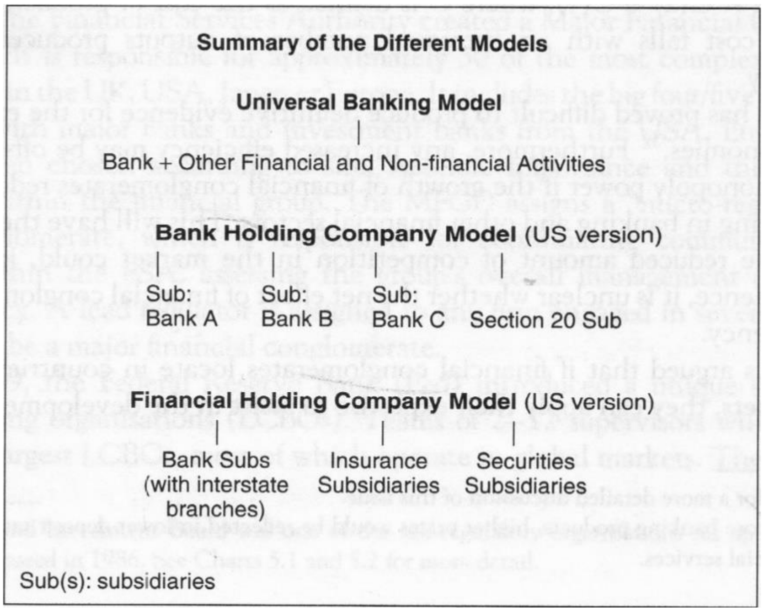

Figure 1: Illustration on different models
Source: Shelagh Heffernan (2005) Modern Banking. England. John Wiley & Sons Ltd.

1.4 Investment banking

Generally, there is no market for the income derived from bank loans. (Alan D. Morrison, William J. Wilhelm Jr, pp. 3) Thus, banks cannot rely on any upon prices to provide it with information about its counterparties. Hence, relationships between lenders and borrowers are formed in order to acquire the information needed for lenders to evaluate their investments. The actual information isn't communicated and bank depositors don't play any part in either interpreting it or in gathering it. Since there is no price mechanism, banks need to substitute the mechanisms by intervening directly in the operations of the businesses to whom they lend money. In comparison, securities markets place a great importance upon prices. In securities markets, relevant information is spread among several economic actors. Relative prices communicate information about resource constraints in the economy helping corporations to plan and evaluate their own activities. Whereas banks substitute for the price mechanism in security market in producing information and communicating it to the corporate borrower, investors produce information themselves and in case corporations fail to respond to price signals investors intervene themselves. The intermediaries in the security markets are called investment banks.

As mentioned, the feature which generally is considered to separate banks from other financial firms are the combined function of acting as intermediary between savers and borrowers, hence providing liquidity as a service. (Shelagh Heffernan, pp. 23) As a byproduct, there are payment facilities. Although investment banks act as intermediaries in the security markets, it is a different form of intermediation. Investment banks do not provide liquidity as service in the similar way than traditional banks do, yet investment banks contribute to increased liquidity in the system by providing new forms of finance for corporations. Hence, the functions of investment banks and traditional banks differ to an extent which has lead the term "bank" be somewhat misleading. Thus, the US National Association of Securities Dealers (NASD) does not officially recognize the term "investment bank" and instead uses "broker dealer" to describe such firms. Yet, many of the investment banks also offer traditional banking services such as deposit, checking and ATM services to individuals typically having high net worth. Although these services cover only minor part of their operations, they are still banks. In most countries these kind of businesses will have to report to both bank and securities regulators. Nonbanks, on the other hand, might offer so called "banking products" such as personal loans and mortgages without fulfilling the description of a bank. These so called non-banks are not banks as they do not fund themselves with deposits thus not offering a complete core banking service. For instance, personal loan or mortgage corporations specialize in loans or mortgages which are financed through bond issues or alternatively by turning a bundle of assets into asset or mortgage backed securities and selling them to raise liquidity. The growth of these nonbanks are results of the growing diversification of banks. These non-banks' financial services include for example mutual funds, stockbroking, insurance, pension funds, asset management and real estate services. The attraction for the customer is convenience; customers tend to demand a bundle of services since it is easy to obtain.

The Glass-Steagall act, originated in 1933, prohibited commercial banks to underwrite securities, except for municipal bonds, US government bonds and private placements. (Shelagh Heffernan, pp. 20) The primary object was to avoid any collusions among firms in the banking industry and also to avoid financial crisis such as the crisis that took place in 1930. The very early US investment banks practiced business by raising capital for large corporations and government by acting as underwriters for both corporate and government securities. In addition, they arranged mergers and acquisitions. In contrast, investment banks in present practice a wider variety of activities. In addition to the activities of early stage of investment banking, investment banks nowadays engage in trading equities, bonds and proprietary. Also fund management, global custody and consultancy are provided.

2. METHODOLOGY

This research conducts a comparative study and cross sectional analysis on U.S based commercial banks and investment banks within 10-year time frame. The purpose of this study is to determine whether the respective banks have changed after the financial crisis of 2008 in respect to their financial stability and performance.

The comparative analysis is implemented on 10 chosen financial companies including J.P Morgan, U.S Bancorp, Bank of America, Wells Fargo, Suntrust Banks, American express, Citigroup, Raymond James, Morgan Stanley and Goldman Sachs for the ten-year period from 2006 to 2016. This time frame enables observing the ongoing trend in the bank behavior as well as how the crisis has affected and changed the banks. A variety of variables is considered together in order analyze to what extend banks have been moving in the direction of better performance and stability.

In order to implement the cross sectional analysis, U.S Bancorp, Suntrust Banks, Bank of America and American Express are chosen. These financial companies represent bank holding companies whereas the rest, J.P Morgan, Wells Fargo, Citigroup, Raymond James, Morgan Stanley and Goldman Sachs are identified as financial holding companies. The cross sectional analysis is executed between these two groups by comparing them to each other. The aim is to reveal similar patterns in the respective companies' behavior, if there is any.

All of the chosen banks are publicly traded and their reported financial data is used in order to calculate ratios needed for the analysis.

	2016		2006
1. J.P Morgan Chase & CO	2490972	**1. Bank of America**	1459737
2. Citigroup	1792077	**2. Citigroup Inc**	1884318
3. Wells Fargo	1787632	**3. J.P Morgan Chase**	1351520
4. Bank of America	2187702	**4. Morgan Stanley**	1120645
5. Goldman Sachs	860165	**5. Goldman Sachs**	838201
Morgan Stanley	N/A	**6. Wells Fargo & CO**	481996
6. U.S Bancorp	445964	**7. U.S Bancorp**	219232
7. Suntrust Banks Inc	204875	**8. Suntrust Banks Inc**	182202
8. American Express	158893	**9. American Express**	127853
9. Raymond James Financial Corp	31594	**10. Raymond James Financial Corp**	11517

Table 1: Financial companies organized by their assets.
Source: Compiled by author by the basis of annual financial data of respective companies

These companies are listed in the table 1 above, by the size of their total assets. For Morgan Stanley data for year 2016 isn't available. We can see from the table, that J.P Morgan Chase and Citigroup have both maintained their size and their position in the top three whereas Bank of America has gotten smaller and dropped out the top three biggest banks to be investigated.

In financial studies, ratio analysis is commonly used tool in order to indicate financial performance for banks. Usually ratio analysis is conducted by calculating the ratios and comparing them to the past to make interpretations. (Issam Tlemsani, Huda Al Suwaidi, pp. 302) Ratios that will be used in the research are divided into different groups. First group is measuring performance and profitability and it includes following ratios: ROA, ROE and net interest margin. Second group is measuring the leverage, including ratios: leverage ratio and total debt ratio. Third group concentrates on the asset and liability composition of the respective companies, including ratios: short-term liabilities over total liabilities and customer deposits over total liabilities and loans over total assets. Non-interest income is ratio chosen to measure possible changes in the companies' structure.

Ratios are useful to evaluate a company's performance over time compared to the performance of other companies and industry norms. Ratio analysis has the advantage of allowing the comparison of companies regardless of their size and reporting currency. (Thomas R. Robinson, pp. 547) The ratios used within the research are defined below. Ratios are listed by the group they belong to. Group 1 is performance and profitability, group 2 is leverage, group 3 is asset and liability composition and group 4 is structure.

$$ROA = \frac{Net\ income}{Total\ assets}, ROE = \frac{Net\ income}{Total\ equity}, Net\ interest\ margin = \frac{Net\ interest\ income}{Total\ Earning\ assets} \qquad (1)$$

$$Equity\ multiplier = \frac{Total\ assets}{Total\ equity}, Total\ Debt\ ratio = \frac{Total\ liabilities}{Total\ assets} \qquad (2)$$

$$\frac{Customer\ deposits}{Total\ liabilities}, \frac{Short\text{-}term\ funding - customer\ deposits}{total\ liabilities}, \frac{Total\ loans}{Total\ assets} \qquad (3)$$

$$\frac{Non\text{-}interest\ income}{Net\ operating\ revenue} \qquad (4)$$

In order to conduct the cross sectional analysis of the two groups, financial holding companies and bank holding companies, T-Test is executed. To reveal whether the means of the two samples (bank holding companies and financial holding companies) are statistically different or not, this research uses T-test. T-test is part of family of parametric techniques and it is used to analyze possible differences between two groups or conditions. (Xiaohong Chen, Helen pp. 4)

Within the research, null hypothesis (H0) is chosen. Null hypothesis states that there are no differences between the means of the 2 groups. Null hypothesis states that if the significance of the test is equal or less than 0.1, it can be stated that there is significant difference between the two groups. On the other hand, if the significance is higher than 0.1, then H0 can be accepted and it can be agreed that there is no significant difference between the two groups.

Within the research, 2-tailed distribution is used and the two samples are assumed to have unequal variance.

2.1 Overview of the companies

The comparative analysis is implemented on 10 chosen financial companies including J.P Morgan, U.S Bancorp, Bank of America, Wells Fargo, Suntrust Banks, American express, Citigroup, Raymond James, Morgan Stanley and Goldman Sachs. Of these financial companies, U.S Bancorp, Suntrust Banks, American Express and Bank of America represents the group of bank holding companies. This group is established in order to compare these companies to investment banks and thus analyze the direction of these two groups in the cross-sectional analysis. In this section, the financial companies under investigation as well as some of their services and products that they are providing will be shortly introduced. This introduction is not meant to be in-depth, but more like introductory description providing an overview of the chosen financial companies.

American Express Company, financial holding company that was converted to bank holding company in 2008, is probably the best known for its credit card services. The company was founded in 1950 and it is headquartered in New York. (Yahoo Finance) Together with its subsidiaries, American Express provides charge and credit payment card products as well as travel-related services to consumers and businesses worldwide. In addition to credit card services, American Express also provides traditional banking services such as deposits and loans. The company's clients consist of consumer clients as well as small and big business clients.

Suntrust Banks is also representing a bank holding company. It was founded in 1891 being headquartered in Atlanta. It operates through consumer banking and private wealth management, wholesale banking, and mortgage banking – segments, providing variety of financial services for consumer, business and institutional clients. Different segments provide different products. Wholesale banking segment offers corporate and investment banking solutions such as auto dealer financing, corporate insurance premium financing solutions and capital raising, whereas mortgage banking segment offers residential mortgage products in the secondary market.

U.S Bancorp also represents a bank holding company. U.S. Bancorp was founded in 1863 and is headquartered in Minneapolis, Minnesota. U.S Bancorp provides a variety of financial services such as depository services including checking accounts and saving accounts, lending services like traditional credit products. In addition to traditional banking products and services, also U.S Bancorp provides investment products to its customers, which consist of individuals, businesses, institutional organizations, governmental entities and other financial companies.

J.P Morgan Chase, financial holding company, is the biggest company of the companies chosen to be studied when measured by the asset size. J.P Morgan Chase operates indeed worldwide, through four different segments: consumers and community banking, corporate and investment banking, commercial banking and assets and wealth management. Consumers and community banking offers deposit and investment products and services to consumers, for small businesses, again, lending, deposit, cash management and payment solutions etcetera. Corporate and investment bank – segment offers investment banking products and services, whereas commercial bank segment provides financial solutions such as lending treasury etcetera. J.P Morgan Chase was established in 1799 and it is headquartered in New York.

Citigroup, second biggest company of the investigated financial companies, was founded in 1812, having headquarter in New York. Citigroup is financial holding company that provides numerous financial products and services. Its clients consist of consumers, business clients, governments and institutions worldwide. Also Citigroup operates through different segments: Citicorp and Citi Holdings. The Citicorp segment offers traditional banking services to retail customers by practicing retail banking and commercial banking. Citi Holdings segment offers consumer loans and for example portfolio of securities.

Wells Fargo was established in 1852 and the company's headquarter is located in San Francisco. Wells Fargo is a diversified financial company offering retail, commercial and corporate banking services for individuals, corporations and institutions. Wells Fargo operates through different segments. To mention a few, checking, savings, market rate and individual retirement accounts are provided through community banking segment. Wells Fargo's wholesale banking segment, on the other hand, provides commercial loans and lines of credit, letters of credits, asset-based lending, equipment leasing et cetera. Third segment, wealth and investment management provides for instance financial planning, private banking, credit and investment management.

Bank of America Corporation was established in 1874, having headquarter in Charlotte. The bank provides banking and financial products and services through its subsidiaries. Bank of America's clients consist of consumers, small and middle-market businesses, institutional investors, large corporations as well as governments worldwide. The products and services are provided through four segments: consumer banking, global wealth and investment management, global banking and global markets. Consumer banking provides the traditional and money market savings accounts, CDs and IRAs, noninterest an interest-bearing checking accounts, investment accounts and products as well as credit and debit cards, residential mortgages, home equity loans and direct and indirect loans. The global wealth and investment management is concentrated on investment management, brokerage, banking, retirement product, wealth management and customized solutions. The global banking segment offers lending products and services, such as commercial loans, leases, commitment facilities, trade finance, real estate lending as well as short-term investing option etcetera. The global markets segment, again, provides financing, securities clearing, settlement, risk management and foreign exchange among other activities.

The Goldman Sachs Group was established in 1869. The investment bank's headquarter is located in New York. The company operates worldwide exercising investment banking, securities and investment management. Also Goldman Sachs divides its operations to 4 segments, which are Investment banking, institutional client services, investing and lending and investment management. The investment banking segment provides financial advisory services. These services include strategic advisory assignments related to mergers and acquisitions. This segment also deals with restructuring, risk-management and underwriting services such as debt and equity underwriting of public offerings. The institutional client services segment deals with credit products, mortgages, currencies, commodities and equities as well as provision of securities services. Segment called investing and lending, concentrates on investing and originating longer-term loans in order to provide financing to clients. This segment also makes investments in debt securities and loans public and private equity securities and so on. The fourth segment, investment management, deals with investment management products and services, such as wealth advisory services consisting of portfolio management as well as financial counseling, brokerage and other transaction services. Goldman Sachs group provides its services to corporations, financial institutions, governments as well as to individuals.

Morgan Stanley is a financial holding company founded in 1924. The company's headquarter is located in New York. Morgan Stanley provides a variety of financial products and services to its customers. These customers consist of businesses, governments, financial institutions and individuals worldwide. Institutional securities segment provides capital raising and financial advisory services such as services related to the underwriting of debt, equity and other securities, also advice on mergers and acquisitions, restructurings, real estate and project finance are offered. Within the same segment, also sales and trading services are offered, including financing, market-making services in equity securities and fixed income products, including foreign exchange and commodities, prime brokerage services, corporate loans, commercial and residential mortgage lending, asset-back lending etcetera. Wealth management segment is focused on different financial services and solutions. Investment management segment deals with variety of investment strategies and products consisting of equity, fixed income, liquidity and so on.

Raymond James, established in 1962, is a financial holding company which, through its subsidiaries, involves in the underwriting, distribution, trading and brokerage of equity and debt securities. Also, the sale of mutual funds, for example, and other investment products are included. The private client group segment offers securities brokerage services, which includes the already mentioned sale of equities, mutual funds and fixed income products as well as insurance products to individual client. The capital markets segment offers securities brokerage, trading as well as research services to institutions. The asset management segment deals with, for example, fee-based asset management programs. The Raymond James Bank segment both originates and purchases commercial and industrial loans as well as tax-exempt loans, securities based loans and commercial and residential real estate loans. The final segment deals with items such as principal capital and private equity activities, including various direct and third party private equity investments. Although Raymond James is somewhat smaller than other companies studied, it is still very similar to other financial companies in terms of its operations and business focus which makes it important part of the study. The use of ratio analysis makes the result comparable.

3. ANALYSIS AND RESULTS

3.1 Performance and profitability

The first ratios calculated for the companies are return on assets, ROA, return on equity, ROE and net interest margin. Return on assets is calculated by dividing net income by total assets, measuring profit per dollar of assets. (Stephen A.Ross, Randolph W. Westerfield, Jeffrey Jaffe, pp. 54) ROE is calculated by dividing net income by total equity, measuring how the stockholder fared during the year.

In the two figures below, figure 2 and figure 3, the results of the ratio calculations for each companies separately and average ratios for bank holding companies and financial holding companies are shown.

The figure 2 showing results of return on equity, indicates that for most of the companies, returns on equity have been the highest in 2006, year prior the burst of financial crisis. Only American Express has had higher result in the following year. For American Express, it is only matter of 0,01 change. After year 2007, however, there is no significant change in ROE.

Along with American Express, also U.S Bancorp has managed to keep its return on equity positive, and the volatility is not so remarkable as it is for some of the companies. For Suntrust Banks, there is a declining trend in ROE visible from 2006 to 2009. In 2009 they are indeed reporting loss instead of net income, which results in negative ROE. In 2010, however, the Suntrust Banks is able to improve its performance and improvements are visible for the last six years investigated. Bank of America is following the same pattern as Suntrust Banks in terms of ROE. There is steady decline in its ROE from 2006 to 2010. But after 2010 and reported loss, Bank of America's ROE is starting to improve. It is important to note, that in 2016, none of the investigated companies have managed to increase their ROE back to the level it was before the burst of the crisis.

Both J.P Morgan Chase and Raymond James have managed to maintain their returns on equity in approximate same level, excluding 2008 when there was a notable drop in both companies' ROE.

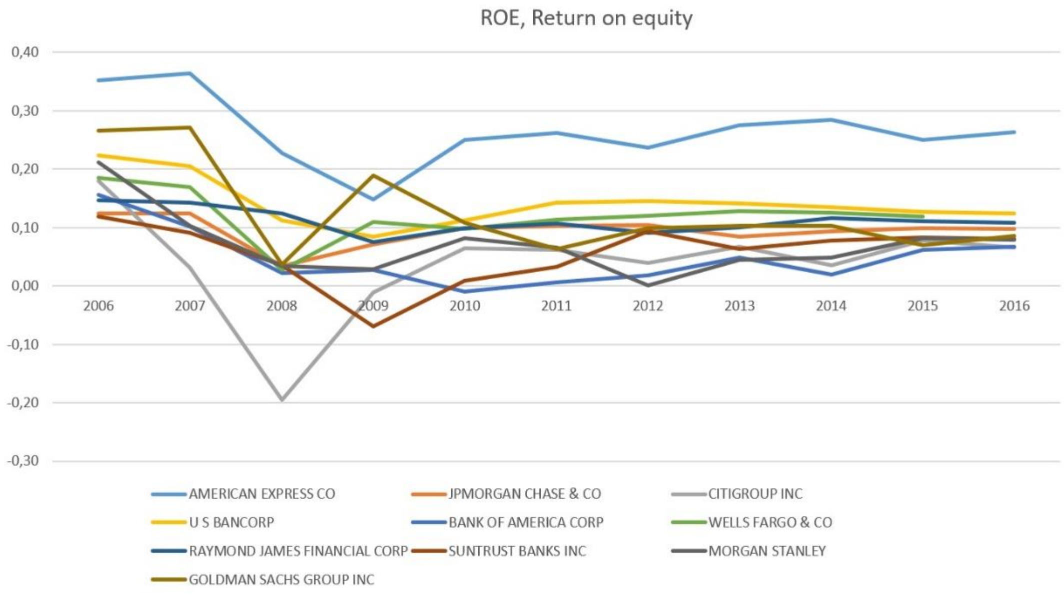

Figure 2: Return on equity
Source: Compiled by author by the basis of annual financial data of respective companies

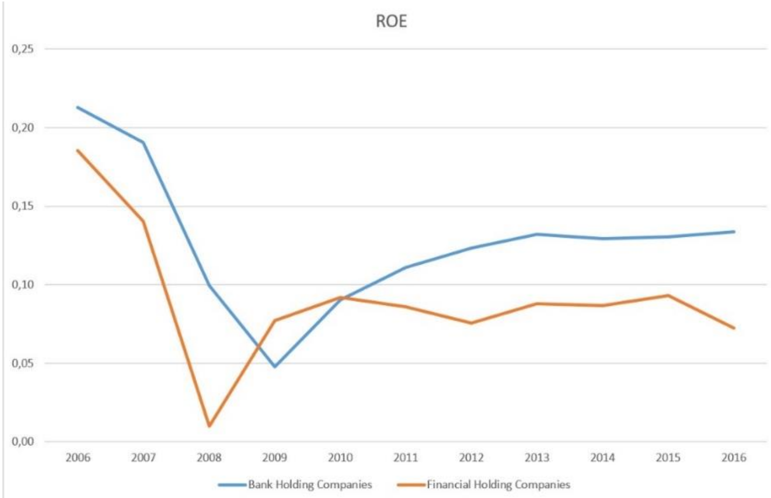

Figure 3: Average ROE for BHC and FHC
Source: Compiled by author by the basis of annual financial data of respective companies

Figure 3 illustrates the change in average ratio for each year for both bank holding companies, BHC, and financial holding companies, FHC. The pattern for both groups is distinctively similar. From the figure it is possible to observe, that financial holding companies have experienced their lowest performance year prior the bank holding companies.

Figure 4 below is showing results of calculations for ROA, separately for each company. This figure illustrates, that companies have produced observably lower returns on assets than on equity. Low returns on assets is mainly due to the huge amount of assets these companies are carrying compared to the net income they are able generate. Each of the ten companies maintain their rather low returns during the whole ten-year period.

The companies that are actually having negative returns are Citigroup in 2008 and Suntrust Banks in 2009. These negative returns are caused by their reported loss instead of net income in the respective years.

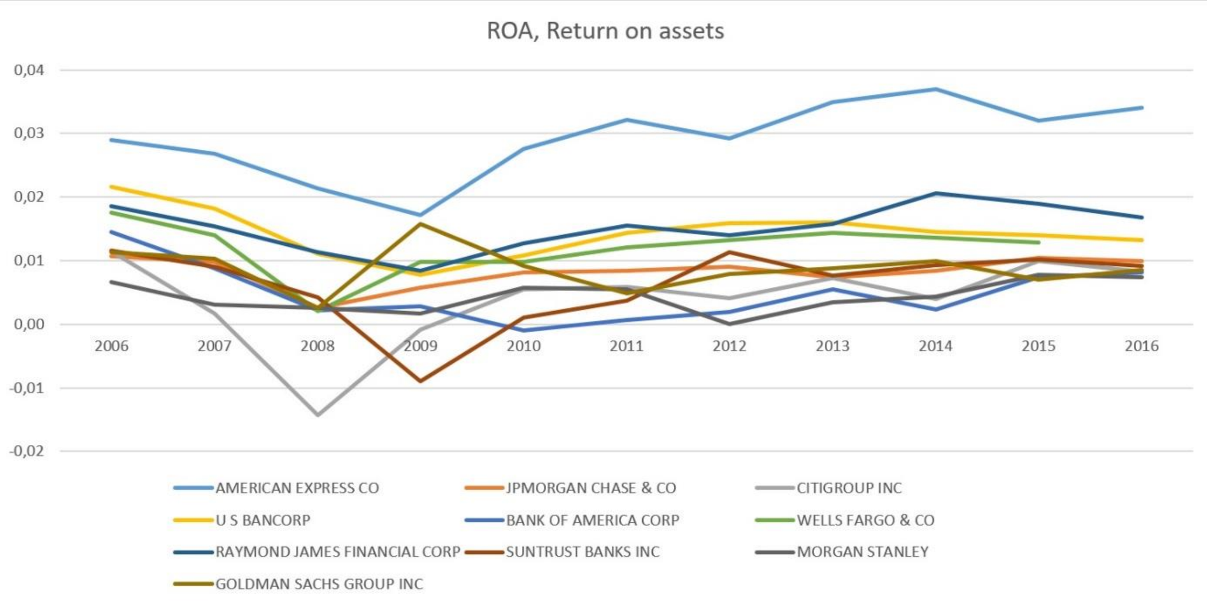

Figure 4: Return on assets
Source: Compiled by author by the basis of annual financial data of respective companies

Figure 5, illustrating the average returns on assets for both groups, is indeed showing the similar pattern experienced by both group of companies. It is possible to see from the figure 5, that both BHC and FHC have experienced huge drop in their returns but started to improve within one year. Yet neither of the companies have actually managed to revive their returns to the same level they were in 2006. In terms of ROA and ROE, the companies investigated have not taken clear steps for better profitability and thus to more stable financial condition.

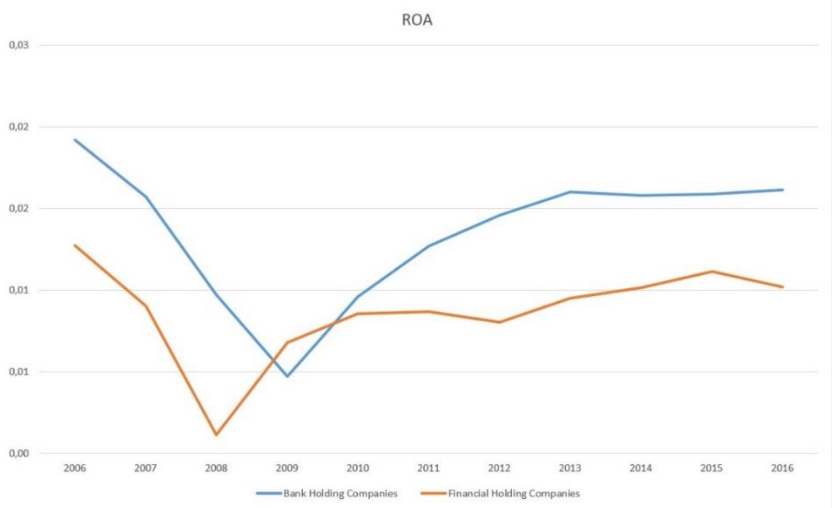

Figure 5: Average ROA for BHC and FHC
Source: Compiled by author by the basis of annual financial data of respective companies

The following ratio calculated for the financial companies is net interest margin, which is also part of profitability ratios. In this research, the net interest margin is calculated by dividing net interest income by total earning assets. Earning assets are one group of assets, which generate income for the company. Result for companies, are shown in the figure 6 below. For American Express, net income was negative for the first two years, resulting in negative ratios in 2006 and 2007. However, after 2010, American Express has managed to increase the ratio. For both Morgan Stanley and Goldman Sachs the respective ratio is the lowest. For Wells Fargo, the ratio is getting smaller year by year. For J.P Morgan Chase the ratio is remaining quite stable during the years. After 2007 there is no huge drops in net interest margin, but on the other hand, none of the banks except for American Express have managed to increase the ratio. Thus, in terms of net interest margin there is no observable change towards better stability for these financial institutions investigated.

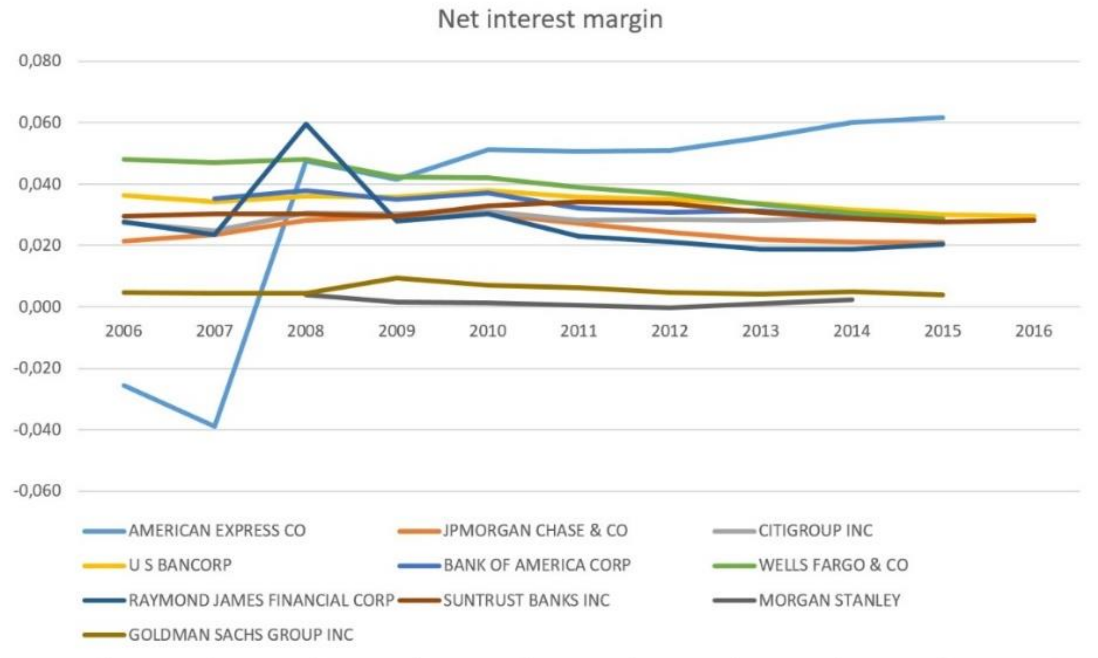

Figure 6: Net interest margin
Source: Compiled by author by the basis of annual financial data of respective companies

From figure 7 it can be seen that for BHC there is less change in net interest margin whereas for FHC the change is more notably and the decrease in the respective ratio is greater.

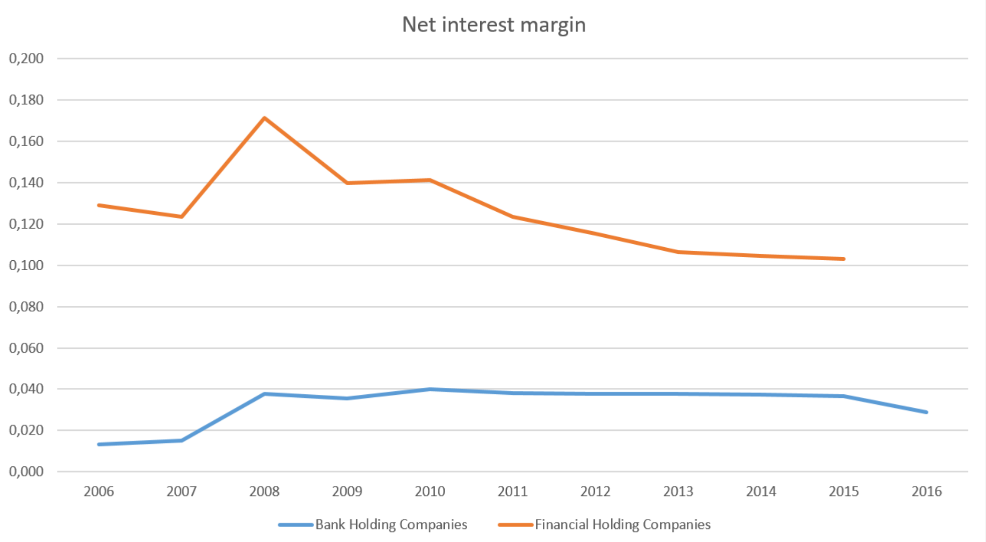

Figure 7: Average Net interest margin for BHC and FHC
Source: Compiled by author by the basis of annual financial data of respective companies

3.2 Leverage

Leverage of the chosen banks will be assessed with multiple ratios, including equity multiplier, defined as total assets over total equity, total debt ratio defined as total liabilities over total assets and debt to equity defined as total liabilities over total equity. By calculating ratios measuring the leverage of the respective banks, it is possible to analyze whether these banks have moved to more stable direction or not. This is based on the concept, that high leverage indicates higher risks.

Equity multiplier is sometimes referred as leverage ratio. This ratio is used in order to get an overview of the mixture of the owner's equity and debt used to operate. To understand the high results shown in the figure 8 below, it is important to understand, that banks tend to borrow a lot of money, resulting in these relatively large equity multipliers. (Stephen A.Ross, Randolph W. Westerfield, Jeffrey Jaffe, pp. 59)

The figure 8 shows that each of the companies have experienced decline in terms of equity multiplier. There is no distinction between the behavior of the banks and financial companies. For both groups, the ratios are experiencing a declining trend. For Goldman Sachs and Morgan Stanley the respective ratio has been very high compared to other companies in 2006 and 2007. After that, however, both companies have almost systematically reduced their ratio reflecting the overall trend. This decline is indicating that these financial companies have adopted new, less risky business model.

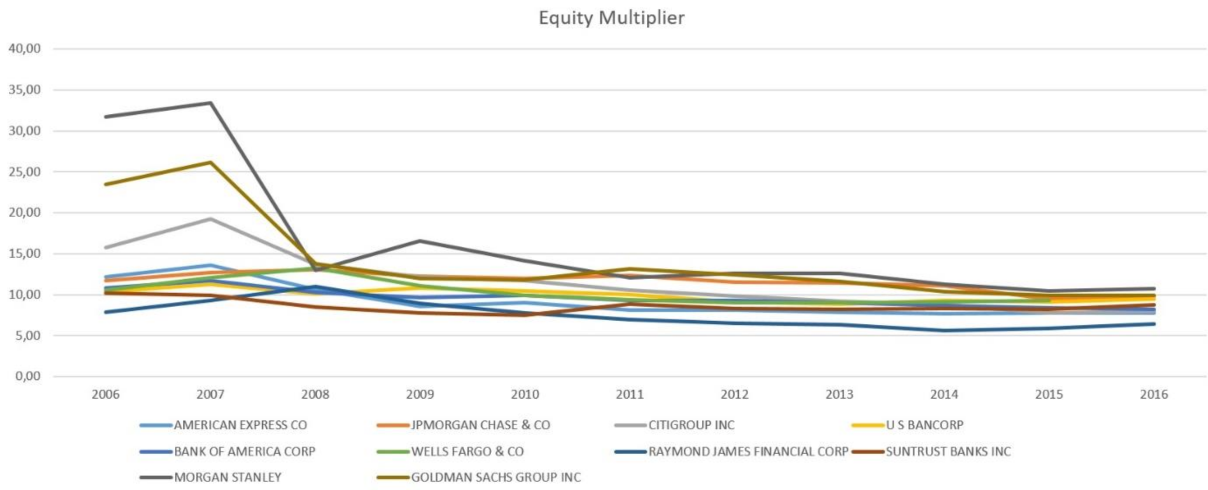

Figure 8: Equity multiplier
Source: Compiled by author by the basis of annual financial data of respective companies

The figure 9 showing the average ratios for both groups illustrates, that there is notable drop in the ratio especially for FHC. For BHC the drop is much flatter but still there is an observable trend of decreasing ratio for both groups.

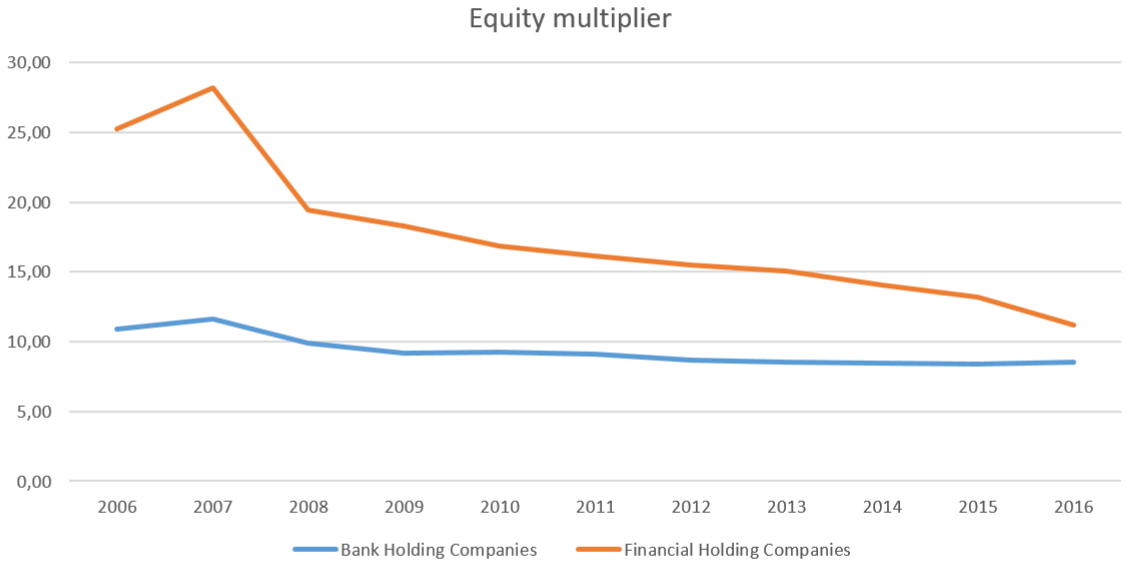

Figure 9: Average Equity multiplier for BHC and FHC
Source: Compiled by author by the basis of annual financial data of respective companies

Total debt ratio, shown in figure 10, is showing clear trend for each company. It can be interpreted that all companies have gone toward smaller ratios. The banks, American Express, Citigroup, U.S Bancorp, Bank of America and Suntrust banks have all high ratios which is usual for the whole industry. There is no difference in the two groups, banks and other financial companies', behavior. All chosen companies have decreased their total debt ratio, thus heading towards somewhat less risky structure.

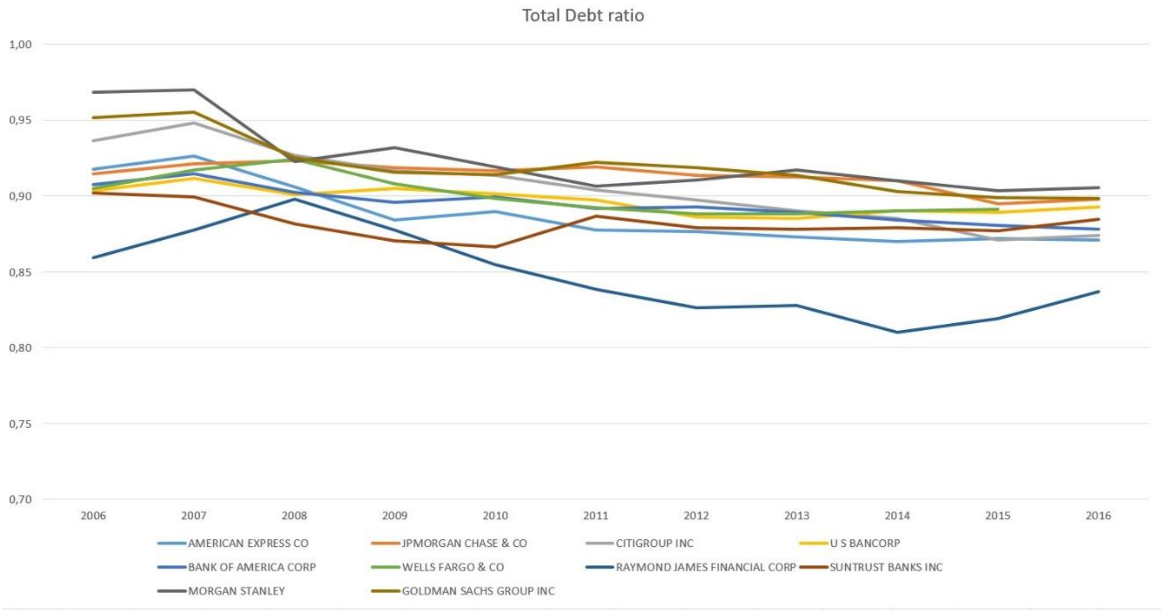

Figure 10: Total debt ratio
Source: Compiled by author by the basis of annual financial data of respective companies

In figure 11 the similar pattern within both groups is illustrated. Figure shows that FHC has had higher ratios from 2006 to 2014, but in 2015 and 2016 the ratio for both groups is practically the same.

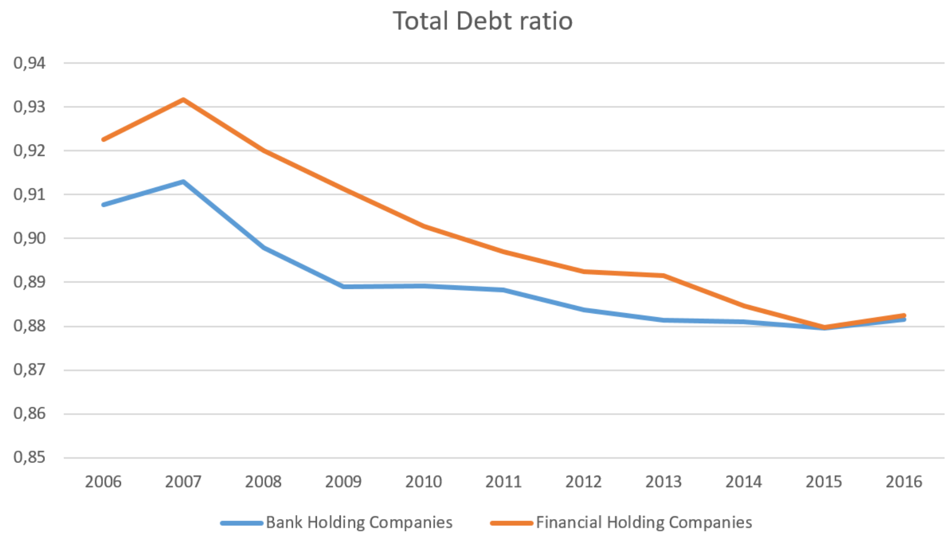

Figure 11: Average total debt ratio for BHC and FHC
Source: Compiled by author by the basis of annual financial data of respective companies

3.3 Asset and liability composition

Within this subsection, balance sheet analysis is conducted within the financial companies under investigation in order to observe any trends that would affect the stability of the respective companies. Customer deposit over total liabilities and short-term borrowing over total liabilities represent the liability composition of the financial companies. Loans over total assets is part of asset composition analysis.

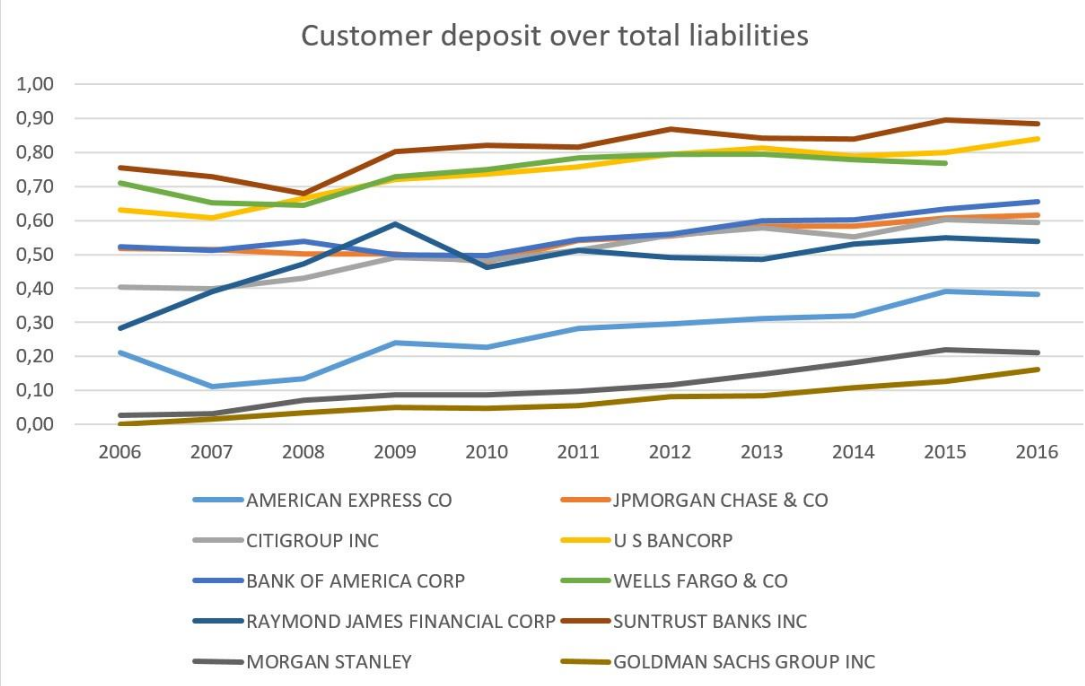

Figure 12: Customer deposits over total liabilities
Source: Compiled by author by the basis of annual financial data of respective companies

Customer deposits are generally considered as relatively safe source of funding. Thus, banks which rely considerably on funding their operations by way of customer deposits in their overall funding structures, can be considered safe. What makes customer deposits safe in terms of funding, is that they are stable and substantially cheap source of funding. After the financial crisis of 2008, it was more difficult to attract other than deposit funding, and from the table it is shown, that in 2009, the ratio for all companies except for J.P Morgan Chase and Bank of America has gone up. Biggest increases are experienced by Raymond James and Suntrust banks. U.S Bancorp, Bank of America, Wells Fargo and Suntrust Banks are having the highest ratios, whereas for Goldman Sachs the customer deposits are not that considerable, although it has increased the respective ratio.

For all the companies, the overall trend seems to be more or less increasing, as shown in figure 12 above. Increased reliance on customer deposits indicates that these companies have moved towards more stable structure.

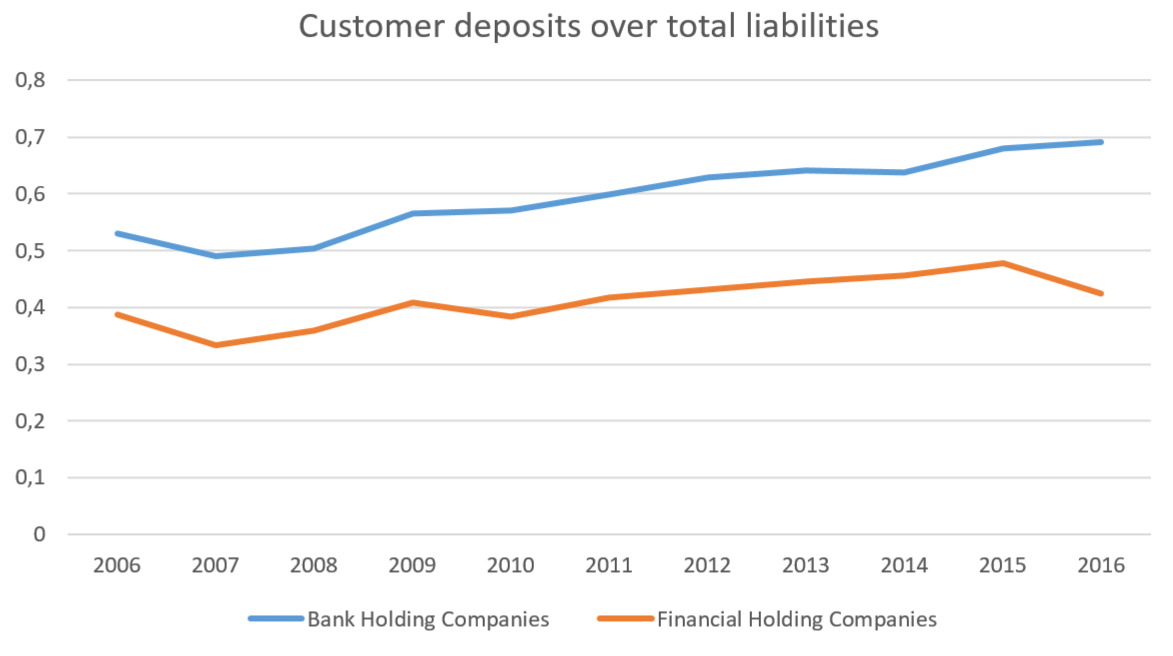

Figure 13: Average Customer deposits over total liabilities for BHC and FHC
Source: Compiled by author by the basis of annual financial data of respective companies

The figure 13 shows the similar patterns in the behavior of both bank holding and financial holding companies all the way from 2006 to 2015. In 2016 however, there is a bigger drop experienced within FHC whereas BHC has continued to increase the share of customer deposits in their liabilities.

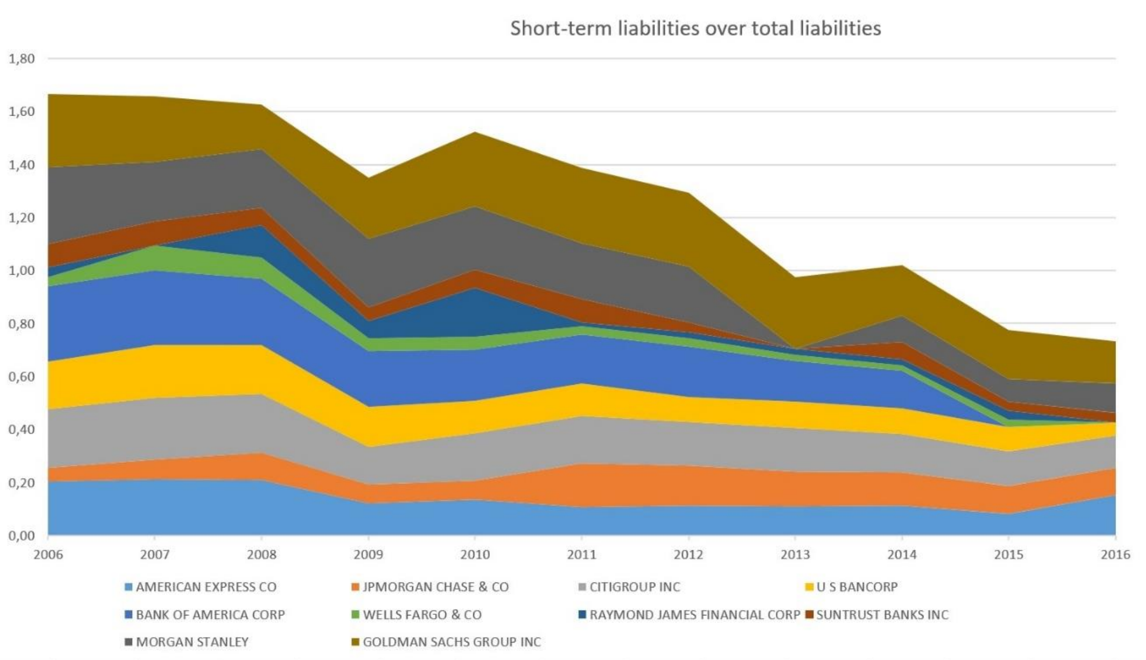

Figure 14: Short-term funding excluding customer deposits over total liabilities
Source: Compiled by author by the basis of annual financial data of respective companies

Figure 14 illustrates the development of short-term liabilities to total liabilities for the banks investigated.

Short-term liabilities over total liabilities describes the portion of short-term liabilities in the total liabilities. Figure 14 illustrates that there is a decreasing trend among the companies investigated. This means, that the portion of short-term debt in total liabilities is decreasing among the companies. This trend is more visible in figure 15, in which the average ratio for BHC and FHC are shown. As short-term liabilities are generally considered as more expensive source of funding, decrease in short-term funding may affect positively to the performance of these companies.

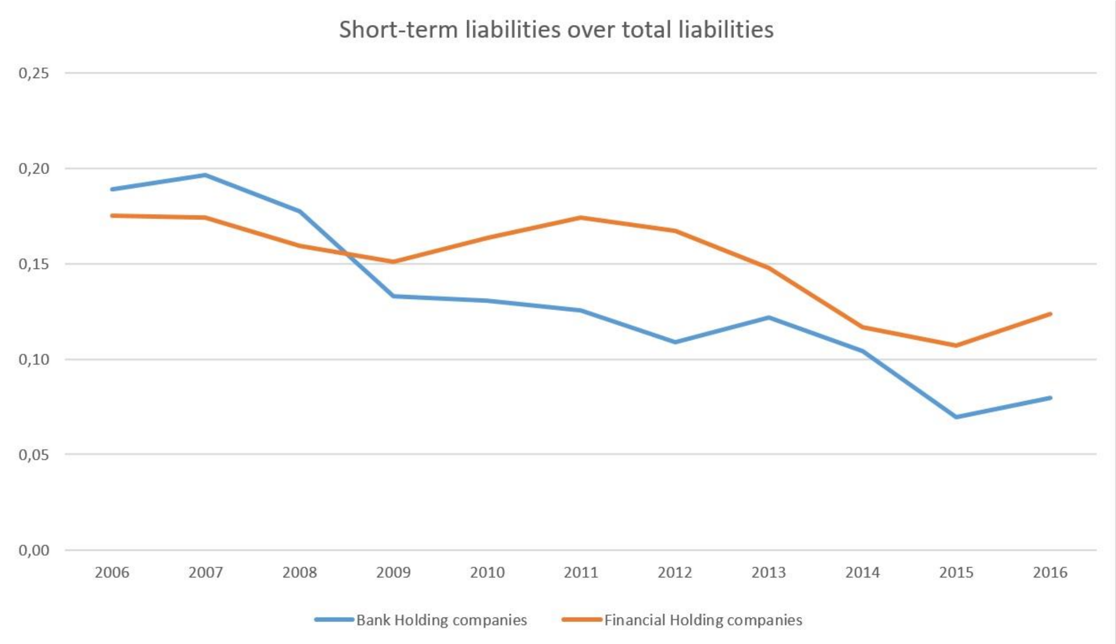

Figure 15: Average short-term funding excluding customer deposits over total liabilities for BHC and FHC
Source: Compiled by author by the basis of annual financial data of respective companies

Figure 15 illustrates, that both groups have decreased their short-term funding during the 10-year period.

For banks, loans are typically a riskier assets category than investment in securities. (Ata Can Bertay, Harry Huizinga, pp. 14) From the loans over total assets- figure below we can see that American express has slightly increased its loan share. From 2006 to 2009 the ratio is declining, but already in 2010 it is starting increase. For Citigroup, the ratio is remaining approximately the same during the ten-year investigation period. For U.S Bancorp and Bank of America the respective ratio fluctuates, but doesn't change significantly. In 2016, however, ratios for both banks are lower than they were in 2006 indicating signs of adopting more traditional, customer-focused banking model. Suntrust banks, as well, has increased its ratio slightly during the years.

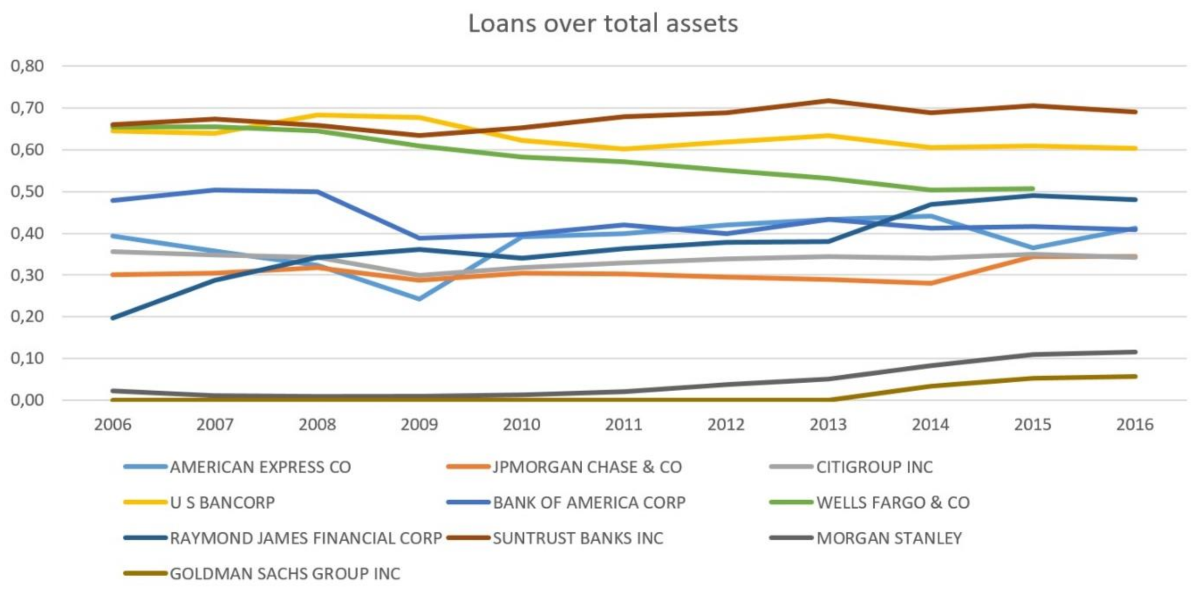

Figure 15: Loans over total assets
Source: Compiled by author by the basis of annual financial data of respective companies

Figure 16 illustrates the average development for both groups. It has remained relatively flat during the 10-year period, although BHC is experiencing a drop in 2009 compared to previous year.

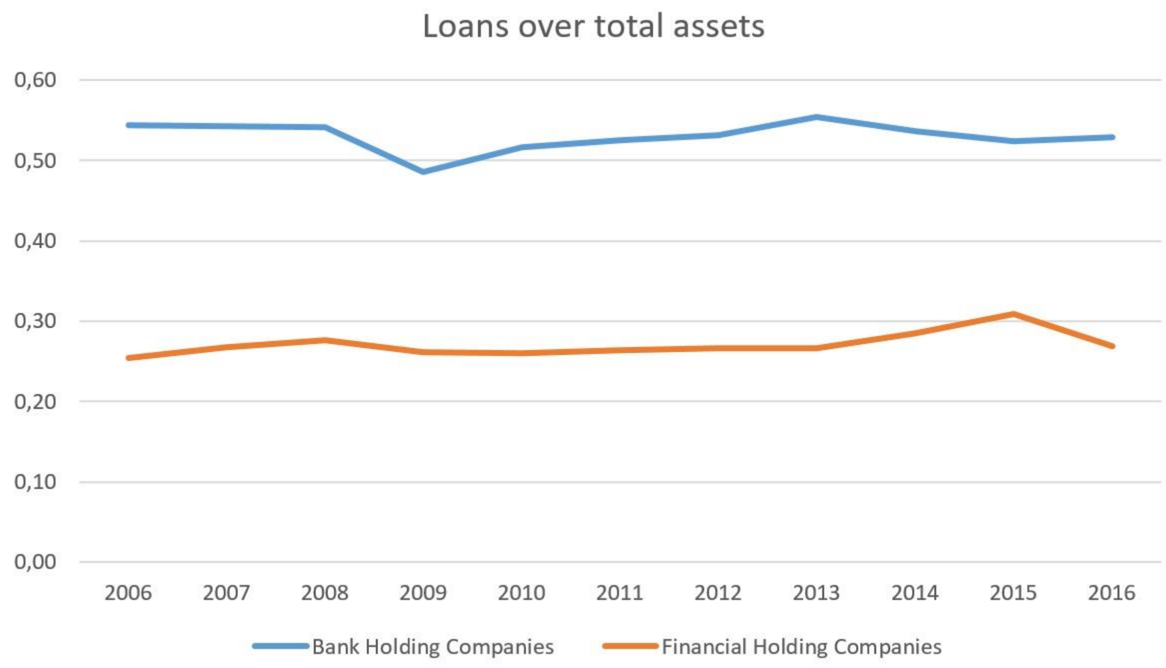

Figure 16: Average loans over total assets for BHC and FHC
Source: Compiled by author by the basis of annual financial data of respective companies

3.4 Structure

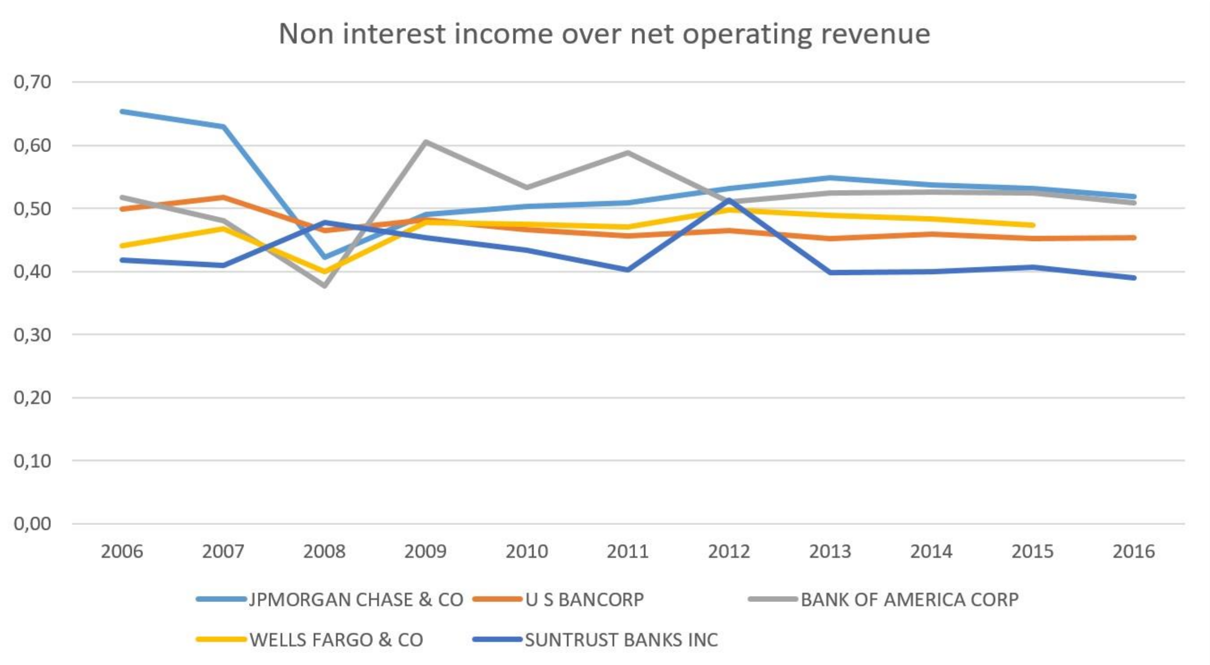

Figure 17: Non interest income over net operating revenue
Source: Compiled by author by the basis of annual financial data of respective companies

Figure 17 is illustrating the results when net interest income over net operating revenue is calculated. For other companies, this ratio is not available due to lack of data. Net operating revenue is derived by adding together non-interest income and net interest income. As illustrated in the figure 17, it is possible to see that for the banks that ratios can be calculated, the respective results are rather volatile. All of the banks, except for Wells Fargo, started with higher ratios in 2006, but end up with decreased values in 2016. This is rather surprising, since generally U.S banking industry is shifting away from traditional sources of revenue, including interest revenue toward non-interest revenue such as fee income, service charges, trading revenue and so on. The decrease in these ratios indicates that these companies have moved towards less risky business model. (Ata Can Bertay, Harry Huizinga, pp. 10)

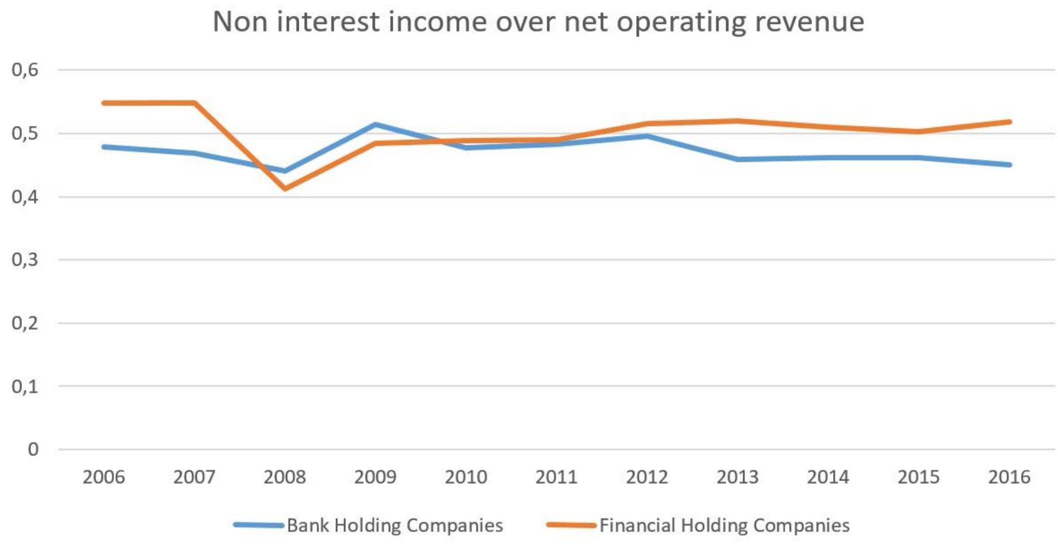

Figure 18: Average non-interest income over net operating revenue for BHC and FHC
Source: Compiled by author by the basis of annual financial data of respective companies

The average ratio for BHC and FHC, shown in figure 18, reveals that both companies are having less non-interest income by the year 2016 compared to 2006. Also, both groups experienced a notable drop in the respective ratio in 2008.

3.5 T-Test

T-Test was executed for each ratio for each year. As the H0 stated, if the significance is higher than 0.1, then H0 can be accepted and it can be agreed that there is no significant difference between the two groups. From table 2 in which all the results are gathered it is possible to see, that the t-test produces a probability p value that is in most of the cases higher than 0.1, denoting that the means for these two groups, bank holding companies and financial holding companies, is not different. Loans over total asset is the only group which has p values lower than 0.1 during the whole 10-year period. Another exception is for equity multiplier in 2009 and 2008, significance being only .04. In addition, net interest margin has p values lower than 0.1 from 2010 to 2014. However, the table 2 illustrates that there are no significant differences in the two groups what comes to ROA, ROE, non-interest income over operating income, short-term liabilities over total liabilities and customer deposits over total liabilities.

	T-Test probability										
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
ROA	0,20	0,23	0,17	0,75	0,88	0,62	0,35	0,41	0,52	0,47	0,40
ROE	0,65	0,51	0,20	0,61	0,98	0,70	0,39	0,46	0,52	0,44	0,38
Non-interest income over Operating income	0,63	0,50	0,48	0,59	0,75	0,91	0,48	0,29	0,36	0,42	-
Loans over total assets	0,04	0,06	0,08	0,15	0,06	0,05	0,05	0,03	0,04	0,09	0,04
Equity multiplier	0,17	0,12	0,04	0,04	0,10	0,15	0,16	0,17	0,36	0,58	0,63
Total Debt ratio	0,40	0,25	0,02	0,07	0,32	0,53	0,57	0,50	0,83	0,99	0,95
Short term liabilities over total liabilities	0,84	0,69	0,72	0,75	0,55	0,34	0,29	0,66	0,72	0,27	0,36
Net interest margin	0,60	0,65	0,41	0,12	0,07	0,04	0,04	0,04	0,08	0,15	-
Customer deposits over total liabilities	0,24	0,39	0,40	0,39	0,32	0,31	0,29	0,28	0,29	0,22	0,12

Table 2: Probability p for each ratio for 10-year period.
Source: Compiled by author by the basis of annual financial data of respective companies.

3.6 Summary

By analyzing the companies' financial data for the 10-year time period, it was possible to identify several trends that indicate better stability for the banks after the financial crisis of 2008.

The equity portion in the structures of each company has increased in the 10-year period compared to the asset portion. This trend indicates improved stability for both the financial companies as well as to the banks. For both groups the trend is similar.

Equity multiplier measures leverage, thus it is usually called as leverage ratio. Calculations for this ratio shows, that all banks have become less leveraged by 2016. Especially notably the change is for Morgan Stanley and Goldman Sachs, which had both significantly higher ratios than other companies investigated in 2006. This is certainly a positive trend, indicating that these companies have consciously made decisions leading to less risky business model.

Total debt ratio for the companies has continued to increase for the first 2-3 years of investigation, but towards the end of the 10-year period, the ratio is starting to decrease. Although the ratios are not experiencing huge changes, the overall trend is still positive in terms of risk and stability.

Increase in customer deposits over total liabilities is also reflecting a positive trend within banks investigated. All companies have indeed increased their customer deposit share of total liabilities. This trend is also reflected in short-term funding over total liabilities. This ratio indicates that the short-term borrowing from, for example, other banks and capital markets has decreased. Thus, both banks and financial companies have both moved towards traditional, customer focused business. The decrease in non-interest income for J.P Morgan Chase and U.S Bancorp also strengthens this assumption. All companies with data available, except for Wells Fargo, have smaller ratio in 2016 than they had in 2006.

In addition, the share of loans in total assets shows signs of these companies going towards traditional customer-based business model for both groups.

The t-test also reveals, that for the two groups investigated in the cross-sectional study, the means are similar. This indicates that bank holding companies and financial holding companies have gotten more similar in their operations.

On the other hand, negative findings are related to the profitability and performance ratios, ROA, ROE and net interest margin which are very low for each company and are yet to reach the pre-crisis level.

CONCLUSIONS

The financial sector has changed a lot during recent decades. Universal banking was enabled in the United States in the end of 1990s, in Europe a decade earlier. Universal banking has changed the banking industry drastically: instead of practicing only basic banking activities, banks were able to become full servicing financial firms. Universal banking was the first step towards the more complex banking structure.

Banks have important role of providing necessary capital in the economy. They act as intermediaries between borrowers and savers. Basically banks are distributing the money where it is not currently needed to a place a need emerges. This is crucial role for the financial sector, since it enables the effective circulation of capital in the economy.

The actual impact that financial institutions have on the economy is complex. However, the direction that financial institutions choose to take on will most likely determine the direction of the whole business world. This is what the whole world got to witness, when the financial crisis of 2008 plunged the whole global economy into recession.

At the same time as the banks were getting more complex, the whole financial market was getting increasingly complicated. Because the financial crisis of 2008 can largely be seen caused by the reckless lending policy and new, complex financial instruments initiated by financial institutions in the U.S, the stability of the banking system will remain a concern. Key financial actors, for instance investment bank called Lehman Brothers, were so highly leveraged and stuffed with new, unprecedented complex financial instruments that bankruptcy was eventually inevitably. Afterwards, it has been argued that financial institutions dealing with these new financial innovations actually lacked the necessary information to keep the risks at sustainable level. Financial institutions engaged in securities which exposed them to set of different risks they were not aware of.

Asset securitization was one tool banks started to excessively use prior the crisis. Through this tool banks could diversify their investments and increase lending activities. Securitization enabled also new ways for banking sector to develop: securitization made commercial banks less reliant on retail deposits.

The financial crisis of 2008 cannot be described especially unique, since there has been cases of previous crisis in banking markets caused by freezing of interbank markets and so called toxic loans. Still, hundreds of banks were subject to bankruptcy during the latest financial crisis. Thus, the objective of this paper was indeed to investigate, whether there is observable changes in the financial companies' behavior towards better stability. This objective was reached by conducting a ratio analysis for 10-year period for all the chosen financial companies. Although the lack of required data for some companies set certain constraints for the study, the rather big number of companies under investigation enabled to draw conclusions although some data were at times not available.

Results of the study imply, that after the crisis, banks have moved towards more stable structure and less risky behavior. For instance, banks have increased their share of equity in total assets. Although equity is considered as more expensive way of funding compared to debt, at certain level the costs of financial distress caused by excessive funding with debt get higher than the cost of equity. Hence, higher portion of equity makes these companies less vulnerable in case of market changes. This trend is shown in equity multiplier. In addition to this positive change in the structure of the respective financial companies, the study reveals similarly positive trends in the companies' behavior.

Customer-deposit over total liabilities and short-term borrowing over total liabilities indeed reveal, that banks have engaged in less risky business models in terms of less risky operations. However, although these companies are showing several positive trends, concerns regarding their profitability raised when ratios concerning profitability and performance were calculated. None of the financial companies were able to return to the same level of profitability they were prior the burst of the crisis. All of the ratios, net interest margin, ROE and ROA are revealing the extremely low returns for the respective companies. Thus, the low profitability and weak financial performance of these financial companies should raise concerns. It illustrates just how far-reaching the impacts of financial crisis are and raise a need for further studies.

In the light of this study, financial companies have chosen to exercise more traditional, customer based business model, in which they make more loans and rely more on customer deposits and in the larger share of interest income in total income. This is also seen when compared the financial ratios for bank holding companies and financial holding companies. Study within this paper denotes, that these two groups have moved towards same direction. This may indicate that the trend of more complex banking model and operations is moving over for more traditional and stable, less risky business model.

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