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Banking, Mortgage and the Credit Industry in the USA

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Abstract

Banks fail because of inadequate capital base, mismanagement of funds, overextension of credit, lack of regulation and control, and unfair competition from foreign banks. Banks face the problem of persistent illiquidity, unprofitable lending, and poor asset base.

Although the Federal Reserve (Fed) did not eliminate bank crises, it reduced the frequency. The presence of Fed to lend to illiquid banks and the capital markets in times of stress enhanced financial stability and reduced the frequency of bank crises. The financial crisis resulted in a call onto the government for increased supervision and improved regulation of the financial industry. Although there are new regulations and government intervention, a complete turnaround of the world's economy may take a long time.

Keywords: **US banking; Mortgage; Credit industry; Financial crisis, Banking crises**

INTRODUCTION

Because banks were regulated regarding the amount of interest rate they could pay on deposits, bank customers withdrew funds from the banking system and placed them in money market funds. These heavy withdrawals crippled the banks. The ceilings on deposit interest rates were repealed in the 1980s and Congress removed the restrictions on interstate banking in 1994; bank mergers were then allowed. In 1999, the Glass Steagall Act was repealed and banks were able to obtain more funding to make more loans and purchase new forms of securities from Wall Street and the international money markets.

Lending standards were loosened; as indicated by an increase in the mortgage credit availability index (MCAI). Loosening the lending standards enabled banks to increase their market share in the mortgage sector. The relaxation of credit restrictions in 2006 housing boom tempted consumers to pay too much for properties. When the financial crisis hit and house prices drop, many home owners find became overleveraged.

Although in the early 2000s, cheap credit led to a real estate bubble, house prices began to fall by the mid 2000s. A lot of borrowers defaulted on their loans, which led to a huge drop in the value of mortgage-backed securities. This drop made banks insolvent. Because the money market lenders had no insurance, in 2007, they stopped lending to the banks.

Inefficient mortgage lending led to a lot of crisis such as the 2007-2010 financial crisis. The financial crisis resulted in a call onto the government for increased supervision and improved regulation of the financial industry. The new regulations put banks under pressure, which makes it more difficult to operate profitably. Though the economy is improving, mortgage debt is on a slow rise as the housing market picks up and foreclosures slow down. Consumers are now cautious about going into debt. This caution will negatively affect the lending industry and the pace of economic recovery. A complete turnaround of the world’s economy may take a long time.

The history of the US banking industry

The banking system is one of the most important industries in the US [1] as it operates the payment system and acts as the financial intermediary between depositors and borrowers. The first American bank was established in 1781; when Alexander Hamilton recommended to Congress that a bank be established to facilitate trade. According to Sylla [1], a few months after the recommendation, the Congress chartered the first bank, the Bank of North America, in Philadelphia. In 1784, Boston merchants founded the Massachusetts Bank and Hamilton founded the Bank of New York. Hamilton also founded the Bank of the United States (BUS), a National bank, capitalized at $10 million, with 20% ownership by the federal government.

In 1789, George Washington, the first US president, made Hamilton the secretary of the treasury. Hamilton created the Federal Revenue system, treasury securities, and defined the US dollar in terms of gold and silver coins. US financial system was firmly established in the 1790s; which encouraged the rapid growth of the US economy. By 1800, there were about 30 banks, and by the beginning of the Civil War, there were about 1600 banks. BUS issued its stocks for sale in a few cities, which led to the establishment of stock exchange markets in Philadelphia and New York in the early 1790s.

At first, banking was highly politicized; but in the 1830s, a few states began to enact free banking laws to eradicate the politicization. Government issued coins; banks issued paper money. The payment system was inefficient and counterfeit was rampant. In 1863, the federal government therefore, took over the note issuing and a uniform national currency was established. When the BUS federal charter expired in 1836, its charter was not renewed; hence, there was no Central Bank in the US until 1913. Between 1836 and 1914, the banking system suffered some major economic growth problems

In 1913, Congress created a new central bank, the Federal Reserve System, (Fed). The Fed opened for business in 1914 with 12 regional Reserve Banks, coordinated by the Federal Reserve Board in Washington, DC. The new system was a decentralized central bank. The Fed introduced Federal Reserve Notes and operated a national check-clearing system. Fed was given the power to increase or decrease currency and credit as necessary to enhance economic stability. In the 1930s, National bank notes were replaced by the Federal Reserve notes.

Although Fed did not eliminate bank crises, it reduced the frequency. The presence of Fed to lend to illiquid banks and the capital markets in times of stress enhanced financial stability and reduced banking crises. However, the leadership of the Fed was weak and divided; this weakness contributed to the Great Depression of 1930-1933. President Franklin Roosevelt therefore, enacted the Banking Act of June 1933 (the Glass-Steagall Act) and introduced federal deposit insurance to protect bank customers' deposits. The banking Act of 1933 enhanced banks' stability but at the expense of competition and innovation.

Because there was a ceiling on deposit interest rates, banks were unable to pay satisfactory return on deposits, bank customers therefore, withdrew deposits from the banking system and invest them in money market funds. The heavy withdrawals crippled the banks. Congress repealed the ceilings on deposit interest rates in the 1980s and removed the restrictions on interstate banking in 1994, this removal enabled bank merger. When the Glass Steagall Act was repealed in 1999, banks were able to obtain more funding to make more loans and purchase new forms of securities from Wall Street and the international money markets.

Bank crises are always preceded by asset price bubbles, large capital inflow, and credit boom; and lead to a significant decline in tax revenue, increase in government spending

(G), and a rise in government debt [2]. That was exactly the case in the 2007-2008 crisis. There were housing bubbles and credit boom in the 2000s; when the crisis hit, the government has to bailout the financial industry. The bailout increased government debt.

The US banking industry

A bank is a financial intermediary between the surplus (depositor) and the deficit (businesses/borrowers) spending sector of an economy [3]. The banking system is one of the oldest, largest, and most important industries in the US [1]. Banks have two important economic functions: a) to operate the payment system and b) to act as the financial intermediary between depositors and borrowers [4]. By taking money from the surplus segment of the economy and granting credit to the deficit segment, a bank creates money. A bank is a key element in growing national income and in creating trade and commerce [3].

Banks must maintain a prudential balance between maximizing shareholders' wealth and safekeeping depositors' money. A bank must be able to attract enough capital from the market based on the returns it has historically provided the suppliers of that capital. Banks face the problem of persistent illiquidity, unprofitable lending, and poor asset base [5]. As Ikpefan et al. stated, banks fail because of inadequate capital base, mismanagement of funds, lack of regulation and control, unfair competition from foreign banks, and overextension of credit.

As of 2014, the US banking system consisted of 6,659 FDIC-insured commercial banks and savings associations (down from 7,513 as of mid-2011). As noted by Plunkettresearch.com, deposits in FDIC-insured organizations totaled $10.69 trillion in June 2014 (up from $9.97 trillion in 2013), while assets totaled $14.12 trillion (up from $13.35 trillion in 2013). There were 6,429 credit unions (down from 7,339 in 2011), with assets totaling $1.044 trillion. Employment at banks, savings associations, credit unions, credit card firms, mortgage brokers, payment transaction processors and other types of lenders in the US totaled 2.599 million in July 2014, down from 2.638 million in 2013 [6].

Banking has become a highly globalized industry (plunkettresearch.com) due to electronic distribution of funds, rising household wealth in emerging economies, and the relaxed restrictions on bank ownership by foreign entities. Before 2007, mortgage lenders including banks, lowered monthly payments and credit rating requirements. Lenders offered zero-down mortgages, 40-year fixed-rate loans, and options that allowed borrowers to defer a large part of their monthly payment. This offer enabled banks to increase their market share in the mortgage sector.

The relaxation of credit restrictions in the 2006 housing boom lured consumers into overpaying for properties. When the financial crisis hit and house prices dropped, many home owners were overleveraged [6]. The international monetary fund (IMF) warned persistently about risks in the banking system due to high levels of government debt in developed countries and slow economic growth in many nations. Financial institutions around the world are prone to potential losses from bonds issued by indebted European countries.

The financial crisis called for government intervention for increased supervision and improved regulation of the financial industry. The government started to recapitalize banks. Recapitalization is a bank reform to restructure, re-brand, and refurbish the banking system [7]. Recapitalization is directly proportionate to bank improved performance [4]. Banks were ushered to increase their capital base to enable them cushion potential losses without bailouts. The leverage ratio rule is enacted to limit banks' ability to use sophisticated accounting and special corporate structures to build up liabilities off of their balance sheets.

In July 2010, President Obama signed the Dodd-Frank Wall Street Reform and Consumer Protection Act. The Dodd-Frank Act is intended to promote US financial stability by improving accountability and transparency in the financial systems to protect consumers from abusive financial services practices. New regulations such as the Dodd-Frank Act of 2010 that decreased the potential to earn profits forced banks to start looking for ways of increasing fee income. Banks now target the rapidly growing Muslim population, the high income oil-producing Muslim nations, and Muslim-owned businesses to provide services that conform to the Islamic concept of Sharia. In 2014, residential mortgages increased to $9.86 trillion from the 2013 $9.83 trillion [6].

Retailers and automobile manufacturers provide loans to car buyers. Wal-Mart became a retail financial services giant by opening Money Centers in its stores in Mexico and US. Its Bluebird cash card enables customers to pay bills and cash checks. In September 2014, Wal-Mart announced its partnership with Green Dot Corporation to offer low-cost checking accounts called GoBank. These automobile manufacturers and Wal-Mart are taking market share away from commercial banks. This Shadow Banking System poses a threat to banks.

Internet and mobile banking business is evolving. A revolutionary wave of smart phones that help people manage financial accounts is popular in Asia, Europe and the US highly secure mobile banking and bill payments encouraged innovative firms to launch text message-based banking systems via cell phones. Cell phone service penetration into poor villages worldwide has marked the banking revolution.

Loan origination

Origination is the process by which a mortgage is secured. A borrower submits a loan application with documentation related to his/her financial and credit history to the underwriter typically a bank. Sometimes, a third party such as a broker is involved. The broker reviews the borrower's information and a number of lenders to select the ones that will best meet the borrower’s needs. Loans can be categorized into high-quality A-paper, no-doc, NINJA (no income, no job, and no asset) classes.

In the United States fixed-rate mortgages are common, while in the Western Europe variable-rate mortgages are common. Default rates are lower in Europe than in the United States. In the United States, mortgage loans are often non-recourse debts (i.e., the lender's recovery is limited to the collateral if the borrower defaults; (the borrower is not personally liable) unlike in most countries.

The mortgage industry

Mortgages are commercial papers and can be transferred and assigned freely to other holders. Mortgage loans are secured by the property purchased with the loan. At that point, the mortgage is called agency paper or agency bonds. Compared to other service industries, mortgage servicing is rated very low in customer satisfaction; and mortgage applications have been reduced due to high interest rate.

The US mortgage banking industry consists of about 15,000 institutions with the annual revenue of about $70 billion. Banks such as JP Morgan Chase, Bank of America, and Citigroup lend money to buy properties using the properties as collateral. The use of mortgages to buy homes is common in developed countries. The government in many countries helps people to buy houses through beneficial tax policies, but few governments (as in the US) purchase mortgages to provide security. Demand for mortgage services is driven by home sales and low mortgage rates. The profitability of the mortgage companies depends on volume, interest rate spreads, and efficient operations. Large companies have the opportunity of economies of scale in operations.
From the Depression through the late 1970s, bank deposits were the main source of funding for home loans [8]. This indicated that lenders were financing long-term assets with short-term liabilities, which is a problem. Congress therefore created a process to transform the US mortgage market from a deposit-financed system to a capital markets-financed system. Two government agencies, Ginnie Mae and Fannie Mae, were created to foster mortgage lending, and encourage home ownership. Banks were then able to sell mortgages they had originated to investors in the secondary markets. Efforts to stabilize the mortgage market were a failure as secondary markets were slow to develop, and bank deposits remained the main source of funds for home mortgage lending.

Congress and regulators were spurred into action to bring about regulatory changes to transform mortgage lending [9]. Congress passed the Depository Institutions Deregulation and Monetary Control Act of 1980 and the Garn-St. Germain Depository Institutions of 1982; and Regulation Q was phased out. In 1981, Federal Home Loan Bank Board (FHLBB) introduced a change in accounting rules, which enabled lenders to sell mortgages on the secondary market without a huge accounting loss [10]. This change helped to create a liquid secondary market for mortgages. Secondary market for the sale of mortgages increased from $12B in 1981 to $52B in 1982 [9]. Mortgage-backed securities (MBS) were exempted from the investor protection laws; and Freddie

Mac and Fannie Mae became the largest issuers of MBS working closely with Wall Street firms [8].

In the early 2000s, low interest credit led to a real estate bubble. By the mid 2000s, house prices began to fall. A lot of borrowers defaulted on their loans; which led to a huge decrease in the value of mortgage-backed securities [1]. The decline in the value of loans and securities on banks' balance sheets made banks insolvent. However, bank depositors did not panic because of the presence of the FDIC. Money market lenders had no insurance; so, by 2007, they stopped lending to banks.

Inefficient mortgage lending led mortgage crises. The mortgage crisis led to a rise in foreclosures. The non-availability of funds triggered many banks including Fannie Mae to tighten lending guidelines, which made it much more difficult to obtain loans. Agencies dominate the high balance loan market; and there is a high entry barrier for new entrants. According to 2014 Accenture research result, 20-30% of lenders will be off the market by 2020 as the banking industry is volatile to inside and outside convergent disruptions. It could cost the largest US banks about $104B to resolve mortgage related legal issues from the subprime crisis (Accenture). Companies need to reduce servicing costs by reducing redundancy and automation. Lenders have to be agile and innovative to be successful in 2020 (Accenture).

HISTORY OF THE CREDIT CARD INDUSTRY

Although the earliest credit cards emerged in Europe in the 1890s, the concept of widely accepting credit card started in the US. The first widely issued charge card was Diners' Club card in the 1950s. The card was developed in the late 1940s by Frank McNamara of New York. By the end of 1950, Diners had 20,000 members. By 1952, Diners Club had franchises in Canada, France, and Cuba, and in 1955, Western Airlines became the first airline to accept Diners Club card for payment. Diners Club was a success and became Citicorp in 1981.

In 1985, Discover Card entered the credit card market and became the largest independent credit card network in the US. Discover Card is the first credit card company to offer "no annual fee" and "cash back" credit card to consumers. The credit card industry continues to evolve offering new features to attract new customers. Benefits such as 0% APR credit cards and reward programs are now the order of the day.

CREDIT RATING

Credit Rating is an assessment of the credit worthiness of a borrower be it an individual, a corporation, state or sovereign government (investopedia.com). Ratings reflect the ability of the entity to pay back in full and on time. The assessment is done by a credit rating agency such as Standard & Poor, Moody's, and Fitch Ratings. The rating agencies are paid by the company seeking the credit rating for itself or its debt issues.

A Credit rating agency (CRA) is a company that assesses and assigns credit ratings to securities to describe a debtor's ability to pay back debt and in a timely manner. A CRA may also rate the credit worthiness of the debt issuer. The debt instruments rated by CRAs include government bonds, corporate bonds, CDs, municipal bonds, and preferred stock. Credit ratings facilitate the trading of securities on a secondary market and affect the interest rate that a security pays out; the higher the ratings, the lower the interest rates. Because business owners hesitated to extend credit to new distant customers; the credit reporting agencies took it upon themselves to rate borrowers. Business owners could use this rating as a guide to determine the credit worthiness of borrowers.

The first agency was established in 1841 by Lewis Tappan in New York City followed by Robert Dun who published his first ratings guide in 1859 and John Bradstreet was formed in 1849. Henry Varnum Poor’s publishing company was the first to produce a publication of compiled financial data about the railroad and canal industries bonds after the 1907 financial crisis. In 1909, John Moody, a financial analyst, issued a publication focused solely on railroad bonds. In 1913, Moody’s began to use a letter-rating system and included industrial firms and utilities in its ratings; Fitch published its in 1922. In 1975, SEC began referencing credit ratings. This referencing allowed firms with high-rated bonds to have smaller reserves.

Rating agencies grew in size and profitability as the number of issuers accessing the debt markets grew in the United States and worldwide. In 2008, there were over $11 trillion structured financial debt securities outstanding in the US bond market. In 2009, the worldwide bond market total debt outstanding was estimated at $82.2 trillion. The Big three CRAs (Moody’s, S&P, and Fitch) issued 97% - 98% of all credit ratings in the United States and about 95% worldwide. The three CRAs’ position in the credit rating industry and the increase in the credit market made them profitable with a margin of about 50% between 2004 and 2009.

Critics indicated rating and watching of securities has not worked as smoothly as agencies suggested. In 2001 with the Enron’s accounting scandal, the company's ratings remained at investment grade until 4 days before bankruptcy. Ratings of preferred stocks were labeled as poor. Mortgage delinquencies had been increasing over a year before Moody's stopped rating Freddie Mac's preferred stock triple-A in 2008 when it was downgraded close to the junk bond. Critics noted that the market alerts the CRAs of trouble rather than vice versa [11].

Because rating agencies are exempt from Regulation FD (fair disclosure), companies can provide the rating agencies with information that they have not supplied to other analysts without fear of regulation retaliations. Bonds are more volatile today because companies had borrowed money based on projections, rather than actual assets and performance. Firms borrow money and some of it is not shown on financial statements and CRA sometimes inflate credit ratings.

The inflated credit ratings issued by agencies such as Moody's, Standard & Poor's, and Fitch was one of the key problems of the 2008 financial crisis (Boylan). The reports contained flawed quantitative models and data, which was intended to please the investment banks that created the securities and paid the agency fees. The value of securities rated by the CRAs had been widely questioned. A lot of these securities were downgraded to junk during the 2007-2008 financial crisis.

FINANCIAL CRISIS

Wright et al. [12] defined financial crisis (FC) as a malfunction or nonfunctioning in one or more financial market(s) or intermediaries. Crisis can be systemic or non-system. A systemic crisis occurs when all or most of the financial system malfunction or stop functioning such as in the great depression; while a non-systemic crisis involves one or few markets/sectors of the financial markets such as the savings and loan association. Wright and Quadrini indicated FC may disrupt the financial system worldwide. In the US, there have been a few systemic crises such as in 1929-1933. Non-systemic crisis include the stock market crash of 1973-1974, the dotcom of 2000, 911 in 2001, and the subprime mortgage in 2007. Financial crisis prevent the flow of credit from the savers to the borrowers. Financial crisis makes the spread of risks expensive and difficult. Sometimes a non-systemic crisis may be controlled before it spreads to other sectors of the financial system.

In 2006, home prices increased rapidly because mortgage rates were low due to low federal funds rate (rate at which banks lend to each other). Banks originated illiquid loans and funded them with liquid deposits. Banks were funding long-term assets (loans) with short-term liabilities (deposits). As a result, there was a decline in deposit supply, which in turn reduced loan availability. Banks also did not hold enough cash and marketable securities to satisfy withdrawals from depositors and borrowers with credit lines [12,13]. Mortgage originators are unregulated and undercapitalized. When they could not sell their mortgages, they were forced out of business and trading ultimately ceased.

The 2007-2008 financial crisis started as a non-systemic crisis linked to subprime mortgages but in 2008, the failure of several major financial service companies turned it (the crisis) into the most severe systemic crisis in the United States since the Great Depression [12]. The financial crisis was attributable to the high increase in mortgage default [14]. Because lenders were quick to sell loans to securitizers, lenders did not take the time to carefully screen and monitor borrowers [15]. Investment banks have a high demand for large pools of subprime loans to securitize; this high demand played a major role in inducing a decline in the lending standards (Schuermann). The high demand encouraged lenders to continue lending to risky borrowers, which eventually led to loan default. The loan securitizers earn higher interest rate on the loan with little or no risk exposure; while the loan originators earn high fees. Arentsen et al. [14] study result indicated there was a high probability of delinquency for securitized loans originated by investment banks. As noted by Arentsen et al., the default rate for subprime mortgages increased from 5.6% in mid-2005 to over 21% in mid-2008.

The financial crisis resulted in a large contraction of credit availability to consumers; for instance automobile loan and real estate mortgage [16]. Unavailability of loan might have forced real estate owners to sell their homes for capital/cash at a low price. Lenders sell loans via securitization (bundling and selling mortgages to institutional investors) to financial institutions that package them into mortgage-backed securities (MBS), which are then sold to investors. MBSs enabled investors the portfolio diversification benefits of holding a large number of mortgages. Collateralized mortgage obligations (CMOs) allowed investors to pick the risk-return profile they desired; usually a group of high-rated securities to minimize their risk in case of default.

Collateralized Debt Securities (CDS) increased tremendously from $631.5 billion in 2001 to $62,173.20 billion in 2007 [14]. Commercial banks were the largest buyers and sellers of CDS through out the 2007-2008 financial crisis [17]. The economic downturn and the declining house prices contributed significantly to the subprime mortgage delinquencies [18].

Economists and policymakers are now trying to prevent another bubble by educating people to be more cautious investors, encouraging bank regulators to use their power to keep leverage to a minimum, using monetary policy (increase interest rates or tighten money supply growth) to deflate bubbles before they spread and endanger the financial system. To maintain a balance between the strength and drawback of each approach, a combination of better education, more watchful regulations, and an accommodative monetary policy may be utilized.

Global banking crisis

The financial crisis of 2007-2009 is the first major global crisis since the Great Depression of 1929 to 1932 [19]. The crisis initiated in the United States' lending market; but rapidly spread to other advanced and emerging, countries. As Fed Funds rose to 5.25% in 2006 from 1% in 2003 (Table 1), interest rates rose and poor households across the US struggled to pay their mortgages. Many of them went bankrupt and lost their homes. Federal funds rate is the interest rate at which institutions (banks and credit unions) with surplus balances in their accounts at Fed lend to institutions in need of funds usually overnight. The interest rate that the borrowing bank pays to the lending bank to borrow the funds is negotiated between the two banks. The federal funds rate is an important benchmark in the financial markets. As Fed funds rate increases, interest rate increases.

The government introduced various financial policies to protect the financial sector, especially banks, through debt, deposit guarantees, and capital injection [19]. These financial policies ultimately transferred risk on a massive scale from these financial institutions to the governments [20]. Countries with high political risk, large current account deficits, high unemployment, and high government budget deficits experienced a high degree of the contagion.

Table 1: US Banking, Mortgages and Credit Industry Overview.

Banks	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**	**2008**	**2007**
Commercial Banks Total Assets	$14.12T	$13.35 T	$12.9T	$12.4T	$11.9T	$11.6T	$12.05 T	$10.7T
Commercial Banks Total Liabilities	$12.52 T	$11.92 T	$11.23 T	$10.82 T	$10.44 T	$10.79 T	$9.84T	$8.93T
Housing & Mortgage								
Total US Mortgage Outstanding	$13.32 T	$13.28 T	$13.26 T	$13.46 T	$13.73 T	$14.35 T	$14.74 T	$14.56 T
Total US Mortgage Delinquency	6.04%	6.74%	8.13%	8.97%	9.96%	8.15%	4.20%	2.00%
Consumer Debts								
Total Consumer Debt Outstanding	$3.24 T	$3.04T	$2.87T	$2.72T	$2.65T	$3.25T	$2.66T	$2.53T
Credit Card Balances Outstanding	$678.3 B	$850B	$845B	$842.5 B	$840B	$917B	$1005B	$972B

Data source: Plunkett Research Ltd. 2015, Federal Reserve Bank of St. Loius, Credit.com Inc

As banks increase their investment in toxic financial instruments, the solvency risk of banks increases, and banks began to attract deposits by offering higher rates [21]. Despite offering higher rates, commitments-exposed banks experienced low deposit growth and were forced to cut back on new credit originations. Firms drew heavily on credit lines from banks in 2007; as a result, banks were in crisis in 2007-2008. But with support from the government and government-sponsored agencies such as FHLB, banks were able to meet the demand.

The Breton Woods' fixed exchange rate and the increase in oil prices also triggered a prolonged global recession. The 1980 global collapse of commodity prices and the US volatile interest rate contributed to the sudden debt crisis in Latin America and Africa. A high global banking crisis is historically associated with high external debt default. A country may leave her external debt default hanging but leaving a domestic banking crisis hanging may lead to a crippling effect on her trade and investment [2]. As noted by Reinhart et al. [2] the frequency of bank crisis has increased for small and poor countries; however, the number of bank crisis for both developed and developing countries are the same. As Reinhart and Rogoff indicated, advanced countries are more prone to banking crisis than the small countries.

The financial crisis in the US quickly spread to other advanced countries especially France, Italy, and Japan [2]. This occurrence indicated a financial contagion. High international capital mobility repeatedly caused international banking crisis, which resulted in high current deficit. An increase in capital inflow to a developing country could lead to a credit boom; which could ultimately lead to a financial crisis and an increase in asset prices [22]. Reinhart and Rogoff asserted that loosening restrictions in a financial system would bring adverse effect on the financial stability of a country whether developed or developing. One can then conclude that deregulation would not be a strategic solution to any financial crisis.

The recent global financial crisis is related to a number of complex and highly interrelated factors such as the underestimated complexity generated by the growth of innovative and skillfully arranged financial products (derivatives). Banks' ambitious profitability from securitization, the exorbitant fees earned by the underwriters, and the inability of financial markets' supervisory authorities to proactively and timely assess the exploding crisis to mitigate the damage before its spread, played a significant role in the spread of the crisis.

Banks transformed much of the high-risk mortgage debt (securitizations) into mortgage-backed securities (MBS) and collateralized debt obligations (CDO), and sold them on the secondary markets to investment firms and insurance companies around the world. This re-packaging transferred to the investors, the rights to the mortgage payments and the related credit risk. With the collapse of some banks in 2007, the increasing number of foreclosures helped speed the fall of housing prices; and the number of subprime mortgages in default began to increase.

Securitized MBS and CDOs are low risk/high return investment as opposed to the regular low risk low return and high risk high return asset portfolios. The collapse of liquidity in MBS and CDO led to the dramatic write-downs in 2007. When stock markets in the United States, Europe, and Asia continued to plunge, leading central banks drastically coordinated to cut interest rates and governments took equity stakes in major banks.

Bailout

Bailouts can be an effective way of mitigating further declines in economic activity. During the Great Depression, the federal government used $500 million of taxpayer money to capitalize the Reconstruction Finance Corporation (RFC). At first, people thought it was welfare for the rich; but later realized that it helped the economy to recover by keeping important companies afloat. Home Owners Loan Corporation (HOLC) was also bailed out. The bailout enabled home-owners who had negative equity on their homes refinance their mortgages on favorable terms.

Costs of owning or borrowing and risk of loss to investors has been reduced; speculative valuations and market imperfections have been minimized [23]. These reductions suggested that high and rising levels of real output and consumption in this segment of the economy are sustainable. Government intervention in the mortgage industry is widely accepted by investors because the intervention has made loan readily available especially in areas with scarcity of funds [23]. The flow of funds to mortgage investors has been stabilized and made more predictable; thus, this dependable source of funds for mortgage investment could mean future stability in the mortgage investment industry.

Government interventions in support of the banking sector resulted in risk spillovers between banks and governments [20]. Stanga [20] noted that the spillovers took place through two main channels. First, bank rescue measures led to a decrease in bank default risk and an increase in the government fiscal burden [24]. Second, the deterioration of government creditworthiness negatively impacted its bond portfolio value and hence its ability to obtain future funding [25]. The first channel depicted the risk transfer from banks to governments due to a bank bailout, while the second shows the co-movement between the default risks of the two sectors [20]. Bank rescue packages involved a risk transfer from the financial sector to the government balance sheet because bailouts are funded in the short term by issuing new debt, which led to a reduction in the value of existing bonds. Changes in sovereign credit risk affected bank credit risk positively after bailout announcement. As Stanga [20] noted, the estimated bailout shock for the US drops substantially after the crisis unlike in Europe. This indicated a lower risk transfer and a stronger stabilization effect [20]. As indicated by Stanga, a bailout shock leads to a significant and persistent decrease in banks' default risk for the US but only a temporary decrease for the majority of European countries and a rise in the government default risk for all countries.

A problem in one section of the globe may cripple the whole world as seen in the 2008 Lehman Brothers' collapse, which triggered the global financial crisis. The US public debt as a ratio of GDP rose to 89% in 2014; now, the government's budget deficit is shrinking and is now at a 7-year low, due mainly to continuous job and economic growth. US debt burdens can be expected to rise if the Federal Reserve increases interest rates in the near future.

More government and private spending is required to stimulate sluggish economies; as a bailout is not a long-term solution for financial crisis. Cutting government spending to control the budget will result in minimal growth and high unemployment. Government spending that is not backed by private spending may create an insignificant growth in the economy. Governments, businesses, and households around the world therefore, should boost incomes or cut spending to manage their debts.

Changes in banking, lending and investments since the financial crisis

Evolution has made banking a highly globalized industry [6]. The global financial crisis forced the government of all nations to increase supervision, change, and improve regulation of the financial industry. Basel Committee on Banking Supervision (BCBS), a global Committee, was asked to monitor the banking system. Tier-1 capital requirement, which is used to measure bank's financial stability, mandated that bank equity plus reserve be 8% of a financial institution's asset. According to Plunkettresearch.com, this ratio is expected to increase to 8.5% by 2019 for many banks.

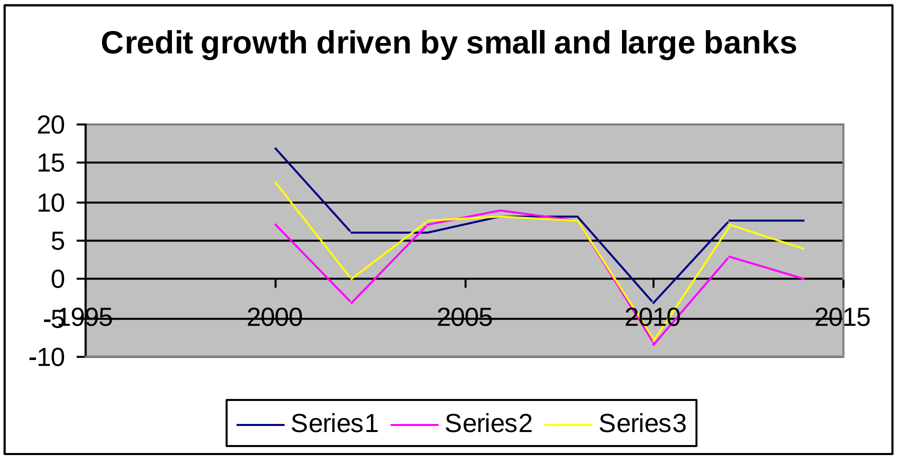
The Financial Stability Board (FSB) recommends the amount of cash on hand that banks must hold. This recommendation will enable banks to withstand financial shocks without a need for government bailouts. The government of a country may auction off any bank that poses a financial risk. The Consumer Financial Protection Bureau (CFPB) funded by the Fed, oversees and regulates mortgages, credit cards, personal loans, and retirement plans. Federal Housing Finance Agency (FHFA) is to extend help for one year to borrowers who are facing challenges.

In the USA, banks are forced to dramatically increase their levels of capital cushion against potential losses (plunkettresearch.com). Consumers are more skeptical to borrow now than they were in 2006 [26]. Although consumers' reluctance to borrow may increase savings and lower consumption, it may negatively affect the lending industry and the pace of economic growth. Because it is difficult for banks to earn profits, banks restrict hiring and continue to merge to increase efficiency and reduce total costs.

Firms are required to hold higher levels of capital; this requirement restrained their ability to earn profits. Commercial banks' ability to take investment risks has been greatly reduced. Peer-to-peer lending companies are growing because they enable lending between members of lending clubs, or between friends and family; for instance, www.prosper.com is connecting wealthy individuals with small but promising firms to fill the capital needs for expansion and startups.

Mortgage debt and car loans are slowly increasing, while the housing market improves and foreclosures decrease. Total credit card debt has dropped substantially since 2007. The use of credit cards dropped from $972B in 2007 to $678.3B in 2014. In 2013-14, the US housing market recovery improved. As depicted by the chart in Figure 1, in 2000, and 2005-2007, credit growth accelerated; but in 2008, it started to decline. In 2010, there was a huge decline in the credit originated by banks. In 2014, credit growth started to accelerate again. Table 2 shows that in 2010, consumer debt went down to

$2.65T from the 2009 $3.25T; rose again to $2.87T in 2012 and $3.24T in 2014.



Series 1 = Small commercial banks

Series 2 = All commercial banks

Series 3 = Large commercial banks

Figure 1: Data source: Deutsche Bank Research.

The credit tightness index shows the Mortgage Credit Availability Index (MCAI) increased by 9.5 from 109.1 in February 2013 to 118.6 in February 2015 (MBA). This increase in MCAI indicated lending standards are loosening. Farrell [27] indicated the mortgage servicing industry is faced with the threat of effectively managing unfair deceptive abusive act or practices (UDAAP) laws as there are no rules to follow.

As noted in the Fed's press release of December 16 2015, economic activity is expanding at a moderate pace. Consumer spending and business investment have been increasing at steady rates in the past few months. The real estate sector has improved. Inflation rate is below 2% and unemployment rate is decreasing. The Federal Open Market Committee intends to encourage maximum employment and price stability by gradually adjusting monetary policy. It may take a long time for the world's economy to experience a complete turnaround.

Foreign Banks

Foreign Banks have higher capital and more liquidity, but lower profitability than domestic banks [28]. In terms of loans, deposits and profits, foreign banks' market shares averaged 20% in OECD (Organization for Economic Co-operation and Development) French countries, about 50% in emerging markets and developing countries. Although foreign banks enhance financial and economic performance of their borrowers and the stability of domestic financial systems, foreign banks increase competition for domestic banks [28]. Parent banks can transmit shocks to their foreign subsidiaries, which may negatively affect their lending ability. Foreign banks under-perform domestic banks in emerging markets and developing countries; but has the same level of performance in high-income countries. Foreign banks have more conservative portfolios and operate with less ease in some countries than domestic banks.

Table 2: Historical changes of the Fed Fund Rate.

Date	**Target**	**Change**	**New Level**
11/20/2015	0.25	-0.02	0.12
06/18/2015	0.25	+0.02	0.14
01/10/2015	0.25	-0.01	0.12
12/18/2014	0.25	+0.04	0.13
06/11/2014	0.25	+0.02	0.09
01/07/2014	0.25	-0.02	0.07
12/10/2013	0.25	-0.01	0.09
06/19/2013	0.25	-0.04	0.10
01/10/2013	0.25	-0.02	0.14
12/10/2012	0.25	-0.01	0.16
06/14/2012	0.25	+0.09	0.17
01/25/2012	0.25	+0.01	0.08
12/15/2011	0.25	-0.03	0.07
06/13/2011	0.25	-0.07	0.10
01/07/2011	0.25	-0.03	0.17
12/15/2010	0.25	+0.02	0.20
06/10/2010	0.25	+0.06	0.18
01/06/2010	0.25	0.00	0.12
12/04/2009	0.25	-0.08	0.12
06/02/2009	0.25	+0.12	0.20
01/08/2009	0.25	-0.28	0.08
12/03/2008	0.25	-1.62	0.36

06/04/2008	2.00	-2.29	1.98
01/07/2008	3.00-4.25	-2.29	4.27
12/11 /2007	5.25	+0.02	4.25
09/18/2007	5.75	-0.50	4.75
06/ 29/ 2006	6.75	-0.50	5.25
01/31 / 2006	6.00	+0.75	4.50
12/13 / 2005	5.75	+0.25	4.25
08/09/ 2005	5.00	+0.75	3.50
12/14 / 2004	3.75	+1.25	2.25
09/21 / 2004	3.25	+0.50	1.75
06/25 / 2003	2.50	+0.75	1.00
01/09/2003	2.75		UA

Data source: Federal Reserve Bank of NY

Were there no warning signals of the crisis?

Based on the 2015 report of the Commission on the Measurement of Economic Performance and Social Progress, US is the ninth of the 25 richest nations in the world. US had enough resources to purchase state of the art technology or software that could have detected the financial problem before it turned into a financial crisis. According to Wright et al. [11] a non-systemic crisis may be controlled before it spreads to other sectors of the financial system. The 2007-2008 crisis was initially a non-systemic crisis. Why was it not controlled or managed? There were more than enough banking, mortgage, and credit industry experts who were capable of identifying warning signals and preventing them before they escalated to crisis and spread. Did these experts not see or notice any warning signals? Nobody suspected anything? This is impossible. The crisis did not originate overnight. The crisis should have been prevented by the authorities. It is possible that the experts decided to keep quiet over the warning signals so that they could profit from it.

What happened to the credit rating agencies? They did not identify any warning signals from any of the companies, stocks, and bonds they rated? The CRA did not report any decline in the asset values of financial portfolios. Lehman Brothers received an A grade rating until a few hours before its collapse. One of the functions of a central bank is to closely monitor a nation's financial stability. The Fed did not notice any problem in the financial system. The two government agencies, Ginnie Mae and Fannie Mae, created to foster mortgage lending, did not report any problem either. It is however, unbelievable that all the experts in the money and capital markets, the supervisory authorities, the banking, lending, and the credit industries were unable to save the financial system early enough to prevent the crisis. Perhaps they played the "let's watch and see" game; and by the time they decided to act, it was too late.

Will the new banking regulations prevent future crisis?

Probably not; if it happens once, it can happen again. Banks and investment firms will always want to pursue profitable ventures. Banks' desire for profitability from securitization, the unreasonably high fees earned by underwriters, and the inability of financial markets' supervisory authorities to identify the crisis on time and prevent or mitigate damage before the crisis spread, played a significant role in the severity and spread of the crisis.

Deterioration in the financial system did not occur overnight. A number of complex and highly interrelated factors contributed to the global financial distress. Low Fed funds rate, relaxed (soft) credit policy to encourage growth in the mortgage lending (credit) industry, high level of leverage in the financial institutions, high expectations in the real estate market, high executive salaries and bonuses of US banks and investment firms, are some of the factors that triggered the financial crisis. These elements/factors are still present in the financial industry; therefore, another crisis is a probability.

CONCLUSION

The recent financial crisis resulted from a number of complex and closely related factors such as the underestimated implications of the innovative derivatives. Banks' desire to profit from securitization, the high underwriters' fees, and the inability of supervisory authorities to identify the crisis on time and prevent it from spreading, played a significant role in its severity. Soft lending standards adopted by banks to increase their market share in the mortgage industry also contributed to the crisis.

Policymakers should have a strategic plan in place to cope with episodes of illiquidity in the market. A smooth way of putting monetary policy back to normal in advanced and emerging economies to ensure more efficient and transparent capital and financial markets is important to avoid market disruptions. A dependable source of funds for mortgage investment could stabilize the future of the mortgage investment industry. Government intervention in the mortgage industry is a necessity because this intervention has made loan readily available especially in areas with scarcity of funds [23].

More government and private spending is required to stimulate sluggish economies. Bailouts can be an effective way of managing further declines in economic activity; however, a bailout is not a long-term solution of financial crisis. Reducing government spending to control the budget may result in a low economic growth and high unemployment. Government spending that is not supported by private spending will create an insignificant growth in the economy. Governments, businesses, and households around the world therefore, should boost incomes and savings or cut spending to manage their debts.

Although macroeconomic policies are important, the quality of business regulation and the institution or agency that enforces it is a major factor of economic prosperity [29]. According to Haidar [29], China’s, Botswana’s and Hungary’s economic successes were stimulated by good business regulations. Haidar asserted that across 172 countries, each additional reform between 2006 and 2010 resulted in a 0.15% increase in economic growth. When setting reporting requirements, policymakers need to assess the impact on economic stability. Regulatory authorities should introduce measures that could help prevent illiquidity in major financial and capital markets. Mortgage originators should abide by industry standards and be placed under a prudential regulatory framework.

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