The Role of Credit Rating Agencies in the Financial Crisis

Gabrielle Bishop

Candidate in the Master of Science in Finance

Department of Economics and Finance

Saint Peter's University

Dedicated to the professors, friends, and family I have met at Saint Peter's University. Thank you for the experiences that have helped mold me into the person I am today.

Table of Contents

Introduction

The 2008 financial crisis was one the worst economic downfalls since the Great Depression in the 1920s. The crisis affected not only the United States, but the worldwide economy. Many people from all over the world suffered from this crisis. It is important to understand what happened to prevent it from happening again. First we must understand what happened before the crash in order to understand the events that followed. Financial institutions continuously strive for financial innovation, this means that they are always coming up with bigger and better ideas for the markets. "In short order, the Salomon Brothers trading floor gave birth to small markets in bonds funded by all sorts of strange stuff: credit card receivables, aircraft leases, auto loans, health club dues. To invent a new market was only a matter of finding a new asset to hock."[1] Financial innovations are pushed by financial firms because that is how they are able to attract new investors and increase their profits. Before 2008 new financial securities were introduced to the market.

In the 1990s the government had made a push for affordable housing. The purposes of the Cranston-Gonzalez National Affordable Housing Act of 1990 were to "help families not owning a home to save for a downpayment for the purchase of a home; to retain wherever feasible as housing affordable to low-income families those dwelling units produced for such purpose with Federal assistance; to extend and strengthen partnerships among all levels of government and the private sector, including for-profit and non-profit organizations, in the production and operation of housing affordable to low-income and moderate-income families; to expand and improve

[1] Lewis, Michael. *The Big Short*. WW Norton, 2011

Federal rental assistance for very low-income families; and to increase the supply of supportive housing, which combines structural features and services needed to enable persons with special needs to live with dignity and independence." [2]With this act, there was a surge of mortgage loans and it eventually led to a housing bubble. It led to a bubble because there was a fast increase in the mortgage market. People were able to receive loans that they would not have been able to receive before the act. "That significant decrease [in interest rates] enabled banks to extend consumer credit at a lower prime rate (the interest rate that banks charge to their "prime," or low-risk, customers, generally three percentage points above the federal funds rate) and encouraged them to lend even to "subprime," or high-risk, customers, though at higher interest rates (*see* subprime lending). Consumers took advantage of the cheap credit to purchase durable goods such as appliances, automobiles, and especially houses. The result was the creation in the late 1990s of a "housing bubble" (a rapid increase in home prices to levels well beyond their fundamental, or intrinsic, value, driven by excessive speculation).[3]

Almost everyone who applied for a mortgage received the loan, no matter the qualifications of the borrower. There were several types of loans that were given out during this time. There were liar loans, NINJA loans, no doc/low loans, stated income loans, and Alt A loans. An Liar loans were when banks would essentially tell borrowers to lie about their income."*Ninja loans*, short for No Income, No Job or Assets, is the sardonic way people in the business describe poorly documented loans that were blithely made to high-risk borrowers."[4]No doc/low doc loans were loans that did not require borrowers to provide any documentation, or a

---

[2] *CRANSTON-GONZALEZ NATIONAL AFFORDABLE HOUSING ACT OF 1990*. (n.d.). https://www.hud.gov/sites/documents/TITLEI_CRAN_GON.PDF.
[3] Duignan, B. (n.d.). *Financial crisis of 2007–08*. Encyclopædia Britannica. https://www.britannica.com/event/financial-crisis-of-2007-2008.
[4] Rosenthal, J. (2008, August 15). *No Docs*. The New York Times. https://www.nytimes.com/2008/08/17/magazine/17wwlnguest-rosenthal-t.html.

low amount of documentation of income, etc. to receive the loan. Stated income loans were when banks took the loans for face value and did not try to cover up that the borrower could not afford the loan. For example,"In Bakersfield, California, a Mexican strawberry picker with an income of $14,000 and no English was lent every penny he needed to buy a house for $724,000." [5] People were able to receive loans when their jobs did not provide the means to pay off the loan. Additionally, people who did not have jobs were also able to receive these loans. People under the NINJA loans would still get approved for the mortgages they applied for. Although many people were able to get approved for these loans and receive a mortgage loan, not many were able to pay off these payments.

In the midst of all of this, financial institutions were selling mortgage backed securities (MBOs). MBOs are securities that were backed by mortgages and would be sold to investors. The concept behind the MBOs was that mortgage payments would eventually be received by investors and that is how they would receive their money. Unfortunately, we can see that not many people would be able to realistically pay off their mortgages, but no matter, institutions would still sell these securities. Investors, and the rest of the world did not realize the consequences of buying these securities. Furthermore, credit rating companies would rate these MBOs as triple A, meaning they were the best securities one could buy because we know that the loans would not default at all. These MBOs were not triple A, essentially they were trash and no one could really pay off their high mortgages.

The 2008 financial crisis was a global impact. The financial crisis was overall recent so there are still discrepancies of what led to the cause of this crisis. Many economists cannot agree to what year the crisis definitely ended, or if it ended at all. What we can agree on is that the crisis originated in the United States from the Lehman Brothers. They can agree that the financial

[5] Lewis, Michael. *The Big Short*. WW Norton, 2011

institutions at the time were thought to be “too big to fail”. This essentially meant that enormous financial institutions would be able to be bailed out by the government, which means that the government would find a way to help these banks instead of just watching them fall. When these institutions did start to fall they brought the world down with them. A lot of these financial institutions mismanaged the risk that was associated with the securities market.

In this paper the author will discuss the causes and effects of the 2008 financial crisis. We will understand the full depth of the mortgage back securities market, the affordable housing act, and the downfall of many financial institutions. We will also be able to observe data from Lehman Brothers and other financial firms to see if they were truly all on the same downward spiral. Although the 2008 financial crisis seems straightforward, there are so many moving parts to this crisis. In Chapter 1 the author will discuss the background of the financial crisis, Chapter 2 will discuss the ultimate cause of the crisis, and Chapter 3 will discuss the solution to the 2008 financial crisis.

Chapter 1: The Change in Banking

The nature of banking was simple, financial institutions would follow the three-six-three model. This model was as follows: the banks would borrow at three percent, lend at six percent, and be out on the golf ranges by three pm. There was no innovation in this sector and people kept it easy going. The banking industry was like this because after the Great Depression in the 1920s the government made it difficult for banks to compete with one another. The government implemented tighter regulation on banks and limited the kind of services they could provide for clients. This resulted in a non-competitive industry that stayed stagnant. By the 1980s the regulations were loosened by the government and eventually there was a widespread use of technology. The banking industry could now operate in a complex and competitive environment.

With the regulations loosened, financial institutions were able to open up more services to clients such as investment banking, retail and commercial banking, and wealth management services. Financial institutions were now able to create complex products and services. This enabled financial innovation. Financial innovations led to securitization.

Securitization is when there are pools of various types of contractual debt put together and then the cash flow from the debt is sold to investors as securities. An example of this is mortgage backed securities. "For instance, a bank offering home mortgages might round up $10 million worth of such mortgages. That pool is then sold to a federal government agency like Ginnie Mae or a government sponsored-enterprise (GSE) such as Fannie Mae or Freddie Mac, or to a securities firm to be used as the collateral for the new MBS."[6] The mortgage backed securities would work in tranches. This means that investors would get their payments in payment distributions. "[Collateralized mortgage obligations] take the cash flow from pass-throughs and segregate it into different bond classes known as tranches, which provide a time frame, or window, during which repayment is expected. This gives investors some level of payment predictability. The tranches prioritize the distribution of principal payments among various classes and serve as a series of maturities over the life of the mortgage pool."[7] Investors would want the borrowers to pay off their loans because the payments would go to them. The financial institutions would divide up the payment streams which led to no one knowing what they actually had.

Credit rating companies such as Standard & Poor's, Moody's Investors Service, and Fitch

---

[6] *Mortgage-Backed Securities*. Mortgage-Backed Securities | FINRA.org. (n.d.). https://www.finra.org/investors/learn-to-invest/types-investments/bonds/types-of-bonds/mortgage-backed-securities.

[7] *What Are Mortgage Backed Securities?* Fidelity. (n.d.). https://www.fidelity.com/learning-center/investment-products/fixed-income-bonds/mortgage-backed-securities.

Ratings were in charge of rating these securities. Credit rating companies would rate these mortgage backed securities triple A, the best rating a security could get. When a product is rated triple A it means that the product is as safe to invest in as United States treasury notes. It means that the product is very low risk and basically guaranteed to make a return. "Ratings agencies, like Moody's or Standard and Poor's, gave high marks to the processed mortgage products, grading them AAA, or as good as U.S. Treasury bonds. And financiers regarded them as reliable, pointing to data and trends dating back decades."[8] These rating agencies control about 95% of the market. Investors would rather just look at the credit ratings than do their own due diligence. Since investors would simply look at the ratings of the securities they would buy any product that is rated triple A. Not only did securities seem more attractive to investors, but in order for investment banks to sell the securities they had to have high ratings.

The Commodity Futures Modernization Act was passed in 2000. This act deregulated over the counter derivatives. "The Commodity Futures Modernization Act, as adopted, is a significant step forward for U.S. financial markets. This important new law creates a flexible structure for regulation of futures trading, codifies an agreement between the Commodity Futures Trading Commission (CFTC) and the Securities and Exchange Commission to repeal the 18-year old ban on trading single stock futures and provides legal certainty for the over-the-counter derivatives markets. The law, which reauthorizes the CFTC for five years, also clarifies the Treasury Amendment exclusion and specifically grants the CFTC authority over retail foreign exchange trading."[9] This means that two private parties could set the price for the derivatives. For example, JP Morgan and Bank of America could sell a derivative for 10,000 and

---

[8] Rauchway, E. (2018, September 14). *The 2008 Crash: What Happened to All That Money?* History.com. https://www.history.com/news/2008-financial-crisis-causes.

[9] Congress Passes Commodity Futures Modernization Act, CFTC Reauthorized for Five Years. (n.d.). https://www.cftc.gov/sites/default/files/opa/press00/opa4479-00.htm.

no one would be the wiser to tell them the product is not worth that much. That is because financial firms were constantly thinking of new derivatives so much that most people did not understand the derivatives. “The lack of regulation meant that banks could get their money right away by selling mortgages immediately after making the loans, but investors in MBS were essentially not protected at all. If the borrowers of mortgage loans defaulted, there was no sure way to compensate MBS investors.”[10] After congress passed the Commodity Futures Modernization Act commission and fees rose tremendously in the finance industry. This pushed for the mortgage backed securities sales even more. The incentives for selling these securities were very enticing to sellers. The lenders and bankers did not bear any risk when they sold these loans, all the risk was passed to the investors. Incentives were very attractive especially when banks became interested in mortgage backed securities. Incentives were seen as one of the weaknesses to cause the financial crisis. “One such weakness was the misalignment of incentives that resulted from the separation of borrowers and lenders in the securitization chain.[2] Under the “originate-and-distribute” business model, lenders did not bear the credit risk of borrower default, which led to a deterioration in credit quality of the underlying assets.[3]Instead, that risk was passed on to investors.[4]” [11]Banks decided to buy large positions in mortgage backed securities. The banks bought billions of dollars in mortgage backed securities. This is what pushed the incentives for sellers.

Credit rating agencies rated the mortgage backed securities triple A. When banks started to invest in the venture they believed the credit rating agencies. They believed that the securities

[10] *Mortgage-Backed Security - Learn How an MBS Works*. Corporate Finance Institute. (2019, May 1). https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/mortgage-backed-security-mbs/.

[11] *Speech by SEC Commissioner: Realigning Incentives in the Securitization Market*. Realigning Incentives in the Securitization Market (Commissioner Luis A. Aguilar; March 30, 2011). (2011, March 30). https://www.sec.gov/news/speech/2011/spch033011laa-item-1.htm.

were an overall safe investment and they would miss out on easy money. These securities were rated as safe as a U.S. treasury note. If banks bought billions of dollars of these very safe investments then they would be able to make safe and secure profit from these investments. Banks saw opportunity, investors and lenders saw incentives, and borrowers saw their dream of home ownership. "With a steady supply of, and increasing demand for, mortgage-backed securities, Freddie Mac and Fannie Mae aggressively supported the market by issuing more and more MBS. The MBS created were increasingly low-quality, high-risk investments. When mortgage borrowers began to default on their obligations, it led to a domino effect of collapsing MBS that eventually wiped out trillions of dollars from the US economy. The effects of the sub-prime mortgage crisis spread to other countries around the globe."[12] In the end, we know now that these securities were not safe at all. The securities that were rated as safe as U.S. treasury notes were actually worth nothing. These investments were not safe at all and defaulted very quickly. No one saw the defaults coming so they did not know how to handle this type of catastrophe. This erupted a world of chaos and uncertainty within the global economy. The banking industry reputation was shot and the government had to step in and bail out the banks.

Chapter 2: The Cause of the Crisis

There are a lot of factors that caused the financial crisis of 2008. People have blamed banks, mortgage officers, the government, credit rating agencies, and borrowers. Throughout this chapter we will see why the credit rating agencies played the most crucial role in the financial crisis and why ultimately they were the ones to cause the crisis.

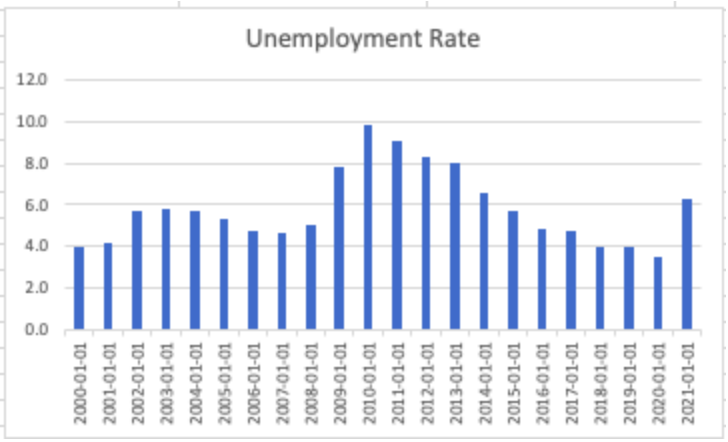
---

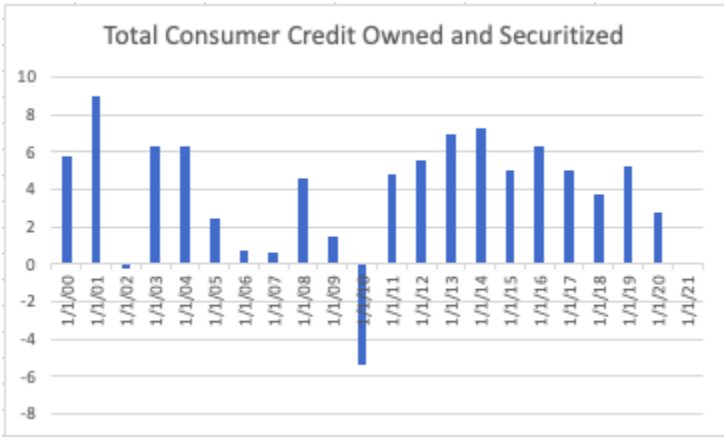
[12] *Mortgage-Backed Security - Learn How an MBS Works*. Corporate Finance Institute. (2019, May 1). https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/mortgage-backed-security-mbs/.

The author ran regressions to understand how the data affected the economy. The economy will be measured by our independent variable, gross domestic product. We need to understand how all of our variables work together and why they were chosen. We have 11 dependent variables. The author chose the unemployment rate, home equity loans, financial derivatives, homeownership rates, interest rates, inflation, securitized credit, money market funds, mortgage backed securities, and financial stress. Unemployment affects the gross domestic product because when the rate is higher that means not as many people are working. When there are not as many people working there are not enough people to increase the output of the economy. This is why the Federal Reserve closely targets the unemployment rate after any financial crisis. It is important that the unemployment rate is as close to 0 as possible. We want as much people as possible in the labor force. Our next variable is home equity loans. This means that they are loans used to receive a lump sum of equity if they have paid off a percentage of their mortgage loan. A home equity loan is a second mortgage on the home, where you are able to receive fixed payments and a fixed interest rate. This is included in the variables because we can measure how many people were able to pay off their mortgages to a percentage where they were able to take out a second mortgage on the house back then and how it looks now. We can see if people are actually able to pay off outstanding balances on mortgage loans now as compared to back then. Our next variable is financial derivatives. Financial derivatives are financial securities such as stocks, bonds, etc. that are sold based on a value of something else. For example, if you buy stock A and then news comes out that stock A was in a scandal. Stock A's value will decrease because of their scandal, not because of stock A itself. People come up with different financial derivatives all the time, an example of this would be securitization. Securitization is when you convert an asset, usually a loan, into a marketable security. This

means that you are able to sell that loan on the market for profit. An example of this would be mortgage backed securities. Mortgage backed securities is another variable. Mortgage backed securities are bundled home loans that are put together and sold as a security. This is an important variable to measure when relating it to the financial crisis of 2008 because this was the new financial derivative at that time. People and banks were trading mortgage backed securities but did not truly understand what it was. They knew it was the next big thing and did not want to miss out on profits. The next variable is homeownership rates. The author included this because of the 1990 Affordable Housing Act. This was a push for people to obtain the "American Dream" and be able to buy a home of their own. This made qualifications for mortgage loans a little looser. The next variable included is the interest rate. The interest rate is important because we can see how the economy was doing. For example, whenever we have interest rates below 1% that is because the government is trying to stimulate the economy and encourage people to buy more. We usually see these types of interest rates after a financial crisis. Our next variable is inflation. We included inflation because we can see how much the dollar was worth during these times. We can see if the American people are able to get more or less with the United States dollar and it shows us how strong the dollar was at the time. Securitized credit is a variable as well. This shows the uprise and downfall of where securitized credit stood at the time of the financial crisis. The next variable is the money market funds. This was important to include because money market funds are focused primarily on cash or cash equivalent investments. We can see how people gauged mortgage backed securities on the money market fund. Lastly, we have financial stress. Financial stress tests the risk of investments or assets. We are able to see how risky something is by running different scenarios and see how it affects the financial stress of the market or that specific financial institution.

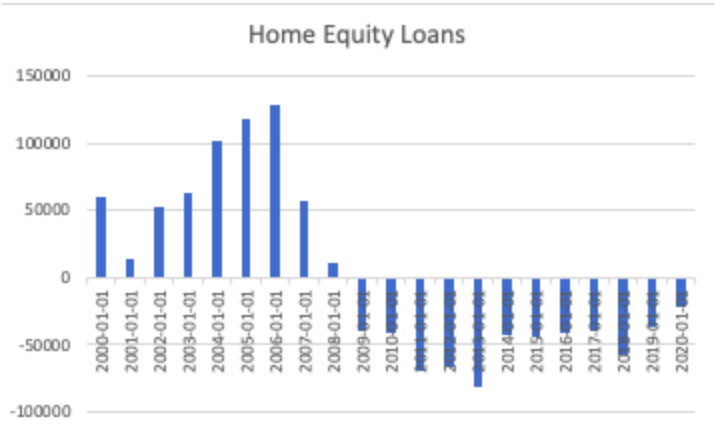
Looking at the unemployment rate we can see that it was somewhat consistent from 2000-2008. In 2009 there was a jump in the unemployment rate. The jump is explained because of the financial crisis. During the crisis people were getting laid off left and right. People who were graduating from college could not find any jobs because no one was hiring. It was an extremely difficult time to join or maintain a job within the labor force. We see that this peaked in 2010. After 2010 the rate started to slowly decrease again.





When we look at total consumer credit owned and securitized graph we see the inconsistencies as well. In 2000 to 2001 there was a small jump and this could be explained by the 2000 Commodity Futures Modernization Act which deregulated over the counter derivatives. In 2002 there was a huge decrease in the securitized credit and then it jumped back up in 2003. Then we see it drop in 2005, then to barely nothing in 2006 and 2007. In 2010 we see the peak decrease in the securitized credit. The peak decrease is explained by the crisis as well. During the housing boom people were buying the securitized credit as they saw but until 2010 when people felt the effects of that they wanted no parts. They wanted to get rid of all the securitized credit.

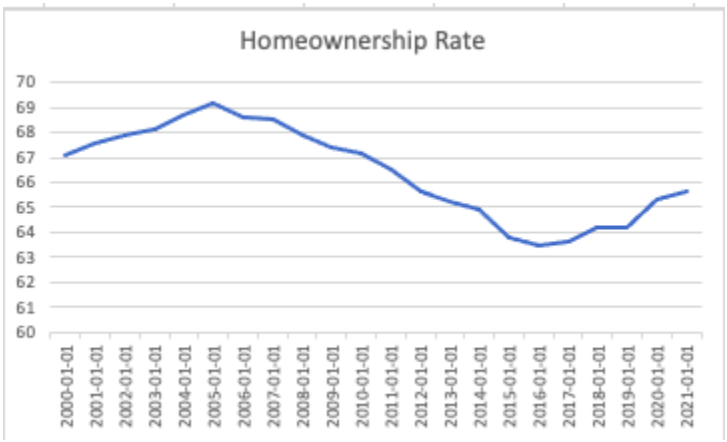
Now we will examine the home equity loans graph. In this graph we see that half of the graph is in the positives and then after 2008 there was a decrease in the home equity loans. Looking closely, we can see that there was a large dip in home equity loans from 2006 to 2007. It is important to note this because we can assume this is when the housing bubble truly burst. Less and less people were unable to take out second mortgages because they could barely afford to pay the one they already had. From 2008 to current we see that not as people can take out home equity loans. People are concerned with their original mortgage. They want to pay that off and they do not have the funds to take out a second mortgage.

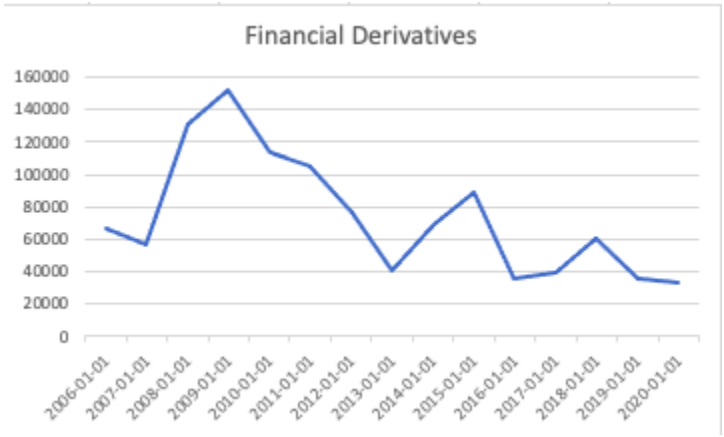


Inflation is showing us how much the dollar is worth. From 2003-2004 the dollar was becoming stronger and then there was a slow decline. In November of 2008 we saw the ultimate dip in the dollar. American people were not able to buy enough on the dollar anymore. The dollar was not worth as much.

The peak of homeownership rates was in 2005. After 2005 the homeownership rate slowly decreased. We can see the boom of the housing bubble. It is a slow increase from 2000-2003, then a

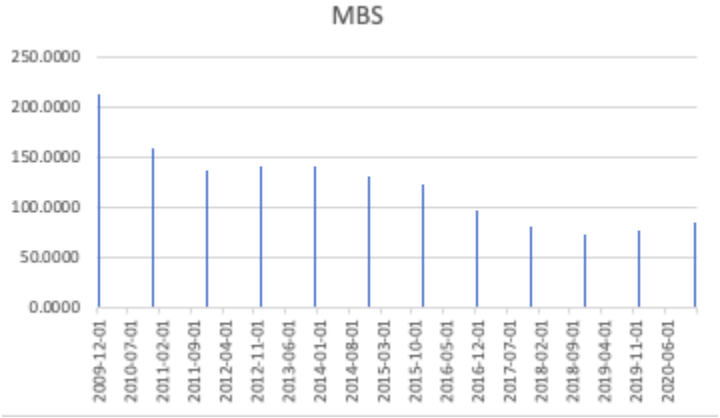
sudden jump from 2004-2005. Notice the housing bubble bursting after 2005 and the decline of homeownership.





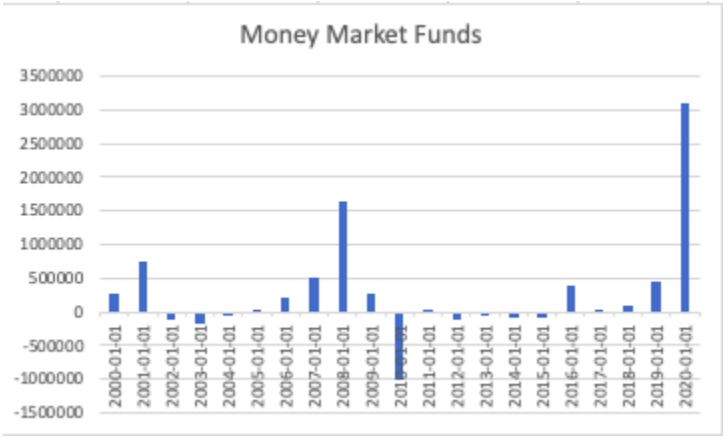
Looking at financial derivatives we can see that the peak of the derivatives were in 2009. From 2006-2007 there was a small decline then from 2007-2008 there was an extreme increase in the derivatives. This shows how the banking industry changed and how they were always thinking of new ideas and market securities. The peak is around 2009, around the financial crisis, showing how the industry was buying new securities and into the new trend at the time. After the crisis we can see the decline in financial derivatives.

The peak of mortgage backed securities was in 2009. This was when it was a new trend and people wanted to buy it as fast as they could. People wanted a piece of the prize and did not want to miss out on the money

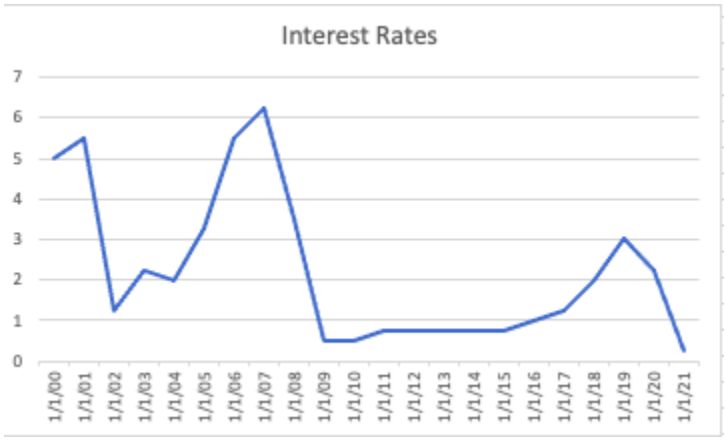


that could be made. After the peak of 2009 there was a slow decline in the mortgage backed securities. People realized that most of the mortgage backed securities they bought were trash and wanted to sell them and get them off their books. This caused the decline, but they couldn't entirely get rid of them.

Examining the money market fund we can see there was a jump in the market from 2007-2008. This is because in a crisis everyone wants to have access to liquid as fast as possible. People feel more secure when they are able to hold the cash in their hand, so they want to invest in more liquid investments. Then in 2009 there was a giant decrease in the money market funds. This could be because people did not have enough funds to invest in the liquid market because they tapped it out the year beforehand. After 2009, the money market funds went downward and then slowly back up.



Interest rates are usually lowered after a recession or crisis. This is because the government wants to stimulate the economy and encourage consumers to buy. Looking at the graph for interest rates we can see that interest rates skyrocketed in 2007 to over 6%. After the peak rate of 6%, the interest rate shot down to less than 1%. This is to encourage the stimulation of the economy.



Next we have the gross domestic product. Although the American took a dramatic toll and went into a recession after the 2008 financial crisis, we can see that the gross domestic product did not take any major dips. This is comforting to know, although the unemployment rate and inflation rates were not doing well, gross domestic product was around the same area. From 2007 we can see that it did begin to decline but in 2010 it began to increase again. From 2010 it consistently increased.

The financial stress was important to note in the financial crisis. This helped to look at certain scenarios and to see how the economy or bank would react to a certain scenario. It measures how risky an investment is. From 2004-2007 there was a decline in financial stress in the economy. This changed from 2007-2010. 2007 was when mortgage backed securities were taking the market by storm. The stress came from the garbage securities that were being bought up. After 2010 there was an ultimate decrease in the financial stress of the economy. This is most likely due to the new laws that were made to limit banks on certain investments. People would like to have a peace of mind when it comes to their economy, so we want to make sure financial stress is not decreasing tremendously.

The author ran regressions to see what dependent variables were most crucial to the independent variable, gross domestic

product. The first regression included all variables. In this regression we can see that only a few variables had any significance to the y variable. No variable was significant in the regression. The author then chose to run a regression with only a few of the variables at a time to see how these specific variables affected the independent variable. For the second regression the author chose: unemployment rate, home equity loan, homeownership rate, interest rate, securitized credit, money market fund, and financial stress. In the second regression only two variables were significant: home equity loan and the money market fund. The author ran another regression with different variables. In the third regression the variables were: unemployment rate, financial derivatives, homeownership rate, interest rate, inflation, securitized credit, mortgage backed securities, and financial stress. The only significant variable in this regression were the mortgage backed securities. To isolate the variables even further, the author chose only three variables for the fourth regression. In the fourth regression the author chose securitized credit, financial stress, and mortgage backed securities. In this regression financial stress and mortgage backed securities were significant to the gross domestic product. The R square was .88, which means that the financial stress and mortgage backed securities could explain 88% of the gross domestic product change. In the last regression the author used the most significant variables together and isolated them with the y variable. After isolating the two variables, only one was significant. The significant variable was financial stress.

Regression 1

Regression Statistics	
Multiple R	0.991871194
R Square	0.983808466
Adjusted R Square	0.821893123
Standard Error	832.7348677
Observations	12

ANOVA

	df	SS	MS	F	Significance F
Regression	10	42134325.96	4213432.6	6.07606697	0.30648173
Residual	1	693447.3599	693447.36		
Total	11	42827773.32			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	195416.1632	203087.899	0.96222455	0.51225427	-2385060.3	2775892.59	-2385060.3	2775892.59
X Variable 1	2283.094594	2096.02077	1.08925189	0.47282042	-24349.374	28915.5636	-24349.374	28915.5636
X Variable 2	0.080692292	0.06157747	1.3104191	0.41497536	-0.7017236	0.86310823	-0.7017236	0.86310823
X Variable 3	-0.009368098	0.029386921	-0.3187846	0.8035391	-0.3827643	0.36402814	-0.3827643	0.36402814
X Variable 4	-2918.178767	3033.8444	-0.9618749	0.51236987	-41466.827	35630.4693	-41466.827	35630.4693
X Variable 5	824.6859016	1008.897782	0.81741274	0.56374443	-11994.576	13643.9477	-11994.576	13643.9477
X Variable 6	1416.927393	1604.46645	0.88311438	0.5394646	-18969.752	21803.6066	-18969.752	21803.6066
X Variable 7	76.23993175	193.0452833	0.39493289	0.76054785	-2376.633	2529.11283	-2376.633	2529.11283
X Variable 8	0.001778591	0.002612541	0.68078959	0.61948193	-0.0314169	0.03497408	-0.0314169	0.03497408
X Variable 9	-51.80938582	47.50582806	-1.0905901	0.47243104	-655.42816	551.809392	-655.42816	551.809392
X Variable 10	580.1949562	765.2060782	0.75822053	0.58699832	-9142.6701	10303.0601	-9142.6701	10303.0601

Regression 2

Regression Statistics	
Multiple R	0.93035465
R Square	0.865559775
Adjusted R Square	0.793168885
Standard Error	1658.195467
Observations	21

ANOVA

	df	SS	MS	F	Significance F
Regression	7	230134980.2	32876425.74	11.95675	9.2736E-05
Residual	13	35744958.7	2749612.208		
Total	20	265879938.9			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	78947.80858	49892.42038	1.582360767	0.13758234	-28838.213	186733.83	-28838.213	186733.83
X Variable 1	-268.6632778	670.6866368	-0.400579441	0.69523525	-1717.5937	1180.26711	-1717.5937	1180.26711
X Variable 2	-0.010241344	0.02060039	-0.497143229	0.6273897	-0.0547458	0.03426309	-0.0547458	0.03426309
X Variable 3	-906.0521293	809.8198813	-1.118831669	0.28345988	-2655.5616	843.45736	-2655.5616	843.45736
X Variable 4	-295.4957874	397.4904335	-0.74340352	0.47046014	-1154.2217	563.230086	-1154.2217	563.230086
X Variable 5	-273.1441662	126.8049514	-2.154049689	0.0505808	-547.08961	0.80127632	-547.08961	0.80127632
X Variable 6	0.001102913	0.000740234	1.489951455	0.16009499	-0.0004963	0.00270209	-0.0004963	0.00270209
X Variable 7	-1132.406425	452.0872106	-2.504840656	0.02634714	-2109.0815	-155.73139	-2109.0815	-155.73139

Regression 3

Regression Statistics	
Multiple R	0.975658295
R Square	0.951909108
Adjusted R Square	0.82366673
Standard Error	828.5782632
Observations	12

ANOVA

	df	SS	MS	F	Significance F
Regression	8	40768147.5	5096018.438	7.422734364	0.063421392
Residual	3	2059625.815	686541.9383		
Total	11	42827773.32			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-15916.19194	47965.73546	-0.331824203	0.761852253	-168564.5695	136732.1857	-168564.5695	136732.186
X Variable 1	208.0645994	573.8708327	0.362563468	0.740968519	-1618.248512	2034.377711	-1618.248512	2034.37771
X Variable 2	-0.014035301	0.017109002	-0.820345963	0.472130373	-0.06848378	0.040413179	-0.06848378	0.04041318
X Variable 3	519.0465011	689.8594127	0.752394606	0.506467546	-1676.394038	2714.48704	-1676.394038	2714.48704
X Variable 4	-143.3346891	502.5527344	-0.285213231	0.794038166	-1742.681782	1456.012404	-1742.681782	1456.0124
X Variable 5	-679.048355	458.8640292	-1.47984656	0.235477486	-2139.358489	781.2617793	-2139.358489	781.261779
X Variable 6	69.09884661	87.57456651	0.789028703	0.487703695	-209.602509	347.8002022	-209.602509	347.800202
X Variable 7	-35.79794222	10.5703973	-3.386622206	0.042881442	-69.43766405	-2.158220387	-69.43766405	-2.1582204
X Variable 8	-332.922181	320.2510826	-1.039566138	0.374963217	-1352.104056	686.2596936	-1352.104056	686.259694

Regression 4

Regression Statistics	
Multiple R	0.94221677
R Square	0.88777245
Adjusted R Square	0.84568711
Standard Error	775.117428
Observations	12

ANOVA

	df	SS	MS	F	Significance F
Regression	3	38021317.1	12673772.37	21.0945808	0.00037243
Residual	8	4806456.214	600807.0267		
Total	11	42827773.32			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	18757.395	767.2939453	24.44616579	8.3703E-09	16988.012	20526.778	16988.012	20526.778
X Variable 1	5.04370462	72.08612182	0.069967762	0.94593669	-161.18719	171.2746	-161.18719	171.2746
X Variable 2	-481.69734	218.3116633	-2.206466347	0.05840199	-985.12494	21.7302601	-985.12494	21.7302601
X Variable 3	-43.310035	6.687580801	-6.476188738	0.00019289	-58.731624	-27.888446	-58.731624	-27.888446

Regression 5

Regression Statistics	
Multiple R	0.94218033
R Square	0.88770377
Adjusted R Square	0.86274905
Standard Error	731.011283
Observations	12

ANOVA

	df	SS	MS	F	Significance F
Regression	2	38018375.9	19009187.9	35.5725832	5.329E-05
Residual	9	4809397.46	534377.495		
Total	11	42827773.3			

	Coefficients	Standard Erro	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	18740.8544	688.431079	27.2225571	5.9029E-10	17183.5151	20298.1937	17183.5151	20298.1937
X Variable 1	-478.67095	201.807581	-2.3719176	0.04177747	-935.19141	-22.150482	-935.19141	-22.150482
X Variable 2	-43.060394	5.33442039	-8.0721786	2.0601E-05	-55.127691	-30.993097	-55.127691	-30.993097

Looking at the variables that can be measured by numbers, we see that they did take part in the financial crisis. Although these variables were factors in the crisis they were not what ultimately led to the crisis. We will now focus on the credit rating agencies. A lot of people trusted these agencies to rate the securities true to what they were worth. “Meant to provide investors with reliable information on the riskiness of various kinds of debt, these agencies have instead been accused of exacerbating the financial crisis and defrauding investors by offering overly favorable evaluations of insolvent financial institutions and approving extremely risky

mortgage-related securities."[13] When a credit rating agency rates a security as Triple A this means that it was as safe to invest in as a U.S. treasury note. This means that one is guaranteed a return and will not have to worry about a loss. When mortgage backed securities were introduced into the market they were receiving Triple A ratings."Ratings are usually characterized by a letter grade, the highest and safest being AAA, with lower grades moving to double and then single letters (AA or A) and down the alphabet from there. The ratings handed out by each of the Big Three have widespread implications for investors and global markets. Together they control nearly 95 percent of the credit ratings market, in large part because their status was enshrined in the original 1975 Securities and Exchange Commission (SEC) regulations of the sector."[14] The issue is that the mortgage backed securities were thrown into pools with each other. This means that no one actually knew what was inside a certain pool of the securities. It was filled with random mortgages and there was no way to truly tell what was good or bad. All of the mortgage pools were rated Triple A. People did not have time or simply did not want to do their own due diligence and trusted the credit rating agencies. Once they saw what was rate Triple A they would invest in it. Unfortunately, since no one actually knew what were in the pools the securities turned out to be worth nothing. These were not safe investments at all. They were garbage. People put their trust in the credit rating agencies. "Critics argue that the ratings agencies failed to take into account the potential for a decline in housing prices and its effect on loan defaults. The agencies' inflated ratings also failed to account for the greater systemic risks associated with structured products, and they were accused of sacrificing quality ratings to win a bigger share of the lucrative sector. By 2006, Moody's had earned more revenue from structured

---

[13] Council on Foreign Relations. (n.d.). *The Credit Rating Controversy*. Council on Foreign Relations. https://www.cfr.org/backgrounder/credit-rating-controversy.
[14] Council on Foreign Relations. (n.d.). *The Credit Rating Controversy*. Council on Foreign Relations. https://www.cfr.org/backgrounder/credit-rating-controversy.

finance—$881 million—than all its 2001 business revenues combined."[15] They felt safe enough to not have to do their own due diligence because the credit rating agencies were supposed to do that for them. The credit rating agencies did not do their job; they cared about profits over people. When workers of the credit rating agencies wanted to decrease a rating they had to go through several obstacles to degrade a security. After the worker would submit why a security needed to be downgraded the agencies would mostly not approve the downgrade. "[A woman from Moody's] told them, for instance, that even though she was responsible for evaluating subprime mortgage bonds, she wasn't allowed by her bosses simply to downgrade the ones she thought deserved to be downgraded. She submitted a list of the bonds she wished to downgrade to her superiors and received back a list of what she was permitted to downgrade. 'She said she'd submit a list of a hundred bonds and get back a list with twenty-five bonds on it, with no explanation of why.'"[16] The workers were unable to do their job because the agencies did not want to provide true ratings, instead they wanted to provide the ratings that worked for themselves. "We conclude the failures of credit-rating agencies were essential cogs in the wheel of financial destruction," according to the report submitted by the Financial Crisis Inquiry Commission in January 2011. "The three credit-rating agencies were key enablers of the financial meltdown. The mortgage-related securities at the heart of the crisis could not have been marketed and sold without their seal of approval."[17] The credit rating agencies ultimately led to the financial crisis of 2008.

---

[15] Council on Foreign Relations. (n.d.). *The Credit Rating Controversy*. Council on Foreign Relations. https://www.cfr.org/backgrounder/credit-rating-controversy.
[16] Lewis, Michael. *The Big Short*. WW Norton, 2011
[17] Krantz, M. (2013, September 13). *2008 crisis still hangs over credit-rating firms*. USA Today. https://www.usatoday.com/story/money/business/2013/09/13/credit-rating-agencies-2008-financial-crisis-lehman/2759025/.

Chapter 3: The Dodd-Frank Act

After the 2008 financial crisis people realized that there needed to be changes within the law. The crisis helped to create the US Financial Regulatory Reform. Although the financial crisis happened in 2008 the solutions for it did not come until 2010. The Reform was created to prevent events like the 2008 subprime crisis from happening again. The public realized that the private sector had too much power and needed to be controlled. The US Financial Regulatory Reform helped to create the Consumer Protection Act, also known as the Dodd-Frank Act. The Dodd-Frank Act placed restrictions on the financial services sector. The 2000 Modernization Act helped to keep deregulation on over the counter financial derivatives. When this act was put into place it enabled financial institutions to take advantage and highly upcharge commission and fees. The Dodd-Frank Act put regulations in place that would restrict financial instruments from taking too much power from the public. “Some of the main provisions found in the Dodd-Frank Act include: Banks are required to come up with plans for a quick shutdown if they approach bankruptcy or run out of money. Financial institutions must increase the amount of money they hold in reserve to account for potential future slumps. Every bank with more than $50 billion of assets must take an annual “stress test,” given by the Federal Reserve, which can help determine if the institution could survive a financial crisis. The Financial Stability Oversight Council identifies risks that affect the financial industry and keeps large banks in check. The Consumer Financial Protection Bureau protects consumers from the corrupt business practices of banks. This agency works with bank regulators to stop risky lending and other practices that could hurt American consumers. It also oversees credit and debit agencies as well as certain payday and consumer loans. The Office of Credit Ratings ensures that agencies provide reliable credit ratings to those they evaluate. A whistle-blowing provision in the law encourages anyone with

information about violations to report it to the government for a financial reward. The Dodd-Frank Act is still in place today and financial firms must follow this act or they could be fined heavily."[18] The Dodd-Frank Act put checks and balances in place for the banking industry. There were new agencies put in place to regulate this industry. This act is supposed to protect consumers and make sure they are not taken advantage of from the financial industry. The act contains 16 major areas of reform for the banking industry ranging from mortgages to derivatives. Within the Dodd-Frank Act there is Volcker rule. This rule prohibits banks to invest, sponsor, or own any proprietary trading operations. This helps the banks to limit what they can do. "The Volcker Rule forbids banks from making certain investments with their own accounts. For example, banks can't invest, own or sponsor any proprietary trading operations or hedge funds for their own profit, with some exceptions."[19] There is a close regulation on derivatives as well. Credit swaps or security based swaps must go through a clearing house. "In addition, the Act requires hedge funds and private equity advisors to register with the SEC and to provide information about their trades and portfolios in order to determine whether they are creating any systemic risks"[20] Furthermore, there are laws in place to protect consumers to help prevent this type of crisis from happening again. Consumers were not aware of variable rates and how high they could go or that they were given a loan that overextended their finances."The borrower was told he had an 'effective interest rate of 7 percent' when he was in fact paying something like 12.5 percent."[21] The Dodd-Frank Act has rules in place to protect them. "In addition, the Act implemented a series of mortgage reforms to protect consumers. These reforms: Require lenders

[18] History.com Editors. (2018, January 26). *Dodd-Frank Act*. History.com. https://www.history.com/topics/21st-century/dodd-frank-act.
[19] History.com Editors. (2018, January 26). *Dodd-Frank Act*. History.com. https://www.history.com/topics/21st-century/dodd-frank-act.
[20] Thomson Reuters. (2016, June 21). *What Is the Dodd-Frank Act?* Findlaw. https://www.findlaw.com/consumer/securities-law/what-is-the-dodd-frank-act.html.
[21] Lewis, Michael. *The Big Short*. WW Norton, 2011

to ensure that homeowners can repay on their loans; Require lenders to disclose the maximum a consumer could pay on a variable rate mortgage; Remove financial incentives used by lenders to pressure borrowers into more costly loans; Penalize lenders that violate federal standards by prohibiting them from foreclosing on non-compliant mortgages or allowing the borrowers to recover damages as high as 3 years worth of interest payments; Prohibit pre-payment penalties; Allow borrowers with high-cost loans to lower their interest rates; Establish an Office of Housing Counseling to provide counseling on homeownership and rental housing."[22] The Consumer Protection Act, also known as the Dodd-Frank Act, was the solution put in place for the 2008 financial crisis.

Conclusion

The 2008 financial crisis was a crucial time in American history and worldwide. It affected consumers, banks, and the world economy. There were many factors that contributed to the crisis. People blame the government, banks, mortgage officers, borrowers, and credit rating agencies. All of these factors played parts in the crisis, but ultimately one factor sealed the fate of the crisis. Credit rating agencies were the ultimate cause of the financial crisis. Without the approval rating of credit rating agencies people would not have been able to invest in mortgage backed securities or thought about investing in them. Credit rating agencies rated mortgage backed securities Triple A, which caused investors to buy as much as possible. It was rated Triple A, so there should have been minimal risk associated with these securities. "Worse was to come in the financial crisis of 2007-09, which the three big rating agencies—Moody's, S&P and Fitch—helped cause by trading reputation for profit and giving implausibly high marks to

[22] Thomson Reuters. (2016, June 21). *What Is the Dodd-Frank Act?* Findlaw. https://www.findlaw.com/consumer/securities-law/what-is-the-dodd-frank-act.html.

securitised mortgages. An official report on the crisis branded the agencies "essential cogs in the wheel of financial destruction".[23] People put their trust in these agencies and were not able to trust the agencies to do their job. After the crisis there were more committees established to regulate the agencies. Although there are committees to regulate the agencies, there are still the same agencies in place. These agencies are still trusted to rate securities and we have to hope they are doing their due diligence. Having more committees in places and placing more regulations on the financial crisis will ultimately not prevent another financial crisis from happening. There are always new financial derivatives that are being placed in the market. There are booms and busts. Something new comes out and it is a boom then it busts. There will be new laws and regulations in place to prevent that specific bust from happening again, but we cannot prevent new financial instruments from being created. People will always think of new ideas and trends. The financial crisis is a part of history and we hope to not repeat this specific crisis again.

[23] The Economist Newspaper. (2020, May 7). *Credit-rating agencies are back under the spotlight*. The Economist. https://www.economist.com/finance-and-economics/2020/05/07/credit-rating-agencies-are-back-under-the-spotlight.

Works Cited

Congress Passes Commodity Futures Modernization Act, CFTC Reauthorized for Five Years. (n.d.). https://www.cftc.gov/sites/default/files/opa/press00/opa4479-00.htm.

Council on Foreign Relations. (n.d.). *The Credit Rating Controversy*. Council on Foreign Relations. https://www.cfr.org/backgrounder/credit-rating-controversy.

CRANSTON-GONZALEZ NATIONAL AFFORDABLE HOUSING ACT OF 1990. (n.d.). https://www.hud.gov/sites/documents/TITLEI_CRAN_GON.PDF.

Duignan, B. (n.d.). *Financial crisis of 2007–08*. Encyclopædia Britannica. https://www.britannica.com/event/financial-crisis-of-2007-2008.

History.com Editors. (2018, January 26). *Dodd-Frank Act*. History.com. https://www.history.com/topics/21st-century/dodd-frank-act.

Krantz, M. (2013, September 13). *2008 crisis still hangs over credit-rating firms*. USA Today. https://www.usatoday.com/story/money/business/2013/09/13/credit-rating-agencies-2008-financial-crisis-lehman/2759025/.

Lewis, Michael. *The Big Short*. WW Norton, 2011

Mortgage-Backed Securities. Mortgage-Backed Securities | FINRA.org. (n.d.). https://www.finra.org/investors/learn-to-invest/types-investments/bonds/types-of-bonds/mortgage-backed-securities.

Mortgage-Backed Security - Learn How an MBS Works. Corporate Finance Institute. (2019, May 1). https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/mortgage-backed-security-mbs/.

Rauchway, E. (2018, September 14). *The 2008 Crash: What Happened to All That Money?* History.com. https://www.history.com/news/2008-financial-crisis-causes.

Rosenthal, J. (2008, August 15). *No Docs*. The New York Times. https://www.nytimes.com/2008/08/17/magazine/17wwlnguest-rosenthal-t.html.

Speech by SEC Commissioner: Realigning Incentives in the Securitization Market. Realigning Incentives in the Securitization Market (Commissioner Luis A. Aguilar; March 30, 2011). (2011, March 30). https://www.sec.gov/news/speech/2011/spch033011laa-item-1.htm.

The Economist Newspaper. (2020, May 7). *Credit-rating agencies are back under the spotlight*. The Economist. https://www.economist.com/finance-and-economics/2020/05/07/credit-rating-agencies-are-back-under-the-spotlight.

Thomson Reuters. (2016, June 21). *What Is the Dodd-Frank Act?* Findlaw. https://www.findlaw.com/consumer/securities-law/what-is-the-dodd-frank-act.html.

What Are Mortgage Backed Securities? Fidelity. (n.d.). https://www.fidelity.com/learning-center/investment-products/fixed-income-bonds/mortgage-backed-securities.