

Moral Hazard during the Financial Crisis of 2008 and Future Implications for the United States

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Abstract

The Financial Crisis of 2008 is largely understood to be a story of bad actors, incentivized by a chain of dumping off debt investment risk to another party. This phenomenon was seen from the highest level, particularly with Wall Street banks, to the individual mortgage lender and all parties in between. This paper explains that the Crisis was indeed caused by what will be discussed as 'moral hazard,' but refutes the common notion that moral hazard was systematic to the free financial market. Specifically, this paper contends that government subsidies did more to prop up moral hazard and allow financial institutions to take advantage of a lack of institutional risk than had these institutions been left alone altogether. Through an examination of five government subsidies as well as a case study on the former financial institution Washington Mutual, this paper affirms the hypothesis, and posits that less government intervention, although not complete removal, in regulating financial institutions will do better to create less systematic pressure to create moral hazard than more intervention.

Introduction

Economists have long studied the causes and effects of the infamous 2008 Financial Crisis which led to a recession both within the United States and abroad. An official commission launched by the U.S. federal government to investigate the causes of the crisis itself yielded conflicting explanations obviously tied to party affiliation and did not produce any clear economic or political consensus. Studying the Crisis is not only enlightening but crucial to understand, as a nuanced and holistic comprehension of its causes and effects can help to prevent future crises. The Commission's conclusion states that "If we do not learn from history, we are unlikely to fully recover from it. Some on Wall Street and in Washington with a stake in the status quo may be tempted to wipe from memory the events of this crisis, or to suggest that no one could have foreseen or prevented them...It is an attempt to record history, not rewrite it, nor allow it to be rewritten."¹ Preventing a crisis of this magnitude from happening again is and has been at the top of mind of our government for over a decade. With a potential recession looming on the horizon over the next year or two, studying the Crisis is now, more than ever, paramount to economic decision-making.

Further, it is useful to distinguish the true causes of the crisis from less important ones, and discover what was truly "unavoidable," if anything. Economists, politicians, and academics alike have struggled to determine whether the crisis, fueled by moral hazard, was a result of government or market failure. Distinguishing between these two potential causes is also of the utmost importance for the Federal Government. Even the Commission recognizes "the Federal Reserve's pivotal failure to stem the flow of toxic mortgages, which it could have done by

¹ http://fcic-static.law.stanford.edu/cdn_media/fcic-reports/fcic_final_report_conclusions.pdf

setting prudent mortgage-lending standards.” A conclusion supporting the argument that government failure was the cause of the crisis, rather than market failure, would lead us to a narrative that the crisis was avoidable to some extent, and can be avoided in the future if necessary precautions are taken.

It is well known that financial crises lead to contagions that can affect entire regions, countries, and even the world in the case of the 2008 Crisis. Preventing future crises is not only beneficial for ourselves and our own businesses, but the entire global macro economy. Given the rapid increase in financialization in the last few decades, macroeconomic trends are yielding results that are drastically compounded. For example, the issuance and significant rise in sales of OTC (“over-the-counter”) derivatives in forms like synthetic collateralized debt obligations (“CDOs”) amplified the crisis. Had large financial institutions not invented these complex financial instruments that depended on the stability of the housing market and the underlying mortgages, billions of dollars would not have been exposed to risk. Understanding the causes of the crisis will help signal to financial institutions the kinds of instruments they should, and more importantly should not be creating. One of the main gripes expressed by the Occupy Wall Street movement was the fact that large investment banks were selling derivatives so complex that even the bankers themselves did not understand what they were marketing and selling to clients. While future recessions may be unavoidable, given the natural expansion and contraction of global capital markets, we can undoubtedly take steps to reduce the magnification of such phenomena. As such, this piece will bring to light channels by which we can brace for economic contraction, and put ourselves in a position to survive and emerge from the next downturn.

Central Argument

This paper will demonstrate that chief among the causes of the Crisis was ‘moral hazard,’ or the idea that agents become much more comfortable with risk when they are not the ones bearing any downside cost. Moral hazard plays an important role in all aspects of our lives, broadly ranging from things like theft insurance to tenure at universities. However, in this case moral hazard was extreme, as lenders did not have to earn this reduction of risk by some form of merit or fee (i.e. paying for insurance or working many years to be granted tenure). The Housing and Community Development Act of 1992 was an attempt to provide affordable housing to low-income families and individuals across the U.S., allowing all to pursue the American Dream of being a homeowner, regardless of income. Had the government not backed these ‘subprime’ loans, lenders would have no reason whatsoever to issue these loans. Unfortunately, no one thought this would later backfire when individuals purchased multiple homes with multiple subprime mortgages, compounding the issue and causing the housing bubble to crash.

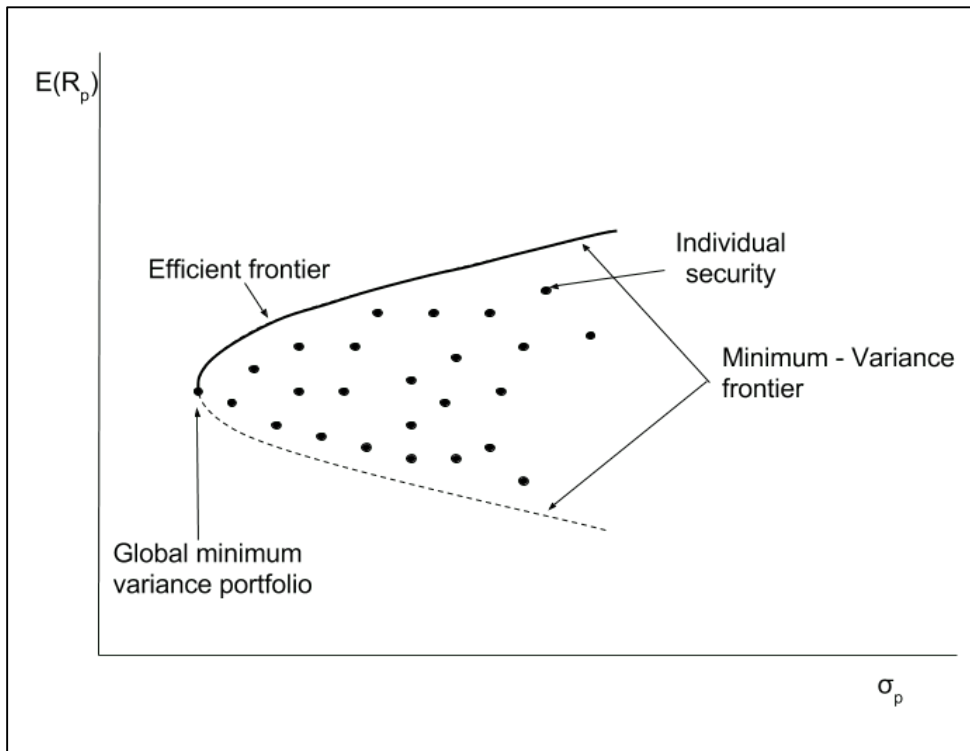
More specifically, this paper will advance the idea that government subsidies and guarantees to financial parties encouraged reckless financial practices, and did so more than increasing government regulation would have done. This resulted in knowledge that still shapes the way our government acts today and examine its implications on our democratic system. To prevent future crises, governments ought to consider lowering the amount of subsidies they issue, thus decreasing moral hazard, instead of increasing regulation as a more efficient solution. This plan, however, does come with potential costs that cannot be neglected. For one,

a lack of increased regulation puts faith in the fact that the free market will operate as it is supposed to. With heightened regulation, we can increase the likelihood that nothing of this magnitude will happen again, but we have to trust that without subsidies and guarantees, there will not be incentives to issue similar loans. Moreover, increasing regulation would increase domestic state capacity, which has its own benefits and drawbacks.

There are several government subsidies this paper will examine and attempt to prove empirically that decreasing will do more to prevent crisis than increasing regulation. These subsidies include deposit insurance, discount-window lending, and bailouts. The paper will examine the relationship between risk and return of a lender's portfolio to prove that government subsidies distort normal loan capital markets, increasing abnormally high issuances of loans, making previously efficient portfolios inefficient. The paper will accomplish this by investigating the specific terms of these mortgages and whether or not borrowers were rational actors (or rational enough) in these instances. It is clear that predatory lending played a large part in the collapse of the housing market but was this predatory lending caused by government subsidies more than a lack of regulation? Firms like Countrywide and Washington Mutual became famous for the role their predatory lending practices played in propping up the financial crisis. An examination of the loans they issued and the specific terms of those loans, both before and after the issuance of specific subsidies, will bring to light the strength of their overall credit portfolios.

This aforementioned examination will allow for the utilization the efficient frontier economic model, which measures the relationship of risk to return in an investor's portfolio.

The underlying assumption is that the efficient frontier curve shifts when an outside agent (i.e. Fannie Mae) is introduced.



² *The Efficient Frontier Model*

The efficient frontier curve shifts up and to the left with the introduction of an outside agent that mitigates risk in some regard. In this case, government subsidies guaranteeing the insurance of subprime loans to lenders do indeed move this curve. As a result, previously existing portfolios become less efficient and have to be restructured in order to become as efficient as they were before. In practice, this played out where lenders maximized only the number of subprime loans they issued since they were all guaranteed to be paid back by the

² <https://ift.world/concept1/concept-65-minimum-variance-efficient-frontiers/>

government. It was inefficient not to charge outrageous interest rates and collect as many payments as possible, not caring whatsoever about the borrower's risk of default.

Based on the paper's findings, a final recommendation will be made for the future actions of governments on their treatment of financial agents like lenders. The paper will suggest that it is better for governments to not make guarantees whatsoever on loans they issue, while arguing that some, but not total regulation is best. This examination will occur while keeping in mind the potential tradeoffs to an increase in government regulation, such as having to trust in the faith of efficient free markets, rather than guaranteeing a mitigation of risk with increased regulation. However, the conclusion will show that decreasing subsidies are still a more effective means of preventing crisis than increased regulation in terms of overall net benefits. Without these guarantees, lenders (investors in the efficient frontier model) will naturally arrive at their optimal loan portfolio, and the loan capital markets will not be distorted, exposing the U.S. to future crisis. This model is the best tool for analyzing the various situations of institutional lenders in the lead-up to the Crisis, as these lenders are, after all, investors in and of themselves who care about maximizing their own return given their capital allocations.

Overview of Moral Hazard

It is without a doubt that moral hazard played a significant role in propping up the financial crisis. While the extent to which moral hazard caused the Crisis has been debated, the evidence points to it being the principal cause of the crisis altogether. The Economic Times defines moral hazard as "a situation in which one party gets involved in a risky event knowing

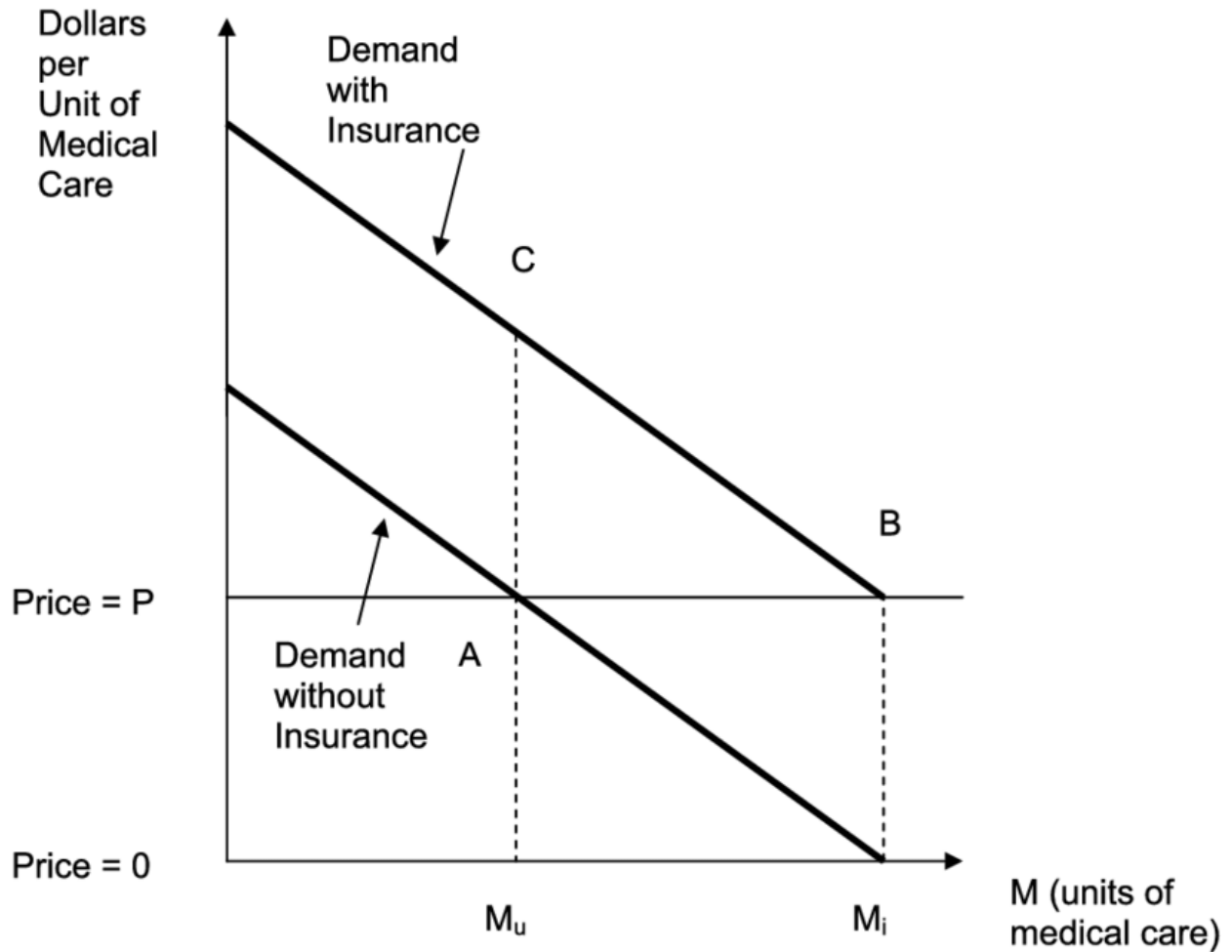
that it is protected against the risk and other party will incur the cost. It arises when both the parties have incomplete information about each other.”³ Moral hazard “occurs when the borrower knows that someone else will pay for the mistake he makes. This in turn gives him the incentive to act in a riskier way.” In the case of the Financial Crisis, institutional lenders were incentivized to take on more risk with the knowledge that their loans would be insured by the U.S. government. It was ultimately this incentive that caused the housing market to crash in dramatic fashion.

The term “moral hazard” originated during the late nineteenth century, where it was used primarily by English insurance companies. This phenomenon is named as such due to its original use to characterize insurance fraud or immoral behavior on the part of an insured party.⁴ It was not until the 1960s that economists adopted this term for its current use. While moral hazard has been observed throughout economic and financial life, mortgage securitization is a particularly strong example. This is because mortgage securitization, or the practice of bundling thousands of mortgages together and selling them as a tradeable product that yields cash flows from the underlying mortgages, allows the originators to pass on the risk to other parties and not keep the securities on their balance sheet. In a sense, lenders were extraordinarily incentivized to invest in increasingly risky loans, as they could both sell these in bundles to investors, as well as had the knowledge that they were insured by the U.S. government. Below is an illustration of the effect moral hazard has on the demand for

³ <https://economictimes.indiatimes.com/definition/moral-hazard>

⁴ Dembe, Allard E. and Boden, Leslie I. (2000). "Moral Hazard: A Question of Morality?" Archived 2016-05-13 at the [Wayback Machine](#) *New Solutions* 2000 10(3). 257–79

healthcare, something that can be extrapolated to all demand once risk has been assumed by an outside agent:



*The Effect of Moral Hazard on Demand for Healthcare*⁵

We clearly find that without any form of insurance (moral hazard), the demand for healthcare goes down. If people were uninsured they simply would not be able to afford essential care, and a morally hazardous agent (health insurance firms) step in to fill that demand void.

⁵ https://www.researchgate.net/figure/New-Analysis-of-Moral-Hazard_fig1_5984419

Moral hazard has been of particular interest to economists and political scientists in its practical applications in recent decades. These academics tend to argue that the inefficiency that arises with moral hazard is due to information asymmetry. In the Insurance industry, for example, companies are unable to observe the everyday behavior of their clients, and as such, are unable to deny coverage to individuals who take risks they are unaware of. In the case of the Financial Crisis, the federal government was completely unaware of the risky practices institutional lenders would engage in if they promised to insure the subprime loans they issued. Moreover, the government could not have predicted the instruments Wall Street would develop, such as Collateralized Debt Obligations (“CDOs”) that would rapidly exacerbate the financial crisis upon the demise of the housing market. While it is easy to blame banks and other institutional lenders for unethical and predatory practices, it should come as no surprise that crisis ensued. With the introduction of this government subsidy (the guarantee of insured loans), lenders had to re-optimize their own loan portfolios. Additionally, this was the only way for low-income or high risk individuals to obtain the necessary leverage for a mortgage of their own.

Moral hazard was not a factor in the mortgage lending market before the introduction of such a subsidy by Fannie Mae and Freddy Mac. Lenders had to consider a client’s creditworthiness with extreme care and deliberation before deciding whether or not to issue such a loan. Any downside risk was to be assumed by the lender themselves and, as such, the subprime mortgage market never became popular until the lead-up to the crisis. It was precisely this government-created form of moral hazard that led to a series of events, ultimately resulting in a global recession. Government-created moral hazard was the primary

culprit propping up the Crisis, and an examination of the specific subsidies granted by the government will display which of these, if any, need to be reduced more than regulation needs to be increased.

Subsidies

Perhaps the primary reason for the existence of government subsidies and guarantees in favor of financial institutions in the lead-up to the crisis was the central belief that these firms were “too big to fail.” While it is important to make sure our financial institutions are strong and can maintain and stabilize flows of capital across the globe, it can be very dangerous to view these institutions as too important or central that we cannot allow them to go bankrupt. In a 2010 speech, then-US Federal Reserve chairman Ben Bernanke famously remarked that “if a firm is publicly perceived as too big, or interconnected, or systematically critical for the authorities to permit its failure, its creditors and counterparties have less incentive to evaluate the quality of the firm’s business model, its management, and its risk-taking behavior. As a result, such firms face limited market discipline, allowing them to obtain funding on better terms than the quality or riskiness of their business would merit and giving them incentives to take on excessive risks.”⁶ The obvious problem with firms that are so massive and central to economies is the risk of contagion when any of these firms experiences downturn. Moreover, 80-90% of the money supply in the U.S. (defined as M-1) is composed of bank checking deposits. If the government were to remove subsidies issued to these firms, they

⁶ Ben S. Bernanke, Speech at the Independent Community Bankers of America National Convention: Preserving a Central Role for Community Banking (March 20, 2010).

would not be incentivized to take on more risk than they should. This not only drastically decreases the chance that the one firm is exposed to potential losses, but also decreases the risk of the compounding effects of those losses on the market as a whole. Further, it is important to discern which subsidies contribute most significantly to the arising of moral hazard and what actions (or rather, inactions) future governments can take to mitigate the chance of contagion.

Subsidy #1: The formation of Fannie Mae and Freddie Mac as GSEs

Throughout the majority of the twentieth century, mortgage lending took place primarily at banks, thrifts, and credit unions. The most common mortgage was a fixed-rate mortgage, or one that offers the same interest rate from the day it is issued. The institutions that originated the loans tended to keep the mortgages on their own books, not securitizing and selling them, and bore all the downside risk. While Fannie Mae was originally created in 1938 as part of the government, it became privatized as a government-sponsored enterprise (“GSE”) in 1968, with Freddie Mac following two years later. Almost immediately thereafter, a secondary mortgage market had been created, allowing lenders to securitize and sell away any risk they had been taking on. Selling these mortgages gave the lenders additional capital with which they could create even more mortgages, creating a cycle of originating, bundling, selling, and originating more mortgages.

Initially, “Fannie Mae and Freddie Mac had a positive influence on the mortgage market by increasing homeownership rates in the United States. However, allowing Fannie Mae and Freddie Mac to function as implied government-backed monopolies had unintended

consequences.”⁷ As time went on, these consequences grew ever-larger and the harms created by this government subsidy drastically outweighed the benefits. One of the primary benefits of obtaining GSE status, and the most important in the case of the Crisis, is the Secretary of the Treasury’s authorization to purchase up to \$2.25 billion of securities from each company to support their liquidity. Thus, the government itself had up to \$4.5 billion of exposure to risk, all invested in keeping the two GSEs as liquid as possible.

We begin to see a chain of dumping-off risk to the next party, which all came back to the government. By continuing to sell riskier and riskier assets to the next party, no individual institution believed they were at risk by investing in these mortgages, or the Mortgage-Backed Securities that were created with them. “The fact that the market believed in this implicit guarantee allowed Fannie Mae and Freddie Mac to borrow money in the bond market at lower yields than other financial institutions. The yields on Fannie Mae and Freddie Mac’s corporate debt, known as agency debt, was historically about 35 basis points higher than U.S. Treasury bonds.”⁸ While 35 bps (0.35%) may not seem like a significant spread, when there are trillions of dollars at stake any seemingly nominal increase in a bps spread becomes significant. Here we see an amassing of private profits through public risk. While Fannie Mae and Freddie Mac were incredibly profitable for over two decades, the implicit guarantee of the government did not actually benefit homeowners. This subsidy simply created moral hazard which helped contribute to the Crisis.

⁷ <https://www.investopedia.com/articles/economics/08/fannie-mae-freddie-mac-credit-crisis.asp>

⁸ Ibid

Subsidy #2: Discount Window Lending

The discount window is an advent of US monetary policy that allows banks to lend from a central bank to meet liquidity shortages that are caused by some sort of disruption. This differs from the “LIBOR” rate which is simply the rate at which commercial banks lend from one another. Banks tend to prefer borrowing from other banks given a cheaper rate and a lack of obligatory collateral. As such, during times of economic distress, discount window lending spikes when all banks are facing liquidity shortages. The discount window has been in existence since the establishment of the Federal Reserve in 1913 and was the Fed’s primary tool during its inception.

The simple fact that commercial banks have a central bank to back them in case they need immediate liquidity incentivizes banks to make riskier bets. This goes far beyond mortgage loans. When assessing any business’ creditworthiness, banks do not have to worry extensively about downside-case outcomes, as they have the knowledge that they will be able to acquire liquid assets (i.e. cash) from the Federal Reserve. This is a very general subsidy that encourages all sorts of risky practices. However, if discount window lending did not exist, banks would be more responsible for self-regulation, and would also not engage in such risky practices. Although this seems somewhat counterintuitive, given the fact that we tend to think increased regulation leads to less risk, it has been proven that an overstepping by the government, in the form of this issued subsidy, leads to less stability in the markets over time.

There are several rates charged to institutions including the primary credit rate (by far the most common), the secondary rate (less stable institutions), and seasonal credit rate. Both primary and secondary credit tend to be offered on a secured, overnight basis, while seasonal

credit is extended up to nine months. The primary rate is 100 basis points (“bps”) above the federal funds target, and the secondary is 50 bps above. Again, we find something seemingly counterintuitive. The less creditworthy institution is charged a lower rate. This is because the subsidy exists to assist struggling banks that are in dire need of liquidity. However, we see this unfortunately backfire, as less stable banks that are already engaging in relatively risky practices are aware that their interest rate will be nominally lower than the primary rate, and thus continue to engage in riskier practices than other institutions. Discount window lending thus proves itself to be the most damaging subsidy and one that is deemed necessary because of the existence of financial institutions that are systematically important. However, were there never any such institution or “too big to fail” backdrop, there would be no need for the subsidy.

The two aforementioned government subsidies have shown themselves to do more harm than good in times of distress. While the creation of these subsidies were perhaps done with noble intentions, government involvement in financial regulation has proven to be ineffective and damaging to Americans in the long run. The government has failed to consider in the past that it is not an increase in regulation, but a decrease in subsidies that will lead to more economic stability, growth, and efficient markets. Had these subsidies never been in place, these financial institutions would have been responsible for self-regulation, and would not have engaged in the risky practices they did with these subsidies in place. Banks like Washington Mutual and Countrywide would have never failed, and perhaps the recession could have been prevented altogether. Self-regulation is not always a bad thing, especially when the alternative has proven to be so damaging.

Subsidy #3: Central Bank Bailouts

The issue of whether or not to bail-out these large, global banks was a cornerstone of the Occupy Wall Street movement during the height of the Crisis. Many individuals across the country felt that their taxpayer dollars should not be spent on rescuing firms that time and time again exhibited unhinged and risky behavior. As we now know after an initial failed congressional vote, the U.S. government overwhelmingly decided that the systematically-important financial institutions' ("SIFIs") collective failure could cause a shock so severe that the world may never recover. While it is widely viewed that the right decision was made, it is important to posit whether it was right to even offer bailouts to banks that could fail before the Crisis ever occurred, again increasing moral hazard. It is in this capacity that the Federal Reserve is considered a "lender of last resort," an idea initially suggested by Walter Bagehot. In Munger and Salsman's *Is "Too Big to Fail" Too Big?*, it is noted that Bagehot "argued that many financial crises are merely problems of illiquidity not insolvency. In such a situation, contagion can be contained, and even cured by making sure a central bank does three crucial things:

1. Lend as much money as *necessary* directly to troubled (temporarily illiquid) banks
2. At a *penalty* rate (far above the market interest rate)
3. And only against *good* collateral, as offered by a technically solvent bank"⁹

Unfortunately, we discover that these "rules" are not actually useful when it comes to crafting legitimate policy. A true lender of "last resort" will have to violate both the second and third rules by nature. However, it is primarily the third rule that allows us to distinguish between insolvency and illiquidity when it comes to banks. Failing banks that lack good collateral (likely

⁹ Munger & Salsman, *Is "Too Big To Fail" Really Too Big?*

most failing banks) are potentially more contagious than those with good collateral to borrow against. However, if we assume it is the job of the Federal Reserve to prevent contagion, it would be impossible to adhere to the third rule. The reality that must be understood is that failing banks are simply going to be lacking good collateral. Illiquidity and insolvency are undoubtedly correlated. Once the central bank agrees that it must bail-out *insolvent* banks, it becomes “no longer a mere *lender* of last resort, but also an *insurer* of last resort—a backstop for bank bondholders and stockholders...Such ‘loans’ cannot be repaid, at least not at penalty rates, because the loan was made to restore the value of the firm (its solvency, or net asset value), not to provide the liquidity it needs to operate.”¹⁰ With this understanding it is abundantly clear that bailouts do not function as they are intended to.

Bailouts not only fail to solve issues of market failure, but actually prop them up, as banks become incentivized not to remain liquid. The new Basel III liquidity and minimum capital requirements imposed on SIFIs following the Crisis¹¹, only restricted banks’ ability to operate more than if the government had never intended to bail out the banks upon their failure from the start. Imposing liquidity requirements does indeed put these banks at a lower risk of failure, but also inhibits their ability to function as they wish. In a natural market characterized by both less regulation and fewer subsidies, banks can both operate to their full capacity while still hedging against risk with the knowledge that they will not be saved by the Federal Reserve. Additionally, the American taxpayer would not have to worry about the practices of these banks as their taxes would no longer be funding this preexisting safety net. This scenario

¹⁰ *Ibid*, 442

¹¹ <https://www.bis.org/bcbs/basel3.htm>

logically seems to be a win-win for all parties involved, but will only work if the government accepts the fact that bailouts, and the expectation thereof, do more harm than good in the long run. Currently there are 29 Global Systemically Important Banks (G-SIBs). The sheer quantity of G-SIBs that exist warrant a discussion surrounding their practices and the extent to which governments should involve themselves in their practices, particularly in the United States where there are eight (Bank of America, Bank of New York Mellon, Citigroup, Goldman Sachs, JP Morgan Chase, Morgan Stanley, State Street, and Wells Fargo).¹²

Subsidy #4: Federal Deposit Insurance

The Federal Deposit Insurance Corporation (FDIC) was initially established as a response to the Great Depression in the United States. The Banking Act of 1935 made the FDIC a permanent government agency, after two years of being a temporary agency, and provided a maintained deposit insurance level of \$5,000 per account. Following the global Crisis in 2008, the limit was raised to \$250,000. The FDIC is also the organization responsible for receiving insolvent banks and selling them quickly to another financial institution. There has been a clear historical trend where we observe the federal government granting the FDIC more power and control over banks, especially following times of economic downturn. This “concentration of power in the FDIC is traditionally justified by two arguments: (i) FDIC control speeds the disposition of the bank’s assets which maintains the liquidity of deposits and encourages faith in the banking system, and (ii) the FDIC’s role as the largest creditor gives it an incentive to

¹² <https://www.fsb.org/wp-content/uploads/2015-update-of-list-of-global-systemically-important-banks-G-SIBs.pdf>

maximize recovery.”¹³ While these arguments appear to be somewhat salient upon an initial glance, one must ask the question as to what a counterfactual would look like had deposit insurance never existed. Perhaps deposit insurance encourages faith in the banking system, but if depositors’ assets were not insured, banks would be incentivized to do whatever they could to protect these deposits. A business like any other, banks will obviously do whatever they can to keep their customers happy and maintain a consistent stream of deposits. In a fractional reserve banking system like the one we have today, banks do not keep all of their deposited assets as cash.¹⁴ This lower level of liquidity is of significant concern when a bank fails. Without deposit insurance, banks would be incentivized to keep as much liquidity as they need to in order to prevent a collapse in the event of a bank run, as was the case during the Great Depression.

Additionally, the view that the FDIC deserves the amount power it currently enjoys is not one that is ubiquitously held. Richard Hynes and Steven Walt, professors at the University of Virginia School of Law, posit that the two justifications ought not to be considered. They argue that “the first argument fails because it conflates the need for a timely satisfaction of the claims of insured depositors by the FDIC with the need to quickly dispose of the failed bank’s assets. As stated, the second argument fails to justify FDIC control as the largest creditor can take self-interested actions harmful to other claimants...A detailed survey of the capital structure of failed banks reveals that the FDIC is usually the only major creditor and that the

¹³ <https://scholarlycommons.law.wlu.edu/cgi/viewcontent.cgi?article=1023&context=wlulr>

¹⁴ <https://onlinelibrary.wiley.com/doi/full/10.1111/ajes.12023>

value of the FDIC's claim nearly always exceeds the value of a failed bank's assets."¹⁵

Furthermore, the authors put forth four limits on the argument in favor of FDIC control:

- (i) Capital structure is endogenous—the absence of claims junior to the FDIC may reflect the lack of voice given to these claimants in a bank resolution process
- (ii) Agency costs internal to the FDIC may prevent the FDIC from maximizing the recovery from the failed bank's assets
- (iii) The FDIC may not be the residual claimant of extremely large banks with complex liability structures
- (iv) Debt conversion schemes which allow for automatic financial restructuring of a failed bank may render bank resolution procedures less necessary¹⁶

It is abundantly clear that the amount of power granted to the FDIC, and frankly the organization itself, have drawbacks that do indeed perpetuate moral hazard. Moreover, as of June 30, 2019, there were 5,303 FDIC insured institutions.¹⁷ As such, there were also over 5,300 institutions susceptible to moral hazard because of deposit insurance. Perhaps consumers ought to think more deeply about why the FDIC enhances their faith in the banking system. It is worth asking the question of whether deposit insurance actually does more harm than good by way of creating moral hazard for both the most important financial institutions in the world and really any bank insured by the FDIC, especially in a fractional reserve banking system.

Subsidy #5: Insured Fraudulent Charges

¹⁵ *Ibid*, 985

¹⁶ *Ibid*, 986

¹⁷ <https://www.fdic.gov/bank/statistical/stats/2019jun/industry.pdf>

While we tend to believe that banks are liable for credit or debit card fraud, as the cardholder is insured by law in these instances, it is not always that simple. Let us take the example of the infamous Target data breach that occurred in 2013. Unfortunately “Using the credentials to exploit weaknesses in Target’s system, the attackers gained access to a customer service database, installed malware on the system and captured full names, phone numbers, email addresses, payment card numbers, credit card verification codes, and other sensitive data.”¹⁸ As a result, Target was held responsible and was ordered to pay an \$18.5 million multistate settlement, which was at the time the largest ever for data breach. Initially, banks that were partnered with Target for their cards were responsible for reimbursing their customers. These banks then turned to Target and via a series of lawsuits demanded they be paid back, as this was not their fault. The biggest loser in the situation ended up being Target, who both had to pay the aforementioned settlement, as well as incur the millions of dollars in losses resulting from the initial fraud. While Target did have to bear a rather unfortunate loss, this type of occurrence can be extreme for small business owners who cannot afford such a hit.

Although in the previous case the partner banks were successful in their legal pursuit, they are also able to “purchase insurance to protect against losses”¹⁹ from the government as a second line of defense against fraudulence. Although banks do have to deal with temporary losses in the event of fraud, they almost always pursue legal action against the business who was the initial victim. While they do, on occasion lose these lawsuits, they typically purchase fraud insurance from the government so they are not directly liable for such fraud. As such,

¹⁸ <https://www.usatoday.com/story/money/2017/05/23/target-pay-185m-2013-data-breach-affected-consumers/102063932/>

¹⁹ <https://www.businessinsider.com/heres-what-happens-when-your-bank-fails-2015-7>

banks have no problem issuing lines of credit for events such as overdraft as they know that even in the event of fraud, they can either purchase some form of insurance from the government themselves or come after the business that they feel is responsible to pay them back. Banks are not incentivized to completely put an end to fraud, as in many cases, they are not the ultimate loser and in fact recoup all their initial losses. The fact that the government allows the purchase of such insurance completely disputes the notion that banks are noble saviors that always look out for theft. While this subsidy is not quite as potent as the others, it nonetheless does nothing to discourage moral hazard.

Case Study: Washington Mutual

Washington Mutual is perhaps the biggest name associated with the 2008 Financial Crisis. Its failure was the largest in banking history, and its story is one that we must draw lessons from as a nation looking to prevent future crises. Since its inception, Washington Mutual (“WaMu”) was a mid-sized thrift that specialized in home mortgages. In 2003, however, its CEO Kerry Killinger claimed that he wanted “to do for the lending industry what Wal-Mart and others did for their industries, by catering to middle and lower income Americans and helping the less well off buy homes.”²⁰ This is how WaMu’s risky lending strategy was born, and by 2006 its high risk strategy started to come undone. The firm incurred record rates of both delinquency and default, and its securities saw significant ratings downgrades. By 2007, the bank itself had started to lose profits, frightening both investors and depositors alike, and leading to an eventual liquidity crisis. On September 25, 2008 the Office of Thrift Supervision

²⁰ <https://www.hsdl.org/?view&did=7125>

(OTS) had no choice but to seize and sell WaMu to the more stable JPMorgan Chase, representing a \$1.9 billion sale. Although this sale was somewhat controversial, with opponents arguing that the government should have simply “let the bank fail,” the OTS did not have a realistic choice in the matter, not wanting to risk completely exhausting the \$45 billion Deposit Insurance Fund.

It is without a doubt that the banks’ increasing tolerance for risk, due to government guarantees, is what both undermined this specific institution, and shocked the entire global financial system. “Its fixed rate mortgage originations fell from 64% of its loan originations in 2003, to 25% in 2006, while subprime, Option ARM, and home equity originations jumped from 19% of the originations to 55%.”²¹ Furthermore, WaMu’s subprime securitizations, facilitated by its subprime lender, Long Beach Mortgage Corporation, grew over six times, increasing to \$29 billion in subprime securitizations in 2006 and \$42.6 billion in Option ARMs (Adjustable-Rate Mortgages, the flagship product of the bank).

Not only did WaMu shift its loan portfolio to a drastically riskier one, but engaged in clearly questionable, if not downright unethical lending practices that compounded the effects of its portfolio. WaMu would qualify high risk borrowers for loans they clearly could not afford and terms for interest rates they did not understand. Many of these loans originated by Long Beach were short term, hybrid adjustable rate mortgages, referred to as “2/28,” “3/27,” or “5/25” loans, all of which were 30-year mortgages. These would advertise the low fixed “teaser rate,” which would then change to a higher floating rate after a certain number of years (the numerator in each of the aforementioned fractions). Long Beach and WaMu would qualify

²¹ Ibid

borrowers based on whether they were able to afford the teaser rate rather than the higher adjustable rate. In certain cases, WaMu would not even verify the borrower's income when issuing them a loan. These are what became known as "NINJA" loans (No-Job, No-Income) and became a popular product for lenders throughout the country. With the knowledge that these loans would be insured by Fannie Mae and Freddie Mac, WaMu and others were clearly incentivized to issue as many loans with high interest rates as they could, eventually recuperating the entire principal and collecting interest until the borrower's inevitable default. WaMu and others "designed compensation incentives that rewarded loan personnel for issuing a large volume of high risk loans, valuing speed and volume over loan quality."²² This problem plagued the bank from the C-Suite all the way through individual loan officers that would meet with the families that purchased mortgage loans.

In an additional attempt to mitigate the bank's exposure to risk, WaMu would securitize and sell bundles of these high-risk mortgages to investors on Wall Street. In January 2005, a proposal presented to the WaMu board of directors that became the basis for the bank's high-risk strategy. The proposal included a calculation that showed a dramatic improvement in profitability with this new strategy, given both the collection of higher interest payments and the ability to securitize and sell these bundles in the form of Mortgage-Backed Securities ("MBSs") at higher prices.²³ The memorandum to the Board noted that "Our primary financial

²² Ibid

²³ "Higher Risk Lending Strategy 'Asset Allocation Initiative,'" submitted to Washington Mutual Board of Directors Finance Committee Discussion, JPM_WM00302975-93, Hearing Exhibit 4/13-2a.

targets for the next five years will be to achieve an average ROE [Return on Equity] of at least 18%, and an average EPS [Earnings Per Share] growth of at least 13%.”²⁴ These high-risk MBSs paid a much higher coupon than similarly-rated securities. This was due to the higher risk associated with these underlying mortgages, but that risk was thought to be diversified away, as these bundles were mixed with highly-rated AAA and AA rated loans. The great fallacy, however, was that the ratings agencies were misrepresenting the quality of these mortgages to appease their customers (i.e. WaMu and other lenders). It is believed that “The failure of ratings agencies to properly price the risky securities at the heart of the financial crisis has been attributed to conflict of interest (being paid by the issuers of the assets they are rating) and shopping for the best rating (get more than one rating, then only make public the highest one).”²⁵ However, economists argue that these incentives have always been in place. It was both the timing and the complexity of the assets being rated that contributed to the misrepresented quality of MBSs. Supposedly, “When the assets are very simple, risk assessment is not very complicated and the dispersion of ratings across agencies is very low. Thus, there is no incentive to shop around. In addition...people outside the agencies can independently check and verify the ratings easily so any manipulation of the ratings would be easy to discover, and the revelation that their ratings are inflated would damage their credibility and hence their business.”²⁶ The complexity of the newly-formed assets created a proverbial don’t-ask-don’t-

²⁴ 6/1/2004 Washington Mutual memorandum from Kerry Killinger to the Board of Directors, “Strategic Direction,” JPM_WM05385579 at 581.

²⁵ <https://economistsview.typepad.com/economistsview/2009/03/why-did-ratings-agencies-fail.html>

²⁶ Ibid

tell situation between the ratings agencies and the banks. Although the banks were somewhat aware that many of the mortgages comprising the securities were not sound, they were able to hide this within the “diversity” of the securities. On the other hand, the ratings agencies felt comfortable justifying their misrepresentation of the asset quality by accepting diversification as an explanation. Thus, banks were unaware of the total exposure to risk they took on by owning these assets, and agencies had an excuse to keep the banks happy and preserve their clientele. The following chart shows the typical capital structure of a Mortgage-Backed Security and the investors who owned part of each tranche:

Selected Investors in CMLTI 2006-NC2

A wide variety of investors throughout the world purchased the securities in this deal, including Fannie Mae, many international banks, SIVs and many CDOs.

	Tranche	Original Balance (MILLIONS)	Original Rating ¹	Spread ²	Selected Investors
SENIOR 7.8%	A1	\$154.6	AAA	0.14%	Fannie Mae
	A2-A	\$281.7	AAA	0.04%	Chase Security Lendings Asset Management; 1 investment fund in China; 6 investment funds
	A2-B	\$282.4	AAA	0.06%	Federal Home Loan Bank of Chicago; 3 banks in Germany, Italy and France; 11 investment funds; 3 retail investors
	A2-C	\$18.3	AAA	0.24%	2 banks in the U.S. and Germany
MEZZANINE 21%	M-1	\$39.3	AA+	0.29%	1 investment fund and 2 banks in Italy; Cheyne Finance Limited; 3 asset managers
	M-2	\$44.0	AA	0.31%	Parvest ABS Euribor; 4 asset managers; 1 bank in China; 1 CDO
	M-3	\$14.2	AA-	0.34%	2 CDOs; 1 asset manager
	M-4	\$16.1	A+	0.39%	1 CDO; 1 hedge fund
	M-5	\$16.6	A	0.40%	2 CDOs
	M-6	\$10.9	A-	0.46%	3 CDOs
	M-7	\$9.9	BBB+	0.70%	3 CDOs
	M-8	\$8.5	BBB	0.80%	2 CDOs; 1 bank
	M-9	\$11.8	BBB-	1.50%	5 CDOs; 2 asset managers
	M-10	\$13.7	BB+	2.50%	3 CDOs; 1 asset manager
	M-11	\$10.9	BB	2.50%	NA
EQUITY 1%	CE	\$13.3	NR		Citi and Capmark Fin Grp
	P, R, Rx: Additional tranches entitled to specific payments				

¹ Standard & Poor's.

² The yield is the rate on the one-month London Interbank Offered Rate (LIBOR), an interbank lending interest rate, plus the spread listed. For example, when the deal was issued, Fannie Mae would have received the LIBOR rate of 5.32% plus 0.14% to give a total yield of 5.46%.

SOURCES: Citigroup; Standard & Poor's; FCIC calculations

²⁷ Mortgage-Backed Security Composition

On the surface, the asset appears to be well diversified to yield both high cash flows from the lower-rated BB and BB+ tranches of debt, exemplified by the high spreads (relative to LIBOR).

²⁷ <https://www.govinfo.gov/content/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf>

As it turns out, mortgages rated as highly as AA would eventually turn delinquent and default. The diversification safety net did not exist whatsoever. Investors did not know what they were purchasing, agencies were misrepresenting the products being sold, and lenders continued to invest in increasingly risky mortgages and securitizing them. With the benefit of hindsight it seems as though Washington Mutual's downfall was, at the very least, inevitable.

Unfortunately for Americans, while WaMu was not "too big to fail," it was big enough that its failure impacted the lives of millions of households. Once a critical mass of individuals began to default on their mortgages, WaMu and other lenders became unable to recover their losses, even with the assistance of Fannie Mae and Freddy Mac. The entire housing market plummeted, and home values reached incredible lows. This was something leading economists, the American government, and even experts like Ben Bernanke and Timothy Geithner thought impossible. Housing had been an industry that had not only been stable, but was thought to continue to be going up, perhaps forever. The housing "bubble" is one of several we turn to throughout history to help explain other bubbles and market crashes. Once the housing market crashed, it was inevitable that all of Wall Street would follow, and the shocks from the crash would be felt throughout the entire global capital markets.

Compounding Effects: Derivatives and CDOs

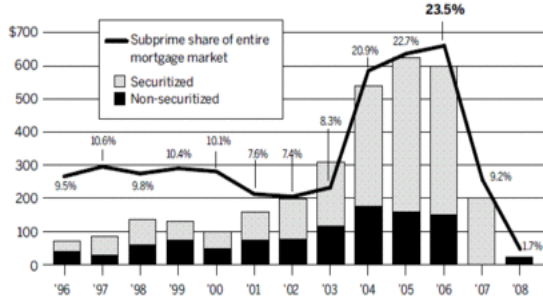
The following images, both from the Financial Crisis Inquiry Commission Report, reflect subprime mortgage originations and mortgage delinquencies, respectively, from the late 1990s through the late 2000s. We see a clear effect from one graph to the next. The Subprime Mortgage Originations graph displays a stark increase in number of subprime loans issued

beginning in about 2003 (when the government decided to provide the subsidy to lenders in an effort to increase national home ownership rates). After a spike in 2006 at 23.5% subprime share of the entire mortgage market, the vast majority of which were securitized and sold to Wall Street, the number of subprime mortgage originations fell drastically. At the same time, there was a dramatic spike in Mortgage Delinquencies by Loan Type across all types of loans, but especially in subprime adjustable and fixed rate mortgages.

Subprime Mortgage Originations

In 2006, \$600 billion of subprime loans were originated, most of which were securitized. That year, subprime lending accounted for 23.5% of all mortgage originations.

IN BILLIONS OF DOLLARS



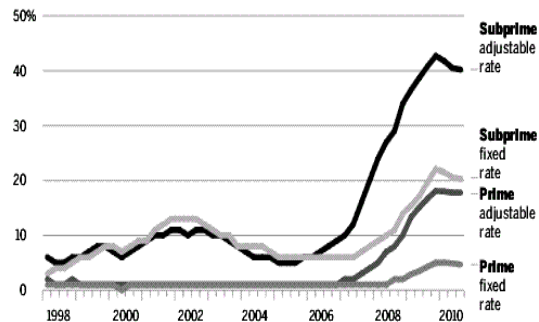
NOTE: Percent securitized is defined as subprime securities issued divided by originations in a given year. In 2007, securities issued exceeded originations.
SOURCE: Inside Mortgage Finance

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Mortgage Delinquencies by Loan Type

Serious delinquencies started earlier and were substantially higher among subprime adjustable-rate loans, compared with other loan types.

IN PERCENT, BY TYPE



NOTE: Serious delinquencies include mortgages 90 days or more past due and those in foreclosure.
SOURCE: Mortgage Bankers Association National Delinquency Survey

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We observe a clear causal relationship between subprime origination and delinquency (and ultimately default) of these mortgages. To make matters worse, these loans were securitized, bundled, and sold to investors who expected that the cash flows of the underlying mortgages would produce significant returns to the investors. It is undoubtable that derivatives based on these mortgages amplified to the impact of the housing crisis, causing a global recession.

The Conclusions of the Financial Crisis Inquiry Commissions note that there were three primary ways in which Over-The-Counter (“OTC”) derivatives, or derivatives which are privately

²⁸ Ibid, 70

²⁹ Ibid, 217

negotiated and traded without any sort of exchange, contributed to the crisis in three important ways. “First, one type of derivative—credit default swaps (CDS)—fueled the mortgage securitization pipeline. CDS were sold to investors to protect against the default or decline in value of mortgage-related securities backed by risky loans.”³⁰ A credit default swap is simply a contract that offers insurance on a bond or loan in the case that it fails. AIG, for example, sold \$79 billion worth of CDSs. These banks and lenders thought the housing market would never fail, and as such, were happy to sell as many swaps as they possibly could, believing they would simply collect interest payments on the swaps into eternity. However, when the housing market did eventually collapse, these banks were so over-exposed on their swaps that their liquidity was drained unlike ever before. The 2015 film *The Big Short* depicts hedge fund manager Michael Burry going from bank to bank on Wall Street buying as many credit default swaps as he could, affirming his bet that the housing market would collapse. When these banks had to pay out on their swap losses, they had to be bailed out by the government given extreme liquidity issues and Burry, alongside a few others, made hundreds of millions of dollars on their bet.

The second way derivatives contributed to the exacerbation of the Crisis was the fact that “CDS were essential to the creation of synthetic CDOs. These synthetic CDOs were merely bets on the performance of real mortgage-related securities. They amplified the losses from the collapse of the housing bubble by allowing multiple bets on the same securities and helped spread them throughout the financial system.”³¹ Again, we see the belief that the housing

³⁰ Conclusions of The Financial Crisis Inquiry Commission, xxiv

³¹ Ibid, xxiv

market would never fail drastically amplifying the Crisis. As if CDOs would not have done enough damage on their own, the creation of a speculative tool allowing institutions to bet on CDOs, which were already betting on underlying mortgages, was an incredibly unfortunate thing. Goldman Sachs alone created, packaged, and sold \$73 billion worth of synthetic CDOs between 2004 and 2007. These CDOs referenced over 3,400 mortgage securities, with 610 of them being referenced at least twice. The bet that the housing market would never fail proved to be a disastrous one, and one that we must consider when developing new financial instruments in the future.

Finally, the fact that lenders, and AIG in particular, were not required to put aside capital reserves for protection against the sale of its derivative products, cost the government dearly. The Inquiry Commission noted that “The government ultimately committed more than \$180 billion because of concerns that AIG’s collapse would trigger cascading losses throughout the global financial system. In addition, the existence of millions of derivatives contracts of all types between systematically important financial institutions—unseen and unknown in the regulated market—added to uncertainty and escalated panic.”³² The government frankly could not let AIG fail, as the resulting effects on the markets would have been irreversible. AIG would have never created these derivative tools in the first place if it did not think the housing market would not fail. While it is easy to blame a lack of regulation in the case of AIG (i.e. capital requirements for liquidity purposes would have prevented the collapse), it is important to remember that if the government had not created these guarantees on loans in the first place,

³² Ibid, xxv

and believed itself that the housing market was strong, AIG would not have been doing what it felt it needed to in order to maximize its own efficiency as a financial institution.

An Alternative to Increased Regulation: Revisiting the Efficient Frontier

It is clear that increased regulation of institutional lenders and securitizing agents in the lead up to the Crisis would have helped prevent such a disaster. This paper has also shown that had the government not issued the subsidies they did to lenders, the extreme results of the Crisis could have also been prevented. The question now remains as to which solution is best. The Efficient Frontier Model explains that investors (in this case, lenders) attempt to optimize given the constraints that exist on their portfolios. While we know that subsidies that created moral hazard shifted the curve up and to the left, causing lenders to redesign their portfolio composition, increased regulation would also shift the curve, but down and to the right. Not only does this mean that lenders have to re-optimize their portfolios, but they are unable to issue the same number of loans they otherwise could have without the introduction of an outside agent. This would result not only in less profit for banks and other lenders but lower homeownership rates. It is important that low income Americans have some sort of vehicle to invest in (typically a home) to help them escape poverty traps that consistently oppress them. The optimal solution ends up being a more hands-off approach from the government in the affairs of institutional lenders, especially those that issue mortgages and securitize those mortgages. This way lenders will arrive at a natural optimal portfolio that allows for increased homeownership without the negative side-effects. While some regulation is always necessary

to prevent abuses like predatory lending, governments ought to be careful about issuing subsidies that do more harm than good to our financial system.

Economists, politicians, and academics alike have consistently attributed the causes financial crisis to this aforementioned lack of regulation. When the time came to bail the Wall Street banks out, the media broadly portrayed the US taxpayer as the major loser following the Financial Crisis. Americans felt that they were the ones paying for the excessive greed and sometimes illegal practices of finance professionals. However, this story is often told incorrectly. It was not the greed of Wall Street, but the sheer lack of foresight from the government, when deciding to issue particularly dangerous subsidies, that was the original party at fault. In this sense, we can trace the exacerbation of the Crisis all the way back to the Housing and Community Development Act of 1992. While the government had noble intentions, wanting every citizen to be able to live the American Dream of owning their own home, they did not correctly predict the cascade of mistakes that would follow. It is for this reason that we can conclude the government ought to simply involve itself less when it comes to the regulation of financial institutions. Past attempts to improve the economy have been largely “hit or miss,” but the mistakes made in the lead up to 2007 are simply unforgivable. It is the professionals that have worked in the industry their whole lives that understand it best and will naturally regulate themselves if given more freedom. This would create the perfect balance of competition, a high ceiling for success, and self-regulation that would produce net-benefits for all of society.

Indeed, market failure is a very real phenomenon that requires government intervention to solve. However, the 2007 Financial Crisis was not the result of market failure,

but rather a showcase example of clear-cut government failure. There will probably always be debate surrounding the role of government in the financial industry but it is nevertheless important to acknowledge both sides. Take, for example, the Volcker Rule, which “bans banks from most trading or speculating unless they are doing so on customers’ behalf. Proponents say the rule is designed to rein in reckless risk-taking at taxpayer-insured banks, but conservative critics complain that it is unduly burdensome to comply with, and deprives banks of legitimate moneymaking opportunities. They also say it has harmed liquidity—the ability to easily buy or sell—in certain financial markets.”³³ While many believe that less issuance of subsidies will do more to discourage moral hazard than increasing regulation, there is absolutely no doubt that less subsidies would lead to more efficiency for financial institutions. With the ability to act almost freely, firms are not deprived of moneymaking opportunities, nor are they incentivized to act irrationally or take on too much risk. Thus, decreasing the amount of subsidies would have been far more efficient, for all parties involved in the lead up to the Crisis, than increasing regulation.

Future Implications

When thinking about the future of the global financial system, both in the U.S. and abroad, it would be ideal for governments to simply not interfere with the practices of mortgage lenders for the benefit of all parties. While this is not necessarily the prevailing viewpoint held by economic and political historians, it is undoubtedly one that needs to be

³³ <https://www.marketwatch.com/story/financial-regulation-reign-in-the-banks-or-let-the-market-work-2017-05-22>

considered by governments when thinking about what lies ahead. With talks of an impending recession and the recent inversion of the yield curve,³⁴ it becomes all the more important we consider the agents propagating moral hazard in our economy today. While it is true that moral hazard is a natural phenomenon that affects us all when we no longer have to bear the downside cost associated with risk, there are certainly actions we can take to prevent putting ourselves in such a position.

The aforementioned being considered, the Federal Reserve still plays a critical role in controlling the pace of our economy and making sure things stay in check. Should there be a recession, it will be paramount that the Fed raise interest rates at the right time (following said recession) to stimulate borrowing and spending in the economy, and before the economy gets too accelerated, raise those rates back to their previous level. The government does and should play a role in setting the bounds that a free market should operate in. We need to correct market failure, make sure actors play fairly by the rules we vote on, and control rates, something only accomplished by the government. Beyond that, however, we must realize the benefits of free markets and financial self-regulation. There ought to be natural winners and losers, and natural consequences for the actions of individuals and firms. Creating harmful financial products like the synthetic CDO on a market that may or may not be a bubble ought to have dire consequences. However, it is unlikely these would ever be created were it not for the government intervening in the affairs of financial institutions in the first place. We need to allow firms to optimize under natural constraints of the market, rather than force them into a

³⁴ <https://www.washingtonpost.com/business/2019/08/14/recession-watch-what-is-an-inverted-yield-curve-why-does-it-matter/>

set of circumstances they will only try to circumvent, harming everyone in the process. While this is not always an easy discussion to have, there is a true optimal solution to the problem of the creation of moral hazard in the financial markets.

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