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A Closer Look at the Necessity of Managing Monetary Policy Expectations

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A CLOSER LOOK AT THE NECESSITY OF
MANAGING MONETARY POLICY EXPECTATIONS

By

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A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Finance
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ABSTRACT

Monetary policy changes that are unexpected by the investing public can generate great volatility and illiquidity in the equities market, and therefore may severely compromise the Federal Reserve's ability to control the economy. Given the investing public's power, their fear of uncertainty, and their impulsive nature to create and act upon uninformed expectations, it is imperative that the Federal Reserve uses any and all communication about monetary policy with the purpose of further advancing their stability objectives.

Initially, the Federal Reserve felt that changes in monetary policy were most effective if decided and implemented in private however over 50 years after its establishment, Ben Bernanke began to realize the power of transparency and communication. Given how recently its power was recognized and utilized, it is still a relatively new topic with various facets that have yet to be explored. This paper will carefully analyze these different facets of transparency. First it will explain why a lack of communication was originally considered to be the most effective way to implement monetary policy. Next, it will explore the relationship between the investing public's power and their need for communication. And lastly, it will attempt estimate the best way to use communication to the Federal Reserve's benefit, with special attention to the recent financial crisis of 2008 and how Ben Bernanke handled it. These results will reiterate the value of transparency between the Federal Reserve and the investing public about target federal funds rates and expected inflation, which will ultimately allow them to work together to achieve the same objectives.

DEDICATIONS

To my family, thank you for giving me the opportunity to participate in this program and the encouragement to finish it

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To my friends, thank you for supporting me throughout this whole process

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INTRODUCTION

THE ROLE OF THE FEDERAL RESERVE

Before we go into detail about the Federal Reserve's use of communication it is first necessary to completely understand their role in the economy and the role of communication independently. Often times, the Federal Reserve's Monetary Policy is confused with Fiscal Policy because changes in both have significant macroeconomic implications, however they are quite different. Fiscal Policy is only controlled by the government and can be explained as any change in tax and/or spending policies of the government as well as regulatory policies. These changes are decided by Congress and the Administration, and are funded by the federal budget created from taxation. They also may issue notes and bonds to the public to attempt to finance deficits necessary to implement fiscal policy (Heakal).

The government's fiscal policy can be very useful in the long run. The decision of where to allocate and distribute funds can incentivize participants in the economy whose actions then directly impact GDP, economic growth, and the labor market both in the short run and the long run.. Since fiscal policy is funded through tax policy, it is considered a very important since it can impede economic development while attempting to spur it. It clearly has the ability to affect spending patterns and spur economic growth, however in order to work best it should be used in tandem with Monetary Policy.

The Federal Reserve uses Monetary Policy to influence the state of the macroeconomy in hopes of controlling inflation and reaching full employment, which ultimately fulfills their goals of stable economic growth. In order to reach that objective, the Federal Reserve has two main tactics that it may employ. They may use Monetary Policy to alter the federal funds rate and they also have the ability to print more money and purchase large amounts of bonds to change the supply and demand of money.

Changing the federal funds rate, or the rate which banks charge each other for short-term loans, will ultimately affect short-term interest rates. Long-term rates can be impacted through the purchase of long-term Treasury securities referred to as Quantitative Easing (QE). Short-term and long-term interest rates play a huge role in influencing the stock market and the economy as a whole due to one crucial factor; when interest rates are high and it costs more to borrow money, people and companies alike are less likely to borrow money and make investments (Bernanke, Money, Interest Rates, and Monetary Policy). This is clearly a very powerful tool because the more money that is exchanged in the system, the more jobs are created/available, and the more growth is spurred in the economy.

Given that a change in money supply can so largely affect whether people choose to invest in the market and ultimately spur growth in the economy, one would think that it would be best to just keep interest rates as low as possible. However there is a big problem with this logic; the lower the interest rates, the more likely inflation is to occur (Rand). This is where the Federal Reserve's dual objective comes into play. Congress established their two goals to be to reach

maximum employment and price stability. Both components have an inverse relationship and may not reach its full potential without negatively affecting the other.

THE ROLE OF COMMUNICATION

The effectiveness of the policy itself, which is to be communicated, will not be discussed. The debate on whether it is best to focus on minimizing unemployment rates or stabilizing economic growth will never end. While Republicans generally believe it is best to promote stable economic growth, Democrats are more concerned with lowering unemployment rates, and there is not enough research to conclusively support one way or the other. That is the focus of normative economic policy: what is the best tradeoff among competing objective? Therefore, this paper will only focus on the transparency of the policy itself. There are three types of transparency that must be handled; goal transparency, knowledge transparency, and operational transparency.

Goal transparency refers is the most important type. This refers to the Federal Reserve being open about their target inflation, target unemployment and target interest rates. Information about those values will allow the public to feel safe when investing their money, whether the news is good or bad. Knowledge about where the economy is headed creates consumer confidence that will allow the Federal Reserve to work together with the public to ultimately reach their joint objectives (Swanson).

Transparency about what the Federal Reserve knows and/or wants is so important because it creates trust between the public and the Federal Reserve. Often times, the Federal

Reserve is able to predict what will happen to the economy next, whether there is a shock or a growth spurt coming. Although it is very easy to communicate about a possible time of growth because it will only serve to further improve the economy, it is most important to communicate when economic downturn is right around the corner because if people are surprised by it then they will no longer trust the Federal Reserve and be very hesitant to take any sort of investment risk in the future, even when the economy is doing well (Bernanke, Kuttner).

The last form of transparency is operational transparency, which refers to openness about how the Federal Reserve plans to reach their objectives, given their knowledge about the current state of the economy. This could be openness about any changes in federal funds rate, Treasury bond purchases, and more.

In order to be considered fully transparent, all three forms of transparency must be employed together. This paper will further analyze how this transparency has been used in the past, the role of it, and what the correct level of communication ultimately should be.

THE HISTORY OF PRIVATE DECISIONS

HOW IT WAS DONE BEFORE

Although the Federal Reserve has been extremely transparent about their activities recently, that has not always been the case. When Ben Bernanke became the Chairman of the Federal Reserve in 2006, he revolutionized how the central bank ran its operations through open communication because right before his tenure, transparency wasn't acknowledged as being effective.

Previously, meetings were held in private and little to no communication was made to the public about changes. Investors were left in the dark about future expectations and therefore caught by surprise when significant economic changes took place. This can hurt the economy significantly because that caused investors to be more hesitant despite the Federal Reserve telling them that it was okay to get back into the markets.

WHY IT WAS ACCEPTED

There are two main theories supporting monetary policy without transparency. The first is that the Federal Reserve just knows best and operates better by keeping the public in the dark; this theory resides strongly with Alan Greenspan. This belief that he alone was able to directly influence the economy holds the underlying implication that the reaction of the public was not

powerful enough to make a significant difference, or get in the way of reaching his macroeconomic objectives.

This assumption that the investors' reaction to policy changes will not affect the economy is supported by the rational expectations model, which was developed by John Muth. This model believes that investment decisions are made based on current expectations for the future, which are correct estimates for the future. Numerous experts in behavioral finance, strongly disagree with this assumption and feel it is outdated.

Disagreements about the accuracy of the rational expectations model are valid because many experiments have found that individuals over-estimate their ability to predict the economic future, and they are too influenced by emotions when making decisions (Rustamli & Abbas). Both of these facts clearly show that people cannot be trusted to make rational expectations about the future, therefore a lack of communication could be very detrimental.

The second theory as to why a lack of communication between the Federal Reserve and the public may be best puts emphasis on the "element of surprise." This refers to the Federal Reserve predicting how the markets will react and using it to their advantage. For example, if they announce out of nowhere that interest rates have dropped drastically, investors will flood the market with investments, which will spur economic growth. Had the investors not been surprised by this information then they may not have reacted so drastically (Matthews). So clearly, this is a very useful tool if the Federal Reserve uses it to their advantage, however it carries negative implications.

No investor will complain about good surprises, when they didn't expect to get so much return, however if they are surprised by a loss then they will search for a scapegoat to blame, and

all fingers will point to the Federal Reserve. An example of this happening would be if the Federal Reserve were to significantly raise interest rates overnight without any warning. People would be very upset because they would not be earning as much money on their investment, and therefore they would be unlikely to trust the Federal Reserve again when they say that interest rates will stay low (Bernanke, Woodford).

While it is undeniably effective to surprise the public if performed correctly, it is a very dangerous method because doing so will compromise the credibility of the Federal Reserve and therefore make the public lose their trust in them, which they need to effectively execute other policies.

NECESSITY OF COMMUNICATION

REACTION TO UNCERTAINTY

Uncertainty is highest right before a Federal Reserve or Federal Open Market Committee announcement. This uncertainty can be measured by volatility in the stock market. On days right before an announcement about monetary policy is made, the difference between the opening price and closing price can be quite drastic, however the instability generally decreases after the announcement has been made (Swanson 2006). The biggest change is seen when announcements about inflation or target federal funds rates and QE are made. This makes sense because those two factors are the most influential for the market and therefore the economy.

To come to that conclusion, statistical evidence was taken from S&P 500 prices from 2005 to 2014 and matched up according to dates of significant Federal Reserve announcements. The difference between opening and closing prices were calculated and comparisons were made against days of announcements and days after announcements. It shows that despite whether the announcement was unexpected or not, the fact that it was communicated was able to decrease the volatility that was present leading up to the announcement (Bauer).

Volatility is usually not a good characteristic for the stock market because it creates unnecessary risk. Generally speaking, people are risk-averse and would prefer returns to be predictable; therefore if markets were to be more stable it would promote growth. It is clear that

communication from the Federal Reserve is able to stabilize the markets by decreasing uncertainty.

THE POWER OF THE PUBLIC

Despite the Federal Reserve's ability to control the money supply, coordinated trading by institutional investors who manage trillions of dollars and driven by their own economic forecasts can move markets in ways that even the Federal Reserve cannot control. The public will act upon expectations, whether they are directly from the Federal Reserve or ones that they had to make up on their own. Given the evidence that has been analyzed above, investors have ultimate power over markets. They are able to cause volatility or ease it simply based on their euphoria for profits or their fear of losses. Even the best matador cannot stand against a stampede of bulls.

What has yet to be explored is the ability of the stock market to influence the economy. This relationship between the stock market and the economy is very important because it raises the question of whether loose monetary policy that inflates asset prices is sufficient to trigger economic growth. The reverse causality is one that is easier to understand. Namely, a downturn in the economy will cause stock markets to go down, but the Federal Reserve's expectation is that the reverse is also true.. If the stock market goes down for example, it will have extremely negative implications for the economy.

This is known for certain because decreases in the stock market mean that less people are borrowing and making purchases. Borrowing money and making purchases are the two most important factors for economic growth because consumer spending accounts for about 70% of GDP. Even the expectations of a downturn in asset price, both debt and equity, would cause people to be safe and save their money, which will consequentially make the economy suffer because it will cause unemployment to rise.

HOW TO BE TRANSPARENT

The maximum transparency is founded upon four principles; the clarity of objectives, open communication about the formation and implications of policy decisions, publicly available information about the central bank, and accountability of integrity (IMF).

The purpose of an implemented change in monetary policy should be readily available to the public. To do this, the Federal Reserve should publicly disclose any and all information about the policy. This communication of objectives can be as specific as minute basis point changes in interest rates, or as basic as the role of the central bank in comparison to the government.

The decision making process of the Federal Reserve should also be publicly disclosed. Information about the reasons for changes, how decisions were made, and why must be disclosed in a public and timely matter. Any change should be reported as soon as possible, but minor changes or even follow-ups on the progress of policies should be periodically addressed. This will increase consumer confidence in the Federal Reserve and avoid market moving trades in equity and debt markets based on unfounded or imperfect assessments of Federal Reserve Policy that usually accompanies opaque policy

The hFederal Reserve's balance sheet and open market operations must also be publicly available. Just as any other company or bank must publish their account information, so too, must the central bank. This includes publishing information about any major development in the

financial system, such as how any new program/policy will impact banks, financial institutions, markets, and the economy as a whole.

The Federal Reserve should have spokesmen that periodically address the public, updating them about the conduct, performance, and outlook of their policies. During these appearances, discussion about any of the above mentioned public information may also be elaborated on, such as balance sheet information and market operation as well as changes in overall economic policy and monetary targets. If there is any question about certain figures or discrepancies, they should be addressed.

These are all suggestions from the International Monetary Fund to increase transparency. The above principles will inarguably keep the public more informed about the actions of the Federal Reserve, and this paper will next explain the 2008 financial crisis and the role of communication within it.

EXPLAIN THE 2008 FINANCIAL CRISIS

The housing market crash of 2008 has had severely negative implications on housing prices, unemployment rates, and ultimately the economy as a whole. The purpose of monetary policy is to avoid or at least limit those negative reactionary responses and promote stable economic growth, with the Federal Reserve focused on inflation and unemployment rates. These should be kept around 2% and below 6.5% respectively. The Federal Reserve strives to do this

mainly by adjusting the Federal Funds Rate, and purchasing treasury bonds through open market operations

Since the crash, the Federal Reserve has implemented many easy money policies, known as Quantitative Easing (buy short-term Treasuries) and the Twist (rebalancing from short to medium term Treasuries), and consequentially has lowered interest rates substantially across the maturity spectrum and increased the money supply available to the housing market by buying mortgages. However, despite these aggressive measures, unemployment rates remain high (especially the U6 measure for the underemployment rate) and the economy has yet to fully bounce back to the stages it was at previously growing instead at an anemic rate of about 2% notwithstanding large deficit spending and significant monetary expansion. This has led many scholars to believe that monetary policy has run its course in restoring the economy, and that fiscal policy is the only way to further stimulate economic growth.

Although the negative economic implications first became evident in 2007, the problem was deeply rooted in the past and dates back to 1992 when FDIC-insured banks were required by the Communities Reinvestment Act (CRA) to offer a percentage of their loans to sub-prime borrowers, or those who are unlikely to pay the loans back.

Financial innovations in the mortgage market facilitated these sub-prime loans. It worked by bringing borrowers and users together, allowing borrowers to make housing purchases on loans with a very low “teaser rate.” This rate would then reset two years later to a higher rate, when either the borrower was ready to take on the higher rate or they were ready to sell the home and earn a profit off of it.

The root of this policy was the “socializing” of the housing market. In the early 90s, politicians felt that it was unfair to only allow the “rich” to benefit from government programs through Freddie Mac and Fannie Mae that facilitated home ownership. They wanted to extend the possibility of home ownership to those with lower income. The requirements of Freddie Mac and Fannie Mae were stretched to accommodate sub-prime borrowers, but it wasn’t until 1995 when an actual metric was applied to this plan. Initially, government regulations required Freddie Mac and Fannie Mae to make as much as 40% of their loans to sub-prime borrowers, but by 2005 the amount of sub-prime borrowers peaked at over 56%.

Each additional sub-prime borrower clearly added a great deal of risk to the FNMA (is this acronym defined earlier – or spell it out) and FMCC(same here) stocks. However despite the amount of untrustworthy borrowers involved, and the huge change in the financial risk of the organization, credit rating agencies failed to inform the public of the dangers in investing in them and kept their ratings at AAA for mortgage-backed securities backed by these sub-prime mortgages.

Then two years later in 2007, when the teaser rates reset to the real rates, all borrowers tried to sell their homes and get out of the housing market at the same time. Home prices fell and defaults on sub-prime mortgages rose; there were no homebuyers in the market, only desperate sellers. The law of supply and demand immediately drove down housing prices and its effect was manifested in the stock market.

Lehman Brothers, a previously strong investment bank, was heavily invested in the subprime mortgages. They were highly leveraged which made them extremely vulnerable to any changes

in the value of their mortgage assets. In the first quarter of 2007, the risk of investing in Mortgage-Backed Securities was becoming more and more apparent as more defaults accumulated. However, despite the instability, the Lehman Brothers CFO, Erin Callan, still felt that the company would be able to contain any losses from it (McConnell, 2012).

August 2007 was an abrupt wake up call for the CFO and company as a whole when they realized the severe miscalculation of the value of the housing market. They tried to take preventative measures but by 2008 their stock fell by 93% and they finally declared bankruptcy (McConnell, 2012). This was one of the first huge indicators that a global financial crisis was in the process of unfolding and its implications would be felt around the world for years to come.

The results were catastrophic. The avalanche of foreclosures pulled poverty rates up to above 14%. Unemployment rates doubled from around 4-5% in 2007 to 10% in 2009. Stock market prices dropped an average of 50%. And banks had to raise their loaning standards, which made borrowing near impossible because they were too scared to take on any more risk given their current fragile states (Perry, 2010).

HOW BERNANKE HANDLED EVERYTHING

Any investor who is knowledgeable enough in the investment field knows that monetary policy directly affects the value of their stock portfolios. The reason for this is clear, the Federal Reserve is able to alter short-term interest rates as well as longer term rates through the QE program, which in turn affects how much people are willing to borrow and lend out. When

interest rates are low, the low cost of money encourages borrowing and the risk of default is lower in comparison when interest rates are high, because of lower interest payments (Hayo, Kutan, & Neuenkirch, 2008).

The Federal Reserve's current position that it will keep interest rates low until the unemployment rate drops to below 6.5% has had a significant effect on long term interest rates. Rates will remain low so long as the Federal Reserve can convince markets that they will continue with their low-rate and easy-money policies. But convincing markets is not always easy, There have been times in the past when the medium-term and long-term interest rates have spiked up because of some announcement Ben Bernanke, the head of the Federal Reserve, makes that does not convincingly convey the Fed's policies.

For example, in February of 2013, Bernanke made an announcement that the economy was doing well which drove the stock market down because to the public, economic growth means that the Federal Reserve will cut back on their easy money policies (Bernanke). People were very hesitant to invest in the market in fear that the Federal Reserve would begin to "taper" its purchases of mortgage backed securities and long-term treasuries.

The only way Bernanke could calm the markets and increase investment was by announcing in March that the Federal Reserve would continue its monthly \$85 billion dollar asset purchases, and it would keep short-term interest rates near zero until the unemployment rate reaches at most 6.5% (Matthews, 2013). This immediately caused markets to recover. By the end of the month the S&P 500 increased 50 points , which is a very significant change in comparison to the usual 10 point change each month(Yahoo Finance).

The above example clearly shows a time when the Federal Reserve's communication affected the stock market positively. However, their communication can be just as powerful in a negative way. On June 9th, 2008, Ben Bernanke made a speech to the public regarding the economic outlook of the country. In the midst of the housing crisis unfolding, he reported that inflation was his main concern (Bernanke).

He referenced the sharp raises in energy prices at the time and said that they were too concerning to ignore. It was made very clear that the Federal Open Market Committee would "strongly resist an erosion of long term inflation expectations." Throughout the entire speech, interest rates were only mentioned once, and there was no dialogue about the potential of lowering them (Bernanke).

By the end of the day, the price of one share of the S&P 500, a general indicator of how the asset market is performing, dropped nearly \$30. The opening price was \$1,273.38 and it dropped all the way to \$1,244.57 (Yahoo Finance). Typically, the stock may change from open to close anywhere from \$0 to \$15, as can be seen in the months leading up to and after that speech was given. A \$30 change in one day is extremely drastic.

One month later, June 15th, 2008 Bernanke appeared before Congress and gave a similar speech. He again cited inflation to be out biggest problem and stated that it is expected to continue to increase both in the short term and in the long term. Even more concerning for the markets, he went on to say that he would increase the standards for borrowing as another precautionary measure against inflation (Bernanke).

The day before that speech was given, July 14th, the S&P 500 opened at \$1,241.61. At the end of July 15th, the day the speech was given, the closing prices dropped all the way down to \$1,214.91.

This is a perfect example of the power of transparency. The fact that he said over and over again that inflation was the main concern in his dual mandate spoke volumes to the investing public and they immediately took their money out of the market. At the time, he should have encouraged borrowing and investments by lowering interest rates and borrowing standards, but the Federal Reserve just wasn't able to see the signs of the recession that was about to occur.

If Ben Bernanke and the Federal Reserve had managed expectations better, markets would not have acted so drastically. The problem is that Bernanke truly felt that inflation was of main concern, when in reality the lack of economic growth that was about to ensue should really have been.

INTERNATIONAL USES OF TRANSPARENCIES

Mark Carney, the head of the bank of Canada during the Housing Crisis, realized how closely related the economic affairs of Canada and the United States were. He was able to correctly predict that the housing crisis was about to ensue and the global implications of it. In March of 2008, when the crisis was first beginning unfold, he used the primary lever in his job and adjusted the short-term interest rates from 4% to 3.5%, which at the time was seen as a very

bold move, given the currently high unemployment ratings and the steady level of demand. It was also considered to be very aggressive because the Bank of Canada usually moves the interest rate in $\frac{1}{4}\%$ increments. He also anticipated a need for monetary stimulus to keep supply and demand balanced and inflation at a steady 2%. These aggressive measures appealed to the investors and allowed them to avoid getting dragged in to our crisis as bad as would have been expected. Throughout 2008 and 2009 he continued to lower interest rates until they reached near zero and pledged to keep them at that rate as long as inflation doesn't rise above 2% (Harrison, March 4, 2008).

Carney used communication to inform the public about what was going on, just as Bernanke did, however his knowledge about what was actually going on far surpassed that of the American Federal Reserve. This shows the importance of timing of communication too, because Bernanke eventually ended up saying the same things Carney said, just a couple months later, however it was much too late for those changes to make a difference. Just two months difference made all the difference and Bernanke just didn't have time to take the preventative measures that the Bank of Canada took, and consequentially the United States experiences a much deeper recession than what it would've had the Federal Reserve been more able to predict the financial future and ultimately lessen the damage it caused the global markets.

CONCLUSION

Which course of action the Federal Reserve should take, is a question that can be answered in a multitude of different ways and the debate about which policy is best is one that will go forever. However what can be said with certainty is that open communication with the public about future objectives and expectations is a very powerful tool that the Federal Reserve may use to her benefit.

The Federal Reserve must be careful about what they choose to disclose because of the profound impact that it has on the market. As can be seen when comparing the United States' economy with that of Canada's in 2008 during the onset of the housing crisis, the public hangs on every word the central bank announces, and they will act upon it.

Given the financial power of the public investing market, it is essential to consider how to manage their expectations in a way that will encourage them to act in accordance with what the Federal Reserve ultimately desires.

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