5-2012

The Impact of Quantitative Easing on Inflation in the United States

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The Impact of Quantitative Easing on Inflation in the United States

By

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An Honors Thesis in partial fulfillment of the requirements for the degree Bachelor of Science in Business Administration in Finance.

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Fayetteville, Arkansas

May 12, 2012

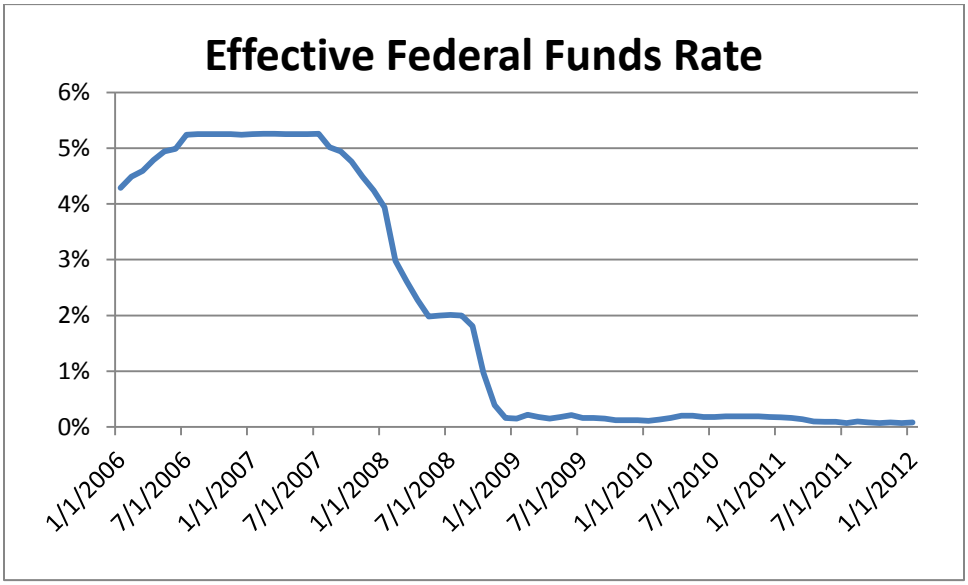
I. Abstract

The purpose of this thesis is to examine the current and potential impact of the Federal Reserve's non-traditional monetary policy known as Quantitative Easing on inflation in the United States. It examines the events and rationale behind the Federal Reserve's policy actions as well as the theoretical implications for inflation. However, theory and reality do not seem to coincide. The Consumer Price Index (CPI) has shown no correlation to what many refer to as the "printing of money" that has occurred during Quantitative Easing. This is in opposition to the basic economic principle of the Quantity Theory of Money which in its most basic form states that "more money chasing the same amount of good will lead to increased price levels." Upon further examination of where the dollars that have been used to purchase treasuries, mortgage backed securities, and other agency debt by the Federal Reserve this thesis finds that the reason for such low inflation statistics is that the money is tied up in the excess reserves of depository institutions. Excess reserve balances of financial institutions now sit at a historical high and if these reserves were to drain into the economy, the inflationary impact could be quite substantial.

II. Introduction

In 2007 and 2008 as markets in the United States were battered by the Subprime Mortgage Crisis, the Federal Reserve began to examine ways that it could stimulate economic recovery. In a period of 10 months the Federal Open Market Committee (FOMC) lowered the federal funds target rate by 60 percent, down to 200 basis points at the end of June 2008. Furthermore, in September 2008 after the largest bankruptcy in United States history, Lehman Brothers, and the potential collapse of other large financial institution looming, the FOMC dropped the federal funds target rate to 0 to 25 basis points.

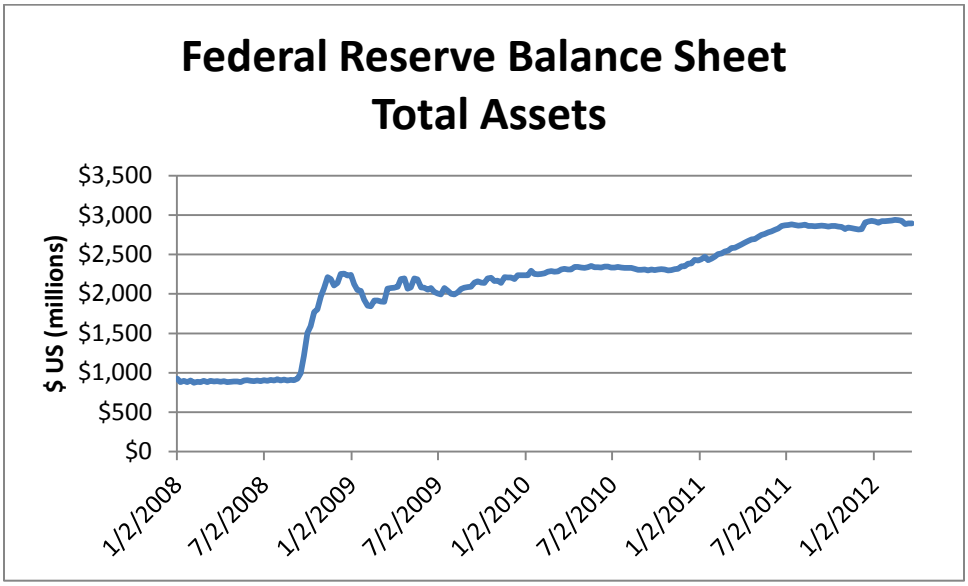
Exhibit 1



Source: St. Louis Federal Reserve Bank FRED system

The Federal Reserve decided that this decrease in the federal funds target rate was not enough to stabilize and stimulate the economy and feared that the United States would fall into another Great Depression. Traditional monetary policy options exhausted, the Chairman of the Federal Reserve, Ben Bernanke, announced in November 2008 that the Federal Reserve intended to purchase up to $600 billion in housing agency debt and agency mortgage-backed securities. It was believed that removing these assets, many of which were toxic, from the balance sheets of financial institutions would help stabilize and restore faith in the financial markets of the United States. However, in March 2009 the Dow Jones Industrial Average Index had fallen nearly 50% year over year to 6500 and the Federal Reserve decided to expand its asset purchases to include long-term Treasury securities valued at up to $1.75 trillion. As seen on the following graph, purchasing this amount of treasury securities would nearly triple the Federal Reserve's total assets, an unprecedented move in the market of the United States.

Exhibit 2



Source: St. Louis Federal Reserve Bank FRED system

The first round of Quantitative Easing may have helped to stabilize the balance sheets of some of the largest financial institutions, but signs of a real recovery were slow to progress and the Federal Reserve believed it need to do more to help stimulate the economy. In a statement released by the FOMC on November 3, 2010 the second round of Quantitative Easing was announced. The official statement released by the FOMC stated "that the pace of recovery in output and unemployment continues to be slow" and "the Committee intends to purchase a further $600 billion of longer-term Treasury securities by the end of the second quarter of 2011, a pace of about $75 billion per month." The committee also announced it would maintain the federal fund rate at 0 to 25 basis points for an extended period of time. Only one member of the FOMC, Thomas Hoenig, voted against the second round of Quantitative Easing because he believed the long-term inflation risk of additional securities purchases significantly outweighed the economic benefits. He describes Quantitative Easing as "a very dangerous gamble**."** The second round of easing lasted until June 30, 2011.

A regression will be utilized in order to estimate the potential impact of the excess reserves of depository institution on inflation in the United States. The three variables that will be included in the regression are the year over year percentage change in CPI, the year over year percentage change in the M2 measure of money supply, and the year over year change in the velocity of the M2 measure of money supply. The results show that in order to maintain inflation at a reasonable level the Federal Reserve must keep banks from draining their excess reserves which could lead to staggering inflation numbers. There are several policies in place to prevent this from happening and the Federal Reserve has also been working to find new strategies to relieve some of the inflationary pressure of Quantitative Easing. The success of these strategies will be paramount to a sustained recovery in the United States, as being too aggressive in removing reserves could destabilize the financial system by harming the balance sheets of banks which have been propped up with excess reserves. On the contrary, removing the excess reserves too slowly could result in excessive inflation.

This thesis will contribute to the literature surrounding the topic of Quantitative Easing and inflation while providing an estimate of the impact that the excess reserves of depository institutions created by Quantitative Easing could potentially have on inflation as measure by CPI in the United States. The introduction will discuss in detail the timing and magnitude of the event that have become collectively known as Quantitative Easing. The literature review will then look at the economic theories motivating the fear that large increases in the money supply can spark inflation followed by an overview of the Federal Reserve's plans for managing the extensive excess reserves present on the balance sheets of financial institutions in the United States. In order to provide a more quantitative view, a regression will then be utilized to give us an equation that can be used to predict inflation as measured by CPI. This is followed by a scenario analysis in which variables such as the amount of excess reserves that leak into the economy and the change in velocity of the M2 measure of money supply are adjusted in order to give a more comprehensive view of the potential impact of Quantitative Easing on CPI.

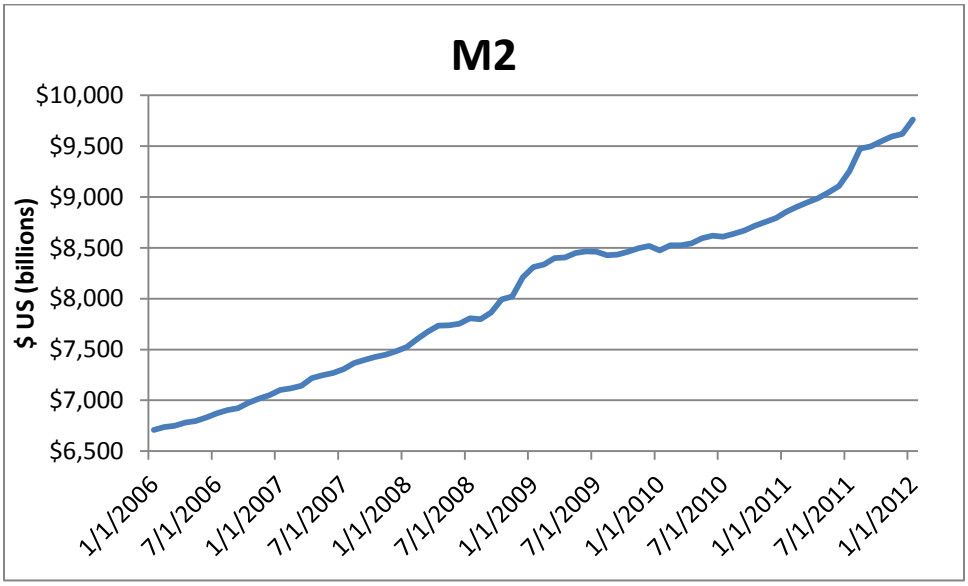
III. Hypothesis

The Federal Reserve's Quantitative Easing program could lead to significant inflation in the United States. While there are many mechanisms that the Federal Reserve has at its disposal, I am certainly concerned that no matter how hard the Federal Reserve tries to limit the leakage of reserves into the economy that some of the reserves will enter circulation and trigger inflation. The following regression will provide an estimate of this potential inflationary effect and help to understand the magnitude of easing that has occurred in the United States.

IV. Literature Review

M2 is a broad measure of money supply and consist of M1 (cash, demand deposits, travelers' checks, and other checkable deposits) plus savings deposits, small time deposits, and money market mutual funds. During Quantitative Easing (November 2008 – June 2011) M2, according to data from the Federal Reserve Bank of St. Louis's FRED system, increased by over US$ 1.2 trillion or 15.4%.

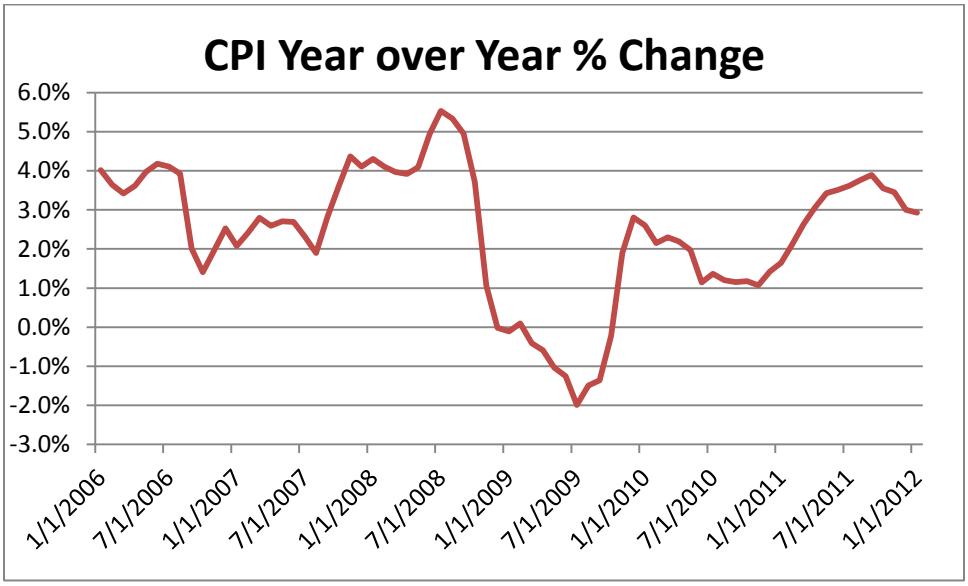
Exhibit 3



Source: St. Louis Federal Reserve Bank FRED system

The money multiplier theory equation is: $\Delta D = (1 / r)\ \Delta R$. In this equation ΔD represents changes in reservable deposits, r represents required reserve ratio, and ΔR refers to changes in total reserves. *The inverse of the reserve requirement in this equation, 1/r, equals the money multiplier (M). In the United States there is a required reserve ratio of 10% in the United States. Thus, M = (1 / .1) = 10. An initial deposit of $1 could result in a maximum of a $10 expansion of the money supply. This has led many to fear that the rapid expansion of the money supply will lead to inflation and further threaten the recovery of the United States economy. The logic behind this reasoning comes to us from the quantity theory of money. Known as the Fisher equation, it states that MV = PT when an economy is in equilibrium and at full employment where: M = average amount of money in circulation, V = velocity of money, P = price level, and T = real value of all transactions. The theory postulates that V and T are constant in the short term thus leading to the conclusion that an increase in M will lead to an increase in P or in other words that the expansion of M2 during Quantitative Easing will lead to inflation. However, if we take a closer look at the data from the most common measure of inflation, CPI, we do not see a spike in inflation during the period Quantitative Easing.

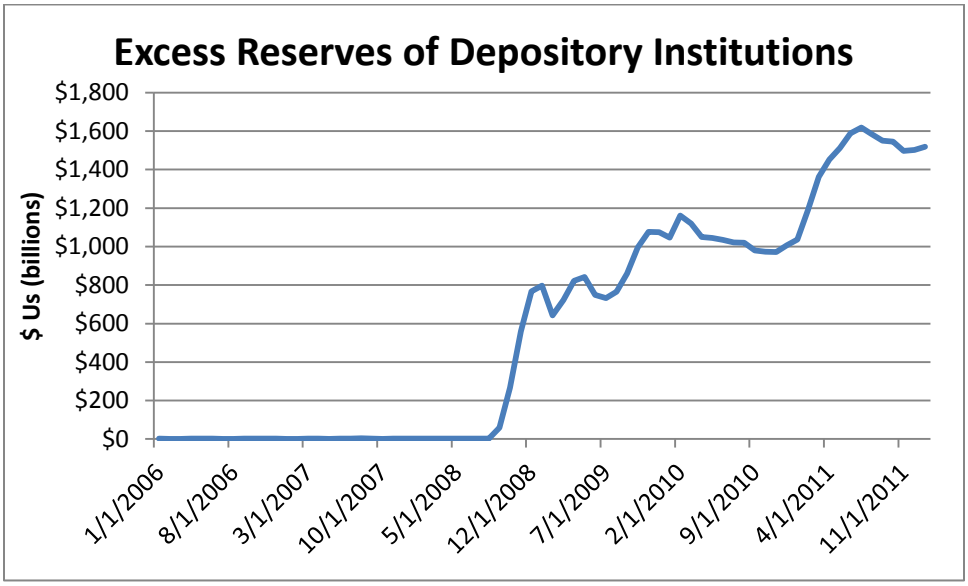
Exhibit 4



Source: St. Louis Federal Reserve Bank FRED system

In fact, using the monthly percentage changes for both the Consumer Price Index and M2 since the beginning of 2006 in a simple correlation reveals that the two variables have been negatively correlated with a value of -11.8%. The stimulative effect on prices from an infusion of dollars into the United States economy that was expected by many has not been seen. The unemployment rate in the United States still sits at an extremely high 8.7% as reported by the Bureau of Labor Statistics and Real GDP Growth for 2011 was only 1.7% year over year. The S&P/Case-Shiller Home Price Index which peaked above 200 in 2006 now rest below 140, over a 30% drop, as the housing market is still struggling to find its footing. The reason that we have not experienced a recovery, even though trillions of dollars have flowed into financial system from the Federal Reserve, is that large portions of the funds have not been utilized by financial institutions and are sitting idly as excess reserves. The next graph illustrates that since the beginning of the Quantitative Easing in November of 2008, the excess reserves of depository institutions has increased astronomically to a total of nearly $1.6 trillion. Compared to the historical amount of excess reserves held by banks in the United States, which is next to zero, $1.6 trillion dollars is an astounding amount. The potential inflationary effect of these excess reserves being pushed through the financial system is extremely large.

Exhibit 5



Source: St. Louis Federal Reserve Bank FRED system

Over time if these large amounts of excess reserves are not drawn down, there could be large amount of price inflation in the United States. There is not much precedent for the Federal Reserve of the United States to use while undertaking the reversal of Quantitative Easing. However, Japan's program of Quantitative Easing can give the Federal Reserve a glimpse at a much simpler type of easing and subsequent tightening of monetary policy. The Bank of Japan used this unconventional monetary policy from March of 2001 through March of 2006. In order to combat deflation in the Japanese economy, the Bank of Japan drove interest rates down to zero, as has been done in the United States, and purchased Japanese Government Bonds on the open market to flood the banking system with excess reserves. From the chart below you can see that in a little over two years excess reserves in the Japanese banking system increased by approximately 28 trillion yen. The Bank of Japan then quickly pulled excess reserves from the system. The total amount of excess reserves fell nearly 25 trillion yen in only a few months. Japan was able to accomplish this because their easing operations had been extremely straight forward and limits had been placed on the amount of various types of financial instruments that the Bank of Japan could hold in order to ensure that when the easing was over, the selling of these instruments would not flood the market. The rapid drawdown of excess reserves kept inflation out of the Japanese economy and although much simpler than the United States current situation, showed that a successful reversal of excess reserve can occur.

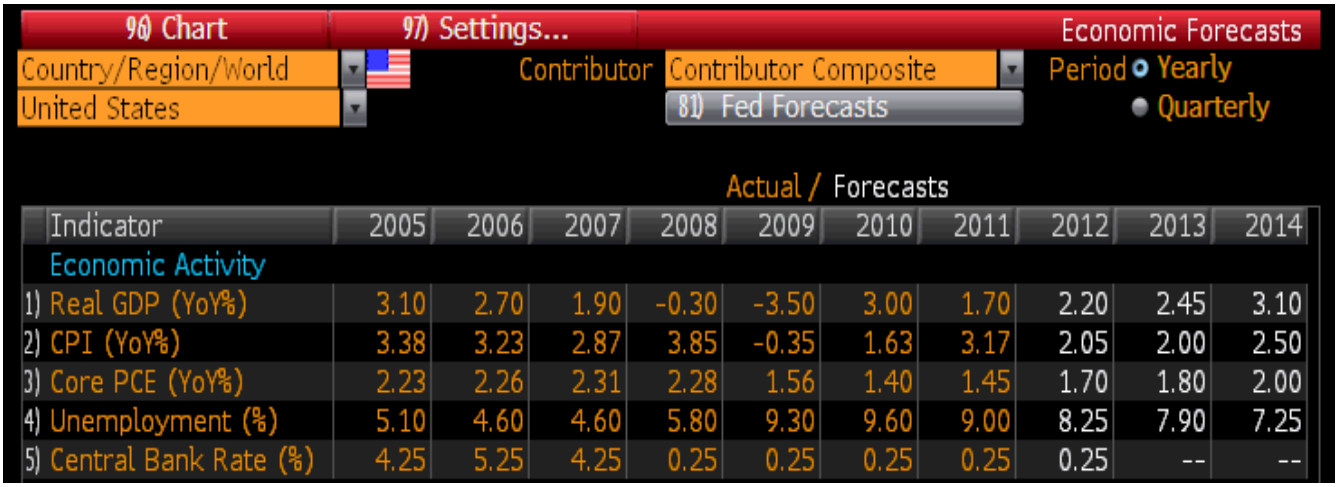
The beginning of the reversal process has yet to unfold in the United States nearly nine months after the completion of Quantitative Easing. It appears that the Federal Reserve believes it can maintain the excess reserves on the balance sheets of the nation's banks for the time being without this leading to increased inflation. In a statement prepared for the Committee on Financial Services of the United States House of Representatives, Ben Bernanke outlined the exit strategy of the Federal Reserve from what he calls "extraordinary lending and monetary policies… implemented to combat the financial crisis and support economic activity. The

following is a list and brief description of all the things mentioned in the speech that could contribute to reversing the excess reserves present in financial markets:

1. **Closing of lending facilities**: use of these temporary programs has already declined sharply and many are set to expire in the near future. At the time of this speech approximately $110 billion was outstanding from these facilities.
2. **Declining exposure to Bear Stearns and American International Group**: exposure to these financial institutions is approximately $116 billion or 5% of the central bank's balance sheet; the Federal Reserve anticipates no losses on these loans and full repayment "gradually over time"
3. **Paying Interest on Excess Reserve Balances**: authority granted in 2008 by Congress; this allows the Federal Reserve to supply incentive for the financial institutions with excess reserves to not invest in money markets and other low yielding financial instruments
4. **Reverse Repurchase Agreements (Repos)**: Federal Reserve sells a security to a counterparty with an agreement to repurchase the security at some date in the future; this drains reserves from the banking system and the recent development of tri-party repos has increased the Federal Reserve's ability to absorb reserves
5. **Term Deposits**: similar to CD's; auctioned off as large blocks of deposits that would provide interest payments on excess deposits while not allowing them to be counted as reserves; in combination with reverse repos the Fed estimates that several hundred billion dollars would be absorbed
6. **Allowing Mortgage Backed Securities and Agency Debt to Mature or be Prepaid**: passive redemption of these should gradually decease reserves of depository institutions

Will these measures be enough to counteract the massive amount of excess reserves that depository institutions hold on their balance sheets? Only time will tell. Looking at the inflation forecast taken from Bloomberg's Contributor Composite Average, consisting of 86 domestic and international financial institutions, we can see that the inflation forecasts through 2014 are moderately low. This indicates a level of confidence in the Federal Reserve's ability to draw down reserves and tighten monetary policy. However, forecasts are not always accurate and over confidence in the ability of the Federal Reserve to manage such a massive issue may render these forecasts irrelevant.

Exhibit 6: Bloomberg Economic Forecast (ECFC)



Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Economic Activity										
1) Real GDP (YoY%)	3.10	2.70	1.90	-0.30	-3.50	3.00	1.70	2.20	2.45	3.10
2) CPI (YoY%)	3.38	3.23	2.87	3.85	-0.35	1.63	3.17	2.05	2.00	2.50
3) Core PCE (YoY%)	2.23	2.26	2.31	2.28	1.56	1.40	1.45	1.70	1.80	2.00
4) Unemployment (%)	5.10	4.60	4.60	5.80	9.30	9.60	9.00	8.25	7.90	7.25
5) Central Bank Rate (%)	4.25	5.25	4.25	0.25	0.25	0.25	0.25	0.25	--	--

Source: Bloomberg LP

V. Methodology

I used quarterly data from January 1985 – October 2011 for my analysis collected from the St. Louis Federal Reserve's FRED system to run a regression. The dependent variable used in the regression is the Consumer Price Index year over year percentage change. The two independent variables included in the regression are the year over year percentage change of the velocity of the M2 measure of the money supply as well as the year over year percentage change in the size of the M2 money supply.

Exhibit 7: Regression Variables

Variable	Description	Frequency	Measurement
CPI	U.S. Consumer Price Index	Quarterly	% Change YoY
M2 Velocity % Change	Velocity of the M2 Money Stock	Quarterly	% Change YoY
M2 % Change	M2 Money Stock	Quarterly	% Change YoY

VI. Results

Exhibit 8: Descriptive Statistics

DESCRIPTIVE STATISTICS			
	M2 % Change	**M2 Velocity % Change**	***CPI***
Mean	5.5%	-0.2%	2.9%
Standard Error	0.2%	0.3%	0.1%
Median	5.6%	0.2%	2.9%
Standard Deviation	2.4%	3.4%	1.3%
Sample Variance	0.1%	0.1%	0.0%
Kurtosis	-65.1%	169.5%	166.1%
Skewness	-19.2%	-98.8%	-37.5%
Range	9.8%	17.6%	7.8%
Minimum	0.4%	-11.9%	-1.6%
Maximum	10.3%	5.7%	6.2%
Count	108	108	108

Exhibit 9: Regression Summary Output

SUMMARY OUTPUT

Regression Statistics	
Multiple R	50.54%
R Square	25.54%
Adjusted R Square	24.13%
Standard Error	0.01
Observations	108

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	0.00	0.00	18.01	0.00
Residual	105	0.01	0.00		
Total	107	0.02			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.02	0.00	4.27	0.00	0.01	0.03	0.01	0.03
M2 % Change	0.22	0.08	2.78	0.01	0.06	0.37	0.06	0.37
M2 Velocity % Cha	0.29	0.06	5.30	0.00	0.18	0.40	0.18	0.40

The p-value of M2 % Change and M2 Velocity Change are both significant at the test size of 5%. This leads me to reject the null hypothesis and conclude that both independent variables have significant relationship with the dependent variable, CPI. The result of this regression is an equation that shows us the relationship between our independent variables and dependent variable:

CPI = .02 + .22 (M2 % Change) + .29 (M2 Velocity % Change)

VII. Scenario Analysis

In order to get a better idea of how the excess reserves of depository institutions as reported by the St. Louis Federal Reserve's FRED system could affect inflation, I created a scenario analysis that incorporates the CPI equation derived from the above regression. First, I calculated the expansion of the M2 measure of money supply if certain level of excess reserves were to enter the economy. I used data from the FRED system to calculate the expansion of the M2 money supply by multiplying the excess reserves by a hypothetical percentage that could leak into the M2 measure of money supply. I then calculated the historical M2 money multiplier (M2 / monetary base) using historical data from the FRED system. Following this I calculated the percentage increase that the excess reserves would cause in the M2 measure of money supply. I did this by taking the historical average of 8.59 and multiplying by the amount of excess reserves then adding it to the current amount of M2 before dividing by the current amount of M2.

M2 % Increase = Current M2 + Excess Reserves (Historical Multiplier) / Current M2

I then plugged these values for the M2 percentage increase and various values for M2 velocity changes into the regression equation to determine potential CPI levels given various scenarios. The results below show us potential CPI:

Exhibit 10: Scenario Analysis

Consumer Price Index							
M2 Velocity Change	% of Leaked Excess Reserves						
	100%	75%	50%	25%	10%	5%	1%
6%	32.9%	25.5%	18.2%	10.9%	6.5%	5.0%	3.9%
5%	32.6%	25.2%	17.9%	10.6%	6.2%	4.7%	3.6%
4%	32.3%	25.0%	17.6%	10.3%	5.9%	4.4%	3.3%
3%	32.0%	24.7%	17.3%	10.0%	5.6%	4.2%	3.0%
2%	31.7%	24.4%	17.0%	9.7%	5.3%	3.9%	2.7%
1%	31.4%	24.1%	16.7%	9.4%	5.0%	3.6%	2.4%
0%	31.1%	23.8%	16.5%	9.1%	4.7%	3.3%	2.1%
-1%	30.8%	23.5%	16.2%	8.8%	4.4%	3.0%	1.8%
-2%	30.5%	23.2%	15.9%	8.5%	4.2%	2.7%	1.5%
-3%	30.2%	22.9%	15.6%	8.3%	3.9%	2.4%	1.2%
-4%	29.9%	22.6%	15.3%	8.0%	3.6%	2.1%	0.9%
-5%	29.6%	22.3%	15.0%	7.7%	3.3%	1.8%	0.6%
-6%	29.3%	22.0%	14.7%	7.4%	3.0%	1.5%	0.3%

VIII. Conclusion

Seeing the results of the scenario analysis it becomes apparent that the excess reserves of depository institutions could certainly cause high levels of inflation in the United States. Fortunately, the Federal Reserve is working to prevent these excess reserves from leaving the balance sheets of financial institutions and if the Federal Reserve is successful in doing so we can see that low inflation levels as calculated by CPI are obtainable. I believe there will be significant challenges throughout the process of reversing excess reserves from the balance sheets of banks and there will be a fine line between successfully removing reserves and causing economic turbulence.

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Data

St. Louis Federal Reserve Economic Data (FRED)
Link: http://research.stlouisfed.org/fred2/

Date	M2 % Change YoY	M2 Velocity % Change YoY	CPI % Change YoY	Monetary Base ($US billions)
1985-01-01	9.2%	-0.7%	3.6%	194.806
1985-04-01	8.2%	-1.6%	3.8%	199.034
1985-07-01	9.2%	-2.1%	3.4%	204.052
1985-10-01	8.6%	-1.5%	3.5%	208.899
1986-01-01	7.3%	-0.6%	2.9%	211.717
1986-04-01	8.4%	-1.8%	1.6%	217.448
1986-07-01	8.8%	-2.6%	1.6%	223.111
1986-10-01	9.3%	-3.6%	1.3%	229.845
1987-01-01	9.1%	-3.7%	2.1%	235.214
1987-04-01	7.1%	-1.3%	3.8%	239.978
1987-07-01	5.0%	0.6%	4.3%	242.504
1987-10-01	4.2%	3.1%	4.6%	247.942
1988-01-01	4.4%	2.7%	4.0%	251.601
1988-04-01	5.7%	2.2%	4.0%	257.542
1988-07-01	6.2%	1.9%	4.1%	262.022
1988-10-01	5.7%	1.9%	4.2%	265.442
1989-01-01	4.4%	3.8%	4.9%	267.278
1989-04-01	2.9%	4.6%	5.1%	270.033
1989-07-01	3.7%	3.4%	4.6%	272.094
1989-10-01	5.0%	1.0%	4.7%	275.405
1990-01-01	6.1%	0.4%	5.1%	279.844
1990-04-01	6.4%	0.1%	4.6%	286.942
1990-07-01	5.6%	0.3%	5.6%	294.005
1990-10-01	4.3%	0.6%	6.2%	300.878
1991-01-01	3.9%	-0.9%	5.3%	309.536
1991-04-01	4.2%	-1.4%	4.8%	315.446
1991-07-01	3.6%	-0.4%	3.9%	320.741
1991-10-01	3.1%	1.1%	2.9%	326.634
1992-01-01	2.8%	2.5%	2.9%	334.190
1992-04-01	1.7%	3.9%	3.2%	342.312
1992-07-01	1.3%	4.5%	3.0%	352.355
1992-10-01	1.7%	4.8%	3.1%	363.036
1993-01-01	0.6%	5.1%	3.2%	371.197
1993-04-01	1.0%	4.2%	3.1%	380.718
1993-07-01	1.4%	3.2%	2.8%	392.251
1993-10-01	1.2%	3.6%	2.8%	402.771
1994-01-01	1.8%	3.8%	2.5%	413.157
1994-04-01	1.7%	4.7%	2.4%	420.865
1994-07-01	1.2%	5.3%	3.0%	428.511
1994-10-01	0.6%	5.7%	2.7%	434.193
1995-01-01	0.4%	5.2%	2.9%	439.735

1995-04-01	1.0%	3.3%	3.0%	447.682
1995-07-01	2.8%	1.6%	2.6%	450.840
1995-10-01	3.8%	0.2%	2.6%	453.825
1996-01-01	4.9%	-0.5%	2.7%	457.245
1996-04-01	5.3%	0.7%	2.8%	462.184
1996-07-01	4.5%	1.4%	2.9%	469.508
1996-10-01	4.7%	1.7%	3.2%	475.952
1997-01-01	4.8%	1.8%	2.9%	482.519
1997-04-01	4.7%	1.4%	2.4%	489.934
1997-07-01	5.3%	1.2%	2.1%	496.830
1997-10-01	5.6%	0.3%	1.8%	506.315
1998-01-01	6.2%	-0.5%	1.5%	514.322
1998-04-01	6.9%	-1.7%	1.7%	520.591
1998-07-01	7.1%	-1.8%	1.7%	526.719
1998-10-01	8.1%	-1.9%	1.6%	539.126
1999-01-01	8.1%	-1.7%	1.7%	551.257
1999-04-01	7.7%	-1.2%	2.0%	564.372
1999-07-01	7.5%	-1.1%	2.4%	573.686
1999-10-01	6.2%	0.2%	2.6%	609.186
2000-01-01	5.9%	0.1%	3.2%	607.121
2000-04-01	6.2%	1.3%	3.3%	603.827
2000-07-01	5.8%	0.6%	3.4%	606.080
2000-10-01	5.9%	-0.5%	3.4%	611.516
2001-01-01	7.0%	-2.3%	3.4%	619.388
2001-04-01	8.1%	-4.3%	3.4%	629.174
2001-07-01	9.2%	-5.9%	2.7%	652.121
2001-10-01	10.3%	-7.1%	1.9%	663.633
2002-01-01	9.4%	-5.5%	1.2%	679.423
2002-04-01	7.4%	-4.1%	1.3%	692.402
2002-07-01	7.0%	-2.9%	1.6%	704.358
2002-10-01	6.8%	-2.7%	2.1%	712.436
2003-01-01	6.5%	-2.6%	2.9%	725.895
2003-04-01	7.8%	-3.6%	2.2%	738.271
2003-07-01	8.0%	-2.5%	2.2%	746.102
2003-10-01	5.6%	0.4%	1.9%	753.924
2004-01-01	4.7%	1.7%	1.8%	762.026
2004-04-01	4.9%	1.8%	2.8%	770.707
2004-07-01	3.9%	2.1%	2.8%	785.784
2004-10-01	5.4%	0.8%	3.4%	791.704
2005-01-01	5.2%	1.4%	3.0%	798.457
2005-04-01	3.7%	2.4%	3.0%	802.574
2005-07-01	4.1%	2.4%	3.8%	811.724
2005-10-01	4.1%	2.2%	3.7%	815.818
2006-01-01	4.8%	1.6%	3.6%	830.789
2006-04-01	5.2%	1.3%	4.0%	836.724
2006-07-01	5.3%	0.3%	3.4%	837.967
2006-10-01	5.6%	-0.4%	2.0%	837.629
2007-01-01	5.8%	-1.2%	2.5%	847.296
2007-04-01	6.5%	-1.5%	2.6%	850.110
2007-07-01	6.6%	-1.4%	2.4%	855.106

2007-10-01	6.3%	-1.2%	4.0%	853.946
2008-01-01	6.8%	-2.8%	4.1%	857.005
2008-04-01	6.9%	-3.4%	4.4%	859.755
2008-07-01	6.4%	-4.2%	5.2%	884.394
2008-10-01	8.5%	-8.9%	1.6%	1403.612
2009-01-01	9.8%	-11.4%	0.0%	1667.001
2009-04-01	9.0%	-11.9%	-1.2%	1780.880
2009-07-01	7.9%	-10.3%	-1.6%	1731.270
2009-10-01	5.0%	-4.7%	1.5%	1999.107
2010-01-01	1.9%	0.8%	2.3%	2092.939
2010-04-01	1.7%	2.7%	1.7%	2037.447
2010-07-01	2.3%	2.5%	1.2%	2017.742
2010-10-01	3.1%	1.5%	1.3%	1993.504
2011-01-01	4.6%	-0.4%	2.2%	2223.027
2011-04-01	5.4%	-1.6%	3.5%	2586.741
2011-07-01	9.0%	-4.7%	3.8%	2697.814
2011-10-01	9.5%	-5.2%	3.3%	2630.933