ONCE BITTEN, TWICE SHY:

RETHINKING THE FEDERAL RESERVE'S INDEPENDENCE AND MONETARY POLICY IN THE U.S.

by

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B.S. Mathematics-Economics, B.A. Politics and Philosophy
School of Arts and Sciences 2011

Submitted to the Undergraduate Faculty of

School of Arts and Sciences in partial fulfillment

of the requirements for the degree of

Bachelor of Philosophy

University of Pittsburgh

2011

UNIVERSITY OF PITTSBURGH

SCHOOL OF ARTS AND SCIENCES

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It is widely believed that the Federal Reserve played a central role in bringing about the biggest catastrophe in American history—the Great Depression. The literature is extensive in seeking to provide an explanation for the Federal Reserve's policy errors. This paper offers a new interpretation on why such an event occurred by studying a heretofore-unexamined landmark court case. In 1928, a private citizen filed suit against the Federal Reserve Bank of New York for increasing discount rates; he sough a court injunction that would force the Federal Reserve to decrease rates. The courts found in the System's favor. In 1929, he appealed the case, which was dismissed due to a failure in enjoining the Federal Reserve Board as an indispensible party. The judge during the time further wrote an opinion, in which he clarified that the Board rather than the Banks had true authority within the Federal Reserve System. This paper looks at how these two decisions affected Federal Reserve policy between 1929-1933. It argues that the de-politicization of the Federal Reserve coupled with implicit judicial sanction allowed it to act on its flawed ideology without fear of political recrimination. The paper also examines the impact of the Great Depression on the Federal Reserve's independence today.

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PREFACE

To my committee, Dr. Burnham, Dr. Husted and Dr. Rawski, and especially to my advisor Dr. Troesken, I would like to thank all of you for your patience, support and guidance in helping me complete this Bachelor of Philosophy. I would not have found this interesting case and fascinating legal history without my advisor, whose class I was fortuitous enough to take.

Additionally, I would like to thank my family and friends; this thesis would not have been possible without their relentless encouragement and unwavering belief in me. They accompanied me to coffee shops, libraries and other venues and put up with me during my most stressful times, and for that I shall always be beholden to them.

Finally, I would like to thank the faculty and administration at the Honors College. This work would not have been possible without their guidance, especially during my formative years at the University of Pittsburgh. They truly enriched my undergraduate experience.

Dedication

To the late Dean of the Honors College, G. Alec Stewart a.k.a "Doc."

Doc, thank you for entering my life when you did; you changed my thinking for the better. I am grateful to have known you and very much missed your presence this last year at Pitt.

1.0 INTRODUCTION

"Ours is a land rich in resources...filled with millions of happy homes; blessed with comfort and opportunity... In no nation are the fruits of accomplishment more secure… I have no fears for the future of our country. It is bright with hope."

~Herbert Hoover, Inaugural Address, March 4, 1929, Washington D.C.[1]

The above quote from President Hoover's Inaugural Address was recorded seven months before the stock market crash that would rock the U.S. economy; by the end of his term in 1932, the United States would have been plunged into a depression that left one in every four unemployed and significantly reduced the nation's wealth. From the experience of a "higher degree of comfort and security than ever existed before in the history of the world," the United States entered a severe depression of a magnitude never experienced by the U.S. economy before or since.[2] The graph on the following page shows the U.S. real GDP; one can see the clean, log-linear relationship of GDP, except for the period between 1929 and 1933. Between the peak in 1929 and the trough in 1933, real GDP had declined by about 37%.

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[1] Hoover, Herbert. Inaugural Address. Washington, D.C. 4 March 1929. <http://www.hooverassociation.org/hoover/speeches/inaugural_address.php>
[2] Ibid.
[3] Friedman, Milton and Anna J. Schwartz. *A Monetary History of the United States, 1867 to 1960.* Princeton:

Figure 1: Historical Real GDP in the U.S. (logged) from 1790 to Present

Data from: Johnston, Louis and Samuel H. Williamson, "What Was the U.S. GDP Then?" MeasuringWorth, 2010. <http://www.measuringworth.org/usgdp/>.

The literature on explanations for this calamity is extensive; the standard argument holds that money supply played a central role in exacerbating the magnitude of the recession. According to Friedman and Schwartz (1971), the Federal Reserve System (referred to as the "Fed" from here on), which had been entrusted with the authority to mitigate financial turmoil and ensure economic prosperity, actually caused the historically unprecedented contraction, which they call "a tragic testimonial to the importance of monetary forces."[3] Whether external factors forced the recession or it occurred because of the Fed's policies, it is nonetheless widely accepted today that the Fed's erroneous policy significantly worsened the recession, especially in its failure to fulfill its role as the lender of last resort.

This has led to extensive research into the reasons for the Fed's policy failures. In their book *A Monetary History of the United States, 1867 to 1960,* Friedman and Schwartz (1971) argue that the death of Governor Strong of the Federal Reserve Bank of New York in 1928 left a power vacuum within the Fed because Harrison, who replaced strong in 1928, was not a dominant personality and was unable to lead the Fed during its time of need. This resulted in a shift of power to the Board, which did not have traditions of strong leadership. They contend that this lack of leadership prevented the Fed from taking decisive and prompt action, as it had done in the 1920s under Strong; thus, policy from 1929-1933 was "passive, defensive, [and] hesitant" and ultimately, ineffective.[4]

In *A History of the Federal Reserve, Volume 1: 1913*-1951, Meltzer (2003) argues that Strong's death would not have been changed the outcome of policy during this time because by 1930, the rest of the reserve banks and the Board blamed the speculation of 1928-29 on what

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[3] Friedman, Milton and Anna J. Schwartz. *A Monetary History of the United States, 1867 to 1960.* Princeton: Princeton University Press, 1971. p. 300
[4] Ibid., p. 411

they viewed as Strong's over-expansionary policy in 1924-27. Meltzer contends that this diminished the New York Bank's standing during policy-making in the crucial years that led to the Great Depression; the rest of the System were unwilling to back New York's consistently expansionary policy proposals yet again. Moreover, Meltzer also shows that the Fed's policies during the depression were in line with the beliefs of the time and policies pursued in the 1920s. The belief that speculation and inflation must be followed by painful deflation in order to restore price stability, along with the two main policy doctrines of the time, the "real bills doctrine" and the "Riefler-Burgess doctrine," caused the Fed to misread money indicators, resulting in erroneous policy. Additionally, Meltzer attributes the Fed's problems to an attempt to burst a bubble where there might have been none, and this combined with the extreme inflation-aversion would not allow it to expand money sufficiently.

In *The Strategy and Consistency of Federal Reserve Monetary Policy, 1924 – 1933,* Wheelock (1991), also finds that policy was less responsive during the depression than between 1924-1929; however, he attributes this to the Fed's pursuit of a single policy strategy and goal rather than a change in the administration, though that might have admittedly played a part. Because the Fed contended that low borrowing implied easy credit conditions, the officials truly believed they were responding to the depression sufficiently. This is also in line with the argument Meltzer makes in pointing out that Strong, who bought into this mistaken policy, might have also thought that the expansionary policy was sufficient. However, Friedman and Schwartz notice that the New York Bank, particularly its directors, kept pushing for open market purchases and expansionary policy because they had updated their policy beliefs due to their experience as the policy-makers of the financial stronghold.

In this paper, I will show that the Fed's policy mistakes stemmed not just from its flawed ideologies, but also due to a significant shift in the institutional arrangement that has not been considered by these historians. In 1928, one private citizen sued the Federal Reserve Bank of New York for increasing discount rates; he wanted the courts to pass an injunction that would force the Fed to decrease rates. The courts found in favor of New York. In 1929, he appealed the case; the Circuit of Appeals dismissed the case because of a failure to enjoin the Federal Reserve Board as an indispensible party in the case. This case, *Raichle v. The Federal Reserve Bank of New York*, was historic because it passed the first judicial judgment on the ability of the Fed to make independent policy through discount rate changes and open market operations.

By examining the meeting minutes of the Open Market Investment Committee (OMIC), I will argue how the Fed derived legitimacy from this court decision to make independent policy without political pressure. Between 1929 and 1933, the Fed made consistently independent decisions, and it was deeply reluctant to coordinate policies with the government. The power struggle within the Fed between New York and the Board, which Friedman and Schwartz and Meltzer agree caused much uncertainty in 1928-29 regarding monetary policy, can be better explained through the framework that one body derived more legitimacy than the other from each of these court decisions. The first decision gave the Federal Reserve Bank of New York legitimacy to make policy, but the second affirmed the Board's sense that it was supreme over the reserve banks because of Judge Hand's opinion. Thus, the power shift that Friedman and Schwartz refer to did not occur merely because of Strong's death, but because the court decision upheld the Board's responsibility to supervise the banks.

Unfortunately, in acting from a newly affirmed sense of independence, the Fed made grave policy errors because of its flawed models and ideologies; it allowed money supply to fall

too low, plunging the U.S. into the Great Depression. This experience has scarred the Federal Reserve and has constrained its independence today. The paper discusses how the Federal Reserve in the 1950s and beyond has been swayed by political and popular sentiments and is actually not as independent as currently perceived. It will be argued that because of the Federal Reserve's blunders in its early years, the public does not trust it to make proper policy during times of distress; thus, increased public attacks and congressional scrutiny causes the Board to give in to popular demand, which results in a feedback loop that severely compromises its policy-making.

The paper is organized as follows. Section 2 outlines the legal history that resulted in the constitutionality of a federal agency's ability to print money. Section 3 describes the Federal Reserve System as it existed back in the 1920s; it lays out tools the System had available, monetary policy beliefs of the time and major problems and concerns faced by the System during this time. Section 4 examines policy closely in 1928 and 1929, particularly around the time the case was filed, decided, appealed and dismissed. Section 5 explores policy from 1930 to 1933, especially whether the legitimacy derived from the case might explain some of the policy blunders. Section 6 performs a short thought experiment to see how the Federal Reserve would have been shaped had the courts decided to find for the plaintiff. Section 6 examines Federal Reserve's independence deficiency from 1951 to present, and the paper concludes with implications for the Federal Reserve's independence in the future.

2.0 THE FEDERAL RESERVE'S CONSTITUTIONALITY

A series of prior court rulings cemented the constitutionality of the Federal Reserve because of precedence, the idea that courts must respect prior decisions. These decisions found that Congress had the authority empower Federal administrative agencies, overrun state law if it affects national money system, and finally that national banks and their federal functions (of central banking) are constitutional. This section will briefly explore the legal history of money in the U.S. that led to these decisions.

The First Bank of United States, and its successor the Second Bank of the United States, were established by Congress to handle the financial needs and requirements of the federal government. Though the banks were private, they held Treasury deposits, including tax revenues, and essentially operated as the "government's bank." Because of this special relationship with the central government, the First and Second Banks experienced greater profits due to preferential treatment. The First Bank's creation was widely contested, particularly by the South, because of fears that it would create a money monopoly; the Bank's charter renewal in 1811 failed because of a general distrust of national banking institutions. However, without the First Bank to regulate monies during the War of 1812, severe inflation resulted, leading the same administration that denied the re-charter, to bring back the First Bank in the form of the Second Bank of the Unites States. State-charted banks resented and envied the Banks of the United States, and the Banks continued to be sources of political contention.

Congress's ability to delegate power to federal agencies was contested and upheld in many cases, especially the landmark case *McCulloch v. Maryland,* which passed judgment on state interference in "central banking." Maryland passed a bill in 1818, which allowed the state to levy taxes on notes of banks not chartered in Maryland[5] Maryland's bill specifically targeted the Second Bank's Baltimore branch since it was the only Bank not operating under a Maryland Charter that issued notes. McCulloch, the head of the Baltimore Branch, refused to pay the tax. The case, which was appealed to the Supreme Court, contested that Congress did not have the explicit authority to charter a bank, making the Bank of United States unconstitutional.

Chief Justice Marshall found in favor of the federal government by invoking the "Necessary and Proper" Clause, which gives Congress the power to "make all laws which shall be necessary and proper for carrying into Execution the foregoing powers…."[6] He expounded that firstly, Congress and the federal government held supremacy over the state government, and secondly, the "Necessary and Proper" Clause was not meant to be interpreted narrowly, but gave Congress the authority to carry out its other powers as it saw fit.[7] According to this interpretation, though the chartering of a bank is not a specified power, Congress had the ability to create any administrative institution that would allow it to carry out its explicit powers. Thus, Maryland's bill was declared unconstitutional, and the courts allowed Congress the authority to overturn state law if it affected Congress from carrying out its constitutional powers.[8]

Nevertheless, resentment over the Second Bank's operations continued, and the matter of the Second Bank's constitutionality persisted, resulting in the Jacksonian banking crisis in the 1830s and early 1840s. Andrew Jackson formed his platform for the presidential election in 1932

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[5] *McCulloch v. Maryland.* 17 U.S. 316 (1819).
[6] U.S. Const., Art. I, §8, cl. 18
[7] *McCulloch v. Maryland.* 17 U.S. 316 (1819).
[8] State laws affecting the national money system fell under this category. Ibid.

around the removal of the Second Bank of the United States from power; he contended that a single national bank held too much power and caused inflation and other ills when issuing notes that were not properly backed by metal.[9] Jackson, with his common man appeal and passionate attack on the corruption of rich stock-holders at the expense of the poor farmer, won the election and embarked on his agenda to shut down the Second Bank. In 1832, he vetoed a bill to extend the Bank's charter beyond 1836, and in 1833, he officially transferred government deposits from the Second Bank and to various state-chartered banks, called "pet banks."

The Second Bank went bankrupt in 1841, but more importantly traditional historians such as Sumner and Schlesinger argue that his "bank war" also caused the banking panic in 1837 and inflation because the state banks over-issued their notes.[10] They also contend that Jackson's Specie Circular, an executive order issued in 1836 to only accept "specie," i.e. notes back by gold and/or silver, for public land further lead to over-issuing and depreciating currency.[11] Moreover, since the Second Bank's charter was only due to expire in 1836, it could still operate as the "central" bank though it did not have government deposits; in an attempt to twist Jackson's arm, the Second Bank enacted some policies that attempted to arrest credit and banking, which led to further expansion of state-issued specie. Though economists continue to contend over the reasons behind the banking panic of 1837 and the subsequent contraction, Jackson's "bank war" caused uncertainty within the American banking system.

The banking panic of 1837 and the subsequent contraction from 1839-43 was one of the worst in American history. Friedman and Schwartz compare this contraction to the Great

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[9] Hummel, Jeffrey Rogers. "The Jacksonians, Banking, and Economic Theory: A Reinterpretation." *Journal of Libertarian Studies.* Vol. 2, No. 2. 1978. pp. 152.
[10] Ibid. p. 153
[11] Ibid.

Depression that followed less than a century later because of the similar money uncertainty.[12] During this time, the van Buren administration attempted to pass the Independent Treasury Act, which would set up an independent treasury that would be isolated from all banks; the Act finally passed in 1841, but was repealed one year later, leading to further uncertainties.[13] Some wanted to establish a central bank at this time, but most still did not believe such an authority to be constitutional.

The Independent Treasury system was reestablished in 1844, and sought to "divorce the government from all connection with the money market."[14] Government deposits were moved to the treasury and its branches; however, there still did not exist a national currency. The National Banking Act of 1863 and 1864 created a national banking system in an attempt to create an uniform currency and to aid in financing the civil war by issuing bank notes backed by government securities rather than metal.[15] In 1865, Congress imposed a tax on notes issued by state-chartered banks, thus creating a monopoly of note issue in the newly chartered national banks, again in order to create a market for government bonds.[16] The first common national notes approved by Congress were the "greenbacks," but war efforts caused a significant portion of these notes to be consumed quickly. In 1862, the Legal Tender Act was passed, which allowed the government to print money in order to raise revenue for the Civil War without increasing taxes; it made the greenbacks "a legal tender of all debts, public and private, even those contracted before the legal tender cases were passed."[17]

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[12] Friedman and Schwartz (1971), p. 299.
[13] Hurst, James Willard. *A Legal History of Money in the United States, 1774-1970.* University of Nebraska Press. Lincoln. p. 194-195.
[14] Ibid. However, the Treasury's operations continued to affect money market, which never lead to a true separation of state and banking as intended.
[15] Friedman and Schwartz (1971), p. 18.
[16] Hurst (1973), p. 37.
[17] Friedman and Schwartz (1971), p. 46.

The Legal Tender cases further questioned and upheld the authority of Congress to use fiat currency, or "paper" money, as the legal tender. The 1870 decision in *Hepburn v. Griswold* found the Legal Tender Act to be unconstitutional, but this decision was overturned in *Knox v. Lee* in 1871.[18] Article 1, Section 10 of the Constitution expressly prohibits the states from issuing "bills of credits" or making anything other than gold and silver coin as "legal tender." However, no such restriction was placed upon the federal government's authority. Moreover, the broad interpretation of the "Necessary and Proper Clause" from *McCulloch v. Maryland* gave Congress the ability to enact any law in pursuance of its specific Constitutional powers. Article 1, Section 8 explicitly gives Congress the authority to "borrow and coin money" and "regulate the value" of U.S. and foreign coins. Thus, the issue in the legal-tender cases was whether fiat currency could be used to carry out Congress's ability to regulate the value of currency.

The Supreme Court ruled in the federal government's favor, stating that Congress had the authority to

> reasonably decide what definitions of legal tender would best serve public interest and that the public interest in an effective money supply warranted applying the statutory definitions of legal tender even to govern agreements for payment in legal tender money made prior to the legislation.[19]

Thus, the ability to issue currency was declared constitutional. The matter of delegating the power of coining money, which the Constitution expressly gives to Congress in Article 1 Section 8, was also resolved by the argument that Congress still made the law, but chose agencies, like

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[18] Friedman and Schwartz (1971), p. 46-47. The decision in the first case caused little stir because it was assumed that the decision ruled only upon the legality of the use of greenbacks for contracts made before its issue, but it soon became apparent that it also made the greenbacks unconstitutional for contracts entered into after the war. Thus, Congress pushed for a review of this matter, and an opportunity arose in 1871.
[19] Hurst (1973), p. 41-42.

national banks and later the Federal Reserve, to implement it.[20] The federal functions of national banks and the constitutionality of the National Banking Act of 1864 were upheld. Since banks operating across state borders were considered to be constitutional, Federal Banks that would essentially act as clearing houses for these banks should also be constitutional.

Following the Civil War and the approval of a common currency, there continued to be arguments, especially regarding bimetallism, and in 1873, Congress passed the Coinage Act, which demonetized silver.[21] However, the legal constitutionality of the Federal Reserve's powers had already been decided at this juncture. The inefficiency of the Treasury and national banking system before the turn of the century necessitated a central bank. The Treasury tended to rather sporadically grant or withhold liquid assets on which banks could base their lending.[22] It was unable to inspire confidence in the economy. Additionally, the national banking system was rigid and inefficient in providing both currency and deposit-check money.[23] The lack of central control and a central regulatory body further debilitated the banking system.

Thus, the Fed, when it was established in 1913, was viewed as an improved body that could assume the powers that already existed in these various bodies. It followed from precedence that there exists federal power whereby the Fed could authorize the printing of money and conduct open market operations to regulate terms of bank credit. The Courts also affirmed the Fed's regulatory authority, generally a matter within state department, in 1913.[24] Therefore, the ruling in *Raichle* was merely one in a string of many that affirmed the constitutionality of Federal Reserve powers.

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[20] McC. Wright, David. "Is the Amended Federal Reserve Act Constitutional? A Study in the Delegation of Power." *Virginia Law Review.* Vol. 23, No. 6. April 1937. pp. 629-653. <http://www.jstor.org/stable/1067642>. p. 630.
[21] Friedmand and Schwartz (1971), p. 49
[22] Hurst (1973), p. 194.
[23] Ibid., p. 290.
[24] Ibid., p. 295. *First National Bank of Bay City v. Fellows* 244 U.S. 416 (1917).

However, the lack of a specific mandate with well-defined goals for monetary policy outcomes allows the Fed undue powers, which people argue is unconstitutional. The Federal Reserve had to narrow its mandate from experience according to its discretion.[25] In 1923, around the time when the bull market took off in the stock exchange, the Fed decided to include "'sound' credit conditions" as a criterion for supplying money and justified that

> …if business is undergoing a rapid expansion and is in danger of developing an unhealthy or speculative boom, it should not be assisted by to easy credit conditions. In such circumstances the creation of additional credit should be discouraged by increasing the cost of that credit.[26]

This resulted in a "moral suasion" campaign in 1928-29 when the Federal Reserve used its monetary authority to specifically discourage credit from entering the stock market. Frank Raichle, in suing the Federal Reserve Bank of New York, actually questioned the self-determined power of the Federal Reserve in bursting market bubbles by attempting to curb the stock market boom. The courts, by ruling in favor of the Fed, upheld its ability to make independent monetary policy, but also implicitly approved of its current policy stance that speculation must be discouraged and inflation avoided.

This section considered the legal history of money and banking before the establishment of the Federal Reserve. Some things become apparent from this brief exploration. The first is the persistence of distrust of national banking institutions, particularly prevalent in the South and West because of their agricultural base. This would continue to play a role in the establishment of the Federal Reserve System. The second is the predominance of inflationary problems because of a lack of central authority to control money. The courts have played a predominant in role in determining the authority of a national agency to print money, and the path was thus paved for

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[25] McC. Wright (1937), p. 637.
[26] McC. Wright (1937), p. 637. Original Source: Federal Reserve Annual Report for the year 1923, p. 10.

the existence of a central bank, but because of this distrust of one strong bank, the result was the Federal Reserve System.

3.0 THE TRIALS AND TRIBULATIONS OF A YOUNG FED

Following the banking panic of 1907, Congress recognized the need for a "central" bank to control the seasonal expansion of credit and serve as a lender of last resort, but the Democrats distrusted a truly central authority that would put the interests of a financial industry before agricultural and real business interests.[27] The Democrats gained control of Congress, and the Federal Reserve System took the form of a system of twelve Reserve Banks that could independently establish policy with a Federal Reserve Board that would supervise them and coordinate policy. It was a compromise between public and private ownership. Each Reserve Bank consisted of a Board of Directors comprised of bankers, who recommended policy; the Chairman of the Bank (more commonly referred to as the Governor) would transmit these recommendations to the Board, whose five members were politically appointed. The Board's Chairman would rotate on an yearly basis; the Board had the ability to (dis)approve the recommended policy. Apart from this, a committee of bankers made up the Federal Advisory Council that would advise the Board on policy decisions.

The Federal Reserve Act of 1913 established a "scientific federal banking system" that would create a more uniform monetary policy across the country and prevent the

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[27] Johnson, Roger. "Historical Beginnings…The Federal Reserve." Public and Community Affairs Department. The Federal Reserve Bank of Boston. December, 1999. <http://www.bos.frb.org/about/pubs/begin.pdf>.

overexpansion.[28] However, the actual act was vague in terms of the central bank's mandate. The only explicit constraint on the Federal Reserve's ability to conduct policy was the order to only discount those bills arising out of "actual commercial transaction," not those merely covering investments.[29] The act also called upon the Federal Reserve to adhere to the gold standard and make policy accordingly.[30] This open-endedness created much confusion during the Federal Reserve's early years as it attempted to make policy.

The act also did not clearly draw the lines of authority between the Board and the Reserve Banks. The original federalist system of central banking diffused the command of the Board, but the Board built its authority through a desire for uniformity. The Reserve Banks generally deferred to the Board regarding policy, resulting in slight divergences, but on the occasions of conflict, the reserve banks saw that the authority to make discount rate decisions rested with them because the intent behind the comprised bill was a decentralized system. In the 1920s, the struggle for supremacy between the Board and the Federal Reserve Bank of New York became apparent as the Board stepped up its efforts to take control of the System.

The System's main policy-making tool at this time was discounting; the reserve banks had the ability to change discount rates, which impacted the member banks' ability to borrow from the central bank, and acceptance rates (also referred to as buying rate and bills rate), which was the rate at which one could buy bank acceptances. Additionally the reserve banks could also conduct open market operations, which involved buying and selling bank acceptances, bills of

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[28] *Raichle v. Federal Reserve Bank of New York.* 34 F. 2d 910 (C. C. A. 2d, 1929).
[29] Federal Reserve Act. 12 U.S.C. Ch. 6. Pub.–No. 43.–63d Congress. § 13 (1913). p. 264. <http://home.hiwaay.net/~ becraft/FedResAct.pdf>.
[30] Ibid. § 26. p. 274. "Nothing in this Act contained shall be construed to repeal the parity provision or provisions contained in an Act approved March fourteenth, nineteen hundred, entitled 'An Act to define and fix the standard of value, to maintain the parity of all forms of money issued or coined by the United States, to refund the public debt, and for other purposes.' This refers to the Act that established the gold standard.

exchange and so forth, but would expand in the 1920s to include government securities as well.[31] The Banks also had the additional authority of making gold transactions.

In establishing an authority that essentially assumed preexisting powers and functions from national banks, the Fed had to firmly demonstrate its authority in order to discourage a market analogy of shared power.[32] The act required national banks to become members of the Federal Reserve System, and many thought they could collude with the reserve banks for their benefit. However, the System quickly dispelled such notions and solidified its authority over member banks, first by adjusting the general credit situation without waiting for applications from member banks for loans or rediscounts, and by rejecting the notion that "the [Federal Reserve] banks were legally bound to rediscount eligible paper whenever a member tendered it," as the bankers insisted.[33] This sufficiently divorced the Fed from the banking industry, and gave it supremacy in conducting monetary policy.

The Federal Reserve began operations in 1914 during World War I. Immediately following its establishment, the Federal Reserve found itself catering to the Treasury's demands because of the war and "became subservient to the Treasury's perceived needs."[34] The System sacrificed its independence to finance Treasury bond sales and lower the cost of debt finance, but found itself facing the unpleasant task of lowering wartime inflation. According to the belief of the time, deflation following inflation was "inevitable" in order to force prices to adjust, which implied that wartime inflation must be followed by painful readjustment. Additionally, the European powers abandoned the gold standard to finance the war, and the US banned the export

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[31] Federal Reserve Act (1913). §14. p. 264-65.
[32] Hurst (1973), p. 66.
[33] It was authorized, not commanded, to rediscount eligible paper. Ibid., p. 208.
[34] Meltzer, Allan. *A History of the Federal Reserve, Volume 1: 1913 – 1951.* University of Chicago Press. Chicago, 2003. p. 85.

of gold, but the central bankers expressed the desire to return to the gold standard once again, even if it required the forceful deflation of the currency.[35]

With this in mind, the System raised interest rates sharply in 1920-21, which resulted in deflation, a sharp decline in industrial and agricultural production and a rapid increase in unemployment.[36] The hardships caused by falling prices and high interest rates in many member banks particularly incensed the South and West. Within a few years of its operations, the Federal Reserve appeared to have acted exactly in the way Congress and the public had feared: its policy in 1920-21 favored the banking industry at the expense of the agricultural sector. Though Congress initially supported the Fed's policy of progressive rates (penalizing banks that borrowed more from its reserve banks), public outrage grew over high rates, particularly in the agricultural areas.[37]

While Meltzer argues that the public outrage during this time stemmed more from "the background of hostility to high interest rates in the South and West" than from the actual economic hardships, but the public outrage deeply affected the Fed.[38] The System was facing political pressure just when it was trying to become independent of the Treasury and the political system. Though evidence shows that the Fed might have kept interest rates too high for too long, which prolonged the recession, political fervor tipped the scales in favor of lower discount rates when the System itself was vacillating over policy.

The young System continued to suffer further consequences of its actions in 1920-21. A flurry of Congressional activity sought to contain the central bank's independence, including

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[35] Ahmed, Liaquat. *Lords of Finance: The Bankers Who Broke the World.* The Penguin Press. New York, 2009. Chapter 1.
[36] Meltzer (2003), p.109.
[37] Ibid., p. 115. The Congressed actually passed an act in 1920 that authorized the progressive rates, called the Phelan Act. (p. 105).
[38] Meltzer (2003), p. 131.

hearings and a proposal in 1921 to restrict the Federal Reserve's ability to increase discount levels above a certain ceiling without congressional approval.[39] Though this proposal never passed, Congress and the public became preoccupied with price stability over other concerns in the 1920s.[40] These concerns are reflected in the congressional hearings held throughout the decade (in 1922-23, 1926-27 and 1928) to set price stability as an explicit and main policy goal.

Though the deflation that started in 1920 had ended by 1922, the political backlash shaped the Federal Reserve's policy throughout the 1920s, particularly the Board's reluctance in 1928-29 to raise interest rates above 6% during the stock market boom.[41] More importantly, it also impacted the Federal Reserve's policy stance. The System saw this period as an opportunity to preserve and re-establish its independence. When the committee organized to carry out a congressional inquiry over the high interest rates recognized that the Federal Reserve was "most at fault when it yielded to Treasury pressure during the summer and fall of 1919" and the System "should have been more concerned about inflation and less concerned about Treasury refunding operations," the System's main policy preference had been formed.[42] The consequences of its policies had created popular and political support for stable prices. Thus, the Federal Reserve's concerns over speculative excesses, reluctance to expand policy due to fears of inflation, and the agenda to re-establish the gold standard all revolved around price stability. Without inflation the "inevitable" deflation need not follow, which the Federal Reserve found desirable in order to preserve its independence.

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[39] Meltzer (2003), p. 127.

[40] This preoccupation stemmed from "real" economy concerns rather than a need to fight inflation; the public did not want to suffer deflation, but the Federal Reserve took this to mean that it had to fight inflation first and foremost so that it could avoid the painful deflation.

[41] Ibid., p. 131. Footnote 117.

[42] Ibid., p. 128.

The other development that occurred as a result of the threat to its independence was the establishment of the Open Market Investment Committee (OMIC) in 1922; open market purchases/sales of government securities became the main means of controlling money supply. Though its discovery was accidental, the System increasingly relied on purchase and sales of government securities to make policy because it could contract the money supply without facing the political heat of high discount rates.[43] This allowed the Federal Reserve to further maintain its independence, but it also increased the importance of the Federal Reserve Bank of New York. With Governor Strong of New York steering the OMIC, the Federal Reserve Bank of New York and Strong assumed tremendous power. Furthermore, the five members of the OMIC were able to make policy without Board approval, which the Board believed had violated the compromise behind the Federal Reserve Act since the bankers had now effectively taken control of central banking. The Board struggled throughout the decade to take back the authority it believed to be rightfully its own from New York and the OMIC.

The 1920-21 deflation and the 1923 recession also caused ideologies to diverge, which further heightened tensions between the Board and the New York Bank. New York adopted what Meltzer calls the "Riefler-Burgess doctrine," which contended that open market policy was more effective than discount rates and should be employed first before discount rate changes were made.[44] The premise of the doctrine was the belief that banks are reluctant to borrow at discount windows because it is a penalty rate; they want to decrease their borrowing when possible. Thus,

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[43] The Fed's open market operations certainly affected the money market rates, but this did not cause any heat because the public, particularly the South and West, were fixated on discount rates specifically.
[44] Meltzer (2003), p. 162.

the proponents of this policy relied on member banks' borrowing and the market interest rate as the proper measure of the effectiveness of monetary policy.[45]

The ideology favored by the Board, and in fact by Congress during this time, is the "real bills doctrine," which contended that the Federal Reserve should monitor the use of credit, particularly by discouraging the use of credit for speculative purposes because it "diverted" credit from real business activities and production.[46] As mentioned earlier, the Federal Reserve Act explicitly calls upon the reserve banks to only discount real bills and placed injunctions against the use of credit for speculation. Proponents of this ideology, which included most economists of the time, believed that if credit expanded with business (by supporting it), it would not lead to inflation, but credit used for speculative purposes would.

Though both schools agreed that speculation was harmful, they differed in their response to it. The Riefler-Burgess side, led by Strong and New York, contended that policy should focus on controlling the *quantity* of credit because the Fed could not control how the credit is used once it leaves the discount window.[47] However, the "real bills" side believed that the Federal Reserve could and should influence the *quality* of credit because harming real business in an effort to discourage some banks from supporting speculative endeavors was undesirable. These differences combined with the lack of clear distinction regarding the authority of the Board over the reserve banks lead to a lack of direction within the System during 1928-29 and beyond.

The existing threat to its independence in the 1920s caused an aversion within the System, particularly the Board, to high interest rates "that had damaged agriculture and

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[45] Meltzer (2003), p. 164. This proves to be a grave mistake as it misleads policy in 1930-32 and results in the Great Depression because according to the Riefler-Burgess doctrine, if member borrowing was low, this implied easy monetary policy. Ibid. p. 279.
[46] Ibid., p. 138-139
[47] Ibid.

commerce and heightened criticism of the System."[48] By seeking to preserve its independence, the Fed actually acted according to popular sentiment of the time by fixing price stability and inflation-aversion as its primary goal. However, the System also had the contradictory policy goal of avoiding increases in discount rates. Initially, this goal of avoiding increases in discount rates (and facilitating the establishment of the gold standard) dominated the System's preferences. When the economy was booming in 1927-28, the Federal Reserve should have increased rates sooner (as New York proposed throughout 1928), but fear of political reprisal dominated the fear of potential inflation, so the Board refused, relying instead on "direct action."

Examined against this political environment, the court case in 1928 is particularly enlightening. A private citizen takes the Federal Reserve Bank of New York to court for increasing discount rates because high interest rates were particularly reactionary during this time period. However, he came from an investment point of view; he contended that the Federal Reserve had no call to curb the stock market boom and discourage speculation. The following section examines this case (and its subsequent appeal in 1929) and its effect on policy in1928-1929.

[48] Meltzer (2003), p. 139.

4.0 THE LEAD-UP TO THE STOCK MARKET CRASH

In 1927, stock prices rose though the US was in a recession. The increase in stock prices meant that credit was already sufficiently loose, so the System had to decide between tightening and expanding money. Strong wanted lower rates, partly because of international cooperation to preserve the gold standard (the British sterling needed strengthening), but also to alleviate hardships during the recession.[49] However, neither the Board nor the Advisory Council wanted to allow money expansion because they did not want to add to the already inflationary sentiments.[50] The System followed Strong's suggestion of expansionary policy, and in the summer of 1927, it increased open market purchases and decreased discount rates.[51]

By 1928, financial activity was booming, and the general opinion within the System was that the growth of bank credit was "more rapid than required" and could not be continued.[52] On January 12, the OMIC voted to sell government securities to tighten money because the newly created credit had been diverted into "channels of investment and speculation."[53] However, the increase in broker loans by its next meeting in the end of March indicated to the System that

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[49] Meltzer (2003), p. 216.
[50] Ibid., p. 217.
[51] Ibid., p. 175.
[52] Open Market Investment Committee. *Developments During 1928*: *Excerpts from the Federal Reserve Open Market Investment Committee during 1928*. Federal Reserve Archival System for Economic Research. <http://fraser.stlouisfed.org/ historicaldocs/537/download/7471/1928.pdf>. p. 171.
[53] Ibid., p. 174. By its next meeting on March 26, the open market account had been reduced to $273,000,000 (a reduction of about $156 million), and discount rates in all banks were increased to 4%, a 50 bps increase. p. 186.

credit continued to be for speculative purposes. This led to the conclusion that the 4% discount rate was not as affective in curbing the speculative appetite; the System decided to sell more securities during the following month to tighten credit further.[54] Throughout April and May, concerns over speculation had not abated because of the continued increase in broker loans. The System was still dissatisfied with the expansion of bank credit, which it stated had manifested itself mostly through loans extended on stocks and bonds. [55] All reserve banks increased discount rates, and the OMIC continued to sell securities and acceptances in the open market. Between the end of April and July 13, discount rates had increased by 100 basis points (bps) to 5%.[56]

On August 4, 1928, Frank G. Raichle, a private citizen and owner of some stocks and bonds, filed a case against the Federal Reserve Bank of New York for "[a]rtificial stringency! Propaganda! Money despotism! Paternalism!" and accused the Federal Reserve Bank of being "illegally engaged in the arbitrary reduction of business through the fixing of high rediscount rates."[57] His official charge stated the Federal Reserve Bank of New York's wrongful spreading of propaganda about an alleged money shortage, attempting to restrict supply of credit available for investment purposes, and raising the rediscount rate for member banks. He claimed that in pursuing these detrimental policies, the New York Bank caused the prices of his stocks and bonds to fall, thereby depriving him of his property without due process, thus violating his Fifth Amendment rights.[58] The case was filed under the District Court of United States for Southern

[54] Open Market Investment Committee (1928), p. 189.
[55] The OMIC met again in the end of April. The System's account balance was $152,318,300 at the time of the meeting. On May 25th the OMIC observed that money flowing into New York had offset the effects of open market operations and proposed the other reserve banks interest rates to prevent such an outflow. Ibid., p. 196-200
[56] The System's account balance at this time was $85,000,000 holdings in securities. Ibid., p. 216.
[57] Direct quote from Raichle. Quoted in the Time article: "Business: Stock Market." Time. Aug 13, 1928.
[58] Shull, Bernard. *The Fourth Branch: The Federal Reserve's Unlikely Rise to Power and Influence.* Praeger Publishers. Westport, 2005. p. 204.

District of New York, and following a trial, the courts found in favor of the Federal Reserve Bank of New York on November 6, 1928.

Immediately following the filing of the suit, the idea of "seasonal crop marketing paper," which would discount agricultural loans at lower rates, emerged; the Board pushed for this, but the OMIC objected to this idea, and this proposal was rejected. Nevertheless, this was the first response of the Board to the filing of the suit, and there is a definite sense that the System was suddenly uncomfortable with the high rates and tight policy. At this meeting on August 13, the OMIC stated that purchases might be necessary to prevent "any unwholesome restriction of credit."[59] No changes were made to the discount rates or to the System's account at this meeting, but the mood had definitely changed. The money conditions in the end of September and October were easier, broker loans increased, and on October 26, New York felt that due to an increase in bill holdings, the pressure on speculative credit had been relieved, which was contrary to the System's goal at the beginning of the year.[60] However, on the November 13th meeting of the OMIC, following the court decision, concerns over stock market speculation were once again raised, and all of the Governors in the committee urged the Federal Reserve Bank of New York to "increase its buying rates for bills of all maturities by 1/8 of 1% in the near future."[61]

Though the case is not explicitly mentioned in the meeting minutes of the OMIC, it appears to have halted the Federal Reserve's restrictive policy for a few months. The System felt the rumblings of discontent over high rates and immediately proposed possible purchases and a policy of "differential discounting" that would prevent another political backlash like in the early

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[59] Open Market Investment Committee (2008), p. 228.
[60] Ibid., p. 243 – 244.
[61] Ibid., p. 252. New York did not increase rates, and towards the end of the year, the System makes some purchases in the open market.

1920s. Since the case was also filed during crop season and the System always made more money available during this time, it is possible this fact, rather than the case, dictated policy. However, after the court ruled in favor of New York, Governors at other reserve banks immediately asked New York to increase buying rates, which is a little too coincidental to ignore, suggesting that the case must have had some psychological impact on the System.

Moreover, New York emerged from this decision feeling more independent of political pressures because of a reaffirming of its legitimacy and independence. While it is true that New York always had always been more independent, this was a New York Bank under Harrison, who was described as more diplomatic and conciliatory.[62] The 1928 case did not have the same impact on the Board that it did on New York because from the Board's perspective, just when it had started tightening money in the beginning of 1928 through interest rate hikes, the System immediately faced criticism. Though it wasn't an outraged public or Congress, a private citizen taking a Reserve Bank to court was still an expression of displeasure. This immediately caused the Board to employ "direct action" and other softer measures in 1929 as a way to discourage speculation. Thus, the heightened power struggle in 1929 between the Board and the New York Bank must be examined within this framework.

In the beginning of 1929, the Federal Reserve faced the same problem that it faced in 1928 of "checking any unnecessary expansion of credit without, if possible, seriously penalizing business."[63] On January 21st New York increased buying rates of bills. In February, the Board launched its Moral Suasion campaign, whereby it directly asked its member banks to stop discounting loans that were used towards speculative ends. At the February 5th meeting, New

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[62] Meltzer (2003), p. 195.

[63] Open Market Investment Committee. *Developments During 1929*: *Excerpts from the Federal Reserve Open Market Investment Committee during 1929*. Federal Reserve Archival System for Economic Research. <http://fraser.stlouisfed.org/ historicaldocs/542/download/7472/1929.pdf>. p. 266.

York and the other reserve banks discussed the necessity of increasing rediscount rates in the near future, but the Board made it clear that it preferred direct action to discount rate increases.[64] On February 14, the Directors of New York voted for a 6% rediscount rate, but the Board denied this action.[65] Between mid-February and early August, New York requested to increase discount rates on nine different occasions, but the Board denied every single request.

All of these requests were actually made before the end of May, and a frustrated letter from New York to the Board on May 31st read as follows:

> It is the belief of the directors of this bank that the Federal Board policy of seeking the control of credit without an increase in the discount rate and otherwise as generally understood, has created much uncertainty throughout the country, and that the bringing of the Federal Reserve Board and this bank into harmony with respect to a program which will remove uncertainty is essential to the restoration of confidence…[66]

In June and July, the directors of New York chose not to increase rates because they wanted to make harmonious policy, but they clarified that their position had not changed; interest rates needed to be increased as soon as possible.[67] Again, during these months, New York was ready to take the risk of public wrath, but the Board refused to do so because it still feared political backlash.

Raichle appealed his case on May 17th, 1929 and hearings resumed on May 21st. This time, his claims were more explicitly reported: he had suffered property loss in excess of $3000 due to the policies pursued by New York and the System more generally.[68] Because they had

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[64] Open Market Investment Committee (1929), p. 275.
[65] Open Market Investment Committee (1929)., p. 276.
[66] Ibid., p. 313
[67] On May 22nd Harrison met with the Board and complained that because of moral suasion member banks are not borrowing from the Reserve Bank for any purpose, and the increase in interest rate would be a good signal to resume borrowing, but with restraint. The Board refused. Ibid., p. 311.
[68] "Resume Hearings in Reserve Suit: Raichle Action to Determine Whether Courts May Pass Upon Decisions of Federal System." *The Wall Street Journal*. p.15. May 17, 1929.

restricted the supply of credit available for investment purposes and had sought to control member banks through direct action, he argued that he had been forced to pay high interest rates and had the value of his property depreciated without due process of law.[69] He wanted the courts to issue an injunction preventing the System from taking any action in order to forcefully liquidate broker loans. *The Wall Street Journal* observed that the "real issue before the court appears to be whether the courts may pass upon the acts and decisions of the Reserve system when such acts and decisions have been lawfully made but possibly with mistaken judgment."[70]

The Board appeared to be the only body within the System that was extremely averse to increases in discount rates at this juncture. The Federal Advisory Council advised the Board to approve rate increases on two separate occasions, once in April and once on May 21, just as hearings on Raichle's appeal had resumed. On April 24, the Board explained to New York that increasing discount rates would be a "confession of the inability of the System to deal with a limited number of member banks who are misusing its facilities other than by imposing the penalty of increased rates upon the entire banking and business structure of the country."[71] At this time, direct action/moral suasion was a legitimate policy tool according to the real bills proponents, but New York was skeptical because it followed the Riefler-Burgess school.

However, on June 5 the Board changed its position and stated that if after easing money, there was a return to speculation, only then " [was] a rate increase justified, perhaps several increases…."[72] On June 13 the Board also decided that a "temporary suspension of a rigid policy

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[69] "Resume Hearings in Reserve Suit: Raichle Action to Determine Whether Courts May Pass Upon Decisions of Federal System." *The Wall Street Journal*. p.15. May 17, 1929.
[70] Ibid.
[71] Open Market Investment Committee (1929), p. 300.
[72] Ibid., p. 316.

of direct pressure" was in order.[73] Again, once the case hearings had resumed, the Board backed down from its (relatively) hard line of discouraging speculation; before it denied rate increases because it did not want to admit that its policies were ineffective, but in June the Board denied the increases because of niggling doubts that perhaps it was being too harsh on the economy. New York disagreed, but compromised with the Board that if, for any reason, there was a demand for credit for speculative purposes, "the remedy of increased discount rates should be applied *promptly* and *rigorously*…"[74]

These developments show that the New York Bank was much more confident of its policies than the Board, though the Board asserted its position more firmly. The latter can be attributed to the power struggle between the Board and New York, and the lack of strong leadership under Harrison. The reserve bank and the Federal Advisory Council, made up of bankers predominantly, appear to have shrugged off the political recriminations of the past few years, but the Board was excessively influenced by fear. It is only when Judge Hand dismissed Raichle's case on July 15th because of a failure to enjoin the members of the Federal Reserve Board as indispensible parties to the case (Raichle only charged the Federal Reserve Bank of New York and the System generally), that the Board found the confidence to ignore fears of political backlash.

At the meeting on August 2 with the Board, Harrison felt that discount rates should be increased, but acceptance rates should be decreased; the reserve banks believed that such a policy would disabuse people of misusing the Federal Reserve's credit facilities, but the lower acceptance rate would still release some funds.[75] On August 8, New York carried out these

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[73] Ibid., p. 320.
[74] Open Market Investment Committee (1929), p. 322.
[75] Ibid., p. 329.

policies following Board approval. Finally, after nine rejections, the Board approved an increase in discount rates. Harrison meant the lowering of acceptance rates to be a bargaining technique that would convince the Board to approve the discount rate increase, but the Board's approval should be attributed to the dismissal of Raichle's case rather than this possible bargaining technique because of the shift in its position. In a Bulletin issued on August 1929, the Board mentioned the unusual importance of the case and quoted Hand's opinion that "if it proceeds in good faith through open-market operations and control of discount rates to bring about a reduction of brokers' loans, it commits no legal wrong."[76] This definitely gave the Board the approval it needed to make policy as it saw fit.

At the September meeting of the OMIC, the committee members found that Federal Reserve credit had increased, but more worrisome was the continued expansion of broker loans because the increase in discount rates had no impact on call or money rates.[77] One month later, the stock market was in distress, with Black Thursday on October 24, and Black Tuesday on October 29. Ironically, when New York asked for a reduction in discount rates and increase in purchases, the Board denied this motion, but allowed a reduction in acceptance rates. According to Meltzer, this is in accordance with the real bills doctrine because this decrease in acceptance rates could help real bills.[78] On October 28, when New York requested another decrease in buying rates due to the sudden decrease in broker loans, the Board responded that "no further

[76] The Federal Reserve Board. *Federal Reserve Bulletin: August, 1929*. United States Government Printing Office. Washington, D.C., 1929. The Federal Reserve Archival System for Economic Research. < http://fraser. stlouisfed.org/publications/frb/1929/download/50719/frb_081929.pdf>. p. 567.
[77] Open Market Investment Committee (1929), p. 343.
[78] Meltzer (2003), p. 243.

reduction in the bill rate should be made at this time as easing program of the System seems to be progressing satisfactorily."[79]

The following day, Harrison and New York took matters into their own hands and purchased securities worth $115,000,000 without Board approval. Friedman and Schwartz commended New York for this decisive action and found that the Federal Reserve reacted appropriately only to this first shock of the five experienced between 1929 and 1933.[80] At the time, however, the Board resented this "rogue" action and ordered New York to suspend purchases and decrease discount rates instead.[81] On November 7th, Harrison urged more purchases of securities, but the Board, still seething over Harrison's temerity to make purchases without approval, was no longer willing to listen.

In his opinion given at *Raichle v. Federal Reserve Bank of New York*, Hand states that the Board was specifically empowered "to regulate open market transactions, review and determine rates of discount… [and the reserve bank] is a governmental agency under the direction of the Federal Reserve Board."[82] Thus, the Board rightfully must have felt that New York had overstepped its bounds, especially given the preexisting power struggle between the OMIC and the Board. On November 14, the Board approved another reduction in the discount rates to 4.5% and a reduction in the bills rate to 4%. The mood at the end of the year seemed to be quite congratulatory; the System felt they had been successful in stopping the speculative excesses because the stock market had quieted down, but Harrison warned that money should not be

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[79] Open Market Investment Committee (1929), p. 356.
[80] Friedman and Schwartz (1971), p. 391.
[81] Ibid., p. 359. On November 5, the Board passed a resolution that no Federal Reserve Bank could buy papers of maturity greater than 15 days to curb New York's actions.
[82] Learned Hand. *Raichle v. Federal Reserve Bank of New York.* p. 6.

tightened, and perhaps even purchases were necessary in 1930 to ease the credit for real business purposes.[83]

The System for the most part handled the post stock market crash well, especially given the beliefs of the time. Meltzer notes that in 1928-29, the situation was actually deflationary, not inflationary as everyone had assumed because of the increase in stock prices.[84] Though the rates could have been lowered substantially, the Board was unwilling to do so because historically rates such as 0.25% had never existed; the System truly felt it had done enough and a crisis was averted.

The reaction of the System during and immediately following the stock market crash seems to violate the claim made in this paper that following the second decision, the Board became more confident of its ability to conduct policy. If this were indeed the case, the fact that New York proposed rate decreases instead of the Board, might indicate that the Board was indeed overcautious as before. However, this should be evaluated against the context of the time. As mentioned earlier, reducing acceptance rates would be the proper course of action under the real bills doctrine, which the Board (and the politicians of the time) supported; however, New York was much more attuned to credit quantity because of the Riefler-Burgess doctrine. Some of the decisions made also had nothing to do with feelings of legitimacy, but feelings of animosity between Young, the Chairman of the Board, and Harrison. Finally, the Board had abandoned direct action, which was a soft measure it had adopted fearing more criticism.[85] These actions support the argument that the Board had emerged stronger following the *Raichle* case.

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[83] November 27 letter from Harrison. Open Market Investment Committee (1929), p. 379.
[84] Meltzer (2003), p. 234-235.
[85] Meltzer (2003), p. 247. Meltzer further states that the Board was always aware of the limitations of direct action because in the 1925 Annual Report it wrote about the futility of qualitative control.

Meltzer finds that though the Board was in favor of more purchases, OMIC does not do anything further in November; New York was willing to sit back because the upward pressure on interest rates had declined.[86] However, the alternate explanation is that New York made one last independent attempt in purchasing securities worth $115 million in one day, and it was not willing to anger the Board anymore, particularly when the law had come down on the side of the Board and listed the reserve banks as mere "governmental agencies." This explains New York's unwillingness to step in and further anger the Board, and also explains why the Directors at New York were unable to push their expansionary agenda in 1930.

The other significant reason was the diffusion of New York's power in conducting the System's open market operations. In 1930, the Board finally replaced the five member OMIC with the Open Market Policy Conference, which included the Governors of all the Reserve Banks and the Board. This is yet another change that indicates the shift in power to the Board that Friedman and Schwartz mention, but it was not entirely due to Strong's death and Harrison's passivity, as they argue, but rather the Board's increased legitimacy resulting from the court decision.

In *The Fifteenth Annual Report of the Federal Reserve Board for the period ending in December 31, 1928*, the Board notes that the "most important points involved in the case were whether a Federal Reserve Bank or the Federal Reserve System generally is authorized to exercise its discretion in fixing rediscount rates."[87] In *The Sixteenth Annual Report of the Federal Reserve Board for the period ending in December 31, 1929*, it states that

> [t]he opinion of the Circuit of Appeals is of unusual importance because it contains the first recorded judicial interpretation of the Federal Reserve Act

[86] Meltzer (2003), p. 286

[87] The Federal Reserve Board. *The Fifteenth Annual Report of the Federal Reserve Board for the period ending December 31, 1928.* Washington, D.C. : United States Government Printing Office, 1929. p. 40.

> dealing with the discretion of the Federal Reserve Banks and the Federal Reserve Board with respect to fixing rediscount rates.[88]

Where the 1928 report only mentioned the Banks and the System in general, Hand listing the Board as an indispensible party changed the language in the 1929 report.

In 1929, following the court's decision, the Los Angeles Times bitterly reported that the Federal Reserve would continue to keep its grip and stated that "no semigovernment [*sic*] board or institution in the United Stated had more power than the Federal reserve, with the possible exception of the United States Supreme Court."[89] Furthermore, the ruling in *Raichle* effectively gave "judicial sanction to the assumption by the Board of the power to allocate credit between industry and finance."[90] The courts determined that the Federal Reserve's powers included the authority to monitor financial markets and burst bubbles where it perceives them. However, the Federal Reserve's moral suasion campaign and attempts to starve the stock market affected industry and the real economy.[91] In the spring of 1929, various signs indicated that the American economy was slowing; steel production declined, construction was sluggish and car sales waned.[92] The stock market peaked in September, a mere six weeks after the court's ruling. The stock market crashed a few weeks afterwards in October 1929.

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[88] The Federal Reserve Board. *The Sixteenth Annual Report of the Federal Reserve Board for the period ending December 31, 1929.* Washington, D.C. : United States Government Printing Office, 1930. p. 36.
[89] Sinclair, John F. "Reserve Board Keeps Grip: Injunction Restraining Enforcement of Rediscount Rates Denied in Federal Courts." *The Los Angeles Times*. p. 12. July 18, 1929.
[90] McC. Wright, David. "Is the Amended Federal Reserve Act Constituitional? A Study in the Delegation of Power." *Virginia Law Review.* Vol. 23, No. 6. April 1937. <http://www.jstor.org/stable/1067642>. p. 639.
[91] Ibid.
[92] "A Selected Wall Street Chronology." *The Crash of 1929.* Prod. Ellen Hovde and Muffie Meyer. The American Experience Series. Public Broadcasting Service. <http://www.pbs.org/wgbh/americanexperience/features/timeline/crash/>.

5.0 PLUNGING INTO THE GREAT DEPRESSION

This section examines how things spiraled out of control in the years 1930-33, particularly because of the Board's newfound independence. The general sentiment at the beginning of 1930 was the belief that the crisis had been averted; the System recognized that the country was headed toward a recession, but believed that money-easing policies of November 1929 were sufficient. Again, this stemmed from the belief of the time that a recession was inevitable, especially when it followed speculative excesses. Nevertheless in March 1930, the Board accepted a reduction in bills rate and rediscount rate at New York, and approved of open market purchases. However, a month later, the Board felt that further expansion of money should be halted. During these months, the Directors of New York strongly felt that policy should be expansionary because "in their opinion it would be unfortunate if the banking system could not be used to facilitate recovery."[93] The Board approved small purchases, but interestingly, though New York was for expansionary policy, other bank governors did not want to take any action during the time.

Differences of opinion also emerged between the Directors of the New York Bank and Harrison. The Directors believed that the priority of the System should be to bring down money rates to more reasonable levels. However, the other members of the System felt that since purchases had not affected long-term interest rates, it actually could not do so, and they opposed

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[93] Meltzer (2003), p. 205.

this proposal because that would only result in "useless" expansion and inflation down the road. Opinion was so divided and heated that New York at one point considered withdrawing from the OMPC. Harrison dissuaded the Directors from doing so, but he was also unable to convince the OMPC that securities should be purchased.[94] This incident shows that New York could not handle the extra restrictions the Board had placed upon it and was not happy under the new structure put in place by the authoritative Board.

By September 1930, the dominant opinion in the System was that open market purchases and easy money had failed to revive the economy. In October, the New York directors once again urged Harrison to propose purchases, but he failed to do so because he, like the others at the Federal Reserve, blamed their current problems on Strong's excessive expansionary policy in 1926-27.[95] In November and December, banks started failing; Friedman and Schwartz call this round of failures the First Banking Crisis, which they argue is the second shock experienced by the economy during the period 1929-33.[96] In the first two weeks of December, New York independently made significant purchases in the open market and reduced rates in response to the failure of the Bank of United States, a medium-sized member bank.[97] Both actions were taken without Board approval. The System, excluding New York, saw no responsibility towards the bank failures because 80% of the failures were in non-member banks, and the few member banks that failed were attributed to bad management that could/should not be corrected by central bank actions.[98]

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[94] Meltzer (2003), p. 310.
[95] Ibid., p. 323.
[96] Friedman and Schwartz (1971), p. 308-309.
[97] Meltzer (2003), p. 325. The purchases amounted to $100,000,000 securities and $75,000,000 acceptances after
[98] Friedman and Schwartz (1971), p. 358.

During the December meeting of the OMPC, the Conference chastised New York for "temporarily exceed[ing] its authority by purchasing more securities than the conference had authorized."[99] The System now expressed wishes to make open market sales, though the New York directors disagreed. These wishes appear to have been made with the intent of reversing New York's policy. In the past, when New York had taken such independent moves, the Board and System in general merely looked for a way to go forward and make more cohesive policy, but now, the others, particularly the Board, were no longer willing to tolerate such "rogue" behavior because it smacked of insubordination.

At the start of 1931, the first round of bank failures had halted, and the Fed once again started contracting money. Though a couple of members of the Board did believe that policy should be expansionary, this advice was not heeded. In January, New York directors once again tried to convince Harrison to continue "easy policy" or at the very least, not make sales, but Harrison did not do so. In March 1931, the third shock hit the economy through another wave of bank failures, the Second Banking Crisis, which had a more severe effect on the money stock.[100] Six months later, when Harrison proposed purchases, Young, now the Governor of Boston, objected. However, in July, at the urging of Meyer, the current Board Chairman, the System made moderate purchases of $30,000,000.[101]

In August 1931, the New York directors approved bill purchases on the reserve bank's own account, and though Harrison and Meyer pushed for further purchases in the System's account, the OMPC ruled that no immediate purchases were necessary, much to the Board's

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[99] Friedman and Schwartz (1971), p. 358.
[100] Ibid., p. 312
[101] The animosity between Harrison and Young had not died down, even after Young left the Board. Incidentally, Harrison's sudden desire to purchase securities was because of the foreign situation, not any change in his policy stance on the domestic situation.

disappointment. Following this meeting, the Board changed organization by asking to meet with the OMPC before it had made its final recommendation, rather than after as had been traditionally done.[102] This is yet another example of the Board's increasing leadership within the Fed because by meeting before the Conference made its recommendation, it had a better chance of influencing the final decision. The Board at this time also pushed its agenda by only approving up to $120,000,000 worth of purchases (but no sales), in order to prevent the OMPC from further tightening the money, yet another strong signal of the Board exerting its supremacy over the reserve banks, something that might not have occurred without the court decision in 1929.

In September 1931, Britain abandoned the gold standard, which is the fourth shock to the money stock, according to Friedman and Schwartz.[103] Britain's action led to a speculative frenzy and conversion of U.S. dollars to gold in September and October, due to fears that the U.S. would similarly abandon the gold standard; gold stock declined and the outflow of gold put further pressure on bank reserves. The Fed's response to this particular shock was vigorous and prompt; on October 9, New York increased discount rates to 2.5% and in another week to 3.5%, the sharpest hike in history before and since.[104] This caused more bank failures in the U.S. The Fed's response to this external drain is not surprising, particularly given its agenda throughout the 1920s of maintain the gold standard and preventing inflation. This event had an appropriate policy response, which the Fed knew and carried out.

Meanwhile, during these tough times, the Hoover administration attempted to cope with the lack of monetary easing by enacting fiscal measures. In 1931, Congress established the

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[102] Friedman and Schwartz (1971), p. 379-380.
[103] Ibid., p. 316.
[104] Ibid., p. 317.

National Credit Corporation (NCC), which was a consortium of the largest banks who could make loans available to the smaller banks in order to be able to meet the demands of panicking depositors; since these large banks were expected to make loans available on collateral not ordinarily acceptable, the NCC and voluntarism failed.[105] In January of 1932, Congress set up the Reconstruction Finance Corporation (RFC), which was an independent agency that had the authority to extend loans to banks and other financial institutions as well as railroads.[106] The Glass-Steagall Act, passed in February 1932, attempted to increase borrowing from reserve banks by broadening the collateral the Fed could hold against Federal Reserve notes and widening the circumstances under which individual banks could borrow from the system.[107] Though there was support in Congress for government expenditures and monetary expansion, if only through fiscal measures, the "proposals were widely castigated by the business and financial community as 'greenbackism' and 'inflationary.'[108]

In January 1932, the New York directors continued to urge open market purchases, and Harrison urged the OMPC to make purchases as part of a national program to expand credit and support the Treasury; though the OMPC approved of purchases up to $200,000,000, no purchases were made.[109] This again illustrates the Fed's heightened independence during this time because it no long felt the need to immediately capitulate to congressional demands. Finally in April, the Fed began modest purchases after the congressional threat to its independence had become too high. Congress had basically indicated that if the System would proceed towards monetary expansion more vigorously, no congressional action would take place.

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[105] Friedman and Schwartz (1971), p 320.
[106] Ibid.
[107] Ibid.,p. 321
[108] Ibid., p. 322
[109] Ibid., p. 383-384.

However, the failure to do so might have resulted in the passage of a bill that would have essentially directed the Fed to make open market purchases until wholesale prices had risen to their 1926 level.[110] Thus, the System carried out purchases of $500,000,000 for five weeks starting on April 12. In May, the OMPC voted to extend the program for another $500 million, but it reduced the weekly rate of purchase. The Fed was reluctant to carry out policy recommended by Congress because it believed would they would lead to inflation; it slows down purchases even though "the danger of unsound credit proposals [was] still great."[111] On July 16, Congress adjourns, which freed the Fed from congressional pressures; between August 10 and the end of 1932, the System's account holding remained unchanged.[112]

Another indication of the Fed's heightened independence is its refusal to cooperate with the fiscal measures enacted by Congress. The Emergency Relief and Construction Act of July 1932 permitted the Reserve Banks to discount for individuals, partnerships, and corporations, "with no other sources of funds, notes, drafts and bills of exchange eligible for discount for member banks."[113] However, the Fed did not exercise these powers because it felt they were inflationary, again evidence of how depoliticized the Fed had become, especially in contrast to the 1920s. The Federal Home Loan Bank Act was also passed in July 1932 to cope with problem of frozen assets of home financing institutions; it allowed federal home loan banks to make advances to institutions on the security of first mortgages they held.[114] However, these fiscal maneuverings did not have much success without monetary policy support. In the last quarter of

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[110] Friedman and Schwartz (1971), p. 384.
[111] Ibid., p. 386.
[112] Ibid., p. 389.
[113] Friedman and Schwartz (1971), p. 321. Footnote 26.
[114] Ibid.

1932, banks once again started failing.[115] In the 1932 elections, Roosevelt won and Hoover had to contend with lame-duck presidency until March, which led to further policy confusions.

At the start of 1933, the Fed wanted to discourage Congress from adopting inflationary measures because the open market purchases of the previous year "had enabled Treasury to borrow cheaply and 'so in some measure has encouraged the continuance of an unbalanced budget.'"[116] Meanwhile, rumors that the dollar would be devalued, which stemmed from the administrative change, caused the demand for gold coins and certificates to increase. The Fed responded to this external drain by once again increasing discount and buying rates; however, because of an almost irrational fear of inflation, it did not purchase securities to offset the rate increase.[117] This last move led to the Banking Failures of 1933. By March 1933, New York's reserve percentage had decreased below the legal limit. Roosevelt declared a national banking holiday on March 6.[118] However, more than a third of the banks did not open at all after the bank holiday finally ended almost ten days later. The general panic had permeated the System, which had been forced to shut down the reserve banks themselves because of its own failures.

Though the Board took an increasing leadership role during this period, the lack of agreement within the Board prevented it from agreeing on a proper and timely course of action. New York directors favored expansionary policy and at times took actions without Board approval, but this only angered the OMPC and certain members of the Board and did not actually help because the System acted in a manner that would offset the expansion. All of these are consequences of the legitimacy the Board derived from the court decision, particularly the failure to coordinate with the fiscal policies of 1931-32. The Federal Reserve believed that it had no

[115] Friedman and Schwartz (1971), p 325.
[116] Ibid., p. 390
[117] Ibid., p. 326
[118] Ibid., p. 327

responsibility to help the administration, another indication that it felt assured of its independence; such a strong stance could not have been taken without the implied judicial sanction from *Raichle v. Federal Reserve Bank of New York*. Furthermore, the Fed also only reluctantly went along with congressional policies when greatly pressured because it viewed Congress's proposals as dangerous because of its short-termism. The Fed was ultimately obsessed with preventing inflation even as late as 1933, during the trough of the Great Depression when money supply had decreased by a third. Upholding its independence allowed it to act on this mistaken belief.

6.0 A THOUGHT EXPERIMENT

Suppose the courts had found in favor of Raichle and required the Federal Reserve to discount bills for investment purposes. As mentioned earlier, the Federal Reserve's policies were well enough underway in slowing down economic activity in the spring of 1929. Forcing the Federal Reserve to make more credit available would have funneled more money into the stock market, but it would also have revived flagging economic activity. However, this would have continued to the allow the bubble to grow, making the inevitable crash even more spectacular due to market forces. Where the change might have occurred would have been after the crash.

When the crash did occur, the Federal Reserve would have been forced to continue its expansionary policy, which in such a situation is actually desirable because it mitigates a credit crunch. Moreover, the Federal Reserve would have also been forced to perform its job as the lender of last resort; one might have seen something similar to the bailouts of today because the hypothetical ruling could have concluded that the Federal Reserve should continue to rediscount loans even if they had the stock market shares as collateral.[119] Fewer banks would have failed, credit would have been available to kick the economy back into action, and the Great Depression might have been a mere blip in economic history. Thus far, things sound good.

However, Hand, in his opinion in *Raichle*, decisively concluded that the "remedy sought [in forcing the Federal Reserve to rediscount] would make the courts, rather than the Federal

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[119] Similar to central banks accepting my subprime loans as collateral in 2008 in order to make money available to banks.

Reserve Board, the supervisors of the Federal Reserve System, and would involve a cure worse than the malady." Once the economy recovers from the recessions due to expansionary monetary policy, one can see what he probably meant by issuing the above statement. Continued expansionary policy, especially during periods of economic booms, leads to inflation. The Federal Reserve would, of course, find it necessary to tighten monetary policy, but with its power effectively undermined by the courts, the Federal Reserve would have been become extremely susceptible to political pressure and public outrage. Once it starts to decrease credit, one can expect a short-term increase in unemployment. The public would undoubtedly decry the Federal Reserve's policies and bring the central bank to court because its actions are hurting the economy.[120]

The courts, based on precedence and their lack of knowledge regarding monetary policy measures and their consequences, would most likely rule that the Federal Reserve should make money available. Though this would briefly alleviate the unemployment situation, inflation would continue to increase because the central bank is forced to print money. One might even expect a scenario like stagflation, or even worse hyperinflation, because if unemployment starts to rise, the temporary solution would be to continue printing money. By the time it becomes clear that this expansionary solution has stopped being effective, inflation would already be out of control.

Even if Congress indirectly consents to tighter monetary policies, the number of cases filed against the Federal Reserve would increase tremendously, burdening and in turn paralyzing

[120] It is generally the case that the public is rarely concerned with inflation because one cannot see its detrimental effects until the sickness has spread.

the judiciary.[121] The Federal Reserve would be unable to act speedily when necessary to correct situations, and monetary policy would essentially become ineffective. As Hand further stated in *Raichle*:

> It would be an unthinkable burden upon any banking system if its open market sales and discount rates were subject to judicial review. Indeed, the correction of discount rates by judicial decree seems almost grotesque, when we remember that conditions in the money market often change from hour to hour, and the disease would ordinarily be over long before a judicial diagnosis could be made.[122]

Though in the short run, a ruling in favor of the plaintiff might have prevented the magnitude of the Great Depression, the long-term consequences would have been disastrous. Not only would the Federal Reserve have been paralyzed, it would have been paralyzed with an inflationary bias because any time it made an unpleasant decision, someone would take the Federal Reserve to court, and the Federal Reserve would be forced to reverse its policy. Other consequences of a prolonged expansionary monetary policy also include more asset market bubbles and their inevitable crashes and downturns.

The courts correctly ruled that the Federal Reserve should be allowed to conduct open market operations independently because to do otherwise would have substituted judicial for administrative judgment, which is not desirable for monetary policy. Unfortunately, this decision came at a time when market sentiments were unhealthy and most likely precipitated the stock market crash. The courts preserved the Federal Reserve's independence, but this resulted in the grossest mismanagement of policy in the 1930s. Though an independent central bank should be

[121] If the protests staged in 1982 against Volcker's Federal Reserve, is any indication of the public displeasure, one would expect the public to take action via the judiciary since that option would be available under this hypothetical ruling.
[122] *Raichle v. Federal Reserve Bank of New York.* 34 F.2d 910 (1929).

able to take unpleasant decisions in face of public outrage, the following section examines how *Raichle* paradoxically led to the opposite in the case of the Federal Reserve.

7.0 THE DEARTH OF CENTRAL BANK INDEPENDENCE IN THE U.S.

The Federal Reserve Act, as it stands today, is ambiguous in determining a policy goal for the Federal Reserve. It is called upon to:

> maintain long run growth of the monetary and credit aggregates…so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates. The Chairman of the Board shall appear before the Congress [semi-annually]…regarding the efforts, activities, objectives and plans…with respect to the conduct of monetary policy….[123]

The various objectives of the central bank are also somewhat conflicting, which was very much apparent during the stagflation of 1970s and 1980s. The ambiguity gives the central bank considerable goal independence and room to maneuver because the Fed has the ability to adapt and tailor its policies to a given situation. However, the semi-annual appearances of the Chairman before Congress to discuss objectives and implementation suggest that this "independence" comes with a caveat. These appearances diminish policy independence considerably because the government has the ability to influence and dictate the policy of the Federal Reserve in these meetings. Nevertheless, the central bank ultimately decides the policy; according to the law, it does not need a stamp of approval from Congress or the public.

[123] The Federal Reserve Act. 12 U.S.C Ch. 3. <http://www.federalreserve.gov/aboutthefed/fract.htm>.

Depending on the strength and determination of the chairmen, the Federal Reserve has the ability to oppose Congress.[124]

Regarding management, the Federal Reserve has considerable independence, but there again exists room for government influence. The President appoints seven members to the Board of Governors of the Federal Reserve for 14-year terms,[125] which implies strong management independence. It is also free of the congressional budget process and selects its own staff, further indications of its management independence. However, should certain powers of the Board overlap or conflict with the powers of the Treasury, the Treasury can supervise and control such powers of the Federal Reserve.[126] This special relationship between the Treasury and the Fed makes it unclear exactly who is calling the shots in some situations. Thus, the Fed can mostly operate and conduct policy according to its own discretion, but the government has the ability to strongly influence its policies.

Economists classify the Fed as quasi or mostly independent. Alesina and Summers evaluated central bank independence and average inflation in their 1993 paper; the graph on the following page is a summary of their findings.[127] The Federal Reserve's goal and operation independence from a technical perspective affords it tremendous independence, which is reflected in Alesina and Summers' high evaluation.[128] However, compared to other central

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[124] Romer, Christina D. and David H. Romer. "Choosing the Federal Reserve Chair: Lessons from History." *Journal of Economic Perspectives.* Vol. 18, No. 1. Winter 2004. p. 129-162. <http://www.jstor.org/pss/3216879>. Romer's 2004 paper attributes great importance to the Board's Chairmen and their political beliefs in conducting monetary policy.
[125] §10, The Federal Reserve Act. 12 U.S.C ch. 3. <http://www.federalreserve.gov/aboutthefed/ fract.htm>.
[126] Ibid.
[127] Alesina, Alberto and Lawrence Summers. "Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence." *Journal of Money, Credit and Banking*, Vol. 25, No. 2. (May, 1993), p. 151-162. <http://links.jstor.org/sici?sici=0022-2879%28199305%2925%3A2%3C151%3ACBIAMP%3E2.0.CO%3B2-T>
[128] The Alesina and Summers 1993 index of central bank independence is actually a compilation of the Bade and Parkin (1982) index (extended by Alesina [1988]), and the Grilli, Masciandaro and Tabellini (1991) index. All of them give the Federal Reserve a similarly high independence ranking. Ibid., p. 153-154.

banks, the Federal Reserve has been only as successful in curbing inflation as some of its less independent counterparts such as the Dutch or Belgian central bank. This finding has two possible interpretations: either the Federal Reserve isn't as inflation averse as other independent central banks, or the Federal Reserve is not as independent as currently perceived.

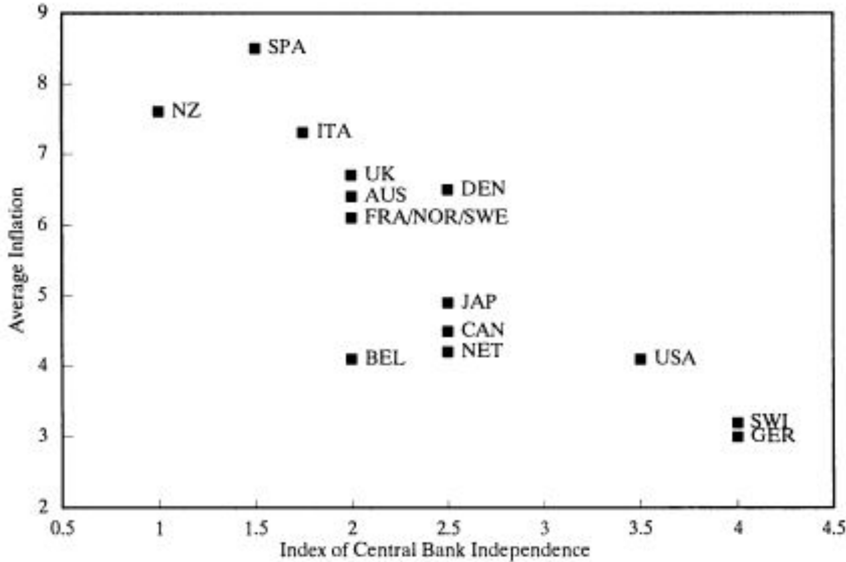

Figure 2: Central Bank Independence and Average Inflation (from Alesina and Summers [1993])

Evidence from history shows that the latter is likely the case; the Federal Reserve prioritizes between unemployment and inflation based on public sentiment and political pressure. The vague mandate in reality detracts from the Federal Reserve's ability to make independent policy because the Board takes its cues from public sentiment. Moreover, the history of distrust and contempt the American public holds for its central bank further constrains the Federal Reserve's independence because unpopular policy usually results in rumblings of the Federal Reserve's constitutionality and congressional inquiries. This causes the Federal Reserve to give in to the political pressure in order to preserve its independence. A truly independent central

bank would be willing to make unpopular policy decisions despite public outrage, but the Federal Reserve shows hesitation in making unpopular policy, which after the Great Depression has been characterized by a reluctance to raise interest rates following recessions.

Before the Great Depression, the Federal Reserve was single-mindedly preoccupied with inflation and price stability; though one of the policy goals in the 1920s was a return to the gold standard, the System refused to follow gold standard rules if it meant allowing inflation to rise.[129] It made many blunders because of this obsession with avoiding inflation, which undoubtedly resulted in the Great Depression. However, following the Great Depression mitigating unemployment and recessions became the major policy concern, until the Paul Volcker took over the Board. The negative growth and high unemployment during the Great Depression caused an aversion within the nation for high unemployment. This in turn influenced the Federal Reserve's preferences, especially since many of the consequences of the Great Depression were a result of the Federal Reserve's policies.

In 1951, the Federal Reserve returned to independent policy-making after a prolonged hiatus.[130] Initially, the Federal Reserve showed a preference for price stability and low inflation; Martin, the Federal Reserve Chairman, made statements worthy of the Bundesbank, known for its tough stance against inflation.[131] Figure 3 (on page 51), which is a closer snapshot of historic inflation, shows that post-war inflation was once again a problem in the late 1940s and early 1950s. When contrasted with Figure 4 (on page 52), which shows logged values of real GDP since 1900, one can see why inflation rather than economic growth was the focal point; the

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[129] Meltzer (2003), Chapter 4: New Procedures, New Policies, 1923-1929.

[130] Between 1936 and 1951, the Federal Reserve essentially lived in the Treasury's pockets. The one exception is in 1936-37, when the System stirred itself to raise interest rates in order to prevent inflation, which cut short the recovery and explains why the United States was still in a recession when entering World War II. Ibid.,

[131] In 1958, Martin issued the following statement: "The remedy for the inflation…was bound to be disagreeable but the problem required taking a stand." Inflation was a mere 3% at this time. Romer and Romer (2004), p. 137

economy had boomed during the war, but post-war disinflation policies had to be pursued. This suggests that inflation aversion was probably not an unpopular policy stance at this point, particularly because the Federal Reserve was trying to establish its independence following almost two decades of inaction and subservience.

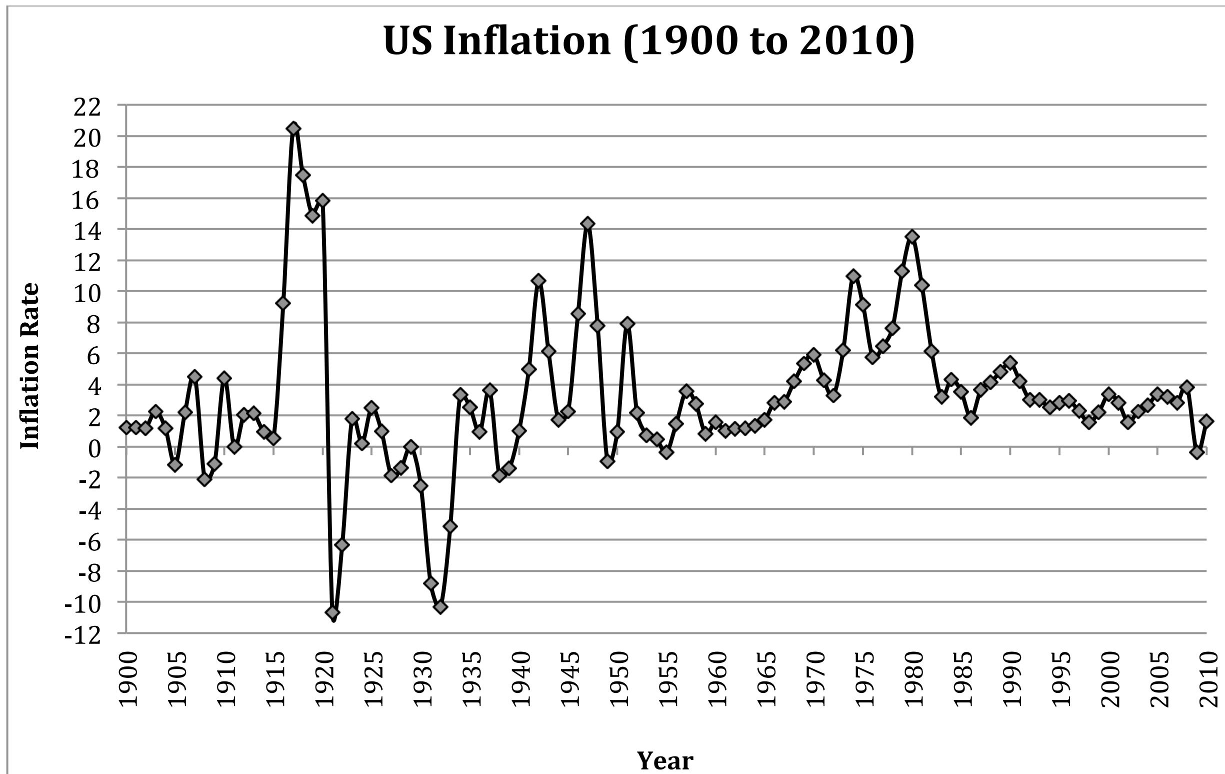

Figure 3: Inflation Rates in the U.S. from 1900 to present

However, in the 1960s, policy preferences once again shifted to promoting full employment. Though Martin still presided over the Federal Reserve, he believed that fiscal and monetary policy should be coordinated, and the Federal Reserve had a responsibility to finance the government's budget deficits. According to Martin, the Federal Reserve was "independent

within the government, not independent *of* the government [emphasis added].”[132] He willingly accepted that the Federal Reserve’s independence should be curbed, but this does not fully explain his willingness to forgo his firm beliefs that inflation would not benefit unemployment in the long run.[133]

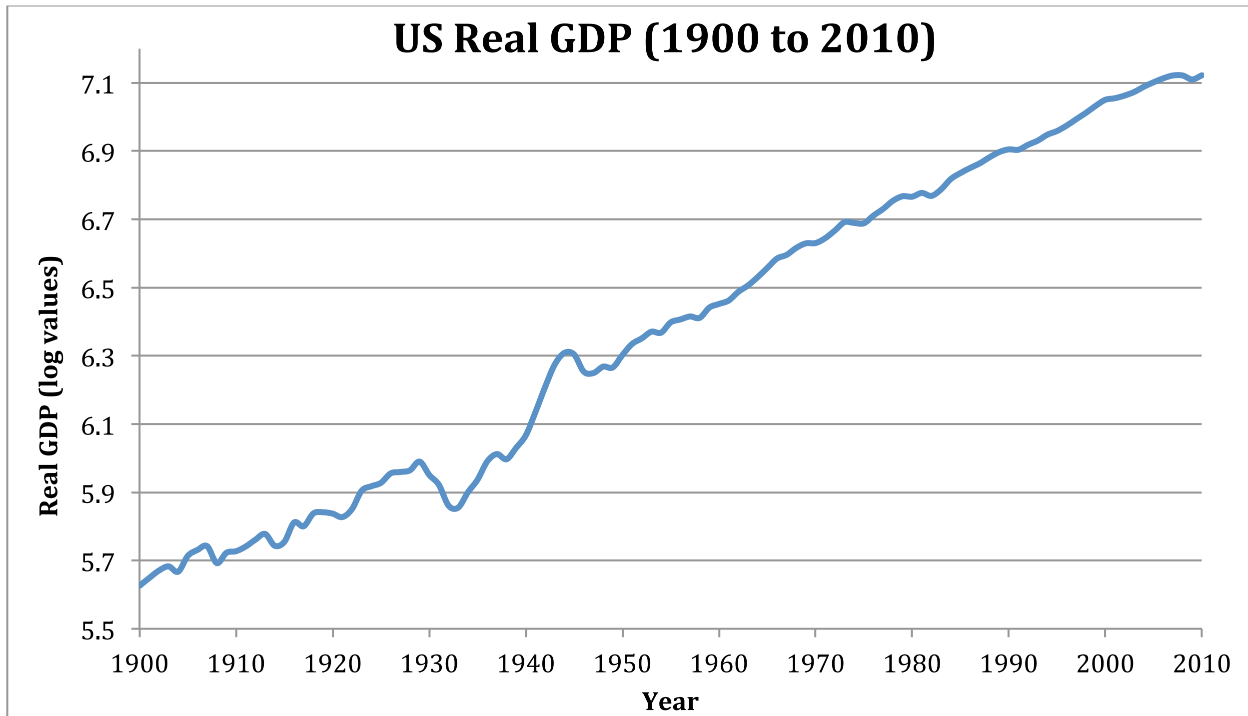

Figure 4: Real GDP in the U.S. from 1900 to present (logged)

A flurry of congressional activity began in 1960s in response to some Federal Reserve policies that caused high interest rates. In the mid-1960s, Congressional hearings on high interest rates at thrifts and small banks caused the Federal Reserve to once again look for ways to control

[132] Meltzer, Allan. “History of the Federal Reserve.” Lecture. Porter Hall, Carnegie Mellon University. Pittsburgh, PA. 4 April 2010.
[133] Romer and Romer (2004), p. 137. Footnote 3

inflation without raising rates at these banks.[134] During this period, the Treasury also lobbied Board members not to increase discount rates, and the Federal Reserve complied.[135] In 1967, the House Banking Committee sought to establish ceilings on market interest rates, subjugating higher rates to presidential approval; though the bill failed in the Senate, this once again threatened the Federal Reserve's independence. This period is particularly reminiscent of the 1920s, but with one main difference: the political backlash to higher rates in the 1960s caused the Federal Reserve to ignore rising inflation for budget deficit financing and supporting full employment.

Nevertheless, Martin increased interest rates in late 1968, and the economy entered a recession by the end of 1969.[136] Inflation continued to be high for peacetime. The Federal Reserve's challenge in 1970 was to maintain the high interest rate to curb inflationary expectations. However, the regime change in 1970 highlights the Board's reluctance to further increase interest rates or even maintain high rates due to fear of political reprisal. Within the first two months of his tenure, the Federal Open Market Committee (FOMC), which replaced the OMIC and OMPC, loosened policy considerably because unemployment had exceeded 5%. They believed that inflationary expectations had abated.[137] However, when inflation failed to fall as they expected, the administration concluded that monetary policy couldn't really arrest inflation.[138]

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[134] Meltzer, Working Paper (July 2010), p. 17.
[135] Ibid., p. 18.
[136] Meltzer contends that this is because the Reserve Bank presidents resisted political pressure, which in turn reduced the Board's ability to respond to political pressure. Working Paper (July 2010), p. 21.
[137] Romer and Romer (2004), p. 139.
[138] Ibid., p. 140.

Burns did not even attempt to make uphold the central bank's independence; he met numerous times with President Nixon to discuss policy.[139] Romer and Romer find that the Burns administration initially could not tolerate even modest increases in unemployment because aggregate restraint could no longer effectively curb inflation. Between 1971 and 1973 unemployment fell steadily; 1972 was election year, and Nixon's belief that no election has been lost due to inflation caused the Board to further facilitate his campaign by expanding policy.[140] In 1974, the Fed once again adopted a tight policy and called upon the people to "tolerate a slower rate of economic growth and a higher rate of unemployment than any of us would like."[141] During Burns' tenure, the Fed also stated its intention of conducting monetary policy by using monetary targeting. However, it continued to place more importance on smoothing interest rates and reducing unemployment.[142] The Fed was less inclined to constrain money supply, as evidenced by the accelerating money supply between 1970 and 1980 in spite of monetary targets set by the Federal Reserve.

Miller followed Burns in 1978, and he only held office for 17 months. During Miller's brief tenure unemployment rates fell and inflation surged because of the belief that unemployment rates were above the natural rate of unemployment. The Fed was also fairly passive under Miller. Interestingly, in 1978 Congress passed the Humphrey-Hawkins bill, which increased congressional oversight of the Federal Reserve considerably.[143] The Chairman was required to meet more regularly with Congress to discuss strategies and the Federal Reserve's

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[139] Meltzer, Allan. "History of the Federal Reserve." Lecture. Porter Hall, Carnegie Mellon University. Pittsburgh, PA. 4 April 2010.
[140] Meltzer, Working Paper (July 2010). p. 23.
[141] Romer and Romer (2004), p. 141. Originally in Federal Reserve Board *Bulletin*, August 1974. p. 566.
[142] Mishkin, Frederic S. "From Monetary Targeting to Inflation Targeting: Lessons from the Industrialized Countries." Graduate School of Business, Columbia University. National Bureau of Eocnomic Research. January 2000. <http://www0.gsb.columbia.edu/faculty/fmishkin/PDFpapers/00BOMEX.pdf>. p. 4.
[143] Shull (2005), p. 152.

performance in adhering to monetary aggregate targets. Though the Act itself was called the "Full Employment Act," it specifically mandated the Federal Reserve to curb inflation. This change in the political climate reflects public opinion; during the late 1970s, polls showed that the public found inflation to be the most important domestic problem.[144]

In 1979, Paul Volcker became the Chairman of the Federal Reserve, after Carter expressly stated that he wanted someone who would fight inflation.[145] He was a strong "monetarist" chairman who did not hesitate in increasing interest rates. However, due to the Humphrey-Hawkins bill, the Federal Reserve wasn't as independent as one generally believes of the Volcker era. Indeed, in early 1980, Carter requested Volcker to use credit controls rather than higher interest rates, and Volcker reluctantly agreed to do so (he had no choice). However, in this instance, the public signalled that it wanted lower inflation by mailing cut-up credit cards to Congress and the Federal Reserve and reducing loans.[146] Credit controls ended because the public decisively showed its displeasure with the high inflation; for the first time, a President lost the re-election due to inflation. Ronald Reagan supported Volcker's anti-inflationary policies.

However, this public bravado did not last. As Volcker continued the unpopular hike in interest rates into the double digits, the economic reality and hardships led to protests against theFed's policies.[147] Volcker even met with protesters a couple of time to placate the indignant masses regarding the "tyrannical" Fed.[148] Congress once again attempted to pass bills that would force the Federal Reserve to lower rates and undermine its independence.[149] Fortunately, oil

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[144] Meltzer, Allan. "History of the Federal Reserve." Lecture. Porter Hall, Carnegie Mellon University. Pittsburgh, PA. 4 April 2010.
[145] Ibid.
[146] Meltzer, Working Paper (July 2010), p. 24.
[147] Shull (2005), p. 142.
[148] Shull (2005), p. 142
[149] Ibid., p 143

prices started declining steadily from 1983, removing some of the inflationary pressures; this allowed the Fed to ease the restrictive monetary policy and remove threats on its independence.

One can conclude from these occurrences that the Federal Reserve was only able to combat inflation because it initially had public backing, and when that failed, it had a strong Chairman. The congressional oversight and public support lent Volcker legitimacy, at least for the first two years, because the Federal Reserve was merely acting in accordance with the wishes of the people. The actions taken by Volcker when many factions of the public were outraged indicates that the Fed did not bow to political pressures due to a strong Chairman who believed in the Federal Reserve's independence. Volcker also had Reagan's backing, which helped.

Following these drastic policies that finally brought inflation under control, the US entered the period of Great Moderation under Greenspan, when the Federal Reserve flourished. Inflation was low, policy was mostly counter-cyclical, and the economic growth was mostly smooth. However, following the dot-com crash and subsequent recession, it is widely contended that the Fed held interest rates too low for too long, which caused, or at the very least, worsened the bubble in the housing market. Though Greenspan has denied that his policy of "too" low interest rates was to blame for the bubble, the popular sentiment that the Federal Reserve made a blunder begs an explanation for its policy.[150]

The answer for the Federal Reserve's policy during this period is once again political pressure. In 2003, the US entered the war against Iraq; though Bush took over from a Clinton era that was running budget surpluses, by this time, the government had once again started running deficits, which put a downward pressure on interest rates. In 2003 Congress also signed the American Dream Downpayment Initiative (ADDI) into law, which sought to increase

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[150] Chan, Sewell. "Greenspan Concedes that the Fed Failed to Gauge the Bubble." *The New York Times*. March 18, 2010. <http://www.nytimes.com/2010/03/19/business/economy/19fed.html>.

homeownership rate, especially among low income and minority groups.[151] Thus, the political environment during this time called for easy money because of expansion in fiscal policy; readily enough the Fed made it available. This explanation for the Fed's error in holding interest rates too low in the 2000s is in line with its past tendencies to bow under political pressure.

From these sketches of the Federal Reserve's operations following World War II, the Federal Reserve does not appear as independent as it is given credit for. Whether the Fed believed it should not be very independent, or implicitly complied with the President and Congress, or derived its legitimacy from public support, history shows that the Fed's policy preferences take on lexicographic ordering between inflation and unemployment based on public and political sentiments. A strong Chairman, like Volcker, was able to break out of this pattern briefly and administer the medicine the people needed but refused to take; though his method worked, his policy resulted in public outcries regarding the Fed's constitutionality, which could have had serious consequences had he not been able to reduce rates in 1982 as he was so fortuitously able to do. Greenspan's record up until early 2000 was impeccable, suggesting he was another strong Chairman, but when his administration faced serious recession and rising unemployment, he succumbed to political pressures.

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[151] "American Dream Downpayment Initiative." U.S. Department of Housing and Urban Development. Updated: May 4, 2010. <http://www.hud.gov/offices/cpd/affordablehousing/programs/home/addi/>.

8.0 CONCLUSION

Ultimately, central banks should be independent, especially of judiciary oversight because “the experience of the Board of Governors, to whom Congress has committed the supervision of this complex system, gives them an advantage which judges cannot have in dealing with the congeries of imponderables involved in questions of banking policy.”[152] A private citizen questioned the Federal Reserve’s authority to detect and deflate bubbles, and the courts confirmed that the Federal Reserve could set policy as it sees fit. However, after its disastrous attempt at monitoring the soundness of credit in the 1920s, the Federal Reserve never again attempted to starve the stock market.

Today, stock market manias and crashes continued to occur more frequently, and with greater impact on the real economy. Successive asset bubbles are unsurprising and should actually be expected, especially if the Federal Reserve really does have a tendency to hold interest rates too low for too long. After all, the dotcom bubble and crash that occurred in early 2000 gave way to the housing bubble in a few short years and another crash before the end of the decade. To address this problem, proposals regarding Federal Reserve operations are once again on the congressional floor. Some propose to give the Federal Reserve more powers, especially in a regulatory capacity, so that it can prevent financial markets from excessive risk-taking. There

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[152] “Reviewability of Conditions of State Bank Membership in the Federal Reserve System. *Columbia Law Review.* Vol. 49, No. 2. Columbia Law Review Association, February 1949. pp. 265-269.

are even proposals that call upon the Federal Reserve to detect asset price bubbles and deflate them instead of letting them run their course.[153] Unless the independence deficiency outlined here is addressed, such proposals will not be effective because the Federal Reserve continues to be constrained by fears.

The Fed's tendency to give in to public and political wishes was apparent from the beginning of its establishment. The courts upholding the System's right to make independent policy in *Raichle* was a shining moment that allowed it to stop fearing political recrimination, but this proved to be more of a curse than a boon because the legitimacy the Federal Reserve derived from this case unfortunately led to serious errors on the System's part that resulted in the Great Depression. The psychological impact of this tremendous event on the public and the Federal Reserve is undeniable. It is now prone to err on the side of easing recession conditions than on preventing inflation (unless the public demands otherwise). In other words, the Federal Reserve is more concerned with short-term than medium term consequences.

The current administration's actions are very much in line with these claims. Bernanke acted in unprecedented ways to prevent the economy from plunging into another Great Depression, but this was done are undertaking fiscal policy actions in taking on mortgage-backed securities (guaranteed by government agencies such as Fannie Mae and Freddie Mac) as assets. Ironically, in 1932 when Congress urged the Board to similarly assist the housing and mortgage market, the Board refused. This is another example of how the Board was more independent in the three years following the court ruling in 1929 than it is today. The actions following the financial crisis in 2008 were clearly taken with a short-term view.

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[153] Lahart, Justin. "Fed Rethinks Stance on Popping Bubbles." Economy. *The Wall Street Journal.* October 7, 2008. <http://online.wsj.com/article/SB122420268681343047.html>.

Policy for the future is a little more worrisome. It is unclear how the Fed will remove the toxic assets from its balance book. Bernanke has also flushed the system with a tremendous amount of credit without a proper exit strategy; when it becomes profitable for banks to lend the money sitting in their reserves, they will do so. The budget deficit projections for the future indicate further pressure the Fed to finance fiscal policy by essentially printing money. All of these indicate inflationary pressures down the road. It remains to be seen how the public and the Federal Reserve act in the coming years when high unemployment and high inflation could once again be a major problem. The following observation made by Volcker in 1980 will prove to be particularly useful for future-policy making under the current mandate for the Federal Reserve:

> In the past, at critical junctures for economic stabilization policy, we have usually been more preoccupied with the possibility of near-term weakness in economic activity or other objectives than with the implication of our actions for future inflation… The result has been our now *chronic* inflationary problem…. Success [in breaking this pattern] will require that policy be consistently and persistently oriented to that end. *Vacillation and procrastination, out of fears of recession or otherwise, would run grave risks.*[154] [emphasis added].

Regardless of how the Federal Reserve digs itself out of its current hole, changes need to be made that will address the independence deficiency in the Federal Reserve. One possible solution that Meltzer proposes is to require the Federal Reserve to choose policy targets based on some predetermined rule like the Taylor rule with the political officials; this would constrain political influence because Congress could ask Chairmen to render their resignation if they fail to meet the targets.[155] However, this might not address the underlying problem behind the Federal Reserve's tendency to give in to popular opinion: public recrimination and the people's lack of confidence in the Federal Reserve's ability to take the right course of action.

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[154] Romer and Romer (2004), p. 145. Originally from Federal Reserve *Bulletin*, March 1980 p. 214.
[155] Meltzer, Working Paper (July 2004). p. 28. This model was implemented in New Zealand with apparent success.

Meltzer offers the explanation that "in periods of stress and public discomfort, Congress, the administration or both offer the Federal Reserve and others increased scrutiny and direction."[156] This comes from a public that questions the Federal Reserve's existence and constitutionality during difficult times. The Fed is not afforded the same respect as central banks in other developed nations and is held in down right contempt at times. During the Great Moderation, the Fed commanded the most admiration under the stewardship of Greenspan, but the recent crisis has once again eroded its respectability. The Fed's policy in preventing another major depression in 2008 did not have popular support. The public was outraged by what it viewed as the privatization of profits and socialization of losses when the too-big-to-fail banks were rescued with taxpayer dollars. Rumblings of the Fed's constitutionality have once again emerged. If the Fed gets through this crisis and its consequences without major blunders, its credibility will grow, but only until the next crisis. Thus, a solution must be found to increase the Federal Reserve's image in American society.

The European Central Bank (ECB) is tremendously independent its independence is immortalized in the Treaty of Maastricht, which cannot be easily amended. The German people revered the Bundesbank, and German politicians would rarely comment on the central bank's policy. The kind of Congressional inquiries seen in the United States would have never taken place in Germany, and they won't take place now in the European Union over the ECB's policies. Perhaps this means that the Federal Reserve's powers should be similarly immortalized in the US Constitution to safeguard its independence, but one can never see that happening given its track record. The other solution is to completely alter the Federal Reserve's mandate and make price stability its main concern; numerous central banks of developed countries were

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[156] Meltzer, Working Paper (July 2010). p. 27

restructured to follow this model in the 1990s including the Bank of England and the Reserve Bank of Australia. However, it is not clear if such a plan would work in the United States.

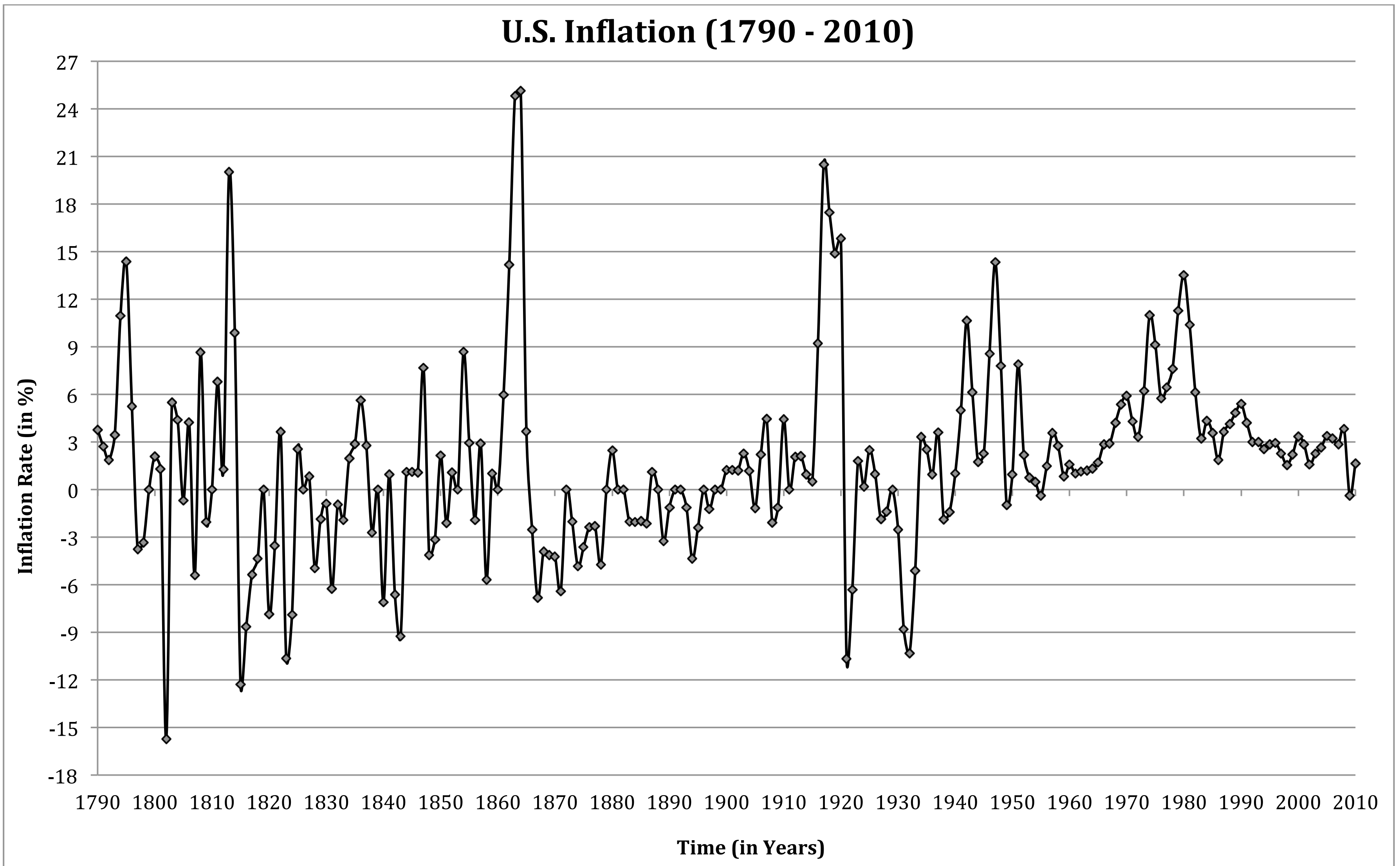
Federal agencies are given independence and are slightly removed from political pressure in order to prevent time inconsistency in preferences. The Utility companies face pressure to deliver low rates because people are not as concerned about upkeep expenses since they might not be around to experience the benefits. Central banking is another such "industry" that faces time inconsistency pressure. When the Fed's independence was upheld, it allowed the biggest catastrophe in U.S. economic history to occur. Now, it appears to face the same time inconsistency pressures as the constituents because it is not as independent as perceived. Therefore, something must be done to address the central bank's susceptibility to political pressures, especially because the Federal Reserve's actions have global consequences.

APPENDIX A

U.S. HISTORICAL INFLATION RATES (1790 – Present)

Year	Inflation	Year	Inflation	Year	Inflation
1790	**3.75**	1820	**-7.87**	1850	**2.16**
1791	**2.71**	1821	**-3.52**	1851	**-2.11**
1792	**1.87**	1822	**3.65**	1852	**1.08**
1793	**3.45**	1823	**-10.65**	1853	**0**
1794	**10.95**	1824	**-7.88**	1854	**8.68**
1795	**14.38**	1825	**2.57**	1855	**2.95**
1796	**5.26**	1826	**0**	1856	**-1.91**
1797	**-3.75**	1827	**0.83**	1857	**2.92**
1798	**-3.33**	1828	**-4.96**	1858	**-5.67**
1799	**0**	1829	**-1.85**	1859	**1**
1800	**2.1**	1830	**-0.89**	1860	**0**
1801	**1.31**	1831	**-6.26**	1861	**5.96**
1802	**-15.73**	1832	**-0.95**	1862	**14.17**
1803	**5.49**	1833	**-1.93**	1863	**24.82**
1804	**4.38**	1834	**1.97**	1864	**25.14**
1805	**-0.7**	1835	**2.89**	1865	**3.68**
1806	**4.23**	1836	**5.62**	1866	**-2.53**
1807	**-5.41**	1837	**2.77**	1867	**-6.82**
1808	**8.66**	1838	**-2.7**	1868	**-3.91**
1809	**-2.05**	1839	**0**	1869	**-4.14**
1810	**0**	1840	**-7.1**	1870	**-4.24**
1811	**6.8**	1841	**0.95**	1871	**-6.4**
1812	**1.26**	1842	**-6.62**	1872	**0**
1813	**20.02**	1843	**-9.24**	1873	**-2.03**
1814	**9.89**	1844	**1.12**	1874	**-4.83**
1815	**-12.29**	1845	**1.1**	1875	**-3.62**
1816	**-8.65**	1846	**1.09**	1876	**-2.35**
1817	**-5.36**	1847	**7.69**	1877	**-2.31**
1818	**-4.34**	1848	**-4.14**	1878	**-4.73**
1819	**0**	1849	**-3.14**	1879	**0**

1880	**2.48**	1924	**0.18**	1968	**4.19**
1881	**0**	1925	**2.51**	1969	**5.37**
1882	**0**	1926	**0.97**	1970	**5.92**
1883	**-2.02**	1927	**-1.86**	1971	**4.3**
1884	**-2.06**	1928	**-1.38**	1972	**3.31**
1885	**-2**	1929	**0**	1973	**6.21**
1886	**-2.15**	1930	**-2.51**	1974	**10.98**
1887	**1.1**	1931	**-8.8**	1975	**9.14**
1888	**0**	1932	**-10.31**	1976	**5.76**
1889	**-3.25**	1933	**-5.12**	1977	**6.45**
1890	**-1.12**	1934	**3.32**	1978	**7.61**
1891	**0**	1935	**2.54**	1979	**11.27**
1892	**0**	1936	**0.95**	1980	**13.52**
1893	**-1.13**	1937	**3.61**	1981	**10.38**
1894	**-4.36**	1938	**-1.88**	1982	**6.13**
1895	**-2.4**	1939	**-1.42**	1983	**3.21**
1896	**0**	1940	**1.01**	1984	**4.32**
1897	**-1.23**	1941	**4.99**	1985	**3.56**
1898	**0**	1942	**10.66**	1986	**1.86**
1899	**0**	1943	**6.13**	1987	**3.65**
1900	**1.24**	1944	**1.73**	1988	**4.14**
1901	**1.23**	1945	**2.27**	1989	**4.82**
1902	**1.21**	1946	**8.56**	1990	**5.4**
1903	**2.28**	1947	**14.33**	1991	**4.21**
1904	**1.17**	1948	**7.79**	1992	**3.01**
1905	**-1.16**	1949	**-0.96**	1993	**2.99**
1906	**2.23**	1950	**0.96**	1994	**2.56**
1907	**4.47**	1951	**7.89**	1995	**2.83**
1908	**-2.09**	1952	**2.19**	1996	**2.95**
1909	**-1.12**	1953	**0.75**	1997	**2.29**
1910	**4.42**	1954	**0.49**	1998	**1.56**
1911	**0**	1955	**-0.37**	1999	**2.21**
1912	**2.06**	1956	**1.49**	2000	**3.36**
1913	**2.13**	1957	**3.57**	2001	**2.85**
1914	**0.94**	1958	**2.74**	2002	**1.58**
1915	**0.52**	1959	**0.83**	2003	**2.28**
1916	**9.24**	1960	**1.58**	2004	**2.66**
1917	**20.49**	1961	**1.01**	2005	**3.39**
1918	**17.47**	1962	**1.14**	2006	**3.23**
1919	**14.87**	1963	**1.19**	2007	**2.85**
1920	**15.84**	1964	**1.34**	2008	**3.84**
1921	**-10.68**	1965	**1.71**	2009	**-0.36**
1922	**-6.31**	1966	**2.85**	2010	**1.64**
1923	**1.79**	1967	**2.9**		



Graph: Historical Inflation Rates in the U.S. from 1790 to Present

APPENDIX B

U.S. HISTORICAL REAL GDP (in millions of 2005 dollars)

Year	Real GDP	Year	Real GDP	Year	Real GDP
1790	**4,027**	1820	**14,414**	1850	**49,586**
1791	**4,268**	1821	**15,181**	1851	**53,577**
1792	**4,583**	1822	**15,757**	1852	**59,764**
1793	**4,947**	1823	**16,327**	1853	**64,651**
1794	**5,601**	1824	**17,295**	1854	**66,883**
1795	**5,956**	1825	**18,069**	1855	**69,672**
1796	**6,146**	1826	**18,711**	1856	**72,470**
1797	**6,269**	1827	**19,292**	1857	**72,841**
1798	**6,538**	1828	**19,552**	1858	**75,789**
1799	**7,000**	1829	**20,296**	1859	**81,276**
1800	**7,398**	1830	**22,162**	1860	**82,107**
1801	**7,759**	1831	**23,992**	1861	**83,570**
1802	**8,003**	1832	**25,613**	1862	**93,954**
1803	**8,139**	1833	**26,402**	1863	**101,179**
1804	**8,455**	1834	**26,846**	1864	**102,327**
1805	**8,903**	1835	**28,270**	1865	**105,257**
1806	**9,323**	1836	**29,107**	1866	**100,428**
1807	**9,332**	1837	**29,374**	1867	**102,150**
1808	**9,353**	1838	**30,589**	1868	**106,134**
1809	**10,068**	1839	**31,375**	1869	**109,022**
1810	**10,626**	1840	**31,461**	1870	**112,276**
1811	**11,109**	1841	**32,166**	1871	**117,618**
1812	**11,553**	1842	**33,194**	1872	**127,460**
1813	**12,210**	1843	**34,839**	1873	**138,333**
1814	**12,721**	1844	**36,818**	1874	**140,849**
1815	**12,823**	1845	**39,148**	1875	**140,598**
1816	**12,822**	1846	**42,330**	1876	**146,418**
1817	**13,120**	1847	**45,211**	1877	**153,703**
1818	**13,597**	1848	**46,735**	1878	**158,643**
1819	**13,860**	1849	**47,384**	1879	**177,133**

1880	**191,814**
1881	**215,798**
1882	**227,250**
1883	**233,535**
1884	**229,685**
1885	**230,480**
1886	**249,225**
1887	**267,331**
1888	**282,701**
1889	**290,824**
1890	**319,077**
1891	**322,850**
1892	**339,301**
1893	**319,606**
1894	**304,458**
1895	**339,247**
1896	**333,642**
1897	**348,023**
1898	**386,074**
1899	**412,475**
1900	**422,843**
1901	**445,287**
1902	**468,159**
1903	**481,821**
1904	**464,761**
1905	**517,201**
1906	**538,350**
1907	**552,184**
1908	**492,484**
1909	**528,081**
1910	**533,767**
1911	**551,061**
1912	**576,879**
1913	**599,651**
1914	**553,739**
1915	**568,835**
1916	**647,713**
1917	**631,693**
1918	**688,666**
1919	**694,191**
1920	**687,704**
1921	**671,938**
1922	**709,250**
1923	**802,640**
1924	**827,355**
1925	**846,789**
1926	**902,122**
1927	**910,834**
1928	**921,273**
1929	**977,000**
1930	**892,800**
1931	**834,900**
1932	**725,800**
1933	**716,400**
1934	**794,400**
1935	**865,000**
1936	**977,900**
1937	**1,028,000**
1938	**992,600**
1939	**1,072,800**
1940	**1,166,900**
1941	**1,366,100**
1942	**1,618,200**
1943	**1,883,100**
1944	**2,035,200**
1945	**2,012,400**
1946	**1,792,200**
1947	**1,776,100**
1948	**1,854,200**
1949	**1,844,700**
1950	**2,006,000**
1951	**2,161,100**
1952	**2,243,900**
1953	**2,347,200**
1954	**2,332,400**
1955	**2,500,300**
1956	**2,549,700**
1957	**2,601,100**
1958	**2,577,600**
1959	**2,762,500**
1960	**2,830,900**
1961	**2,896,900**
1962	**3,072,400**
1963	**3,206,700**
1964	**3,392,300**
1965	**3,610,100**
1966	**3,845,300**
1967	**3,942,500**
1968	**4,133,400**
1969	**4,261,800**
1970	**4,269,900**
1971	**4,413,300**
1972	**4,647,700**
1973	**4,917,000**
1974	**4,889,900**
1975	**4,879,500**
1976	**5,141,300**
1977	**5,377,700**
1978	**5,677,600**
1979	**5,855,000**
1980	**5,839,000**
1981	**5,987,200**
1982	**5,870,900**
1983	**6,136,200**
1984	**6,577,100**
1985	**6,849,300**
1986	**7,086,500**
1987	**7,313,300**
1988	**7,613,900**
1989	**7,885,900**
1990	**8,033,900**
1991	**8,015,100**
1992	**8,287,100**
1993	**8,523,400**
1994	**8,870,700**
1995	**9,093,700**
1996	**9,433,900**
1997	**9,854,300**
1998	**10,283,500**
1999	**10,779,800**
2000	**11,226,000**
2001	**11,347,200**
2002	**11,553,000**
2003	**11,840,700**
2004	**12,263,800**
2005	**12,638,400**
2006	**12,976,200**
2007	**13,228,900**
2008	**13,228,800**
2009	**12,880,600**
2010	**13,248,200**

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