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Roosevelt's Recession, 1937: Lasting History and Contested Policy

Jonian Rafti
Bard College

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**Roosevelt's Recession, 1937:
Lasting History and Contested Policy**

Senior Project Submitted to
The Division of Social Studies
of Bard College

by
Jonian Rafti

Annandale-on-Hudson, New York
May 2015

*Dedicated to my friends & teachers
for their four years of encouragement.*

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INTRODUCTION

The 1937 Recession is a lesser-known event overshadowed by the Stock Market Crash of 1929 and the Great Depression. Nonetheless, it is a subject of deep interest because it brought about an uncommonly sharp economic downturn during the depression recovery period. A study of 1937 provides the unique opportunity to examine the casual contributing role, if any, of the historically unprecedented recovery efforts enacted by President Franklin Delano Roosevelt in 1933.

To set the stage, Figure 1 plots real gross domestic product (GDP) between the years 1935 and 1938.¹ During the Recession, GDP declined nearly 10%.

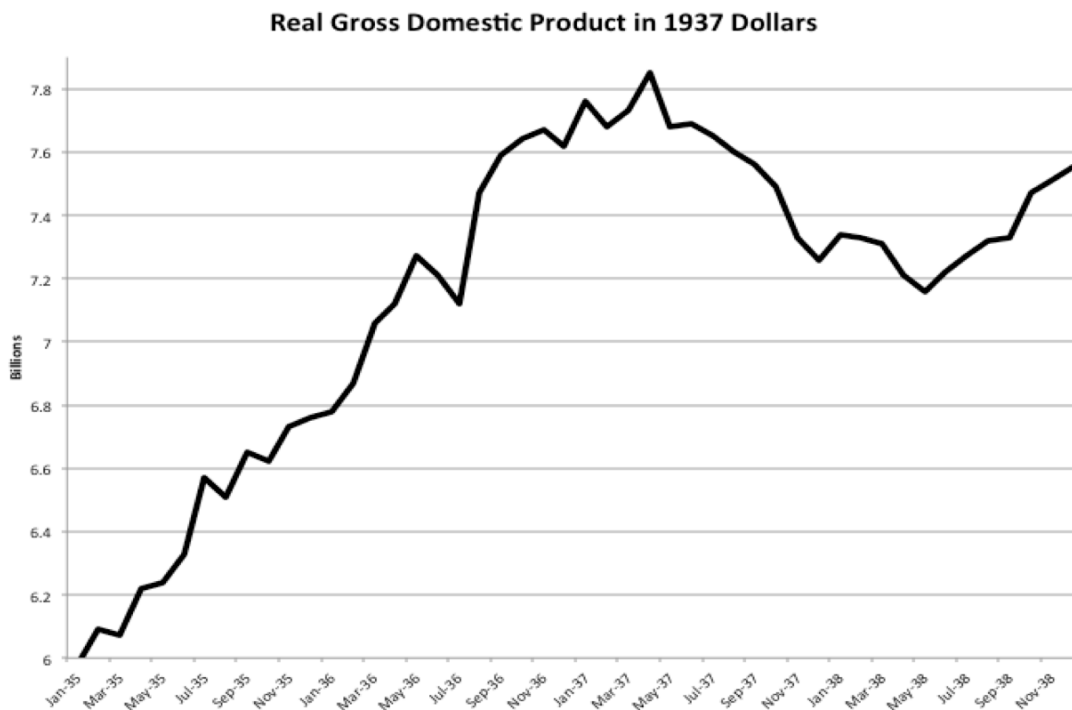


Figure 1. Real GDP in Chained 1937 Dollars.
Source: The End of the Great Depression 1939-41, by Robert J. Gordon and Robert Krenn

¹ Real GDP is a measure of economic output that is adjusted for price changes at each observation year. The values in Figure 1 are in terms of 1937 dollars.

Industrial production output data allows for a more nuanced examination of the Recession's impact. Figure 2 plots the NBER's industrial production index, an indicator that measures the output of manufacturing, mining, and electric and gas utility production facilities. The solid grey line is a plot of the index between March 1933 and December 1940.² The dashed line, provided for comparative purposes, plots industrial production during the 2008 Great Recession recovery period.

The years 1937 and 1938 should have been defined by continued recovery from the nation's worst economic collapse. For reasons to be explored, overly optimistic policymakers and outspoken and disagreeing economists made key mistakes leading to the Recession. Confusion, a lack of theories, and ideological barriers jointly contributed to the downturn. A comprehensive understanding of society, politics, and economic thought during the decade prior to the Recession is required to understand the unprecedented and contested factors that contributed to its onset. The policymakers at the root of these factors made decisions that brought about one of the most unique downturns in American economic history.

This study begins by turning the focus away from 1937 and gazing back to the onset of the Great Depression, starting with President Herbert Hoover's time in office. Subsequently, this study examines the state of economic thought during the Recession and the development of new theories in response to the Great Depression. Finally, the project

² The data was made relative to the pre-Depression peak in industrial production, which occurred in the year 1929. In other words, the data was adjusted so that the 1929 peak equals 100%.

ends with a quantitative analysis that was recurrently complemented by the historical knowledge amassed.

Given that the varied recovery efforts that followed the Great Depression make it difficult to isolate the causes of the 1937 Recession, the little economic literature on this topic has yet to reach a point of general consensus. While some texts contribute the downturn only to fiscal policy changes, others consider monetary policy as the only cause. This study finds both views to be valid. Only in the context of diminished government spending was monetary policy able to have an impact great enough to lead to the Recession.

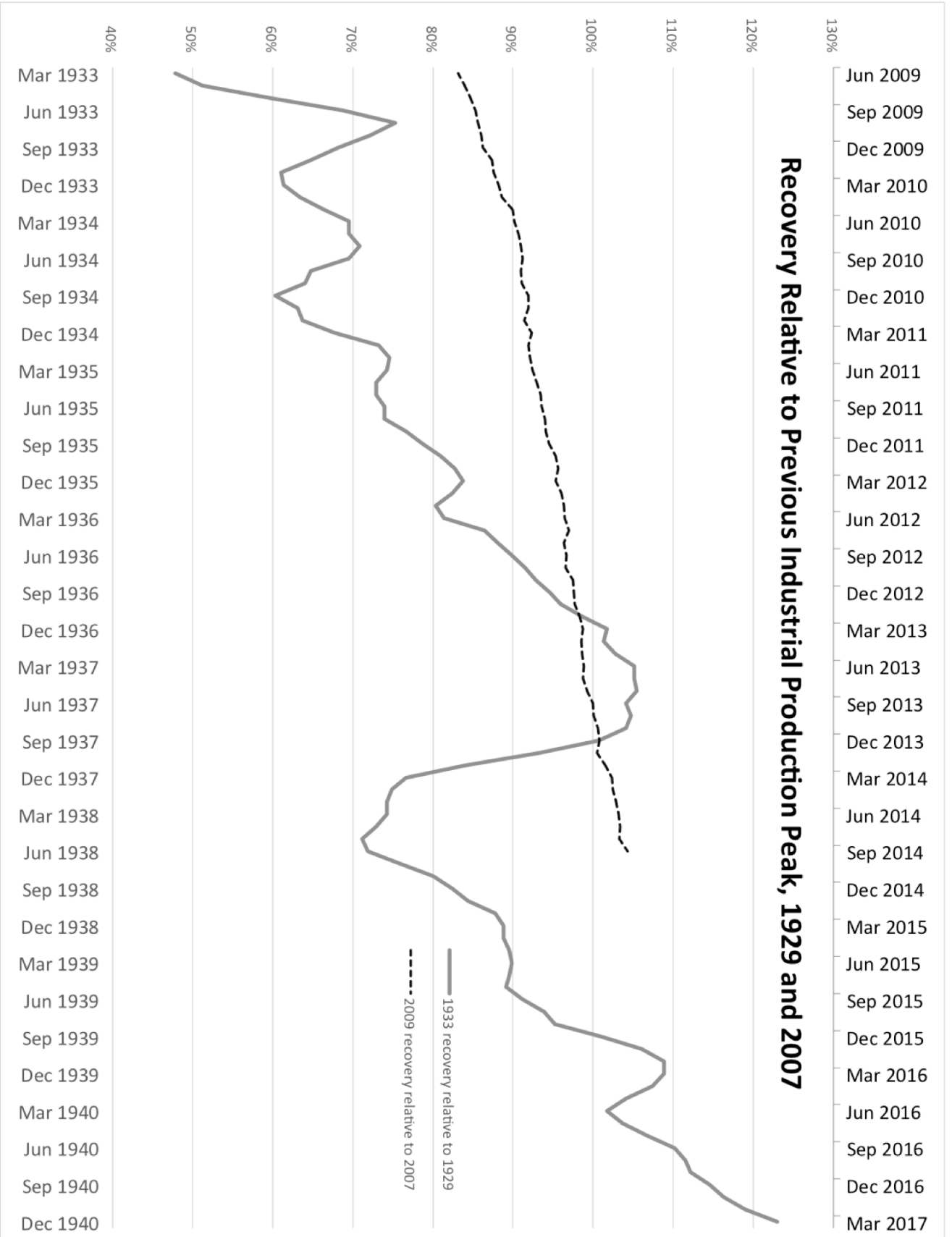


Figure 2. Recovery Relative to Previous Peak, 1929 and 2007. Data adapted from: Board of Governors of the Federal Reserve System (US), *Industrial Production Index [INDPRO]* retrieved from FRED, Federal Reserve Bank of St. Louis.

I.

THE CRASH AND THE DEPRESSION: A NATION, SURPRISED

Despite having gained the label of “do-nothing President” from his opponents across the aisle, President Hoover took a surprisingly proactive approach to addressing the alarming conditions that resulted from the Stock Market Crash of 1929. Hoover’s recovery efforts served as the foundation of President Roosevelt’s New Deal. Hoover “understood the importance of stimulating aggregate demand in a depressed economy and the economic policies he pressed for were intended for that purpose.”³ However, given his political philosophy and the social climate of the time, he believed that recovery required limited government intervention; he considered monetary policy as the only tool at his disposal. Rexford Tugwell, one of the architects of the New Deal, highlights the extent to which Hoover built the foundations for recovery by saying, “The ideas embodied in the New Deal legislation were a compilation of those which had come to maturity under Hoover’s aegis... all of us owed much to Hoover, [especially] for his enlargements of knowledge, for his encouragement to scholars, for his organization of research.” Tugwell continues, “The brains trust got much of its material from the Hoover committees or from work done under their auspices”⁴ Hoover’s dedication to research-backed policy decisions was a trait he brought to the White House from prior posts.

Before his time in the White House, Hoover served as the third Secretary of Commerce from 1921 to 1928. Although the position was considered one of the least

³ Barber, *From New Era to New Deal*, 118.

⁴ *Ibid.*, 195.

prestigious cabinet posts, Hoover used his seat as a platform to advocate for issues outside of the traditional scope of his position.

During his first two years as Secretary, Hoover lobbied for restrictions on foreign lending. Hoover was concerned about the rise in foreign investment because he believed that “our citizens... have had but little experience in international investment.”⁵ Between the years 1924 and 1929, American foreign lending totaled \$6.429 billion. During that same period, total British foreign lending was only \$3.3 billion.⁶

The surge in foreign lending was the result of the 1913 Federal Reserve Act and financial sector ingenuity. Prior to the Federal Reserve Act, national banks in the United States were prohibited from opening branches abroad. The Act ended this prohibition, and the number of bank branches in foreign countries soared from 26 in 1914 to 181 in 1920.⁷ The new foreign branches gave international borrowers easier access to American lenders. In addition to international expansion, the increase in foreign investment was also tied to a financial instrument first introduced in 1921: the investment trust. Like the modern mutual fund, an investment trust pooled client contributions and invested the pooled fund on behalf of the clients. The use of the investment trust as a financial instrument started in Britain, where trusts traditionally invested in foreign bonds. When the instrument made its debut in the United States, the focus on foreign bonds was retained.⁸

Responding to the increases in foreign investment, Secretary Hoover ordered the

⁵ Ibid., 36.

⁶ Kindleberger, *The World in Depression*, 56.

⁷ Eichengreen, "The U.S. Capital Market," in *Developing Country Debt and Economic*, 1:122.

⁸ Ibid.

Commerce Department to assess foreign investments. With the new mandate, the Department provided economic condition summaries and investment project information to hundreds of U.S. banks.⁹ However, the assessments did little to alleviate Hoover's concerns. Even during his Presidency, Hoover was worried about over-investment, both nationally and abroad. Unlike many of his contemporaries, he believed that the market was overvalued.¹⁰

As President, Hoover felt it was pertinent to caution the public about the dubious increase in market values. In early 1929, he instructed Treasury Secretary Andrew Mellon to provide the public with investment advice. Following Hoover's directive, on March 14, 1929, Mellon made a public statement encouraging investors to look beyond corporate stocks. Mellon announced, "The present situation in the financial market offers an opportunity for the prudent investor to buy bonds," and he pointedly continued, "bonds are low in price compared to stocks."¹¹

An aspect central to Hoover's concern about the market was the method underlying the expansion in stock purchases. As stock values inflated, and as more Americans flocked to the market in hopes of earning easy money, the financing of stock purchases became commonplace. Individuals willing to take out a loan could now easily invest more than they would otherwise have been able to afford. By September 1929, outstanding broker's loans obtained by NYSE members totaled \$8.5 billion. The value of

⁹ *Ibid.*, 1:124.

¹⁰ Barber, *From New Era to New Deal*, 72.

¹¹ *Ibid.*, 73.

loans outstanding had nearly doubled in less than two years.¹² Figure 3 shows the rise in the value of broker's loans outstanding.

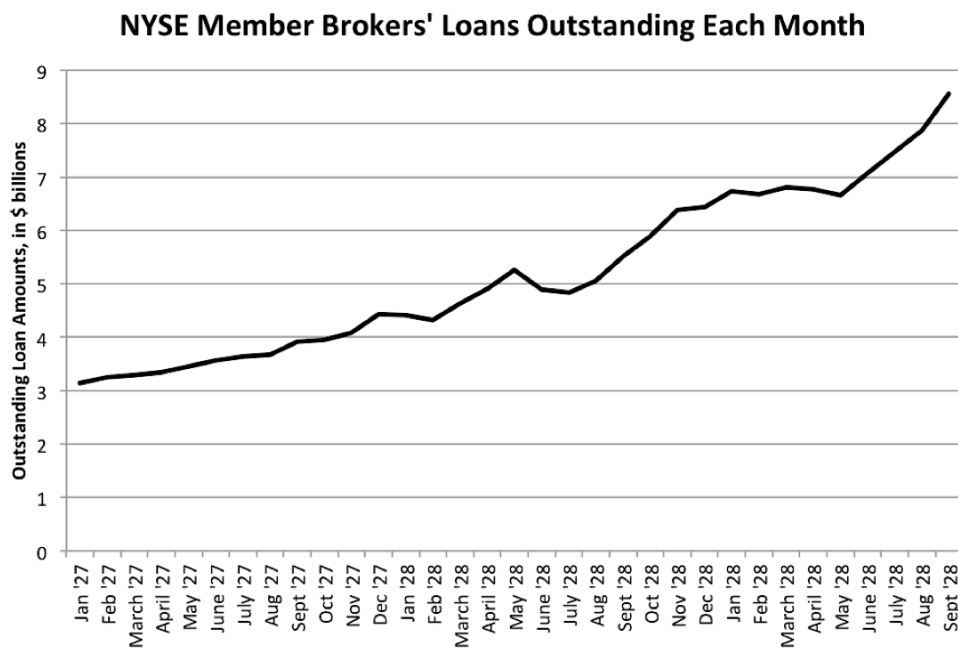


Figure 3. Outstanding Broker's Loans. *Data adapted from: "Statistical Abstract," 279.*

For comparison to modern day amounts, the value of outstanding broker's loans in 1928 represented the value of 8% of 1929 GDP. To relate these numbers to values today, 8% of GDP in 2014 represents \$1.28 trillion.¹³ As these figures show, the value of broker's loans outstanding in the year 1929 was an extraordinarily high amount. As time will tell, the vast amount of money tied up in these un-discountable and risky loans contributed, in part, to a banking crisis that brought the financial system to its knees.

It is important to note that concern over security speculation had long existed outside of the President Hoover's office. In its annual report for the year 1923, the

¹² U.S. Department of Commerce Bureau of Foreign and Domestic Commerce, *Statistical Abstract of the United States*, 279.

¹³ According to data obtained from the BEA, GDP in 1929 was \$104.6 Billion and 2014 Q2 GDP is \$16,010 Billion.

Federal Reserve Board discussed, at length, recommended credit policy. The discussion underscored the importance of “productive,” or non-speculative, uses of credit. The Board warned that a speculation in commodity stocks could produce disequilibrium between production and consumption:

The characteristic of the good functioning of the credit system is to be found in the promptness and in the degree with which the flow of credit adapts itself to the orderly flow of goods in industry and trade. So long as this flow is not interrupted by speculative interference there is little likelihood of the abuse of credit supplied by the Federal reserve banks and consequently little danger of the undue creation of new credit...It is the nonproductive use of credit that breeds unwarranted increase in the volume of credit; it also gives rise to unnecessary maladjustment between the volume of production and the volume of consumption, and is followed by price and other economic disturbances.¹⁴

However, it took the Federal Reserve Board half a decade to apply their 1923 speculation doctrine. It wasn't until their 1929 report that the Board devoted significant discussion to the rampant security speculation.¹⁵ A contemporary student of economics may be surprised to discover that, before the 1929 crash, opinion was sharply divided among economists and policymakers about the nature of stock prices. The disagreement regarding speculation is best highlighted in an infamous address given by Irving Fisher, a renowned economist and leading figure in the field. On October 15, 1929, during a speech in New York City before the Purchasing Agents Association, Fisher assured audience members and other stakeholders that, despite what others are saying, stocks

¹⁴ Federal Reserve Board, Tenth Annual Report of the Federal, 34.

¹⁵ Friedman and Schwartz, *A Monetary History of the United*, 254.

have reached "what looks like a permanently high plateau."¹⁶ Fisher's prediction stood the test of time for less than ten days.

The Stock Market Crash of 1929 is considered by most to be the start of the Depression. However, some economists believe that the crash should not have had an impact outside of the stock market. Milton Friedman, in an interview for *Newsweek* in 1970, simply stated, "Whatever happens to the stock market, it cannot lead to a great depression unless it produces or is accompanied by a monetary collapse."¹⁷

Friedman's statement in *Newsweek* reflects the conclusion that he and Anna Schwartz reached in their groundbreaking and contested 1963 book, *A Monetary History of the United States, 1867-1960*. Chapter Seven of their book, "The Great Contraction," argues that the 1929 stock market crash would not have led to a downturn as long and as painful as the Great Depression had the Federal Reserve not presided over a contraction of the money supply.¹⁸ They state, "The monetary collapse was not the inescapable consequence of other forces, but a largely independent factor which exerted a powerful influence on the course of events."¹⁹

A series of banking crises between 1930 and 1933 brought about the collapse of the financial system. Given the structure of the American banking system, bank failures and bank runs occurred with regular frequency in the decades before the Depression. Bank failures were often hyper-local events that affected small banks in rural areas. However, the three banking crises that occurred between 1930 and 1933 were

¹⁶ Fisher Sees Stocks Permanently High," *The New York Times*, October 16, 1929.

¹⁷ Friedman, Samuelson, and Wallich, "How the Slump Looks to Three Experts," *Newsweek*, May 25, 1970.

¹⁸ The money supply refers to money available for use and circulating in the economy. Varying standardized measures of the money supply exist, from most liquid measurement of money to least liquid.

¹⁹ Friedman and Schwartz, *A Monetary History of the United*, 300.

unprecedented due to their sequential timing and the large sum of currency held by the suspended banks.

The first banking crisis began during October of 1930 and tapered off in early 1931. During this period, bank failures peaked in November and December. In November, 256 banks, with total deposits of \$180 million, failed. The following month ushered in the failure of 352 banks, with total deposits of over \$370 million.²⁰ The deposits of suspended banks in November 1930 alone were more than double the previously recorded maximum, since the onset of monthly data recording in 1921. The most dramatic of the bank failures during the first crisis was the collapse of the Bank of United States on December 11, 1930. With over \$200 million in deposits amongst its 440,000 depositors, the failure of this New York City-based bank represented the largest commercial bank failure, as measured by deposits, in American history.^{21 22}

Just months after the stock market crash, towards the end of the first banking crisis, economists and policymakers predicted the onset of recovery. Upticks in certain economic indicators led many to conclude that the worst had passed. James A. Farrell, President of U.S. Steel, proclaimed in January 1931, “The peak of the depression passed thirty days ago.”²³ In the first few months of 1931, industrial production rose, and factory employment was declining at a lower rate.²⁴ However, these slight upticks weren’t enough to increase public confidence. The total value of deposits in suspended banks

²⁰ Ibid., 308.

²¹ Ibid., 310.

²² Edsforth, *The New Deal: America's*, 43.

²³ Ibid., 40.

²⁴ Friedman and Schwartz, *A Monetary History of the United*, 313.

started increasing after March 1931: a second banking crisis was unfolding.

Having been witness to the unprecedented number of bank failures that took place only months earlier, banks strengthened their reserves at the onset of the second crisis. With more urgency than before, banks shored up their reserves by liquidating assets, while depositors converted deposits to currency. Between February and August 1931, total commercial bank deposits declined at a value greater than the total decline experienced in the eighteen months before February. From August 1931 to January 1932, 1,860 banks, with combined deposits of \$1.45 billion, closed their doors.²⁵

In addition to the internal drain that banks faced from customer withdrawals, they also faced external pressures. In September 1931, Britain's departure from the gold standard fueled fears that the United States would follow. In fear of American departure from the gold standard, foreign central banks and international investors started converting dollar assets to gold. The Federal Reserve, in turn, sharply increased the rediscount rate.

The events outlined above placed a large downward pressure on the money supply. According to Friedman, the decline in money supply could have been avoided if the Federal Reserve initiated large-scale purchases of government securities. In April 1932, after heavy political pressure from Congress, the Federal Reserve commenced on a \$1 billion purchase of government securities. However, the financial sector looked down upon the Federal Reserve's operations because many considered the purchases to be inflationary.²⁶

²⁵ Ibid., 315-317.

²⁶ Ibid., 322.

The purchases temporarily stabilized the financial system. By late 1932, conditions had improved in the banking sector. The value of currency held by the public peaked in July and declined through the end of the year, meaning that the public hoarded less cash. Total demand deposits, which had been declining for over a year, reached a minimum in July and increased until the end of 1932. Similarly, total time deposits reached their minimum in September and increased through the end of the year.²⁷ The positive banking sector developments, during the latter half of 1932, broke what was a yearlong downward trend. Once again, recovery seemed to be on the horizon; however, trouble brewed.

In the last quarter of 1932, a series of banks failed in the West and Midwest. Yet again, fear flourished, and the public's demand for currency increased; the banking crisis of 1933 was underway. The 1933 crisis was unlike those that preceded it, and its impact was felt across the entire country.

On the eve of President Roosevelt's inauguration, Friday, March 3, thirty-two states had closed all their banks, six states had closed most of their banks, and ten states had placed restrictions on withdrawals.²⁸ On the third day of his Presidency, Monday, March 6, President Roosevelt declared a nationwide banking holiday between March 6 and March 9.²⁹ On March 9, the President indefinitely extended the banking holiday until otherwise declared in a subsequent proclamation; the undefined holiday lasted until March 13.³⁰

²⁷ Ibid., Table A-1, 713.

²⁸ Black, *Franklin Delano Roosevelt: Champion*, 269.

²⁹ Roosevelt, "Proclamation 2039 - Declaring," The American Presidency Project.

³⁰ Roosevelt, "Proclamation 2040 - Bank," The American Presidency Project.

It's important to note that President Roosevelt's bank holiday proclamations held the power of law due to his administration's unique interpretation of executive emergency powers. The White House more broadly interpreted the definition of national emergency outlined in the 1917 Trading with the Enemy Act. Intended for use during war, the Act failed to make war a prerequisite for the declaration of national emergency and the assumption of executive emergency powers. President Roosevelt's use of emergency powers created a controversial precedent for future Presidents.³¹

On March 12, on the eve of the conclusion of the final banking holiday, President Roosevelt addressed the nation in his first fireside chat and called on the country to "unite in banishing fear."³² The public's positive response to President Roosevelt's first fireside chat was unprecedented.

The Depression-era bank runs were atypical not only due to their severity, but also due to the banking sector's response. Unlike those crises that preceded them, the 1930's banking crises occurred under the watch of the Federal Reserve. Prior to the establishment of the Federal Reserve in 1913, banks typically responded to such conditions by restricting the conversion of deposits into currency. Without fear of failure due to currency withdrawals, banks were able to stay open long enough to build their liquidity positions.

During the Depression, privately organized efforts to shore up the banking system were very limited because the banking sector generally assumed that it was no longer necessary to organize and adopt wide-scale conversion restrictions. Friedman contends,

³¹ United States Senate Special Committee on the Termination of the National Emergency, *Emergency Powers Statutes: Provisions*, 4-5.

³² Roosevelt, "Fireside Chat on Banking," The American Presidency Project.

“the very existence of the Reserve System concerted [conversion] restriction” due the Federal Reserve’s role as lender of last resort.³³ He believes that stronger banks had less of an incentive to utilize conversion restriction as a tool because they had a new escape mechanism that didn’t exist before 1913: discounting.³⁴ This new system rested on the assumption that the Federal Reserve would actively intervene in times of crisis. However, the intervention, or lack thereof, did not necessarily contribute to recovery.

Although Friedman and Schwartz unwaveringly argue that monetary policy caused the Depression, one cannot ignore the other unwavering argument put forward by John Maynard Keynes. Keynes and his followers argue that the lack of fiscal policy leadership, in other words the lack of government stimulus spending, transformed what could have been a small economic downturn into a full-blown depression. A live decades before Friedman, Keynes actually lived through the Depression. Rooted in the study of economic downturns, Keynes’ theories fundamentally changed macroeconomics and shaped government policy for nearly a century.

Early during the Depression, Keynes advocated for government spending to stimulate the economy. His lonely voice stood in contrast to prevailing wisdom of the time. Almost universally, economists and politicians agreed that balanced budgets were a prerequisite for recovery. Eric John Hobsbawm, a British historian of industrial capitalism, colorfully summarized the state of economic thought in the early 1930’s:

The economists... nailed their flag to the mast of Say’s Law which proved that [economic] slumps could not actually occur at all. Never did a ship

³³ Friedman and Schwartz, *A Monetary History of the United*, 311.

³⁴ *Ibid.*, 312.

founder with a captain and crew more ignorant of the reasons for its misfortune or more impotent to do anything about it.^{35 36}

Although Hobsawm's was concerned with British economists and politicians, the situation in the United States, Britain's cultural and social counterpart, mirrored Britain.

Keynes frequently contributed to magazines and newspapers that catered to the mass public. One year after the Stock Market Crash, Keynes introduced a two-part article, titled "The Great Slump of 1930," by solemnly noting, "The world has been slow to realize that we are living this year in the shadow of one of the greatest economic catastrophes of modern history."³⁷ Keynes understood that the events unfolding were unprecedented and inexplicable under existing economic theory. However, at the time, common wisdom viewed economic downturns as events based in morality. It was believed that long-lasting booms were the natural products of risky investor and business behavior.

Through this lens, recessions were cyclical periods that brought about needed restraint. As the Pulitzer-Prize nominated journalist Sylvia Nasar puts it, "Recessions, in this view, were regrettable but necessary correctives, like a detox program for a drunk."³⁸ This view was so commonplace that even President Roosevelt conveyed similar beliefs during his candidacy for President. In 1932, during his nomination speech at the Democratic National Convention, FDR declared that gains from the 1920's boom were wasted frivolously:

³⁵ Hobsbawm, *Industry and Empire: The Birth*, 190.

³⁶ Say's Law is the defunct notion that production is itself the source of demand. An individual producer is paid for their services and that payment is used to purchase other goods.

³⁷ Keynes, "The Great Slump of 1930," 402.

³⁸ Nasar, *Grand Pursuit: The Story*, 323.

Enormous corporate surpluses piled up-- the most stupendous in history. Where, under the spell of delirious speculation, did those surpluses go? Let us talk economics that the figures prove and that we can understand. Why, they went chiefly in two directions: first, into new and unnecessary plants which now stand stark and idle; and second, into the call-money market of Wall Street.³⁹

In the same address, FDR shared views that a contemporary reader may not expect of the President, views that would eventually spearhead the nation's largest public works spending program; he underscored the need for continued government frugality and restraint during the Depression:

For three long years I have been going up and down this country preaching that Government - Federal and State and local - costs too much. I shall not stop that preaching. As an immediate program of action we must abolish useless offices... We must merge, we must consolidate subdivisions of Government, and, like the private citizen, give up luxuries which we can no longer afford.⁴⁰

Although he made a clear case for lower taxes and smaller government, FDR's traditionalist views were somewhat offset by his call for relief at the federal level. He stated that while the "primary responsibility for relief rests with localities now... the Federal Government has always had and still has a continuing responsibility for the broader public welfare."⁴¹ Even though the severity of the Depression was clear by 1932, FDR's belief that Federal Government had a role in promoting public welfare remained controversial within segments of American society. Contributing to the country's inability to view relief the role of Government were long-standing notions about the poor, notions that had their roots in Britain.

³⁹ "131 'I Pledge You—I,'" in *The Genesis of the New Deal*, 651.

⁴⁰ *Ibid.*, 652.

⁴¹ *Ibid.*, 658.

In industrializing eighteenth century Britain, economists, rooted in the classical assumption of perfectly free markets, faced difficulty in explaining the persistence of poverty and unemployment despite rapid industrial expansion. Various theories were put forward, but only the simplest idea gained widespread traction across British society: prolonged poverty was theoretically inexplicable, and thus, inexcusable. Continued unemployment, excluding that caused by misfortune, was assumed to be simply the byproduct of character flaws. Through this lens, poverty became the domain of charity, not economics.⁴² This simplistic outlook on poverty was widely accepted due to the ease with which the idea conformed to higher-class political goals and culture. Unfortunately, the burgeoning social Darwinist movement of the mid-nineteenth century set in stone, for decades, the notion that poverty was caused by personal shortcomings. It was not until the onset of the Progressive Era that these views changed.

In the last two decades of the nineteenth century until the onset of the First World War, technological progress, newfound wealth, prolonged peace, and political activism came together and set the stage for a unique populist idealism aimed at societal reform and betterment. The developments of the Progressive Era seeded in public consciousness the idea that government can be a force for good. Without this movement as a historical backdrop, FDR's New Deal would have likely been culturally and politically unfathomable.

During the Progressive Era, Edwin R.A. Seligman served as a key reformer in the realm of economic policy. Seligman, a founding member of the American Economic Association and the American Association of University Professors, transformed the field

⁴² Schumpeter, "Unemployment and the 'State of the Poor'," in *History of Economic Analysis*.

of economics by leading a professionalization of the discipline. He also shook the field of public finance by advocating for a move away from regressive indirect taxes to a progressive centralized tax collection system. Seligman and his reform-minded contemporaries understood that powerful ideas did not easily transform to power through the force of law; a barrier existed between economists and their theories and the political process. They realized that their role required active participation in policymaking. The Progressive-Era economists acted on that realization, and due to their success, they set a precedent for the involvement of economists in political advocacy. In 1913, years of engagement with policymakers culminated into two historic reforms: the Income Tax (16th) Amendment and the creation of the Federal Reserve System.⁴³ However, in 1914, the First World War brought to a halt the idealism and hopefulness that defined the Progressive Era. Having successfully swung through the field of public finance, the pendulum of reform now stood still for nearly a decade. It took an economic disaster for a weary and disillusioned post-war society to again develop an interest in reform.

Conservative economic policies were long considered common wisdom before the Depression, and to an extent, during the downturn. Public figures, from mainstream economists to political candidates, were expected and assumed to support balanced budgets. Straying from the wisdom of a balanced budget ensured a future of political irrelevancy. However, during the early years of economic turmoil, Keynes led a small, vocal, minority of economists that advocated for government spending programs. As his

⁴³ A concise history of Progressive-Era economic policy reform efforts, specifically that of public finance, is provided in: Ajay K. Mehrotra, "Edwin R.A. Seligman and the Beginnings of the U.S. Income Tax," *Tax Notes*, November 14, 2005.

predictions were proven to be accurate, and as his theories became more reliable, Keynes' influence quickly soared at an international level.

Months before the idea gained traction among other economists, Keynes confidently declared in December 1930 that the world faced a downturn more serious than a common recession. Recessions were then considered cyclical economic corrections that necessarily followed prolonged periods of unsustainable growth. In his December op-ed, Keynes pondered whether man was “now awakening from a pleasant dream [the 1920s boom] to face the darkness of facts? Or dropping off into a nightmare which will pass away?”⁴⁴ Keynes, of course, had a response to the question he posed. He asserted that the gains realized during the preceding decade were not deceitful byproducts of speculation, but productive, fruitful output. With that single assertion, Keynes discounted the traditionalist view that the downturn was a corrective mechanism.

Although he flatly rejected cyclical correction as a causal factor, Keynes provided no alternative explanation for the downturn. Almost a year after the Stock Market Crash, he concluded that existing theoretical knowledge could not be adequately applied to the present glut. He noted, “Today we have involved ourselves in a colossal muddle, having blundered in the control of a delicate machine, the workings of which we do not understand.” In one of his most famous metaphors, Keynes compared the current state of the economy to that of an automobile with an elusive technical malfunction. He wrote, the machine is “jammed as the result of a muddle. But because we have magneto trouble, we need not assume that we shall soon be back in a rumbling wagon and that motoring is

⁴⁴ Keynes, "The Great Slump of 1930," 402.

over.”⁴⁵ The wheels of commerce needed to roll once again. For that to occur, Keynes believed joint action was required from both London and Washington to restore confidence, revive enterprise, and restore prices.⁴⁶

The Disorientation of A Discipline

In response to the Depression, Keynes developed new economic theories that questioned an orthodoxy accepted for centuries in the English-speaking world. Until the early 1930s, classical economics was the prevailing school of thought in Britain, and to a lesser extent, the United States. The roots of classical economics can be traced to Adam Smith’s magnum opus, *The Wealth of Nations* (1776). Smith’s book made commonplace the belief that free markets were guided by an “invisible hand.”⁴⁷ The history of economic thought is punctuated by pioneering figures, like Smith. These individuals fundamentally altered existing theories, and oftentimes, served as key public figureheads.

In the two decades leading up to 1930, Irving Fisher was as the center of American economics. Fisher studied at Yale and obtained his undergraduate degree in 1888 and his Ph.D. in 1891. At Yale, Fisher found himself surrounded by Progressive-Era economists who, unlike their British counterparts, largely rejected laissez-faire principles. Unlike economists today, mainstream economists in the late 1800’s had greater flexibility to hold reform-minded views because the profession had not yet fully professionalized, nor had it developed grounding in statistical analysis. In 1896, Arthur Hadley, later to serve as President of Yale for twenty-two years, critically referred to American

⁴⁵ Ibid.

⁴⁶ Keynes, "The Great Slump of 1930, II" 428.

⁴⁷ Smith, *An Inquiry into the Nature*, IV.2.9.

economists as “a large and influential body of men who are engaged in extending the functions of government.”⁴⁸ ⁴⁹ Fisher strongly agreed with Hadley. During his studies, Fisher became increasingly disgruntled with the views of his peers and professors. Fisher’s theoretical interests stood in contrast of the reform-minded economists, like E.R.A. Seligman, who were at the forefront of American discourse during the three-decade period before the Great War.

Fisher eventually found a comfortable niche at Yale. He tailored his studies and flocked to courses led by William Graham Sumner, the Chair of Political Economy. Sumner was a polarizing figure who held contrarian views; unlike his colleagues, Sumner was a staunch advocate of laissez-faire economics. Fisher leaned towards laissez-faire economic thought, and he believed the discipline should free itself from its early roots in philosophical inquiry. Fisher desired a rigorous analytic model of study that yielded conclusive answers; he wanted to push the field towards the realm of the sciences.⁵⁰

Sumner advised Fisher to write a dissertation using mathematical economics, a field still in its infancy. Fisher believed that “before applying political economy to railway rates, to the problems of trusts, to the explanation of some current crisis, it is best to develop the theory of political economy in general.”⁵¹ Adhering to this desire, Fisher set out to create one of the first mathematical models of an economy. Fisher included a model in his dissertation, titled “Mathematical Investigations in the Theory of Value and Prices.” His thesis was widely and highly praised. Paul Samuelson, the first recipient of

⁴⁸ Nasar, *Grand Pursuit: The Story*, 149.

⁴⁹ “Past Presidents,” Office of the President.

⁵⁰ Nasar, *Grand Pursuit: The Story*, 150.

⁵¹ *Ibid.*, 151.

the Nobel Memorial Prize in Economics, proclaimed Fisher's work as "the greatest doctoral dissertation in economics ever written."⁵²

Fisher's model was a hydraulic machine that calculated equilibrium prices. Fisher's highly complicated hydraulic contraption was a simplified representation of the interrelated nature of the economy. Although a simplified rendition of the economy, the machine represented the markets at work. As Fisher grew older, he strayed from strict adherence to laissez-faire economics. In a 1906 piece, he declared that government had a role to play in the economy because markets could not always be trusted to act in the best interest of society. A middle ground was needed because, as he noted, "We are today in danger of too much socialistic experimentation; but nothing can be gained... by ignoring or condoning the opposite evils of individualism."⁵³ The idea he hints at is an externality, a concept formally introduced by Pigou in 1920.

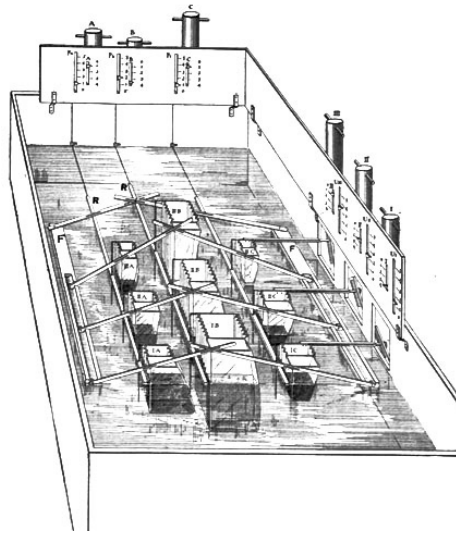


Figure 4. Diagram of Fisher's Equilibrium Machine.
 Source: Fisher, "Mathematical Investigations in the Theory," 38.

⁵² Ibid.

⁵³ Fisher, "Why Has the Doctrine," 27.

In the two decades since 1906, Fisher's work in the field of monetary economics gained an audience in England with Keynes.⁵⁴ Both Fisher and Keynes viewed the stability of a currency's purchasing power as the antidote to gluts and instability.⁵⁵ Fisher viewed not the gold standard problematic, but the way it was used; a unit of money was tied to a weight of gold, not to a unit of purchasing power. In regards to the price level, Fisher believed, "The so-called 'level of prices' is largely at the mercy of monetary and credit conditions. The tide of prices will rise or fall with the flood or ebb of gold or of paper money or of bank credit. Evidently a rise in the level of prices is a fall in the purchasing power of the dollar or other monetary unit, and *vice versa*."⁵⁶ To remedy this inherent instability, Fisher believed government had to maintain a constant purchasing power by varying the weight of a gold dollar. Under his proposal, the price of gold bullion would vary relative to commodity prices.

The recession experienced in 1920-1 inspired Fisher to relate fluctuations in the supply of money to booms and busts. World War One brought with it a 147% increase in the wholesale price level between June 1914 and May 1920.⁵⁷ To combat inflation, the Federal Reserve Bank of New York rapidly increased the discount rate, and the system's other banks followed New York's lead. In the seven months between November 1919 and June 1920, the discount rate increased from 4% to 7%.⁵⁸ The rate increase was unprecedented, and by 1921 it became evident that the Federal Reserve had achieved its

⁵⁴ Nasar, *Grand Pursuit: The Story*, 283.

⁵⁵ Keynes, *A Tract on Monetary*, 187.

⁵⁶ Fisher, "Dollar Stabilization.," in *Encyclopedia Britannica*, XXX.

⁵⁷ Friedman and Schwartz, *A Monetary History of the United*, 206.

⁵⁸ *Ibid.*, 226-233.

goal of deflating the economy. Unfortunately, the economy deflated to an undesirable extent, and a deflationary recession was underway. Whether Lebergott's or Romer's historical unemployment rate calculations are considered, the unemployment rate essentially doubled between 1920 to 1921.⁵⁹

The experience of 1921 led Fisher to explore the relation between the price level and unemployment. Whereas his predecessors found no link between the price level and the unemployment rate, Fisher uncovered the existence of a relationship between the rate of change of the price level and the unemployment rate.⁶⁰ With this discovery, Fisher started to advocate for intervention aimed at price level stabilization. In a 1923 letter to the editor of the *New York Times*, Fisher criticized an editorial that argued against Keynes' advocacy of price stabilization. In his letter, Fisher drew a distinction between prices and the price level. While "prices should be left to supply and demand," Fisher noted that, "This does not, or should not, mean that the price level should be left to supply and demand."⁶¹ Two years later, Fisher published an article where he argued that variations in economic activity, as measured by Warren M. Persons' index of trade, could be largely attributed to the rate of change in the level of prices. In his conclusion, Fisher noted that "the so-called 'business cycle'... seem[s] to be largely mythical."⁶² In the decade preceding the Depression, one of America's leading economists increasingly started viewing business cycles as a monetary phenomena. The Depression finally crystalized Fisher's views on the causes of economic downturns, and he became one of

⁵⁹ Romer, "Spurious Volatility in Historical," 31.

⁶⁰ Nasar, *Grand Pursuit: The Story*, 301.

⁶¹ Irving Fisher, "Stabilizing Price Levels," *The New York Times*, September 2, 1923.

⁶² Fisher, "Our Unstable Dollar and the So-Called," 201.

the first modern monetarists.

In 1932, Fisher published *Booms and Depression*. The book introduced a theory of economic cycles called debt deflation, a theory that pins the roots of economic downturn to deflating levels of debt. The following year, Fisher expanded his theory and summarized his theory's chain of events for readers:

Assuming a state of over-indebtedness exists, this will tend to liquidation through the alarm either of debtors or creditors or both... (1) *Debt liquidation* leads to distress selling and to (2) *Contraction of deposit currency*... This contraction of deposits and of their velocity, precipitated by distress selling, causes (3) *A fall in the level of prices*... Assuming, as above stated, that this fall of prices is not interfered with by reflation or otherwise, there must be (4) *A still greater fall in the net worths of business*, precipitating bankruptcies and (5) *A like fall in profits*, which in a "capitalistic," that is, a private-profit society, leads the concerns which are running at a loss to make (6) *A reduction in output, in trade and in employment of labor*. These losses, bankruptcies, and unemployment, lead to (7) *Pessimism and loss of confidence*, which in turn lead to (8) *Hoarding and slowing down still more the velocity of circulation*. The above eight changes cause (9) *Complicated disturbances in the rates of interest*, in particular, a fall in the nominal, or money, rates and a rise in the real, or commodity, rates of interest.⁶³

In the book, Fisher included a twenty-one page chapter that outlined remedial policy, mainly monetary, to be taken during downturns. As the final remedial step "needed only in emergencies," Fisher listed "stimulating borrowers and buyers" through "stamped dollar" subsidies that lost value over time.⁶⁴ Throughout the New Deal, Fisher maintained that private industry subsidies were preferable to the "slow, clumsy, inefficient and costly" government-led public work programs.⁶⁵

Fisher's research and beliefs led him to energetically lobby for public policies

⁶³ Fisher, "The Debt-Deflation Theory of Great," 342.

⁶⁴ Fisher, *Booms and Depressions: Some*, 142.

⁶⁵ Allen, "Irving Fisher, F. D. R., and the Great," 576.

during the Depression and the Recession. From 1933 to 1939, he wrote more than one hundred letters to President Roosevelt.⁶⁶ Although overshadowed by Keynes and somewhat sidelined by the President, Fisher continued pressing for the adoption of his remedies. These solutions, however, all but excluded fiscal policy measures; his roots in laissez-faire thought started showing. In a 1934 response to the price setting measures of the Agricultural Adjustment Act (1933) and the National Recovery Administration (1933), Fisher informed the President of his objection to “the philosophy of wealth destruction and limitation as a means of enhancing the money values for certain classes at the expense of the nation as a whole.” He pointedly added, “On this matter some of the ‘brains trust’ do not seem to have brains to trust.”⁶⁷

On the brink of the Recession and after successful Depression recovery efforts, Fisher again wrote to the President on October 24, 1937 to argue “it was not government expenditure which pulled us out of the depression... [but rather the expansion of] check-book money which turned over twenty times a year.”⁶⁸ The full onset of the Recession brought Fisher a feeling of personal failure. In a letter to his wife on December 12, 1937, Fisher said, “I’m going to make a desperate effort to stick a pin in F.D.R.” In the same letter, he also reflected on his inability to sway Roosevelt: “Why couldn’t I have influenced the President more and earlier! I suppose it’s my shortcoming.”⁶⁹

That same month, Fisher wrote to Marriner Eccles, the Chairman of the Board of Governors of the Federal Reserve System, and presented his views on the Recession. His

⁶⁶ Ibid., 562.

⁶⁷ Ibid., 580-581.

⁶⁸ Ibid., 577.

⁶⁹ Ibid., 565.

first point declared that “this ‘recession’ is very largely monetary,” while in his second point, he agreed with Eccles’ view that “the ‘monopoly’ price of labor is largely responsible for unemployment.”^{70 71} As will be later discussed, some economists have considered this wage increase, brought about by the Supreme Court’s upholding of the 1935 National Labor Relations Act, one of the more minor causes of the Recession. However, it is overwhelmingly rejected as a contributing factor.

⁷⁰ *Ibid.*, 565.

⁷¹ Fisher’s latter comment is in regards to the 17% increase in nominal wages between November 1936 and November 1937, as measured by the Bureau of Labor Statistics and the National Industrial Conference Board (Velde, “The Recession of 1937—A,” 29).

II.

OUTCRY FOR DOUBLE DIPPING: REACTIONS TO THE NEW SLUMP

In July 1933, journalist Walter Lippman concluded a radio interview with Keynes by stating, “It may be that at the present state of human knowledge we are not equipped to understand a crisis which is so great and so novel.”⁷² A scramble for new knowledge and new theories defined the state of economic thought during the early Depression years. Yet, these new theories did not always translate into government policy.

The architects of the New Deal were lawyers, public servants, and business leaders, not economists and mathematicians. To combat the Depression, they relied more on theories rooted in philosophy than theories rooted in mathematics. For them, the Depression was to be blamed on income inequality, monopolies, and wasteful inefficiencies in production. It was as if politicians and economists spoke different languages. For example, President Roosevelt, after his first personal meeting with Keynes, said that he “liked [Keynes] immensely,” but the President nonetheless complained that Keynes talked like a “mathematician.”⁷³ A clear divide existed between political leaders, struggling to enact effective policies, and economists, struggling to advocate for and explain new theories. In addition to a divide rooted in communication of theory, policymakers and economists were divided in their goals by political strategy. The Depression years were a politically favorable time to pass long-term welfare reform

⁷² Nasar, *Grand Pursuit: The Story*, 319.

⁷³ *Ibid.*, 326.

efforts; such reforms were passed alongside immediate economic recovery efforts. In regards to this mixing of policies, Keynes warned the President against combining long-run welfare reform with short-term recovery efforts.⁷⁴

Many of the early New Deal programs enacted by the Roosevelt administration were policies rooted in a desire for relief, not recovery. When these programs were created, the multiplier effect theory had not yet been firmly established. The principle of the multiplier effect, in an oversimplified sense, is that a unit increase in spending would impact the economy at a rate greater than one unit. Richard Kahn, a student of Keynes, first proposed the theory in 1931.⁷⁵ However, it took Keynes three years to relate the theory to spending; it wasn't until 1934 that the theory gained prominence and was brought to the forefront of political discourse.

In 1933, the Brains' Trust drafted programs aimed at relief. What they didn't know at the time was that these programs aided recovery; employing the needy, hungry, and jobless did not only aid those directly employed, it also stimulated the economy as a whole. Keynes was so instrumental in the development of deficit-spending theories during the Depression that today a page about the New Deal on the FDR Library website is titled "FDR: From Budget Balancer to Keynesian."⁷⁶ However, based on the events of 1936 and 1937, a more honest title would be "FDR: From Budget Balancer to Keynesian to Budget Balancer. The Fight for the Soldier's Bonus."

⁷⁴ Ibid., 324.

⁷⁵ Richard Kahn, "The Relation of Home Investment to Unemployment," *The Economic Journal* 41, no. 162 (June 1931)

⁷⁶ "FDR: From Budget Balancer to Keynesian," Franklin D. Roosevelt Presidential Library and Museum, <http://www.fdrlibrary.marist.edu/aboutfdr/budget.html>.

Fighting for the Soldier's Bonus

Between 1935 and 1937, the economy expanded at a pace that surprised many. Unfortunately, the expansion was not spurred by the private sector, but by government spending decisions. Whatever policy choices led to the Recession, whether monetary or fiscal, the choices were influenced by a belief that expansionary policy was no longer required given the rapid expansion of the economy. For example, in March 1936, commercial loans began rising for the first time since 1929.⁷⁷ However, as the year progressed, the volume of loans increased not due to improved economic conditions, but mainly due to the Soldier's Bonus payment of 1936.

The Soldier's Bonus payment was the result of a prolonged lobbying effort by veterans' groups that began as early as 1919. President Harding vetoed the first iteration of the bonus bill that successfully passed both chambers of Congress on September 19, 1922. In response, the House voted to override the veto 258 to 54, but the override failed in the Senate by only four votes.⁷⁸ Given its widespread popularity, clearly underscored by the overwhelming support it received in Congress, the bill soon reappeared on the legislative docket.

Two years later, President Coolidge vetoed a similar bonus bill on May 15, 1924. Both chambers overrode Coolidge's veto, and the Act became law on May 19, 1924.⁷⁹ The Act established a fund that granted varying levels of monetary compensation to veterans

⁷⁷ Kindleberger, *The World in Depression*, 262.

⁷⁸ An act to provide adjusted compensation for veterans of the World War, and for other purposes., H.R. 10874, 67th Cong., 2d Sess. (1922).

Office of the Secretary of the Senate, *Presidential Vetoes, 1789-1988*, S. Doc. No. 102-12 (1992), 225.

⁷⁹ *Ibid.*, 228.

for their service during World War I.⁸⁰ The Act took the form of an old-age pension system because it stipulated that the benefit could be redeemed beginning only in the year 1945. Although unpopular with veterans' groups, the prolonged maturity window provided the bi-partisan support that was needed to override Coolidge's expected veto.

As the Great Depression swept the nation during Hoover's Presidency, veterans' groups lobbied extensively for an early disbursement of the bonus. In 1932, thousands of jobless veterans, called the Bonus Army, gathered at a Washington D.C. campsite to rally for early payment.

On June 17, the Senate defeated an early disbursement bill that was passed in the House of Representatives. Undeterred, the Bonus Army continued camping in Washington in the hopes of successfully pressuring President Hoover. As weeks passed, the Hoover Administration became less welcoming of the protestors. In an attempt to end the protest, the Attorney General ordered police to clear the campsite on July 28, 1932. The ill-fated decision ultimately led to the Bonus Army Riots, an event that proved to be politically disastrous for Hoover as photographs of veterans under attack spread across the nation.

When President Roosevelt assumed office only a few months later, he quickly moved to end the protests. FDR offered jobless veterans employment through his new program: the Civilian Conservation Corps. Although the protestors were now out of the way, veterans' groups continued to lobby for early disbursement of the bonus. Their lobbying efforts were unsuccessful in securing enough votes to override a veto, but that changed after the 1935 Labor Day Hurricane reframed political discourse. The hurricane led to a public relations disaster that, in part, contributed to an early disbursement of the

⁸⁰ World War Adjusted Compensation Act, ch. 157, 43 Stat. 121-131 (May 19, 1924).

soldier's bonus.

The category five hurricane made landfall in Florida and killed hundreds of veterans employed in regional work camps. The hurricane's impact made national news; front-page headlines appeared multiple days in a row, even in national newspapers like the New York Times. On September 3, 1935, the Times reported on a train dispatched to evacuate seven hundred veterans from a federal bridge project.⁸¹ The next day, Times' readers were confronted with grim front-page articles. The headlines read "75 Veterans Reported Dead in Storm" and "Veterans' Camp Wrecked By Storm."⁸² By September 5, the extent of the devastation became clear. On that day, a front-page headline noted "Veterans Lead Fatalities: Only 11 of 192 Reported as Left Alive in One Florida Camp."⁸³

The Veterans of Foreign Wars, a group that advocated for early disbursement, used the high veteran death toll as a springboard to criticize FDR. On September 14, the group's national commander, James E. Van Zandt, accused the government of having sent the veterans to Florida in the interest of forestalling bonus army demonstrations.⁸⁴ Although it lacked any palatable accusation of negligent behavior, the Commander's meaningless accusation about job-placement intent proved to be politically toxic. Whether the result of dismay over the death toll a politically-calculated media campaign, supporters of early disbursement transformed an otherwise innocent accusation of intent into a headline-grabbing accusation of negligence through the dubious use of casual reasoning fallacies. Washington, and more specifically, the President, was portrayed as putting political

⁸¹ "Both Coasts Threatened," *The New York Times*, September 3, 1935.

⁸² "Veteran's Camp Wrecked by Storm," *The New York Times*, September 4, 1935.

⁸³ "Veterans Lead Fatalities," *The New York Times*, September 5, 1935.

⁸⁴ "Link Bonus Issue to Florida Deaths," *The New York Times*, September 15, 1935.

interests above the safety of veterans.

To put in perspective the critical social climate among more moderate critics, one can examine the rhetoric and criticism deemed acceptable for publication at the outskirts of the political spectrum. For this purpose, an article written by Ernest Hemingway for "The New Masses" is exemplary. "The New Masses" was a leftist magazine with Marxist roots that experienced a surge in circulation during the Depression. The magazine is known for accepting for publication but not printing, Abel Metropol's "Strange Fruit," a poem later made legendary by Billie Holiday.⁸⁵ Although not a mainstream magazine, neither was it a fringe-interest publication.

Hemingway's piece appeared in print on September 17, 1935. The scathing article was provocatively titled "Who murdered the vets?" In addition to the title, Hemingway's clear bias yet politically-damaging criticism is best highlighted by the three questions he asks at the start of his piece: "Whom did they [bonus marchers] annoy and to whom was their possible presence a political danger? Who sent them down to the Florida Keys and left them there in hurricane months? Who is responsible for their deaths?" Throughout his piece, Hemingway chose words that suggested only one individual was ultimately responsible for the hurricane deaths. That individual, of course, was Roosevelt, a President who just months earlier vetoed an early-disbursement bill.⁸⁶

In the end, it was not a bruised Roosevelt that gave in to demands for a bonus. Congress, perhaps more attuned and vulnerable to shifts in public sentiment during an election year, presented a new early-disbursement bill to Roosevelt on January 22, 1936.

⁸⁵ Nancy Baker, "Abel Meeropol (a.k.a. Lewis Allan): Political Commentator and Social Conscience," *American Music* 20, no. 1 (Spring 2002): 45.

⁸⁶ Hemingway, "Who Murdered the Vets?," *The New Masses*, September 17, 1935.

The President vetoed the bill, but he was overridden, and the bill became law on January 27, 1936.⁸⁷

After his veto was overridden, three national commanders of three veterans organizations spoke with FDR at the White House. They tried to quell the President's concerns about inflation resulting from a surge in currency starting in June 1936, the starting month for cash withdrawal. The Commanders informed the President that they would urge their members to retain the bonds and not cash them until 1945.⁸⁸ By August 1936, 71% of the \$1.7 Billion total bonus was converted into cash. The influx of cash into the economy likely contributed to an inflated sense of security because the Soldier's Bonus had a rapid, positive impact on economic conditions.⁸⁹

A False Sense of Wellbeing

As early as 1936, some within the administration believed the Great Depression was over.⁹⁰ President Roosevelt underscored this assumption in his annual message to Congress on January 6, 1937. In his address, FDR asked Congress to continue enacting progressive policies in the interest of American society, even though the depression was over. He stated, "Your task and mine is not ending with the end of the depression."⁹¹ The following day, January 7, the President presented Congress with the proposed budget for 1938. Multiple times in the proposal, the President highlighted that the budget was

⁸⁷ Adjusted Compensation Payment Act, ch. 32, 49 Stat. 1099-1102 (Jan. 27, 1936).

⁸⁸ "Bonus Bill Becomes Law," *The New York Times*, January 28, 1936.

⁸⁹ For a detailed analysis of the Soldier's Bonus expansionary effect, consult: Telser, "The Veterans' Bonus of 1936," *Journal of Post Keynesian Economics* 26, no. 2 (Winter 2003-4).

⁹⁰ Eggertsson and Pugsley, "The Mistake of 1937," 174.

⁹¹ Roosevelt, "Annual Message to Congress, January 6, 1937," The American Presidency Project.

balanced and that there was a lessened need for work relief expenditures. He informed Congress that economic "gains make it possible to reduce for the fiscal year 1938 many expenditures of the Federal Government which the general depression made necessary. Although we must continue to spend substantial sums to provide work for those whom industry has not yet absorbed, the 1938 Budget is in balance."⁹²

During the first half of 1937, economic conditions appeared to be favorable, and there were few signs of a looming downturn. An extensive archival search of presidential press conference minutes yielded nearly no inquiries of concern over economic conditions. Through June of 1937, the only question raised by the press about troublesome economic indicators took place at a press conference on April 2, 1937. In response to a journalist's question, the President said, "Everybody who has been reviewing the existing economic situation is pretty well agreed that the present increase in the production of durable goods is going more rapidly than the production of consumer goods and that... does constitute a danger sign."⁹³ At the press conference, FDR suggested that ending public works projects, like bridge and dam building, would aid durable good price stabilization because the projects required a wide variety of durable goods ranging from steel to concrete. Other than the April 2 remarks, FDR expressed little concern about the economy during his press conferences until the onset of the Recession in the late summer months.

The index of industrial production, plotted in Figure 2, shows a modest decline in output between August and September 1937, a drastic collapse in output between September and December, and a tapering off between December 1937 and May 1938. In

⁹² Roosevelt, "Annual Budget Message to Congress," The American Presidency Project.

⁹³ "Press Conference #357," April 2, 1937, Page 239, Press Conferences of President Franklin D. Roosevelt, 1933-1945, Franklin D. Roosevelt Presidential Library & Museum.

the list below, the industrial production index is provided for every month of output decline during the Recession. The monthly index values are provided as a percent of output in August 1937. The figures within parenthesis are percent changes from the previous month.⁹⁴

August 1937:	100%	(% Change from last month)
September 1937:	96.7%	(-3.26%)
October 1937:	89.6%	(-7.41%)
November 1937:	80.8%	(-9.82%)
December 1937:	73.6%	(-8.87%)
January 1938:	72%	(-2.21%)
February 1938:	71.3%	(-0.91%)
March 1938:	71.3%	(0%)
April 1938:	70%	(-1.83%)
May 1938:	68.4%	(-2.33%)

The start of the Recession took the nation by surprise. Unlike the Stock Market Crash of 1929 and the events that followed, the Recession was not heralded into public discourse by any set of singularly significant and alarming events. Confusion plagued the nation as economic indicators during the early weeks of the Recession trickled in evidence that was worrisome but inconclusive.

The earliest and most public sign of trouble occurred on October 18, 1937, when the stock market experienced “a spectacular decline.”⁹⁵ By the end of the day, stock values of some of the largest corporations in the country declined to less than half of their 1937 peaks. In the ten months leading to October, Chrysler stock reached a high of \$135.25 and closed on October 18 at \$62.25; GM reached a 1937 high of \$70.5 and slumped to \$36;

⁹⁴ Data source: Board of Governors of the Federal Reserve System (US), Industrial Production Index[INDPRO], retrieved from FRED, Federal Reserve Bank of St. Louis.

⁹⁵ "The Stock Market," *The New York Times*, October 20, 1937.

Warner Pictures reached a high of \$18 and closed at \$6; U.S. Steel reached a 1937 high of \$126.5 and closed on October 18 at \$61.5.⁹⁶

Although the October 18 slump was soon followed "by an equally spectacular recovery" on October 20, fear permeated the country during that 48-hour period.⁹⁷ Between October 18 and the early morning hours of October 19, the White House received over forty telegrams urging FDR to close the stock market.⁹⁸ In an early afternoon phone call with Morgenthau on October 19, FDR plainly summarized the prevailing sentiment when he noted, "The White House has the jitters."⁹⁹ With 1929 seared in collective consciousness, all eyes across the country were focused on stock market conditions. Twice on the morning of the 19th, at 10:16 a.m. and 10:56 a.m., Morgenthau telephoned W. Randolph Burgess, then the Vice-President of the Federal Reserve Bank of New York, to check on market conditions. During the first call, Burgess told Morgenthau, "Things have been fairly quiet so far."¹⁰⁰ Later that afternoon, at 1:15 p.m., FDR called Morgenthau to inquire about the market situation. Morgenthau informed the President that conditions were satisfactory but not improving; the two discussed little else during their short call.

The next day, October 20, Morgenthau telephoned FDR, and in a serious voice said, "I am terribly worried. I think you had better close the stock markets." When the

⁹⁶ Howard Wood, "Stocks Crash to New Lows," *Chicago Daily Tribune*, October 19, 1937.

⁹⁷ "The Stock Market," *The New York Times*, October 20, 1937.

⁹⁸ Personal Memo, October 19, 1937, Volume 92: October 12-October 19, 1937; Page 229, The Diaries of Henry Morgenthau, Jr., Franklin D. Roosevelt Presidential Library & Museum, Hyde Park, NY.

⁹⁹ Transcript of Call between Morgenthau and FDR. October 19, 1937, Volume 92: October 12-October 19, 1937; Page 230, The Diaries of Henry Morgenthau, Jr., Franklin D. Roosevelt Presidential Library & Museum, Hyde Park, NY.

¹⁰⁰ Transcript of Call between Morgenthau and Burgess, October 19, 1937, Volume 92: October 12-October 19, 1937; Page 222, The Diaries of Henry Morgenthau, Jr., Franklin D. Roosevelt Presidential Library & Museum, Hyde Park, NY.

President asked why, Morgenthau laughingly replied, "It's going up too fast!"¹⁰¹ The markets were surging, but the good news proved to be temporary. Only two weeks later, on the evening of November 3, Morgenthau wrote the first draft of a letter to be sent to the President. The letter read, in part, "I have had to come to the conclusion that we are headed right into another depression."¹⁰² The warning in Morgenthau's letter stood in contrast to statements that were made just weeks and months earlier. Economic conditions unexpectedly turned negative. Earlier in 1937, even the President was confident that the economy had recovered. Having assumed recovery, FDR asked Congress, on April 20, to curtail work relief spending. He confidently stated, "While I recognize many opportunities to improve social and economic conditions through Federal action, I am convinced that the success of our whole program and the permanent security of our people demand that we adjust all expenditures within the limits of my Budget estimate."¹⁰³

The atypical nature of the 1937 downturn was matched in its peculiarity only by the atypical response Roosevelt took to addressing economic conditions. A search of press conference questions concerning business and economic conditions, as indexed by the FDR Library for the months between September 1937 and January 1938, reveals that the President systematically refused to answer questions regarding the slump. In contrast to his earlier years in office, FDR stood silent as the Recession began.

¹⁰¹ Transcript of Phone Call between Morgenthau and FDR, October 20, 1937, Volume 93: October 20-October 31, 1937; Page 21, The Diaries of Henry Morgenthau, Jr., Franklin D. Roosevelt Presidential Library & Museum, Hyde Park, NY.

¹⁰² Draft Letter to FDR, November 3, 1937, Volume 94: November 1-November 10, 1937; Page 47, The Diaries of Henry Morgenthau, Jr., Franklin D. Roosevelt Presidential Library & Museum, Hyde Park, NY.

¹⁰³ Roosevelt, "60 - Message to Congress," The American Presidency Project.

One of the earliest questions about the Recession was asked at press conference on October 8, 1937. During the conference, a reporter asked the President, "Will you comment on the business situation?" The President replied, "No."¹⁰⁴ Two weeks later, on October 22, the President again was asked about the Recession, "Are you getting any reports... on which you could base a business outlook statement for the Winter of the next Spring? There is a lot of talk about a let-down or recession." FDR informed the reporter that no special reports exist.¹⁰⁵ Although he replied to the direct question about special reports, it's important to highlight that FDR's reply did not address the reporter's statement about a possible recession.

Even though he was being questioned about a downturn, the President, firm in his desire for a balanced budget, announced on October 19 that "the estimated expenditures under the recovery and relief program will be \$1,139,000,000 less than in 1937."¹⁰⁶

In November and early December, the President continued to dodge specific questions about economic conditions. However, while he declined to comment, the President at very least acknowledged that conditions were subpar.¹⁰⁷ By the end of the year, it was clear that the economy was in recession. The President finally began addressing, in more detail, recession-related questions; his replies were longer, more detailed and comprehensive than those from earlier months.¹⁰⁸

¹⁰⁴ Press Conference #401-1.

¹⁰⁵ Press Conference #405-5.

¹⁰⁶ Roosevelt, "Statement Summarizing the 1938," The American Presidency Project.

¹⁰⁷ Press Conferences #409-7; #415-8; #416-4.

¹⁰⁸ Press Conference #425-15.

While the President seemed to be in a prolonged state of denial of recession in public messages, the American public was highly attuned to minute changes in economic conditions. The public followed news of economic conditions closely due to the experiences of and hardships felt during the earlier Depression years. In addition to newspapers of record like *The New York Times* and *The Wall Street Journal*, economic conditions were reported on at a surprising frequency, even in smaller, regional newspapers that catered to middle and working class Americans.

Across the country, from New Orleans' *Times Picayune*, to Brownsville, Texas' *Brownsville Herald*, to Brooklyn's *Daily Eagle*, the state of the economy was a key news topic. Soon after the President's 1937 address to congress, the *Times Picayune* published an article announcing "1937 will be our first year of real prosperity since 1929" but only if labor leaders refrain from creating industrial conflict.¹⁰⁹ Three days later, a positive news article highlighted the improved economic conditions in key segments of the economy.¹¹⁰ On April 2, 1937, *The Brownsville Herald* discussed at length the possible impact of new taxes, budget balancing, and higher wages.¹¹¹ In the same week, *The Brownsville Herald* published other articles that concerned, at length, present economic conditions.¹¹² Clearly, economic conditions were at the forefront of both hyper-local and national news. The

¹⁰⁹ "A Cloud That's Dragonish," *The Times-Picayune* (New Orleans, LA), January 8, 1937, 12.

¹¹⁰ "Industry Pushes up after Holiday Lull; Steel Leads," *The Times-Picayune*(New Orleans, LA), January 11, 1937, 18.

¹¹¹ Rodney Dutcher, "Behind the Scenes in Washington," *The Brownsville Herald*(Brownsville, TX), April 2, 1937, 4.

¹¹² This small, local, newspaper featured during the same week at least two in-depth articles focused on analysis of policy, not only news: "Public Funds Will Control High Prices?," *The Brownsville Herald* (Brownsville, TX), April 4, 1937, 1-2. "Prices," *The Brownsville Herald* (Brownsville, TX), April 2, 1937, 1.

President's silence about conditions during late 1937 should be considered highly unusual given the country's vast interest in the state of the economy.

Yet, while there were indications of trouble with the economy by early Fall 1937, the government was sending mixed messages. On one hand, Washington was beginning to address worsening conditions, while on the other hand, the government was strongly advocating for a balanced budget because widespread relief programs were no longer necessary. In its announcements, the administration lost the consistency that had previously defined public announcements about the economy and future outlook.

Morgenthau spent hours over a three-month time-span preparing for a significant policy-related speech to be delivered before the Academy of Political Science on November 10, 1937. So much attention was paid to this speech that the number of speech-related records, including meeting and call transcripts, drafts and revisions, research data, and memos, had to be split into three volumes for record-keeping. The three volumes consist of nearly 900 pages. The close scrutiny paid to drafting this speech underscores the long-standing preoccupation with a balanced budget that came to the forefront of political discourse over the past year. While the Recession took off, focus was on the budget, not on economic conditions.

In regards to Morgenthau's speech, planning for the speech began on September 13.¹¹³ By October 28, it was decided that the speech would consist of three parts: "reasons why the budget should be balanced," "how the budget can be balanced," and

¹¹³ Conference to Talk Over Plans, 9/13/37, Volume 95: November 10, 1937; Page 1, Diaries of Henry Morgenthau, Jr., Franklin D. Roosevelt Presidential Library & Museum, Hyde Park, NY.

“considerations involving the debt retirement question.”¹¹⁴ After over fifteen drafts, the final speech was delivered at the Astor Hotel on Wednesday, November 10.

Although he was Roosevelt’s Treasury Secretary during a time when the federal deficit expanded, Morgenthau strongly believed that the key to expansion was a balanced budget and private industry. This was a view he recurrently advocated for. His speech before the Academy was one of the most public, and most targeted, policy declarations that Morgenthau addressed during his time in the administration.¹¹⁵

In the speech, he praised the President for his emergency expenditures, but he strongly argued that spending was no longer needed. He noted “this (economic) war... required a many-sided campaign under intelligent and courageous leadership.”¹¹⁶ However, Morgenthau plainly announced, “The emergency that we faced in 1933 no longer exists.”¹¹⁷ He contends that others believe “that another great spending program is desirable to ward off the risk of another business depression,” but Morgenthau asserted that “the domestic problems which us today are essentially different from those which faced us four years ago.” The long speech continues to highlight the benefits of a balanced budget and a cutting back of fiscal policy. Unfortunately, Morgenthau’s speech and his predictions were untimely. Even though economic indicators hinted at recession, his speech was packed with statements that should have been made less confidently. At the start of the

¹¹⁴ Three Parts of Speech as Decided Upon, 10/28/37, Volume 95: November 10, 1937; Page 261, Diaries of Henry Morgenthau, Jr., Franklin D. Roosevelt Presidential Library & Museum, Hyde Park, NY.

¹¹⁵ Shlaes, *The Forgotten Man: A New History*, 341-342.

¹¹⁶ Complete Set of Speech Drafts, Volume 97: November 10, 1937; Page 149, Diaries of Henry Morgenthau, Jr., Franklin D. Roosevelt Presidential Library & Museum, Hyde Park, NY.

¹¹⁷ *Ibid.*, 142.

Recession, the Treasury Secretary proudly announced, "We are nearing the end of one of the most active years in the business history of this country."¹¹⁸

Five days before Morgenthau's optimistic speech, the President addressed Congress in a radically different tone. He begins the address by informing Congress, since their last adjournment in August, "There has been a marked recession in industrial production and industrial purchases." However, keeping in line with the views favored by Morgenthau, the President did not call on Congress for public expenditures. He told Congress that following: "The continuance of business recovery in the United States depends far more upon business policies than it does upon anything that may be done, or not done, in Washington." The President requested legislation to protect labor and keep wages from declining.¹¹⁹ In his view, labor issues in industry and agriculture, not fiscal and monetary policies, caused the Recession.

Keynes, who had withdrawn from public life since a serious heart attack in the summer of 1937, wrote to the President on February 1, 1938. In the eight-page letter, Keynes' outlined his views about the causes of the Recession. Keynes praised the President for his earlier spending programs that were the roots of recovery. In regards to the Recession, Keynes pointed to the curtailment of these programs as the cause. He plainly informs the President that, unless the decline in government spending was supplemented by an expansion in spending in other parts of the economy, "the present slump could have

¹¹⁸ Ibid., 143.

¹¹⁹ Roosevelt, "Message to Congress Recommending," The American Presidency Project.

been predicted with absolute certainty.”¹²⁰ Keynes agreed that the Recession was caused by an “error of optimism.” Unlike the President and other members of the administration, Keynes did not consider this an error of overproduction in the private sector, but an error of spending decline on the government’s part. Keynes ended the letter with a warning: “The maintenance of prosperity in the modern world is extremely difficult...it is so easy to lose precious time.”¹²¹

¹²⁰ "Document 50: February 28, 1938, Letter with attachments, To: Keynes From: Roosevelt," in *FDR's Response to Recession*, ed. George McJimsey, vol. 26, *Documentary History of the Franklin D. Roosevelt Presidency* (University Publications of America, 2005), 307.

¹²¹ *Ibid.*, 312.

III.

THE NUMBERS DON'T AGREE: A REVIEW OF CONFLICTING STUDIES

Throughout the decades, the 1937 Recession was of little interest to economists. Its predecessor, the Great Depression, is the focus of most of the related research. The varied recovery efforts that followed the Great Depression make it difficult to isolate and study and the causes of the Recession. Given the difficulty in studying this downturn, the little economic literature that exists has not reached a point of general consensus: it is split into three broad camps. Some texts contribute the downturn mainly to fiscal policy changes, some consider monetary policy shifts as the main cause, and some point to labor conditions as the culprit.

It took a decade after the Recession for serious, focused scholarship about it to appear. Kenneth D. Roose, a longtime economist at Oberlin College, was one of the earliest economists to devote much of his research to the study of the 1937 Recession. After completing his dissertation at Yale, titled "The Recession and Revival of 1937 - 1938," he began expanding upon his research.¹²² In 1948, part of his dissertation was published in the *Journal of Political Economy*, and then in 1951 he published an article in *The Journal of Finance*, where he examined, more closely, the role played by net government contribution to income during the Recession. His research into the Recession culminated in 1954 when his book, *The Economics of Recession and Revival: An Interpretation of 1937-38*, was published. To this day, his book is the only book solely

¹²² Roose, "The Recession of 1937-38," 239.

devoted to the study of this Recession.

Roose's 1951 paper is concerned with the role of fiscal policy in bringing about the Recession. From the onset, Roose declares that the decline in net government contribution to income, which he used as an indicator for the net effects of government expenditures and taxes, was a contributing factor to the Recession.¹²³ His study seeks to examine not if, but how large of a role the decline of government spending played.

Figure 5, adapted from Roose's study, plots personal income and net government contribution to income between the years 1936 and 1938.¹²⁴ As shown in the figure's grey area, net government contribution to income began sharply declining in December 1936, yet personal income continued increasing without any significant decline for another nine months, until August 1937. Roose closely examined this significant lag to better understand the role of fiscal policy. He contends that the nine-month lag is so large that the decline in net government contribution to income "cannot be regarded as the principal immediate cause" of the decline in personal income.¹²⁵ In other words, the downturn experienced in 1937 cannot be attributed solely to the decline in government spending.

Before examining the lagged effect further, consider the simultaneous peak of both line plots in the plot. Roose notes that "prices, production, and income rose rapidly" during

¹²³ Roose, "The Role of Net Government," 1.

¹²⁴ Personal Income is income received by individuals, non-profit institutions, private trust funds, and private pension funds. It is the sum of wages, labor income, rental income, interest, dividends, and transfer payments. *Source*: National Income and Product Statistics of the United States 1929-46, US Dept. of Commerce, 1946, p. 53-54

Net Gvt. Contribution to Income is a breakdown of measured net decreasing (taxes, etc.) and increasing expenditures (social services, etc.). Figures include local, state, and federal contributions. *Source*: Deficit Spending and the National Income, Henry H. Villard, 1941, Appendix I p. 323.

¹²⁵ Roose, "The Role of Net Government," 4.

the last few months of 1936.¹²⁶ The \$1.7 billion soldier's bonus payment of June 1936 contributed to the expansion. In the next two months, nearly 71% of the total bonus payment was converted into cash. As the bonus is quickly converted to cash, the net government contribution to income graph declines to trend by September 1936, before fiscal policy tightening and expanded and new taxes sends the plot on a steep decline by December of that year. Therefore, the bonus payment, which was quickly converted to cash, had a sharp but brief impact on the economy. Any residual stimulating effects of the bonus payment on the economy should have disappeared by early Spring 1937.

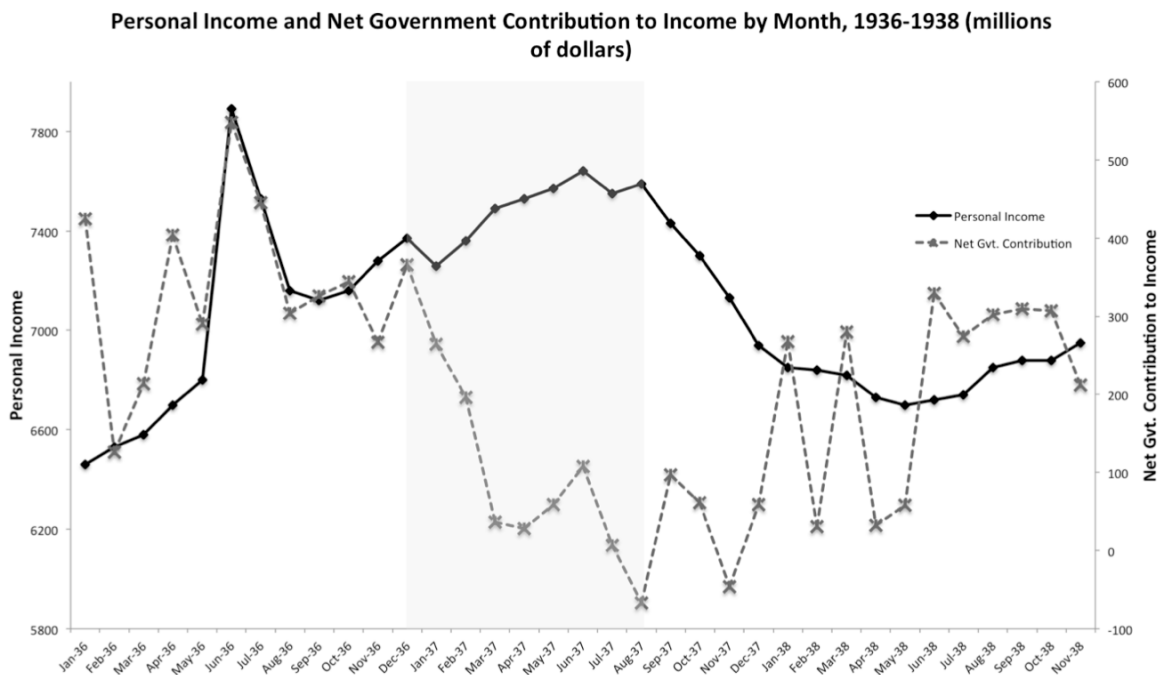


Figure 5. Personal income and net government contribution to income, 1936-1938. Refer to footnote number 124 for data source and variable definitions.

With the effects of the bonus payment ruled out, coupled with the steep decline in government spending since December 1936, personal income should have seen some decline by Spring 1937; however, it continued rising through August 1937. Given these

¹²⁶ Ibid., 240.

two points, Roose argues that the only way the bonus payment could have contributed to the prolonged increase in personal income was by temporarily boosting business and consumer confidence. “Only in this very indirect sense, can it be argued that the bonus expenditures... contributed to the expansion of the level of income from January to June, 1937.”¹²⁷ If we were to assume this is true, private industry was able to sustain the economy for over half a year after the decline in government spending. However, in the latter half of 1937, private industry was unable to offset the decline government spending.¹²⁸ Both the personal income plot in Figure 5 and the industrial production index shown in Figure 2, show steep declines by August 1937. In Figure 6, industrial production is superimposed over Figure 5 to show the similar lagged decline seen in net government contribution and industrial production. Both measures are consistent and seem to fall in line with Roose’s point.

The inconsistent, large spikes in net government contribution to income point to an issue of timing. In regards to these wide fluctuations, Schumpeter commented, “Its high water mark came exactly at the time when the economic process could most easily have done without it and its cessation exactly at the time when the economic process was in its most sensitive phase.”¹²⁹ Government too easily swayed its policy back and forth; the soldier’s bonus was rapidly dumped into the economy during a time of recovery, then spending was extremely and rapidly curtailed. There was a lack of moderation, which swayed the economy upwards, and then aided to its plunge without assistance.

¹²⁷ Ibid., 6.

¹²⁸ Ibid., 14.

¹²⁹ Roose, *The Economics of Recession*, 6.

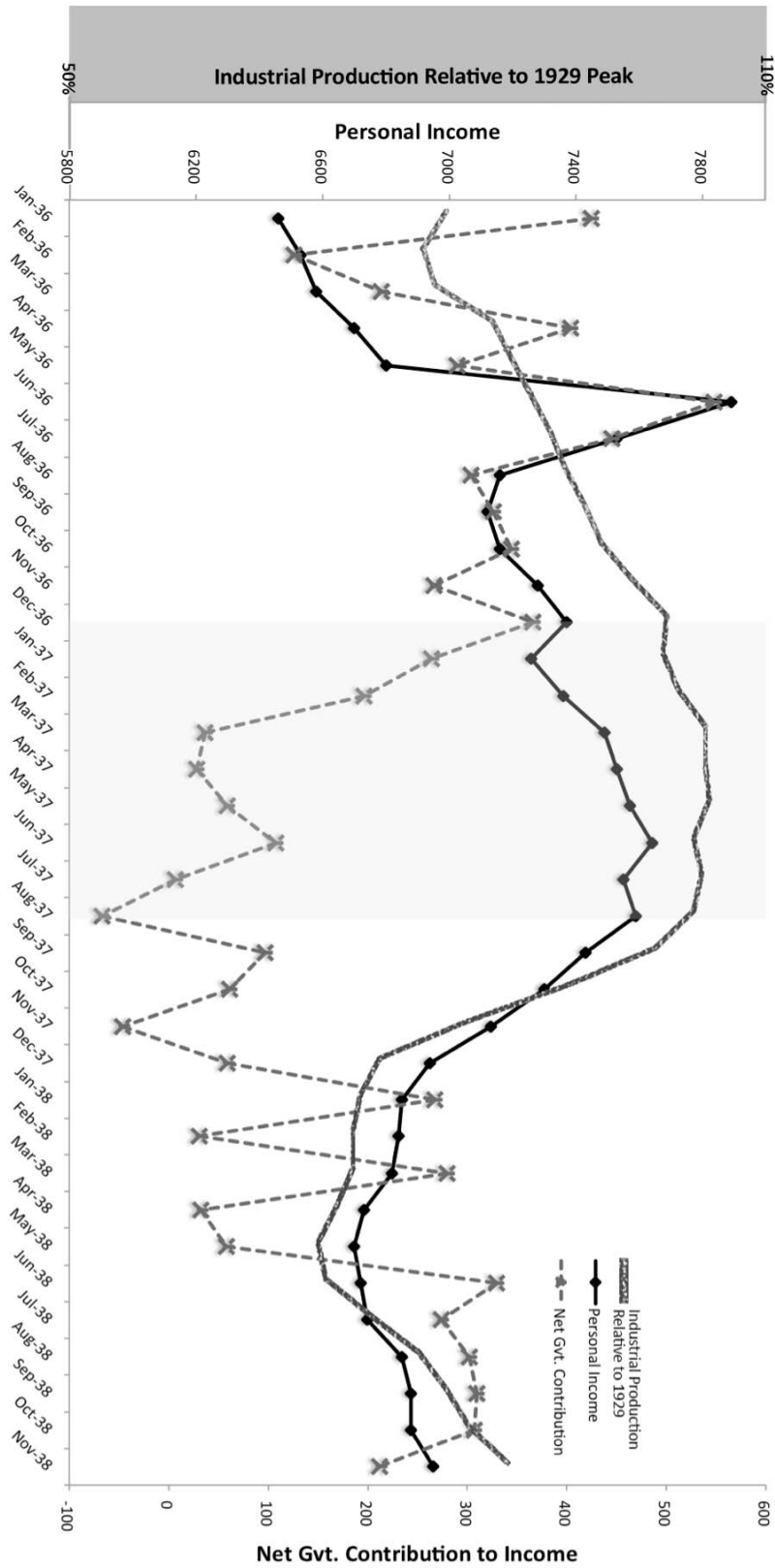


Figure 6. Industrial Production Index (see Figure 2) superimposed over Figure 5.

Given Roose's points and findings, his study can be classified as pointing to fiscal policy as the cause of the Recession. The government adhered to strong pressures by the business community for balanced budgets by 1937. The continued expansion of the economy during the first half of 1937, as government expenditures were being curtailed, could have led many to believe that government was no longer needed for recovery. The latter half of 1937 proved otherwise: for whatever reason, private industry was unable to sustain growth. Pointing to fiscal policy contraction as the main cause, Marriner Eccles, in a radio address on January 23, 1939, declared the "rapid withdrawal of the governments stimulus was accompanied by other important factors... [and] the result was another period of rapid deflation in the fall of 1937, which continued until the present spending program of the government was begun last summer."¹³⁰

Friedman and Schwartz, in an often-cited passage, say, "The most notable feature of the revival after 1933 was not its rapidity but its incompleteness."¹³¹ They point to a large gap in the recovery between nondurable industrial production and durable industrial production to underscore the low levels of private investment. In 1937, nondurables were 21% above 1929 levels, but durables were 6% below their 1929 peak.¹³² Friedman and Schwartz, in agreement with views put forward by Roose, argue that during this time, the lack of private investment was worsened by government policies that increased wages.

¹³⁰ "Radio Address." Under the auspices of the National Radio Forum, conducted by The Washington Evening Star, broadcast over the National Broadcasting Company Network, January 23, 1939, <https://fraser.stlouisfed.org/title/?id=446#!7658>, accessed on February 1, 2015.

¹³¹ Friedman and Schwartz, *A Monetary History of the United*, 493.

¹³² *Ibid.*, 495.

The Role of Wages

Having roughly established the untimely role played by government contributions to income, the focus is turned to wages. During his time in office, Roosevelt believed that the Depression was made worse by excessive competition, a sort of race to the bottom that reduced prices and wages.¹³³ In adherence to this view, one goal of the New Deal was to increase prices and wages. To achieve this, the National Industrial Recovery Act (NIRA) was created in 1933 to limit competition in certain industries. Codes of competition were imposed on industries that agreed to raise wages and accept collective bargaining agreements. Most of the codes were comprised of trade agreements that curtailed competition, which included measures ranging from production caps to minimum prices.¹³⁴ The expansive powers given to the Government under the NIRA led the Supreme Court to rule the act unconstitutional on May 27, 1935. Following the ruling, the National Labor Relations Act (NLRA) was enacted on July 05, 1935, with the same goal of increasing prices and wages.

One view put forward was that the Recession was caused by an increase in labor costs. The increased level of wages, which occurred in 1937 and was sharper than that caused by the NIRA, is attributed to the NLRA. The act, also known as the Wagner Act, addressed employer-employee relations and included a codified set of unfair labor practices.¹³⁵ The constitutionality of the act was immediately challenged because of the new protections the act afforded employees and unions. It took two years for the Wagner

¹³³ Cole and Ohanian, "New Deal Policies and the Persistence," 783.

¹³⁴ *Ibid.*, 784.

¹³⁵ An Act to Diminish the Causes of Labor Disputes Burdening or Obstructing Interstate and Foreign Commerce, to Create a National Labor Relations Board, and for Other Purposes., Pub. L. No. 74-198, Stat. (July 5, 1935).

Act to make its way through the judicial system. During this uncertain time period, the act had little effect on the economy. The constitutionality of the act, specifically the powers granted to the National Labor Relations Board, was argued before the Supreme Court on February 10-11, 1937. On April 12, 1937, in a 5-4 decision, the Court upheld the law.¹³⁶ By early 1937, it became apparent that the Court would uphold the act, which impacted wages.

Figure 7 shows the 1937 spike in wages in certain key industries: manufacturing, bituminous coal, anthracite coal, petroleum, and farming. Real wages are indexed against a postwar manufacturing compensation growth rate of 1.4% and are deflated using the GNP deflator. Anthracite coal and petroleum is indexed to 100 for the year 1932, whereas all other industries are indexed to 100 for the year 1929. The use of this data allows for a more balanced comparison of wage trends across industries.

Of the five industries plotted, the farming sector is the only sector excluded by the NLRA collective bargaining and labor protections.¹³⁷ As shown, the farming sector experiences no spike during the time period of interest. Similarly, the railroad sector, also exempted from NLRA protections, sees no increase in wages during this time.¹³⁸

Of the four affected industries, only the bituminous coal sector maintains an upward trend that existed prior to 1936. The other three sectors, manufacturing, petroleum, and anthracite coal, experience significant and singular spikes in wage levels right around the time period that the NLRA was upheld. Between 1936 and 1938, de-trended real wages spiked 10% in the manufacturing sector, 4.5% in the bituminous coal sector, 4.7% in the anthracite coal sector, and 12% in the petroleum sector. It can be assumed that the NLRA

¹³⁶ Jones & Laughlin Steel Corp. v. NLRB, 301 U.S. (1937).

¹³⁷ Cole and Ohanian, "New Deal Policies and the Persistence," 788.

¹³⁸ Velde, "The Recession of 1937—A," 30.

had a significant impact on wages during the time period of focus. What remains to be proven, however, is whether the increase in the level of wages can be considered a cause of the 1937 Recession.

In testimony before the U.S. Senate Committee on Banking, Housing, and Urban Affairs, Lee Ohanian, an economist affiliated with UCLA and the Hoover Institution, argued that the NLRA-induced wage increases "played a significant role in the 1937-38 economic contraction" because Roosevelt's cartel wage-setting measures distorted market forces.¹³⁹ According to Ohanian, Roosevelt's policies repressed employment and output in order to increase wages above market-clearing levels. True recovery, therefore, was prolonged by the distortion of market forces.

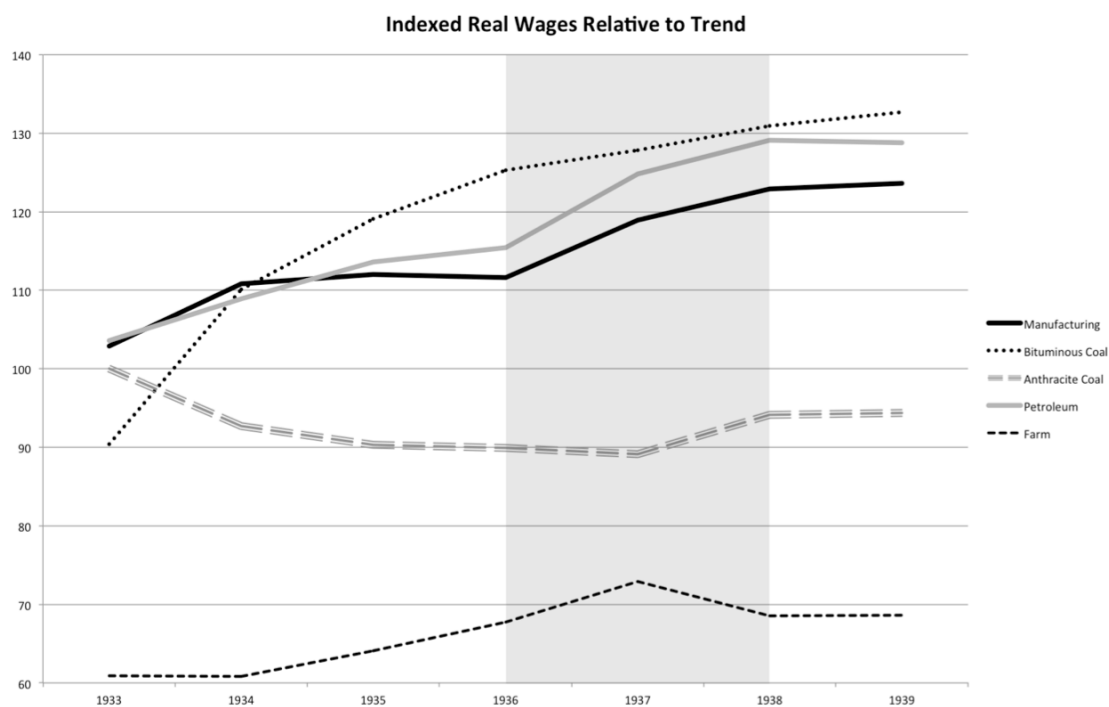


Figure 7. Indexed wages relative to trend in five key sectors.
 Data adapted from: Cole and Ohanian, "New Deal Policies and the Persistence," 788.

¹³⁹ *Testimony Before the US Senate Committee on Banking, Housing, and Urban Affairs* (2009) (statement of Lee E. Ohanian).

Although it is clear that wages rose in response to the NLRA, many other economists discard Ohanian's strong conclusion. Francois Velde, a senior economist and research advisor at the Federal Reserve Bank of Chicago, showed that Ohanian's claim that higher-wages repressed employment is hard to prove. Velde regressed the percent change in employment against the percent change in average hourly earnings between September 1936 and November 1937 and found a negative relationship; a 1% increase in wages brought about a 1.8% fall in employment. Although, at the surface, these findings support Ohanian's conclusion, Velde showed that the results are inconsistent and can easily vary based on the data used. For example, when he changed the end date by several months, from November 1937 to June 1937, his results changed drastically and were no longer significant at the 5% significance level.¹⁴⁰ Velde showed that, although wage levels did increase in certain industries, it is hard to concretely relate an increase in the level of wages to a decrease in employment.

Christina Romer, one of the foremost scholars of the time period, also discounts the role played by an increase in the level of wages. Increased wages and unionization could have contributed to decreased output and investment: in other words, a supply shock. Romer argues that such a supply shock should have been followed by rising prices. However, producers' prices actually fell by 9.4% during this time. In other words, wages did not have any significant negative impact on the economy because the theoretically required consequences of such a negative impact did not actually occur during the time period.¹⁴¹

¹⁴⁰ Velde, "The Recession of 1937—A," 31.

¹⁴¹ Romer, "What Ended the Great Depression?," 763.

Given the findings presented, coupled with the pronounced difficulty in pointing to wages as a cause, it can be assumed that wages played, at most, a minor role in the Recession. More important factors were at play.¹⁴²

The Future and Public Perception

In an interesting and untraditional study, Eggertson and Pugsley examine the role played by muddled perceptions of the government's future price objectives in bringing about the Recession. They argue that public confusion over future inflation targets led to changes in inflation and output, an effect that was amplified in the context of very low interest rates. Their paper rests on the notion that if the public believes in future contractionary policy, this belief creates actual expectations of contraction. However, at low interest rates, expansionary interest rate cutting cannot offset such expectations.¹⁴³ They plainly state the following: "The mistake of 1937 was in essence a poor communication policy... confusing signals about future policy created pessimistic expectations of future growth and price inflation that fed into both an expected and an actual deflation."¹⁴⁴

Their paper examines the role played by monetary policy. Unlike those studies that examine the role of monetary policy before them, this study assumes the role of monetary policy is irrelevant at zero interest rates. It is not policy but expectations about policy that

¹⁴² Overwhelmingly, the NLRA has been discounted as a contributing factor to the Recession. For a detailed review of the existing literature, specifically that related to the NLRA, consult: Papadimitriou and Hannsgen, *Lessons from the New Deal: Did the New Deal Prolong or Worsen the Great Depression?*

¹⁴³ Gauti B. Eggertsson and Benjamin Pugsley, "The Mistake of 1937: A General Equilibrium Analysis," *Monetary and Economic Studies* 24, nos. S-1 (December 2006): 153.

¹⁴⁴ *Ibid.*, 151.

interests the authors. They say, “Our view is that the expectation channel straightens the argument... that monetary factors were responsible for the contraction of 1937-38.”¹⁴⁵ Their paper builds on Eggertson's 2005 staff report, which was published in 2008; the paper credits post-1933 recovery to positive future expectations, as a result of Roosevelt's policy promises.¹⁴⁶ To test their argument regarding the 1937 slump, Eggertson and Pugsley first had to consider public perception of future policy decisions during the time period. In order to do this, they examined newspapers from 1937-1938.

By 1936, some within the administration believed the Depression was over.¹⁴⁷ Roosevelt underscored this assumption in his annual message to Congress on January 6, 1937. In his address, Roosevelt called on Congress to continue enacting progressive policies in the interest of American society even though the Depression was over. He stated, “your task and mine is not ending with the end of the depression.”¹⁴⁸ Such messaging about the end of the Depression was followed by government communication regarding an end of inflationary policies. Eggertson and Pugsley outline the progression of government anti-inflationary announcements, some of which are listed below:

February 18, 1937: In a Senate hearing, Marriner Eccles expressed concern about low interest rates.

March 17, 1937: The Secretary of Commerce and the Secretary of Agriculture hold a press conference and express concern about inflation.

April 2, 1937: Roosevelt holds a press conference and expresses concern about inflation, specifically prices in certain markets.

August 3, 1937: A letter between Roosevelt and Senator Elmer Thomas

¹⁴⁵ Ibid., 154.

¹⁴⁶ Gauti B. Eggertsson, *Great Expectations and the End of the Depression*, staff report no. 234 (Federal Reserve Bank of New York, 2005). Published as "Great Expectations and the End of the Depression," *American Economic Review* 98, no. 4 (September 2008).

¹⁴⁷ Eggertsson and Pugsley, "The Mistake of 1937," 174.

¹⁴⁸ Franklin D. Roosevelt, "Annual Message to Congress," address, January 6, 1937, The American Presidency Project, <http://www.presidency.ucsb.edu/ws/?pid=15336>.

leaked. In the letter, Roosevelt rejects a proposal for a formal 1926 price-level target.¹⁴⁹

To more rigorously examine the role of public perception during the time period, Eggertson and Pugsley created an index to measure the intensity of inflation policy discussion. They used the Proquest Historical Newspaper database to search for articles that mention inflation, reflation, deflation, and price levels, while also including the name of at least one significant government official. Their index shows a very significant peak in inflation communication during the early months of 1937, before the onset of the Recession, and in early 1938, right before recovery.¹⁵⁰ Their index value, treated as exogenous change in beliefs, is built into a model where industrial production is the output.

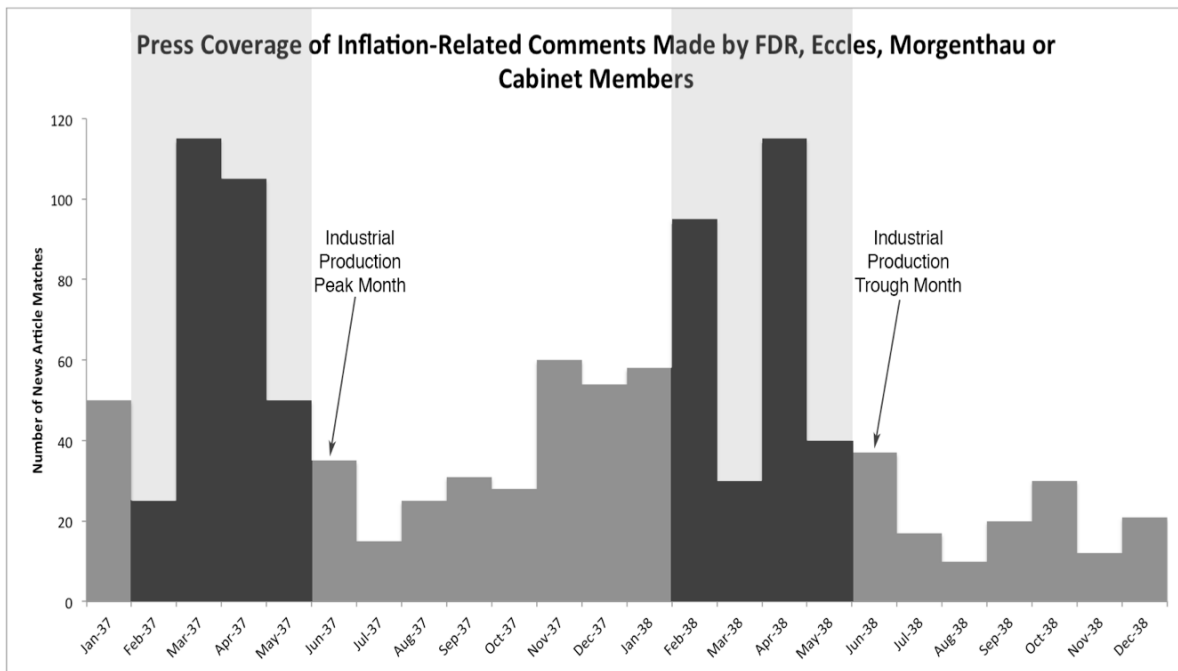


Figure 8. Intensity of inflation-related press coverage.
Data adapted from: Eggertsson and Pugsley, "The Mistake of 1937," 182.

¹⁴⁹ Eggertsson and Pugsley, "The Mistake of 1937," 175, Table 3.

¹⁵⁰ Ibid., 182.

Eggertson and Pugsley contend that, while their study provides a plausible understanding of why the Recession occurred, there were other contributing factors to the onset of the Recession. They assert their model is partly consistent with both the monetarist and the Keynesian interpretation of the Recession. In addition to monetary policy, they say, “Fiscal policy certainly played an important role, especially the efforts of the Treasury to balance the budget.”¹⁵¹ The pulling back of fiscal policy fed into the public’s belief of an incoming deflationary regime. On both fiscal and monetary policy realms, the public was led to believe that deflation was on the horizon.

Having shown, through analysis of historical newspapers, that their theory fits the timeline of the downturn well, they continue their analysis and examine the recovery. Using the same methods, they show that the government began spreading pro-inflationary communication in the early months of 1938. The press widely reported on these communications, as shown by the large spike in inflation-related headlines in Figure 8 between January and April 1938. Aiding their conclusion is that the government, at the highest levels, seemed confused about proper policy steps. The President, completely reversing on his January 06, 1937 inflation warning, held a press conference on February 15, 1938, where he outlined his desire for inflation. In response to a question about price structures, the President stated that prices are “too low and ought to go up at the present time.”¹⁵²

Surprisingly, the argument put forward by Eggerson and Pugsley seems to have a decades-long strand of agreement among economists with uncommon views. Friedman and

¹⁵¹ Ibid., 180.

¹⁵² "Press Conference #434," February 15, 1938, Press Conferences of President Franklin D. Roosevelt, 1933-1945, Franklin D. Roosevelt Presidential Library & Museum.

Schwartz seem to agree, to some extent, that the Recession was partially caused by confusion and mixed expectations. Although they barely elaborate on the point because the bulk of their work is concerned with the Federal Reserve and reserve ratio requirements, Friedman and Schwartz quote Roosevelt's *Economics of Recession* to argue that "‘a bitter division of opinion over the New Deal, its measures and philosophy, hardly calculated to establish an atmosphere conducive to vigorous enterprise and confident risk taking.’"¹⁵³

A Quick Recovery

The recovery began as slowly as the Recession hit. Throughout the latter half of 1938, various economic indicators reached their minimum and began increasing. Some of these troughs are listed below by month.

February: total and private construction contracts

April: corporate bond prices, freight car loadings, nondurable consumer good production

May: retail, department store, and chain store sales, mineral production, total imports, orders for manufactured goods, man-hours worked at manufactures of nondurable goods

June: total income payments, total industrial production, man-hours worked in all manufacturing¹⁵⁴

The above list of various troughs indicates that recovery was on its way by Spring 1938, with the Recession coming to an end by June 1938. As Figure 2 helps show, a rebound began on June 1938. In the section of his paper concerned with the revival, Roosevelt contends that revival from the Recession cannot be directly linked to an increase in government expenditure because numerous economic indicators "had begun to rise before the actual

¹⁵³ Friedman and Schwartz, *A Monetary History of the United*, 496.

¹⁵⁴ Arthur F. Burns and Wesley C. Mitchell, *Measuring Business Cycles*, Studies in Business Cycles 2 (New York: National Bureau of Economic Research, 1946), 88-89

expansion in government spending” of June 1938.¹⁵⁵ Roosevelt’s section draws a weak, casual relationship between government spending and recovery due to timing; recovery began before June, but government expenditure expanded after May. In defense of Roosevelt’s view, the net government contribution to income plot reaches an obviously prolonged high plateau beginning on June 1938; between June and November of 1938, the average government net contribution to income was \$289 million. However, Roosevelt’s argument is fundamentally flawed because he pays no attention to the fluctuations in net government contribution to income in the five-month time period before June.

Although government expenditures increased significantly after May, Roosevelt fails to take into account the fluctuations during the five-month period, which when averaged, reach levels much higher than those seen in 1937. Between July and December 1937, the average contribution was \$18.23 million, with the entire year’s average contribution being \$66.75 million. From January 1938 to May 1938, the average contribution was \$133.54; clearly, during the first five months of 1938, the level of net government contribution to income was much higher than that seen during 1937. Given these figures, Roosevelt’s point regarding non-causality can be disregarded; net government contribution to income increased before, not after, signs of recovery trickled in. This shows, but does not prove, that government expenditures could have brought about the swift revival.

¹⁵⁵ Roosevelt, "The Role of Net Government," 10.

The Great Debate: Monetary or Fiscal Policy?

Similar to their treatment of the causes of the Great Depression, Friedman and Schwartz attribute the Recession to the Federal Reserve's increase of reserve requirements in August 1936, March 1937, and May 1937. They believe that the nine-month, three-step doubling of reserve requirements, reaching the maximum level permitted, was the main cause of the Recession because it led to a contraction in the money supply, due to less bank lending.¹⁵⁶

Friedman and Schwartz begin their analysis of the 1937 time period by examining what role the discount rate played in decisions and outcomes that would later follow. They argue that the discount rate during the years leading up to the Recession, although low in absolute terms, was high relative to market rates, leading banks to view discounting as an expensive way to meet temporary liquidity needs. Therefore, banks relied on alternative sources for liquidity, like accumulating unusually large reserves. However, Friedman and Schwartz do not believe that the discount rate was a mistaken policy decision, "but only that it cannot be regarded as having contributed to monetary 'ease.'"¹⁵⁷

According to their analysis, the singular mistake made by the Federal Reserve was one of interpretation. The Federal Reserve mistakenly interpreted the accumulation of excess reserves as a choice to hoard by risk-averse banks, not as a useful accumulation of reserves to be utilized as an alternative to discounting. Based on analysis of memoranda and statements among Federal Reserve officials, Friedman and Schwartz conclude that the prevailing view within the institution was "that excess reserves were idle funds servicing

¹⁵⁶ Friedman and Schwartz, *A Monetary History of the United*, 517.

¹⁵⁷ *Ibid.*, 515.

little economic function and reflecting simply absence of demand for loans.”¹⁵⁸ The same memorandum outlines five major concerns arising over the size of excess reserves, like banking sector over-investment in government bonds, rapid over-borrowing by individuals and organizations due to the amount of money available for use, and possible inflationary pressures.¹⁵⁹ Clearly, excess reserves were viewed as a problem that required a solution.

To counter the perceived negative effects of excess accumulation, the Federal Reserve had three tools available: open market operations, the act of selling or purchasing government bonds on the open market, adjusting the discount rate, and adjusting the reserve requirement. In an internal memorandum dated December 13, 1935, the Federal Reserve deemed open market operations inefficient due to the size of the excess reserves. Additionally, they ruled discount rate adjustments ineffective, given the public’s low demand for loans. Therefore, the tool of choice was increasing reserve requirements to immobilize the accumulated reserves from being used.¹⁶⁰ Their hypothesis regarding the cause of the Recession links the increase in reserve requirements to a reduction in the money supply, due to the banking sector’s desire to hold excess reserves.

Friedman and Schwartz’s monumental volume brought the role of monetary policy into the spotlight, but their work of economic history largely lacks quantitative analysis and relies heavily on casual arguments. To further examine claims made by Friedman and Schwartz, specifically those related to 1937, a paper from 1992 is examined: Christina Romer’s “What Ended the Great Depression?” Although Romer builds on the foundation laid by Friedman and Schwartz, her paper is primarily concerned with the onset

¹⁵⁸ Ibid., 518.

¹⁵⁹ Each concern listed on the memorandum is closely analyzed in *A Monetary History*, 523.

¹⁶⁰ Ibid., 520.

of recovery. She notes that Friedman and Schwartz “appear to have been more interested in the role that Federal Reserve inaction played in causing and prolonging the Great Depression than they were in quantifying the importance of monetary expansion in generating recovery.”¹⁶¹ Her paper concludes that, primarily, the expansion of the money supply led to recovery. This conclusion is a mirror image of Friedman and Schwartz’s view that a decline in the money supply led to the 1937 downturn.

Early in her paper, Romer criticized contemporary Depression-related research for blindly adhering to assumptions off conclusions reached by leading economists from previous decades, like E. Cary Brown and Friedman. She says, “The emphasis that these early studies placed on policy inaction and ineffectiveness may have led the authors of more recent studies to assume that conventional aggregate-demand stimulus could not have influenced recovery”¹⁶²

Romer’s critique hints that contemporary economists may have misinterpreted relevant causes of recovery due to their preexisting assumptions. To aid her critique, Romer pointed to a paper by Bernanke and Parkinson. The two authors were surprised by the strength of overall recovery in the 1930’s, but having preemptively assumed the ineffectiveness of New Deal policy and not being interested in examining this assumption due to the narrow scope of their paper, the authors concluded that recovery came about naturally. Romer also discounts a specific assumption made by many contemporary economists. Whereas it is often assumed that recovery from the Depression was slow until the start of World War II, Romer bases her study on the assumption that recovery was

¹⁶¹ Romer, "What Ended the Great," 758.

¹⁶² Ibid.

strong. She contends that the decade-long recovery process was to be expected given the unprecedented magnitude of the early 1930's and 1937 contraction.¹⁶³ Romer concludes that without aggregate demand stimulus, which in her view took the form mainly of monetary expansion, "the economy would have remained depressed far longer and far more deeply than it actually did."¹⁶⁴

Much of the literature regarding the 1937 Recession points to monetary policy decisions as the cause. Perhaps due to increasing ideological divisions or perhaps due to the continued taboo around fiscal stimulus, it is sometimes assumed that the support of monetary policy as a causal factor is equivalent to the discounting of the role that was or could have been played by fiscal policy. In an address in 2009, as a member of the White House's Council of Economic Advisers, Romer clarified this point when she flatly stated:

I wrote a paper in 1992 that said that fiscal policy was not the key engine of recovery in the Depression. From this, some have concluded that I do not believe fiscal policy can work today or could have worked in the 1930s. Nothing could be farther than the truth.¹⁶⁵

Although monetary policy may have been the direct contributing factor that caused the 1937 Recession, it's important to contextualize this cause in the absence of fiscal policy. Monetary policy decisions affected the economy at a time when the government pulled back spending. If one assumes that monetary policy was the only cause of the Recession, the next question to be asked is the following: would monetary policy decisions have had an impact if government spending had been maintained at early New Deal levels?

E. Cary Brown, an economist who taught at MIT for nearly sixty years, made a

¹⁶³ Ibid., 759.

¹⁶⁴ Ibid., 758.

¹⁶⁵ Romer, "Lessons from the Great Depression for Economic Recovery in 2009," speech presented at Brookings Institution, Washington D.C., March 9, 2009, 3.

fundamental contribution to the study of the Recession by examining the question posed above. In his seminal 1956 paper, Brown argued that “fiscal policy seems to have been an unsuccessful recovery device,” but he added the caveat “not because it did not work, but because it was not tried.”¹⁶⁶ Romer declared in her 2009 speech that the “crucial lesson from the 1930s is that a small fiscal expansion has only small effects.”¹⁶⁷ She reiterated Brown’s famous conclusion: “The key fact is that while Roosevelt's fiscal actions were a bold break from the past, they were nevertheless small relative to the size of the problem.” To contextualize her argument, Romer presented her audience with two figures: when Roosevelt took office in 1933, GDP was 30% below trend and one year later, in 1934, deficit spending rose only by 1.5% of GDP.¹⁶⁸

To consider the validity of Brown’s and Romer's statements, it must first be asked whether fiscal policy had an impact on the economy in 1937. Disregarding papers on both extremes of the spectrum, the consensus in the middle is that both monetary and fiscal policy factors had an impact on the 1937 downturn. In a paper about the Recession, Velde used a VAR model and concluded “monetary and fiscal factors account fairly well for the pattern of industrial production and, in particular, for the depth of the recession.”¹⁶⁹

Velde was concerned primarily with the hypothesized causes the Recession. His brief but targeted analysis shed light on this little-studied downturn by reaching a conclusion that shows both monetary and fiscal policy factors played contributing roles. However, one of the most important contributions provided by his study is not his

¹⁶⁶ Brown, “Fiscal Policy in the ‘Thirties,” 863-866.

¹⁶⁷ Romer, “Lessons from the Great,” speech, 3.

¹⁶⁸ *Ibid.*, 4.

¹⁶⁹ Velde, “The Recession of 1937—A,” 34.

conclusion, but instead his treatment of the monetary policy question. In regards to the impact that reserve requirement increases had on the money supply, Velde tried to resolve arguments put forward on one end by Friedman and Romer and on the other Telser.

Whereas Friedman argued that reserve requirements had a direct impact on the money supply through decreased lending, Telser examined both sides of the banking sector's balance sheet and argued that banks responded to the reserve requirement increases not by decreasing lending, but instead by liquidating other assets to fulfill their desire for cushioned reserves. If Telser's argument is assumed to be true, then lending did not decrease, and the reserve requirement increases had no impact on the money supply; therefore, the Recession could have only been caused by other hypothesized factors, of which only fiscal policy changes and wage increases remain. Friedman's and Telser's views are mutually exclusive, and they must be reconciled prior to a quantitative analysis, so that a fitting money supply variable, should one exist, can be compiled.

Velde's findings are partially in agreement with Telser's conclusion and partially in agreement with Friedman's. Velde finds that banks did not respond to the increases by decreasing private lending for some time. In agreement with Telser, Velde said, "Looking at interest rates confirms that the impact of reserve requirements manifested itself on tradable securities rather than loans." Velde continued to note that even after the first increase in August 1936, interest "rates charged by banks on loans were little affected."¹⁷⁰ Although his study so far has been in agreement with Telser, Velde went farther and examined even more deeply the possible mechanism by which the reserve ratio increases could have had a downward pressure on the money supply. He found that after the second

¹⁷⁰ Ibid., 25.

increase in March 1937, the U.S. bond market, which had remained relatively stable, saw a spike in yield rates. The spike in the bond market took Morgenthau by surprise. According to Velde, the spike prompted Morgenthau to telephone and complain to Eccles, the Chairman of the Federal Reserve, that the Federal Reserve “bungled the increase in reserve requirements.”¹⁷¹

Based on Velde’s analysis, Friedman was wrong in assuming a direct mechanism of impact on the money supply. Furthermore, Telser’s analysis was valid, but he was wrong to fully discount the role of reserve requirement increases without examining the other possible mechanisms of action. Velde concluded that given the bond rate increases and the sharp decline in corporate issues, the banking sector's demand for corporate and government liabilities had declined. The decreased demand likely was the indirect mechanism through which the reserve requirement increases impacted the economy. Velde noted, "The fall in lending translated into higher interest rates and a lower volume of issues.”¹⁷²

A 2006 paper published by economists Thomas Cargill and Thomas Mayer further discounts Telser’s conclusion. Cargill and Mayer examined more closely the effect of reserve requirement increases on the money supply. Given Telser’s surprising finding that conflicted with long-standing assumptions put forward by Friedman, Cargill and Mayer examined more closely the possible impact, if any, that the increased required reserves had on the money supply. They studied whether banks held reserves due to a lack of profitable lending opportunities, or whether banks hoarded reserves as a reactionary and

¹⁷¹ Ibid., 26.

¹⁷² Ibid.

precautionary measure. Because no reliable measurement of loan demand was available for the time period in question, Cargill and Mayer compared the reserve accumulation behavior of Federal Reserve member banks to that of non-member banks, which were not subject to Federal Reserve mandates:

If member banks increased their total reserve ratios because of a decline in the demand for bank credit, then on the reasonable assumption that there was no concurrent change in the relative volume of credit demand from member and nonmember banks, the total reserve and loan ratios of member banks and nonmember banks should have behaved in the same way when member bank reserve requirements were raised.¹⁷³

The authors utilized a regression analysis that examined the difference between member and non-member banks response behaviors to the increased reserve requirements that affected only the member banks. The overwhelmingly significant results are reported in Table 2 of their paper.¹⁷⁴

They concluded that banks did not respond “to the changes in reserve requirements *essentially* by changing their excess reserves.” Instead, Cargill and Mayer found that “member banks met a substantial part of their increased reserve requirements by reducing their earning assets.”¹⁷⁵ Member banks, in response to the increased reserve requirements, liquidated assets in order to maintain a buffer of excess reserves similar to that which they had prior to the increases. Although the mechanism of action is in question, most of the recent literature is in agreement: the reserve requirement increases affected the money supply. Therefore, a money supply variable focused on the role of reserve requirement increases is necessary for a quantitative analysis.

¹⁷³ Cargill and Mayer, "The Effect of Changes," 417-418.

¹⁷⁴ Ibid., 430.

¹⁷⁵ Ibid., 430-431.

Having pointed to studies that underscore the likely impact of fiscal policy and having argued that no matter the mechanism of action considered, reserve requirement increases likely had an impact on the money supply, focus will be turned in the next section to synthesizing the arguments put forward in an econometric study of only the 1937 Recession. The vast literature concerned with the debate over the role of monetary and fiscal policy is of little use to this study because the literature is primarily concerned with the time period as a whole (1929-1939) or the post-1939 war spending. Given the unique factors leading to the 1937 Recession, studies of the broader time period contribute little to an understanding of only this recession. These studies gloss over the 1937 Recession by treating the recovery period through WWII as one continuous progression. However, as shown earlier in Figure 2, the economy had reached an acceptable level of recovery by 1936, when industrial production matched its 1929 peak. Although unemployment was still high and the economy still in a delicate state, the country was inching towards full recovery until the Recession hit. The consolidation of the time period as one group is a questionable practice. Studies of the Depression should consider the 1929-1936, 1937-1938, and 1939-1945 time periods as distinct points of recovery given the unique factors affecting society within each period.

IV.

SEARCHING FOR A CAUSE: AN ECONOMETRIC ANALYSIS

Of the factors hypothesized to have caused the Recession, the goal of this chapter is to examine, quantitatively, the predictive power of each hypothesized variable on an indicator of overall economic wellbeing. What complicates an analysis of the 1937 Recession is the specificity of the hypothesized casual factors. For example, the wage hypothesis centers not on increased wages in general, but instead on the NLRA-induced wage increase. As another example, Friedman's money supply argument hinges not on the decrease in money supply, but instead on the decrease in money supply as caused by the reserve requirement increases. The prolonged and unresolved debate about the Recession, coupled with the very narrow scope of each hypothesized factor, necessitates the formation of finely tailored variables. In this chapter, variable choices are explained in detail to provide the reader a clear understanding of the choices made and to allow the reader to gauge the applicability of the variables to the arguments they are intended to capture.

Before embarking any further on a quantitative analysis, it is important to draw a distinction between intent and methodological outcomes. As is usually the case with time series regression analysis of historical time periods, modeling is made more difficult by the lack of accurate data and the infrequency of historical data recording. If data availability is of concern in a regression analysis, practitioners often decide to expand the number of observations. In other words, the focal time period is expanded or examined at smaller sub-intervals. This decision serves as a preventative measure against model irrelevancy. The

number of observations is of high importance in statistical testing. Generally, the larger the number of observations, the greater the likelihood that a model can accurately deduce minute relationships. Unfortunately, given the time period of interest, the issue of observation count is more pronounced.

This analysis seeks to gauge the magnitude of impact that each proposed cause of the Recession had on bringing about the downturn. However, on a relatively short ten-year timeline, the Recession is flanked on both ends by historical events that had unprecedented effects on both society and the economy. Both the Great Depression (early 1930s) and World War II (early 1940s) impacted the economy on a scale larger than that of the Recession. Given that the focus is only the 1937 Recession, this analysis must be confined to the months between January 1935 and December 1938.¹⁷⁶ The imposed time constraint allows a model to more accurately calculate the comparatively smaller magnitude of only recession-related developments.

Although it poses drawbacks, the short time interval used provides an uncommon benefit. Because economic indicators fluctuated widely and unexpectedly during the four-year time span examined, autocorrelation poses less of an issue. Simply put, autocorrelation exists when a variable is a function of its former self. In the context of severe autocorrelation, the significance of model results must be closely scrutinized.

¹⁷⁶ January 1935 was chosen as the starting point because the economy was, by that time, in steady recovery. This allows for an analysis untarnished by the shocks that occurred early during the Depression. December 1938 was chosen as the end point in order to exclude from the analysis any possible impacts of pre-WWII German aggression, especially that caused by the Occupation of Czechoslovakia in March 1939.

Data

Regressands

A comprehensive measure that captures the 1937 downturn must be used as the dependent variable across all models in order to examine the causal role played by the different hypothesized factors. Traditionally, studies of the Recession use either industrial production or gross domestic product as the regressand. Later in this chapter, both measures are gauged for their applicability and usefulness.

The industrial production variable was obtained from the Federal Reserve.¹⁷⁷ The Federal Reserve's monthly dataset, indexed to January 1935, measures the real output of all manufacturing, mining, and electric and gas utility facilities located in the United States. The variable is plotted in Figure 9.

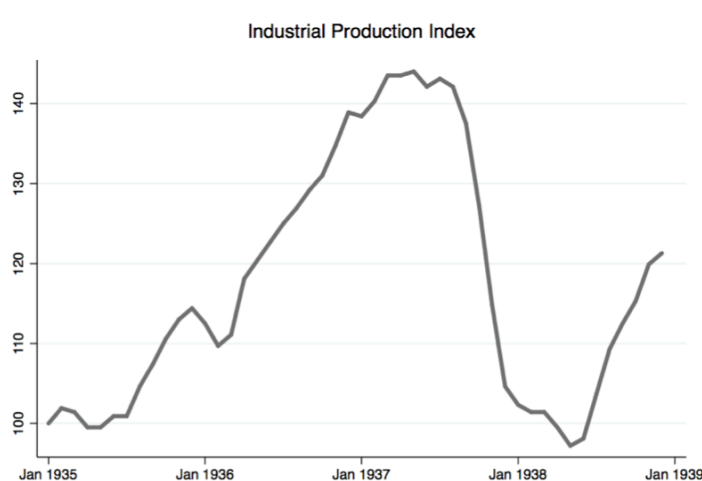


Figure 9. Industrial production indexed to January 1935.
Source: See footnote 177.

¹⁷⁷ Board of Governors of the Federal Reserve System (US), Industrial Production Index [INDPRO], retrieved from FRED, Federal Reserve Bank of St. Louis <https://research.stlouisfed.org/fred2/series/INDPRO/>

The search for the alternative regressand, GDP, was more elusive. During the focal time period, GDP had not yet been adopted as a measure of aggregate output. Furthermore, historic measures of output used during the time period are incompatible for use in this study because they are provided only on an annual basis. Luckily, other papers concerned with this time period have addressed the issue of monthly data availability. This study utilizes as the alternative regressand a monthly real GDP variable obtained from the Gordon-Krenn monthly and quarterly dataset for 1913-1954.¹⁷⁸ Figure 10 plots the real GDP variable.

Gordon and Krenn's dataset provides reliable and important data that is unavailable from traditional sources, like the NBER. Facing the same issue of data availability, Gordon and Krenn converted annual GDP component data to quarterly and monthly intervals, using the Chow-Lin interpolation. For each annual GDP component, Gordon and Krenn used monthly NBER datasets, chosen for their high correlation with the annual GDP component of interest, to ensure an accurate conversion process. Finally, they summed the new monthly component data to provide a measure of monthly GDP.¹⁷⁹

Although both industrial production and GDP show a clear decline during the Recession, each variable varies significantly in the percent change realized. For comparative purposes, Figure 10 combines industrial production, as shown in Figure 9, and

¹⁷⁸ NBER, *The End of the Great Depression 1939-41: Policy Contributions and Fiscal Multipliers*, by Robert J. Gordon and Robert Krenn, working paper no. 16380, 2010.

Robert J. Gordon and Robert Krenn, "New Gordon-Krenn quarterly and monthly data set for 1913-54" (unpublished raw data), accessed March 30, 2015, <http://faculty-web.at.northwestern.edu/economics/Gordon/researchhome.html>.

¹⁷⁹ NBER, *The End of the Great*, 43.

Gordon and Krenn provide more detailed information about the process, including the monthly independent interpolators used, in their appendix. (NBER, *The End of the Great*, 42-54).

real GDP. During the Recession, the decline in industrial production was greater than that of GDP because the Recession impacted industry most severely. Given the difference in percent change, both indicators are used in order to examine the downturn in a more nuanced manner.

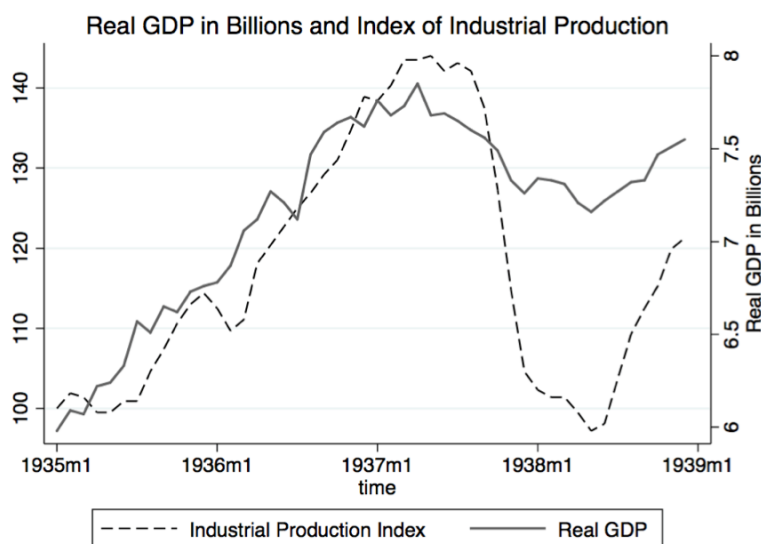


Figure 10. Industrial production index and real GDP in billions, 1935-1938.
Source: Refer to footnotes 177 and 178.

Fiscal Policy

The fiscal policy variable used in this study, real government expenditures in 1937 dollars, was obtained from the Gordon and Krenn dataset and is plotted Figure 11. They transformed NBER series 15005, federal budget expenditures, into real terms. Subsequently, they removed the value of transfer payments, like the Soldier's Bonus, that were included in the original NBER series. They removed transfer payments because their

government-spending variable was to be used in calculating monthly GDP.¹⁸⁰ Gordon and Krenn's dataset is used because it requires no further adjustment. However, there may be need for a dummy variable to account for the large dip in spending that occurred during the first two months of bonus disbursement.

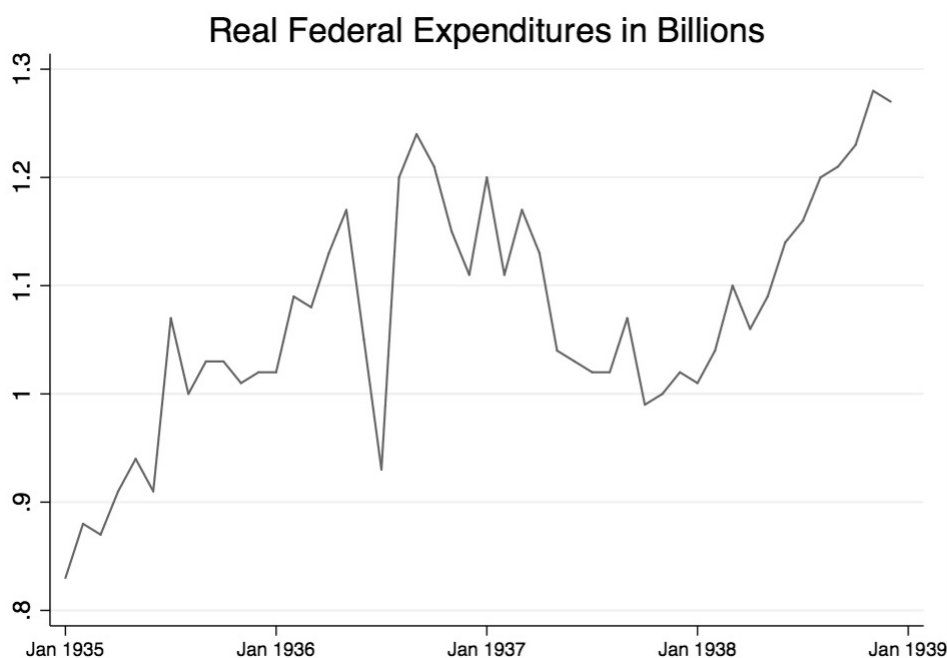


Figure 11. Real federal expenditures in billions.
Source: See footnote 178 and 180.

Wages

The wage increase caused by the NLRA was historically hypothesized to have contributed to the Recession. Although recent research discounts this view, it is nonetheless important to examine the casual impact, if any, of the NLRA. The search for a wage variable required the fulfillment of two prerequisites:

¹⁸⁰ Gordon and Krenn explain the transformation of government spending: "A problem arises in this series because it includes not just G but also transfer payments, which are excluded when calculating GDP. The monthly interpolator series is distorted by particularly large transfer payments in scattered quarters. To find these quarters, we calculated the monthly log change in the interpolator, after changing the data to real terms and X11 s.a. Whenever a monthly change of +40 percent or more was followed by a monthly change of approximately the same amount with a negative sign, we replaced that "bulge" observation by the average of the preceding and succeeding months. These bulges occurred and were corrected for in 4 months: 1931:12, 1934:01, 1936:06, and 1937:06." (NBER, *The End of the Great*, 46.)

- (1) The variable must be confined to industries impacted by the NLRA.
- (2) The variable's NLRA-induced fluctuations shouldn't be overshadowed by wage fluctuations unrelated to the NLRA.

At first glance, the first requirement may seem overly restrictive given the Recession's national impact. However, it's important to remember that the manufacturing industry, arguably the most important and largest industry at the time, was directly impacted by NLRA regulations. With this point in mind, the variable search was confined to the manufacturing sector in the interest of excluding wage effects from large but non-regulated industries. Fulfillment of the second requirement is crucial to this study because a wage variable is included to test only the impact of the NLRA-induced wage increases on the economy. A wage variable that fluctuates with non-NLRA factors the interpretation of the NLRA's impact more difficult.

The variable search started with NBER macrohistory database series 08283, production worker wage cost per unit of output. However, this variable's denominator, manufacturing output, declined during the Recession to a greater degree than its numerator: wages. The variable is incompatible for use because the NLRA-induced wage increase is not the only factor causing major fluctuations in value.

The variable ultimately chosen for use in modeling was wages per *hour worked* in manufacturing, a slight variation of the aforementioned series, wages per *unit output* in manufacturing. The new variable was created by dividing the index of real factory payrolls (NBER macrohistory series 08242) by the index of production worker manhours in manufacturing (NBER macrohistory series 08265).¹⁸¹ Wages per manhours worked,

¹⁸¹ The wage and manhour datasets were individually re-indexed to January 1935 prior to their transformation.

henceforth referred to as the wage variable, was chosen because the variable minimizes fluctuations caused by the Recession, while it maximizes fluctuations caused by the NLRA. The wage variable highlights the impact of the NLRA because it is less reflective of broader changes in the economy. By construction, it provides a clearer understanding of labor costs because wages are considered per unit output realized.

Figure 12 and Figure 13 visualize the desirability of the chosen wage variable. As shown in Figure 12, industrial production, real wages, and manhours worked exhibit a near 1:1 relationship. On the other hand, Figure 13, a plot of wages per manhour worked, shows more nuanced fluctuations. It's important to note that during the NLRA-impact period, from 1936 to late-1937, the wage variable realizes a 10% increase. The size of the increase is comparable to the increase in manufacturing sector wages reported by Cole and Ohanian and plotted in the previous chapter, Figure 7. The post-1937 plot of the wage variable is also comparable to the post-1937 plateau of manufacturing sector wages in Figure 7.

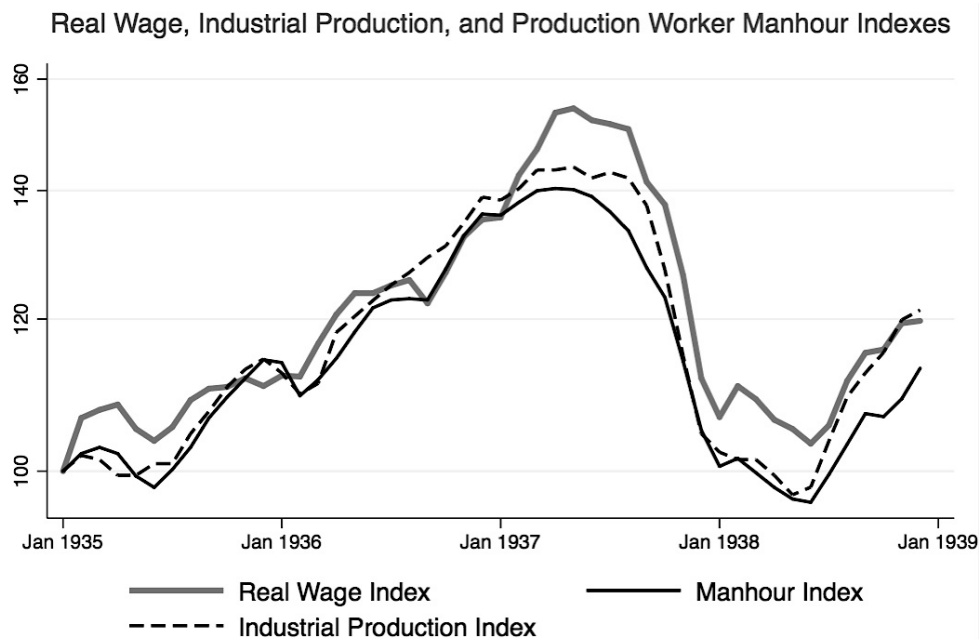


Figure 12. Index of real wages, industrial production, and production worker manhours.
Data adapted from: NBER macrohistory database series 08242 and 08265.

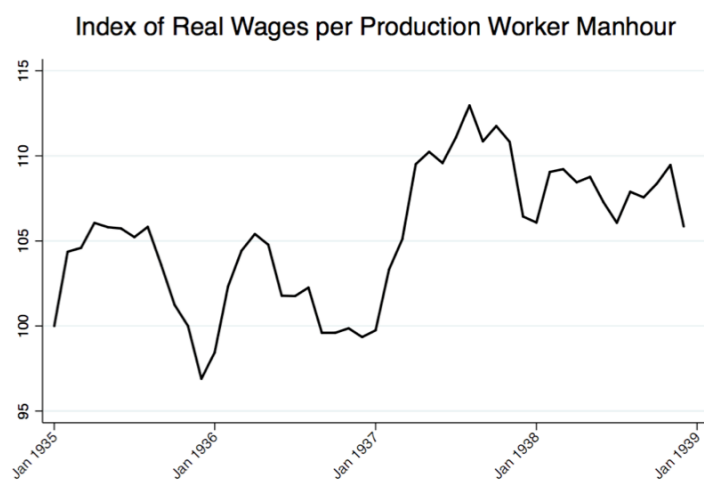


Figure 13. Wage variable used in study, index of real wages per production worker manhours.
Data adapted from: NBER macrohistory database series 08242 and 08265.

*Money Supply*¹⁸²

It is necessary to examine the banking sectors' response to the increased reserve requirements prior to choosing a variable that reflects the impact of monetary policy on the money supply. However, the NBER macrohistory database does not provide distinct datasets for excess and required reserves held. As a workaround, two NBER datasets were used to calculate distinct measures for excess and required reserves.¹⁸³ To split the NBER's total reserves dataset into its excess and required component parts, the equations below were solved for each monthly observation point:

- i. *Given Known Variable: Series 14086* $\equiv \left[\frac{\text{Total Reserves Held}}{\text{Required Reserves}} * 100 \right]$
- ii. *Given Known Variable: Series 14064* $\equiv \text{Total Reserves Held} = \text{Required} + \text{Excess}$
- iii. *Desired Unknowns: Required Reserves; Excess Reserves*
 1. $\frac{\text{Series 14064} * 100}{\text{Series 14086}} = \text{Required Reserves}$
 2. $\text{Series 14064} - \text{Required Reserves} = \text{Excess Reserves}$

Total reserves, required reserves, and excess reserves are plotted in Figure 14. Vertical lines mark the Federal Reserve's three reserve requirement increases. For each line plot, a line of best fit is superimposed for the months preceding the Federal Reserve's first increase in August 1936. Similarly, a line of best fit is added to each plot onwards from April 1937; April is situated one month after the second reserve requirement increase and one month before the third.

¹⁸² The assumption that monetary policy may have played a role in the recession hinges on the assumption that the money supply was impacted by the increased reserve requirements. Based on the related discussion presented in the previous chapter, both assumptions are made.

¹⁸³ NBER macrohistory datasets utilized: Total sum of excess and required reserves held, (series 14064); Percentage of total reserves held to reserves required (series 14086).

Figure 14 shows that banks responded to the reserve requirement increases by further padding their reserves. After the first increase, excess reserves declined as banks shifted funds to required holdings. However, after the third increase, banks started to accumulate excess reserves. Given that total required reserves remained relatively stable after the third increase, and given that total excess reserves increased during the same time, it can be assumed that banks accumulated excess reserves by liquidating assets that would have otherwise been put to alternative use. Clearly, the risk-averse banking sector desired a cushion of excess reserves.

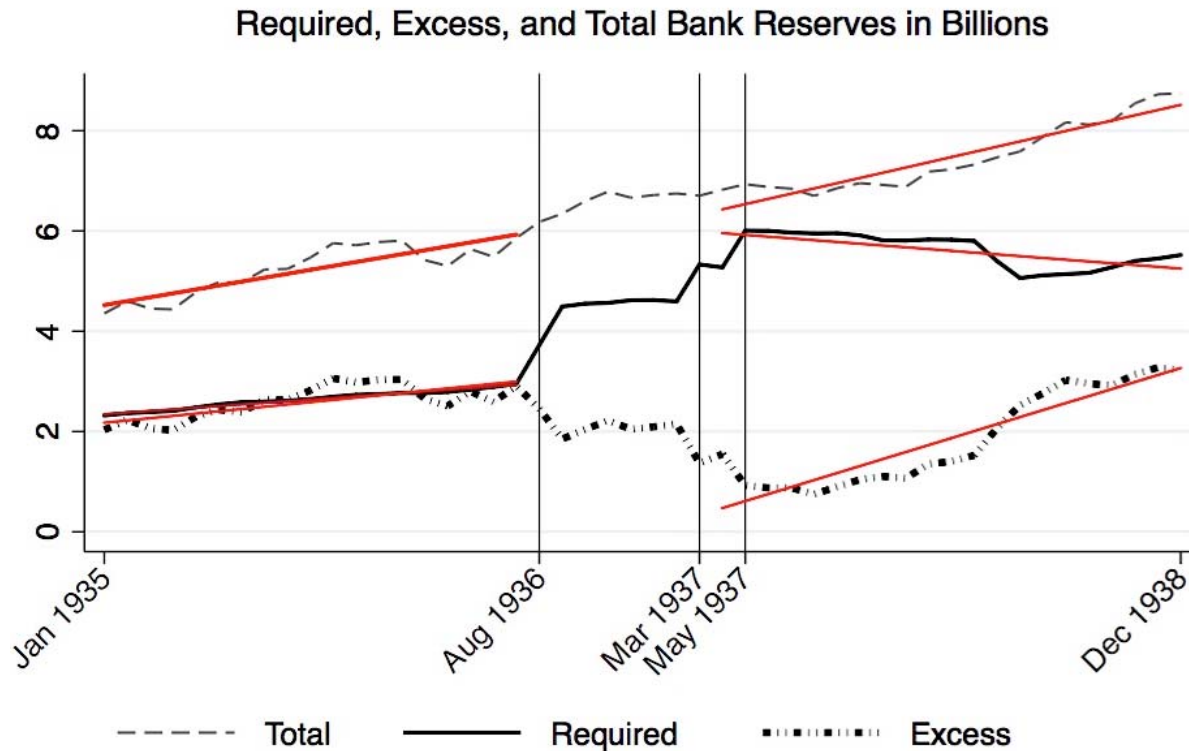


Figure 14. Bank reserves and their trajectories before and after the Fed-mandated increases.

In his paper on the 1937 recession, Velde also concluded that excess reserve accumulation was reactionary. Instead of examining aggregated national data like that used in Figure 14, Velde studied the behavior of banks by member class. He found that central

reserve city banks, like those in New York and Chicago, in 1937 were “considerably closer to their [reserve] limit than banks in reserve cities and country banks.”¹⁸⁴ Central reserve city banks faced significantly greater excess reserve depletion than other member banks. This class of member banks was at the forefront of excess reserve accumulation.¹⁸⁵ Therefore, the post-April 1937 positive slope of Figure 14’s excess reserves plot was most greatly influenced by central reserve city bank accumulation.

Although the Federal Reserve succeeded in making excess reserves unusable, banks responded by hoarding as excess even more assets. During the focal time period, the banking sector treated excess reserves not as a pool of money to be utilized, but as a lifeline locked away for use in times of crises. Having confirmed the banking sector’s excess reserve accumulation as reactionary accumulation, the measure of money supply to be used in this study will exclude both required and excess reserves from its sum.

It is the unfortunate reality that some contemporary studies of the Recession utilize standardized measures of the money supply, like M1 or M2, to characterize their variables without explicitly defining the component parts of the measure used. Because contemporary measures of money supply did not exist in the 1930s, it is sometimes difficult to neatly classify long-defunct institutions, like the postal savings bank, under measures crafted for a modern banking system. Adding to the confusion when examining historic studies, the standardized measures in use today were the product of a 1980s redefinition of the existing “M”s. To avoid any confusion, the money supply variable used in this study will not be classified as any current standard measure.

¹⁸⁴ Velde, “The Recession of 1937—A,” 24.

¹⁸⁵ Velde’s Figure 8.C highlights the remarkably stark accumulation of excess reserves by central reserve city banks. (Velde, “The Recession of 1937—A,” 24.)

NBER macrohistory database series 14144a, money stock in billions of dollars, is used in the creation of the money supply variable. Series 14144a is the seasonally adjusted sum of currency held by the public, all commercial bank demand deposits, and all commercial bank time deposits. Prior to creating a money supply variable, total reserves held (series 14064) and money stock (series 14144a) were deflated using Gordon and Krenn's GDP deflator.¹⁸⁶

Figure 15 plots two possible renditions of money supply. The dashed line plots real money supply, the deflated series 14144a. By construction, the series includes in its sum total reserves held. The solid line plots real money supply excluding real total reserves.¹⁸⁷ As is clear in the post-1937 plot period, the increase in total reserves, caused mainly by an accumulation of new excess reserves, had a negative impact on the already decreasing money supply. Whereas prior to 1937, both line plots in the figure have a near 1:1 relationship, in the months after 1937, money supply exclusive of total reserves decreased to a greater extent than money supply inclusive of reserves. Therefore, the variable used in subsequent modeling is money supply *excluding* reserves, henceforth referred to only as money supply.¹⁸⁸

¹⁸⁶ The monthly GDP deflator was obtained from the Gordon and Krenn dataset. See footnote 178.

¹⁸⁷ Real money supply excluding reserves was created by subtracting deflated total reserves (series 14064) from deflated money stock (series 14144a).

¹⁸⁸ A strong case has been made for the use of bank assets, not liabilities, as the measurement of bank holdings during the 1937 period. However, to examine closely the argument as made by Friedman, and due to the lack of reliable monthly asset-side data, the more traditional liability-side measurement is used. For a detailed study of the alternative asset-side measurement, one that highlights the shortcomings of liability-side measurements, consult: Telser, "Higher Member Bank Reserve Ratios in 1936 and 1937 Did Not Cause the Relapse into Depression," *Journal of Post Keynesian Economics*.

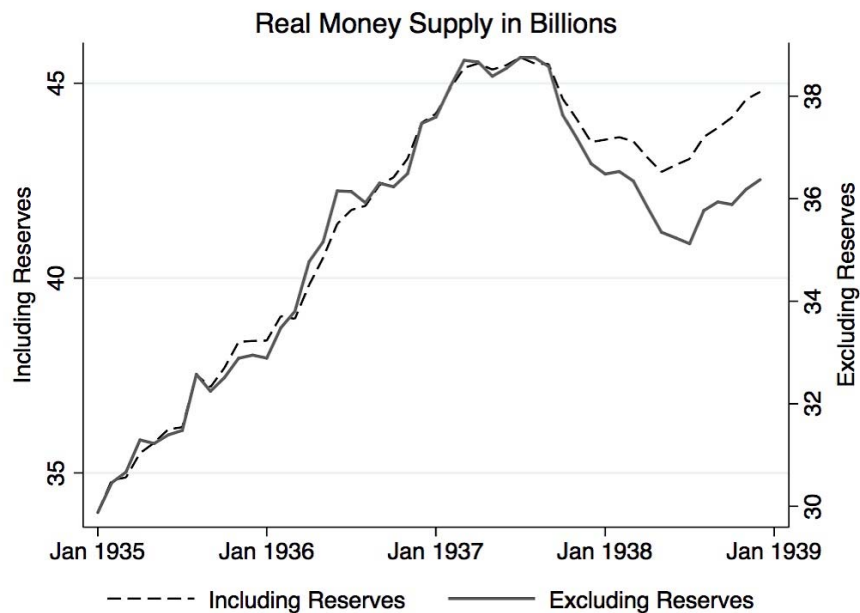


Figure 15 Real money supply including and excluding total reserves.
 Data adapted from: NBER macrohistory database series 14064 and 14144a.

Federal Budget Receipts

Although not of much interest, a tax variable is used in modeling. NBER series 15004, total federal budget receipts in millions, was chosen for use. The NBER's dataset was transformed into billions of dollars and deflated using the Gordon and Krenn deflator. Because it was not seasonally adjusted by the NBER, the variable was smoothed using a moving average of the previous, present, and future month. Figure 16 plots real federal budget receipts before and after smoothing.

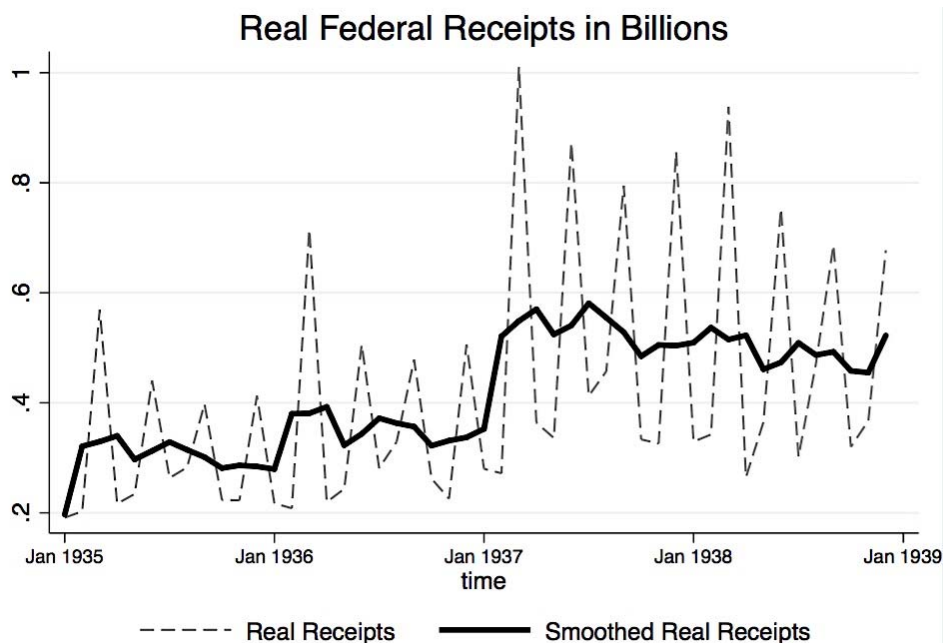


Figure 16 Real federal budget receipts, smoothed and non-adjusted
 Source: NBER Series 15004

Examining the Variables

The variables are log-transformed in order to normalize the data. A log-log model allows for a simple interpretation of the coefficients: a 1% increase in an independent variable leads to a percent change of the regressand that is equivalent to the value of the coefficient output. To gain a better understanding of the variables under consideration, and to aid in model specification, focus was paid to identifying the time-series properties of each variable.

To test for serial correlation of the logged real GDP variable, a correlogram was performed. The correlogram provides two important measures, the autocorrelation and partial autocorrelation functions. The autocorrelation function measures the variable's correlation with itself at each lag. The partial autocorrelation function, at each lag, is a

regression of the variable and that lag, holding all others lags constant. Figure A-1 plots GDP's autocorrelation function. The plot shows that GDP is significantly correlated with up to three previous years. The plot shows a prolonged and somewhat smooth decay of the autocorrelation function, hinting that the data may be non-stationary. Given the decay of the autocorrelation function, GDP is an autoregressive process.

The partial autocorrelation function of GDP is plotted in Figure A-2. The plot provides a more precise visualization of the autoregressive process. As shown in the figure, when the effect of the first lag is controlled for, the correlation of all other lags is, generally, insignificant. Although the function shows significant correlations at lags 1, 6, 13, 16, and 21, it should be underscored that the function cuts off and remains insignificant for five lags after the first. Given the non-zero partial autocorrelation of the first lag, coupled with the long lag delay before other significant spikes arise, it is assumed that GDP is an AR(1) process. The assumption of an AR(1) process is underscored by Figure A-3, a scatterplot of GDP and its first lag, and Figure A-4, a scatterplot of GDP and its second lag. Both plots have clear upward trends that are usually associated with an autoregressive processes.

Given the very high correlation between the income variable and its lags, coupled with the previous tests that indicate an autoregressive process, the analysis continues by examining the type of autoregressive process seen in GDP. To test for a unit root, a Dickey-Fuller test was performed. The null hypothesis is that the variable contains a unit root. The test was performed and produced an output of -2.841, with the p-value being 0.0526. The low p-value barely misses the 95% significance level, indicating that the null hypothesis cannot be rejected. The test was also performed using an increasing number of lags (5-11).

The additional tests confirmed that the null hypothesis couldn't be rejected. Having confirmed the existence of a unit root, the variable is now said to be a random walk. Further Dickey-Fuller tests were used to specify the type of random walk.

The variable can either be a random walk with drift or without drift. A random walk without drift is a process where the current value of a variable is composed of its past values plus an error term. A random walk with drift is, essentially, a random walk with an added constant parameter. GDP was tested for drift and test's p-value was 0.0034. The null hypothesis can be rejected, and the results held with the use of varying lag lengths. GDP is a random walk without drift. GDP, a variable confirmed to be a random walk without drift, was also tested for a deterministic time trend. The test statistic output was -1.642 with a p-value of .7754. GDP is a unit root around a deterministic time trend. A regression of GDP and time further confirmed the existence of a time trend. Because the GDP variable is non-stationary, it is used in modeling in its differenced form.

The tests performed above were repeated on the industrial production variable. Figure A-5, the autocorrelation function of industrial production, shows a steep but smooth decay. Figure A-6, the partial autocorrelation function, is significant at lags 1, 2, with some peaks after lag 10. These graphs suggest that industrial production is an autoregressive. Next, a Dickey Fuller test for unit root was performed. With and without varying lags included, the test output indicated a unit root. The test was repeated with trend added. At varying lags, the test output confirmed the existence of a unit root with a deterministic time trend. However, the test for drift produced inconclusive results. Therefore, the assumption is made that industrial production is a unit root with a deterministic time trend. Like the GDP variable, industrial production will be differenced when used as a regressand. Given

that both possible dependent variables are used in differenced form, independent variables will also be differenced to make the interpretation of model results simpler.

Building a Model

To consider whether industrial production or GDP should be used as the dependent variable, each regressor was individually regressed by up to 4 differenced lags on the two possible regressands. After each regression, a Durbin-Watson test and Breusch-Godfrey test was performed to look for autocorrelation between the regressor variable and the regressand under consideration. The simple regression results are reported in Table A-4 and the Breusch-Godfrey test outputs are reported in Table A-5. Overwhelmingly, when each independent variable was individually regressed on industrial production, the Durbin-Watson test and the Breusch-Godfrey test indicated autocorrelation of the error terms. Therefore, GDP was chosen as the dependent variable to be used in modeling.

The first model used included 3 differenced lags of each independent variable. The results of Model 1 are reported in Table A-1, alongside results for models soon to be discussed. Due to the use of lagged variables in Model 1, the Breusch-Godfrey (BG) test was the prime test of interest. Unlike the Durbin-Watson test, the BG test allows for lagged dependent variables and tests for higher order autoregressive processes. The test output is reported in Table A-2. Based on the reported p-values, the null hypothesis that serial correlation does not exist, was not rejected. In other words, the assumption was made that serial correlation does not exist.

Before further analyzing results, Model 1 residuals were tested for problems. Figure A-7 plots residuals against fitted values. The graph shows a random scatter, a

preliminary indicator that the results were favorable. Furthermore, Figure A-8 shows that the residuals are somewhat normally distributed. It should be noted that Figure A-9, a scatterplot of the residuals against time, appears to be random with no patterns. The autocorrelation function, Figure A-10, shows no lags of significance, and the partial autocorrelation function, Figure A-11, shows no lags of significance. A runs test indicated that the residuals had 24 runs. The p-value output provided was 0.72; the null hypothesis is that the residuals were produced from a random process, which was not rejected. This test further indicated that autocorrelation was not a problem in the model. Finally, Dickey Fuller tests without drift, with drift, and with trend were performed on the residuals. All three tests had p-value outputs of 0.00, thereby raising no concerns regarding a unit root of the residuals. Based on testing of the residuals, the standard error outputs provided in Model 1 were not biased.

To continue improving the model, the wage variable was incorporated in Model 1.1 in its unlogged form. The output of Model 1.1 is reported in Table A-1. The fit of the model improved slightly and the regression results remained comparable to Model 1. Given this slight improvement, coupled with the favorable BG test results reported in Table A-2, the wage variable was retained for use in its unlogged form.

Due to their removal of the Soldier's Bonus impact, the Gordon and Krenn data for government spending declines sharply in June 1936 and July 1936. In Model 2, a time dummy variable for these two months was included to remove a potential source of bias. The inclusion of the dummy variable removed a slight bias from regression results; however, the dummy variable was insignificant in all models.

Model 3 builds upon Model 2 by using a different measure of the money supply variable. In line with other studies of the Recession, the money supply variable in Model 3 was changed to include total reserves. The results of this regression, with all other variables kept unchanged from Model 2, are reported in Table A-3. Although the fiscal policy coefficient does not change as a result of the variable change, the coefficient of money supply increased from .42 in Model 2 to .61 in Model 3. These results should be considered surprising because the variable, having strayed from the argument that reserve hoarding decreased money supply, has now a greater impact in the regression. The money supply coefficients in Model 3 are counterintuitive and the results suggest that other studies, utilizing measures inclusive of reserves, may have inadvertently inflated the role of money supply. Given that the government-spending coefficient remained unchanged in Model 3 and given the reasons for excluding reserves, the next model retained money supply exclusive of reserves.

The final model examined, Model 4, was a cleaned regression of only the significant variable-level lags.¹⁸⁹ Reported in Table A-3, the fit of this regression remained high while the variable coefficients and beta coefficients continued to mirror those previously modeled. Furthermore, this model's BG test, as reported in Table A-2, produced an output even more favorable than that of the other models. Model 4's residual plots, Figure A- 12 to Figure A- 15, were all favorable.

¹⁸⁹ Model 4 was cleaned by removing, step by step, the most insignificant variable lags found in Model 2. Insignificant variables were removed until regression was narrowed to only significant regressors.

Concluding Analysis

To more easily examine the coefficient and beta coefficient values provided by each model, coefficients are reported in Figure 17. Beta coefficients, which consider variables standardized to have a variance of 1, provide an interesting interpretation of regression results: given a 1% increase of a dependent variable's standard deviation, GDP's standard deviation increases by $B\%$. Across all the models, the beta coefficient of the government-spending variable is two to three times greater than that of the money supply variable. When the variables are compared on a common metric of standard deviations, fiscal policy seems to have had the comparatively greatest effect on GDP.

Turning to more traditional metrics, according to Model 4, the fiscal multiplier during the time period was about 1.4.¹⁹⁰ In other words, on average over the time period considered, every dollar spent by the government had an impact on output equivalent to \$1.40. These results are in line with Gordon and Krenn's findings. In their study, they found a fiscal spending multiplier of 1.8-2.2 during the early-WWII years, a time when the American economy was ramping up for war.¹⁹¹ As argued by Eggertson and Pugsley, given the haphazard government messaging and the uneasiness that permeated about the future, a multiplier of 1.4 should be considered surprisingly high for 1937.

¹⁹⁰ G% of GDP during years examined averaged 15%. $\hat{\epsilon}\left(\frac{Y}{G}\right) = \frac{\frac{\Delta Y}{Y}}{\frac{\Delta G}{G}} = \frac{\Delta Y}{\Delta G} * \frac{G}{Y} = \text{Multiplier} * G \text{ Share}$

¹⁹¹ NBER, *The End of the Great*, 35.

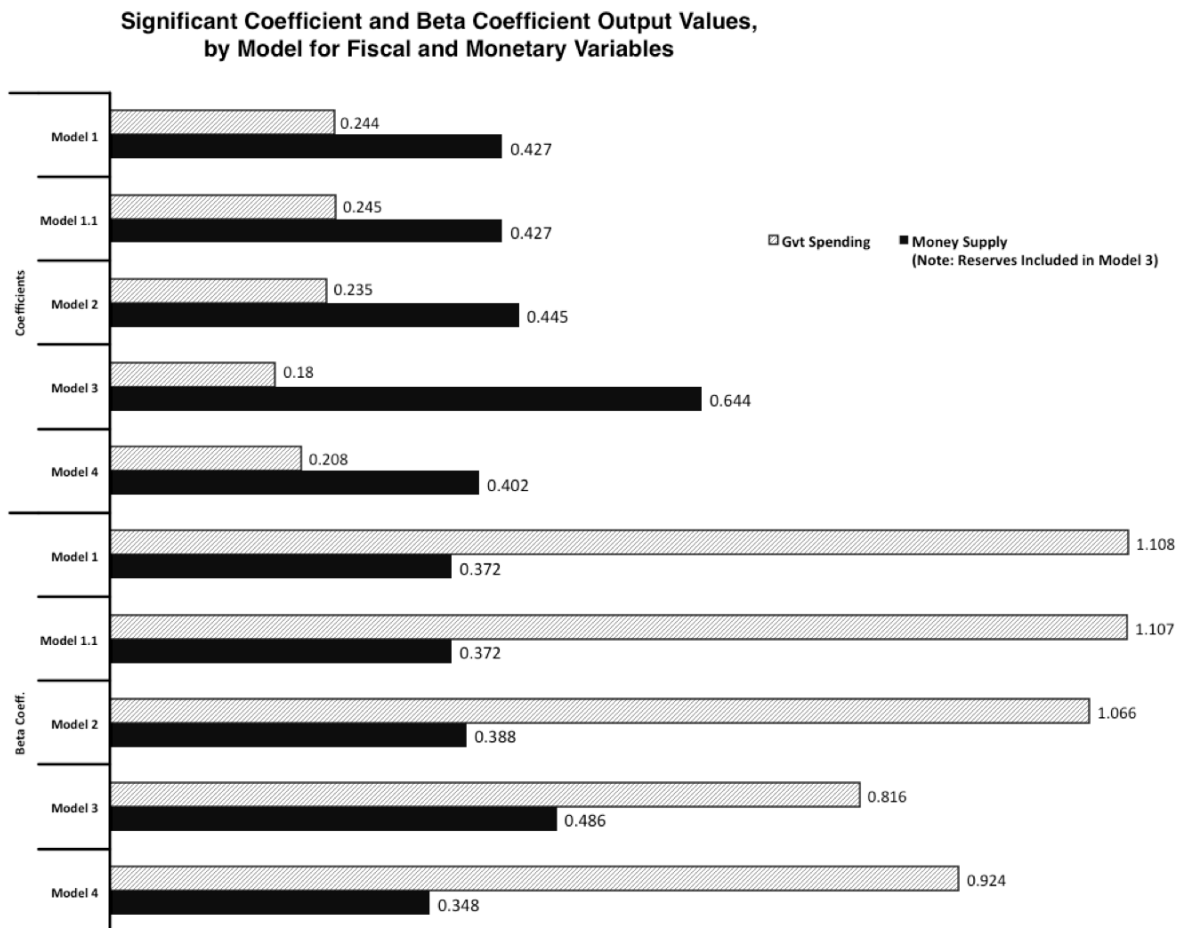


Figure 17

From its September 1936 peak to its October 1937 low, real government spending declined by \$250 million. Given the multiplier, the decrease in spending should have caused a real GDP decline of about \$350 million. During the Recession, real GDP decreased by \$690 million from its April 1937 peak to its May 1938 trough. This means that the contraction of government spending, when the multiplier is accounted for, caused nearly half of the GDP decline experienced during the Recession.

Had New Deal spending continued, it is likely that the Recession would have had a much-lesser impact on the economy. Both monetary and fiscal policies contributed to

the 1937 Recession. Only in the context of diminished government spending was monetary policy able to have an impact great enough to lead to the Recession.

Indecision, political ambition, ideological barriers, and a general lack of knowledge led to policy decisions that caused the Recession. What we learn from 1937 is that ideology must play a role subordinate to the wellbeing of society. In times of need, action, not inaction, is required.

The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist.¹⁹² – *John Maynard Keynes*

¹⁹² Keynes, "Chapter 24: Concluding Notes," in *The General Theory of Employment*.

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APPENDIX

TABLES

Table A-1

<u>Real GDP</u>	Lag Diff	MODEL 1 R ² = .72		MODEL 1.1 R ² = .723		MODEL 2 R ² =.73	
		Coefficient	Beta Coeff.	Coefficient	Beta Coeff.	Coefficient	Beta Coeff.
Real Gvt Spending	0	0.187***	0.848	.188***	0.849	0.181***	0.820
	1	0.057*	0.260	0.057*	0.258	0.054*	0.246
	2	0.033	.	0.033	.	0.032	.
	3	0.029	.	0.029	.	0.028	.
Real Federal Receipts	0	0.011	.	0.011	.	0.011	.
	1	-0.005	.	-0.005	.	-0.005	.
	2	0.004	.	0.005	.	0.004	.
	3	-0.012	.	-0.012	.	-0.014	.
Real Money Supply Excl. Reserves	0	-0.026	.	-0.025	.	-0.022	.
	1	0.427***	0.372	0.427***	0.372	0.445**	0.388
	2	0.015	.	0.014	.	0.030	.
	3	0.178	.	0.180	.	0.190	.
Wage:Manhour Index	0	0.106	.				
	1	-0.199	.				
	2	0.122	.				
	3	-0.057	.				
Wage:Manhour Index	0			0.001	.	0.001	.
	1			-0.002	.	-0.002	.
	2			0.001	.	0.001	.
	3			0	.	0	.
Jun/Jul '36 Dum					-0.004	.	
cons	0.000	.	0.000	.	0.000	.	

~signifies differences ^signifies nat. log // * Robust P<0.1 **Robust P<0.05 ***Robust P<0.01

Table A-2

Breusch-Godfrey LM Test, P > chi2 Output

	Model 1	Model 1.1	Model 2	Model 3	Model 4
Lag 1	0.19	0.18	0.23	0.53	0.14
Lag 2	0.04	0.04	0.07	0.32	0.31
Lag 3	0.06	0.06	0.09	0.30	0.49

Table A-3

<u>Δ Real GDP</u>	Lag Diff	MODEL 3 R ² = .78		MODEL 4 R ² = .605	
		Coefficient	Beta Coeff.	Coefficient	Beta Coeff.
	0	0.180***	0.816	.170***	0.755
Δ Real Gvt	1	0.046	.	.038**	0.169
Spending	2	0.018	.		
	3	0.030	.		
	0	0.013	.		
Δ Real Federal	1	-0.003	.		
Receipts	2	0.009	.		
	3	-0.011	.		
	0				
Δ Real Money Supply	1			0.402***	0.348
Excl. Reserves	2				
	3				
	0	0.015	.		
Δ Real Money Supply	1	0.644***	0.486		
Incl. Reserves	2	-0.093	.		
	3	0.103	.		
	0	0.001	.		
Δ Wage:Manhour	1	-0.002	.		
Index	2	0.002*	0.217		
	3	0	.		
Jun/Jul 36 Dum		-0.002	.	0.001	.
cons		-0.001	.	0.001	.

Δ signifies differences Δ signifies nat. log

* Robust P<0.1 **Robust P<0.05 ***Robust P<0.01

Table A-4. Simple regression of each independent variable on GDP or industrial production.

	Dependent Variable			
	Real GDP		Industrial Production	
Real Gvt Spending	0.175***	-7.4	0.1	-1.25
Lag 1	0.0528	-1.99	0.179*	-2.16
Lag 2	0.0458	-1.92	0.215**	-2.79
Lag 3	0.0312	-1.48	0.178**	-3.43
Lag 4	0.0333	-1.37	0.176***	-3.93
Durbin-Watson Test Statistic	1.926		0.698	

*t statistics in parentheses // * p<0.05 ** p<0.01 *** p<0.001*

	Dependent Variable			
	Real GDP		Industrial Production	
Real Money Supply Excl. Reserves	-0.00897	(-0.04)	1.473***	-4.67
Lag 1	0.341	-1.87	0.915*	-2.43
Lag 2	-0.0617	(-0.27)	0.425	-1.14
Lag 3	0.0431	-0.22	-0.347	(-1.21)
Lag 4	0.248	-1.43	-0.299	(-1.29)
Durbin-Watson Test Statistic	2.01		0.723	

*t statistics in parentheses // * p<0.05 ** p<0.01 *** p<0.001*

	Dependent Variable			
	Real GDP		Industrial Production	
Wage:Manhour Index	0.0275	(0.22)	0.133	(0.39)
Lag 1	0.0341	(0.24)	0.0943	(0.27)
Lag 2	-0.0657	(-0.42)	0.0549	(0.13)
Lag 3	-0.0990	(-0.59)	-0.0718	(-0.20)
Lag 4	-0.102	(-0.83)	-0.0747	(-0.30)
Durbin-Watson Test Statistic	1.968		0.512	

*t statistics in parentheses // * p<0.05 ** p<0.01 *** p<0.001*

	Dependent Variable			
	Real GDP		Industrial Production	
Real Federal Receipts	-0.0131	(-0.57)	0.00515	(0.13)
Lag 1	0.0299	(1.38)	0.0480	(1.32)
Lag 2	0.0210	(1.13)	0.0531	(0.89)
Lag 3	-0.0308	(-0.90)	0.000844	(0.02)
Lag 4	0.00110	(0.07)	0.0135	(0.49)
Durbin-Watson Test Statistic	1.914		0.49	

*t statistics in parentheses // * p<0.05 ** p<0.01 *** p<0.001*

Table A-5. Breusch-Godfrey Test Results for Table A-4 regressions.

Real Gvt Spending Regressand: Real GDP			
lags(p)	chi2	df	Prob > chi2
1	0.013	1	0.9085
2	3.474	2	0.1760
3	6.372	3	0.0948
4	7.934	4	0.0940

Real Gvt Spending Regressand: Industrial Production			
lags(p)	chi2	df	Prob > chi2
1	18.508	1	0.0000
2	22.662	2	0.0000
3	23.023	3	0.0000
4	23.508	4	0.0001

Real Money Supply Excl. Reserves Regressand: Real GDP			
lags(p)	chi2	df	Prob > chi2
1	0.009	1	0.9238
2	0.345	2	0.8414
3	0.413	3	0.9375
4	0.508	4	0.9727

Real Money Supply Excl. Reserves Regressand: Industrial Production			
lags(p)	chi2	df	Prob > chi2
1	18.539	1	0.0000
2	20.497	2	0.0000
3	21.033	3	0.0001
4	21.078	4	0.0003

Wage:Manhour Index Regressand: Real GDP			
lags(p)	chi2	df	Prob > chi2
1	0.000	1	0.9931
2	0.503	2	0.7776
3	1.984	3	0.5757
4	2.023	4	0.7315

Wage:Manhour Index Regressand: Industrial Production			
lags(p)	chi2	df	Prob > chi2
1	23.679	1	0.0000
2	25.077	2	0.0000
3	25.125	3	0.0000
4	25.526	4	0.0000

Real Federal Receipts Regressand: Real GDP			
lags(p)	chi2	df	Prob > chi2
1	0.036	1	0.8495
2	1.003	2	0.6057
3	4.265	3	0.2342
4	4.657	4	0.3243

Real Federal Receipts Regressand: Industrial Production			
lags(p)	chi2	df	Prob > chi2
1	24.687	1	0.0000
2	26.066	2	0.0000
3	26.067	3	0.0000
4	26.285	4	0.0000

FIGURES

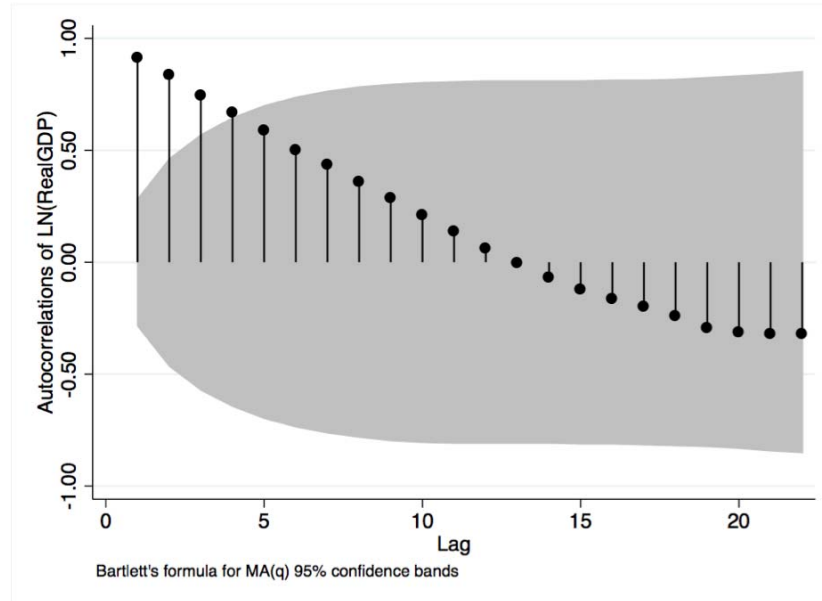


Figure A-1. Autocorrelation plot of GDP variable.

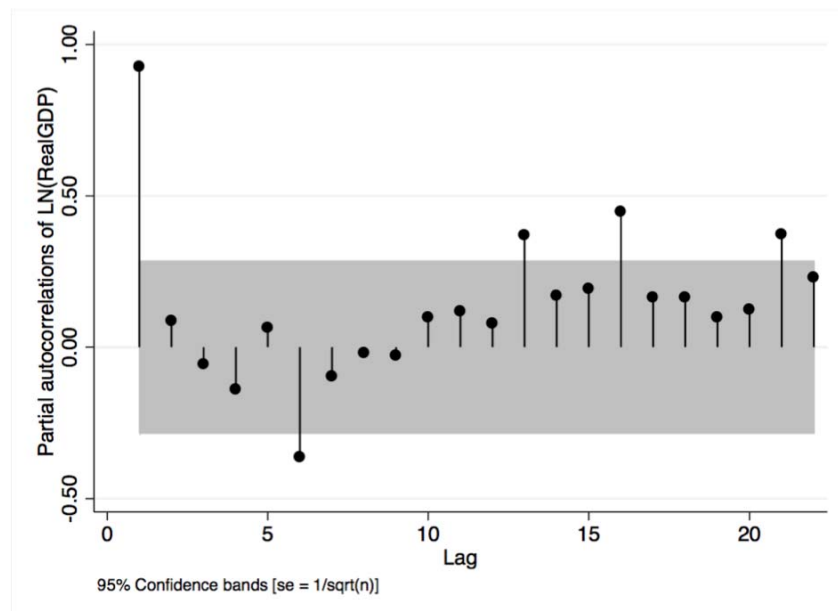


Figure A-2. Partial autocorrelation plot of GDP variable.

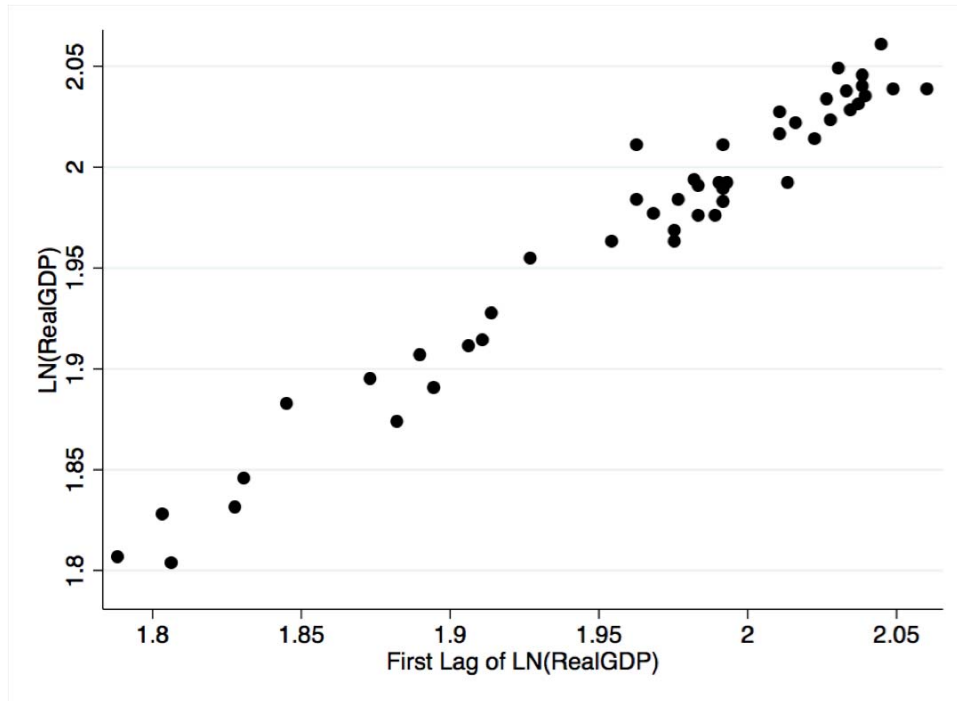


Figure A-3. Scatterplot of the GDP variable against its first lag.

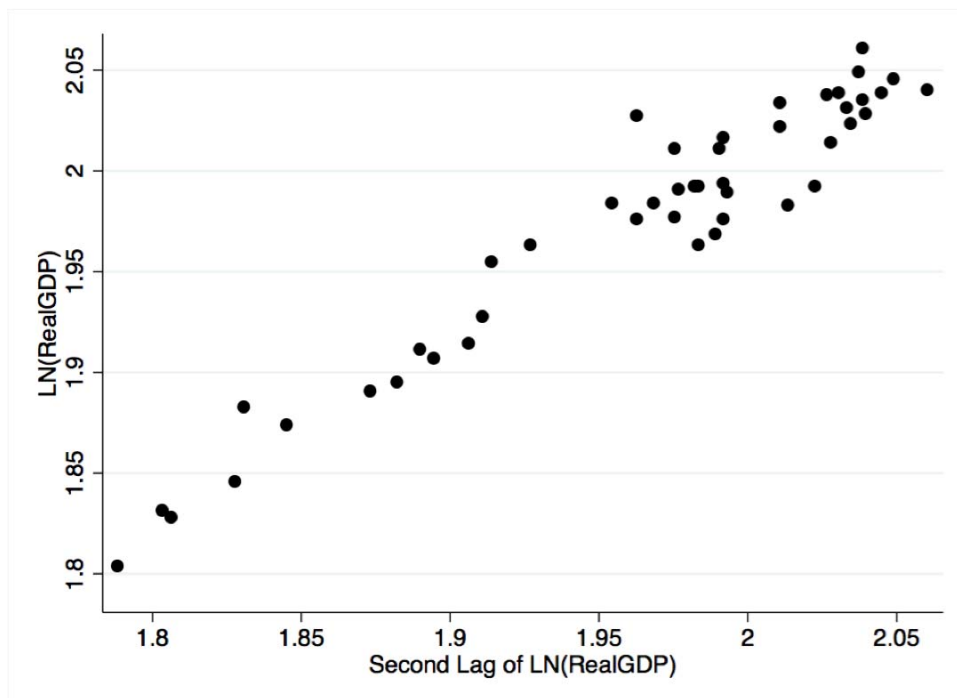


Figure A-4. Scatterplot of the GDP variable against its second lag.

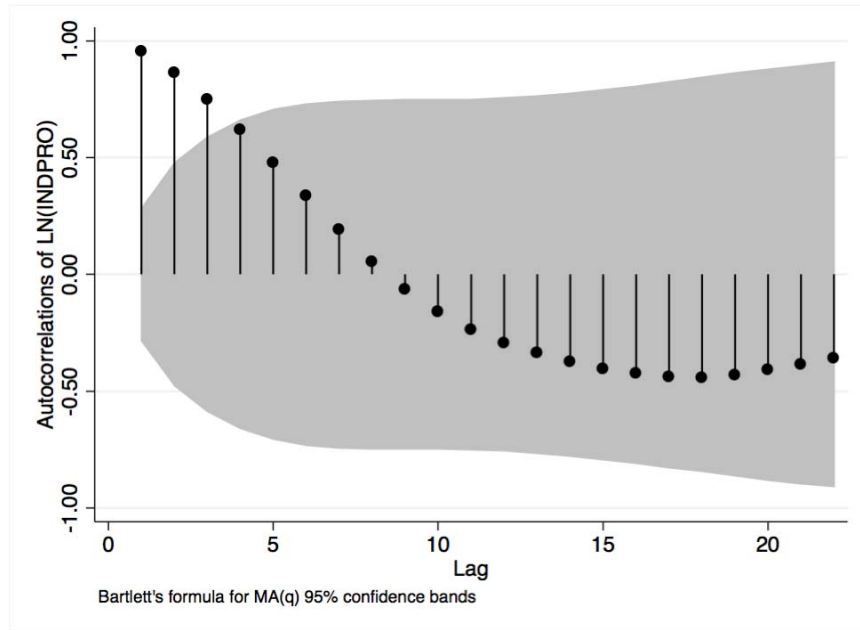


Figure A-5 Autocorrelations of Industrial Production

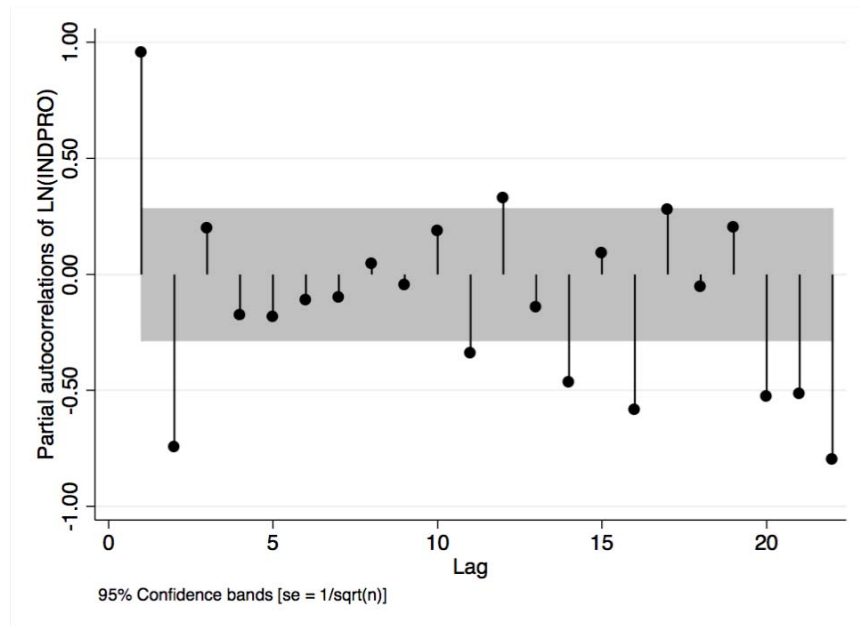


Figure A-6 Partial Autocorrelations of Industrial Production

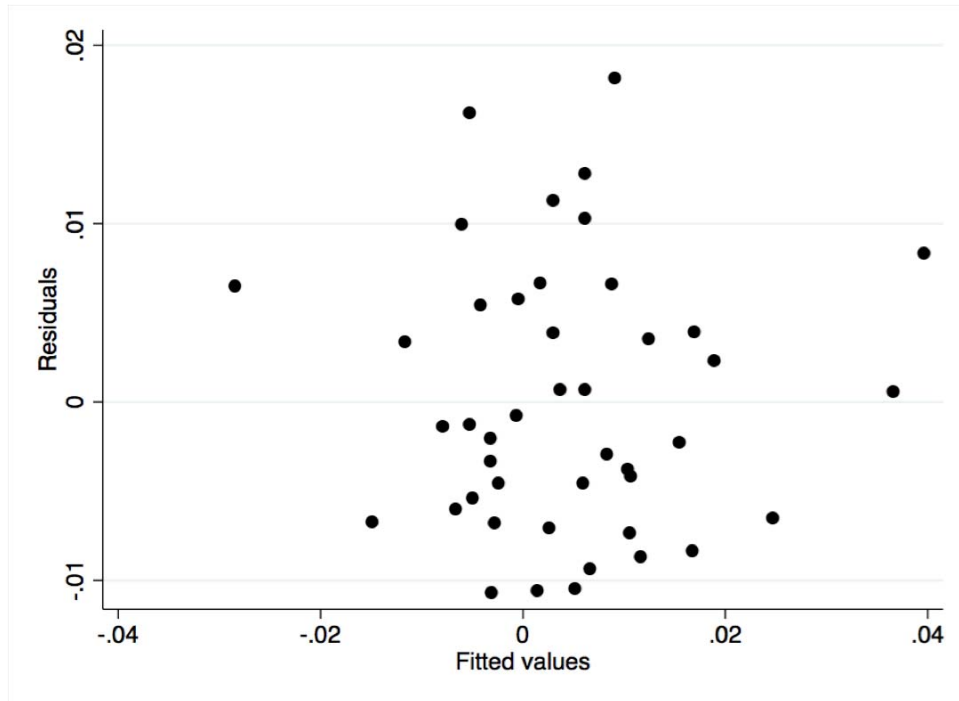


Figure A-7 Scatterplot of Model 1 Residuals Against Fitted Values

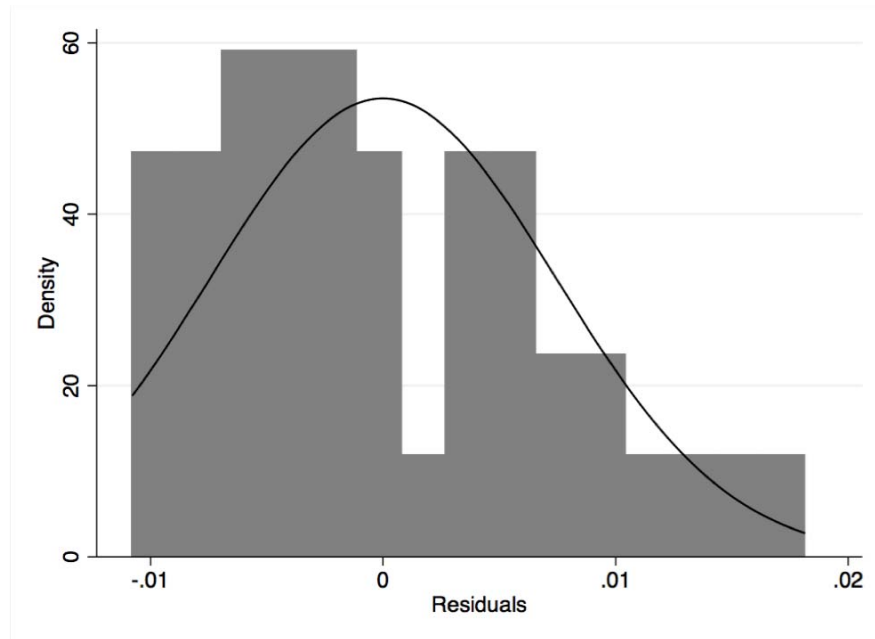


Figure A-8 Histogram of Model 1 Residuals

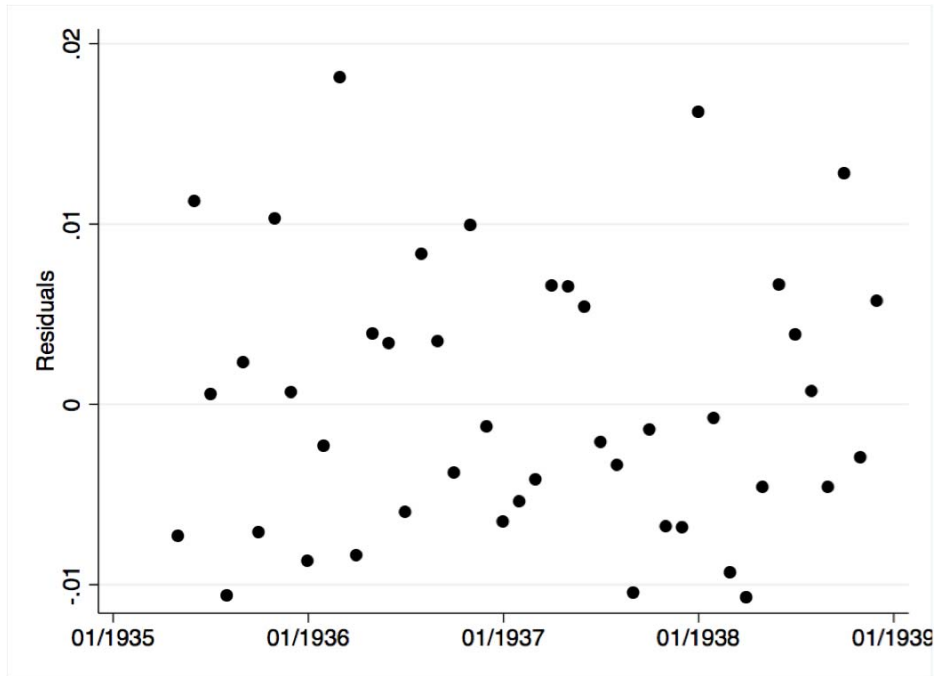


Figure A-9 Model 1 Residuals Plotted Over Time

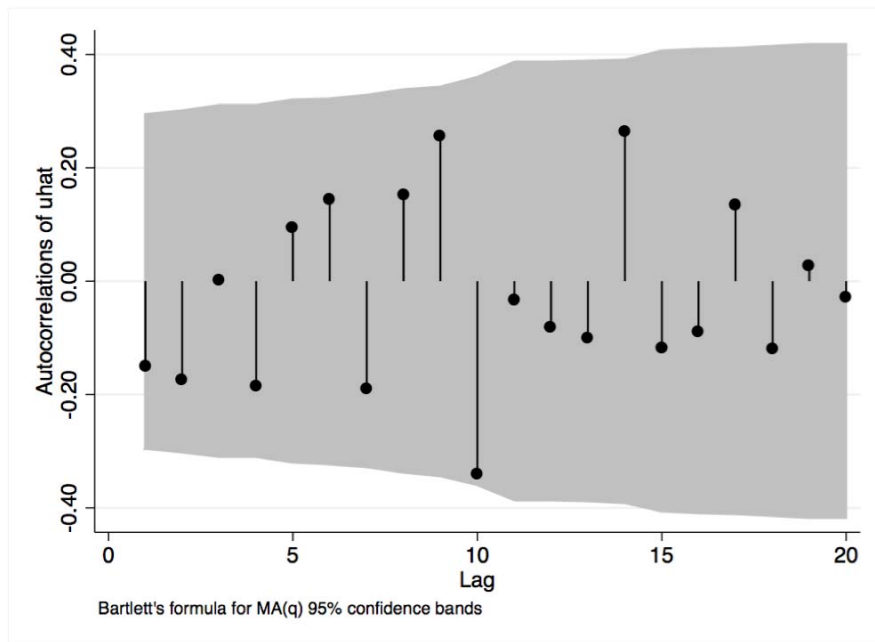


Figure A-10 Autocorrelations of Model 1 Residuals

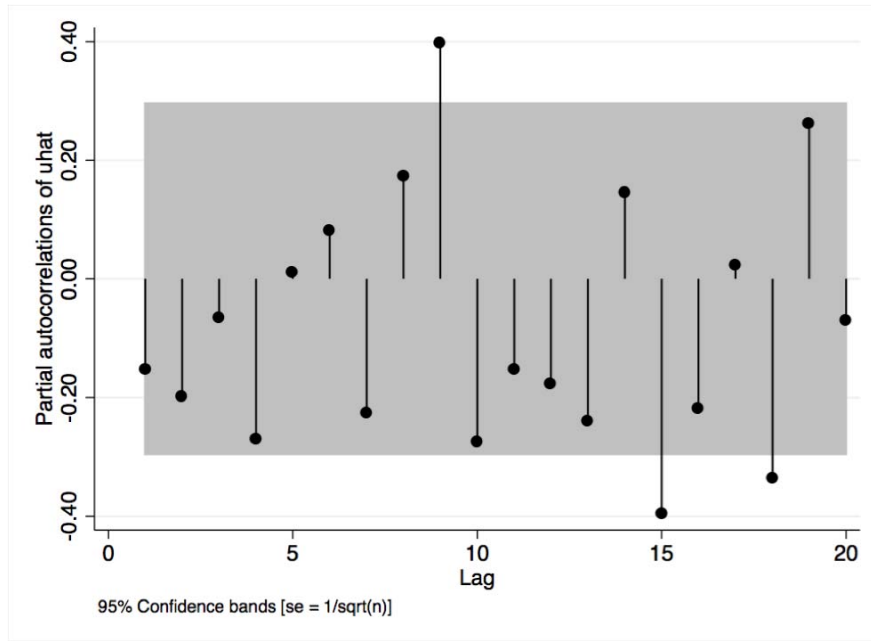


Figure A-11 Partial Autocorrelations of Model 1 Residuals

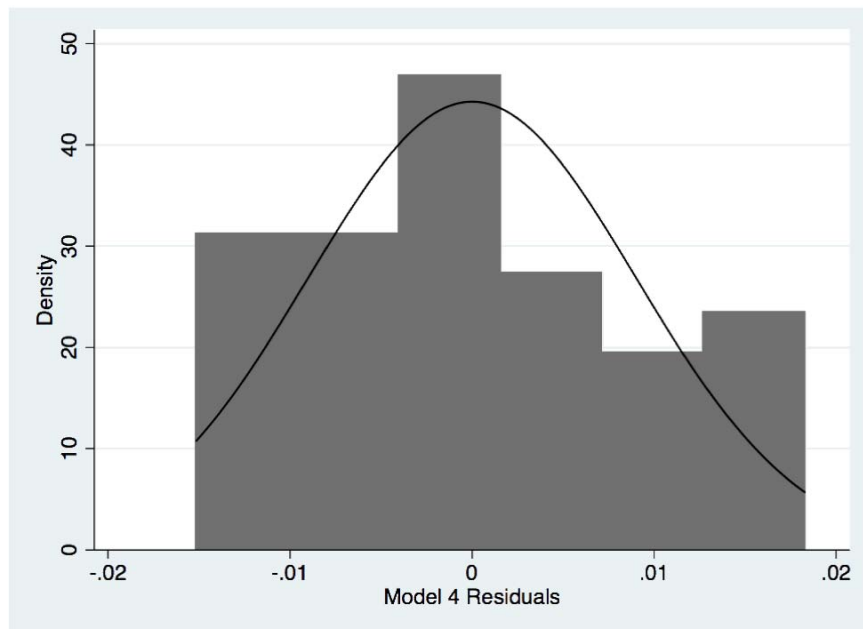


Figure A-12. Histogram of Model 4 Residuals.

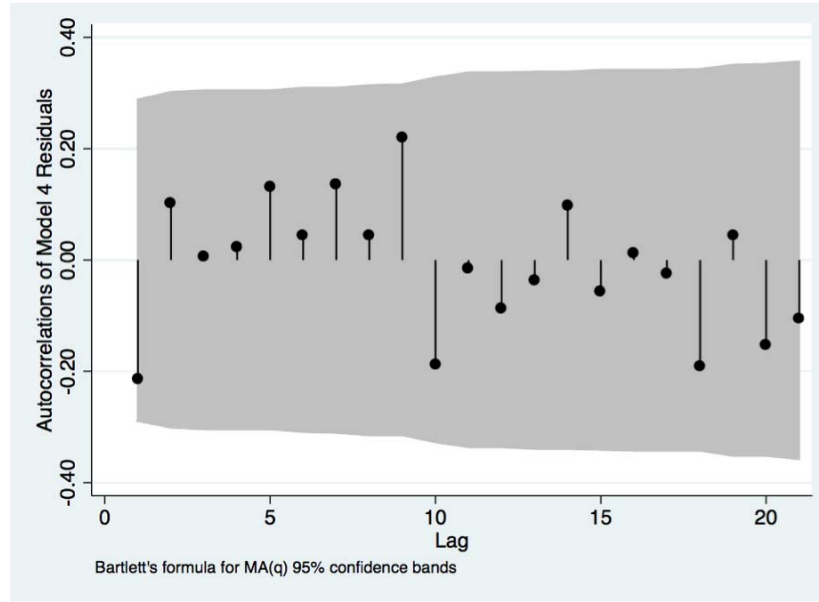


Figure A- 13. Autocorrelations of Model 4 Residuals.

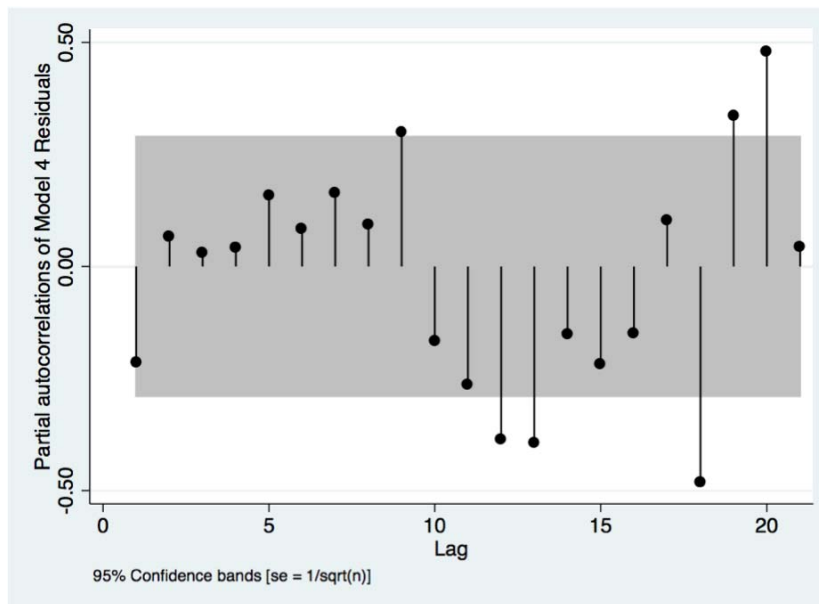


Figure A- 14. Partial Autocorrelations of Model 4 Residuals.

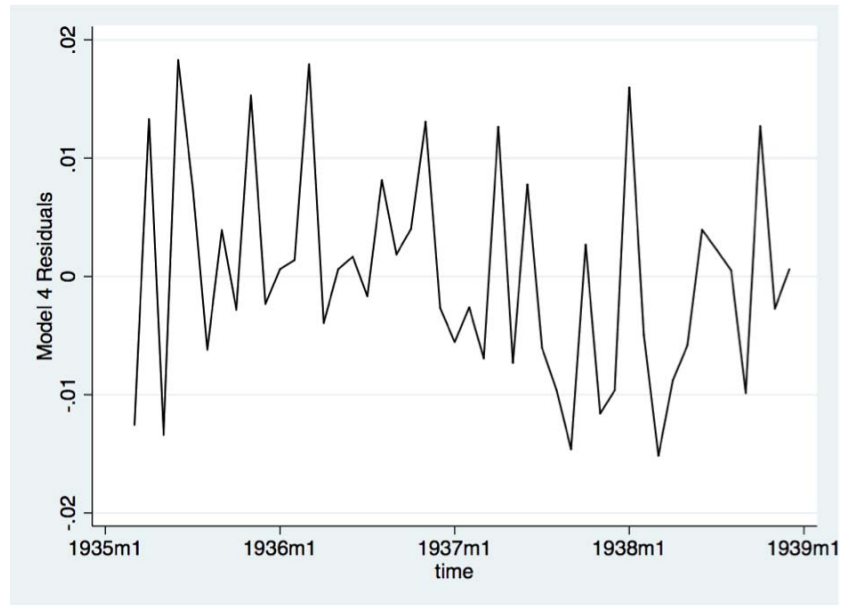


Figure A- 15. Lineplot of Model 4 Residuals.

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