



Contents lists available at ScienceDirect

Explorations in Economic History

journal homepage: www.elsevier.com/locate/eeh

How was the quantitative easing program of the 1930s Unwound?☆

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ARTICLE INFO

JEL Codes:

E32
E58
N12

Keywords:

Quantitative easing
Excess reserves
Gold flows
Great depression

ABSTRACT

Outside of the recent past, excess reserves have only concerned policymakers in one other period: the Great Depression. The data show that excess reserves in the 1930s were never actively unwound through a reduction in the monetary base. Nominal economic growth swelled required reserves while an exogenous reduction in monetary gold inflows due to war embargoes in Europe allowed excess reserves to naturally decline towards zero. Excess reserves fell rapidly in early 1941 and would have unwound fully even without the entry of the United States into World War II. Consequently, policy tightening was at no point necessary and could have contributed to the 1937–1938 Recession.

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1. Introduction

The search to understand the recent recession and its aftermath has led many economists to look back at the Great Depression (Almunia et al., 2010; Eichengreen and O’Rourke, 2009; Crafts and Fearon, 2010). However, while most studies have focused on the actions of the Federal Reserve (Fed) during the downturn, the Great Depression also offers insight on how to unwind the substantial excess reserves that built up as a result of Quantitative Easing (QE). Just as in the late 2000s, short-term interest rates quickly hit the zero lower bound in the early 1930s and central banks considered non-traditional monetary policies to stimulate the economy. These policies led to a massive expansion of the Fed’s balance sheet. And while we have not yet seen the unwinding of the current QE program, we can study the unwinding of a similar monetary expansion during the Great Depression.¹

Even though the Fed did not provide interest on reserves, the depreciation of the dollar in 1934 and large inflows of foreign gold before the Second World War (WWII) resulted in a massive buildup of excess reserve balances.² Over \$14.5 billion of unsterilized gold flowed into the United States on net between May 1934 and December 1941, more than in any other period. While gold inflows were not directly controlled by the Federal Reserve, the decision not to sterilize gold inflows and to immediately convert them into currency was effectively a Quantitative Easing program as they engendered an enormous increase in the monetary base when

* The authors would like to thank to David Wheelock, Edward Nelson, Jonathan Rose, Mark Carlson, Andrew Jalil, Christopher Hanes, Roger Sandilands, Mary Hansen, Kris Mitchener, two anonymous referees, and seminar audiences at the Social Science History Association, the Cato Monetary Workshop, and the Southern Economic Association Meetings for valuable comments, as well as to Daniel Kirwin for invaluable research assistance.

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¹ We study the decline of excess reserves to near zero rather than the return to a “normal” monetary policy environment. As described by Mitchener and Mason (2010), the Treasury’s control over the Exchange Stabilization Fund and the pegging of interest rates during WWII delayed normal monetary policy until the 1950s.

² The current Fed policy of paying positive interest on excess reserves allows the Fed to influence financial markets despite the huge expansion in its balance sheet. Therefore, while lowering IOER might reduce excess reserves, it is not the primary tool the Fed intends to use for this purpose.

<https://doi.org/10.1016/j.eeh.2017.10.003>

Received 21 April 2017; Received in revised form 16 October 2017; Accepted 22 October 2017

Available online xxx

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short-term rates were close to zero. Many authors have considered these large scale asset purchases to be essentially QE programs. [Bernanke et al. \(2004, p. 18\)](#) have characterized these as a “successful application of quantitative easing” whereas authors such as [Anderson \(2010\)](#) and [Hanes \(2014\)](#) use the period to study the effects of QE policies. Additionally, [Bordo and Sinha \(2016\)](#) argue that the 1932 open market operations were an effective QE program that would have mitigated the Depression had they continued.

The literature on excess reserves during the 1930s is extensive. Economists have examined the determinants of the rise in excess reserves ([Friedman and Schwartz, 1963](#); [Wilcox, 1984](#); [Bernanke, 1983](#)) as well as the effect of reserve requirements changes ([Calomiris et al., 2011](#); [Park and Van Horn, 2015](#)). However, to our knowledge, no study has studied the determinants of the fall of excess reserves in the early 1940s.

Our analysis indicates that the cessation of the largely exogenous gold flows is the only factor that can explain the sudden decline in excess reserves in early 1941. Between the trough of the Great Depression in 1933 and the end of WWII, excess reserves fell in only two periods. As gold inflows were slowing after the gold bloc countries had devalued in 1936, excess reserves declined and had almost reached zero before the Recession of 1937–1938 increased them again. The cessation of gold flows from Europe during the war correspond to the more permanent decline in excess reserves started in early 1941. Excess reserves were on track to have unwound fully even without the issuance of war bonds or increase in reserve requirements in late 1941.³ Therefore, policy tightening was unnecessary and may have been counterproductive. We take this as evidence that gold inflows were too large and the returns to alternative investments too low for banks to fully invest their excess reserves in other available assets.

We use three approaches to test this theory. First, we construct a residual model that is able to accurately predict changes in excess reserves from 1934 to 1941 using only gold flows, income, reserve requirements, and currency in circulation. Second, we empirically show that gold inflows are the only variable robustly correlated with changes in excess reserves. Finally, we show that new excess reserves were disproportionately concentrated in New York City where gold flows entered the country, and that the effect of gold was several times larger for New York City banks than other banks around the country.

2. The recovery from the great depression

While prices, income, and production declined steadily after the stock market crash in October of 1929 ([Fig. 1](#)), the banking system remained relatively unaffected until November 1930 when the failure of Caldwell and Company (a key southern financial institution) set off a chain reaction across the banking system.⁴ Banking panics continued intermittently until March 1933. Fears that the newly elected Roosevelt administration would depreciate the dollar after taking office led to a drain of gold out of the system. By March, the New York Federal Reserve Bank had no more free gold and could not honor any additional gold withdrawals. Spilling over just after his inauguration, the panic gave Roosevelt the impetus to take dramatic action by implementing a Bank Holiday. Banks were closed, their books were examined, and only solvent banks were permitted to reopen. When the dust settled, over 4000 banks were shut down permanently ([Wicker, 2000](#)).

Roosevelt took additional steps to stabilize the currency and prevent gold outflows. In 1933, he suspended convertibility of the dollar into gold, restricted gold exports, and forced the sale of all private gold holdings to the Federal Reserve.⁵ The Gold Reserve Act of 1934 formally lowered the value of the dollar from \$20.67 to \$35 per troy ounce of gold and ended the crawling depreciation that had begun in 1933. Significant gold inflows began almost immediately after capital controls were lifted and largely continued until the outbreak of WWII ([Meltzer, 2003](#)).

The banking system began to recover after 1933 and the ratio of currency to deposits steadily declined. However, instead of returning to their prior portfolio allocations, banks began to hold tremendous amounts of excess reserves ([Fig. 2](#)). While excess reserves had been near zero before 1929, they grew rapidly from about \$400 million in April of 1933 to about \$3 billion in December 1935. The Fed was extremely concerned about the large excess reserve balances. In a press release by the Federal Open Market Committee (FOMC) on December 17th, 1935, the Board of Governors argued gold inflows were “excessive”, and the FOMC resolved to absorb the resulting excess reserves as soon as such action would be possible without undue risk ([Meltzer, 2003, p. 498](#)).⁶ Excess reserves began to decline in early 1936, and were on a path to reach zero by late 1937. The potential for surge in loans corresponding to a decline in excess reserves, however, stoked the administration’s fears about inflationary bottlenecks in 1936 and led to an increase in reserve requirements, the sterilization of gold inflows, and fiscal tightening as the federal budget moved towards balance ([Bloomfield, 1950, p. 233](#); [Meltzer, 2003, p. 505–509](#); [Eggertsson, 2008](#)).⁷ As the recession worsened, policymakers reversed these contractionary policies.

³ A full counterfactual without United States entry into World War II is beyond the scope of this paper, but the downward trend of excess reserves appears unaffected by Pearl Harbor and does not appear to accelerate in 1942 either. If anything, the large gold inflows fleeing Nazi advances delayed the unwinding of excess reserves.

⁴ [Friedman and Schwartz \(1963\)](#) provide an excellent overview of the period for the interested reader.

⁵ Roosevelt instructed the Treasury to purchase gold at \$29.62 an ounce and the Reconstruction Finance Corporation to purchase gold at an even higher price. The Thomas Amendment to the Agricultural Adjustment Act gave the President the authority to expand the monetary base and change the gold parity ([Meltzer, 2003, p. 578, Footnote 74](#)).

⁶ The FOMC (December 1935, p.11) states: “It is the view of the Committee, however, that the amount of excess reserves of member banks constitutes a source of danger The Committee believes, therefore, that action should be taken as soon as possible without undue risk to absorb a part of these excess reserves as a safeguard against possible dangers” The FOMC (January 21, 1936, p. 4) later reaffirmed their intentions: “The Committee recognizes that the risks of action are somewhat increased by the present budgetary situation, but it recognizes also that the longer action is delayed, the greater and the dangers resulting from the combination of inordinately large excess reserves and an unbalanced budgetary situation, and the greater will be the difficulty of taking remedial action. Viewing the situation as a whole, the Committee strongly believes that action looking towards a substantial reduction in excess reserves should be taken as soon as this may be feasible”

⁷ There is no generally accepted conclusion over whether the rise in reserve requirements caused the recession. [Friedman and Schwartz \(1963\)](#) and [Velde \(2009\)](#) argue that the increase in reserve requirements caused tight monetary conditions, whereas [Cargill and Mayer \(2006\)](#), [Calomiris, Mason, and Wheelock \(2011\)](#), and [Park and Van Horn \(2015\)](#) argue it had little effect on bank behavior.

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