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Working Paper

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Working Paper, No. 03-10

Provided in Cooperation with:
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Suggested Citation: Cargill, Thomas F.; Mayer, Thomas (2003) : The effect of changes in reserve requirements during the 1930s: the evidence from a comparison of member and nonmember banks, Working Paper, No. 03-10, University of California, Department of Economics, Davis, CA

This Version is available at:
https://hdl.handle.net/10419/23208

THE EFFECT OF CHANGES IN RESERVE REQUIREMENTS DURING THE 1930s: THE EVIDENCE FROM NONMEMBER BANKS – REVISED VERSION

Abstract

Despite the widespread acceptance of Friedman and Schwartz's interpretation of the effect of the 1936-37 increase in bank reserve requirements there is surprisingly little straightforward evidence on this issue, perhaps because data limitations and structural instability precludes econometric modeling. We exploit a simple alternative, comparing member banks with nonmember banks not subject to changes in reserve requirements. The one previous study using this procedure made the unwarranted assumption that none of the states changed their reserve requirements. We avoid this assumption by using data from only seventeen states with stable reserve requirements. The results broadly support Friedman and Schwartz.

Key Words: excess reserves, Federal Reserve, Great Depression, reserve requirements, 1937-38 recession. (JEL E32, E65, and N12)

THE EFFECT OF CHANGES IN RESERVE REQUIREMENTS DURING THE 1930s: THE EVIDENCE FROM NONMEMBER BANKS

Thomas F. Cargill and Thomas Mayer*

I. INTRODUCTION

The Banking Act of 1935 gave the Federal Reserve the power to double member bank reserve requirements. In 1936 and again in 1937 the Fed used this power, not to reduce the prevailing level of bank credit or the money supply, but to eliminate excess reserves that banks had accumulated since 1934, reserves that it was afraid would generate future inflation. These actions have been blamed for generating, or at least exacerbating the short but sharp recession of 1937-38. In reaction to the recession the Fed in 1938 reduced reserve requirements. This episode has generated much debate, mainly because of its bearing on the role of monetary policy in the Great Depression.

The main issue in this debate is whether banks held their excess reserves because they lacked profitable lending opportunities, or because they wanted to hold large precautionary balances. The difficulty in distinguishing between these two possibilities is that no adequate measure of the demand for bank credit is available. To avoid this problem we compare the reserve behavior of member and a subset of nonmember banks not subject to the higher reserve requirement. If banks increased their total reserve ratios because of a decline in the demand for bank credit, then (unless there was a concurrent change in the relative volume of credit

demanded from member and nonmember banks) the total reserves ratios of member banks and nonmember banks should have behaved the same way at the time when member bank reserve requirements where raised. By contrast, if member banks held their large excess reserves as precautionary balances, then they (but not nonmember banks with unchanged reserve requirements) would have responded to the increased reserve requirement by restoring their excess reserves, and thus raising their total reserves relative to those of nonmember banks.

The remainder of the paper consists of six sections. Section 2 provides institutional background regarding the change in reserve requirements in the 1930s. Section 3 reviews the previous literature. The data and regression model are discussed in Section 4 and 5 respectively. The regression results are summarized in Section 6, which also includes a discussion of how the reserve-requirement changes were perceived by the public. A concluding section ends the paper.

2. INSTITUTIONAL BACKGROUND

Until the 1935 Banking Act member bank required reserve ratios had been set by legislation, and differed, as they did for a long time afterwards, depending upon whether a bank was located in one of the two central reserve cities (New York and Chicago), a reserve city (there were about 50 of these with the exact number varying over time), or elsewhere. Reserve requirements for nonmember banks varied from state to state, both in their level and in their composition. Some states allowed their banks to hold a certain proportion of their required reserves in U.S. government securities or in securities issued by that state. This makes it difficult to calculate excess reserve ratios for nonmember banks that could be compared to excess reserve ratios for member banks.

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As Table 1 shows in 1936 the Fed raised reserve requirements of member banks on both time and demand deposits by 50 percent, and in 1937 it raised the requirements on demand and time deposits by a further 33 percent, thus doubling them from their 1935 level. This still left the banking system as a whole with sufficient reserves to meet its legal requirements, though some banks in large cities had insufficient reserves (Roos, 1954, p. 104). But, with a lag of several quarters, member banks sold securities thereby restoring their excess reserves. Then, in April 1938, two months before the trough of the 1937-38 recession, the Fed lowered average reserve requirements on demand deposits by about 13 percent and on time deposits by 17 percent, only to raise them again in November 1941 back to double the 1935 level. We excluded this last change from our sample because we have only one subsequent observation, and that observation is for just after the Pearl Harbor attack. Excess reserves for reserve city and country banks began to rise sharply in 1934, declined from mid-1936 to the latter part of 1937, rose and stayed high for the rest of the decade (See Figure 1).

3. PREVIOUS LITERATURE

In 1963 Friedman and Schwartz initiated the modern discussion of why banks held these high excess reserves.[1] They argued that most of these legally excess reserves were not excess in an economic sense; banks wanted to hold them because they were afraid of further bank runs, having learned from their experience in 1930-33 that they could not rely on the Fed to act as a lender of last resort.[2]

Among the economists who tested Friedman and Schwartz's interpretation of excess reserves only Morrison (1966, pp. 45-47) proceeded, in part, by comparing the reserve ratios of

member and nonmember banks. He concluded that the difference in their total reserve ratios after the 1936-37 increases is approximately equal to the additional reserves that nonmember banks would have had to hold had their reserve requirements increased like those of member banks. Hence, he argued, it was the increased reserve requirements that accounted for the higher total reserve ratios (and thus the approximately unchanged excess reserve ratios) of member banks. But Morrison's results are unconvincing because he implicitly assumed that reserve requirements of nonmember banks were constant. However, based on a review of state reserve requirements, for only 17 of the 48 states can one be confident that the state requirements did not change in the 1930s.

Apart from the natural experiment of 1936-37, the broader problem of why banks piled up large excess reserves has been discussed by several economists in the 1960s and 1970s (see Horwich, 1963, Morrison, 1966; Brunner and Meltzer, 1968 and Frost, 1971), some of whom also dealt, though only in passing, with the 1936-37 increases. In recent years there has been a resurgence of interest in these excess reserves (see Calomiris and Mason, 2003; Graham, 1995; Lindley, Sowell and Stewart, 2001; Ramos, 1996; and, Telser, 2000-2001). Since these papers deal with the 1936-37 reserve-requirement increases only in passing, if at all, they will not be discussed here.

The view that the Fed's reserve-requirements increase caused the sharp downturn in 1937-38 appears to have become conventional wisdom despite little direct evidence beyond that offered by Friedman and Schwartz and Morrison. In a recent review of a book on the Great Depression, Field (2003, p. 289), in summarizing the discussion of Fed policy in the second half of the 1930s, stated: "The downturn in 1937/38 is attributed conventionally to misguided

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monetary stringency… .” Mishkin (2004, p. 422) in the most popular current money and banking textbook discussed the increase in reserve requirements as follows: “So not only does it appear that the Fed was at fault for the severity of the Great Depression contraction in 1929-1933, but to add insult to injury, it appears that it was also responsible for aborting the subsequent recovery.”

Meltzer (2003) provides a comprehensive analysis of the Fed over the period from 1913 to 1951 building on the Friedman and Schwartz study with new sources of information and the accumulation of research since 1963. He concludes that the increase in reserve requirements combined with the lag of offsetting open market operations generated a restrictive monetary policy, and hence contributed to the recession. However, he also cites other adverse events, such as a contractive fiscal policy in 1937 (Meltzer, 2003, pp. 521-529).

It is tempting to view this discussion as part of the Keynesian-monetarist debate, with monetarists claiming that the Fed could have controlled the money supply if it had really tried, and is therefore responsible for the severity of the Great Depression, and some Keynesians arguing that banks would not have turned any additional reserves into earning assets, and deposits. But this simple picture needs qualification. By no means all Keynesians confused legally and economically excess reserves. Tobin (1965, p. 482) notes in his review article of Friedman and Schwartz's Monetary History that most economists (who at the time of Tobin's review were predominantly Keynesians) believed that the increase in reserve requirements had been "too drastic", which implies that banks were not in a liquidity trap. Conversely, a monetarist could concede that the excess reserves of the late 1930s resulted primarily from an insufficient demand for bank credit, but could treat that as a special case resulting from the massive bank failures in 1930-33 and the shock to expectations caused by the restrictive

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monetary policy of prior years (Morrison, 1966, p. 53). Moreover, Friedman and Schwartz did not advocate a monocausal explanation for the pile-up of excess reserves, but allowed a role for the demand for credit and low interest rates, and thus a role for a low marginal efficiency of investment as part of the explanation.[3] Likewise, Meltzer (2003) suggests other nonmonetary factors as important.

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4. THE DATA

Since data on the excess reserve ratios of nonmember banks are not available we compare instead a proxy for the total reserve ratios of member banks and a proxy for the total reserve ratios of nonmember banks.[4] This is feasible because the two hypotheses can be reformulated in terms of total reserves; one asserting that as reserve requirements increased, member banks wanted to increase their total reserve ratios to maintain their excess reserve ratios, and the other asserting that as reserve requirements increased, member banks wanted to draw down their excess reserves and keep their total reserves unchanged, but were prevented from doing so by an inadequate demand for bank credit.

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Testing the two hypotheses by comparing the total reserve ratios of member and nonmember banks is valid only if the reserve requirements of nonmember banks did not change when those of member banks did. Compilations of state reserve requirements were published only in 1930, 1937 and 1944 (Board of Governors, 1930, 1937, and 1944). Accordingly, our sample consists of nonmember banks in 17 states which had the same reserve requirements in all three years.[5] That the reserve requirements in these states were the same in these three years does not of course, guarantee that they were unchanged for the 1930 - 1941 period, but it seems

highly likely. No information is available on the stringency with which state banking authorities enforced their requirements, but there is no reason to assume that any variation in this stringency is correlated with member bank reserve requirements[6].

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The FDIC provides call-report data for member and nonmember insured banks in each state for June 30 and December 31 of each year starting in 1934 (Federal Deposit Insurance Corporation, various dates). The call-reports provide data for insured member and nonmember banks that can be used to calculate the following three measures of reserve behavior for member and nonmember banks:

(1) Cash reserves = Vault cash + Balances with other domestic banks and the Fed
+ Cash items in process of collection

(2) Deposits = Demand Deposits + Time Deposits + Government Deposits
+ Interbank Deposits[7] – Cash items in process of collection

(3) Cash reserve ratio = Cash reserves/ Deposits

The cash reserve ratio (CRR) is the proxy used here for total reserves. The denominator corresponds to the deposit measure against which member and nonmember banks had to hold reserves. The numerator corresponds to neither the definition of reserves applicable to member or nonmember banks. It differs from the former by including interbank deposits, and it differs from the latter by excluding the U.S. government securities and state securities that nonmember

banks could count as reserves in some states.[8] It is therefore a compromise measure required by the different way in which reserves were defined for member and nonmember banks and by the absence of data that would allow a reconciliation between the two.

5. THE REGRESSIONS

The low frequency of the data and the resulting scarcity of observations, as well as the presumably volatile expectations generated by the uncertainties of the 1930s argue against trying to develop an explicit model of bank behavior.[9] There is no reason to assume that by 1936 banks had fully understood the new regulatory regime and reached a rational-expectations equilibrium, particularly given the novelty of the FDIC and the changes wrought by the Banking Act of 1935. In addition, developing a model of bank behavior would require data on the yields banks could obtain on earning assets. Such data are not available, and the Treasury bill rate is not an acceptable proxy.[10] Moreover, for an events study, such as this one does not need an explicit model, unless the variables that should be included in such a model, but are omitted, are correlated with the event being studied.

Accordingly, we used simple OLS regression equations combining state cross-section and time series data from June 1934 to June 1941 to estimate the coefficients of two sets of regressions in which variables for member and nonmember banks are denoted with the subscript "m" and "non," respectively.

The first set of regressions uses the ratio of the cash reserve ratio of member to nonmember banks as the dependent variable and the second set uses the difference of the cash reserve ratio between member and nonmember banks as the dependent variable.

(1) $CRR_m/CRR_{non} = a_0 + a_1(\Delta RR) + a_2(S_m/S_{non}) + a_3(TDR_m/TDR_{non}) + a_4(IBDR_m/IBDR_{non}) + a_{5,1\ldots16}(SD) + a_6(IP)$

(2) $CRR_m - CRR_{non} = b_0 + a_1(\Delta RR) + b_2(S_m - S_{non}) + b_3(TDR_m - TDR_{non}) + b_4(IBDR_m - IBDR_{non}) + b_{5,1\ldots16}(SD) + b_6(IP)$

In each regression, ΔRR is the percentage point change in reserve requirements; S is bank size measured by average assets; TDR is the ratio of time deposits to total deposits; IBDR is the ratio of interbank to total deposits; SD is a dummy variable for each state (except Alabama); and IP is a macroeconomic control variable defined as the monthly Index of Industrial Production for a six months period beginning one month before the call report date. The equations are estimated with a Newey-West adjustment that adjusts for serial correlation and non-constant variances in the residuals. [11]

The variable of interest, ΔRR, measures the percentage point change in the average (weighted) required reserves ratios of member banks over and above the 1935 level.[12] Since the reserve requirement ratio for nonmember banks in our sample was constant during this period, ΔRR also measures the percentage point change in the difference between the required reserve ratio of member and nonmember banks. Until December 1936 ΔRR is zero, when it becomes 2.6, where it stays until June 1937 when it rises to 6.6. It then falls to 4.8 in June 1938, where it remains until the end of the sample period.

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One set of control variables consists of the state dummies and the business conditions dummy. The state dummy variables are needed because the precise definition of deposits and reserves, as well as the stringency with which reserve requirements were enforced, may have differed among the states. The other set of control variables consists of three bank specific variables: bank size, the time deposits/total deposits ratio and the interbank deposits/total deposits ratio. We estimate the regressions with and without these three variables.

Two additional factors need to be considered. The first is a possible asymmetry in the response of banks to increases and decreases in reserve requirements, and the second is the lag in the response of banks to the increase in reserve requirements. The first can be dealt with by estimating the regressions over two periods: June 1934 – June 1941 and June 1934 – December 1937. The shorter period thus excludes the 1938 decrease in reserve requirements.

The lag issue is more complex. The above regressions make no explicit allowance for a lag other than the implicit lag embedded in the data. The first reserve-requirement increase was announced on July 14, 1936 and became effective on August 16, 1936. The first subsequent call report date was December 31, 1936. The 1937 increase was announced on January 30 1937 and became effective in two steps on March 1 1937 and May 1, 1937, with the next call report date being June 31, 1937. The 1938 decrease was announced on April 1 1938, to become effective the next day, but the following call report was dated June 30, 1938.

These lags are much shorter than those suggested by Friedman and Schwartz (1963, p. 543) who concluded, apparently from a visual inspection of the data, that:

> [I]t takes some seven months for banks to adjust to an unanticipated discrepancy between their actual and desired reserve positions produced by a change in their actual position, and some three years for banks to carry through a thoroughgoing revision of their reserve position as a result of a change in their desired position.

Friedman and Schwartz did not present independent evidence for such long lags. Their argument is that since lags have to be that long to reconcile the data with their interpretation of excess reserves one must conclude that the lags are that long. But instead of concluding that the lags are that long one could equally well conclude that their interpretation of the excess reserves is wrong.

Morrison (1966) also found a very long lag in reserve adjustments after financial panics. He attributed this to the difficulty of quickly liquidating enough earning assets, and to the time required for banks to revise their expectations of the volume of earning assets they can reasonably hold. He argued that banks may regard "a large proportion" of a change in potential deposits "as too temporary to warrant a corresponding change in actual deposits", except if it is necessary to meet higher reserve requirements (Morrison, 1966, p. 59). Morrison's argument is applicable at most to the 1936 increase, since following the 1937 increase banks did not have to be concerned about further increases in reserve requirements, because the 1936 increase had brought the required reserve ratio to its statutory maximum (Tobin, 1965). Morrison's work is, however, a useful warning that different disturbances that impact on bank reserve ratios may generate quite different adjustment lags. Hence, the lags that have been estimated by previous studies that covered a combination of various disturbances do not provide useful information on the lag in the response to the 1936-38 reserve requirement changes.

Calomiris and Wilson (forthcoming) discuss how banks adjusted their risk exposure in the 1930s. They argue that banks were constrained in reducing their loans by their fear of imposing financial distress on their borrowers, and by their wish to maintain valuable customer relationships. Their regression results show a substantial lag.

To ensure our results are not sensitive to lag length, we present regressions both with only the implicit lag, and with one and two additional explicit lags of six months.

6. REGRESSION RESULTS

The detailed regression results are presented in Appendix A. The R^2's range from 0.650 to 0.778, and in all regressions ΔRR is significant at the 1 percent level. The coefficients of ΔRR need to be interpreted carefully. They are denominated in terms of percentage point changes in the required reserve ratios from their 1935 values, while the dependent variables are expressed either as a ratio of the member bank cash reserve ratio to the cash reserve ratio of nonmember banks, or else as the difference between these two cash reserve ratios. To calibrate the coefficients of ΔRR in percentage terms (so that they show the percentage point increase in cash reserves when the reserve requirement changes by one percentage point) they have to be multiplied by 100, and in the regressions using the ratio of cash reserves ratios they also have to be multiplied by the cash reserves ratio of nonmember banks. This ratio is 0.3156 for the entire sample period and 0.3059 for the shorter sample period.[13]

Table 2 summarizes the results for ΔRR after making these adjustments. Except for one regression the coefficients of ΔRR are highest for the regressions without an explicit lag, and lowest in the regressions with two explicit lags. In the regressions without a lag they range from 0.75 to 0.91. Even when subtracting two standard errors they do not fall below 0.41. While these results clearly do not justify the claim that banks responded to the changes in reserve requirements *entirely* by changing their excess reserves, they are more supportive of the Friedman-Schwartz hypothesis than of the hypothesis that raising reserve requirements did no

harm. Table 3 shows the results for a shorter period that excludes the 1938 increase. The coefficients for ΔRR are broadly similar to the those of Table 2, though with a smaller sample the confidence limits are much broader.

This still leaves the possibility that changes in reserve requirements had an indirect effect by shifting expectations, an effect that could in principle, go either way.[14] Agents could have believed in 1936 and 1937 that the increases in reserve requirements would generate a recession. But it also possible that they became more optimistic when they saw the Fed taking action to counter potential inflation, and again when the Fed countered the 1937-38 recession by lowering reserve requirements.

One way to assess these possibilities is to look at the change in the Dow-Jones index from the market close just prior to the reserve-requirement announcements to the market close on the first day the market was open following the announcements. These changes were +0.9 percent in 1936, +1.0 percent in 1937, and +2.5 percent in 1938. They are consistent with the hypothesis the market viewed the reserve-requirement changes positively. It is, of course, possible these reserve-requirement changes were at least partially anticipated (or that greater changes were anticipated), so that these movements in stock prices are not an adequate measure of the effect on expectations. We therefore looked at news reports and editorials in the Wall Street Journal and the New York Times, which should both reflect and influence expectations. As shown in Appendix B they do not reveal either a notable positive or negative effect on expectations. Combined, the stock price movements and the contemporaneous news reports are consistent with the view that the changes in reserve requirements were not view negatively, but do not indicate that they were viewed as strongly positive.

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7. CONCLUSION.

All the point estimates of our regressions, except those for the entire period with two explicit lags, show that banks responded to the change in reserve requirements more by reducing their earning assets than by reducing their excess reserves. The regressions using two explicit lags have consistently somewhat lower R^2 's than the other regressions, but even their point estimates show a far from trivial increase in cash reserves ratios. Even going out two standard errors for the whole-period regressions only the two period regressions show an adjustment in earning assets of less than one third. The evidence on the expectational effects of the increase in reserve requirements does not suggest these effects were strong enough to offset the more direct damage the Fed did by raising reserve requirements in 1936 and 1937.

ENDNOTES

* The authors are respectively professor and professor emeritus, University of Nevada, Reno and the University of California, Davis. They are indebted to Ryan Brady, Mark Nickels, Montrice Yakimov, Len Samowitz, Neil Miller, Carter Golembe, and George Kaufman for assistance at various stages of this paper; however, all errors remain the responsibility of the authors.

1. Roos (1954, pp. 302-303) provides a survey of the earlier literature.

2. Hirsch and de Machi 1990, pp. 233) refer to Friedman and Schwartz's discussion of banks' response to the higher reserve requirements as one of their three "crucial experiments", showing the causal primacy of money.

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3. Thus they wrote:

> "The increased fraction of bank assets held in the form of cash assets ... can be partially explained by supply considerations. ... [A] lagged reaction to the gold inflow may have contributed to the increase. More important, because longer lasting, rates of interest in general fell, which made cash assets more attractive compared to other assets. ... Moreover, the shift in preferences depressed particularly the yields on short-term highly liquid assets. ... At those yields it was hardly worthwhile to hold bills instead of cash. In consequence ... the ratio of cash assets to total assets continued to rise until 1940. While supply considerations explain part of the shift into cash assets, they cannot explain the whole of the shift, which was motivated also by the same desire for liquidity as the shift into investments. ... [After] 1936, the acquisition of cash assets became the most convenient and least costly way to achieve the desired liquidity. (Friedman and Schwartz, 1963, p. 457)

4. It would be preferable to compare state banks with just member country banks since nonmember banks were smaller than reserve city banks and functioned more like country banks, but the relevant data for country banks are not available.

5. They are: Alabama, California, Georgia, Iowa, Kentucky, Massachusetts, Missouri, Montana, Nebraska, New Mexico, North Carolina, South Carolina, Tennessee, Utah, Virginia, West Virginia and Wyoming. This does not necessarily mean that all other states changed their reserve requirements; for some states the information provided was insufficient to decide, and we excluded them from the sample. It is also possible that the total reserve ratios of nonmember banks were affected by the changes in member bank required reserves. Nonmember banks could have felt competitive pressure to raise their total reserves to enhance the safety of their deposits. But it is far from obvious that higher reserve requirements significantly raised the safety of member bank deposits. By reducing potential bank earnings they could also have increased the likelihood of bank failure.

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6. There is the problem of window dressing in which banks adjust their asset mix just before the call-report dates to improve the appearance of their balance sheets. This problem is likely to have been more severe for nonmember banks since some states may have enforced their reserve requirements only at specific dates, such as the call-report dates. Very little information on the enforcement of state requirements is available, but if these differences are stable the state dummy variables should account for differences in enforcement.

7. For the banking system as a whole, interbank deposits do, of course, equal balances with banks other than the Fed. But that is not so for member banks or nonmember banks taken separately.

8. These states are California, Georgia, Nebraska and Massachusetts. States generally limited the proportion of reserves that could be held in securities and in interbank deposits.

9. The occurrence of massive bank failures in the 1930-33 period and of relatively few failures after 1934 suggests a regime change that would make it difficult to incorporate prior years in the model. The difference between the post-WW.II period and the 1930s suggests that trying to fit a model covering both periods would encounter similar difficulties.

10. It would not be correct to assume that, since at the margin net expected yields on all assets must be equal, the Treasury bill rate provides an adequate proxy for all yields. Bill rates when compared to loan rates contain large imputed yields in terms of liquidity and safety that may fluctuate. An attempt to estimate a fully specified model would also run into the causality problem; while interest rates affect the excess reserves that banks demand, these excess reserves also affect interest rates.

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11. This allows for a variety of non-random residuals and non-constant variances in the residual process and thus minimizes specification error in modeling the residual process. The regressions were run with RATS, version 5 (*Estima*, 2000).

12. The reserve-requirement changes were calculated as weighted averages for time deposits and demand deposits in country and reserve city banks (the sample does not include any states with central reserve cities). The weights used are the deposits (Board of Governors, 1943, pp. 97-103) at the first observation at which the new requirement became effective. We made no adjustments for the changes in the average required reserve ratio that occurred at other times due a shift in the composition of deposits.

13. Although at first glance these ratios may seem implausibly high they include not just required reserves but also interbank deposits held in excess of required reserves.

14. Since more than sixty years afterwards economists are still debating the effect of the reserve requirement increases it is not plausible simply to assume that agents had rational expectations. In microeconomics where agents have access to heuristics and specialized information, it may be correct to assume that they know more. But that is not so in macroeconomics. Moreover, the

rational-expectations assumption gets much of its credibility from the likelihood that agents will not continue to make the same mistake. But this argument is not applicable to one particular event.

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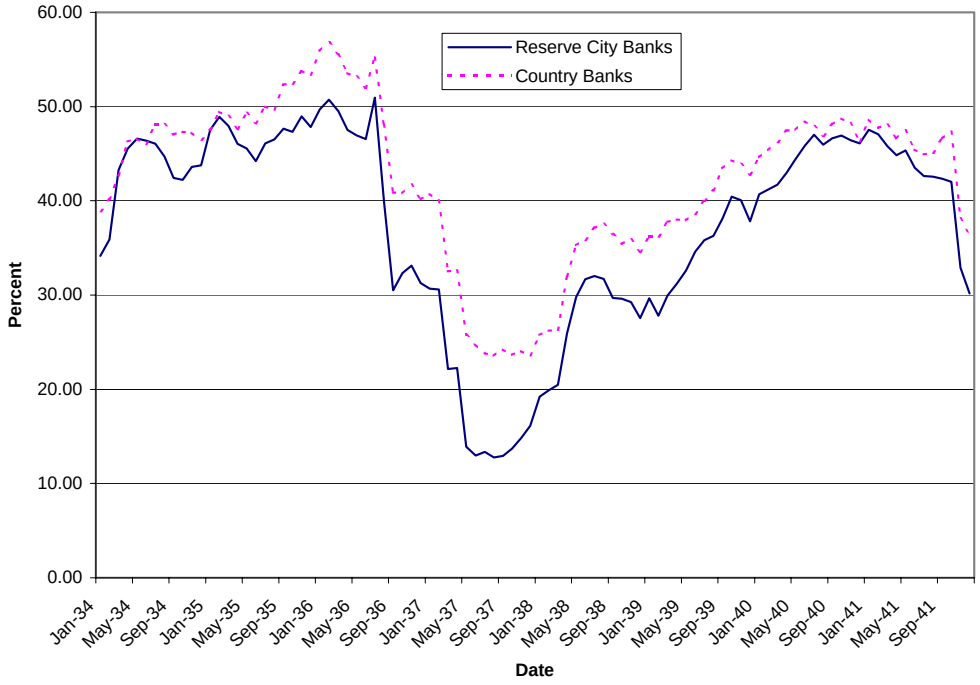
Table 1: Reserve Requirements for Member Banks

Announcement Date		July 14, 1936	January 30, 1937		April 15, 1938	
Effective Date	June 21, 1917 to August 15, 1936	August 16, 1936 to February 28, 1937	March 1, 1937 to April 30, 1937	May 1, 1937 to April 15, 1938	April 16, 1938 to October 31, 1941	Nov 1, 1941 to Dec 31, 1941
Net Demand Deposits						
Central Reserve City Banks	13.00	19.50	22.75	26.00	22.25	26.00
Percent Change Relative to 1936		50%	75%	100%	71%	100%
Reserve City Banks	10.00	15.00	17.50	20.00	17.50	20.00
Percent Change Relative to 1936		50%	75%	100%	75%	100%
Country Banks	7.00	10.50	12.25	14.00	12.00	14.00
Percent Change Relative to 1936		50%	75%	100%	71%	100%
Time Deposits						
All Member Banks	3.00	4.50	5.25	6.00	5.00	6.00
Percent Change Relative to 1936		50%	75%	100%	67%	100%

Source: Board of Governors (1943)

Figure 1: Excess Reserves as a Percent of Total Reserves, January 1934 - December 1941



Source: Board of Governors (1943)

Table 2: Effect of a 1 Percentage Point Change in Reserve Requirements Measured as a Percentage Point Change in the Member Bank Cash Ratio

Dependent Variable: Ratio of Member Bank Cash Ratio to Nonmember Bank Cash Ratio

Explicit lags:	Point Estimate	Point Estimate plus: 1 s.e.	2 s.e.'s	Point Estimate minus: 1 s.e.	2 s.e.'s	R^2
		Excluding Bank-Specific Variables				
0	.91	1.09	1.28	.72	.53	.754
1	.65	.80	.95	.50	.35	.747
2	.39	.53	.68	.25	.10	.736
		Including Bank-Specific Variables				
0	.90	1.08	1.25	.73	.56	.760
1	.65	.78	.92	.51	.37	.753
2	.37	.51	.64	.24	.10	.741

Dependent Variable: Member Bank Cash Ratio Minus Nonmember Bank Cash Ratio

		Excluding Bank-Specific Variables				
0	.79	.96	1.12	.62	.46	.666
1	.64	.77	.91	.51	.37	.664
2	.47	.59	.70	.35	.24	.651
		Including Bank-Specific Variables				
0	.75	.92	1.09	58	.41	.686
1	1.80	2.21	2.62	1.39	.98	.772
2	.45	.55	.65	.35	.25	.672

Table 3: Effect of a 1 Percentage Point Change in Reserve Requirements Measured as a Percentage Point Change in the Member Bank Cash Ratio

June 1934 – December 1937

Dependent Variable: Ratio of Member Bank Cash Ratio to Nonmember Bank Cash Ratio

Explicit lags:	Point Estimate	Point Estimate plus: 1 s.e.	2 s.e.'s	Point Estimate minus: 1 s.e.	2 s.e.'s	R^2
		Excluding Bank-Specific Variables				
0	.99	1.33	1.67	.66	.32	.742
1	.61	.84	1.07	.38	.16	.735
2	.90	1.38	1.86	.41	-.07	.729
		Including Bank-Specific Variables				
0	1.04	1.39	1.74	.69	34	.738
1	.63	.85	1.08	.40	.17	.730
2	.92	1.40	1.88	.44	-.04	.724

Dependent Variable: Member Bank Cash Ratio Minus Nonmember Bank Cash Ratio

		Excluding Bank-Specific Variables				
0	.79	1.15	1.51	.43	.07	.661
1	.54	.77	1.00	.31	.08	.664
2	.83	1.30	1.76	.36	-.10	.650
		Including Bank-Specific Variables				
0	.71	1.06	1.42	.36	.00	.684
1	2.05	2.72	3.38	1.38	.72	.778
2	.91	1.32	1.73	.50	.09	.678

APPENDIX A: Regression Results

Table A1: Regression Results, June 1934 to June 1941

Dependent Variable Defined as CRR_m/CRR_{non}

ΔRR: Current Period

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	1.0543	13.5758	1.3826	8.2658
ΔRR: Current Period	**0.0287**	**4.8391**	**0.0286**	**5.1925**
Size			-0.0202	-1.7702
TDR			-0.1856	-1.5917
IBDR			-0.0004	-1.1156
California	1.2101	12.5420	1.2359	10.4142
Georgia	0.3142	6.8003	0.2689	4.2256
Iowa	0.1276	2.0923	0.1151	1.6940
Kentucky	0.4458	7.4512	0.5182	7.3421
Massachusetts	0.6013	9.6205	0.4847	5.9905
Missouri	0.2670	5.5432	0.5339	2.9179
Montana	0.3120	5.7624	0.3376	4.9941
Nebraska	0.1427	2.8062	0.0607	0.7768
New Mexico	0.2871	5.5426	0.2051	2.3755
North Carolina	0.3219	5.3015	0.4668	2.8503
South Carolina	-0.2057	-4.6221	-0.0473	-0.3049
Tennessee	0.5008	3.6702	0.5912	4.5861
Utah	0.4630	4.0588	0.3333	2.9628
Virginia	0.4110	7.8140	0.3167	4.7332
West Virginia	0.5007	10.6165	0.4580	7.9925
Wyoming	0.1577	3.3455	0.0149	0.1837
Industrial Production	-0.0291	-3.3373	-0.0333	-3.7249
Number of Observations	255		254	
Adjusted R2	0.7542		0.7603	

Table A2: Regression Results, June 1934 to June 1941

Dependent Variable Defined as CRR_m/CRR_{non}

ΔRR: Lagged One Period

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	0.9869	12.5333	1.2330	7.2706
ΔRR: Lagged One Period	**0.0207**	**4.3501**	**0.0205**	**4.7294**
Size			-0.0197	-1.7483

TDR			-0.1006	-0.9034
IBDR			-0.0004	-1.3021
California	1.2101	12.4496	1.2528	10.4649
Georgia	0.3142	7.4654	0.2924	4.8102
Iowa	0.1276	2.2349	0.1010	1.5403
Kentucky	0.4458	8.2445	0.5152	7.6576
Massachusetts	0.6013	9.3560	0.5119	6.0361
Missouri	0.2670	6.1827	0.5403	3.0295
Montana	0.3120	5.9922	0.3140	4.8182
Nebraska	0.1427	3.0044	0.0515	0.6742
New Mexico	0.2871	6.5047	0.1940	2.3396
North Carolina	0.3219	5.9406	0.4970	3.1491
South Carolina	-0.2057	-5.0750	-0.1486	-1.0131
Tennessee	0.5008	3.6581	0.5831	4.6317
Utah	0.4630	4.1743	0.3571	3.2060
Virginia	0.4110	8.3475	0.3365	4.9704
West Virginia	0.5007	11.4802	0.4528	8.0611
Wyoming	0.1577	3.4029	0.0262	0.3176
Industrial Production	-0.0181	-2.2267	-0.0210	-2.4868
Number of Observations	255		254	
Adjusted R2	0.7472		0.7526	

Table A3: Regression Results, June 1934 to June 1941

Dependent Variable Defined as CRR_m/CRR_{non}

ΔRR: Lagged Two Periods

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	0.9421	11.3931	1.1658	6.4495
ΔRR: Lagged Two Periods	**0.0124**	**2.7327**	**0.0118**	**2.7818**
Size			-0.0196	-1.8612
TDR			-0.0750	-0.6455
IBDR			-0.0006	-1.5699
California	1.2101	11.7808	1.2577	10.1526
Georgia	0.3142	6.9383	0.2990	4.6977
Iowa	0.1276	2.0560	0.0950	1.3479
Kentucky	0.4458	7.6333	0.5146	7.3689
Massachusetts	0.6013	8.9808	0.5179	5.8436
Missouri	0.2670	5.6373	0.5441	3.2519
Montana	0.3120	5.3594	0.3107	4.4431
Nebraska	0.1427	2.7728	0.0462	0.6030
New Mexico	0.2871	6.5212	0.1857	2.3165
North Carolina	0.3219	5.6607	0.5065	3.4021

South Carolina	-0.2057	-4.6600	-0.1815	-1.1860
Tennessee	0.5008	3.7217	0.5796	4.8070
Utah	0.4630	4.3239	0.3636	3.3278
Virginia	0.4110	8.3294	0.3416	4.9128
West Virginia	0.5007	10.3618	0.4495	7.5189
Wyoming	0.1577	3.1392	0.0269	0.3206
Industrial Production	-0.0101	-1.2476	-0.0124	-1.4709
Number of Observations	255		254	
Adjusted R2	0.7358		0.7409	

Table A4: Regression Results, June 1934 to June 1941

Dependent Variable Defined as CRR_m - CRR_{non}

ΔRR: Current Period

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	-0.0290	-1.2373	-0.0024	-0.0759
ΔRR: Current Period	**0.0079**	**4.7854**	**0.0075**	**4.3763**
Size			0.0008	0.4179
TDR			-0.3849	-2.9844
IBDR			-0.5029	-2.5827
California	0.1757	8.3804	0.0187	0.2112
Georgia	0.1108	5.6653	0.0907	2.7868
Iowa	0.0494	2.1950	0.0350	1.3231
Kentucky	0.1383	5.9053	0.1496	5.6637
Massachusetts	0.1438	7.4720	0.0122	0.3419
Missouri	0.0987	4.9695	0.1650	3.6103
Montana	0.1160	5.4866	0.1565	6.0750
Nebraska	0.0562	2.5523	0.0210	0.7086
New Mexico	0.1166	5.6028	0.0864	2.9332
North Carolina	0.1136	4.6672	0.1709	2.8157
South Carolina	-0.0918	-4.6122	-0.0387	-0.7318
Tennessee	0.1498	3.8095	0.1183	3.0942
Utah	0.1349	5.2027	0.0335	0.8800
Virginia	0.1184	5.9102	0.0852	2.5178
West Virginia	0.1560	7.8166	0.1313	6.0716
Wyoming	0.0626	2.9779	-0.0188	-0.6029
Industrial Production	-0.0051	-2.1810	-0.0047	-2.1642
Number of Observations	255		254	
Adjusted R2	0.6663		0.6859	

Table A5: Regression Results, June 1934 to June 1941

Dependent Variable Defined as CRR_m - CRR_{non}

ΔRR Lagged One Period

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	-0.0449	-1.9226	1.1830	10.5168
ΔRR: Lagged One Period	**0.0064**	**4.8196**	**0.0180**	**4.3816**
Size			0.0178	1.8656
TDR			-1.0595	-1.9800
IBDR			-2.7477	-3.8030
California	0.1757	9.0729	0.0648	0.1412
Georgia	0.1108	6.1631	0.3416	2.9673
Iowa	0.0494	2.3695	-0.0178	-0.2036
Kentucky	0.1383	6.5386	0.4586	5.2610
Massachusetts	0.1438	7.9092	-0.0158	-0.0845
Missouri	0.0987	5.4816	0.5622	3.7879
Montana	0.1160	5.8437	0.4269	5.1681
Nebraska	0.0562	2.6926	-0.0780	-0.8364
New Mexico	0.1166	6.2443	0.0850	0.9214
North Carolina	0.1136	5.1594	0.6065	2.8732
South Carolina	-0.0918	-4.8085	-0.2426	-1.3162
Tennessee	0.1498	3.7854	0.2764	1.9738
Utah	0.1349	5.4245	0.1713	1.1631
Virginia	0.1184	6.3154	0.4102	3.3474
West Virginia	0.1560	8.5990	0.3409	4.7251
Wyoming	0.0626	3.0349	-0.1954	-1.7748
Industrial Production	-0.0027	-1.2808	-0.0161	-2.2157
Number of Observations	255		254	
Adjusted R2	0.6643		0.7720	

Table A6: Regression Results, June 1934 to June 1941

Dependent Variable Defined as CRR_m - CRR_{non}

ΔRR Lagged Two Periods

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	-0.0570	-2.3215	-0.0165	-0.5110
ΔRR: Lagged Two Periods	**0.0047**	**4.0303**	**0.0045**	**4.5379**
Size			0.0016	0.8813
TDR			-0.2905	-2.2913

IBDR			-0.6109	-3.3384
California	0.1757	8.9344	0.0089	0.1026
Georgia	0.1108	6.0813	0.1111	3.3660
Iowa	0.0494	2.3112	0.0209	0.8300
Kentucky	0.1383	6.5153	0.1491	5.6873
Massachusetts	0.1438	7.7819	0.0148	0.3877
Missouri	0.0987	5.4062	0.1814	4.1155
Montana	0.1160	5.6171	0.1460	5.6627
Nebraska	0.0562	2.6217	0.0055	0.1919
New Mexico	0.1166	6.4117	0.0697	2.5832
North Carolina	0.1136	5.2121	0.2028	3.4867
South Carolina	-0.0918	-4.6358	-0.0835	-1.7233
Tennessee	0.1498	3.8051	0.1073	2.8738
Utah	0.1349	5.5642	0.0557	1.4119
Virginia	0.1184	6.3710	0.1097	3.1719
West Virginia	0.1560	8.5170	0.1232	5.8579
Wyoming	0.0626	2.9432	-0.0242	-0.7601
Industrial Production	-0.0006	-0.2883	0.0002	0.0999
Number of Observations	255		254	
Adjusted R2	0.6511		0.6720	

Table A7: Regression Results, June 1934 to December 1937

Dependent Variable Defined as CRR_m/CRR_{non}

ΔRR: Current Period

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	1.0597	5.1421	1.1362	3.9576
ΔRR: Current Period	**0.0325**	**2.9406**	**0.0340**	**2.9662**
Size			0.0116	0.9395
TDR			-0.1557	-0.8039
IBDR			0.0003	0.5483
California	1.1964	11.6278	1.1020	8.2921
Georgia	0.3702	7.7646	0.3233	4.1372
Iowa	0.1237	2.2217	0.1514	2.5679
Kentucky	0.4355	9.1968	0.3632	4.0777
Massachusetts	0.7300	13.9586	0.6967	7.6207
Missouri	0.2891	6.7321	0.0540	0.2385
Montana	0.3133	6.8625	0.3541	4.2516
Nebraska	0.1701	2.8072	0.2326	2.8881
New Mexico	0.3223	5.8639	0.4161	4.4491
North Carolina	0.3035	6.4040	0.0976	0.5135
South Carolina	-0.1582	-3.6796	0.0353	0.1707

Tennessee	0.7500	8.7421	0.7426	7.8671
Utah	0.6617	5.3629	0.6508	4.6344
Virginia	0.5121	10.6003	0.4803	6.1867
West Virginia	0.5216	12.1512	0.5508	11.3874
Wyoming	0.2149	4.7702	0.2438	2.8298
Industrial Production	-0.0369	-1.3682	-0.0387	-1.4346
Number of Observations	136		136	
Adjusted R2	0.7417		0.7375	

Table A8: Regression Results, June 1934 to December 1937

Dependent Variable Defined as CRR_m/CRR_{non}

ΔRR: Lagged One Period

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	0.7955	5.4772	0.8023	3.0579
ΔRR: Lagged One Period	**0.0200**	**2.6852**	**0.0205**	**2.7551**
Size			0.0115	0.8838
TDR			-0.0927	-0.4452
IBDR			0.0002	0.3699
California	1.1964	11.6196	1.1188	8.2473
Georgia	0.3702	6.9674	0.3412	4.0195
Iowa	0.1237	2.1580	0.1438	2.3745
Kentucky	0.4355	8.3165	0.3646	3.8716
Massachusetts	0.7300	13.1579	0.7187	7.1379
Missouri	0.2891	6.2972	0.0692	0.2918
Montana	0.3133	6.4842	0.3416	3.9001
Nebraska	0.1701	2.8005	0.2265	2.7772
New Mexico	0.3223	5.6283	0.4026	4.1942
North Carolina	0.3035	5.7597	0.1268	0.6403
South Carolina	-0.1582	-3.4204	-0.0324	-0.1478
Tennessee	0.7500	8.6053	0.7370	7.7929
Utah	0.6617	5.1825	0.6703	4.4813
Virginia	0.5121	9.4621	0.4993	5.7620
West Virginia	0.5216	11.4396	0.5467	10.7999
Wyoming	0.2149	4.5120	0.2555	2.7083
Industrial Production	-0.0003	-0.0181	0.0001	0.0068
Number of Observations	136		136	
Adjusted R2	0.7351		0.7300	

Table A9: Regression Results, June 1934 to December 1937

Dependent Variable Defined as CRR_m/CRR_{non}
ΔRR: Lagged Two Periods

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	0.7024	5.4179	0.6832	2.6191
ΔRR: Lagged Two Periods	**0.0293**	**1.8528**	**0.0300**	**1.9106**
Size			0.0114	0.9189
TDR			-0.0649	-0.3038
IBDR			0.0002	0.3001
California	1.1964	11.5431	1.1265	8.3149
Georgia	0.3702	6.5490	0.3491	3.9746
Iowa	0.1237	2.0862	0.1404	2.2554
Kentucky	0.4355	7.8091	0.3655	3.9125
Massachusetts	0.7300	12.5166	0.7283	6.9131
Missouri	0.2891	5.9780	0.0768	0.3394
Montana	0.3133	6.1784	0.3359	3.7616
Nebraska	0.1701	2.7677	0.2236	2.7983
New Mexico	0.3223	5.4840	0.3964	4.2446
North Carolina	0.3035	5.4948	0.1404	0.7338
South Carolina	-0.1582	-3.2642	-0.0622	-0.2788
Tennessee	0.7500	8.5275	0.7346	7.7115
Utah	0.6617	5.1043	0.6786	4.4279
Virginia	0.5121	8.9342	0.5075	5.5878
West Virginia	0.5216	10.9211	0.5448	10.5139
Wyoming	0.2149	4.3574	0.2604	2.7210
Industrial Production	0.0125	0.8444	0.0133	0.8925
Number of Observations	136		136	
Adjusted R2	0.7292		0.7238	

Table A10: Regression Results, June 1934 to December 1937
Dependent Variable Defined as CRR_m - CRR_{non}
ΔRR: Current Period

Variable	Coefficient	t-Statistic	Coefficient	t-Statistic
Constant	-0.0328	-0.5612	-0.0036	-0.0570
ΔRR: Current Period	**0.0079**	**2.1833**	**0.0071**	**2.0108**
Size			0.0012	0.6632
TDR			-0.4127	-1.9037
IBDR			-0.6874	-3.5751
California	0.1895	8.9937	0.0156	0.2175

Georgia	0.1327	6.2232	0.1399	3.2888
Iowa	0.0560	2.3542	0.0341	1.4877
Kentucky	0.1396	6.7403	0.1572	6.4981
Massachusetts	0.1738	8.5515	0.0229	0.4296
Missouri	0.1117	5.4793	0.2093	4.5465
Montana	0.1250	5.8401	0.1790	5.9833
Nebraska	0.0694	2.4029	0.0219	0.7400
New Mexico	0.1334	5.7031	0.0931	3.6225
North Carolina	0.1113	5.0569	0.2019	3.3951
South Carolina	-0.0669	-3.1221	-0.0315	-0.5304
Tennessee	0.2245	8.0485	0.1758	6.2252
Utah	0.1830	6.9537	0.0722	1.1201
Virginia	0.1515	7.4041	0.1244	2.3297
West Virginia	0.1680	8.1133	0.1434	7.0931
Wyoming	0.0895	4.2487	-0.0190	-0.4876
Industrial Production	-0.0074	-0.9510	-0.0054	-0.6578
Number of Observations	136		136	
Adjusted R2	0.6606		0.6835	

Table A11: Regression Results, June 1934 to December 1937

Dependent Variable Defined as CRR_m - CRR_{non}

ΔRR Lagged One Period

Variable	Coefficient	t-Statistic	Coefficient	
Constant	-0.0928	-2.3527	1.0135	8.1680
ΔRR: Lagged One Period	**0.0054**	**2.3669**	**0.0205**	**3.0810**
Size			0.0293	3.6573
TDR			-1.8925	-1.8170
IBDR			-2.9705	-4.6385
California	0.1895	8.7196	-0.6057	-1.5528
Georgia	0.1327	5.9113	0.3757	2.3578
Iowa	0.0560	2.3087	0.0183	0.2785
Kentucky	0.1396	6.4284	0.4049	6.0404
Massachusetts	0.1738	8.2277	-0.1367	-0.5428
Missouri	0.1117	5.2883	0.5024	3.3336
Montana	0.1250	5.6706	0.5658	5.1285
Nebraska	0.0694	2.3984	0.0045	0.0552
New Mexico	0.1334	5.5502	0.2010	2.3833
North Carolina	0.1113	4.8033	0.3764	1.6346
South Carolina	-0.0669	-3.0020	0.0278	0.1002
Tennessee	0.2245	7.9056	0.5089	5.1276

Utah	0.1830	6.6643	0.1542	0.5378
Virginia	0.1515	7.0275	0.3436	1.5175
West Virginia	0.1680	7.8631	0.3863	7.6855
Wyoming	0.0895	4.1156	-0.2223	-1.4132
Industrial Production	0.0009	0.1937	-0.0089	-0.5836
Number of Observations	136		136	
Adjusted R2	0.6643		0.7780	

Table A12: Regression Results, June 1934 to December 1937

Dependent Variable Defined as CRR_m - CRR_{non}

ΔRR Lagged Two Periods

Variable	Coefficient		Coefficient	
Constant	-0.1173	-3.1718	-0.0687	-1.6365
ΔRR: Lagged Two Periods	**0.0083**	**1.7835**	**0.0091**	**2.2287**
Size			0.0008	0.4571
TDR			-0.3943	-1.6552
IBDR			-0.7817	-3.9803
California	0.1895	8.4916	0.0368	0.4958
Georgia	0.1327	5.6863	0.1519	3.2193
Iowa	0.0560	2.2554	0.0287	1.2343
Kentucky	0.1396	6.1925	0.1629	6.2902
Massachusetts	0.1738	7.9579	0.0238	0.4112
Missouri	0.1117	5.1225	0.2319	4.8038
Montana	0.1250	5.5053	0.1792	5.6514
Nebraska	0.0694	2.3794	0.0125	0.4330
New Mexico	0.1334	5.4305	0.0825	3.2116
North Carolina	0.1113	4.6587	0.2343	3.6836
South Carolina	-0.0669	-2.9055	-0.0474	-0.7207
Tennessee	0.2245	7.8061	0.1682	5.9465
Utah	0.1830	6.4891	0.0777	1.0968
Virginia	0.1515	6.7789	0.1378	2.3146
West Virginia	0.1680	7.6567	0.1401	6.7482
Wyoming	0.0895	4.0182	-0.0268	-0.6620
Industrial Production	0.0042	1.1530	0.0050	1.2606
Number of Observations	136		136	
Adjusted R2	0.6495		0.6777	

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APPENDIX B: News Reports on Changes in Reserve Requirement

The New York Times on July 15, 1936 (Anonymous 1936a, p. 1) told its readers that the Fed had "emphasized that the increase in reserve requirements in no sense represented abandonment of the easy money policy which it has followed ...". As interpreted by one official the step was intended to give confidence to investors in long-term obligations by reducing the danger of inflation. (Evidently markets were aware of the Fisher effect.) The next day the New York Times editorialized (Anonymous, 1936b, p. 16) that it is an interesting experiment that "may not in all respects work smoothly. ... Probably the majority of practical observers will approve of the board's decision. There had undoubtedly been a sense of much uneasiness over the possibilities arising from the surplus-reserve situation."

The Wall Street Journal (Anonymous 1936c, pp. 1 and 3) stated that the announcement of the increase had little effect on markets:

> After reaching new highs three days in succession the bond list closed the day with but a slight recession, except for government issues which ... ended the day with fair losses. ... Stock prices ... closed the day little changed, with the industrials higher. ... Altogether, the increased reserve demands caused little more than a ripple in the markets. ... Opinions in banking circles ... ranged all the way from full approval to equally decided condemnation. ... On the whole those approving or holding that the decision was not of great importance were in the majority. Only one or two anticipated that it would have any adverse effect on business or more than a temporary one on the markets. ... Effect on interest rates generally, the consensus was, would be negligible, at least in the large cities. ... Some authorities, however, suggested that the cut in excess reserves would tend to steady rates, to check the downward trend that has continued for so a long time.

In reporting on the 1937 increase the New York Times (Anonymous, 1937a, p. 1) cited the Fed as stating that the increase left banks with "ample" reserves and that easy money would continue. The next day it commented (Anonymous, 1937b, p. 18) that:

> The action was taken with the purpose of heading off a possibly dangerous credit inflation. The experience of 1929 had taught us that once such a boom is under way, both psychological and technical reasons make it extremely difficult to control. Public sentiment resents any "interference with prosperity," and many banks may have already allowed themselves to become short of reserves. This is what makes it so important to take preventive measures before such conditions have arrived.

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In the Wall Street Journal Duffield (1937, p. 1) explained that: short-term interest rates are expected to stiffen over the current year, while long-term rates are expected to be "stabilized" but not raised as a result of ... [the reserve-requirement increase]. ... A boost of one half of one percent or of one percent in short-term rates could take place without affecting long-term rates."

When reserve requirements were lowered in 1938, along with a Treasury announcement that it would cease its gold sterilization program (thus creating about $1.4 billion of excess reserves, compared to the about $0.75 billion released by the lowering of the reserve requirement) the New York Times (Anonymous, 1938, p. 13) remarked that since excess reserves are already high, the decrease in reserve requirements "was interpreted in some quarters as a step largely for the psychological effect in a general program which has inflationary tendencies. Whether it will induce banks to liberalize lending policies ... is conjectural in the present situation." Subsequently it reported (Bell, 1938, business section, p. 1) that excess reserves will now be "far out of proportion to [the Fed's] holdings of government securities." This dissipates "the means of control over a" possibly injurious expansion of credit creation. It called it "a sweeping retreat" from the "government's anti-inflation policy."

> What the short-term effects of this program will be, Wall Street bankers can only guess, except that it seems certain that the price of government securities will be stimulated strongly. For the long term it is apparent, according to bankers and economists, that a situation is being created, which can bring about a great boom, if once business and

finance see an opportunity for profit clearly ahead and the boom psychology which was developing late in 1936 is restored.

More generally, Steindl (2004, p. 99) reports that "except for a few economists" … the decision to raise reserve requirements was widely applauded by economists and "responsible bankers'" because of the inflationary danger posed by large excess reserves.

The Wall Street Journal (Flynn, 1938) called the 1938 lowering of reserve requirements a part of the Administration's pump-priming program.

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