Navigating Constraints: The Evolution of Federal Reserve Monetary Policy, 1935-59

Mark A. Carlson, Board of Governors of the F. R. System
David C. Wheelock, Federal Reserve Bank of St. Louis

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Introduction

- Over the Fed's 100 year history, monetary policy has been widely viewed as a success in just a few decades (the 1920s, 1950s, and approx. 1985-2007).
- And the rest have been a disaster!
- Until recently, the Fed's policy in the 1950s had only so-so reviews:
  - Keynesians criticized the Fed as too tight
  - Monetarists criticized the Fed for procyclical money growth
- Romer & Romer (2002) conclude that the Fed ran a "sophisticated" policy in the 1950s that abided by the Taylor principle, unlike the Great Inflation period, but similar to the Great Moderation.

Romer-Romer (2002)

- Estimates of Taylor rule coefficients for different time periods:

TABLE 1—ESTIMATED FORWARD-LOOKING MONETARY-POLICY RULE

Sample	Inflation[a]	Output[b]	Constant
1952:1–1958:4	1.178 (0.876)	−0.040 (0.295)	−0.562 (1.874)
1964:1–1979:3	0.891 (0.090)	0.269 (0.112)	1.410 (0.517)
1979:4–1987:3	1.263 (0.187)	−0.056 (0.287)	4.614 (0.992)
1987:4–2000:4	1.390 (0.305)	0.672 (0.315)	2.311 (0.760)

Note: Numbers in parentheses are standard errors.

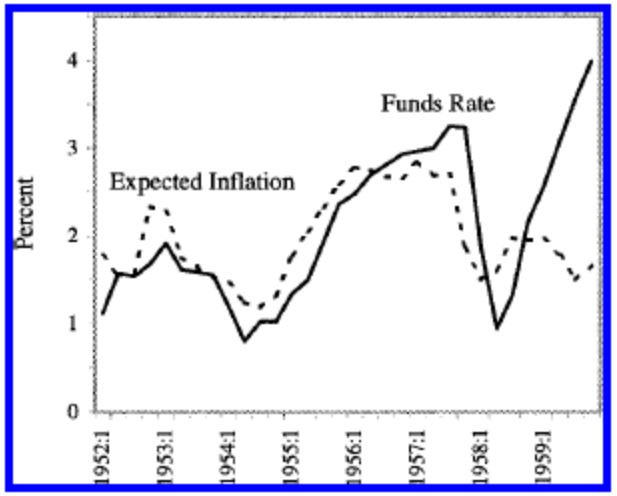


FIGURE 1. FEDERAL FUNDS RATE AND EXPECTED INFLATION

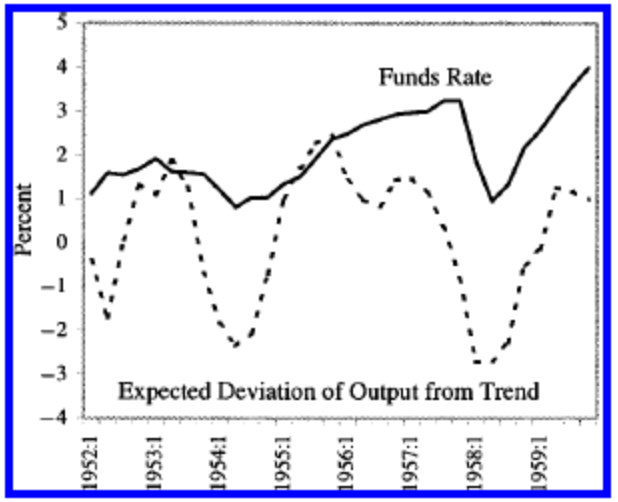


FIGURE 2. FEDERAL FUNDS RATE AND EXPECTED OUTPUT DEVIATION

Our Paper

- We also study the policy of the 1950s, but look backward in time to understand better how policy evolved from the disaster of the Great Depression to the apparent success of the 1950s.
- Whereas others consider whether Fed officials had a good understanding of how to implement policy (Romer/Romer vs. Meltzer), we focus on the constraints the Fed faced in executing policy. Both are important: Well executed policy requires both knowledgeable policymakers and a conducive environment.
- We begin in the mid-1930s, after significant reforms to the financial system and the Fed, especially the Gold Reserve Act of 1934 and Banking Act of 1935.

Game Changing Legislation

- Gold Reserve Act of 1934:
  - Required the Fed to transfer its gold to the U.S. Treasury
  - Fixed the price of gold at $35/oz
  - Established the Exchange Stabilization Fund using $2 billion "profit" on the Treasury's newly acquired gold. The Treasury could now "assume complete control of general credit conditions and negate any credit policies that the Federal Reserve might adopt."
- Banking Act of 1935:
  - Restructured the Fed in favor of the Board of Governors (increased political influence, public accountability)
  - Allowed the Board to adjust required reserve ratios

Outline

- First, we describe policy empirically: To what extent did policy respond to expected inflation and output gaps during 1935-59?
- Finding differences over time, we then investigate whether Fed actions explain the stance of policy under the assumption that the Fed was less constrained when its actions determined the evolution of policy measures.
- We then draw on Fed reports, records of policy deliberations, and other sources to study how policy evolved over time.

Three Eras

- 1935-41: The Fed was constrained by both international conditions (gold flows) and political pressures (Treasury dominance)
  - The Fed responded to expected inflation and output
  - But was limited in how it could respond. By mid-1936, the Fed's SOMA was too small to soak up excess reserves and discount rate hikes were pointless because banks weren't borrowing from the Fed.
  - Fed doubled required reserve ratios, but backed off under pressure from the Treasury
- 1941-51: The Fed pegged interest rates during the war; sought to both control inflation and maintain low interest rates after the war. Reserve requirements again important. Strong political constraint.
- 1951-59: A period unusually free of external pressures on the Fed. The Fed could "lean against the wind," and it did. RR less important than OMO's and discount rate. Approach similar to 1920s.

Reserve Requirements were a key part of policy

- By 1932, Fed recognized that reserve requirements (RR) could be an integral part of monetary policy, rather than a means of assuring bank liquidity.
- Banking Act of 1935 allowed Fed to set RR within a range up to twice the level of 1935.
- Became important when Fed's traditional tools (OMOs and d-rate) were either impotent or devoted to other objectives.
- Fed did not change RR lightly—deliberations are revealing about policy goals and strategy.

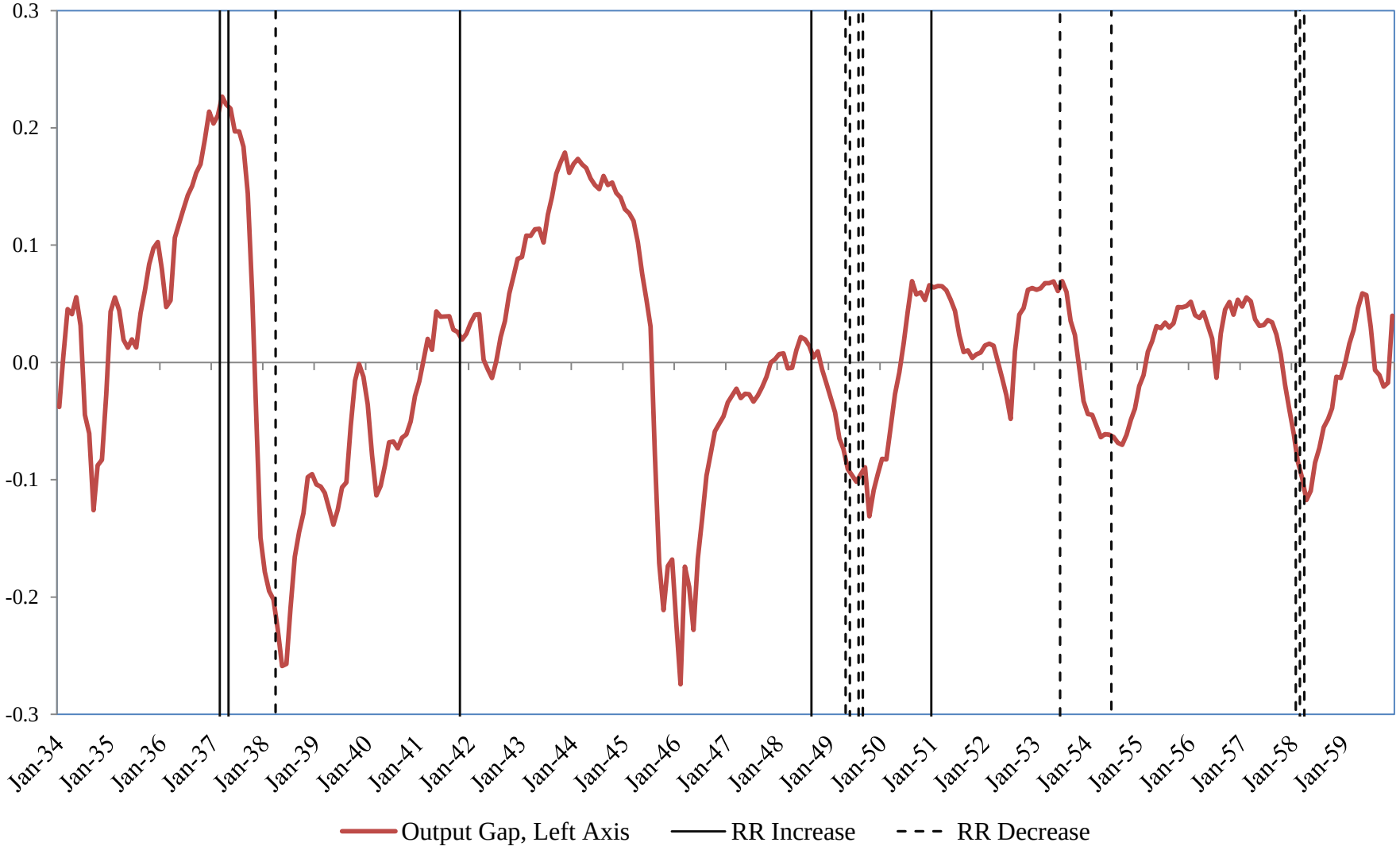
Required Reserve Ratios, 1919-59

	Net Demand Deposits			Time Deposits (all bank classes)
Effective Date[1]	Central Reserve City banks	Reserve City banks	Country banks	
1913—Dec. 23	18	15	12	5
1917—June 21	13	10	7	3
1936—Aug. 16	19.5	15	10.5	4.5
1937—Mar. 1	22.75	17.5	12.25	5.25
1937—May 1	26	20	14	6
1938—Apr. 16	22.75	17.5	12	5
1941—Nov. 1	26	20	14	6
1942—Aug. 20	24	20	14	6
1942—Sept. 14	22	20	14	6
1942—Oct. 3	20	20	14	6
1948—Feb. 27	22	20	14	6
1948—June 11	24	20	14	6
1948—Sept. 24, 16	26	22	16	7.5
1949—May 5, 1	24	21	15	7
1949—June 30, July 1	24	20	14	6
1949—Aug. 1	24	20	13	6
1949—Aug. 11, 16	23.5	19.5	12	5
1949—Aug. 18	23	19	12	5
1949—Aug. 25	22.5	18.5	12	5
1949—Sept. 1	22	18	12	5
1951—Jan. 11, 16	23	19	13	6
1951—Jan. 25, Feb. 1	24	20	14	6
1953—July 9, 1	22	19	13	6
1954—June 24, 16	21	19	13	5
1954—July 29, Aug. 1	20	18	12	5
1958—Feb. 27, Mar. 1	19.5	17.5	11.5	5
1958—Mar. 20, Apr. 1	19	17	11	5
1958—Apr. 17	18.5	17	11	5
1958—Apr. 24	18	16.5	11	5

Inflation and changes in RR, 1934-59

Sources: Bureau of Labor Statistics & Haver Analytics
Last Observation: December 1959

Output Gap and Changes in RR Ratios, 1934-59



Sources: Board of Governors & Haver Analytics
Last Observation: December 1959

Ordered Logit Model of ΔRR

	1935-1959
Predicted output gap	19.4*** (5.7)
Predicted rate of inflation	.54*** (.18)
Constant1	–1.7 (.5)
Constant2	4.3 (.9)
Observations	78
LR χ^2	43.2
Pseudo R^2	.35

Monetary Policy Targets

- Romer-Romer (2002) assert that the Fed targeted the Fed funds rate in the 1950s, similar to 1989-present.
- We think the Fed was more eclectic, using its policy tools to vary free reserves (excess less borrowed) to influence bank lending and short-term interest rates. In the 1950s, the Fed wanted to avoid the appearance of pegging rates (Muelendyke, 1998; Meltzer, 2009)
- We estimate Taylor-type reaction functions for free reserves and the commercial paper rate (the only continuous, non-pegged short-term market rate available for the entire period).

Free Reserves Reaction Functions

	Period 1 1935q1-1941q3	Period 2 1947q1-1951q4	Period 3 1952q1-1959q3
Predicted output gap	–1214.5 (1970.5)	–1166.6 (1220.1)	–3735.7* (2055.0)
Predicated rate of inflation	25.9 (51.8)	16.1 (14.1)	–260.8** (114.9)
Constant	3502.3 (1644.2)	452.8 (105.4)	339.7** (157.2)
Observations	26	20	30
F-statistic	0	1.28	12.3
Adjusted R^2	-	.03	.43

Interest Rate Reaction Functions

	Period 1 1935q1-1941q3	Period 2 1947q1-1951q4	Period 3 1952q1-1959q3
Predicted output gap	–.05 (.25)	2.56 (1.29)	5.7** (2.02)
Predicated rate of inflation	–.004 (.006)	–.002 (.010)	.22 (.15)
Constant	.73*** (.10)	1.63*** (.38)	2.52*** (.42)
Observations	26	20	30
F-statistic	10.1	0	4.49
Adjusted R^2	.41	-	.19

Observations

- Free reserves and interest rates responded to output and inflation only during 1952-59.
- The coefficient on the interest rate response to inflation during 1952-59 is significantly < 1.0, indicating a violation of the Taylor principle (unlike Romer-Romer). Size but not sign of coefficient is sensitive to starting/ending dates and specification.
- Next, we investigate the extent to which free reserves (and cp rate) reflected Fed actions, which provides some indication of the Fed's freedom to set policy.

Policy Actions and Free Reserves

	Period 1 1935m1- 1941m9	Period 2 1947m1- 1951m12	Period 3 1952m1- 1959m9
Holdings of US Government securities	.27 (2.10)	–.02* (.01)	.12** (.05)
Reserve requirements	–90.6 (102.0)	–42.1*** (14.9)	17.5 (57.8)
Discount rate	–1222.7 (1600.9)	–52.9 (68.0)	–278.3*** (103.1)
Constant	6033.0 (5801.6)	1920.3 (271.9)	–2584.6 (1909.2)
Observations	81	60	93
F-statistic	.19	8.5	3.8
Adjusted R^2	.0	.28	.08

Constraints on the Fed

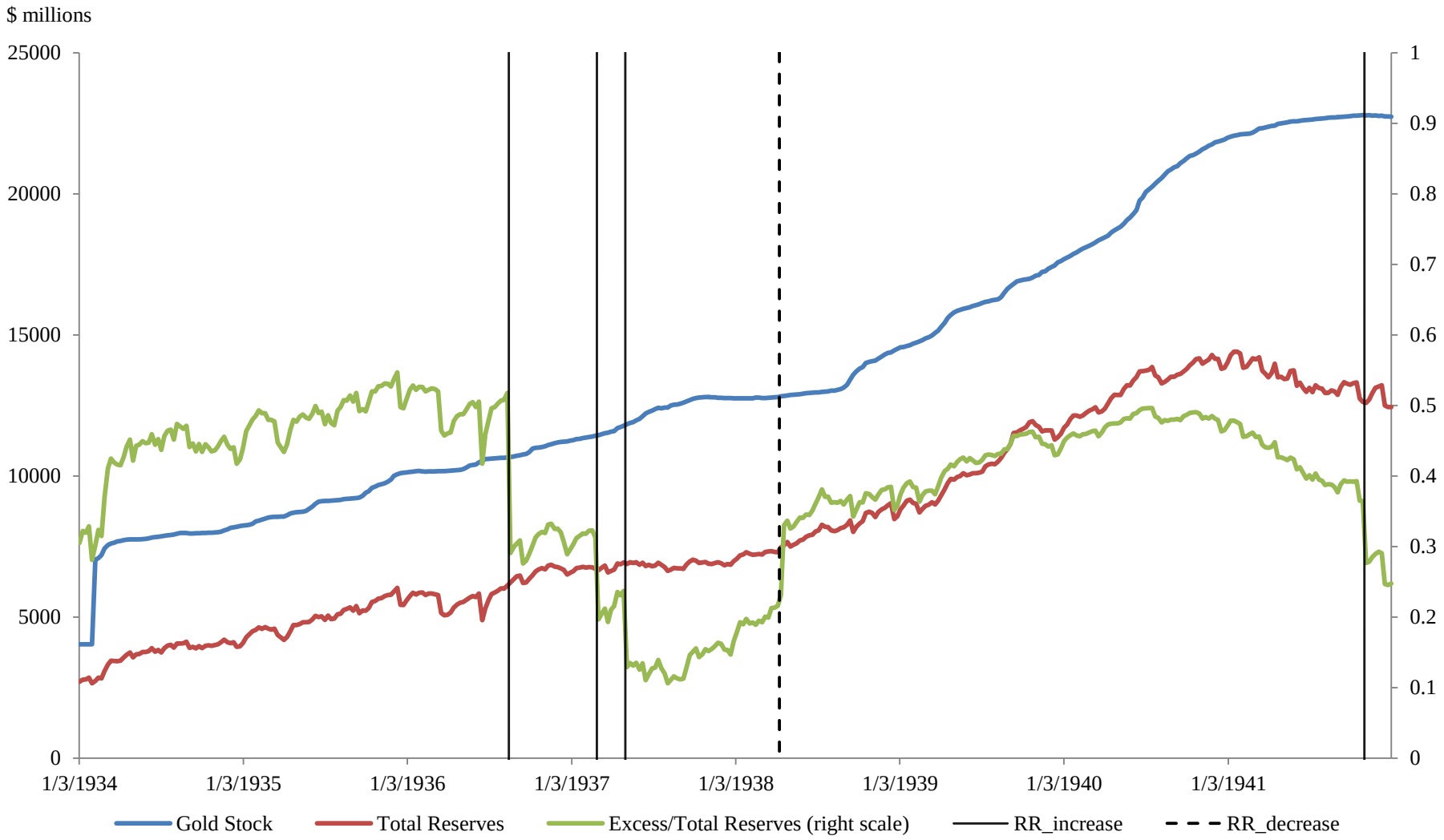
(why the Fed couldn't use free reserves for policy)

- 1935-41:
  - International: gold inflows drove bank reserves and money stock
  - Political: pressure from Tr. Sect. Morgenthau
- 1942-51:
  - Political: goal of low borrowing rates for the Treasury
  - International: some concern with gold (minimal)
- 1952-59: Neither international nor political constraints were binding.

1930s: Gold Flows and Monetary Policy

- Gold inflows were the primary source of reserves. The Fed was unable to sterilize inflows systematically (unlike the 1920s).
- The Fed increased reserve requirements in 1936-37 to prevent inflation by converting excess reserves into required reserves.
- The Treasury sterilized gold inflows from Dec. 1936 to early 1938.
- Fed cut RR and Treasury ended sterilization in 1938. Gold inflows continued to drive reserves until 1941; little or no impact from 1942-59.

Gold Stock, Bank Reserves, and Changes in RR Ratios



Sources: Board of Governors, *Banking and Monetary Statistics*
Last Observation: December 31, 1941

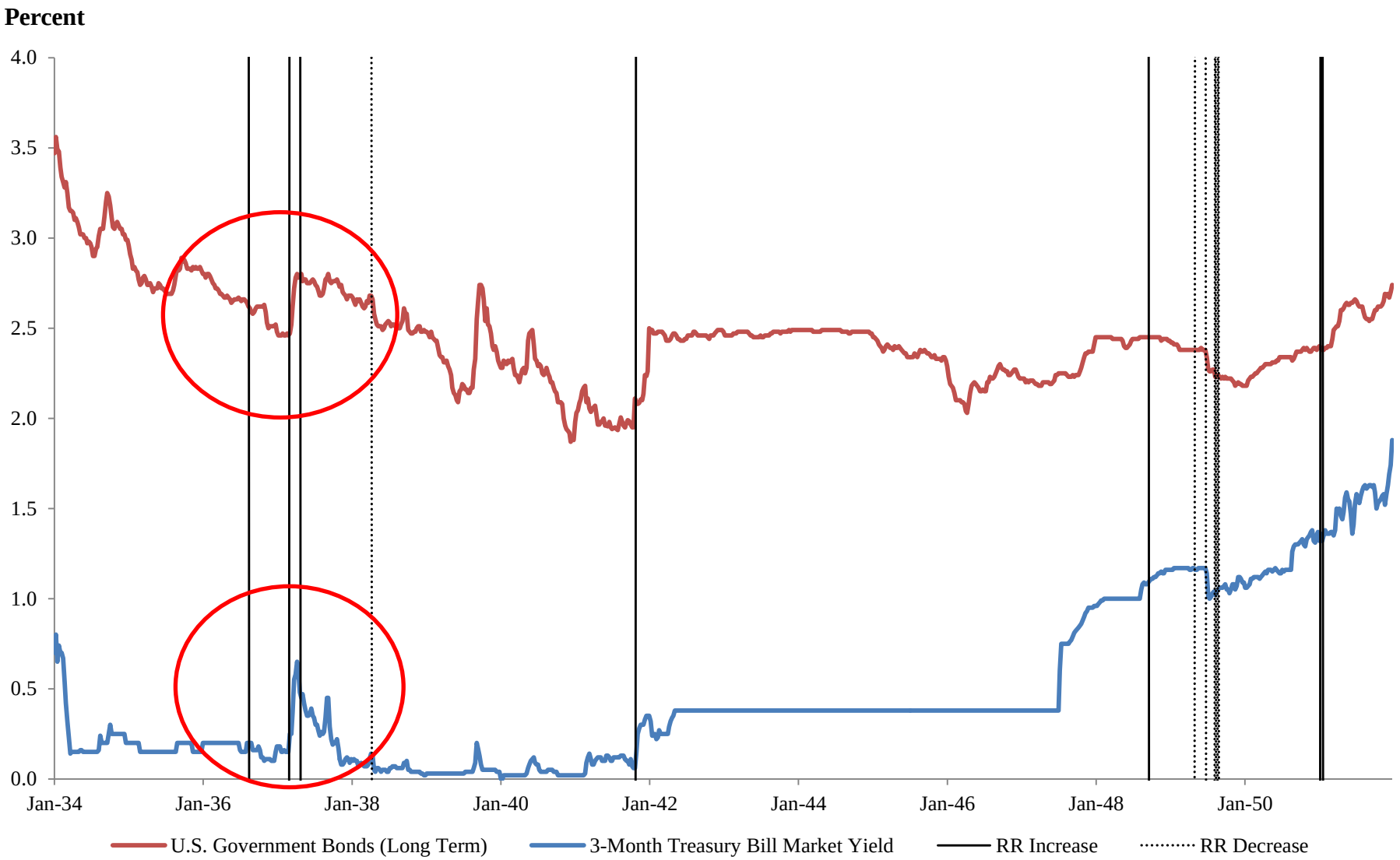
Gold Flows Drove Free Reserves in the 1930s (but not later)

	Period 1 1935Q1-1941Q3	Period 2 1947Q1-1951Q4	Period 3 1952Q1-1959Q3
Holdings of US government securities	4.84*** (1.25)	.01 (.03)	.16** (.06)
Reserve requirements	–317.3*** (40.1)	–70.0** (27.9)	–45.8 (75.3)
Discount rate	–515.1 (891.3)	–51.8 (68.7)	–262.0** (103.3)
Gold stock	.54*** (.05)	.04 (.04)	.18 (.15)
Constant	–9765.3 (4284.3)	939.6 (871.5)	–6256.3 (3653.1)
Observations	81	60	93
F-statistic	69.2	6.7	3.3
Adjusted R^2	.77	.28	.09

Political Pressure

- 1935-41: Treasury Secretary Morgenthau complained about increases in interest rates after increases in RR and threatened offsetting actions.
- Eccles subsequently began to argue for open market purchases because the Treasury market had been "disturbed" and prices were "quite out of line."
- Fed used OMO's to increase reserves before the third hike in May 1937 (a tactic used again later).
- Fed subsequently purchased securities and lowered RR in 1938 in coordination with the Administration's program to boost the economy.

Govt. Security Yields and Changes in RR Ratios

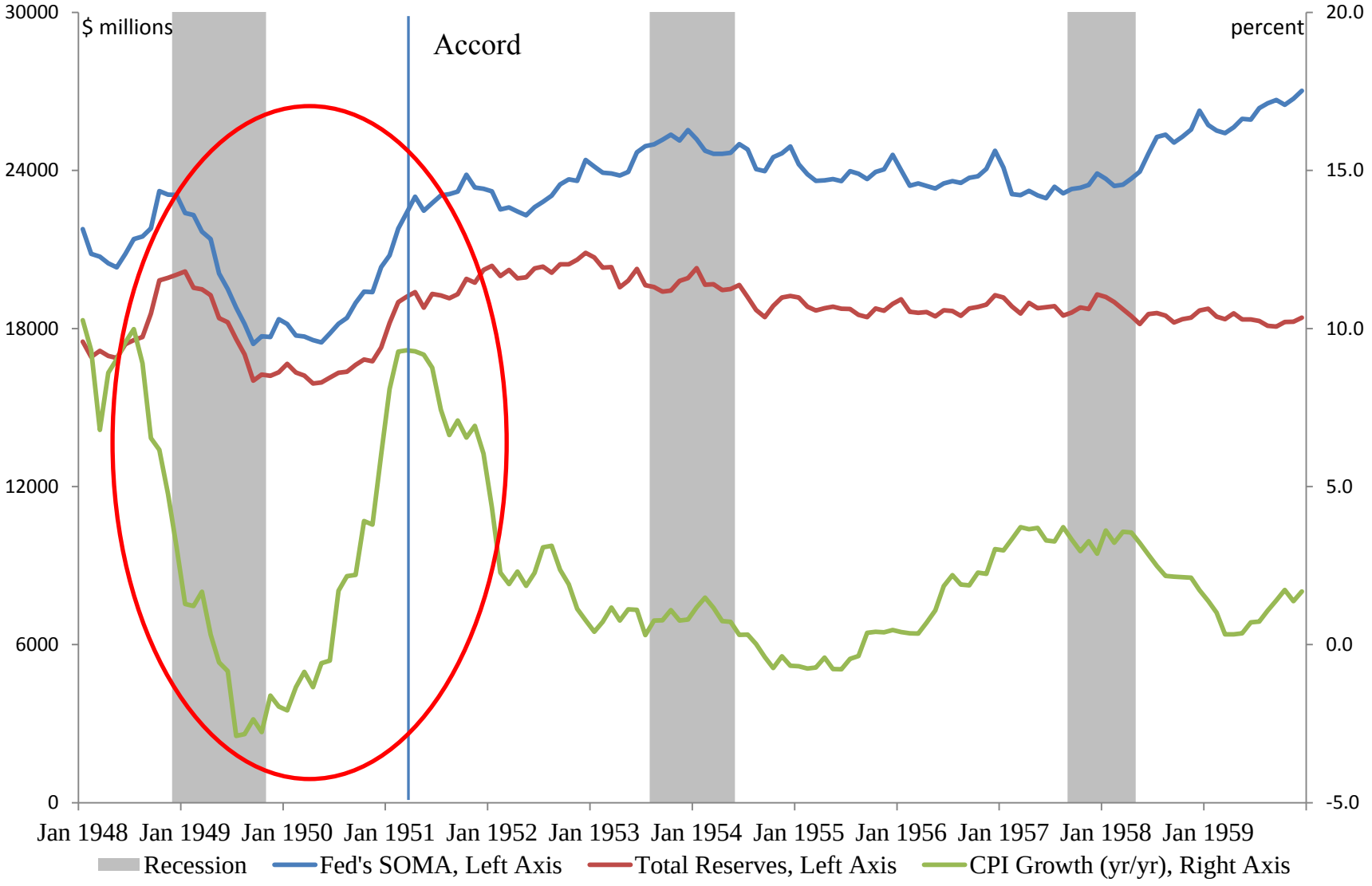


Sources: Board of Governors, *Banking and Monetary Statistics*
Last Observation: December 26, 1959

Postwar Policy

- Fed did not react to the immediate postwar inflation burst when wage/price controls came off. Considered hike in RR, but opposed by NY Fed.
- Fed began to make the case for letting the yields on short-term Govt. securities rise. Treasury acquiesced to some increase.
- Fed had two goals—1) inflation and 2) low i-rates—and tried to fashion two independent instruments. RR not independent of OMOs, however, which frustrated the Fed.
- Fed requested additional authority to regulate credit, increase RR, impose a secondary RR, and subject nonmember banks to Fed's RR.
- Fed's "target zones" for inflation and i-rates broke down in 1950-51 when Fed had to buy govts to keep rates low when inflation was rising sharply (Eichengreen and Garber, 1991).

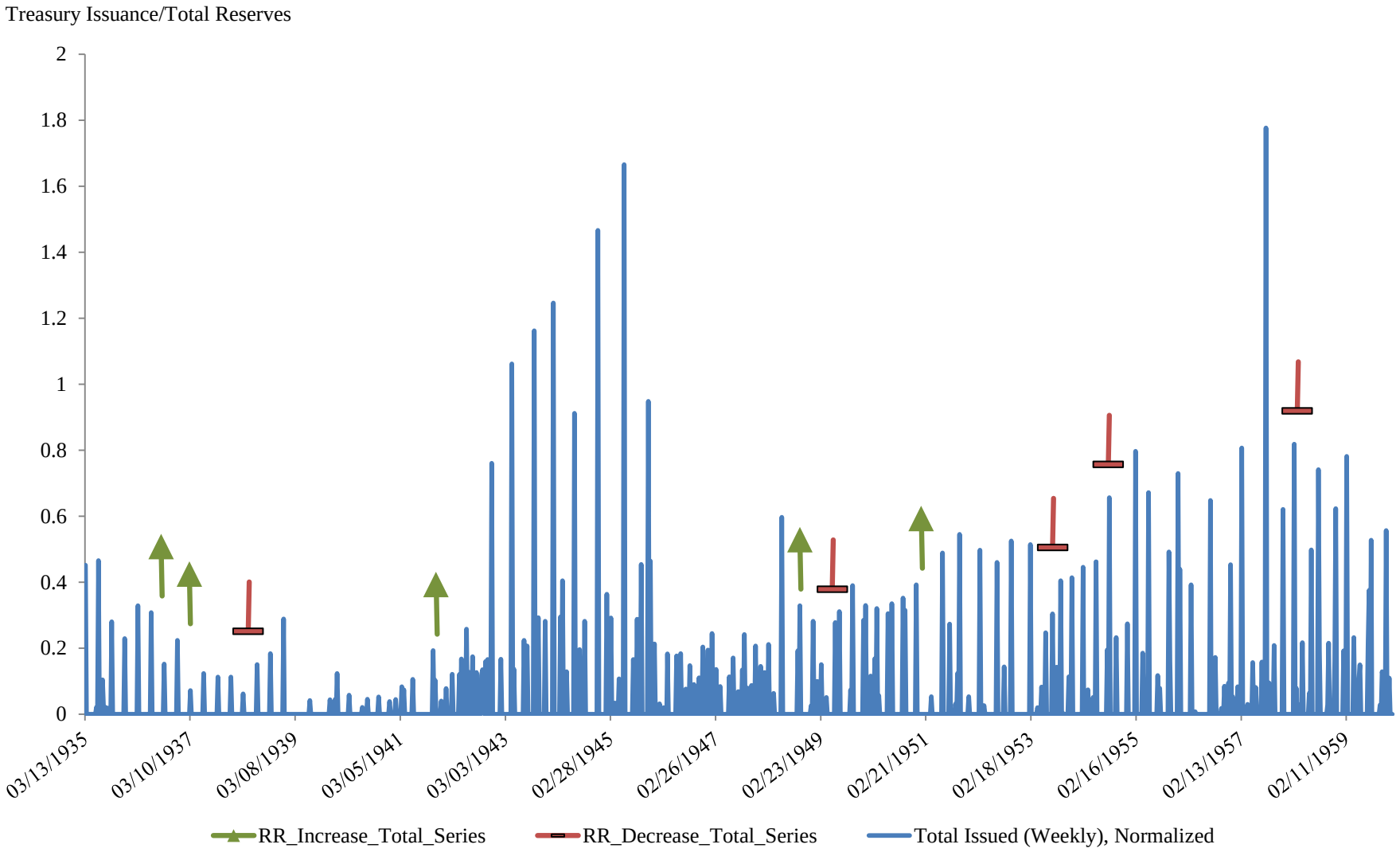
Inflation and Fed's SOMA Holdings



Post-Accord Policy

- The Fed used OMOs and discount rate to move free reserves and interest rates in response to expected inflation and output gaps.
- The Fed also had an “even keel” policy of refraining from policy actions during periods when the Treasury was issuing debt. Occasionally the Fed bought newly issued securities to prevent the failure of a new issue.
- However, the Fed also sought to avoid any semblance of rate pegging by adopting “bills only” and not targeting a specific interest rate (Meulendyke, 1998).
- RR cuts in 1954 and 1958 to encourage recovery from recessions. Not obviously associated with Treasury issuance.

Treasury Issuance and Changes in RR Ratios



Sources: Board of Governors, *Banking and Monetary Statistics*
Last Observation: December 30, 1959

Conclusion

- Gold flows and the balance of payments emerged as concerns in 1958. Fed *Annual Report* stated that gold outflows had run counter to the Fed's efforts to stimulate the economy, and noted a decline in the Fed's own gold reserve ratio. These concerns escalated in the early 1960s (Bordo and Eichengreen, 2013).
- Minimal external constraints enabled the Fed to pursue a "lean against the wind" policy in the 1950s.
- Unlike the 1930s, the Fed could use OMOs to "fine tune" reserves to smooth the response to expected inflation.
- Unlike the 1940s, the Fed could focus primarily on expected inflation and output.
- External pressures (gold and politics) reemerged in the 1960s
- Successful policy requires both enlightened policymakers and a conducive environment. The 1950s had both.