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**Allan Meltzer: How He Underestimated His Own Contribution to the Modern Concept of a
Central Bank**

Robert L. Hetzel

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Abstract: In his great work *A History of the Federal Reserve System*, vol. 1, Allan Meltzer contended that monetary policymakers in the Depression simply ignored the quantity theoretic prescriptions that would have prevented contractionary monetary policy. Practically, he was arguing that the Fed should have accepted the responsibilities for economic stabilization now taken for granted with the modern concept of a central bank. In reality, decades of monetarist criticism had to pass before the Fed accepted both responsibility for the behavior of the price level and economic stabilization. In effect, Meltzer's contention about the self-evident truth of quantity theory ideas ignored the monumental task that lay ahead for the monetarists.

JEL Classification: N2 and E5

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Monetarists delivered a stinging indictment of the Federal Reserve for its role in the Great Depression: in the Depression, the price level fell accompanied by a decline in the money stock. The Fed had the power to prevent the decline in money through open market purchases of government securities that would have offset increases in the currency/deposit and reserves/deposit ratios. Preventing the decline in money would have prevented the deflation and the decline in output that occurred in the Depression. The above critique represents the current professional consensus about monetary policy in the Depression. But where did it come from? Should it have been evident to monetary policy makers in the Depression?

In his critique of Fed policy in the Depression, Allan Meltzer (2003), as well as Friedman and Schwartz (1963), contended that Fed policy had as an obvious alternative the policy of maintaining growth in the money stock. They express bewilderment that the Fed was so “inept” (the Friedman and Schwartz term) as to ignore this policy. “All” policymakers had to do was to read Bagehot (1873) or, as Meltzer argued, Bagehot and Thornton (1802). The “truth” was staring them in the face. However, consensus over identification of the shocks that caused the Depression would require the combination of an intellectual revolution giving to government the responsibility for economic stabilization and the appearance of events that could not be rationalized within the existing framework of real bills. Complicating the problem of identification was the human trait of rationalizing pre-existing beliefs rather than admitting to mistakes made entailing disastrous consequences. In short, to agree with Meltzer as well as with Friedman and Schwartz that a stabilizing monetary policy in the Depression required only that policymakers read the evident truths contained in the existing quantity-theoretic literature on central banking is to trivialize the role that they themselves played in creating the modern concept of a central bank.

Starting in the 1950s and continuing through the 1970s, the monetarists pursued a research agenda that made their story about the Depression convincing ex post. Through examination of monetary “event studies” occurring over time and across countries, they established two empirical facts. The first was an association between the behavior of money and prices. The second was an association between nominal (price) and real (output) instability. Taken in isolation, each historical event inevitably had associated with it a variety of real forces capable of acting as a third variable causing these correlations. However, across time and place, only the behavior of the central bank offered a consistent smoking gun. There is no historical episode including the recent Great Recession that contradicts the monetarist hypothesis that contractionary monetary policy is a prerequisite for a serious recession or that monetary policy is responsible for trend inflation.

Today, no one disputes the pivotal role played by central banks with regard to the business cycle and inflation. It is true that there still remains no consensus over whether the Fed can exercise the degree of control over the economy required in order to exploit Phillips curve trade-offs. The monetarist prediction is that the current attempt at running the economy “hot” in an attempt to raise inflation in a moderate, controlled way will fail. The relevant point here, however, is that monetarists exercised a profound influence on the modern conception of a central bank. That influence did not occur because they enunciated “self-evident truths.” It occurred only over a long period of time in which they predicted the baleful consequences of the many disastrous monetary experiments engaged in by central banks.

Section 1 of the paper expositis “monetary policy” in the Depression where the term is understood using the analytical concepts standard today but which were at best only embryonic in the Depression. Section 2 provides a microeconomic foundation for the monetarist money supply function. Section 3 expositis “money policy” in the sense that policymakers understood it in the

Depression. It highlights the enormous intellectual revolution that would have had to occur for policymakers to have made the transition from the real bills environment of the Depression to an environment in which they engaged in the purposeful money creation recommended by Meltzer as well as Friedman and Schwartz.

1. “Monetary policy” in the Depression

Figure 1 shows the market for bank reserves created by Fed operating procedures in the early 1920s. It shows the marginal cost of renting reserves by a member bank from a regional Reserve Bank. In the period following the Treasury-Fed Accord of 1951 when the Fed revived these procedures, they carried the appellation “free-reserves.” The reserves’ demand schedule is shown as vertical in that the banking system required time to adjust assets and as a by-product its deposits and required reserves. The vertical section of the reserves-supply schedule represents the supply of nonborrowed reserves, which was determined by flows of gold and of currency in the hands of the public, Treasury securities and bankers’ acceptances held by the Fed, float, and Treasury deposits at the Fed. Because the Fed kept the amount of nonborrowed reserves less than reserves demanded, banks obtained the marginal dollar of reserves from the discount window.

There was a horizontal section to the reserves-supply schedule because for small amounts of total borrowed reserves banks could play musical chairs and rotate in and out of the window for short periods of time. However, as total borrowed reserves increased (nonborrowed reserves decreased), banks of necessity had to have recourse to the discount window for periods long enough to violate the Fed’s strictures against “continuous” borrowing and to incur administrative penalties in the form of increased oversight. As a consequence, the reserves supply schedule possessed an upward sloping segment. The marginal cost of reserves then was determined as the sum of the discount rate plus an amount that varied positively with borrowed reserves.

Bank reserves represent a medium for effecting finality of payment, and they support a larger superstructure of the public’s various media of exchange. Through arbitrage, the interest rate determined in this market for “money” defined as a transactions medium controls the interest rate in the “money market,” that is, the market for short-term debt instruments. The interest rate on reserves is not a free parameter. In order to avoid destabilizing the economy, the Fed needs procedures that cause the real rate of interest to track the natural rate of interest, where the latter is the interest rate that would be determined if all markets were perfectly competitive. The idea of the interest rate functioning as part of the price system to set the intertemporal price of resources and the need for procedures that would respect this functioning of the price system lay many decades in the future. Early policymakers saw the regional Reserve Banks as sources of loanable funds capable of influencing the cost and availability of credit. Given the real bills spirit of the times, the presumed role of the Reserve Banks was to keep the cost of funds high enough to avoid speculative excess and to proportion the availability of credit to the legitimate demand for credit needed to get goods and crops to market.

Figure 2 shows the actions taken by the Fed in 1928 and 1929 with the intention of contracting bank credit in order to squeeze out the lending on securities presumed responsible for the speculative excess epitomized by the soaring value of the NYSE. The System sold securities in order to force banks into the discount window. It then raised the cost of borrowing by raising the discount rate and by subjecting banks to supervisory pressures for remaining in the window. The vertical section of the reserves’ supply shifted leftward, the horizontal section with the kink where the

upward-sloping section started rise, and the upward-sloping section rotated upward. The marginal cost of reserves to banks rose dramatically.

2. A monetarist explanation of the behavior of the money stock

The resulting excess of the real rate of interest over the natural rate of interest required contraction in the money stock. Given the relatively high marginal cost of reserves (the real interest rate for banks), banks attempted to liquidate loans in order to obtain the reserves required to repay lending at the discount window. Given fractional reserve requirements, the resulting decline in bank loans and deposits was greater than the leftward shift in the reserves-demand schedule (R_d) and the decline in bank reserves (Figure 3). That is, consonant with monetarist money-multiplier explanations of the proximate causes of the money stock, the reserves-deposits (R/D) ratio rose.

The weakening of the economy caused by monetary contraction weakened the banking system and made it susceptible to runs. A currency outflow from banks precipitated by bank panics shifted the reserves-supply schedule (R_s) leftward and forced banks into the discount window. The marginal cost of reserves (the real rate of interest) rose (Figure 4). Banks tried to obtain the reserves required in order to repay discount window lending and to build up excess reserves by liquidating loans. Due to the fractional reserves characteristic of the banking system, the currency/deposit ratio rose.

Figure 5 shows the reserves market as of 1934 when the Treasury had taken control of monetary policy away from the Fed. Now, the reserves demand schedule is shown over a period long enough for banks to adjust their portfolios. Starting in 1934, the Fed held constant the size of its Treasury portfolio while bank reserves increased due to its monetization of gold inflows, which shifted the reserves-supply schedule rightward.

Note the different implications of Figures 1 and 5. With the free-reserves operating procedures of Figure 1, the Fed set the market interest rate. Because in the Depression it set the market rate above the natural rate, the banking system contracted along with the money stock. The resulting decline in deposits (money) shifted the reserves demand schedule leftward and lowered the market interest rate. However, the expectation of deflation created by the decline in money also lowered the nominal interest rate associated with the natural rate of interest. There was no stable equilibrium. Bank reserves adjusted in a way that exacerbated the difference between the market and natural interest rates.

In contrast, with the reserves-control procedures of Figure 5, the quantity of reserves is given and the market sets the interest rate. With reserves given, the price level is determinate. Given the price level, relative prices adjust to keep real variables equal to their natural values. In Figure 5, the reserves demand and supply schedules intersect at a value equal to the natural rate of interest.

Early policymakers had no understanding of the real interest rate as the intertemporal price of resources (consumption) and necessarily no understanding of the role it played as part of the price system in keeping output moving around potential. They had no understanding of the need for the Fed to provide a nominal anchor as a prerequisite to allowing the price system work. It is no wonder that early policymakers failed to understand the Depression in terms of a failure to abandon the procedures summarized in Figure 1 for the procedures summarized in Figure 5. The economy recovered after March 1933 and grew strongly with the sustained expansion of the money stock

produced by the monetization of gold inflows that began in 1934. Without an analytical framework, however, policymakers learned nothing from these monetary “experiments.”

The framework early policymakers possessed did not discipline their forecasts of the economy in a way that allowed its rejection. Undisciplined by a model with testable implications, they could rationalize any outcome. The human characteristic of an unwillingness to admit mistakes entailing horrific consequences only reinforced the inability of policymakers to learn. Meltzer as well as Friedman and Schwartz were wrong in their presumption that “truth” was staring policymakers in the face and all they had to do was to look at it. Only as the monetarists developed a framework with testable implications for the actions of central banks and organized a vast data base of experiments across time and place to test that framework did learning become possible. Similarly, only then did a consensus about the causes of the Depression and the role of a modern central bank become possible.

3. “Money policy” in the Depression

How did early policymakers understand their world in a way that they could rationalize the Depression? How did they make sense of events in terms of their real bills’ view of the world organized around limiting financial intermediation to productive (legitimate) ends? They had observed in the early 1920s that any regional Reserve Bank’s open market purchases would reduce member bank borrowing and lower interest rates in the New York money market. They viewed these purchases as increasing loanable funds to credit markets. Open market purchases lowered the cost and increased the availability of funds but in an indiscriminate way that did not assure their allocation to productive (nonspeculative) uses. In contrast, funds made available through the discount window and collateralized by real bills would respond to the demand for credit. The requirement that banks not be in the window continuously reinforced the presumption that the bank loans were of the self-liquidating sort associated with the movement of goods and crops to market.

During the Depression, policymakers paid little or no attention to the cost of credit. The discount rates of the Reserve Banks were at historically low levels. They assumed that “low” interest rates could do little to stimulate loan demand as long as a lack of confidence in the economy translated into a lack of demand for loans. Debate turned on how to manage the availability of credit. Open market purchases that increased bank reserves would lower member bank borrowing. Banks could then increase loans starting from a lower level of indebtedness at the discount window. But with minimal loan demand, it was supposed, open market purchases of government securities would force unwanted credit into markets and potentially reignite the “credit inflation” that had created the original “credit debauch.”

The cyclical peak that began the Great Depression occurred in August 1929. The year 1930 was one of anticipatory waiting. Liquidation of the economic excesses presumed to have resulted from the speculative excesses manifested most obviously in the bull market in equities should have led to a strong, healthy economic recovery as had occurred following the 1920-21 recession. That recovery failed to occur. The year 1931 was devoted to maintaining the confidence of markets that policymakers believed was a prerequisite to economic recovery. Given their conservatism, maintaining confidence meant monetary stringency in order to counteract the external drain of gold and the internal drain of currency from banks. The regional Reserve Bank governors viewed the outflow of gold as threatening the gold reserves that constituted the basis of their ability to supply funds to the market when it came time to accommodate economic recovery.

The year 1932 became one of an aborted attempt to supply funds in an attempt to start an economic recovery. If successful, that attempt might have changed the perceived character of the monetary regime from one of passive accommodation of credit demands in response to legitimate demands for credit to one of purposeful “credit inflation.” For policymakers, it was terra incognita. Sustained open market purchases would have forced member banks out of the discount window. In the minds of the regional Reserve Bank governors, that meant fiat money creation. The reason is that it would have breached the gold cover requirements and would have required backing the issue of currency with government securities.

4. Concluding comment

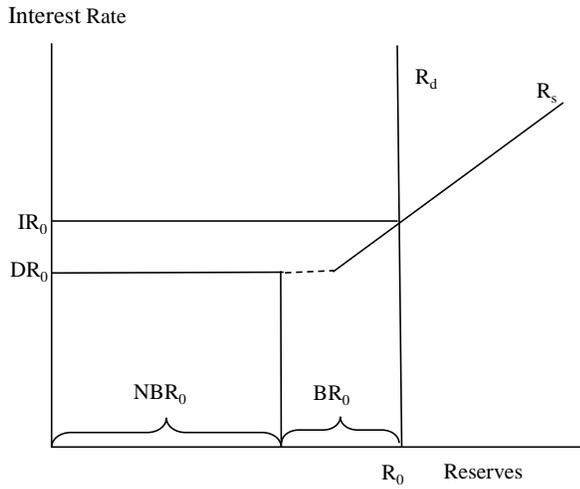
When Allan Meltzer began his career in the early 1960s, the intellectual environment was frozen into a massive Keynesian consensus. After the mid-1960s, faced by a society fractured by the Vietnam War, urban riots, and a militant civil rights movement, the political system demanded low unemployment as a social balm. Keynesians promised to deliver that low unemployment at a moderate cost in terms of inflation—the Phillips curve trade-off. That grand experiment failed but the Volcker disinflation and the Great Moderation were only possible because of the monetarist critique. Inflation is a monetary phenomenon. The price system works to stabilize the macro-economy as long as the Fed provides a stable nominal anchor and allows the price system to work. Without that critique, the United States would not today be a free-market economy. It would be plagued by inflation and on and off price controls.

Relevant to the point of this paper, acceptance of these monetarist insights came only decades after the disaster of the Great Depression. They required the feistiness and sustained attacks of Allan and his fellow monetarists.

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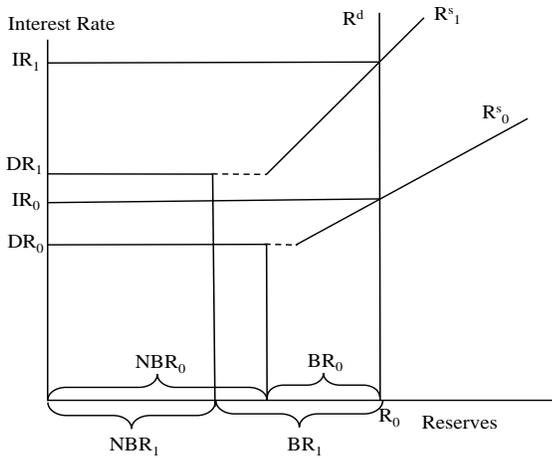
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Figure 1
The Market for Bank Reserves



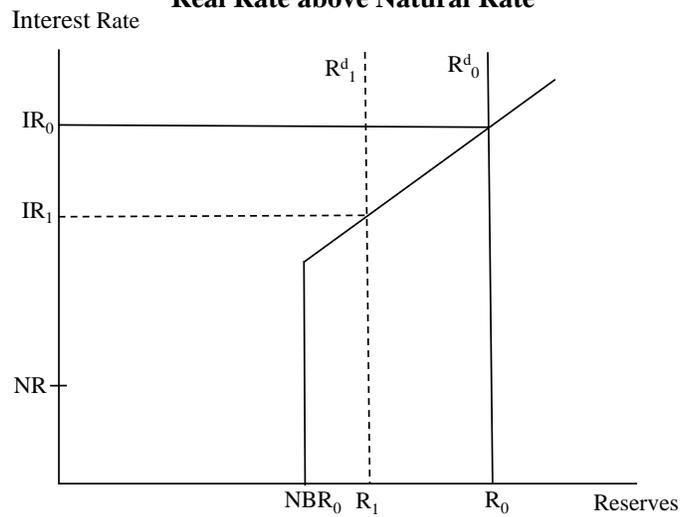
Notes: R is bank reserves. R_d is the reserves demand schedule of the banking system and R_s the reserves supply schedule of the Fed. IR is the interest rate on bank reserves. DR is the discount rate. NBR and BR are nonborrowed and borrowed reserves, respectively. The 0's denote particular values.

Figure 2
The Market for Bank Reserves after Fed Tightening



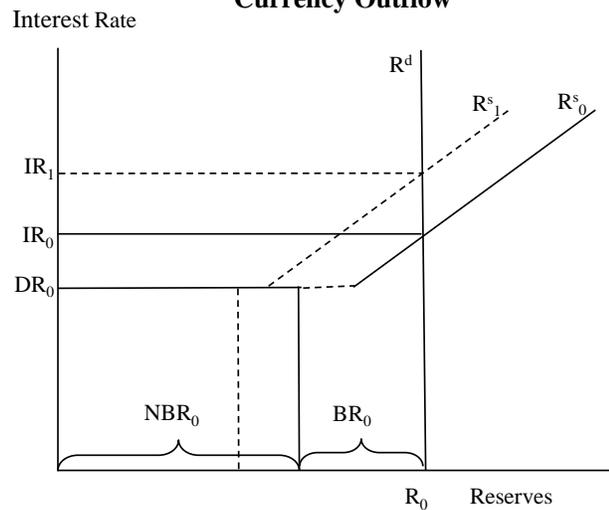
Notes: See notes to Figure 1. The "0's" denote the initial values and the "1's" the values after tightening (lowering NBRs, raising the discount rate, and raising Fed window oversight).

Figure 3
The Market for Bank Reserves
Real Rate above Natural Rate



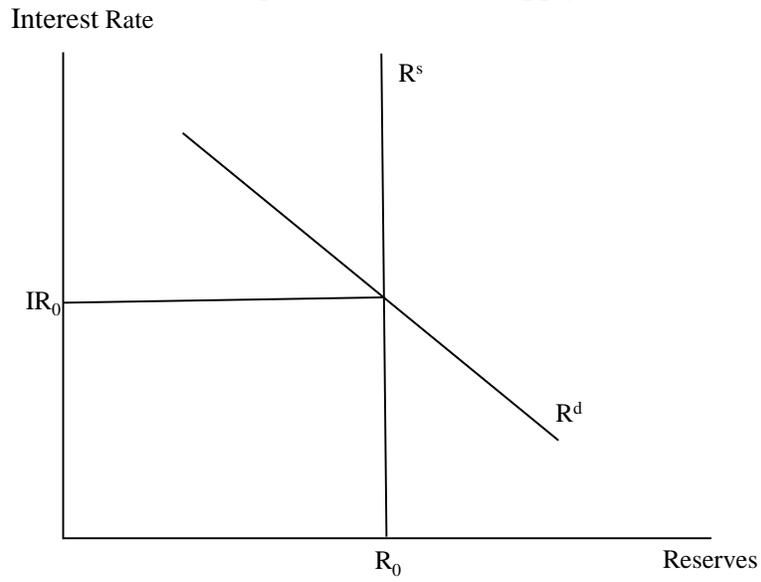
Notes: Contraction of the banking system and declining reserves demand with the real rate (IR_0) in excess of the natural rate (NR).

Figure 4
The Market for Bank Reserves
Currency Outflow



Notes: R is bank reserves. R_d is the reserves demand schedule of the banking system and R_s the reserves supply schedule of the Fed. IR is the interest rate on bank reserves. DR is the discount rate. NBR and BR are nonborrowed and borrowed reserves, respectively. The 0's denote particular values.

Figure 5
The Market for Bank Reserves
Exogenous Reserves Supply



Notes: The market for bank reserves with exogenous reserves supply.