

**A DUOPOLY THEORY OF GOVERNMENT  
MONEY PRODUCTION:  
THE 1930s AND 1940s: A COMMENT**

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This study suggests that the bureaucratic perspective provides a framework compared with the public interest perspective from which to interpret the behavior of the FED and the Treasury in the 1930s and 1940s. It also applies some basic tenets of monetary theory to refute the assertions of some regarding the conduct of monetary policy in that period.

There are at least two perspectives from which one can interpret the behavior of government agencies such as the FED and the Treasury. One is the public interest perspective which assumes that the agency maximizes some social utility function which presumably includes arguments such as inflation, unemployment, and interest rates. The other perspective views bureaucratic behavior as the maximization of the agency's wealth or power. In his paper entitled, "A Duopoly Theory of Government Money Production: The 1930s and 1940s," Mark Toma uses the latter perspective to reinterpret monetary policy in the U.S. during the 1930s and 1940s. Unfortunately, the evidence he presents to support his model rests on a confusing application of monetary theory.

Both the FED and the Treasury, which as a result of the Gold Reserve Act of 1934, could purchase gold, had the power to create money. Toma first develops a duopoly model of money creation. If the two agencies jointly maximize seignorage revenue from one creation, the result is the usual "revenue maximizing" rate of inflation. If they act independently (with the Cournot assumption that each party treats the other's money output as given), the resulting money creation will exceed the revenue maximizing rate. Toma then demonstrates that cooperation between the two agencies will result in less money creation and increased seignorage for both. While this exercise is interesting, it has little relevance to the period in question. Presumably, the model is meant to provide a rationale for implicit contracts between the FED and the Treasury to reduce the overall rate of money creation, but no one has ever argued that inflation rates during the 1930s and 1940s ever approached the "revenue maximizing" rate.

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## 1924-1939

Toma first attempts to explain the constancy of FED credit between 1934 and 1939, a period when the Treasury had substantial power to create money as a result of the Gold Reserve Act of 1934. He argues that the Treasury had an implicit contract with the FED which allowed the FED to retain all its earnings from its asset portfolio so long as it refrained from money creation. In the absence of this implicit contract, Toma postulates that the FED's earnings would be subject to a transfer tax, with rates being a progressive function of FED earnings. In order to infer this implied structure of franchise tax rates, Toma regresses the annual transfer percentage from 1919-1981, excluding the years 1934-1947, against the log of FED annual real earnings and an intercept term. Since FED banks were required to pay half of their net earnings to the U.S. Government as a franchise tax prior to 1933, and turn over all earnings in excess of operating expenses after 1947 (a transfer that amounted to approximately 90 percent in 1981 (Huynh, 1985, p. 192, p. 244), it is hardly surprising that Toma obtains a positive coefficient (0.232) for the earnings variable since his regression is capturing a trend effect. Toma uses these regression results to demonstrate that the FED would have been better off adhering to the implied contract not to increase FED credit in exchange for exemption from the franchise tax. This interpretation of FED behavior during the 1930s is plausible, but as Toma admits, not convincing.

Of course, from the public interest perspective, the question of why FED credit did not increase is hardly puzzling. After all, Treasury purchases of gold from 1934-1939 already caused an increase in high powered money of approximately 150 percent (Friedman and Schwartz, 1963, p. 506). Had FED credit increased as well, the resulting inflation would probably have been considered excessive.

The more intriguing question is why the FED did not sterilize gold inflows and it is here that the bureaucratic perspective provides insightful contributions. Obviously, FED officials had few incentives to sterilize gold inflows because this would have reduced their earnings. Indeed, when the FED became concerned with excessive monetary growth in 1936 and 1937, they resorted to an increase in reserve requirements rather than a contraction in credit. By increasing reserve requirements, the FED's share of real earnings from a given stock of money would increase.

### World War II and the Bond Support Program

Toma's analysis of the World War II bond support program is interesting but involves a bizarre application of monetary theory.

Toma correctly points out that the bond support program lowered the overall cost of debt finance. During World War I, interest rates rose from 3-1/2 percent on the first Liberty bond issue in 1917, to 4 percent on the second Liberty bond issue in 1917, to 4-1/4 percent on the third and fourth Liberty loan issues in 1918, and finally, to 4-3/4 percent on the Victory loan issue in 1919 (Huynh, 1985, p. 67). Investors who purchased the early issues suffered significant capital losses. With memories of this experience, the expected interest rate risk associated with buying government securities would clearly have been significant. Toma is absolutely correct that a commitment on the part of the Treasury and the FED to peg bond prices would have significantly increased investor demand for bonds and lowered their yields by eliminating interest rate risk. But Toma fails to appreciate the effects produced by reduced interest rate risk. For example, Toma incorrectly argues that the resulting reduction in interest rates would increase the demand for real money balances and thus seignorage revenue from any given rate of inflation. But the bond support program, by reducing the interest rate risk associated with government bonds, should decrease the demand for real money balances as Tobin demonstrated in his classic article, "Liquidity Preference as Behavior Towards Risk."<sup>1</sup> Indeed, as in the converse case, the abandonment of the bond pegging program following the Treasury-FED Accord in March 1951 resulted in a simultaneous increase in interest rates and a drop in the velocity of money because of a perceived increase in interest rate risk. (See Table below.)

	Velocity of Money	Bond Yields (%)
December 1949	1.24	2.19
June 1950	1.32	2.33
December 1950	1.47	2.39
March 1951	1.56	2.47
June 1951	1.57	2.65
December 1951	1.53	2.70

Source: U.S. Department of Commerce, *Survey of Current Business*, Monthly Business Statistics. Velocity was calculated as quarterly GNP divided by currency outside banks plus adjusted deposits for the month in question. Interest rates are yields on taxable U.S. Treasury bonds for the month in question.

<sup>1</sup>It is true that velocity of money was significantly lower in World War II than in World War I. But this difference can be explained by a number of factors other than the bond support program. Friedman and Schwartz (pp. 558-561) emphasize the widespread rationing of many important items and the general unavailability of consumer durables as the main reasons for the decline in velocity.

Moreover, in discussing the monetary dynamics of the bond support program, Toma turns traditional monetary theory on its head. Friedman and Schwartz have clearly explained the process of pegging interest rates as one characterized by the Wicksellian process of cumulative inflation. In particular, they state that: "During the War, the 2-1/2 percent interest rate on long-term securities which the FED was committed to protect was below the level consistent with no change in the stock of money required and required for its maintenance the continuous creation of high-powered money." Conversely, "less than a year after the active phase of World War II, the same 2-1/2 percent rate was above the level consistent with no change in the stock of money and would have required for its rigid maintenance the destruction of high powered money" (Friedman and Schwartz, 1963, p. 578). (The money supply fell at an annual rate of 1.1 percent between January 1948 and January 1949 compared to an annual rate of increase of 3.5 percent in the previous year (Darby, 1979, p. 360).

Toma argues that, since low interest rates are associated with low rates of monetary growth, the FED's commitment to keep the government bond yield at a 'low' level would require monetary restraint. Although his analysis is correct in the long run, he neglects the short-run behavior of interest rates necessary to achieve monetary restraint. Friedman clearly demonstrated the dilemma of such an interest pegging process in the following statement from "The Role of Monetary Policy": "Paradoxically, the monetary authority could assure low nominal rates of interest — but to do so it would have to start out in what seems like the opposite direction, by engaging in a deflationary monetary policy. Similarly, it could assure high nominal interest rates by engaging in an inflationary policy and accepting a temporary movement in interest rates in the opposite direction" (Friedman, 1968, p. 7). Under a pegging program, the FED does not have the necessary degrees of freedom to initiate a deflationary program in the first place. What Toma seems to miss is that, under an interest rate pegging program, the money supply is completely endogenous. This misunderstanding is clearly evident in the interpretation of his regression results. Toma regresses monthly changes in long-term government bond rates on the rate of monetary growth and obtains a positive and significant coefficient for the monetary growth variable. From this, Toma concludes that low rates of monetary growth produce low market rates of interest. But clearly, the money supply was not an exogenous variable during the bond support program. In fact, credit demands, as reflected in long-term bond yields, determined monetary growth. As credit demands push up

nominal rates of interest, the FED must buy bonds and thus increase the money supply.

His discussion of the maturity of the bond portfolio also suffers from the same error. Toma examines the maturity of the FED's asset portfolio and finds that the percent of 'over 15-year' securities held by the FED declined from 1940 until 1947. He uses this as evidence of public confidence in the bond support program, for if the public feared rising interest rates, the FED would have been forced to absorb all these long-term government bonds. In fact, the maturity of the FED's portfolio was determined by the structure of interest rate yields adopted in 1942. Interest rate yields were pegged in a pattern ranging from  $\frac{3}{8}$  of 1 percent of 90-day Treasury bills to 2- $\frac{1}{2}$  percent on long-term government bonds. This positive yield curve reflected investors' preceptions of interest rate risk prevailing in 1941. With the pegging of long-term government bond prices, the interest rate risk associated with long-term government bonds was eliminated. Essentially, long-term government bonds became riskless assets. As a result, investors would not rationally hold short-term securities at  $\frac{3}{8}$  of 1 percent when they could hold riskless government bonds at 2- $\frac{1}{2}$  percent.<sup>2</sup> Hence, as one popular macroeconomics text puts it, "the FED found itself buying short-term Treasury bills as fast as they were issued" (Darby, 1979, p. 360). FED holdings of long-term bonds did not increase until after 1947 when the FED stopped pegging short-term rates and thus allowed the structure of interest rates to accurately reflect market conditions.

### Conclusion

The bureaucratic perspective of monetary history may provide fruitful explanations to puzzles which the public interest perspective leaves unanswered. While the elimination of the transfer tax could have plausibly been an explanation of the FED's passive behavior in the 1930s, Toma's explanation of the bond pegging program is less satisfactory. Even with a different perspective, the basic tenets of monetary theory still hold. Toma's evidence is insufficient to warrant any major modification of existing analysis of the bond pegging period based on the Wicksellian process of cumulative inflation.

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<sup>2</sup>Another effect of the bond pegging program was an incentive for banks and other investors to use the support structure to "play the pattern of rates" (Huynh, op. cit., p. 221). An investor could purchase a 9-month certificate whose rate was pegged at  $\frac{7}{8}$  of 1%, hold it for 6 months and then sell it to a FED bank at a price reflecting a yield of  $\frac{3}{8}$  of 1%. Since the FED was compelled to buy treasury bills at the posted rate of  $\frac{3}{8}$  of 1%, the investor would realize a capital gain and thus earn more by lending to the Treasury for 6 months rather than 9 months.

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