

Money Supply and Time Deposits, 1914-69

IN SEPTEMBER 1964 an article in this *Review* discussed the relation between money supply, time deposits, money plus time deposits, and periods of national economic contraction and expansion. In particular, the historical data were reviewed in light of the hypothesis that an increase in growth of the money supply or some other specific monetary magnitude, relative to growth of the demand for it, would result

in a rise in total spending. Conversely, a reduction in the growth of this key variable, without a corresponding decline in the growth of demand for it, would cause a decline in spending.

This note, with accompanying charts and tables, re-evaluates the earlier conclusions in light of the additional experience since September 1964. The top tier of the chart on pages 8 and 9 shows weighted month-to-month changes in the stock of money, defined as private demand deposits plus currency held by the public, expressed in compounded annual rates of growth or contraction from August 1914 through December 1969. The middle and bottom tiers show

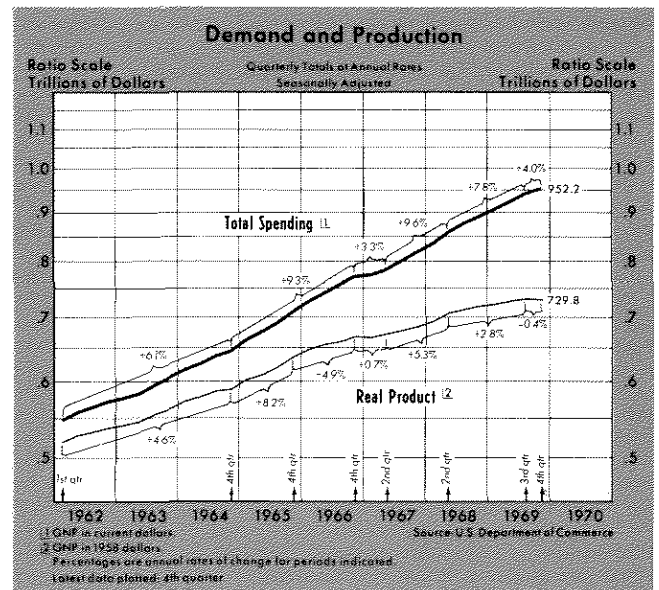
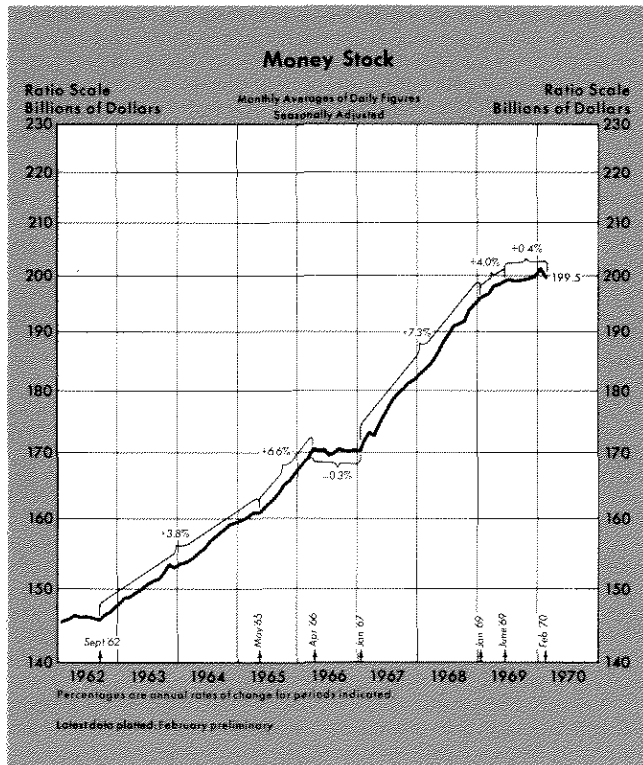


Table I

PERIODS OF CONTRACTION
National Bureau of Economic Research

Peak	Trough	No. of Months
Jan. 1913	— Dec. 1914	23
Aug. 1918	— March 1919	7
Jan. 1920	— July 1921	18
May 1923	— July 1924	14
Oct. 1926	— Nov. 1927	13
Aug. 1929	— March 1933	43
May 1937	— June 1938	13
Sept. 1945	— Oct. 1945	8
Nov. 1948	— Oct. 1949	11
July 1953	— Aug. 1954	13
July 1957	— April 1958	9
May 1960	— Feb. 1961	9

PERIODS OF MARKED SLOWDOWN
Federal Reserve Bank of St. Louis

Peak	Trough	No. of Months
July 1962	— Dec. 1962	5
Oct. 1966	— April 1967	6
Aug. 1969	— *	*

*Specification of the end of the latest slowdown was not clear at the time of this publication.

similar data for time deposits and money plus time deposits, respectively. The shaded vertical columns on the chart, 1914-1961, denote periods of economic contraction as determined by the National Bureau of Economic Research, and the shaded vertical columns, 1962-1969, denote periods of economic slowdown as selected by this bank. The initial and terminal dates for all but the current slowdown are presented in Table I. The horizontal bars on the chart represent the trend rates of change for periods of no marked and sustained change in the rates of change of the variable. Although selection of periods is judgmental, it is believed that most analysts would arrive at substantially similar results. The average annual rate of change for each selected period is presented in Table II for money, in Table III for time deposits, and in Table IV for money plus time deposits.

Experience since 1964 has been similar to that in the 1914-64 period. That is, marked and sustained changes in the rates of growth in either money or money plus time deposits have usually been followed after a brief lag by changes in the same direction in the growth of total spending. With respect to the hypothesis tested, this would seem to indicate that increases and decreases in the supply of these magnitudes, rather than being in response to changes in the

Table II

MONEY SUPPLY¹
COMPOUNDED ANNUAL RATES OF CHANGE
(Seasonally Adjusted)

Periods of No Marked and Sustained Change in Rates of Change (represented by bars on chart)	Annual Rates of Change
June 1914 — Dec. 1969	5.3%
June 1914 — Dec. 1917	14.2
Dec. 1917 — Feb. 1919	8.2
Feb. 1919 — March 1920	17.4
March 1920 — Jan. 1922	8.2
Jan. 1922 — Jan. 1923	11.0
Jan. 1923 — April 1924	0.5
April 1924 — Sept. 1925	10.3
Sept. 1925 — Dec. 1926	2.5
Dec. 1926 — April 1928	3.3
April 1928 — Sept. 1929	0.4
Sept. 1929 — March 1931	4.2
March 1931 — July 1932	14.3
July 1932 — Aug. 1933	4.8
Aug. 1933 — June 1936	16.7
June 1936 — March 1937	6.5
March 1937 — Dec. 1937	8.4
Dec. 1937 — June 1939	7.9
June 1939 — June 1942	17.9
June 1942 — Dec. 1943	30.8
Dec. 1943 — June 1946	12.3
June 1946 — Jan. 1948	3.9
Jan. 1948 — Nov. 1949	1.2
Nov. 1949 — April 1953	4.3
April 1953 — April 1954	0.2
April 1954 — May 1955	4.3
May 1955 — Dec. 1956	1.1
Dec. 1956 — Jan. 1958	0.9
Jan. 1958 — June 1959	4.1
June 1959 — June 1960	2.3
June 1960 — Jan. 1962	2.4
Jan. 1962 — Sept. 1962	0.3
Sept. 1962 — April 1966	4.5
April 1966 — Jan. 1967	0.3
Jan. 1967 — Jan. 1969	7.3
Jan. 1969 — June 1969	4.0
June 1969 — Dec. 1969	0.7

¹Sources: Basic data for June 1914 - December 1946: Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States, 1867-1960*, (Princeton: Princeton University Press, 1963), Table A-1, Col. 7. Basic data for January 1947 - December 1969: Board of Governors of the Federal Reserve System.

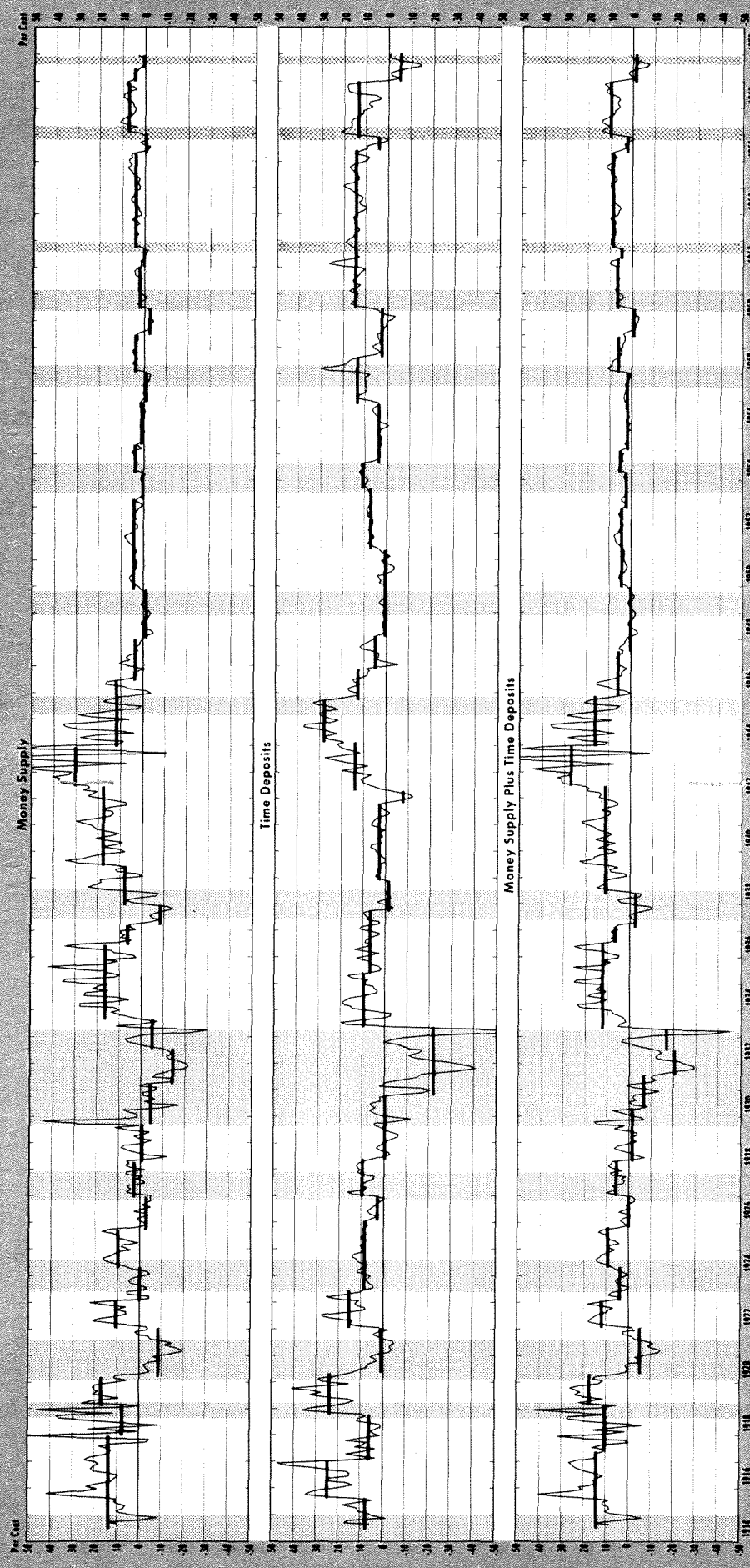
demand for them, have contributed to significant corresponding economic expansions and contractions.¹

The growth rates of both money and money plus time deposits have generally declined prior to peaks in business activity and have risen before troughs. As shown in the two-page chart, the average rates of growth of money and money plus time deposits declined prior to the 1967 hesitation in economic activ-

¹Similar conclusions have been reached using more sophisticated statistical methods. See Leonall Andersen and Jerry Jordan, "Monetary and Fiscal Actions: A Test of Their Relative Importance in Economic Stabilization", this *Review*, November 1968, pp. 11-24; and Michael Keran, "Monetary and Fiscal Influences on Economic Activity - The Historical Evidence," this *Review*, November 1969, pp. 5-24 and "Monetary and Fiscal . . . - The Foreign Experience," this *Review*, February 1970, pp. 16-28.

Money Supply and Time Deposits, 1914-1969

Compounded Annual Rates of Change



1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969

Three-month moving averages of compounded annual rates of change, weighted 1:2:1, computed from seasonally adjusted data. Bars indicate average rates for periods of recession and sustained change in the rates of change. Shaded vertical areas, 1918 through 1921, indicate periods of business recessions; shaded vertical areas, 1929 through 1933, indicate recent periods of economic slowdown. Lowest average plotted, December 1969, which includes rates November, December and January data. The lowest shaded area also terminates in December, although the slowdown may not have ended at that date.

Source: 1928-49, Milton Friedman and Anna Schwartz, "A Monetary History of the United States, 1863-1960," Princeton: Princeton University Press, 1963; 1949-69, Board of Governors of the Federal Reserve System.

Table III

TIME DEPOSITS¹
COMPOUNDED ANNUAL RATES OF CHANGE
(Seasonally Adjusted)

Periods of No Marked and Sustained Change in Rates of Change (represented by bars on chart)

	Annual Rates of Change
June 1914 — Dec. 1969	7.0%
June 1914 — Aug. 1915	7.8
Aug. 1915 — Jan. 1917	25.3
Jan. 1917 — Oct. 1918	6.4
Oct. 1918 — May 1920	24.3
May 1920 — Jan. 1922	1.3
Jan. 1922 — June 1923	15.5
June 1923 — Jan. 1926	8.8
Jan. 1926 — Dec. 1926	3.1
Dec. 1926 — May 1928	9.9
May 1928 — Oct. 1930	-0-
Oct. 1930 — May 1933	- 21.7
May 1933 — May 1935	9.7
May 1935 — Sept. 1937	6.9
Sept. 1937 — Nov. 1938	- 1.1
Nov. 1938 — Oct. 1941	3.0
Oct. 1941 — April 1942	- 7.4
April 1942 — Feb. 1944	14.1
Feb. 1944 — Sept. 1945	28.1
Sept. 1945 — Nov. 1946	12.7
Nov. 1946 — Feb. 1948	5.0
Feb. 1948 — May 1951	0.9
May 1951 — Sept. 1953	7.4
Sept. 1953 — Aug. 1954	10.8
Aug. 1954 — Nov. 1956	3.6
Nov. 1956 — Aug. 1958	13.4
Aug. 1958 — June 1960	2.8
June 1960 — May 1966	14.8
May 1966 — Nov. 1966	4.2
Nov. 1966 — Dec. 1968	13.7
Dec. 1968 — Dec. 1969	- 5.3

¹Sources: Basic data for June 1914 - December 1946: Friedman and Schwartz, *A Monetary History of the United States, 1867-1960*, (Princeton: Princeton University Press, 1963), Table A-1, Col. 3.
Basic data for January 1947 - December 1969: Board of Governors of the Federal Reserve System.

ity. This slowdown in economic activity, although marked, was not severe enough to be classed as a recession by the National Bureau of Economic Research. The average rate of change for both money and money plus time deposits rose prior to the rapid increase in total spending, which began in the summer of 1967.

Movements in both money and money plus time deposits since 1914 have been broadly consistent with the hypothesis. However, when two variables are both consistent with a hypothesis, it is appropriate to ask which shows the most consistency in accord with that hypothesis. In this instance, the money stock, exclusive of time deposits, appears to be the better key variable. For example, beginning in November 1956, eight months before a business cycle peak, time deposits rose rapidly. In fact, in many instances since 1914, time deposits did not decline before a peak

²Charlotte Ruebling, "The Administration of Regulation Q," this *Review*, February 1970, pages 29-40.

Table IV

MONEY SUPPLY PLUS TIME DEPOSITS¹
COMPOUNDED ANNUAL RATES OF CHANGE
(Seasonally Adjusted)

Periods of No Marked and Sustained Change in Rates of Change (represented by bars on chart)

	Annual Rates of Change
June 1914 — Dec. 1969	5.9%
June 1914 — May 1917	14.5
May 1917 — Feb. 1919	10.5
Feb. 1919 — April 1920	18.0
April 1920 — Jan. 1922	- 5.0
Jan. 1922 — Jan. 1923	12.4
Jan. 1923 — April 1924	4.1
April 1924 — Oct. 1925	9.7
Oct. 1925 — Dec. 1926	0.1
Dec. 1926 — April 1928	6.1
April 1928 — April 1930	- 1.0
April 1930 — July 1931	- 5.9
July 1931 — June 1932	- 20.0
June 1932 — April 1933	- 16.2
April 1933 — July 1936	12.5
July 1936 — Feb. 1937	6.7
Feb. 1937 — May 1938	- 2.4
May 1938 — June 1942	11.7
June 1942 — Dec. 1943	27.2
Dec. 1943 — Nov. 1945	16.7
Nov. 1945 — July 1947	5.8
July 1947 — Dec. 1949	0.4
Dec. 1949 — Dec. 1952	4.5
Dec. 1952 — April 1954	2.7
April 1954 — Feb. 1955	5.5
Feb. 1955 — Jan. 1958	1.9
Jan. 1958 — May 1959	6.4
May 1959 — June 1960	- 0.8
June 1960 — April 1962	6.9
April 1962 — Sept. 1962	4.6
Sept. 1962 — April 1966	8.7
April 1966 — Nov. 1966	2.3
Nov. 1966 — Dec. 1968	10.1
Dec. 1968 — Dec. 1969	- 1.5

¹Sources: Basic data for June 1914 - December 1946: Friedman and Schwartz, *A Monetary History of the United States, 1867-1960*, (Princeton: Princeton University Press, 1963), Table A-1, Col. 8.
Basic data for January 1947 - December 1969: Board of Governors of the Federal Reserve System.

in business activity nor rise before a trough. Therefore, the consistent behavior of money plus time deposits results primarily from the overpowering strength of the money variation, rather than the contribution of time deposits. It follows that money plus time deposits is a less sensitive variable than the money supply alone. Moreover, the change in the rate of growth of time deposits has been seriously affected in recent years by the relation between Regulation Q ceilings on interest rates banks are permitted to pay on time deposits and market interest rates.² As a result, the relation between time deposit growth rates and changes in total spending has been even weaker since 1964 than in earlier years.

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