

**Treasury-Federal Reserve Study of the  
U.S. Government Securities Market**

**THE FINANCIAL AND ECONOMIC ENVIRONMENT OF THE 1960'S  
IN RELATION TO THE U.S. GOVERNMENT SECURITIES MARKET**

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## Research Library

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THE FINANCIAL AND ECONOMIC ENVIRONMENT OF THE 1960's  
IN RELATION TO THE U.S. GOVERNMENT SECURITIES MARKET

I. Introduction

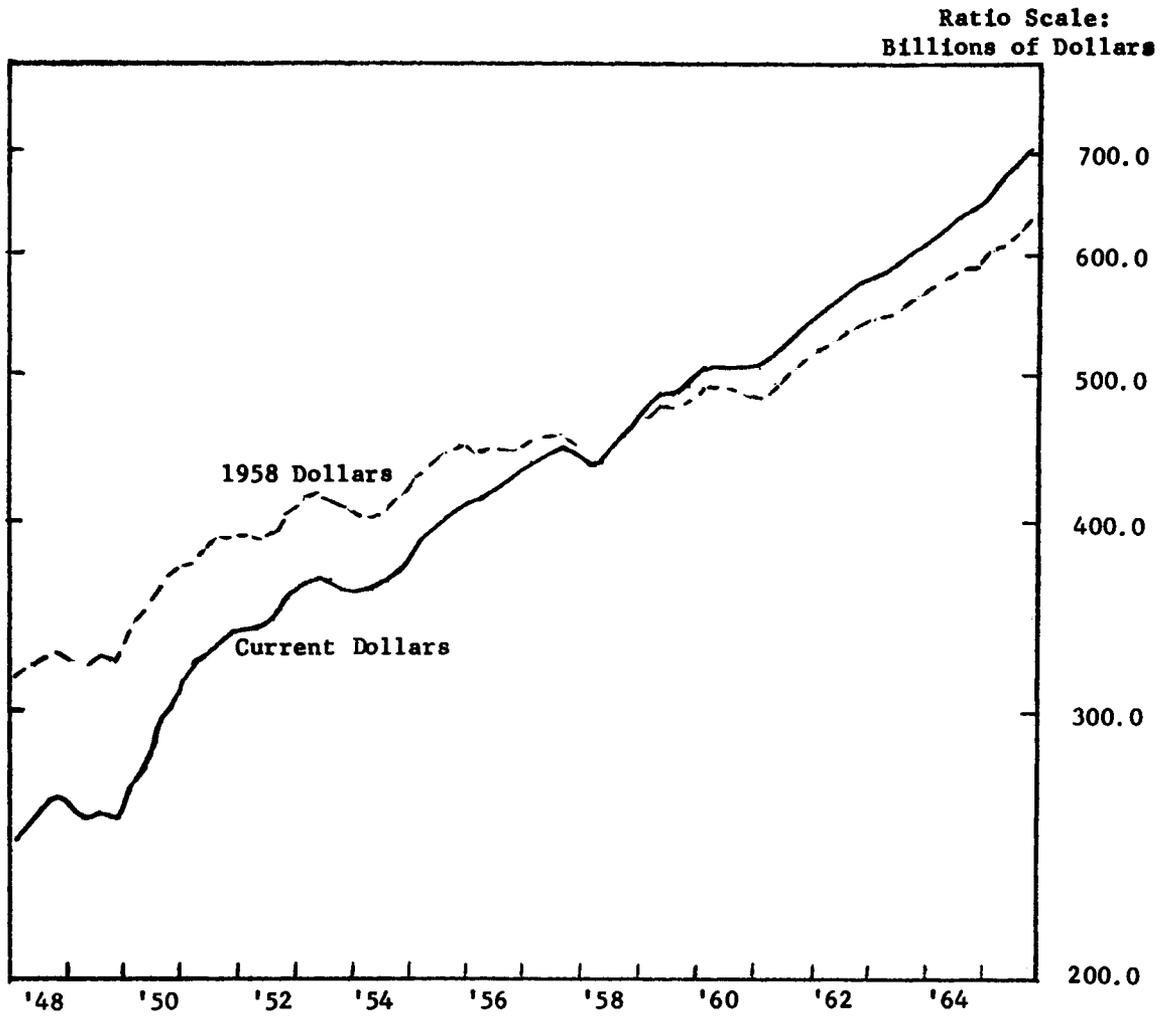
The American economy since 1960 has been quite different from that of the previous 15 years.<sup>1/</sup> In the earlier postwar years, output traced considerably more cyclical movement (Chart 1). In the second half of the 1940's, the economy was dominated by the heavy pent-up deferred demands of the 1930's and World War II, culminating in the first postwar recession of 1949. The early 1950's were dominated by the Korean conflict; the recovery from the recession of 1954 evolved into a capital goods boom ending in the recession of 1957-58; and a sharp but brief expansion in 1958-60 failed to bring the economy to full employment prior to the mild economic downturn of 1960.

Throughout most of the first half of the present decade, on the other hand, economic growth was steady--tracing out the longest peacetime expansion on record--and prices and costs were remarkably stable for most of the period (Chart 2). This desirable state of affairs was marred, however, by relatively high, although irregularly declining, unemployment, and by a continued balance of payments deficit (Charts 2 and 3). In addition, after mid-1965 the greater expenditures associated with the war in Vietnam, placed on top of an expanding economy, led to increasing prices and shortages in some areas.

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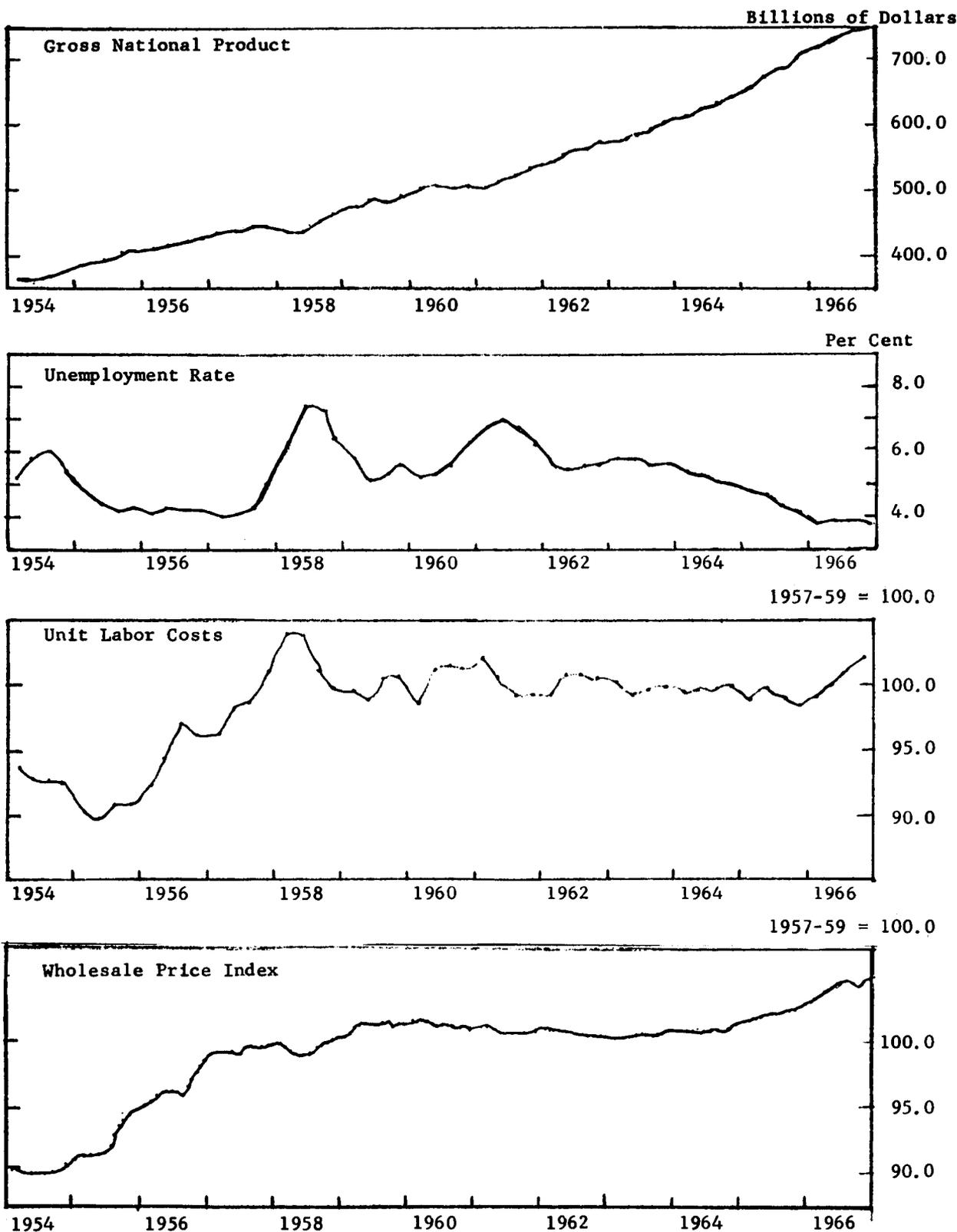
<sup>1/</sup> Because of the timing of its preparation, this paper will focus on the 1960-65 period, with only passing reference to later developments. The first half of the decade was a period of innovation in financial markets and in public policies, and encompasses the essential background for an analysis of the changing structure and performance of the U.S. Government securities market.

Chart 1 - Gross National Product  
1948-65



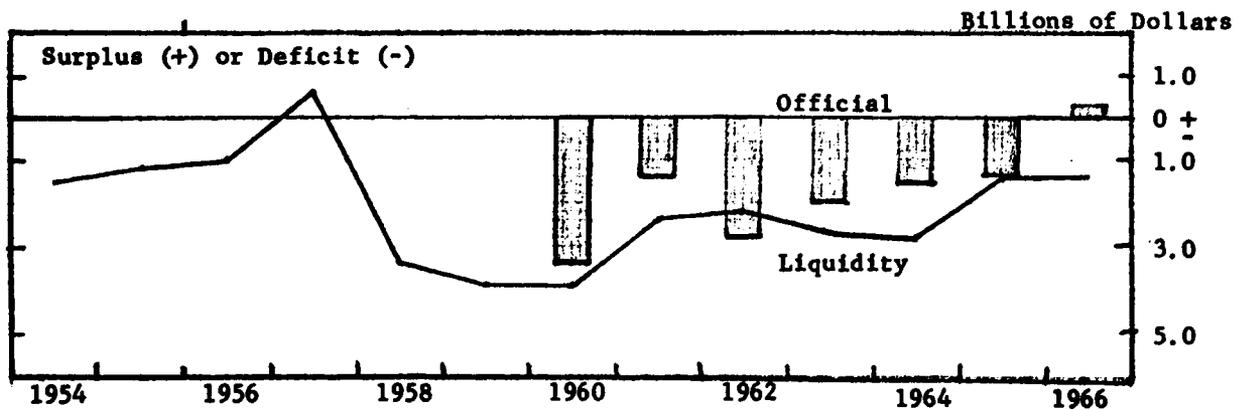
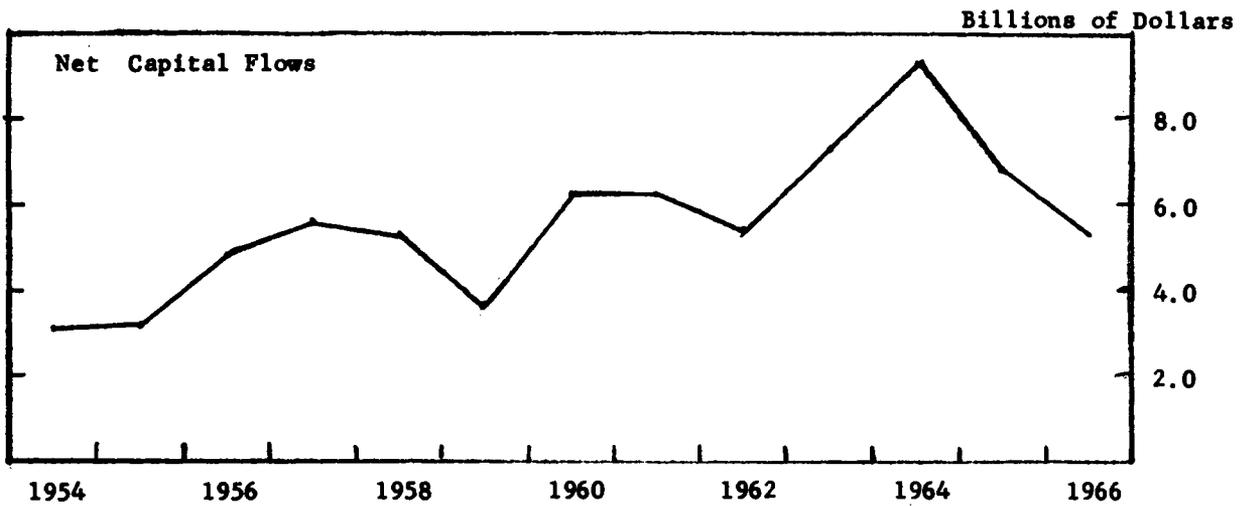
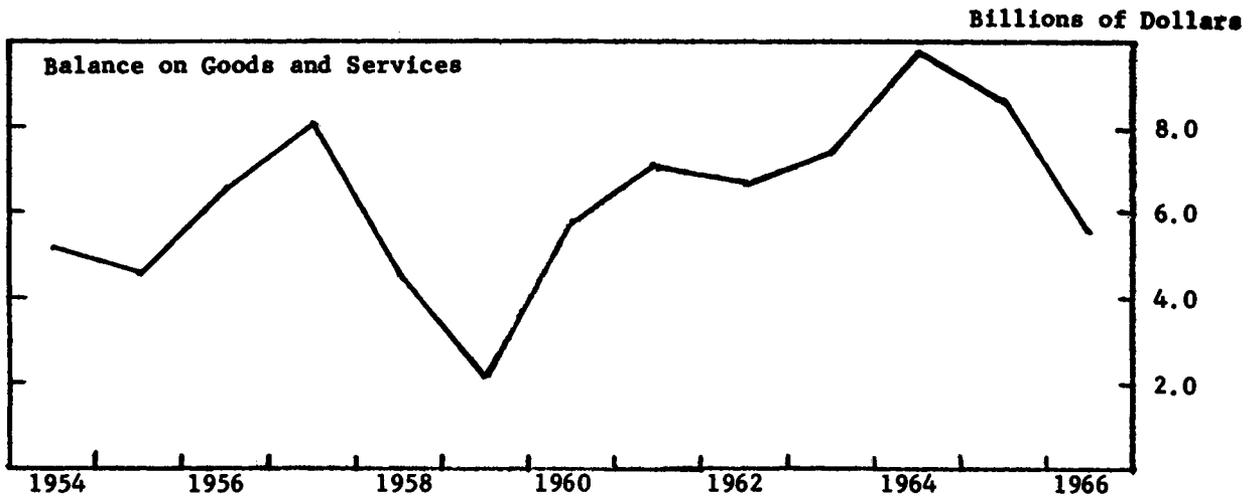
Source: U.S. Commerce Department

-3-  
**Chart 2 - Output, Unemployment, Costs, and Prices**  
 1954-66



Source: U.S. Departments of Commerce and Labor

Chart 3 - U.S. Balance of Payments  
1954-66



Source: U.S. Department of Commerce

NOTE: 1966 Estimated.

Partially as a result of the different problems faced over the period, and partially as a result of the lessons learned earlier in the postwar years, public policies were altered--in some cases markedly. At the same time, and interacting with basic economic forces and public policies followed, the financial system itself saw a number of innovations and evolutions.

All of these changes in the 1960's were reflected in financial markets. This paper will attempt to relate the different economic and financial environment of the 1960's to developments in one financial market: that for marketable U.S. Government securities. The basic characteristics of the economy of the 1960's will be discussed in the second section of this paper, and will be followed by a discussion of public policy in the next section. Then changes in the financial environment originating basically outside of shifts in public policy will be discussed. In the final section of the paper, all of these factors will be related to the changing nature of the Government securities market. An appendix will discuss in more detail international developments and their effect on this market.

## II. Basic Characteristics of the American Economy in the 1960's

During the first six years of the 1960's, the American economy experienced the longest peacetime period of uninterrupted expansion on record. Growth during most of the period was accompanied by unusual stability in financial markets and in prices. In the later part of 1965 and in 1966, however, large and rising defense expenditures related to

Vietnam contributed to an erosion of price stability and to the emergence of characteristics in the economy--such as large inventory accumulation and plant and equipment outlays--in the past associated with the development of cyclical instabilities in the economy.

Partly because of the unusually long period of uninterrupted expansion, the average annual rate of growth of real GNP over the first half of the decade was quite large--about 4.6 per cent, or almost twice the rate shown from 1957 to 1960 and also from 1953 to 1957. While the length and size of the upswing from 1960 to 1965 are the hallmarks of the period, other characteristics are also of great importance. Throughout the period, for example, the U.S. balance of payments deficit remained quite large (Chart 3). While American exports continued to exceed imports, capital outflows--both private and governmental--prosperity abroad, attractive substitute assets, and foreign policies both widened the U.S. payments deficit and accelerated the rate of gold outflow. As a result, U.S. policies had to cope with a payments deficit--which had presented little difficulty in the earlier postwar period--in such a way as to reduce outflows during a period when domestic output was below the full-employment level.

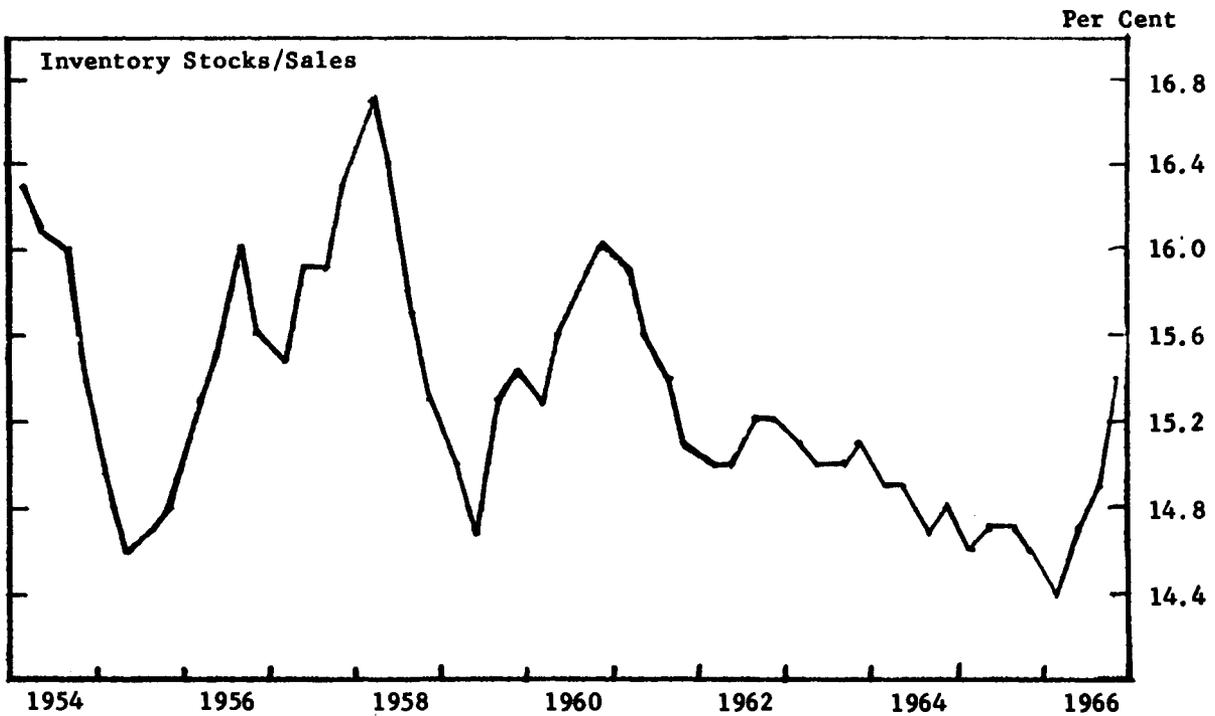
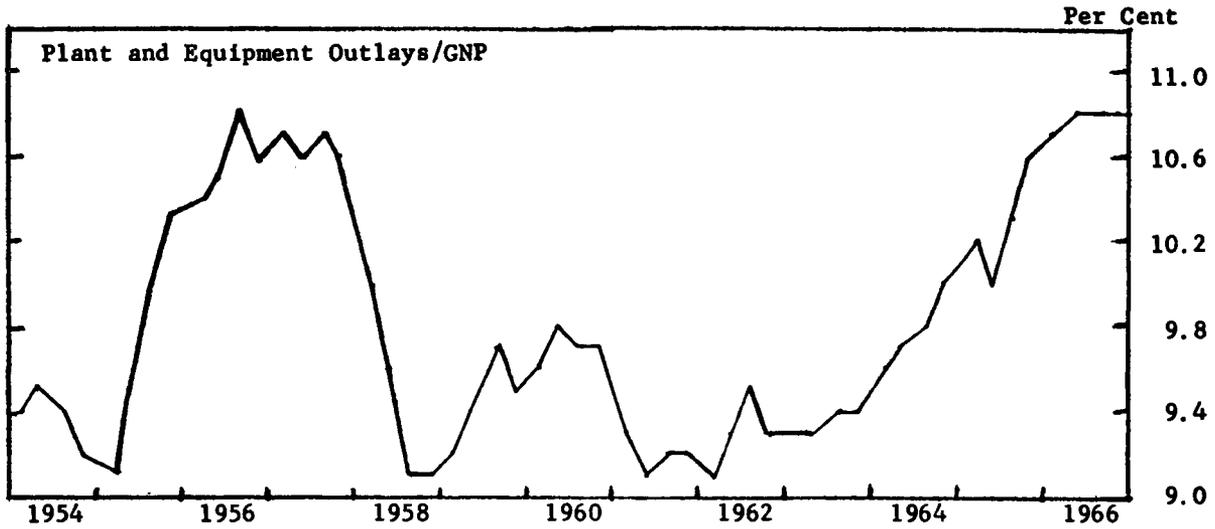
On the domestic scene, growth in output was steady and balanced, and prices and costs showed unusual stability from early 1961 until the first half of 1965. Unemployment rates, on the other hand, remained higher than in the mid-1950's. After declining in 1961, they showed little change until

1964, when they started down again. After about mid-1965, the advance in output began to accelerate, capital expenditures continued to rise sharply, increasing as a share of GNP, unemployment rates declined to levels of the mid-1950's, and price increases became more general.

The orderliness of the expansion in the early 1960's stands in sharp contrast to the 1950's when plant, equipment, and inventory expenditures increased more rapidly than consumer demands. (Chart 4). At the same time, the cost and price stability of this period was in sharp contrast to the middle 1950's and contributed importantly to the reversal of expectations of continued inflation which had characterized the previous decade. With fears of inflation sharply reduced, investors became more willing buyers of long-term fixed return securities. In addition, with capital expenditures restrained by excess capacity during much of the period and with profits large and growing, businesses were able to finance most of their outlays from internally generated funds (Chart 5).

Both the end of "inflationary psychology" and the reduced rate of new capital issues by businesses were important factors in maintaining the relative stability of long-term yields prior to mid-1965--a sharp contrast to previous periods of expansion (Chart 6). Total credit demands, of course, increased each year, but only slightly more rapidly than output (Chart 7). Earlier in the expansion, much of the increased demand for credit was accounted for by the Federal Government and by foreigners, who found U.S. markets attractive sources of funds, but as the expansion progressed, private credit requirements provided the upward thrust to total credit demands.

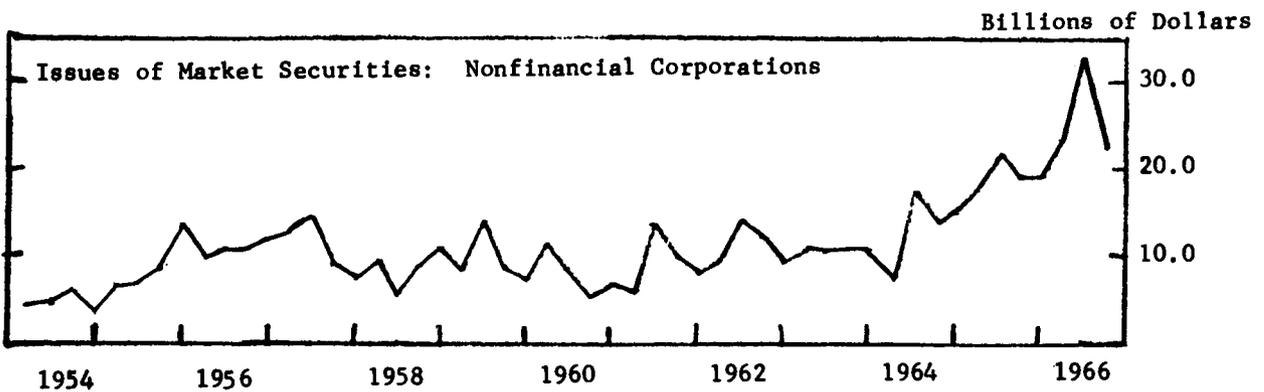
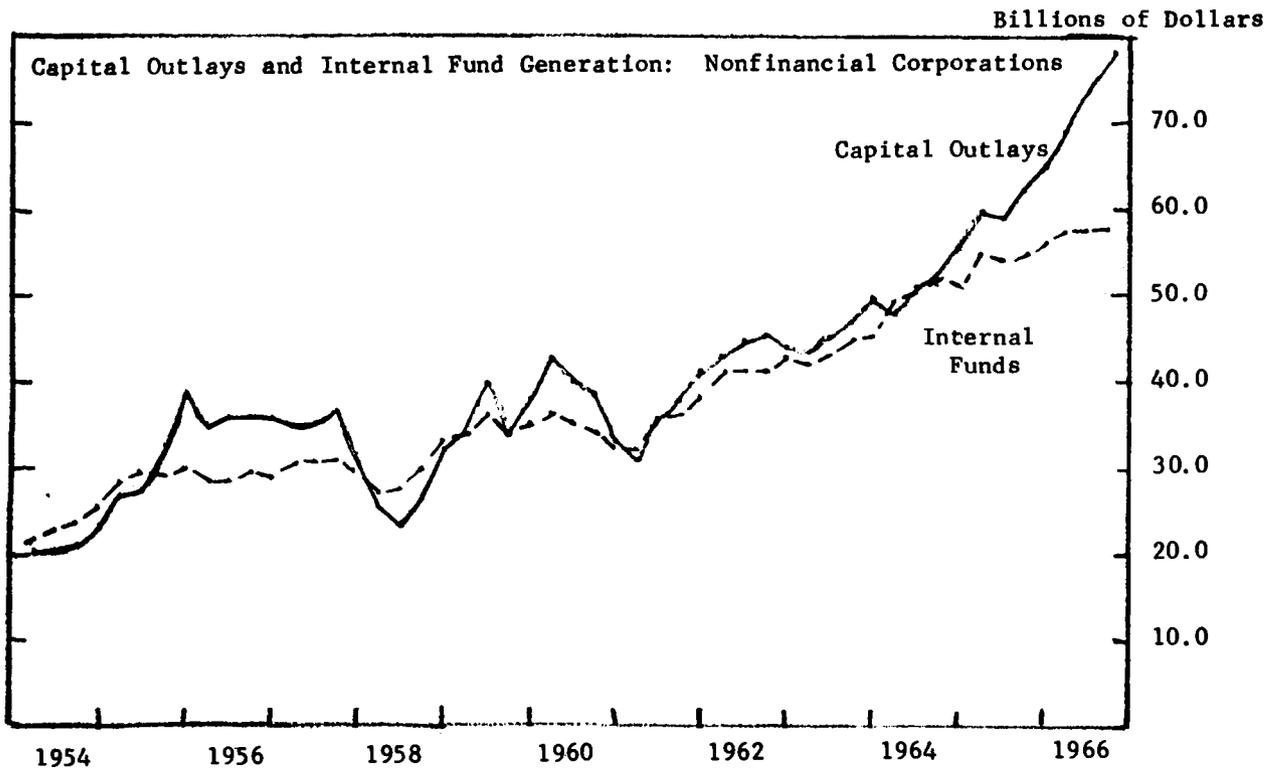
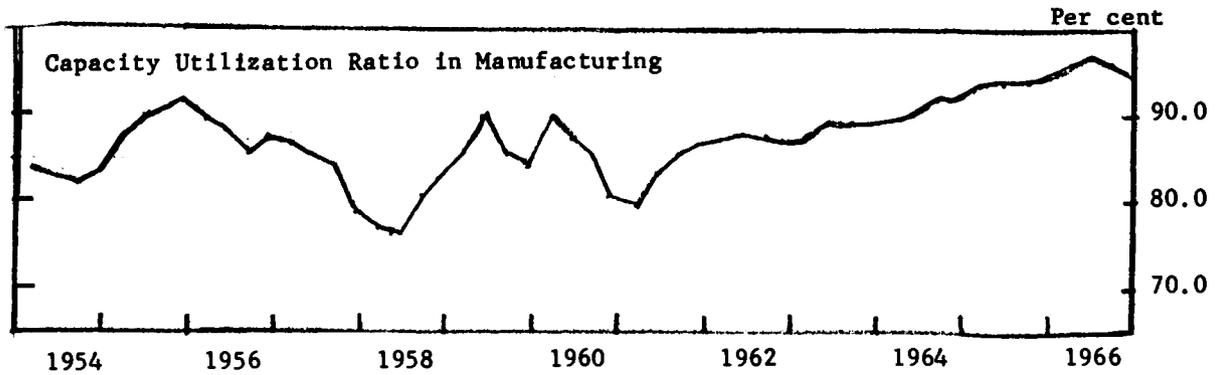
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**Chart 4 - Business Investment**  
 1954-66



Source: U.S. Department of Commerce

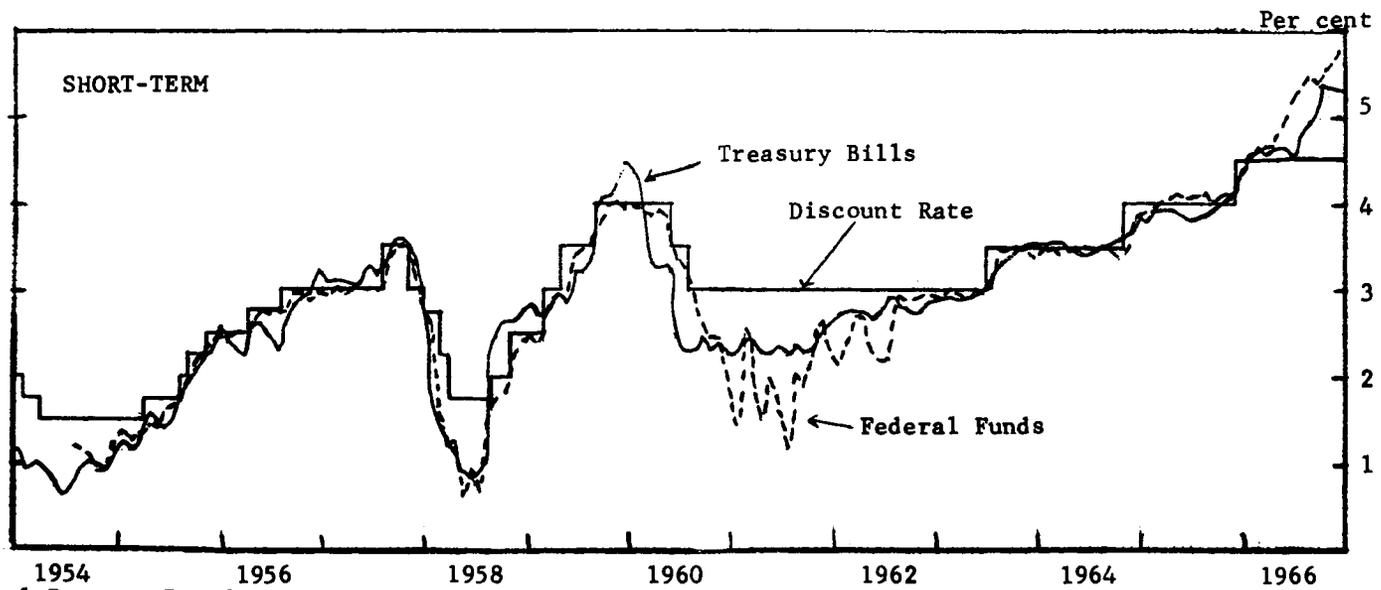
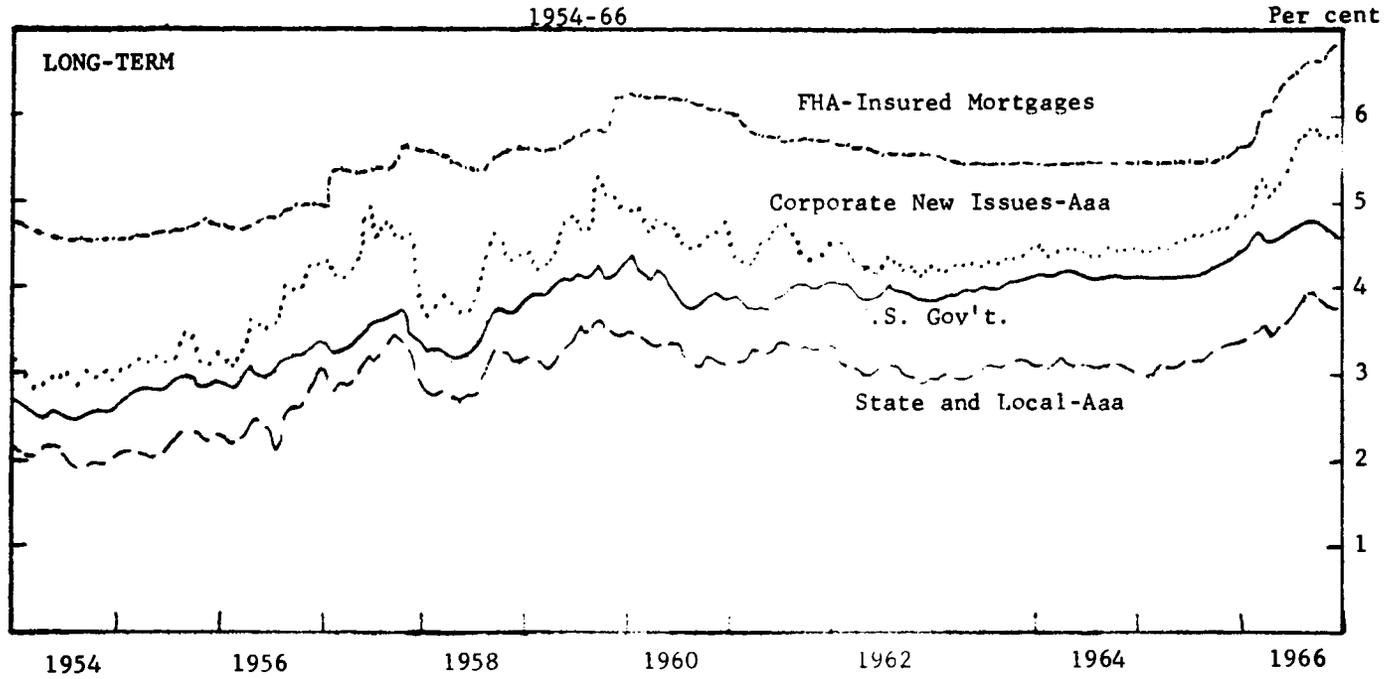
**Fourth Quarter 1966 Estimated**

Chart 5 - Capital Outlays: Capacity and Financing  
1954-66



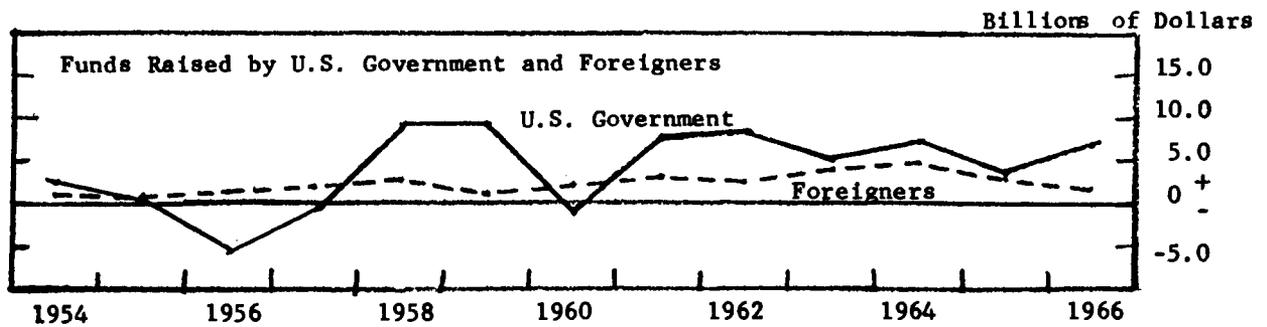
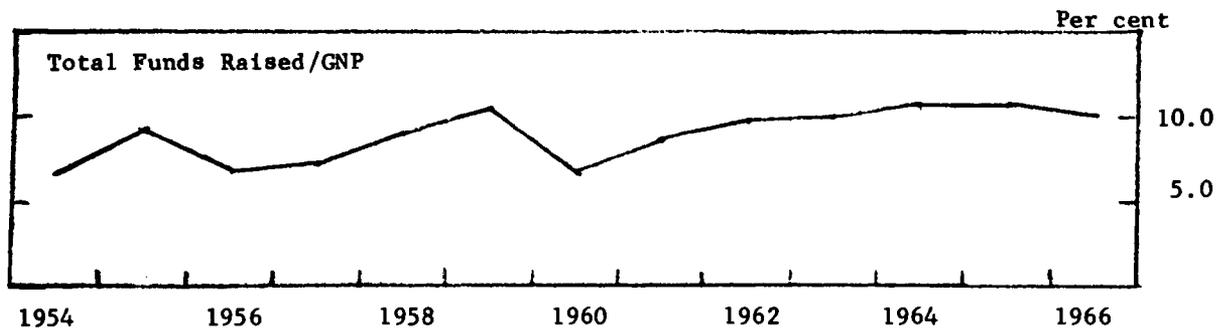
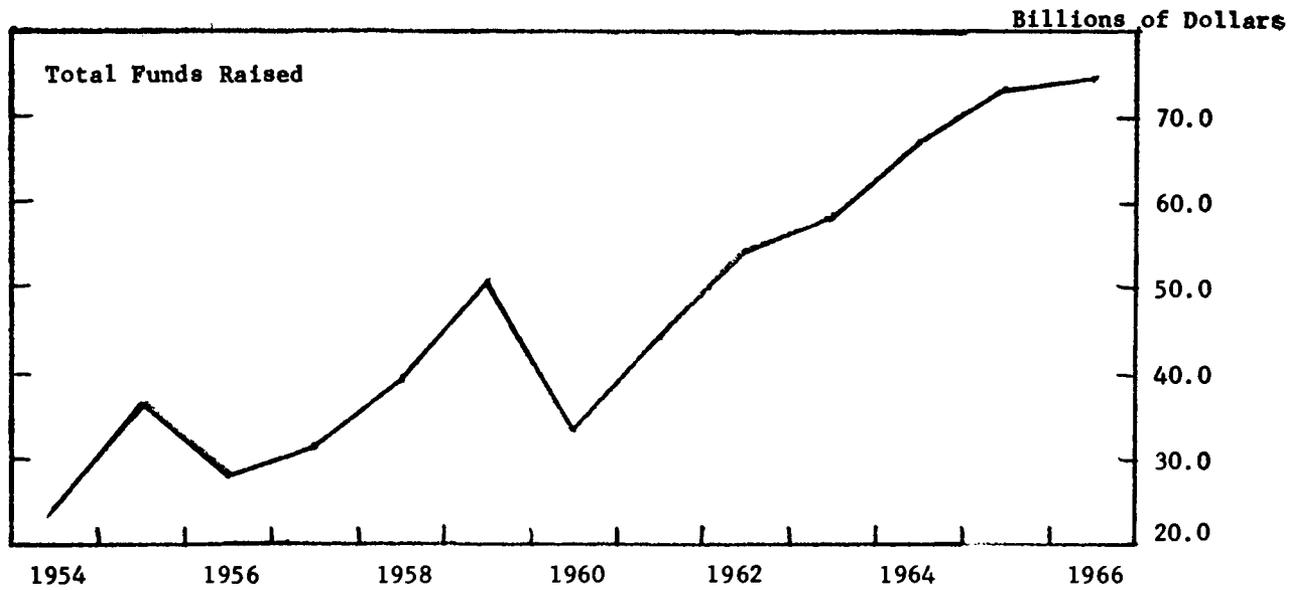
Source: Federal Reserve Board and Flow-of-Funds

CHART 6  
INTEREST RATES  
1954-66



Source: Federal Reserve Board

Chart 7 - Credit Flows  
1954-66



Source: Flow of Funds

Other factors, such as institutional changes in the financial mechanism, also contributed to this relative stability of long-term yields, but the more receptive market for long-term securities and the limited demand for funds in the capital markets until mid-1965 are crucial. After mid-1965 and in 1966, however, increasing concern about inflationary pressure, increased demands to finance growing private capital outlays, and a marked tightening of monetary policy were major factors in the sharp run-up in interest rates. Not only did interest rates rise sharply but they also fluctuated more than earlier in the decade, as financial markets became sensitive to developing uncertainties with respect to public policies, the Vietnamese conflict, and the stability of the economy.

### III. Public Policy

In this section, the various public policies--fiscal, monetary, and debt management--that influenced economic expansion in the 1960-65 period will be discussed in turn. Underlying most of the policy actions taken was the desire to foster the growth of the economy from its low operating rate of 1960-61--within the constraint of a persistent balance of payments deficit.

#### Fiscal Policy

Throughout the early 1960's, fiscal policy was used more aggressively as a conscious vehicle to stimulate aggregate demand than at any time in our history. These policies to increase aggregate demand contributed importantly to the public's expectations that the economy would continue to advance and that the power of the Federal Government would quickly be used to counter any economic reversal.

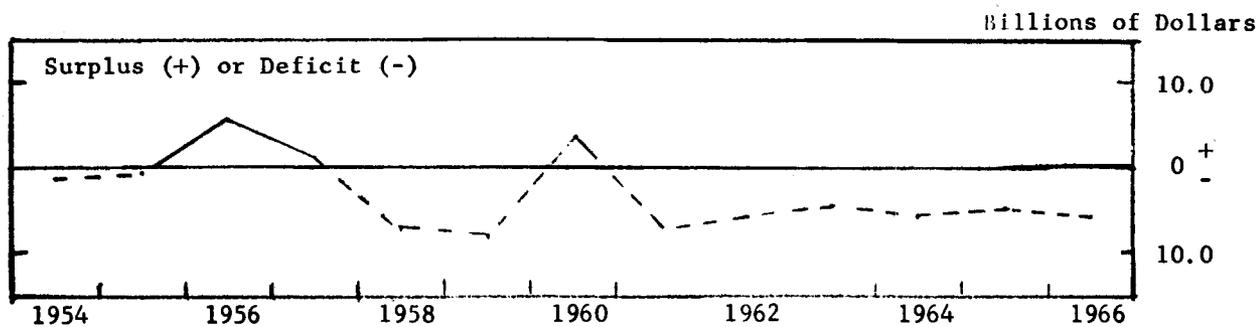
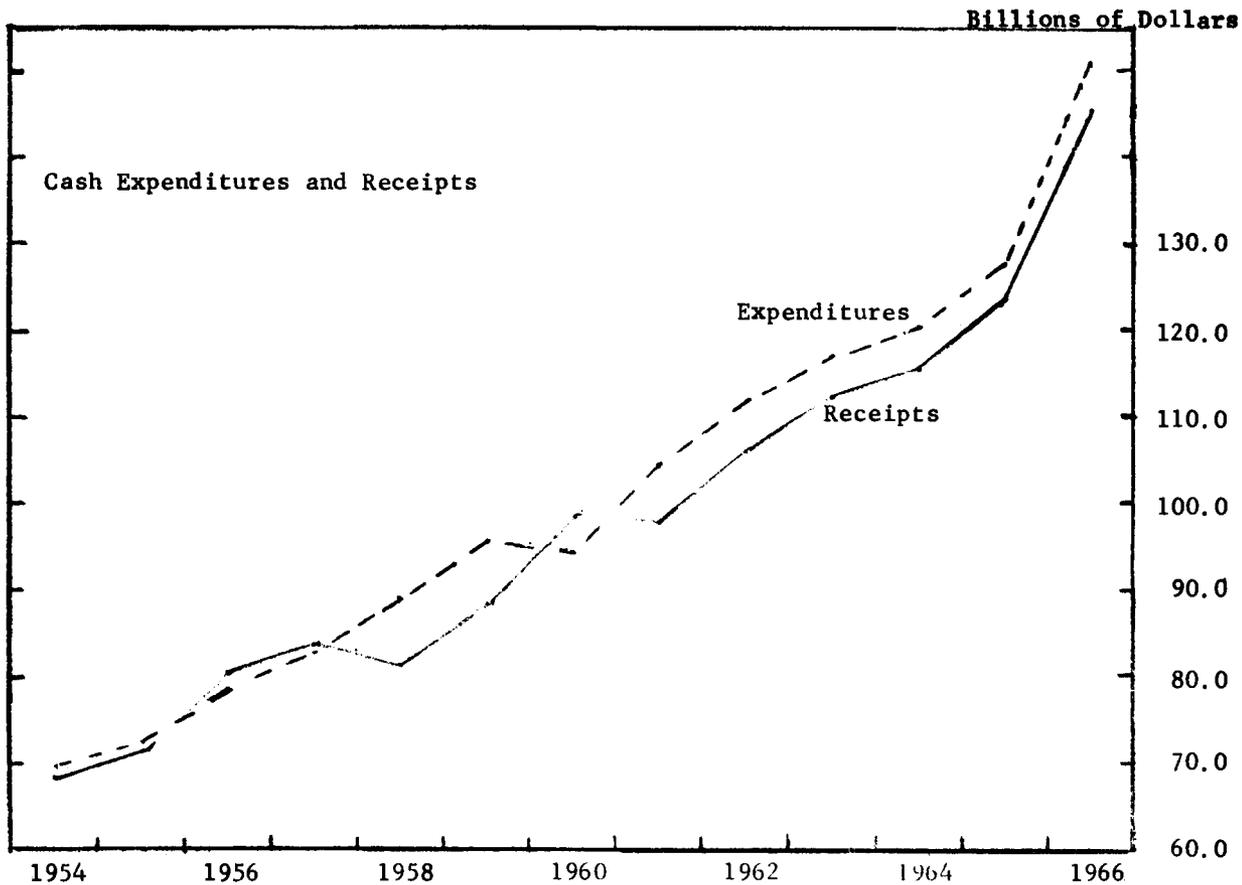
In the economic environment of the period, fiscal policy was a particularly valuable tool for this purpose. Not only do fiscal actions have a broadly based economic influence, but the also--unlike stimulative monetary policies--bring no downward pressures on interest rates, and consequently do not contribute to capital outflows that--in the 1960's--would have enlarged the U.S. payments deficit.

Stimulative fiscal policy actions encompassed both increased expenditures and reductions in tax rates. Cash expenditures over the five years 1961 through 1965 expanded by over \$33 billion (Chart 8). While not all of these increased outlays were associated with anti-cyclical policies, three reductions in tax rates--in 1962, 1964, and 1965--were essentially enacted in order to expand demand. Tax reductions are estimated to have reduced tax inflows by \$23.5 billion in the years the adjustments were effective.<sup>2/</sup> With reduced tax rates and higher outlays, "fiscal drag"--as indicated by the full employment surplus which estimates the amount by which tax revenues would exceed expenditures at full employment--was sharply reduced as in the 1960's progressed (Chart 9).

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<sup>2/</sup> In 1962, in an effort to increase investment, depreciation guidelines were revised and on certain investments businesses could apply a credit against their tax liabilities in the year of the expenditure. It is estimated that these actions reduced tax inflows in 1962 by \$12.5 billion and \$1.0 billion, respectively. In 1964, in two stages, personal and corporate income tax rates were lowered, reducing estimated tax inflows by \$7.7 billion in 1964 and \$11.5 billion in 1965. In 1965 a reduction in certain excise taxes reduced tax inflow in that year by \$1.9 billion. The \$5.6 billion increase in social security taxes in 1966 are ignored.

Chart 8 - U.S. Government Consolidated Cash Budget  
Calendar 1954-66



Source: U.S. Treasury

Chart 9 - Full Employment Budget Surplus  
1956-66



Source: Federal Reserve Board

With the more expansive fiscal policy of the 1960's, the annual cash deficit of the Federal Government averaged \$5.1 billion from 1961 through 1965 (Chart 8, lower panel).<sup>3/</sup> For various technical reasons, the much larger cash deficit of the 1960's translated into an average annual increase in the marketable debt of \$5.8 billion, only slightly above the \$4.9 billion average annual increase in marketable debt from 1954 through 1960. As indicated in Chart 10, the major reason for the great increase in marketable debt in the 1950's was the retirement of non-marketable debt, which was financed by increased marketable issues. Agency issues, participation certificates, changing treasury cash balance, Treasury trust account purchases, and special issues also influences the relationship between the deficit and the sale of marketable securities. While this paper is concerned primarily with marketable issues, it should be remembered that increased reliance on agency securities and participation certificates--especially in 1966--increased the stock of financial assets that directly compete with marketable Treasury issues for the funds of investors.

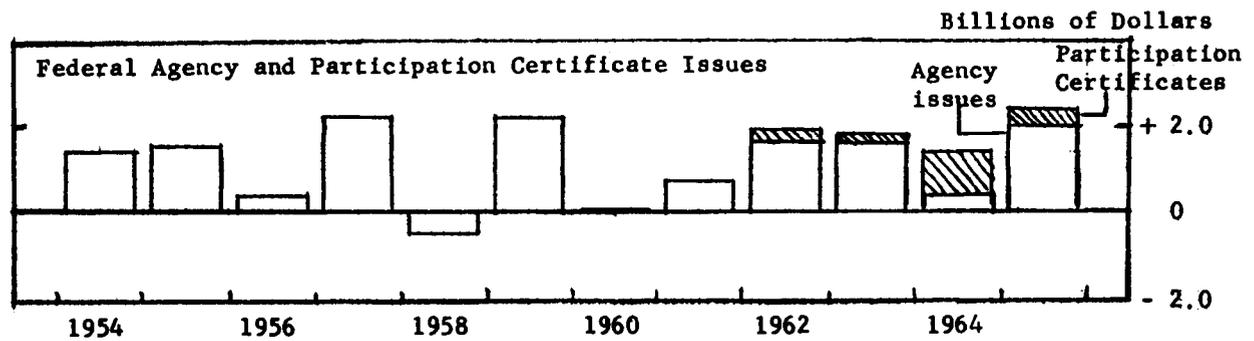
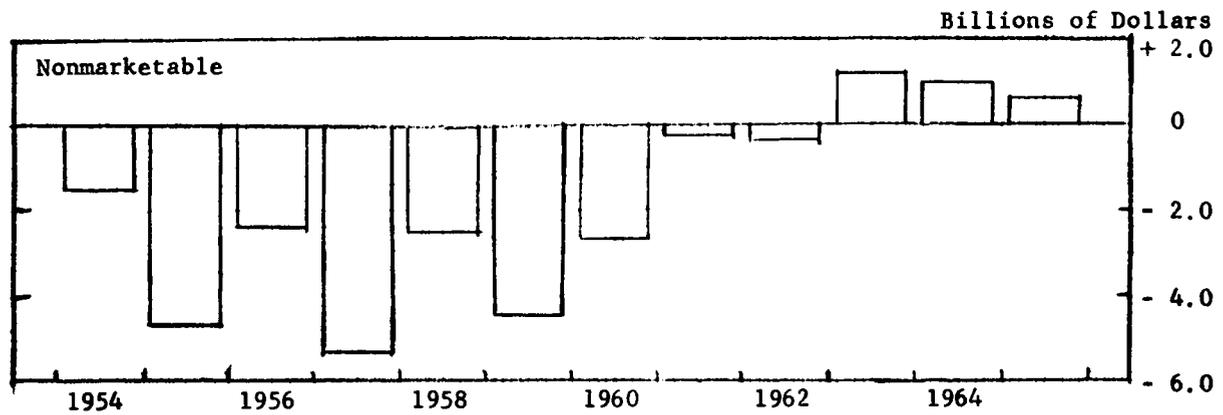
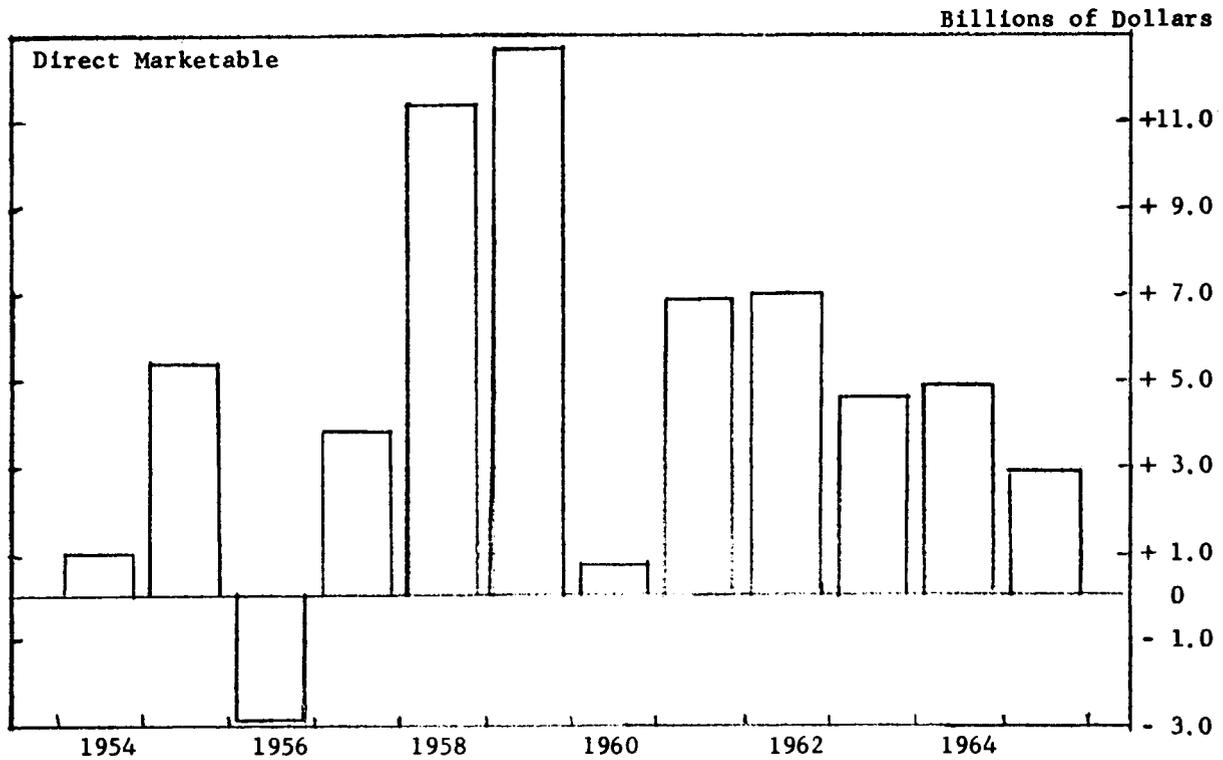
#### Debt Management and Federal Reserve Open Market Operations

In this section open market operations of the Federal Reserve System and Treasury policies will be considered more or less jointly. Both the Federal Reserve and the Treasury in the early 1960's were guided

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<sup>3/</sup> The average annual cash deficit of \$5.1 billion from 1961 through 1965 was lowered by \$0.3 billion due to sales of participation certificates from 1962 through 1965 cumulating to \$1.9 billion. These participation certificates are negative expenditures that reduce the cash deficit.

Chart 10 - Annual Increase in Federal Debt  
1954-65



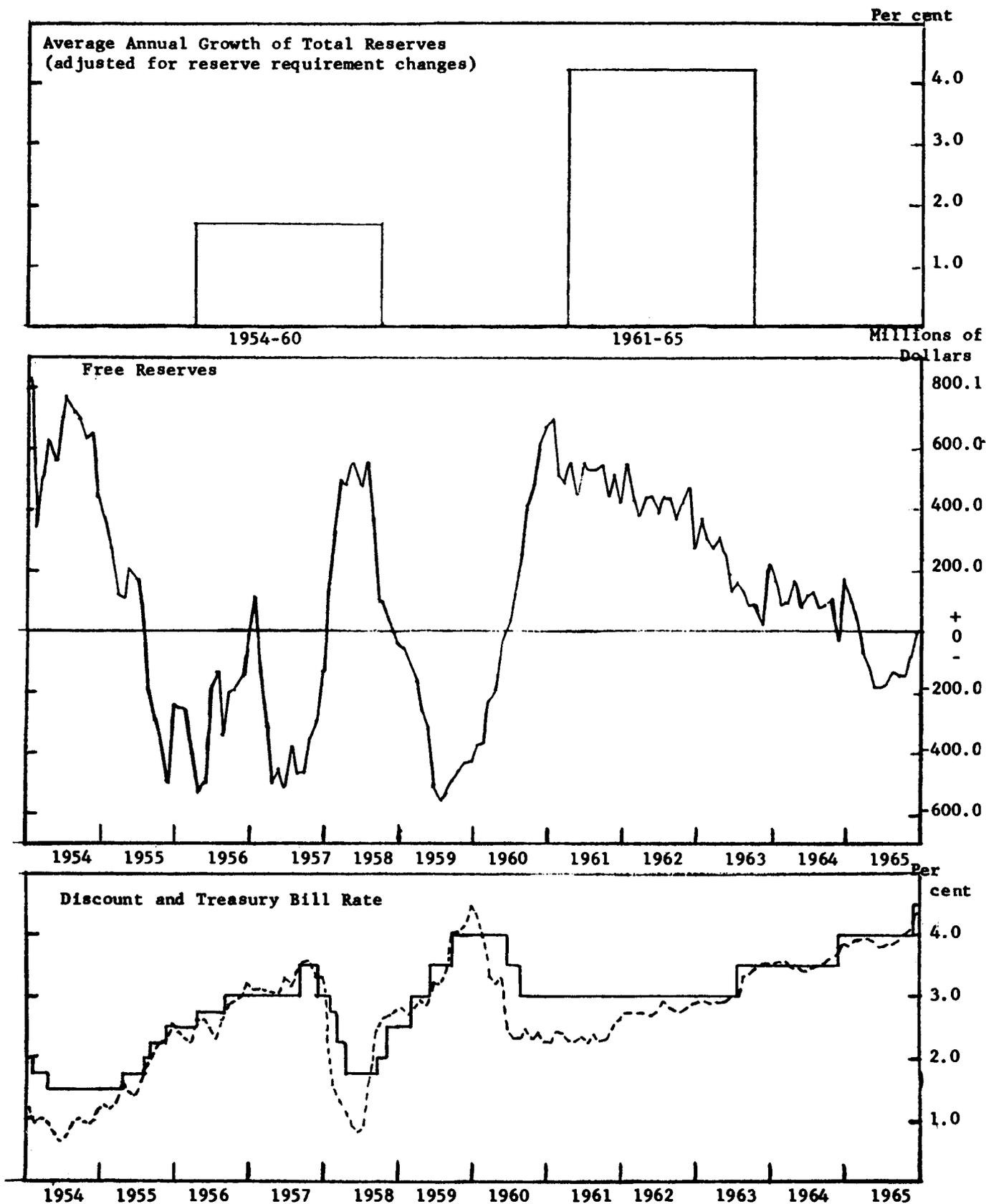
Source: U.S. Treasury

mainly by the same general objectives: to foster economic expansion while minimizing downward pressure on short-term market rates of interest which could contribute to accelerated capital outflows. In addition, the Treasury also sought to lengthen and balance the structure of its outstanding debt in order to ease the problems of refunding its maturing issues.

Stance of Monetary Policy. As the decade of the 1960's began, monetary policy was primarily concerned with contributing to expansion in domestic output, which at the time was considerably below the capacity of the economy. In furthering this objective, the Federal Reserve System supplied reserves more rapidly than in the 1950's (Chart 11). However, while this increase in the stock of total reserves of member banks throughout the first half of the decade is indicative of the generally expansive stance of policy, a large part of the increase in the reserve base of the banking system reflected the acceleration of time deposit inflows, to be discussed below. As funds were shifted from other financial assets to commercial bank time deposits, the resultant increased bank need for legal reserves was generally supplied by the System.

In addition to fostering economic expansion, the Federal Reserve also attempted to reduce downward pressure on short-term rates, which had declined to very low levels in previous periods of expansive monetary policy. Open market operations were one of the major vehicles for restraining the downward pressure on short-term rates, but other methods were also used. For example, in 1960 the discount rate was only reduced to 3 per cent, whereas in 1958 it had been lowered to 1-3/4 per cent. The discount rate

-19-  
**CHART 11**  
**MEMBER BANK RESERVES AND DISCOUNT RATE**  
 1954-65



Source: Federal Reserve Board

was changed relatively infrequently in the 1960 to mid-1965 period--rising to 3-1/2 per cent in mid-1963 and to 4 per cent in late 1964. The relative stability of the discount rate during the period reflected the steady course of monetary policy and was taken by the market as, in part, indicative of the likelihood for interest-rate stability.

Reflecting the expansive monetary policy, borrowings at the Federal Reserve by member banks remained relatively small until mid-1965. Until early 1965 excess reserves exceeded such borrowings, the longest time span of continuous free reserves since the Accord (Chart 11). Moreover, the level of free reserves was generally kept more stable than in earlier periods, tending to reinforce expectations that monetary policy would not be sharply changed. In turn, these expectations contributed to generally reduced week-to-week fluctuations in short-term rates.

Federal Reserve Open Market Operations: Size and Activity. In the first half of the 1960's, as compared to the 1950's, the Federal Reserve System was a much larger factor overall in the Government security market (Table 1). In the 1960's the System more than doubled its average annual gross transactions, almost tripled its outright transactions in the market, and almost doubled its repurchase agreements (RP's). Moreover, and of greater importance, the System open market account not only increased its gross purchases and sales, but also increased its net portfolio holdings more rapidly. Average annual net purchase increased from \$200 million in the 1950's to \$2.7 billion in the first half of the 1960's, and, as a result, the System absorbed an amount equal to over one-half of the new issues of marketable securities in the latter period as compared to less than 5 per cent in the former period.

Table 1

AVERAGE ANNUAL FEDERAL RESERVE SYSTEM TRANSACTIONS  
IN U.S. GOVERNMENT SECURITIES  
(Billions of Dollars)

	1954-60	1961-65
Total Transactions <sup>1/</sup>	<u>14.9</u>	<u>32.5</u>
Outright	5.6	15.0
Repurchase Agreements	9.4	17.5
Net Purchases <sup>2/</sup>	0.2	2.7
Net Purchases as a share of net new issues of marketable securities:		
Including RP's	4.4%	52.3%
Excluding RP's	4.9%	52.7%

<sup>1/</sup> Purchases, sales, and repurchase agreements.

<sup>2/</sup> Change in Account Holdings.

The increased System operations in the Government security market reflected both technical factors and a generally expansive monetary policy which required a larger increase in the banking system's stock of legal reserves.<sup>4/</sup> Part of the reason, for example, for the increase in gross operations was a net increase in the fluctuations in factors affecting reserves which required the System to take greater offsetting actions. Both float and public holdings of currency moved through wider swings in the late 1960's--due to the increased pace of transactions, the increased demand

<sup>4/</sup> This discussion is based on S. H. Axilrod and J. Krummack, "Federal Reserve Security Transactions," Federal Reserve Bulletin, July 1964, pp. 822-37.

for currency, and the revision in regulations permitting the use of vault cash to satisfy legal reserve requirements--and these fluctuations were only partially offset by the reduced variation of Treasury deposits at the Federal Reserve following adoption of a new procedure for making calls on tax and loan accounts. The increased net holdings of Treasury issues by the Federal Reserve, of course, reflected the System's policy objective of fostering expansion, but also was caused by the increased public holdings of currency and greater gold outflows--both of which were offset by the System. In addition, the sharper increase in bank credit that resulted from the movement of funds from nonbank institutions and the market to bank time deposits and the reduced use of changes in reserve requirements also increased the need to supply additional reserves to the banking system.

The System also made greater use of RP's and direct transactions with foreign accounts in the 1960-65 period, which were factors tending to reduce interest rate fluctuations. The increased use of RP's with dealers to supply temporary reserve needs, it is thought, reduces fluctuations in short-term interest rates by eliminating the downward rate pressure of out-right System purchases and the upward pressure of System sales.<sup>5/</sup> Transactions

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<sup>5/</sup> If it is assumed that dealers are content with their inventories at current prices, System purchases may cause dealers to bid for new inventories, and the subsequent sale may cause their inventories to rise above desired levels. With RP's the dealer knows his inventory used in the RP agreement will soon be available to satisfy customer demand. Increased use of RP's--by making favorable financing available to dealers--may also cause dealers to hold larger inventories at each level of prices. See Axilrod and Krummack, op. cit.

with foreign accounts may have less effect on market rates of interest than similar transactions with dealers.<sup>6/</sup> Generally, these transactions coincided with the needs of the System to supply or absorb reserves and eliminated the necessity of the System to, say, sell for foreign account and simultaneously buy for its own account. According to one study, "If the market sees both types of transactions, there is no certainty that the rate effects will cancel out, because of the likelihood that undue weight will be given to the System's own transactions."<sup>7/</sup>

Federal Reserve Operations: Maturity Structure. In addition to increases in both the gross activity and net absorption of Treasury issues by the System Open Market Account, Federal Reserve transactions in Government securities were also broadened to a wider range of maturities in the early 1960's. This action was necessitated by the need to supply reserves by open market purchases in order to foster economic expansion, while at the same time the System wished to avoid downward pressure on Treasury bill rates which might accelerate the movement of short-term interest sensitive funds abroad. In order to further these conflicting goals the Federal Open Market Committee abandoned "bills usually" and authorized the Manager of

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<sup>6/</sup> Average annual System purchases from foreign accounts were \$0.5 billion from 1954-60 and \$2.1 billion from 1961-65; sales to foreign accounts were \$0.8 billion and \$1.8 billion, respectively. Increased transactions were made possible, in part, because of larger foreign holdings of Treasury issue resultant from the cumulative impact of the U.S. deficit with the rest of the world. The relatively greater increases in purchases reflected the System's need to supply relatively more reserves. The greater purchases than sales, however, tended to shield the market from some downward pressure.

<sup>7/</sup> Axilrod and Krummack, op. cit., p. 827.

the System Open Market Account to operate in coupon issues, but still contemplating that the bulk of operations would continue to be in bills.

As indicated in Table 2, most transactions did continue to be carried out in bills, increasingly so each year of the 1960's as the need to avoid downward pressure on bill rates receded with the general upward movement in short-term yields. However, over the five years from 1961 through 1965, about 65 per cent of net purchases (purchases less sales) of the System took the form of bills as compared to 87 per cent from 1954 to 1960 (third panel of Table 2). About 35 per cent of net purchases in the 1960's were in coupon issues with maturities of one year or greater, with almost two-thirds of these in the 1 to 5 year maturity category (bottom panel of Table 2). These ratios should be compared with the 1950's when less than 1 per cent of net purchase represented coupon issues maturing in over one year.

System net acquisitions of coupon issues were relatively larger earlier in the 1960's--when the need to avoid downward pressure on short-term yields was greatest. Thus, in 1961 over three-fourths of System net purchases were in coupon issues with maturities of one year or more, and almost one-third of these matured in excess of 5 years. Net purchases of over 10 year maturities were never large. However, most of the reduction in net purchases of coupon issues as the 1960's progressed centered in the 1 to 5 year maturity range. As a result, purchases of issues maturing in excess of 5 years became a larger proportion of System coupon acquisitions; from 1963 to 1965 such purchases accounted for about one-half of all net coupon acquisitions by the System Account.

Table 2

MATURITY DISTRIBUTION OF FEDERAL RESERVE SYSTEM TRANSACTIONS  
(Per Cent)

Maturity of Issues	1954-60	1961-65	1961	1962	1963	1964	1965
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(Total Purchases)

TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Bills	93.0	79.6	63.6	69.3	82.8	90.2	90.6
Coupon issues maturing:							
Within 1 yr.	6.7	3.6	6.6	11.0	0.6	--	--
In 1 to 5	0.1	11.0	21.1	16.0	9.6	4.4	5.1
Over 5	0.2	5.7	8.7	3.7	7.0	5.3	4.3

(Total Sales)

TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Bills	97.3	91.9	74.1	92.4	97.7	100.0	100.0
Coupon issues maturing:							
Within 1 yr.	2.6	7.2	24.3	6.0	1.2	--	--
In 1 to 5	0.1	0.9	1.6	1.6	1.1	--	--
Over 5	--	--	--	--	--	--	--

(Net Purchases: Purchases less sales)

TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Bills	87.3	64.0	42.9	19.4	67.0	79.6	83.6
Coupon issues maturing:							
Within 1 yr.	12.1	-0.9	-28.7	22.0	*	0.1	--
In 1 to 5	*	23.9	59.9	47.0	18.6	9.3	8.8
Over 5	0.5	13.0	25.9	11.7	14.4	11.0	7.6

(Net Purchases of Coupon Issues Maturing in Over 1 Year)

TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
In 1 to 5	5.2	64.8	69.9	80.1	56.5	45.8	53.8
In 5 to 10	46.6	29.7	25.2	17.9	38.7	43.3	36.6
Over 10	48.3	5.6	4.9	2.0	4.8	10.9	9.7

NOTE: Includes purchases from and sales to dealers and foreign accounts direct.  
Details may not add to totals due to rounding.

\* - Less than 0.1.

It should be noted that coupon transactions were not used for day-to-day reserve adjustments purposes by the System, but rather as one vehicle for supplying reserves. As indicated in the first and second panel of Table 2, coupon issues maturing in more than one year, while they were a not insignificant share of gross purchases in the 1960's, were never of much consequence as a portion of gross sales. No securities maturing in over 5 years were sold by the Account, and 1 to 5 year issues were never as much as 2 per cent of sales.

Treasury Operations: Maturity Structure of New Issues. While the Federal Reserve was absorbing a greater quantity of Government securities, budget deficits increased the supply of marketable issues by over \$25 billion. In determining the maturity of issues to finance these deficits, the Treasury was guided by two conflicting goals. On the one hand, the Treasury desired to place upward pressure on short-term yields while reducing such pressures on long-term yields, a goal that the Federal Reserve System shared. On the other hand, in order to ease re-financing problems, the Treasury also wanted to extend the average maturity of the public debt.

To further the first objective, the Treasury financed about 80 per cent of its deficit by issues of bills (Table 3). The annual increase in bill issues during the 1961-65 period exceeded those of each post-Accord year except 1959--when outstanding bills increased sharply as the statutory 4-1/4 per cent rate ceiling on bonds forced the Treasury to finance its large deficit in the short-term market. Within each year of from 1961 to

Table 3

CHANGE IN OUTSTANDING MARKETABLE U.S. GOVERNMENT SECURITIES  
BY MATURITY

Maturity of Issue	Billions of Dollars						Per Cent	
	Yearly Change					Total 1961-65	1961-65	1954-60
	1961	1962	1963	1964	1965			
TOTAL	7.0	6.9	4.7	4.9	2.1	25.6	100.0	100.0
Bills	4.0	4.9	3.2	5.0	3.7	20.8	81.3	57.8
Coupon issues maturing:								
Within 1 year	6.6	-2.0	-1.1	-5.9	1.2	-1.2	-4.7	-56.1
In 1 to 5 years	-5.9	-4.8	-3.1	5.5	-3.4	-11.7	-45.7	124.7
In 5 to 10 years	1.1	14.2	1.7	0.7	-1.4	16.3	63.7	-4.7
In 10 to 20 years	-1.2	-7.5	3.9	-2.3	2.3	-4.8	-18.8	-49.1
In over 20 years	2.4	2.1	0.1	1.9	-0.3	6.2	24.2	27.3

1965, the timing of Treasury bill offerings for new cash was a factor that tended to modify tendencies for bill rates to decline. Moreover, the reduced market stock of bills resulting from larger Federal Reserve net purchases tended to cause the Treasury to continue to increase new bill offerings so as to continue to add to the bill supply available for public purchase.

The second debt management objective--extension of the average maturity of the debt--was obviously in conflict with the increased bill issues. To offset the effect of these larger bill sales, the Treasury sold over \$68 billion of new bonds from 1961 through 1965 (Table 4). Of these new issues, \$50 billion came out of the new advance refunding technique and about \$18.5 billion from other exchanges, cash refinancings and new cash issues. As can be seen from Table 3, these sales of bonds shifted 1 to 5 year coupon issues to the 5 to 10 year area, and shifted 10 to 20 year maturities to the over 20 year area. The shifting of maturities

Table 4

MATURITY OF BONDS ISSUED BY U.S. TREASURY  
1961-65

(Billions of Dollars)

YEAR	ADVANCE REFUNDINGS <sup>1/</sup>				OTHER <sup>3/</sup>				TOTAL			
	Maturity of			TOTAL	Maturity of			TOTAL	Maturity of			TOTAL
	5-10 yrs.	10-20 yrs.	20 yrs. and Over		5-10 yrs.	10-20 yrs.	20 yrs. and Over		5-10 yrs.	10-20 yrs.	20 yrs. and Over	
1961	6.0	1.2 <sup>2/</sup>	2.6 <sup>2/</sup>	9.8	1.1	0.5	--	1.6	7.1	1.7	2.6	11.4
1962	5.4	0.6	1.8 <sup>2/</sup>	7.8	7.8	--	0.4	8.2	13.2	0.6	2.2	16.0
1963	7.0	2.1	1.3	10.4	4.4	--	0.6	5.0	11.4	2.1	1.9	15.4
1964	10.4	--	1.9	12.3	--	1.5	--	1.5	10.4	1.5	1.9	13.8
1965	7.5	--	2.2	9.7	2.1	--	--	2.1	9.6	--	2.2	11.8
Total (1961-65)	36.3	3.9	9.8	50.0	15.4	2.0	1.0	18.4	51.7	5.9	10.8	68.4

<sup>1/</sup> Includes pre-refundings, junior, and senior advance refundings. Table does not include a \$0.3 billion junior advance refunding and a \$4.0 billion senior advance refunding, both of which occurred in 1960. All of the senior 1960 issue matured in over 20 years; all of the junior issues of 1960 matured in 5 to 10 years.

The \$50 billion of advance refunding issues shown here include only bonds. An additional \$9.6 billion of securities issued via advance refundings matured in less than 5 years. Of all of the \$67.8 billion of securities issued under advance refunds from June 1960 through January 1965 (the last issue), \$13.5 billion matured in less than five years.

<sup>2/</sup> Senior advance refundings.

<sup>3/</sup> Includes other exchanges, cash refinancings, and new cash issues.

outward in this fashion did serve to increase the average maturity of the debt despite the only \$5 billion net increase in new coupon issues, the passage of time, and the greater net new bill issues.

Most of the Treasury success in shifting maturities outward reflected the advance refunding technique, first used in 1960. Under this procedure, the Treasury offers holders of certain outstanding issues that will not mature for some time the option of exchanging their holdings for new securities of longer maturity. Advance refundings do not influence the cash position of the Treasury in the event of low exchange ratio--since the old issue is not yet due--and gives the Treasury complete freedom of timing.

However, the major virtue suggested for the technique is its influence on longer-term yields. Since specific investor groups prefer various maturities of Treasury securities, those that desire longer-term issues tend to sell them as they pass closer to maturity, and the holders of short-term issues do not desire to exchange their holdings for long-term issues. Thus, the reasoning suggests, if exchanges can be offered before outstanding obligations are shifted to short-term investors, holders should be more willing to exchange their securities for longer-term issues. Indeed, there is evidence that advance refundings of longer-term issues ("senior" advance refundings) are in fact carried out with small market churning, and probably with less effect on market yields; those carried out when the issue which can be exchanged have shorter maturities("junior

advance refundings and "pre-refundings") have been characterized by relatively greater market activity and probably more additional upward yield pressure.<sup>8/</sup>

For two reasons, however, senior advance refundings were only carried out three times in this period, the last time in early 1962. First, those three exchanges essentially cleaned out the public holdings of issues which would be used in senior advance refundings--i.e., public holdings of over 5 year bonds held by groups which might be interested in exchanging their issues for longer bonds before they passed into the shorter-term category. Second, the core of the Treasury's refunding problem has been the large amount of 1 to 5 year maturities, so that pre-refundings and junior advance refundings have been carried out much more frequently.

All exchanges through advance refunding have added almost \$10.0 billion to the 20 year maturity area, and almost \$4.0 billion to the 10 to 20 year maturity area from the end of 1960 to the end of 1965. After about mid-1965, the statutory 4-1/4 per cent rate ceiling on bonds eliminated the ability of the Treasury to sell longer-term issues.

Treasury Operations: Investment Accounts. In addition to carrying out its goals by the maturity structure of new issues, the Treasury also increased the aggressiveness with which it used its investment powers--in administering the portfolios of some Federal agencies and trust funds--to affect the market for its own securities. These investment

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<sup>8/</sup> See Thomas R. Beard, U.S. Treasury Advance Refunding, June 1960-July 1964. (Washington: Board of Governors of the Federal Reserve System, 1965), espec. Ch. 3.

accounts must allocate their funds to Government issues--either special issues or marketable debt. In the 1960's, trust account purchase of marketable issues were apparently used in part to enhance the market for Treasury debt through the subscription period of a refunding, to assist the market's digestion of new issues, and at other times to contribute to the smooth functioning of the market.

In the first half of the 1960's the Treasury investment accounts acquired \$5.3 billion of marketable issues or about one-fifth of the net new issues, as compared to less than 15 per cent of new issues from 1954 to 1960. While the amount and share of Treasury purchases did not rise as dramatically as was the case for the Federal Reserve System, as can be seen in Table 5 the maturity composition of Treasury acquisitions changed considerably. Over the first half of the 1960's the Treasury investment accounts reduced their holding of less than 1 year issues--contributing to upward movements in short-term yields--and sharply increased their acquisitions of long bonds. Almost 90 per cent of their net purchases were in bonds maturing in over 5 years--as compared to somewhat over 20 per cent in the 1950's--and over 40 per cent of their net acquisition matured in over 20 years--as compared to about 24 per cent in the 1950's. Not only were most of their purchases concentrated in the long bond area, but these purchases were a large share of new issues--27 per cent of all new bonds maturing in over 5 years and 41 per cent of all bonds maturing in over 20 years.

Table 5  
 Change in Holdings of Marketable U.S. Government Securities  
 of Treasury Official Accounts  
 By Maturity

Maturity of Issue	Billions of Dollars					Per Cent		
	Yearly Change					Total 1961-65	1961-65	1954-60
	1961	1962	1963	1964	1965			
TOTAL	0.5	1.0	2.3	0.2	1.3	5.3	100.0	100.0
Bills	--	0.3	0.5	-0.1	-0.3	0.4	7.5	10.9
Coupon issues maturing:								
Within 1 year	-0.2	--	-0.2	-0.1	--	-0.5	-9.4	17.4
In 1 to 5 years	-0.5	-0.5	0.5	0.5	0.8	0.8	15.1	47.8
In 5 to 10 years	--	1.1	0.3	0.1	0.3	1.8	34.0	26.1
In 10 to 20 years	0.4	-0.5	0.8	-0.5	0.4	0.6	11.3	-26.1
In over 20 years	0.8	0.6	0.3	0.4	0.1	2.2	41.5	23.9
Acquisitions as a share of net new issues (per cent)	7.1	14.5	48.9	4.1	61.9	X	20.7	13.4

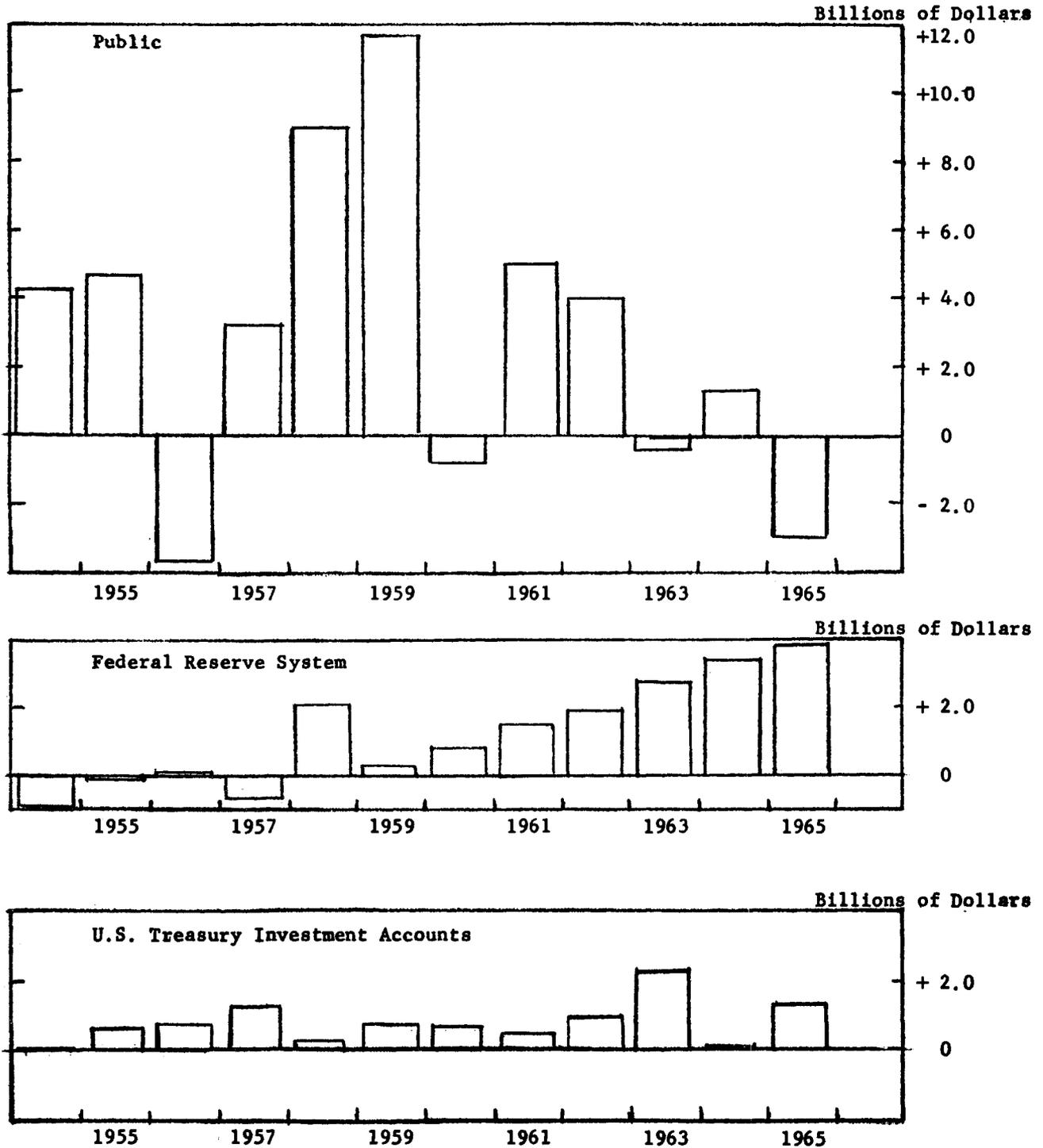
These aggregate statistics clearly indicate the importance of the Treasury's investment operations in the 1960's as a factor influencing the long-term market. In the next section a more disaggregated analysis of Treasury open market operations will be presented within the context of all official operations in the 1960's.

Public Policy: Effects.

Fiscal and monetary policies contributed importantly to the economic expansion of the first half of the 1960's. In addition, debt management and Treasury and Federal Reserve open market operations succeed in furthering the secondary objectives of increasing short-term rates, as well as extending the maturity of the public debt, without bringing undue upward pressure on long-term rates.

Despite the slightly larger average annual increase in total marketable debt in the 1960's, the public actually absorbed considerably less of the marketable debt, on average each year, from 1961 through 1965 than from 1954 through 1960. As indicated in Table 6, official account purchases absorbed almost three-fourths of total new issues in the 1961-65 period--over four times the share of official account absorption in the 1950's--so that the public, on average, acquired only one-third the dollar magnitude of marketable Treasury issues. As indicated in Chart 12, after 1962, public acquisition of marketable debt were either very small or actually negative. With public acquisitions of marketable issues so reduced, interest rate pressures emanating from financing requirements of the Federal deficit were minimal.

Chart 12 - Annual Change in Ownership of Direct Marketable Federal Debt  
1954-65



Source: U.S. Treasury

Table 6  
 Changes in Outstanding U.S. Government Marketable Securities  
 By Ownership

Ownership	Average Annual Change (Billions of dollars)		Per Cent	
	1954-60	1961-65	1961-65	1954-60
TOTAL	4.9	5.1	100.0	100.0
Change in official Account Holdings				
Federal Reserve	0.2	2.7	52.3	4.4
Treasury	<u>0.7</u>	<u>1.1</u>	<u>20.7</u>	<u>13.4</u>
Total	<u>0.9</u>	<u>3.8</u>	<u>73.0</u>	<u>17.8</u>
Change in holdings of public	4.0	1.3	27.0	82.3

NOTE: Percentages based on actual change, not average annual change.

However, as indicated in Table 7, the much greater increase of short-term securities led to a much larger increase in the public holdings of Treasury issues maturing in less than one year (bills and coupon issues). Public holdings of these securities rose by over \$10 billion in this period and contributed to upward rate pressure in the short-term markets. On the other hand, public holdings of issues maturing in more than one year declined by over \$3 billion, and their holding of bonds due in more than 10 years declined by almost \$2 billion, tending to reduce pressure on long-term rates. But, due mainly of the advance refunding technique, total outstandings were shifted outward from the 1 to 5 year to the 5 to 10 year, and from the 10 to 20 year to the over 20 year maturity categories. As a result,

Table 7  
 Changes in Outstanding U.S. Government Marketable Securities  
 By Ownership and Maturity  
 1961-65  
 (Billions of Dollars)

Maturity of Issue	Change in Total Outstandings	Change in Official Account Holdings			Change in Public Holdings
		Federal Reserve	Treasury	Total	
<b>Total</b>	25.6	13.4	5.3	18.7	6.9
<b>Bills</b>	20.8	6.1	0.4	6.5	14.3
<b>Coupon Issues Maturing:</b>					
<b>Within 1 year</b>	-1.2	3.5	-0.5	3.0	-4.2
<b>In 1-5 years</b>	-11.7	3.4	0.8	4.2	-15.9
<b>In 5-10 years</b>	16.3	0.2	1.8	2.0	14.3
<b>In 10-20 years</b>	-4.8	-0.1	0.6	0.5	-5.2
<b>In over 20 years</b>	6.2	0.2	2.2	2.4	3.7

**NOTE:** Detail will not necessarily add due to rounding. Note that data in Table 6 were average annual changes while these data are total changes.

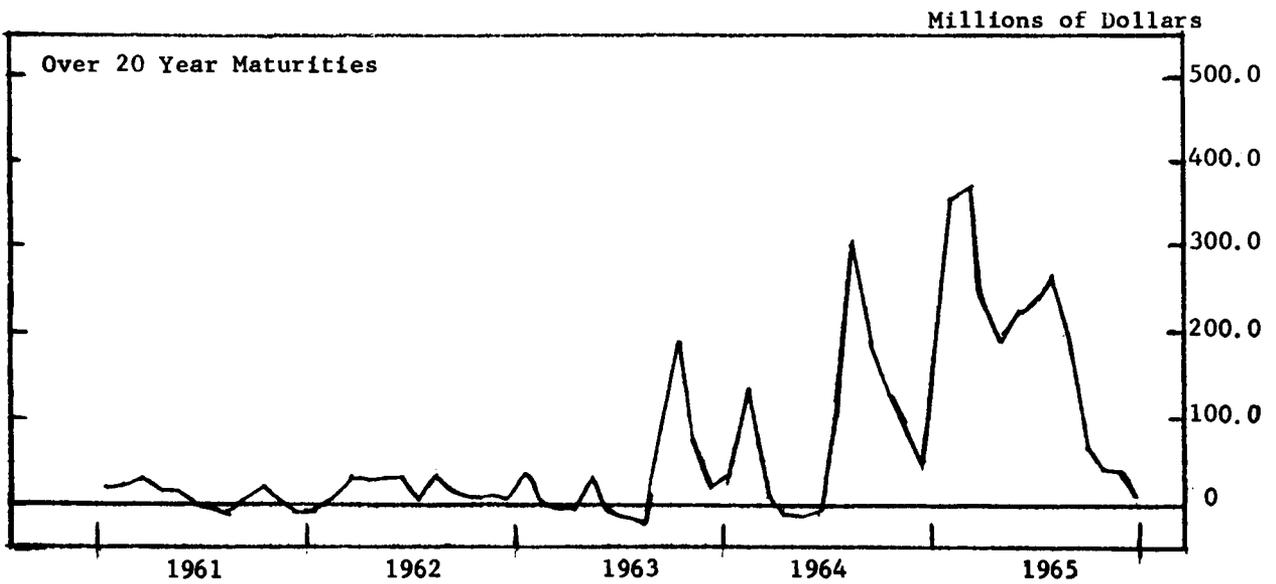
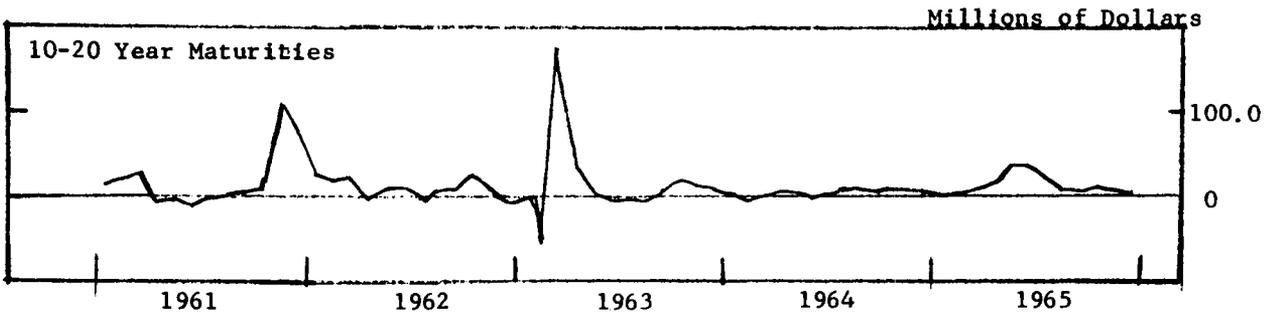
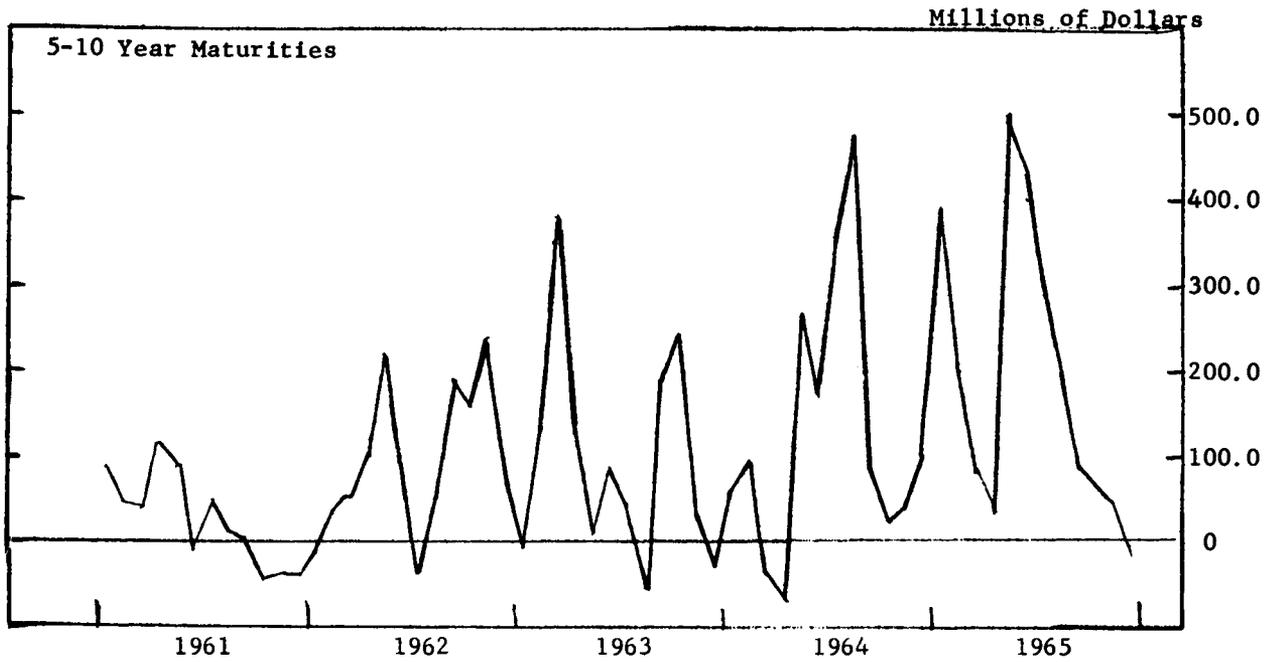
even though the total public holdings of longer-term issues declined, the average maturity of the debt was extended. And both official account purchases of long-term bonds and the advance refunding technique itself, as described earlier, tended to limit the rate impact of the shifting outward in the maturity structure in the public's holdings of bonds.

The rate impact of Treasury finance, however, was not simply due to the gross movements described above--despite their importance. For example, the higher level of Federal Reserve transactions in Treasury issues, was not solely a passive reaction to greater swings in the factors affecting reserves. Given balance of payments considerations--as well as new debt management techniques--the higher level of transactions and the greater use of RP's and direct transactions with foreign accounts were also directed toward stabilizing rate movements, insofar as possible without conflicting with other Federal Reserve objectives. Short-term rate stabilization was also generally enhanced by Treasury new issues of additional bills when required to offset downward rate movements.

Success in longer-term rate stabilization by open market activities of the Federal Reserve and Treasury was not merely due to their gross absorption of a not insignificant amount of coupon issues, but was related to the timing and psychological consequences of actions. Two or three examples are worth mentioning.

In 1963 the Treasury engaged in two advance refundings--in March and September. As indicated in Chart 13, the March issue was associated with very sharp increases in dealer inventories of 5 to 10 and 10 to 20

Chart 13 - Dealer Inventories in U.S. Government Bonds By Maturity - 1961-65  
(Monthly averages of Daily Figures)



Source: Federal Reserve Board

year bonds--much larger increases than had occurred in similar financings in 1961-62. To restrain the potential upward rate movements, Treasury purchases were stepped up. In September, when dealer holdings of 20 year bonds rose sharply (Chart 13) Treasury activity was even more pronounced. In September and October, the Treasury purchased \$350 million of over 20 year bonds, \$100 million to 10 to 20 year bonds and \$150 million of 5 to 10 year bonds, assisting the dealers in sharply reducing their inventory holdings and avoiding a possibly sharp increase in long-term rates.

The year 1965 offers another example. In January, an advance refunding had increased the dealer's inventory of 5 to 10 year and over 20 year securities quite sharply (Chart 13). Very little official account purchasing in the 5 to 10 year area was made, despite which dealer inventories moved down quickly. One large Treasury purchase (\$325 million) of over 20 year bonds helped reduce dealer positions in the area. Then in May a refinancing led to a very sharp increase in dealer holdings of 5 to 10 year bonds and dealers also began to absorb market sales of over 20 year bonds so that dealer holdings of coupon issues became quite large over the spring and summer at the same time that market rates began to rise from increasing private issues and from expectations associated with the escalation in Viet Nam. In May and June, the Federal Reserve purchased \$200 million of 5 to 10 year issues and about \$50 million of longer bonds which helped dealer positions somewhat, but with inventories still quite large in the long bond

area the Treasury came into the market in August and September. In those two months the Treasury acquired \$230 million of over 20 years bonds and \$150 million of other 5 to 20 year bonds in order to absorb the market overhang. It was exactly this kind of activity--timed hopefully to avoid sharp rate movements--that made official account activities so important in the 1960's, and--given the over-all calm economic and financial environment--furthered market expectations that interest rates would remain relatively stable.

Official account activities of this intermittent sort, however, can only offset temporary or short-run market pressures and cannot contribute to rate stability over the long run if basic economic forces are moving strongly in an inflationary direction. The activities of the 1960's were not designed to continuously counter market supply and demand, but only to smooth the pressures. Indeed, the Treasury activities of the late summer of 1965 were undertaken in the realization that while it was desirable to take some overhang of securities off the market, this would best be accomplished at a declining scale of prices in view of the fundamental forces making for higher interest rates. The relatively sharp further price declines subsequent to official operations was a harbinger of the strong credit demand pressures to come later in 1965 and 1966, and signified the impossibility of both maintaining relatively stable interest rates and taking measures to counteract an overly expansive domestic economy.

#### IV. Changing Environment of Private Financial Markets

Shifts in official operations and debt management techniques were not the only changes in the financial environment that affected the Government securities markets in the 1960's. Financial markets in general were sharply influenced by the growing sophistication of the banking system--especially the more aggressive use of Federal Funds and time deposits, the latter being fostered by more permissive regulation of rate ceilings by the Federal Reserve. The increased use of these sources of funds affected the portfolio policies of banks and the financing behavior of other borrowers and lenders.

Another major change in the financial environment of the 1960's was the much greater international mobility of funds, related in large part to the return to convertibility by the major European countries in the late 1950's. The return to convertibility, coupled with the wide and persistent U.S. balance of payments deficit, not only contributed to a larger gold outflow from this country, but also increased the mobility of international capital and hence the impact of credit market conditions abroad on U.S. markets, and vice versa. These developments, of course, were the reason that public policies brought upward pressure on short-term U.S. rates, but they also--along with the greater issue of attractive bank time deposits--specifically affected foreign demand for Treasury issues. This matter is discussed in considerably more detail in the appendix to this paper.

Federal Funds and Time Deposit Growth

Federal Funds Markets. The increased use of Federal funds in the 1960's was a continuation of trend of the previous decade. However, over the first six years of the present decade the gross volume of transaction rose quite sharply; Table 8 gives a rough measure of the increasing volume of purchases and sales by 46 major banks. Not only did the volume rise in the 1960's, but a greater number of banks began to take part in the market; smaller banks, in particular, entered the market for the first time--usually as sellers. Contributing to wider and deeper participation in the Federal funds market were rising levels of yields, greater sophistication in portfolio management, and--as a result--the development of regional markets for the purchase and sale of Federal funds.

Table 8

Gross Volume of Federal Funds Transactions  
46 Major Banks  
1960-65  
(Billions of Dollars)

Year	Volume <u>1/</u>
1960	98.3
1961	101.2
1962	127.6
1963	151.0
1964	160.2
1965	180.1

1/ Sum of weekly average of daily figures of gross purchases and gross sales.

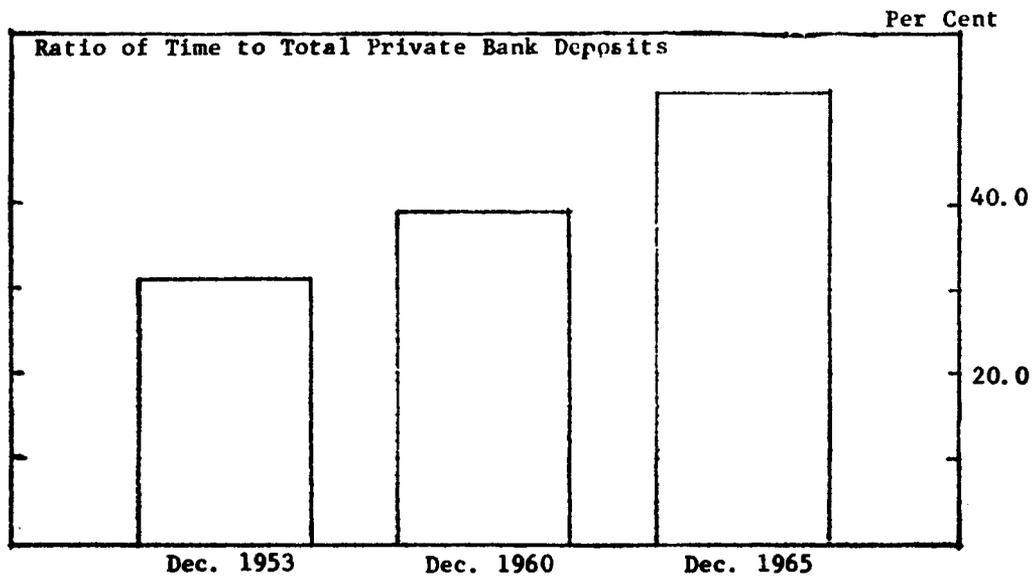
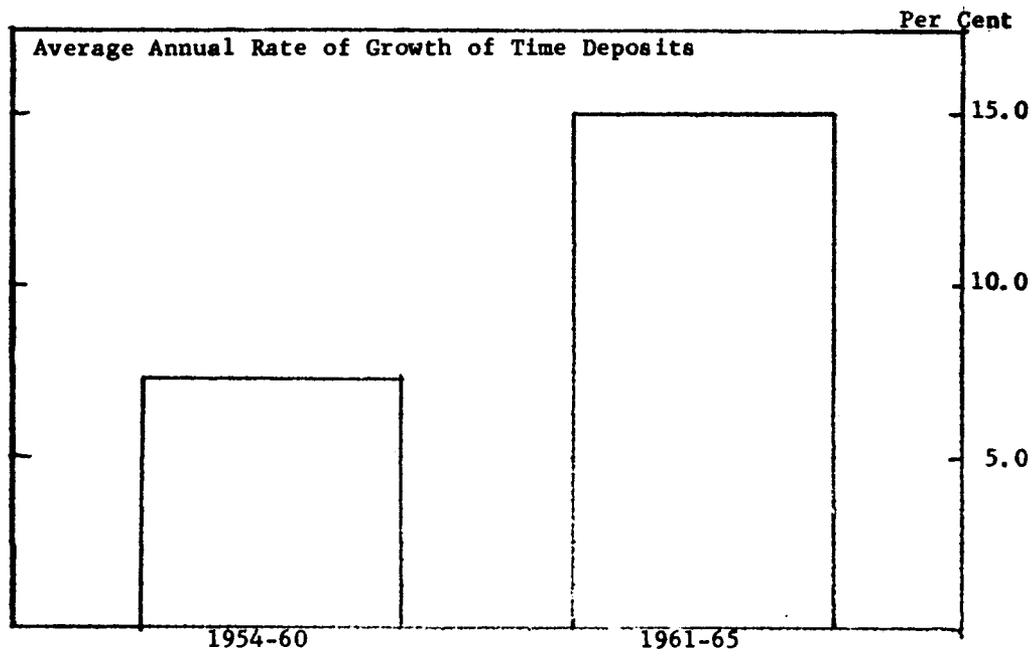
Some of the implications of these developments for financial markets will be jointly considered below with the discussion of the effect of increased time deposits inflows.

Time Deposits. Probably the most dramatic shift in private financial markets in the 1960's was the sharply increased inflow of time and savings deposits to commercial banks. As indicated in Chart 14, the average annual rate of time deposit inflows banks accelerated from the 6.5 per cent annual rate of 1954-60 to over 15 per cent in the 1961-65 period. This chart also indicates that, as a result, time deposits, which were less than third of total private bank deposits in 1954, became the dominant private deposit liability of banks by the end of 1965.

Several factors accounted for this dramatic shift in bank liabilities. The most basic of these was to the desire of banks to regain this competitive position relative not only to nonbank claims but also to financial assets traded in the market. Corporations in the 1950's had increasingly sought to hold more of their liquid assets in earning form, such as Treasury bills, reducing their relative holdings of demand balances. Consumers had also shifted an increasingly larger share of their financial asset holdings to claims on nonbank institutions, the yield on which exceeded the return on bank time and savings deposits by a wide margin. By offering more attractive time deposits, banks hoped to regain some of the funds that both groups had shifted to competing financial assets.

Banks were better able to engage in this competition because the Federal Reserve System increased Regulation Q ceilings--which establish the maximum rate that member banks may pay on time and savings deposits--

-44-  
Chart 14 - Commercial Bank Deposits  
1953-65



Source: Federal Reserve Board

four times in the 1961-65 period, after the one previous increase since the 1930's in 1957. The increase of 1957 and 1962 were mainly motivated by equity reasons, since banks had been placed at a competitive disadvantage by relatively low rate ceilings. Increasingly after 1962, however, changes in the ceiling rate were largely carried out so that banks could remain competitive. Prior to the 1960's, time and savings deposit inflows had decelerated rapidly in expansion periods when banks were unable to continue to offer rates competitive with rates available in the market and at other institutions.<sup>9/</sup> In the 1960's, increases in Regulation Q ceilings permitted banks to continue to attract such deposits.

Another reason for the sharp increase in time deposit growth was that banks throughout the country aggressively used--often, were competitively, forced to use--their new rate freedom to design and offer attractively priced deposit forms appealing to certain investor groups, such as the small denomination certificate of deposit (CD). An even more important innovations--which took place in early 1961--was the decision of major New York City banks to offer large-denomination negotiable CD's to all investor groups; earlier these banks had refused to accept time deposits from corporate customers. Negotiability was assured by previous agreements with Government security dealers to make a market in the paper. With New York banks in these markets, outstanding negotiable CD's increased from four hundred

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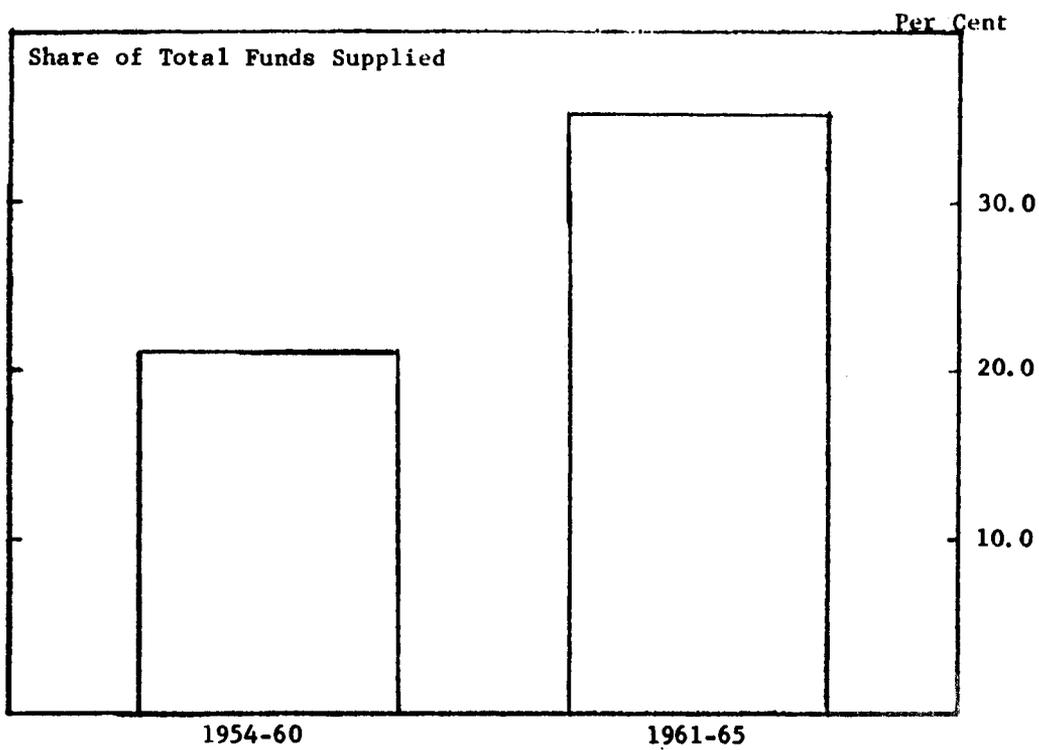
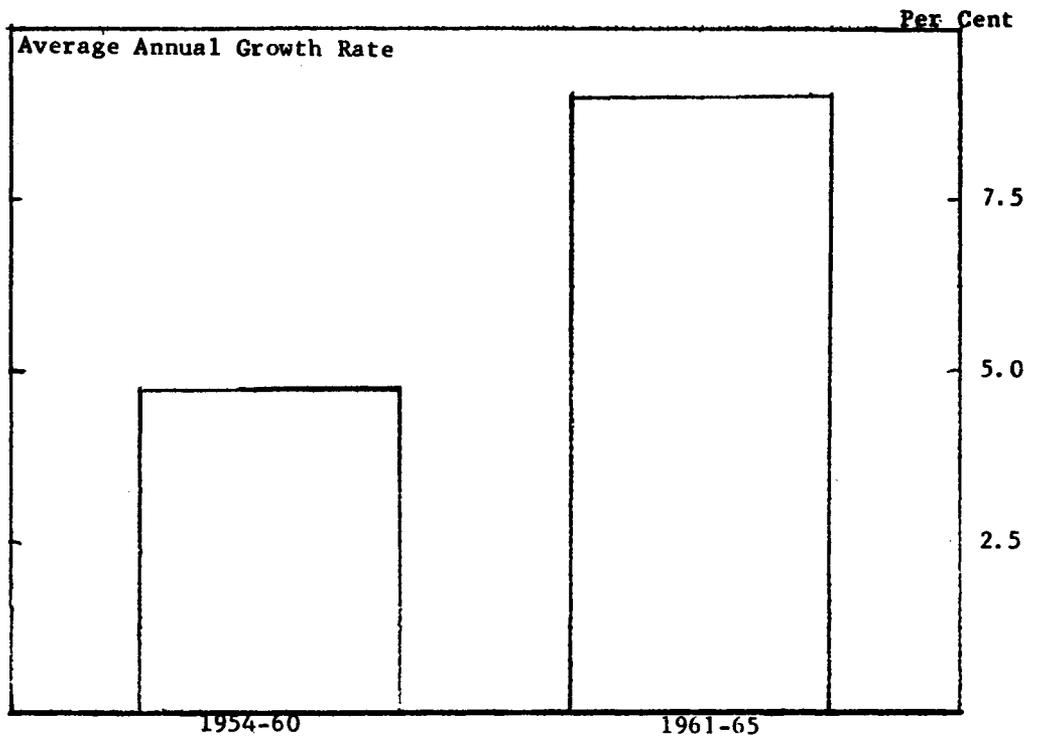
<sup>9/</sup> See Lyle E. Gramley and Samuel B. Chase, Jr., "Time Deposits in Monetary Analysis," Federal Reserve Bulletin, October 1965, pp. 1391-94.

million dollars in early 1961 to over \$16 billion in 1965. By then, negotiable CD's were the second single largest money market instrument, exceeded in aggregate size only by Treasury bills.

With banks increasing their deposit inflows, their rate of increase in credit extended sharply. As indicated in Chart 15, the average annual growth rate of bank credit was about 9 per cent from 1961 to 1965, about twice as rapid as from 1954 to 1960. In addition, banks increased their share of total credit flows from 21 per cent in the former period to 35 per cent in the 1960's.

Growth in bank deposits in large part represented a diversion of funds by the public from other financial assets--money, deposits at nonbank institutions, and securities. The exact degree of substitution is unknown, but as indicated in Chart 16, the public's increase in time deposit holdings apparently came at the expense of nonbank claims and, mainly securities. Public purchases of Treasury issues declined only modestly as a share of total financial asset acquisitions. However, as will be discussed below, corporate businesses sharply reduced their purchases of Treasury issues as they acquired more time deposits. With public purchase of time deposits sharply increased, banks acquired some of the financial assets that would have otherwise been purchased by nonbank institutions and the public. In particular banks acquired an enlarged share of the municipal bond and mortgage markets (Chart 17).

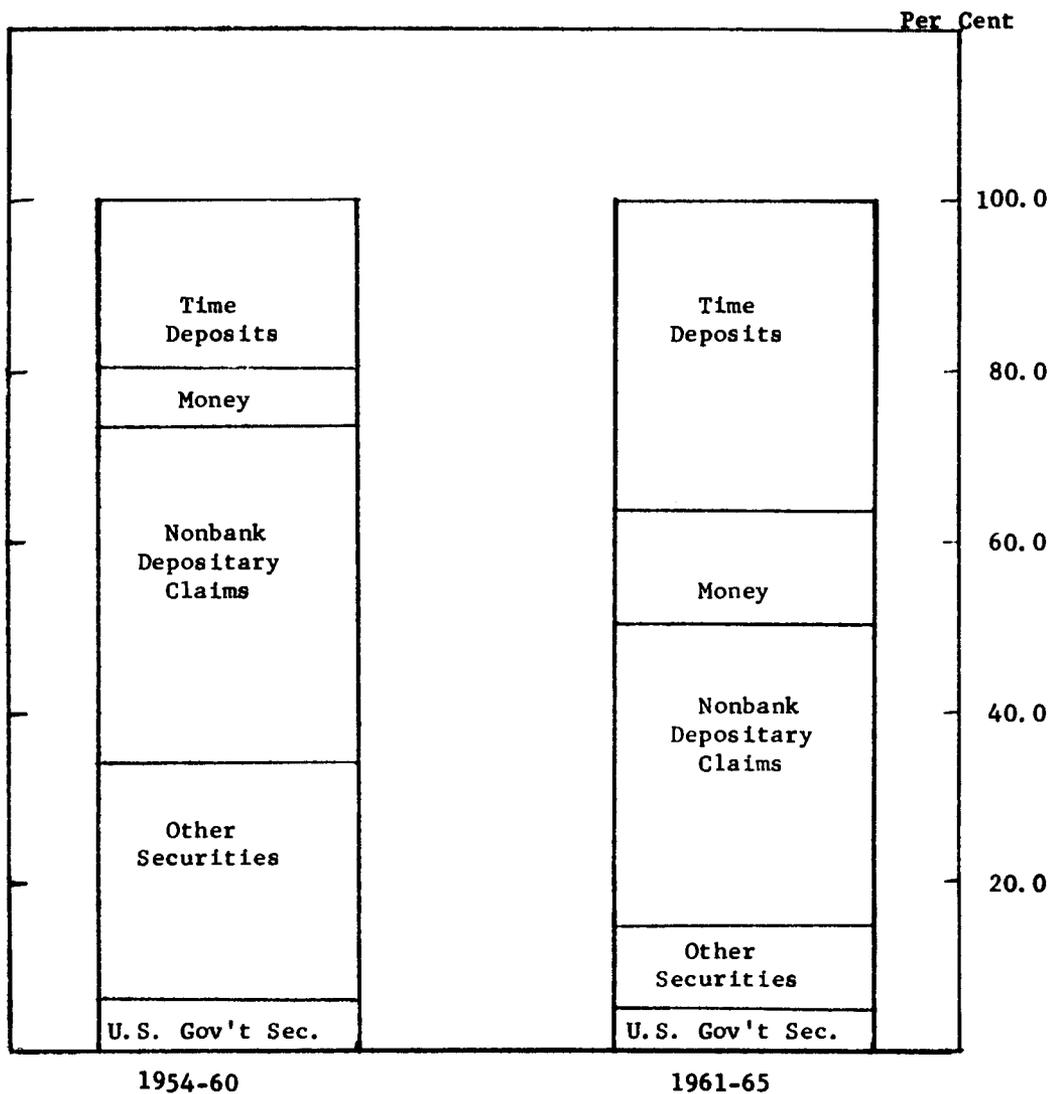
-47-  
Chart 15 - Commercial Bank Credit  
1954-60 and 1961-65



Source: Federal Reserve Board and Flow-of-Funds

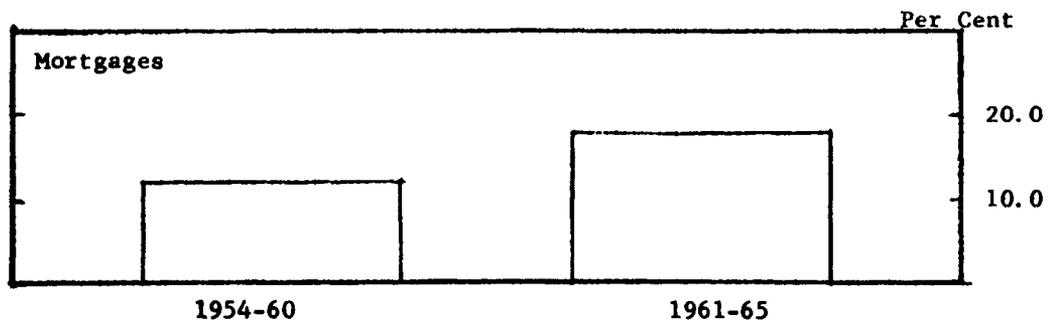
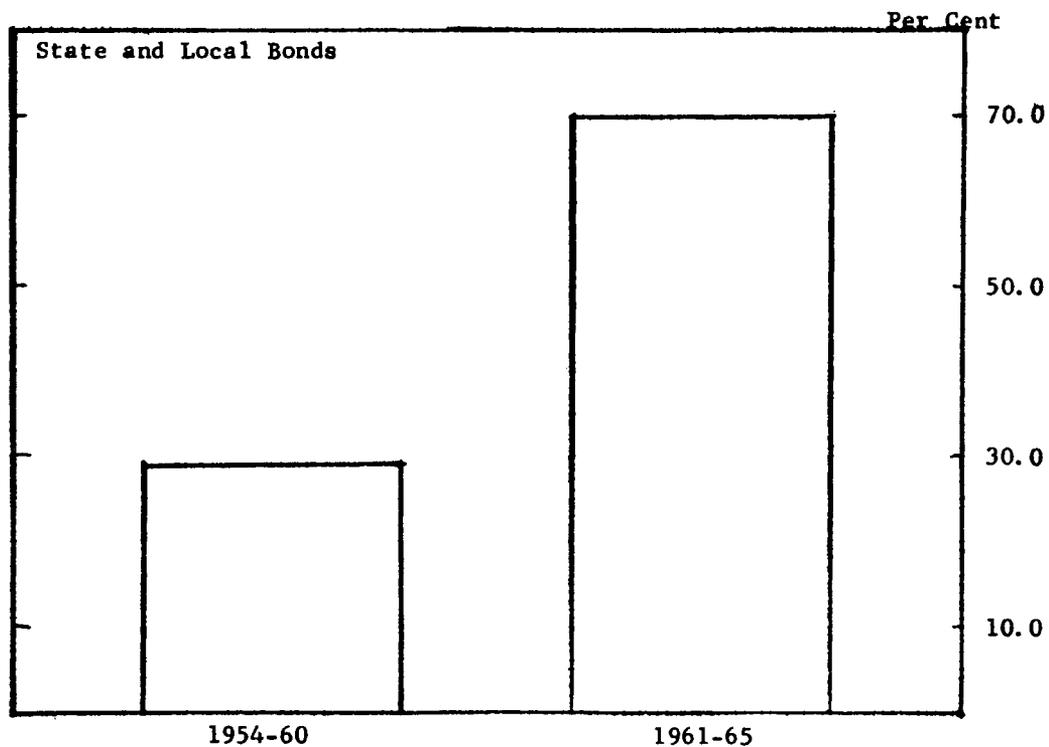
-48-

**Chart 16 - Financial Asset Acquisitions of Private Domestic Nonfinancial Public  
1954-60 and 1961-65**



Source: Flow of Funds

Chart 17 - Commercial Bank Share of Selected Credit Markets  
1954-60 and 1961-65



Source: Flow of Funds

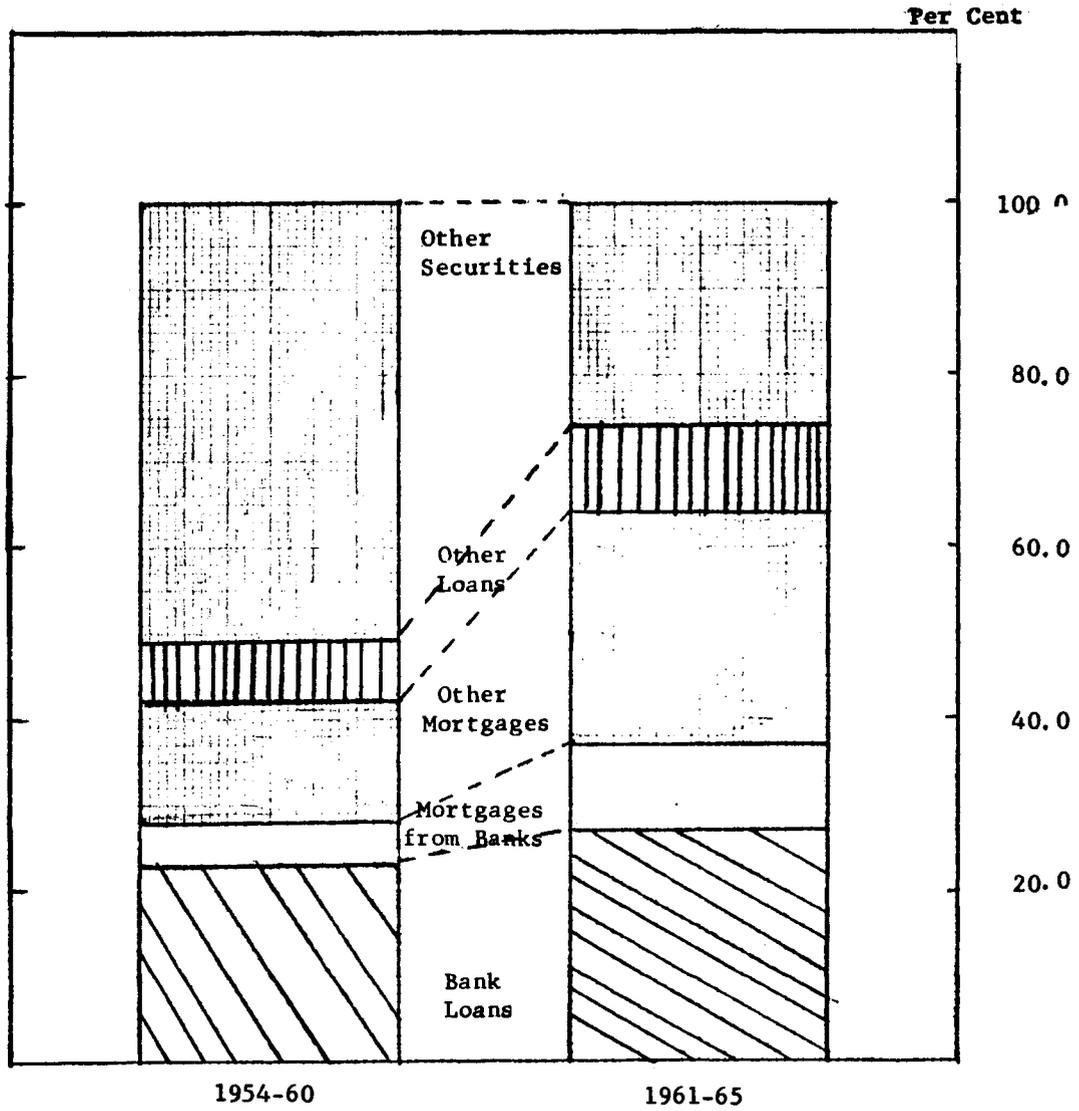
Increased time deposit flows also had an effect on business borrowing patterns. Not only did bank loans account for a greater share of the funds raised by businesses in the 1961-65 period (Chart 18), but with an abundant supply of mortgage credit at low cost, mortgages also increased sharply as a proportion of business credit. A larger share of these mortgage loans were supplied by banks. With both loans and mortgages available on easy terms, firms relied considerably less on security issues.

#### Banking Innovations and Financial Markets

The increased use of Federal funds and time deposits by commercial banks were symptomatic of a more aggressive banking system. In turn, these developments influenced private financial markets, with implications for the demand for Treasury issues and the behavior of the Government securities market.

Interest rate structures. From 1961 until mid-1965, short-term rates generally rose, while long-term rates generally were unusually stable. As indicated earlier, this was one of the goals--and results--of public policy fostered by monetary and debt management policies. Greater time deposit inflows of commercial banks, however, also contributed to this so-called "Operation Twist," and many observers suggested that Regulation Q changes--which permitted banks to increase their time deposits--were more important to this development than open market operations and debt management.

Chart 18 - Composition of Borrowing by Nonfinancial Businesses  
1954-60 and 1961-65



Source: Flow of Funds

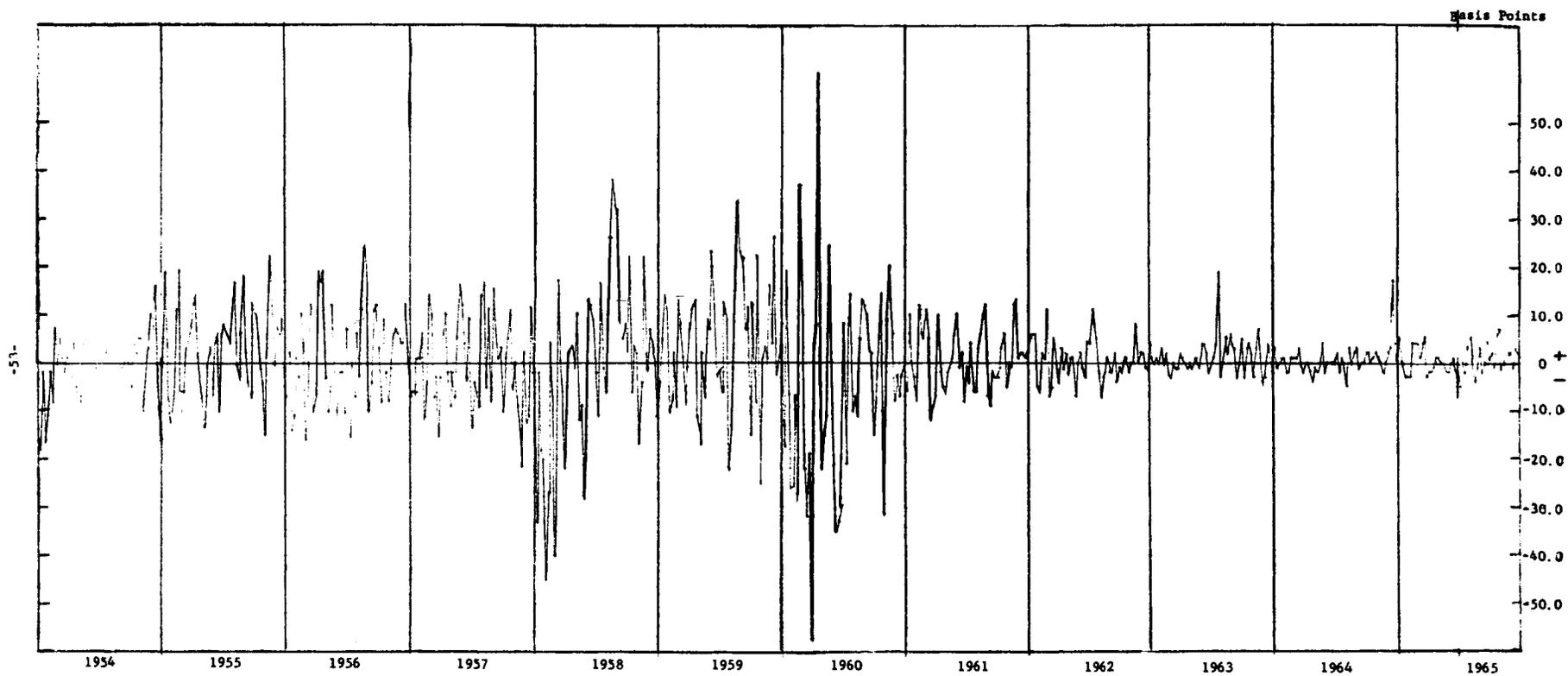
Commercial banks, by increasing the supply of short-term financial assets--particularly negotiable CD's--added upward pressure to short-term yields. At the same time, with less than proportional growth in business loan demand until late 1964, with short-term yields below long-term yields, and with increased pressure on banks to offset the higher costs of deposits, banks stepped up their purchases of long-term assets--particularly real estate loans, State and local bonds, and term loans to businesses. Moreover, with a greater share of credit demand--especially of businesses and State and local governments--met at banks, the supply of long-term market securities issued to the public was reduced. As a result of these developments, upward pressure on long-term yields; especially yields on State and local issues and corporate bonds, were lessened considerably relative to previous postwar expansions.

Interest rate stability. The increased use of Federal funds and time deposits by banks was also an important factor--along with the stability of the economy and public policies--tending to increase the stability of market yields--particularly in the short-term markets where week-to-week fluctuations in yields during the 1960's were considerably less than during the 1950's (Chart 19). During the 1960's, not only were a greater number of banks active in both these markets, but, in addition, the public increased its demand for money market instruments, accelerating the trend of the late 1950's. With the increased number of participants and the greater supply and variety of money market instruments, the ability of both buyers and issuers to arbitrage between markets increased sharply. <sup>10/</sup>

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<sup>10/</sup> See Robert W. Stone, "The Changing Structure of the Money Market," Federal Reserve Bank of New York Monthly Review, February 1965, pp. 32-38.

Chart 19 - Week-to-Week Fluctuation in 3-Month Treasury Bill Rate Market Yield  
1954-65



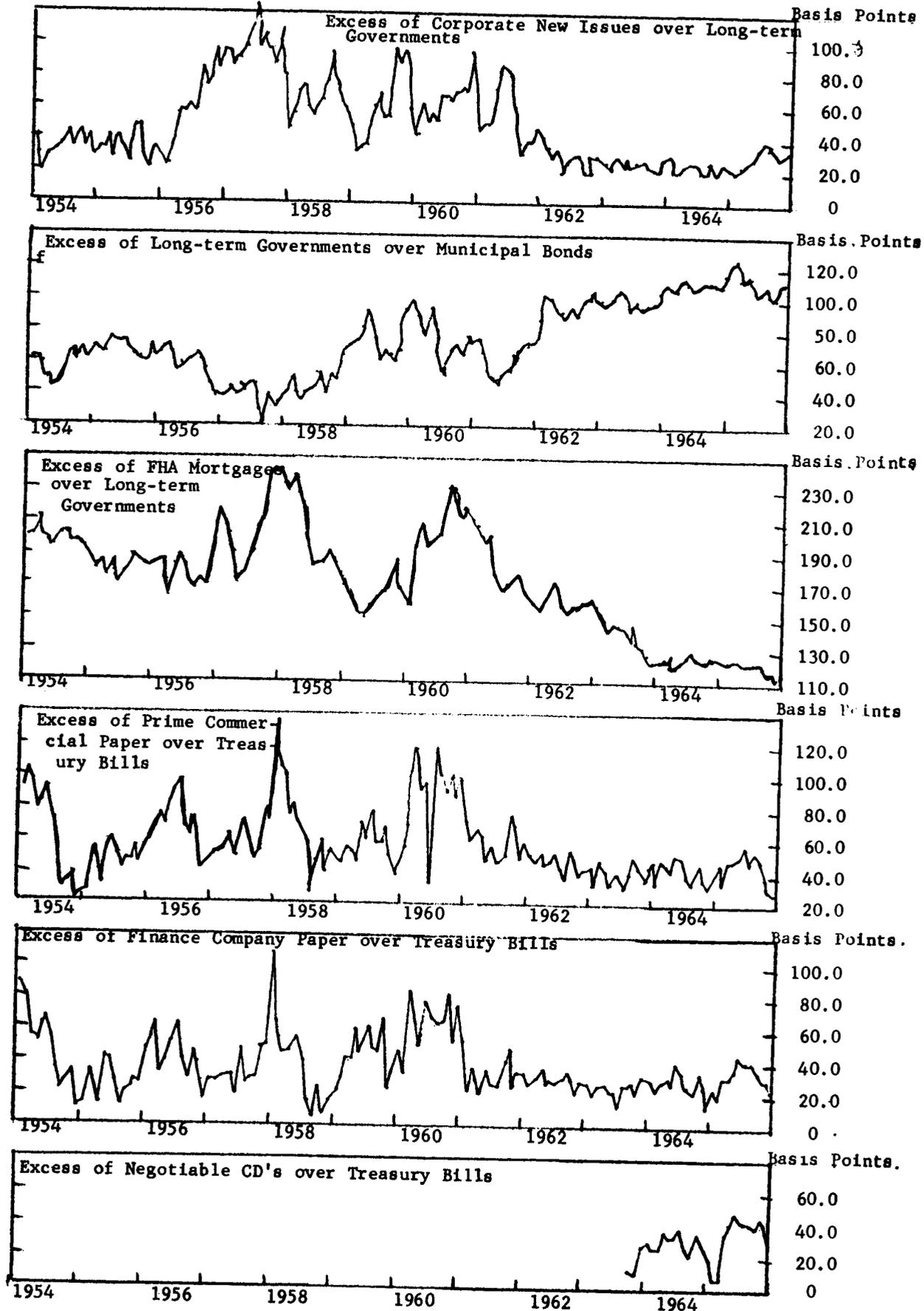
Source: Federal Reserve Board

Such arbitraging between an increased number of instruments which are substitutes--in an environment where interest rate expectation were stable--contributed importantly to reduced fluctuations in market yields. Moreover, the new ability of banks to increase and decrease their time deposits--especially CD's--with small shadings in rates, has significantly increased the flexibility with which the aggregate stock of money market instruments can expand and contract.

In addition to reduced fluctuation of short-term market yields, developments in private financial markets growing out of bank portfolio policies--as well as public policies and the stable growth of the 1960's--tended to reduce to reduce fluctuations in, and to compress the spreads between, yields on both short- and long-term market instruments (Chart 20). In particular, the broadening of the range of assets acquired by commercial banks and the heightened sensitivity of all investors to rate relationships tended to draw yields closer together. The only exception to this development was in the municipal bond market. The very large purchases of such securities by banks tended to reduce tax-exempt yields considerably below other market yields. Thus, the spread between Treasury issues and municipal bonds tended to widen in the 1960's.

Dealer loan rates. With banks more sensitive to alternative yields, with their greater participation in the Federal funds market, and with their active bidding for negotiable CD's, dealer loan rates at banks during the 1960's also tended to move more 'closely with other yields. In turn, this closer matching by banks of opportunity costs tended to increase the sensivity of dealer positions to market yields.

-55-  
 Chart 20 - Yield Spreads Between Various Financial Assets  
 1954-65

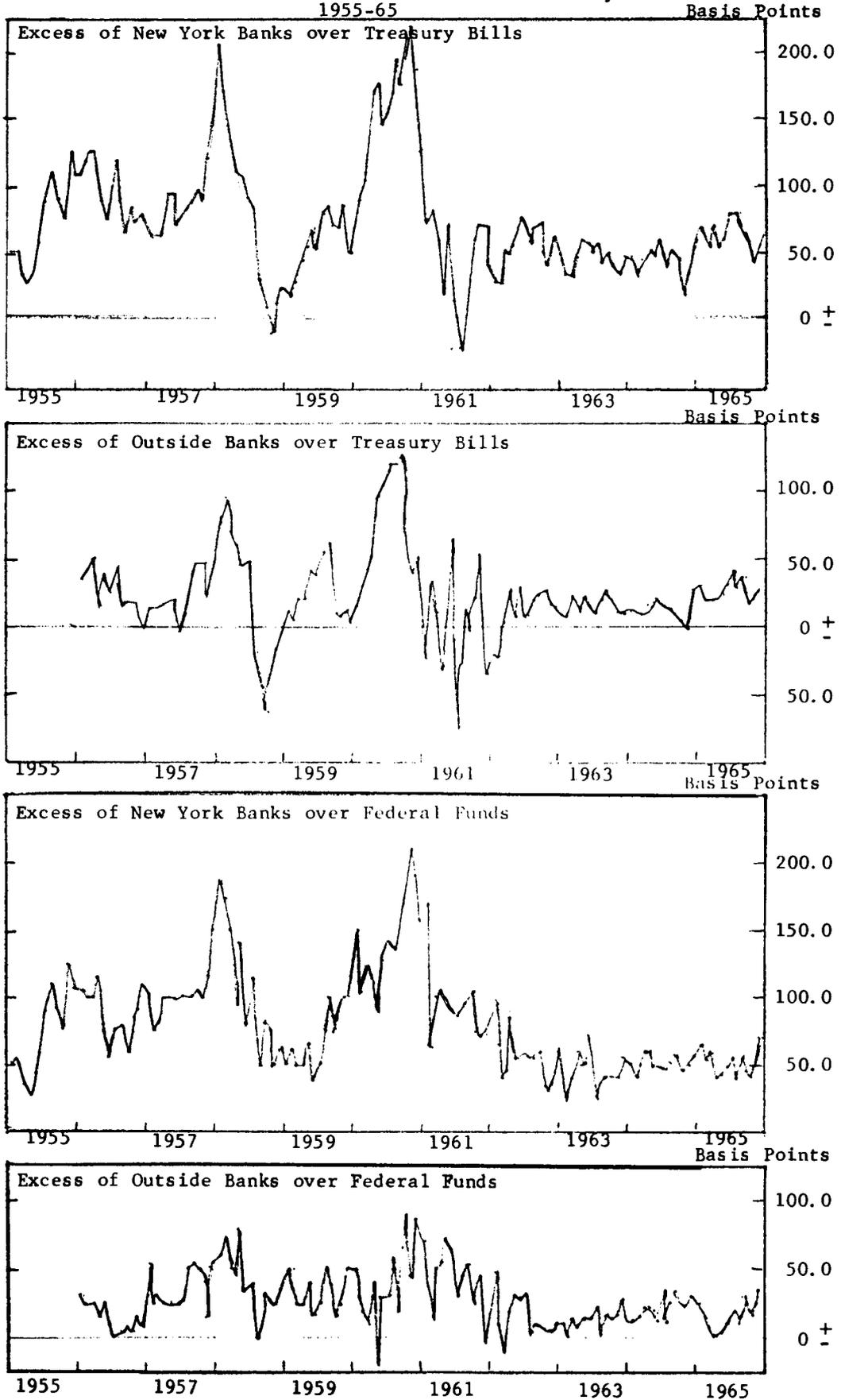


Source: Federal Reserve Board

As a result, dealer loan rates at both New York and outside banks moved closer to the bill and Federal Funds rate, with the yield on these alternative bank assets tending to act as a floor to dealer loan rates (Chart 21). In addition, dealer loan rates at New York and outside banks moved closer together in the 1960's, and at both groups of banks also tended to move closer to the discount rate (Chart 22). It might be noted that in 1966 when the discount rate became out of touch with market rates, dealer loan rates were fairly closely tied to the Federal funds rate, with the latter rate acting as a floor under dealer loan rates for much of the time.

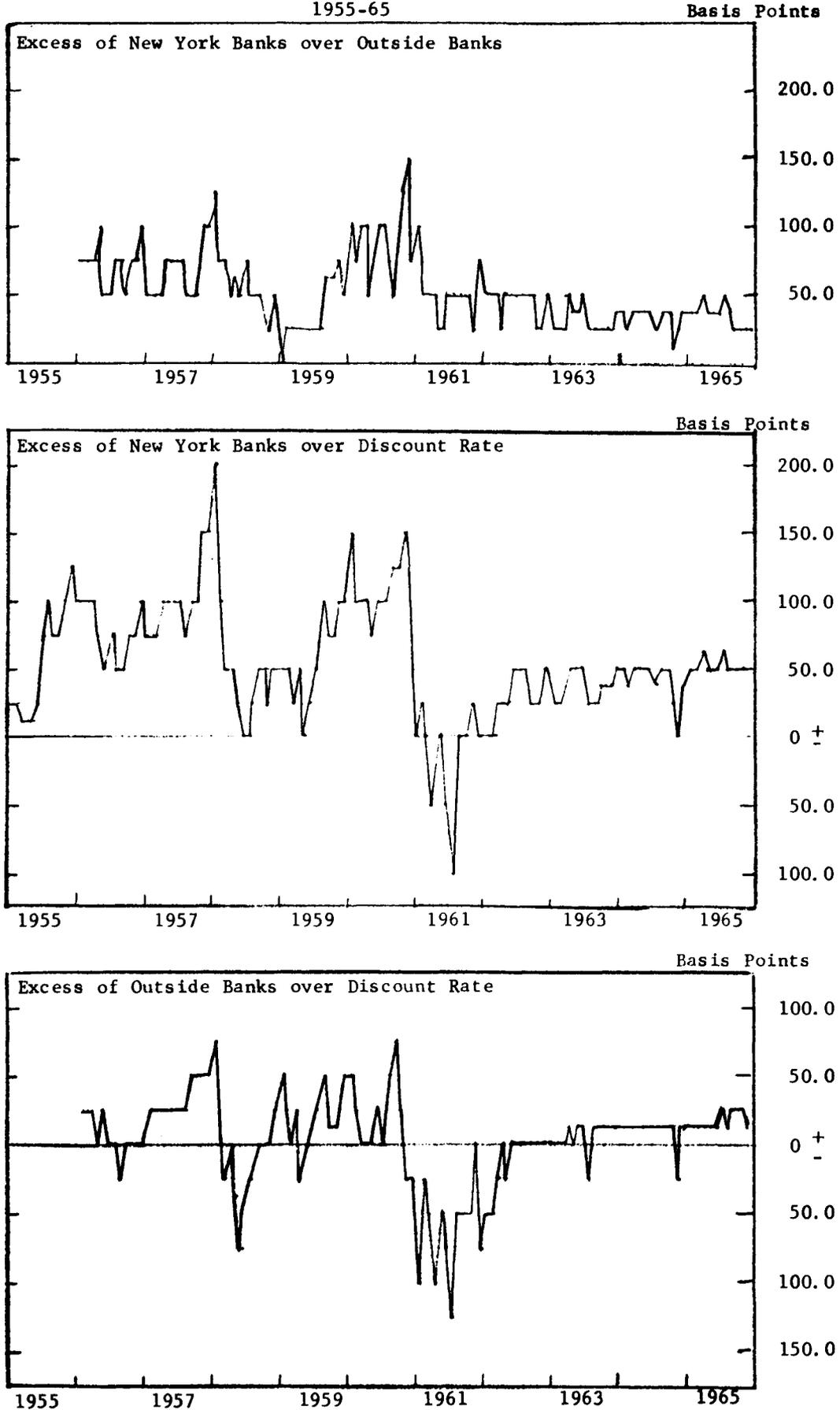
Corporate demand for Treasury Securities. The major buyers of the increased issues of negotiable CD's are nonfinancial corporations. The 20 to 40 basis points premium of CD yields over Treasury bills acted as a powerful magnet on corporate holdings of liquid assets, despite the lower level of liquidity of negotiable CD's relative to Treasury bills. The higher CD yield, the development of a secondary market on CD's, and the availability of specific maturities tended to increase sharply corporate purchases of time deposits in the 1960's. With corporations also generally more aware of alternative yields, their stepped up purchases of time deposits and other private open market paper coincided with their reduced acquisitions of Treasury issues (Chart 23). Indeed in 1964-65, prior to the general shortfall of internal fund generation relative to capital outlays, corporations reduced their Government security holdings while continuing to acquire large volumes of time deposits.

-57-  
 Chart 21 - Bank Loan Rates to U.S. Government Security Dealers  
 1955-65



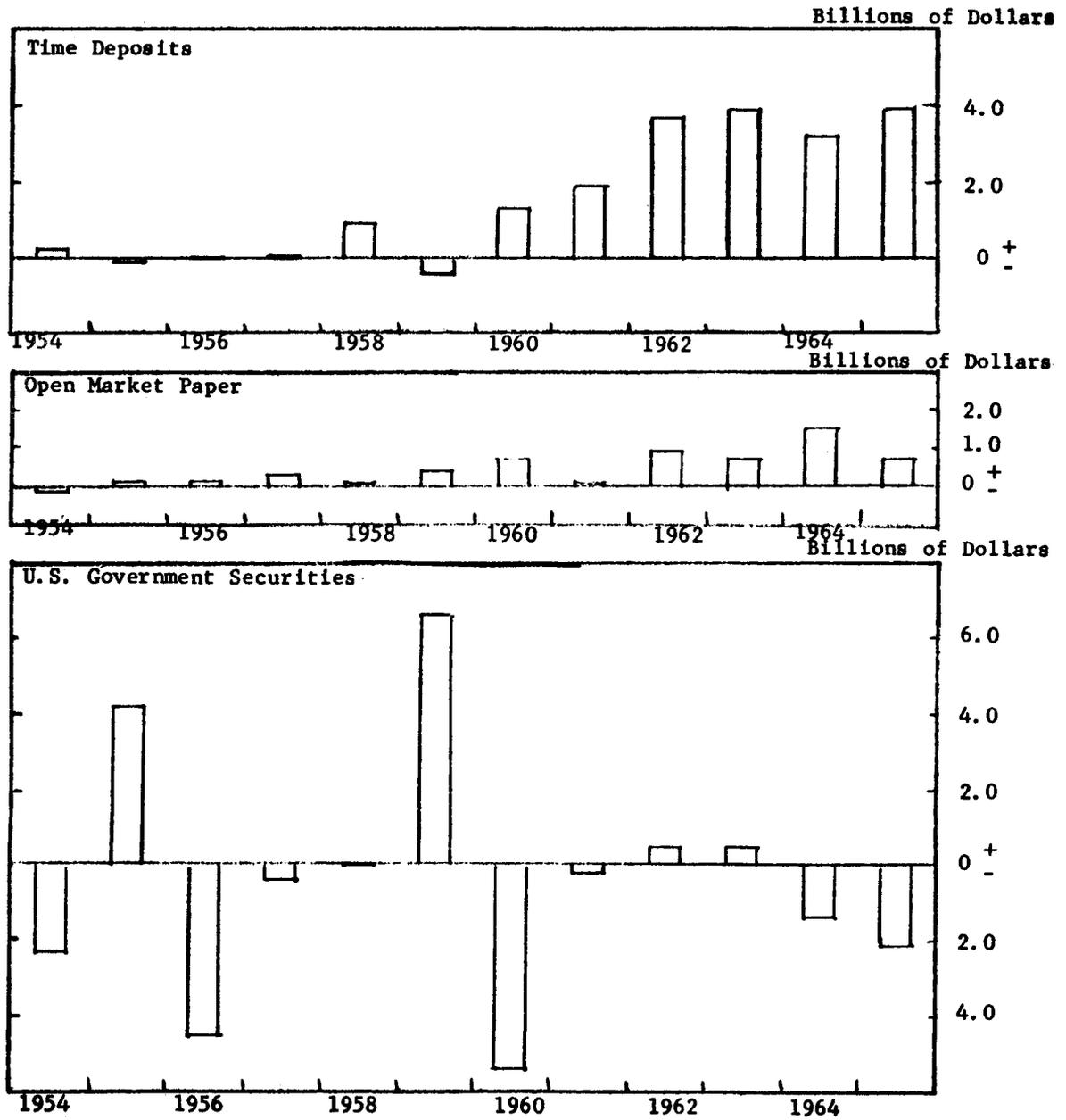
Source: Federal Reserve Board

Chart 22 - Bank Loan Rates to U.S. Government Security Dealers  
1955-65



Source: Federal Reserve Board

-59-  
**Chart 23 - Liquid Asset Acquisitions of Corporate Nonfinancial Businesses**  
 1954-65



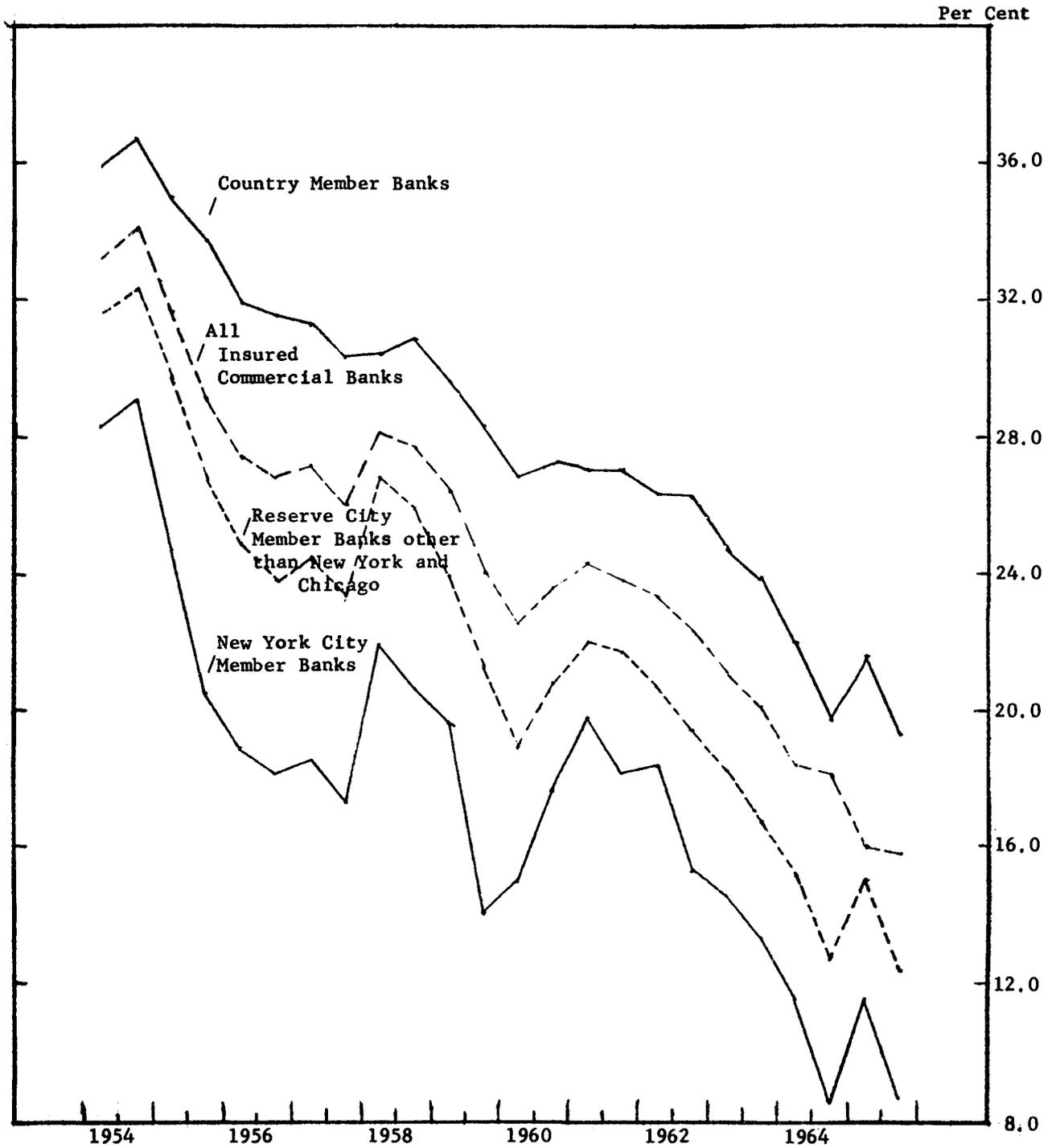
**Source: Flow of Funds**

Bank demands for Treasury securities. It would be expected that expanded participation of banks in the Federal funds market and their increased use of time deposits--especially negotiable CD's--should have reduced their portfolio demand for liquid assets, particularly Government securities. This expectation is based on their increased ability and willingness to finance reserve adjustments, deposit withdrawals, and sharp changes in loan demand by borrowing in both the CD and Federal funds market.

However, while banks of all classes did reduce their holdings of Treasury securities relative to assets in the 1960's, they did so no more rapidly than in the 1950's (Chart 24). In addition, while their total dollar holdings declined somewhat, the proportion of their Government security portfolio in short-term form rose markedly at all classes of banks (Charts 25 through 28), when it would be expected that bank demand for the most liquid Government securities would decline. The share of their portfolio in 1 to 5 year issues declined markedly, while there was some increase in their holdings of over 5 year bonds--mainly in the 5 to 10 year area. The shift in maturity composition in the over 1 year area reflects in part bank participation in advance refundings during the period.

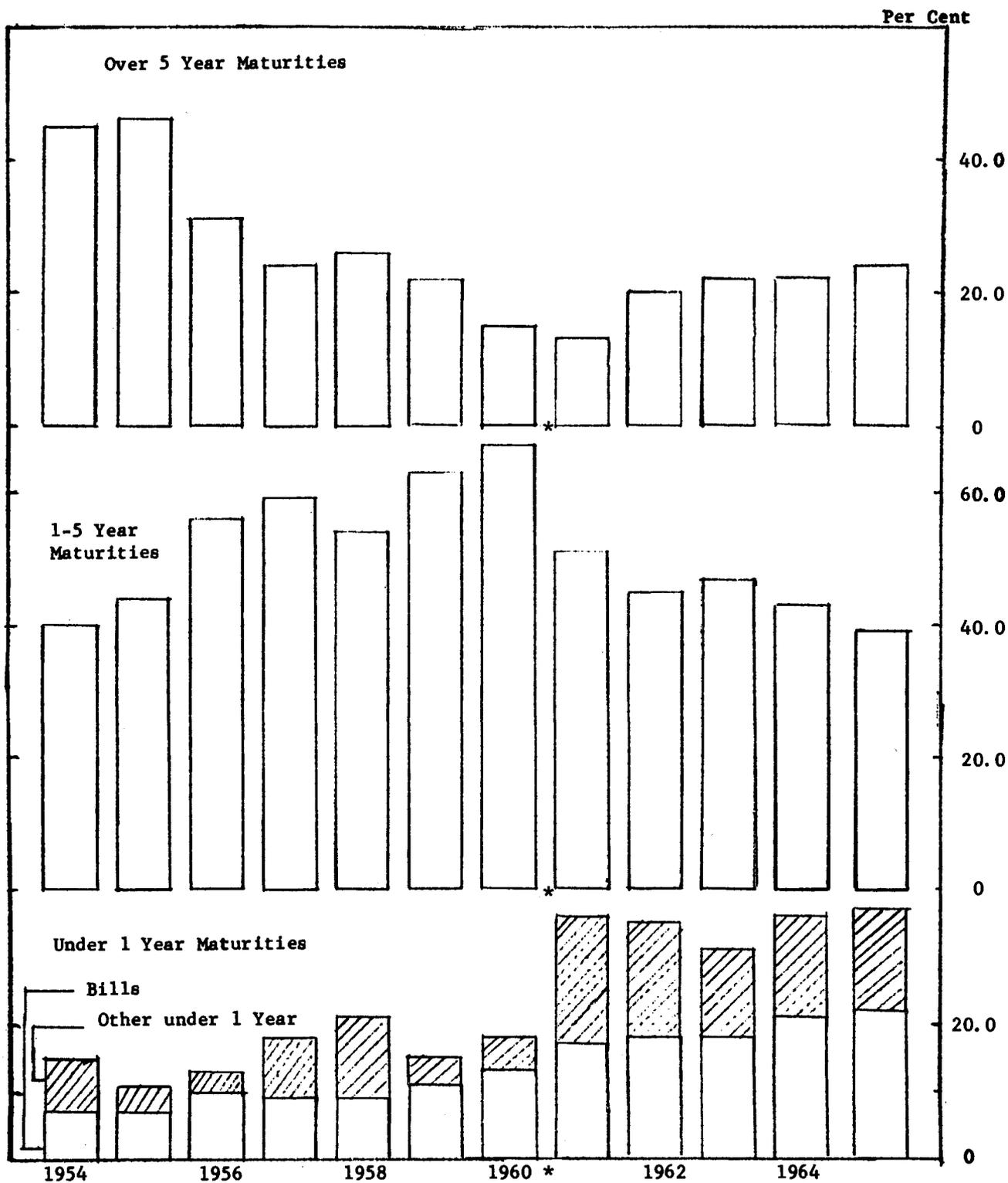
Commercial banks continued to account for a smaller share of all outstanding Treasury issues in the 1960's (Table 9). In 1965, relative to 1960, their share of all maturity categories declined except in the under 1 year and in the 5 to 10 year maturity ranges where it rose moderately.

Chart 24 - Commercial Bank Holdings of U.S. Treasury Securities  
As a Percentage of Total Bank Assets - 1954-65



Source: Federal Reserve Board

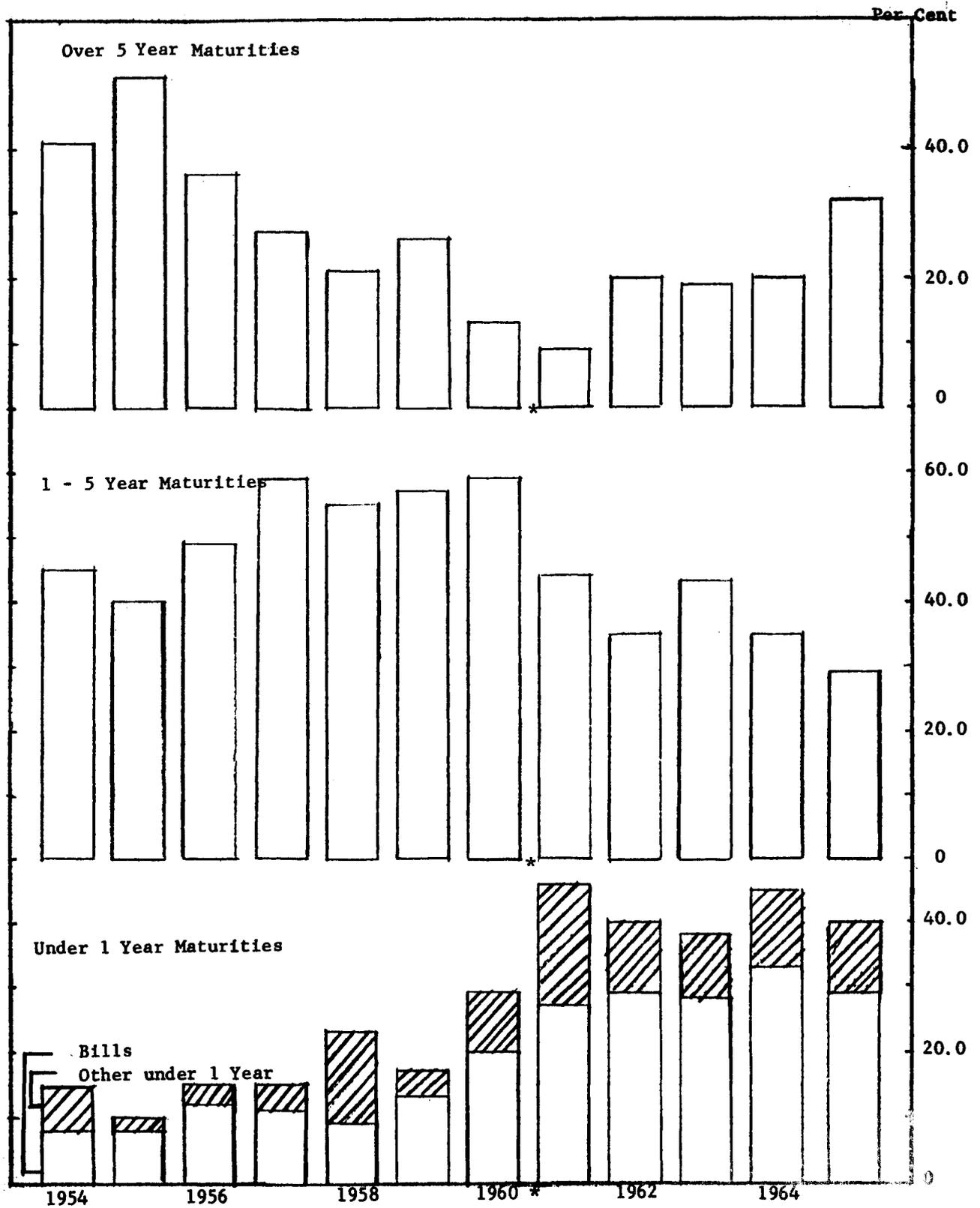
Chart 25 - Maturity Composition of U.S. Government Security Holdings  
 All Insured Commercial Banks  
 1954-65



\* Break in series.

Source: Federal Reserve Board

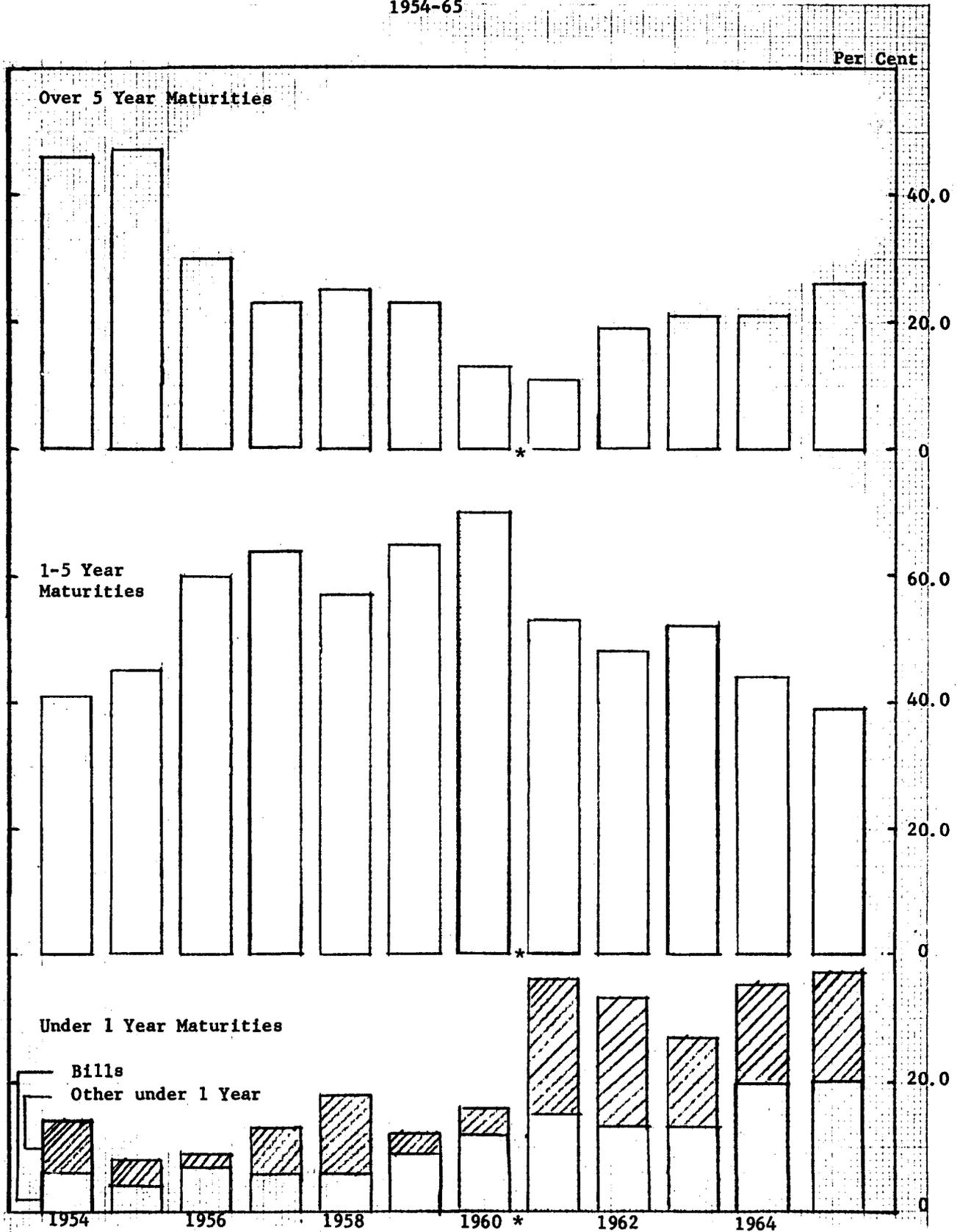
Chart 26 - Maturity Composition of U.S. Government Security Holdings  
New York City Member Banks  
1954-65



\* Break in series.

Source: Federal Reserve Board

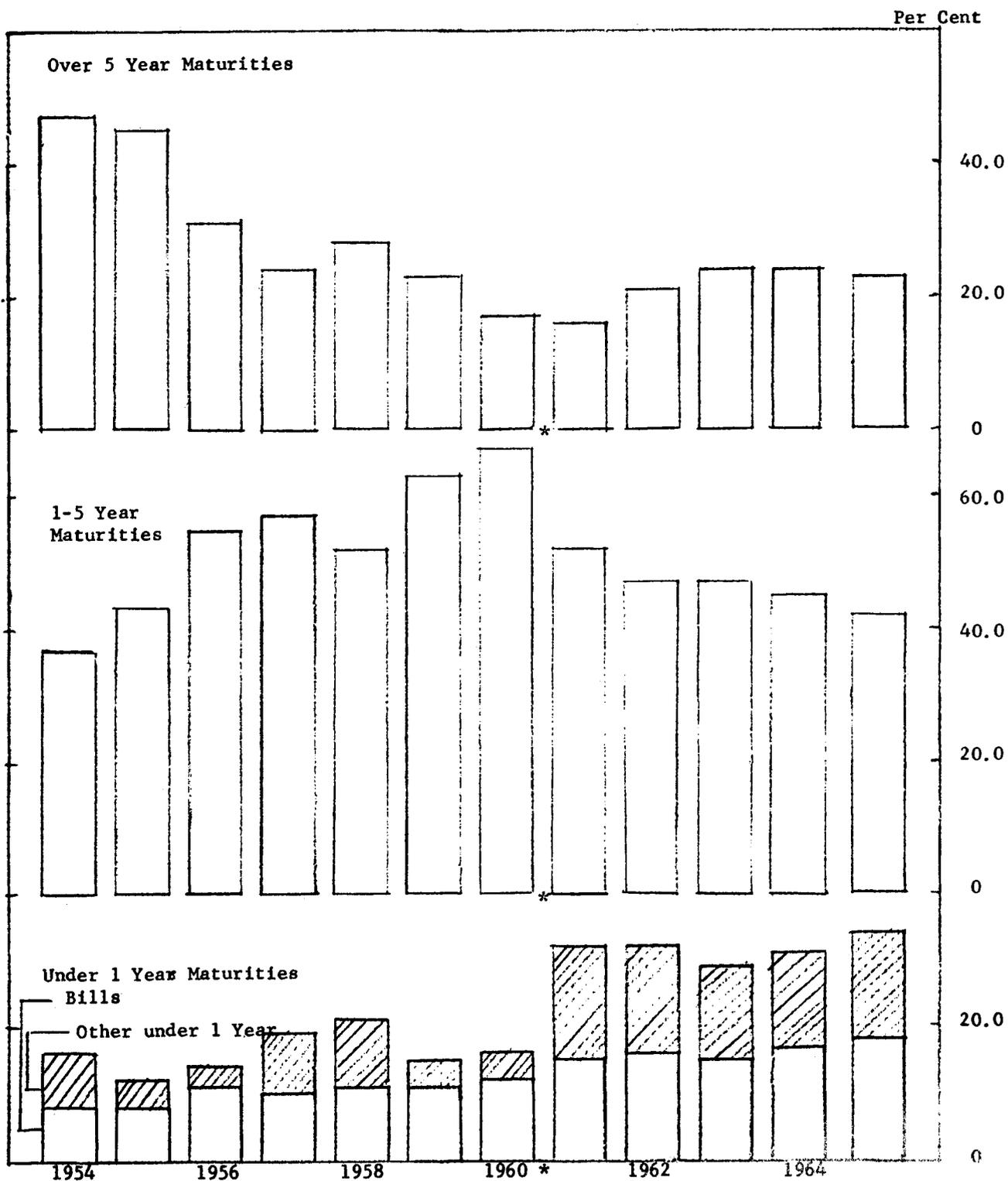
Chart 27 - Maturity Composition of U.S. Government Security Holdings  
Reserve City Member Banks Other than New York and Chicago  
1954-65



\* Break in series.

Source: Federal Reserve Board

Chart 28 - Maturity Composition of U.S. Government Security Holdings  
Country Member Banks  
1954-65



\* Break in series.

Source: Federal Reserve Board

Table 9

Share of Outstanding U.S. Marketable Government Securities  
Held by Commercial Banks  
End of Year  
(Per Cent)

Maturity of Issue	1953	1960	1961	1962	1963	1964	1965
Total	39.6	32.6	24.4	32.6	30.5	30.0	28.3
Bills	25.6	20.8	26.7	24.6	21.9	24.4	22.1
Coupon issues maturing:							
Within 1 year	43.2	25.6	34.1	29.0	22.7	27.8	27.7
In 1 to 5 years	60.2	49.5	50.5	49.0	52.1	42.7	38.9
In 5 to 10 years	51.2	34.2	30.3	35.6	32.5	35.2	38.3
In 10 to 20 years	15.6	14.4	15.8	4.3	8.3	3.3	4.8
In over 20 years	12.5	5.5	3.7	3.2	3.8	3.4	4.7

In general, the evidence seems to suggest that, while banks continued to reduce their demand for Treasury issues in the 1960's, there was no abrupt shift in past trends. Within their portfolio of Treasury issues, banks apparently did expand their demand for short-term and intermediate-term (5 to 10 year) securities.

The failure of bill holdings of banks to show the expected large decline is perplexing. However, there are two possible explanations. First, Treasury bills became relatively more attractive in the 1960's as yield spreads compressed. For example, throughout most of the 1960's, the premia of finance company and commercial paper over bills was considerably below those of periods of rising market rates in the 1950's (Chart 20).

Second, it is clear that while banks increased their use of the CD and Federal funds market in the 1960's for reserve adjustments, it is likely that these same factors increased their demand for portfolio liquidity. Bank purchases of longer term assets and the increasing amount of bank liabilities sensitive to yield differentials may have increased bank demands for portfolio assets, such as Treasury bills, which can be liquidated quickly at little cost.

Innovations in Private Markets: Effects

Perhaps the most important effect of changes in private markets during the 1960's was the contribution of commercial bank behavior to the public policy goal of keeping upward pressure on short-term rate while moderating the rise in long-term rates. It is possible that the debt management and monetary policies of this period would not have succeeded in this objective without the "borrowing short and lending long" activities of banks. Not only did these actions add to the supply of short-term and increase the demand by financial institutions for long-term financial assets, but the supply of long-term market securities issued directly in capital markets was reduced by the enlarged flow of credit granted by financial institutions.

At the same time, the behavior of commercial banks contributed to the increasing sensitivity of financial markets to interest rate differentials. As a result, bank behavior was an important factor in the stability of rates and compression of the yields on financial assets. Expanded arbitraging between markets and an increased elasticity to the supply of financial assets were important in this regard.

However, despite some relative increase in bank demand for bills, on balance these innovations in private financial markets tended to reduce the demand for short-term Treasury securities by expanding the supply of attractive substitutes. On the other hand, demand for longer-term Treasury issues might have been increased somewhat by these developments. Bank purchase of 5 to 10 years issues did rise in the 1960's, along with their purchase of other longer-term assets. In addition, the reduced yield on municipal bonds--due in large part to increased bank purchases--tended to make long-term Treasury issues relatively more attractive.

Finally, the innovations in financial markets tended to link Government security dealer loan rates to the opportunity costs of bank funds. Thus dealer financing costs were kept more in tune with money market pressures. With dealer costs neither tending to rise nor to decline more rapidly than other rates--as they had in the 1950's--pressure on U.S. Government security dealers to build-up or unload inventories because of financing costs was reduced during the bulk of the 1960-65 period, and contributed to the relative stability of interest rates on Government securities. After mid-1965, however, dealer loan rates fluctuated more widely than other money market rates and at times sharp increases in them generated substantial upward yield pressures.

#### V. General Conclusions

In assessing the effects of the economic environment of the 1960's on the Government securities market, it is difficult to separate the broad economic and financial developments which were peculiar to the period--but could also recur again--from the long lasting financial innovations in both

the private and public sectors. The stability of growth and prices, and the relatively limited demand for funds in the private sector throughout a good part of the first half of the decade contributed importantly to the stability of long-term yields, while the rapid acceleration of demands and the resultant inflationary pressures from mid-1965 to late 1966 created the surroundings for much of the sharp upward movement in all interest rates. There are, of course, unique historical circumstances which establish the macroeconomic and broad expectational characteristics of any specific period of time, but the repetition of the stable growth of the 1961- mid-1965 period could occur again, contributing to similar financial and interest rate developments.

In this concluding section, however, it is more fruitful to summarize the implications that center around innovations in public policy and private financial markets. Many of these developments--while certainly not unrelated to the general economic environment--generally did represent conscious changes from the past, rather than merely a "concatenation of circumstances."

Thus, after 1960, public policies directly influenced the behavior of the Government securities market to a degree not known since the Treasury-Federal Reserve Accord of 1951. Attempts to influence the structure of rates included more careful designing of the maturity composition of new issues--including a flexible response of new issues to current market conditions; advance refunding; aggressive Treasury trust account purchases and sales; and a more flexible and dynamic open market policy at the Federal Reserve. The net result of these official operations was to sharply increase

the quantity of short-term obligations held by the public, and to shift outward the maturity of the public's holdings of long-term securities without a large increase in their total holdings of coupon issues. These operations helped to increase short-term yields without bringing upward pressure on long-term yields. Moreover, more aggressive and flexible response to short-run rate movements by the Treasury and Federal Reserve contributed to a greater stability of yields.

The "twist" of the term structure of rates, as well as the greater short-run stability of yields, however, was probably more influenced by innovations in private financial markets. The more aggressive issuing of time deposits by commercial banks added more to the public's holdings of short-term assets than did debt management techniques, broadly defined. Moreover, the increased demand by banks and other financial institutions for long-term financial assets--and the parallel reduction in the pace of private direct capital market financing during most of this period--also added greatly to long-term interest rate stability. In addition, the expanded elasticity to the supply of money market assets engendered by the growth of the negotiable CD, the increased use of Federal funds for reserve adjustment, the broadening of commercial bank investment, and the acceleration of the trend of interest-rate sensitivity among most all money market participants contributed importantly not only to the stability of money market yields, but also the reduced spread between yields on most financial assets.

In the process, however, the quantity of substitutes for short-term Government securities increased. While this increased supply of substitutes added stability to money market yields, it also tended to reduce the demand for short-term Treasury issues in both the U.S. and in foreign markets.<sup>11/</sup> While part of the reduced public's demand for such issues was offset by some increased bank demand, net it is likely that innovations in private financial markets--including the general increase in rate sensitivity--reduced the total demand for short-term Government securities. While this helped to bring upward pressures on short-term yields in the 1960's, these shifts in demand schedule are likely to remain rather permanently--particularly if banks continue to be aggressive CD issuers.

On the other hand, developments in the 1960's tended to increase the quantity demanded of long-term Government issues. No new substitutes for coupon issues developed in the 1960's, but increased demand by financial institutions for long-term instruments in general reduced the spread between long-governments and other similar financial assets, making long-governments relatively more attractive. This increased demand by financial institutions declined in the period of heavy credit demand and reduced deposit inflows of 1966. However, it is likely that in future periods of rapid expansion in deposit inflows, an increase in the quantity demanded of long Governments will again reassert itself.

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<sup>11/</sup> See Appendix A.

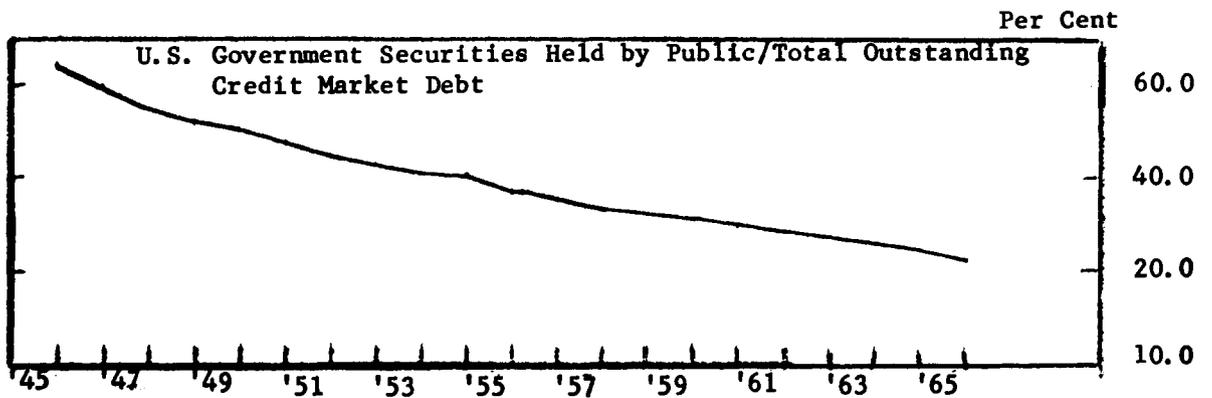
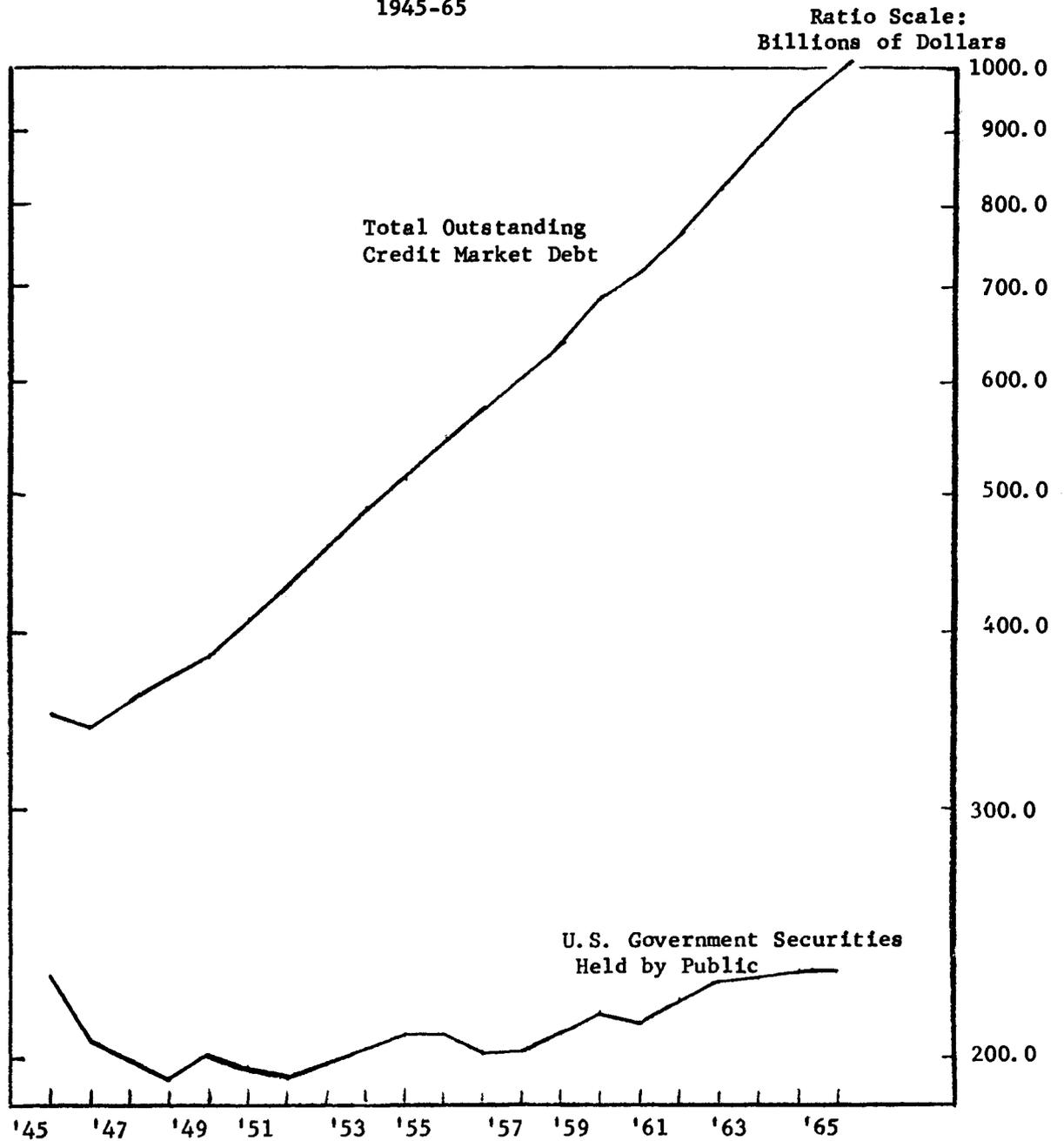
Another factor which tended to add to the strength in long-Governments was some reduction in the market supply. Advance refunding techniques and increased official purchases of coupon issues reduced the quantity of such issuers available in the market. Moreover, such operations tended to add stability to the price of such issues, despite the thinness of market supply, and could have, as a result, increased the demand for the now more attractive Government bonds.<sup>12/</sup>

While developments in the 1960's changed the environment in which the Government security market operated, the declining importance of Federal debt as a financial asset held by the public continued into the 1960's (Chart 29). Increased issues of private financial assets, lack of proportional growth in new Treasury issues, and the large official account purchases--especially by the Federal Reserve--has even accelerated this trend in many ways. As a result of this trend, an increasing proportion of the liquidity of both financial institutions and the non-financial public has been accounted for by private securities--especially financial intermediary debt (Chart 30). These developments present some difficult questions about the ultimate liquidity of American financial institutions, as well as the continued use of the Government securities market as the major vehicle for implementing monetary policy.

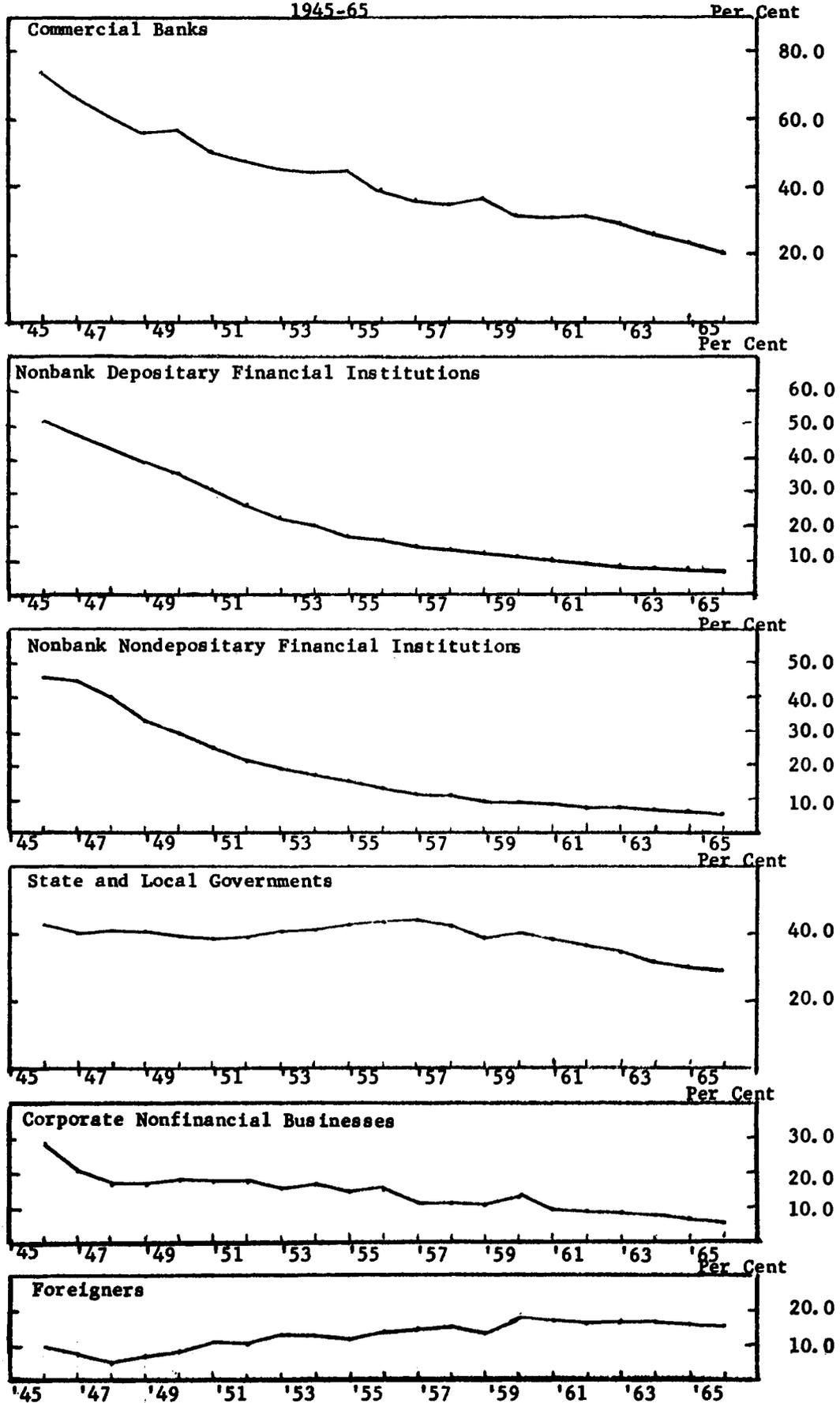
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<sup>12/</sup> The impact of official operations in U.S. Government securities on dealer positions and activity is discussed in the paper, "Market Performance as Reflected in Aggregate Indicators," by Louise Ahearn and Janice Peskin.

Chart 29 - Outstanding Credit Market Debt and U.S. Government Securities Held by Public  
1945-65



-74-  
**Chart 30 - Holdings of U.S. Government Securities as a Percentage of Financial Asset Holdings**  
**Various Sectors**  
**1945-65**



Source: Flow of Funds

Throughout the American economy--but particularly at financial institutions--there is a continuing demand for riskless financial assets to hold as a liquidity reserve. Indeed, laws, regulations, and examination procedures place considerable pressure on institutions to hold some assets without credit risk, generally Treasury issues. However, even to hold the structure of financial assets to that existing in 1965 would require Federal borrowing at a rate of \$13 to \$17 billion a year and private domestic borrowing at a \$35 to \$40 billion rate per year, about two-thirds of the 1965 pace. Such a development implies a permanent depression in private demand and a powerful offset by Federal deficit.

Since a reversal of present trends appears unlikely, it seems clear that the financial structure of the American economy will continue to shift toward private claims, that the conventional liquidity base of financial institutions will continue to erode, and it can be expected that vocal concern about the extended position of the financial system will increase. Indeed, if the 1960's are indicative of the amount of marketable Treasury securities available to the public after official purchases, these trends will accelerate.

If the present trend continues, developments in the Government securities markets over the long-run are likely to be advantageous to the Treasury while complicating Federal Reserve operations. The Treasury should find it increasingly easier to sell its obligations as a relative shortage of riskless financial assets develop. The Federal Reserve, on the other hand, is likely to find itself facing an increasingly difficult

market in which to carry out open market operations. For, while it should be easier for the Federal Reserve to sell securities, it is likely to become quite difficult to buy Treasury issues in quantity without causing sharp price movements because holders of these instruments may be loathe to give up their riskless liquid assets.

APPENDIX\*

The Changing International Financial Environment  
and Foreign Demand for U.S. Treasury Issues

The post-war rehabilitation of European economic and financial systems, to which most of the Fifties was devoted, produced significant changes in the international financial environment. The new pattern of international payments flows and ensuing rebuilding of European monetary reserves worked to reconstitute an international financial system where major currencies are freely convertible and where internationally-held balances<sup>1/</sup> may be moved among financial centers in response to changing market conditions. This new era was formally marked by the return in Europe to external convertibility at the end of 1958. Since 1960 the international financial scene has also been marked by slower foreign acquisition of financial assets in the United States, particularly U.S. government securities.

The overall volume of internationally-held financial assets has increased rapidly since the late Fifties, prompted by the expansive growth of international business and investment activity. Growing international trade has required a larger volume of internationally-held transactions balances. The high level of economic activity in the

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\* This appendix was prepared by Carl H. Stem, Economist, Division of International Finance, Board of Governors of the Federal Reserve System.  
<sup>1/</sup> The term "internationally-held" balances or assets refers to short-term or liquid financial assets held in a country by non-residents.

industrial world has generated a large volume of savings, and relatively stable international monetary conditions and less restrictive international financial arrangements have fostered investment across national borders in both real and financial assets. The development of the European Economic Community in particular has given special impetus to international investment.

By far the largest volume of internationally-held financial assets is in U.S. dollar balances. Foreign central banks are the largest non-resident holders of liquid dollar assets. At the end of 1965, \$14 billion<sup>2/</sup> (or some 60 per cent) of the world's total official foreign exchange reserves of \$23 billion were U.S. dollar financial assets. (This 60 per cent level is unchanged from 1960 but up from 45 per cent in 1954.) In addition, U.S. financial markets, along with those in the United Kingdom, still provide the private non-resident investor with his major investment outlet, particularly in marketable assets.

Modifications in institutional and operational arrangements have created a wider variety of international investment opportunities and a financial system much more sensitive than earlier to changing financial conditions in individual countries. Modified payments regulations permit a freer flow of investment funds than in the earlier Fifties. New financial assets have been introduced and new insitutions--such as the Euro-dollar deposit and the international long-term capital markets--have developed. The international investor today, both official and private, is less dependent on financial assets in the United States. For example, roughly

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<sup>2/</sup> The \$14 billion figure does not include an unknown volume of U.S. dollar assets held by foreign monetary authorities in Euro-dollar deposits.

\$16 billion in dollar-denominated assets is currently held in deposits in the Euro-dollar market, outside the United States, and approximately \$1.6 billion in dollar-denominated long-term bonds have been bought by investors in foreign markets in recent years.

This appendix attempts to analyze briefly how the changing international financial environment has affected the foreign demand for securities in the United States, especially U.S. Treasury issues. It reviews foreign financial investment in the United States and then broadly traces out developments which have contributed to greater internationalization of major financial markets.

The foreign demand for financial assets in the United States

Even though the scope for trading in internationally-held securities has widened since 1957, the expanding volume of internationally-held financial assets continues to take the form primarily of assets in the United States. In the eight years, 1958-1965, foreign-owned liquid assets in the United States, as recorded in the U.S. balance of payments accounts,<sup>3/</sup> increased on the average of \$1.5 billion per year.<sup>4/</sup> In comparison, foreign sterling assets increased during the same period only 40 per cent as much.

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<sup>3/</sup> In the U.S. balance of payments accounts changes in foreign liquid assets in the United States include net changes in the foreign stock of marketable long-term U.S. treasury bonds and notes, as well as all types of short-term securities and assets.

<sup>4/</sup> The year 1958 is a watershed for the U.S. balance of payments. Prior to 1958, the U.S. foreign payments deficit consisted primarily of increases in U.S. liquid liabilities to foreigners. In the four years, 1954-1957, for example, foreigners actually gave up gold to acquire dollar assets in the U.S.; foreign liquid assets increased on the average \$1.12 billion annually during the period while the U.S. gold stock increased an average of \$323 million per year. However, beginning in 1958 the U.S. began to suffer large annual losses of gold although foreigners continued to make on the average slightly larger annual additions to their liquid financial assets in the United States than earlier.

Foreign acquisition of liquid U.S. financial assets, however, has varied widely during the past eight years. In 1959, the first full year following the return to current account convertibility in Europe, 73 per cent or \$2.70 billion of the total U.S. payments deficit of \$3.7 billion<sup>5/</sup> took the form of increased foreign liquid assets in the United States (Chart A-1). Again in 1964, 80 per cent or \$2.25 billion of the total U.S. deficit of \$2.80 billion was reflected in increased foreign holdings in the United States. However, in 1965, when a special effort was made to reduce the U.S. foreign payments deficit and the Bank of France undertook redemption of a large share of its dollar assets for gold, foreign holdings of financial assets in the United States registered virtually no increase.

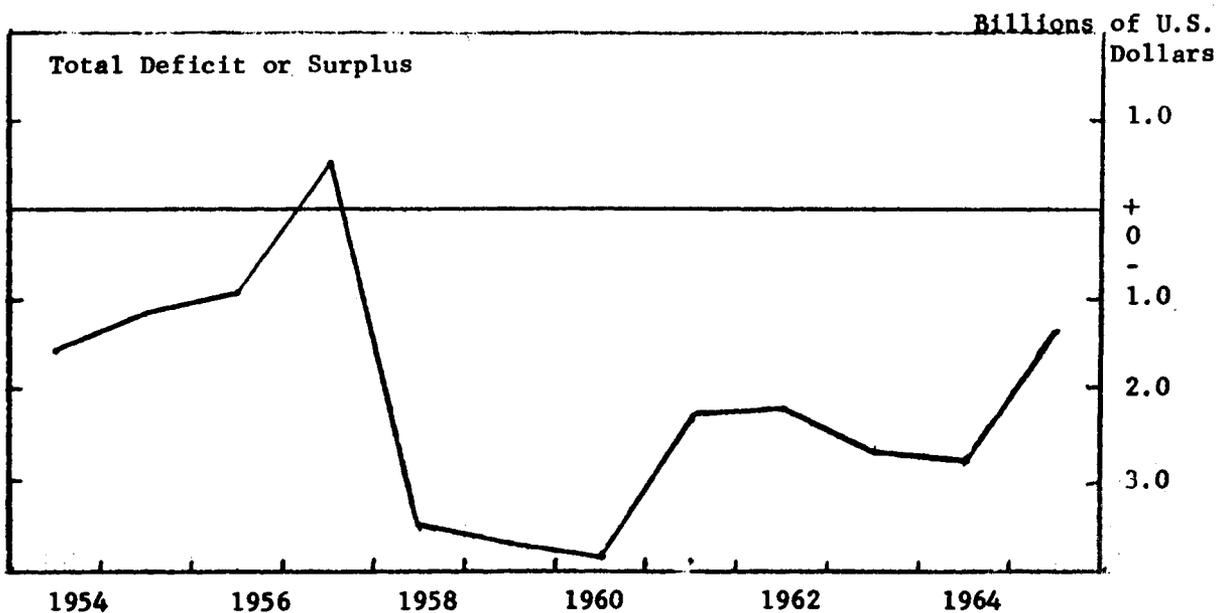
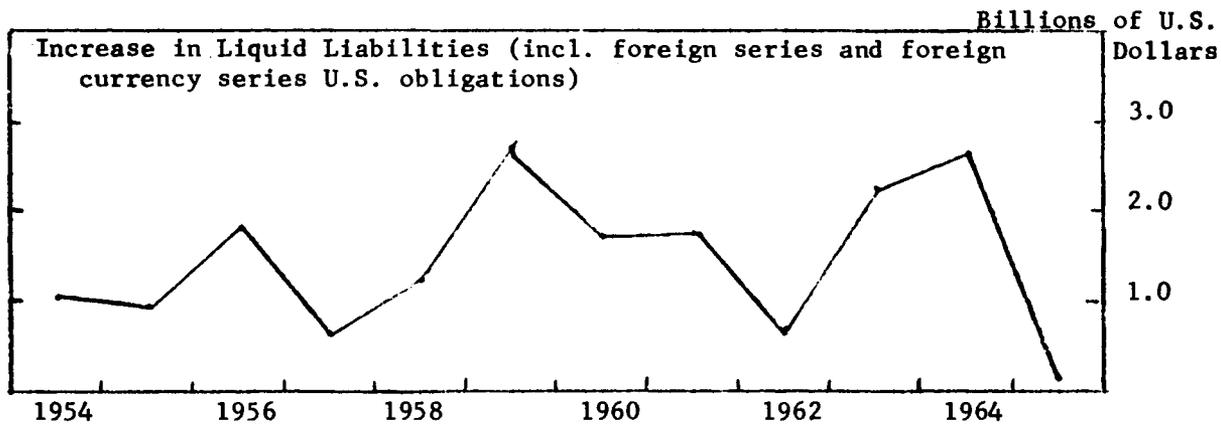
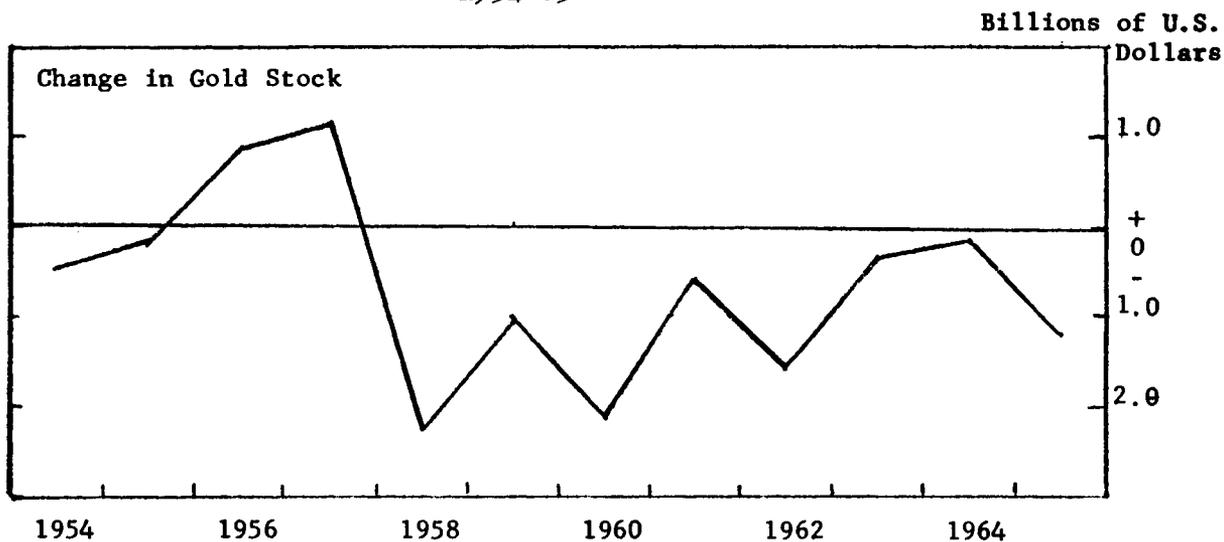
During the six years since 1959, the average annual increase in foreign dollar balances in the United States slowed down from earlier periods and was only 7.5 per cent. For example, in the eight year period between 1957 and 1965 the total volume of foreign assets in the United States grew from \$16.6 billion to \$31.3 billion, an average increase of 11.2 per cent per year.<sup>6/</sup> During the pre-convertibility period--1950 to 1957--foreign dollar balances averaged a 9 per cent per year increase.

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<sup>5/</sup> This figure refers to the U.S. deficit measured on a "liquidity basis." Other measures of the balance of payments would produce different deficits.

<sup>6/</sup> These figures include foreign holdings of U.S. Treasury bills, certificates, notes, and long-term bonds; deposits with commercial banks; and bankers' acceptances, commercial paper and certificates of deposit.

-81-  
 CHART A-1  
 U.S. Balance of Payments Deficit  
 1954-65



Since 1959 the fastest growth in assets in the United States has been registered by those of foreign commercial banks.<sup>7/</sup> Their assets-- which do not include any long-term Treasury issues--have increased from \$4.6 billion to \$7.4 billion or an average of over 12 per cent per year. By way of comparison, total foreign official dollar assets grew from \$13.2 billion to \$19.2 billion or an average of 7.6 per cent per year with assets of private non-bank foreigners increasing on the average only 5.6 per cent--from \$3.6 billion in 1959 to \$4.8 billion in 1965.

The foreign demand for U.S. Treasury issues

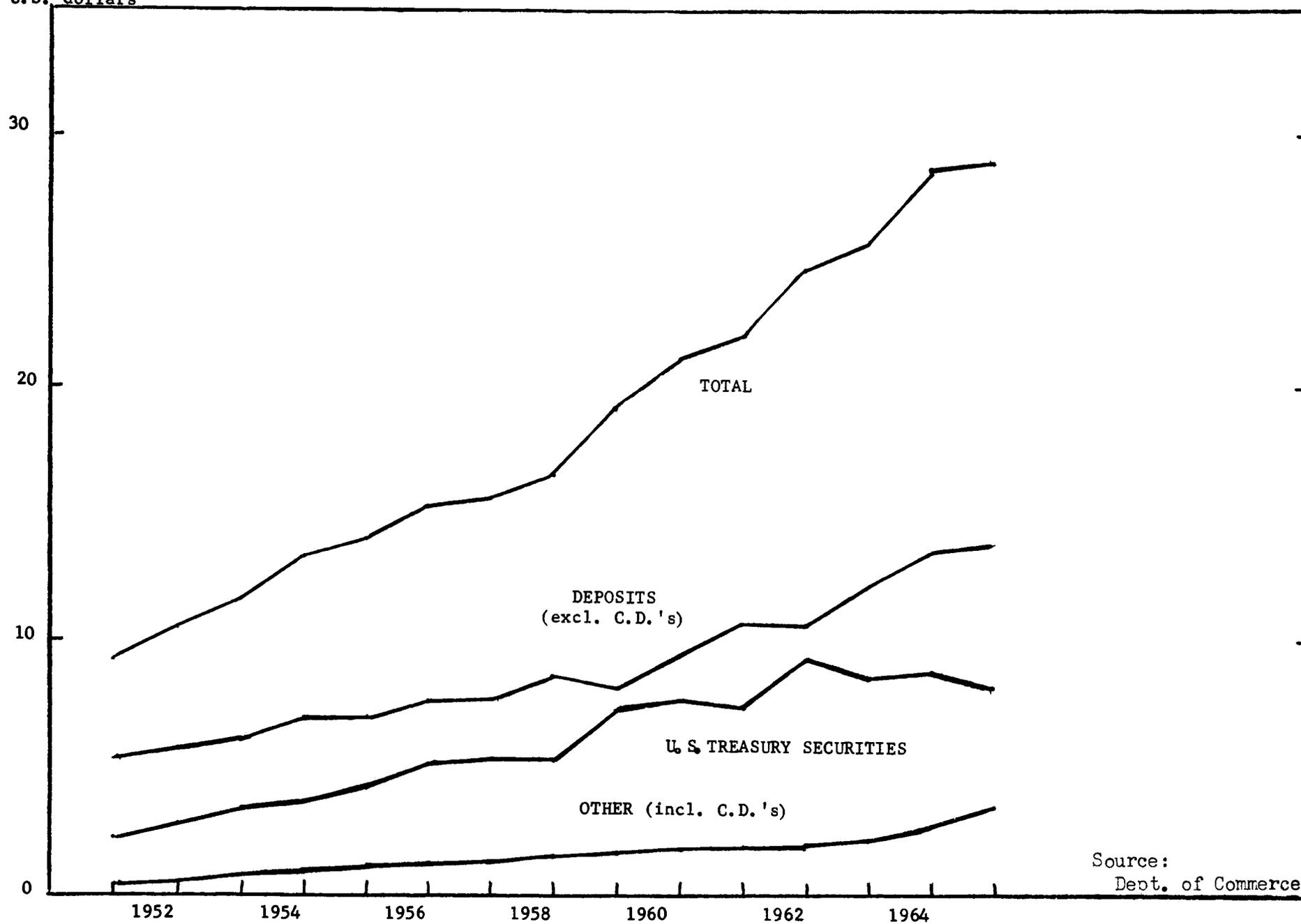
During 1951-1959, the overall foreign demand for both short-term U.S. Government securities and bankers' acceptances and commercial paper grew more strongly than the demand for deposits with commercial banks.<sup>8/</sup> Interest rates were generally rising in the United States during this period, and because of the inflexible rate ceilings imposed on interest-bearing deposits by the Federal Reserve System, deposit rate increases lagged behind rising market yields. Total foreign holdings of short-term Treasury issues rose from \$2.1 billion at the end of 1951 to \$7.5 billion in 1959 (Chart A-2).

<sup>7/</sup> Foreign commercial bank dollar balances in the United States include balances of foreign branches of U.S. banks with their parents--which have grown rapidly in line with expanding U.S. overseas banking--and the balances of foreign banks with their U.S.-based branches and agencies.

<sup>8/</sup> Available U.S. Treasury Department data break down the published aggregate data on foreign short-term financial holdings in the United States into three different classes of ownership--foreign official, foreign commercial banks and all other--and three different categories of investment assets--deposits in commercial banks (both time and demand deposits), U.S. Treasury bills and certificates, and other assets which include bankers' acceptances, commercial paper and certificates of deposit.

CHART A-2 - SHORT-TERM LIABILITIES TO FOREIGNERS REPORTED BY BANKS IN THE UNITED STATES  
1951-65

Billions of  
U.S. dollars



Source:  
Dept. of Commerce

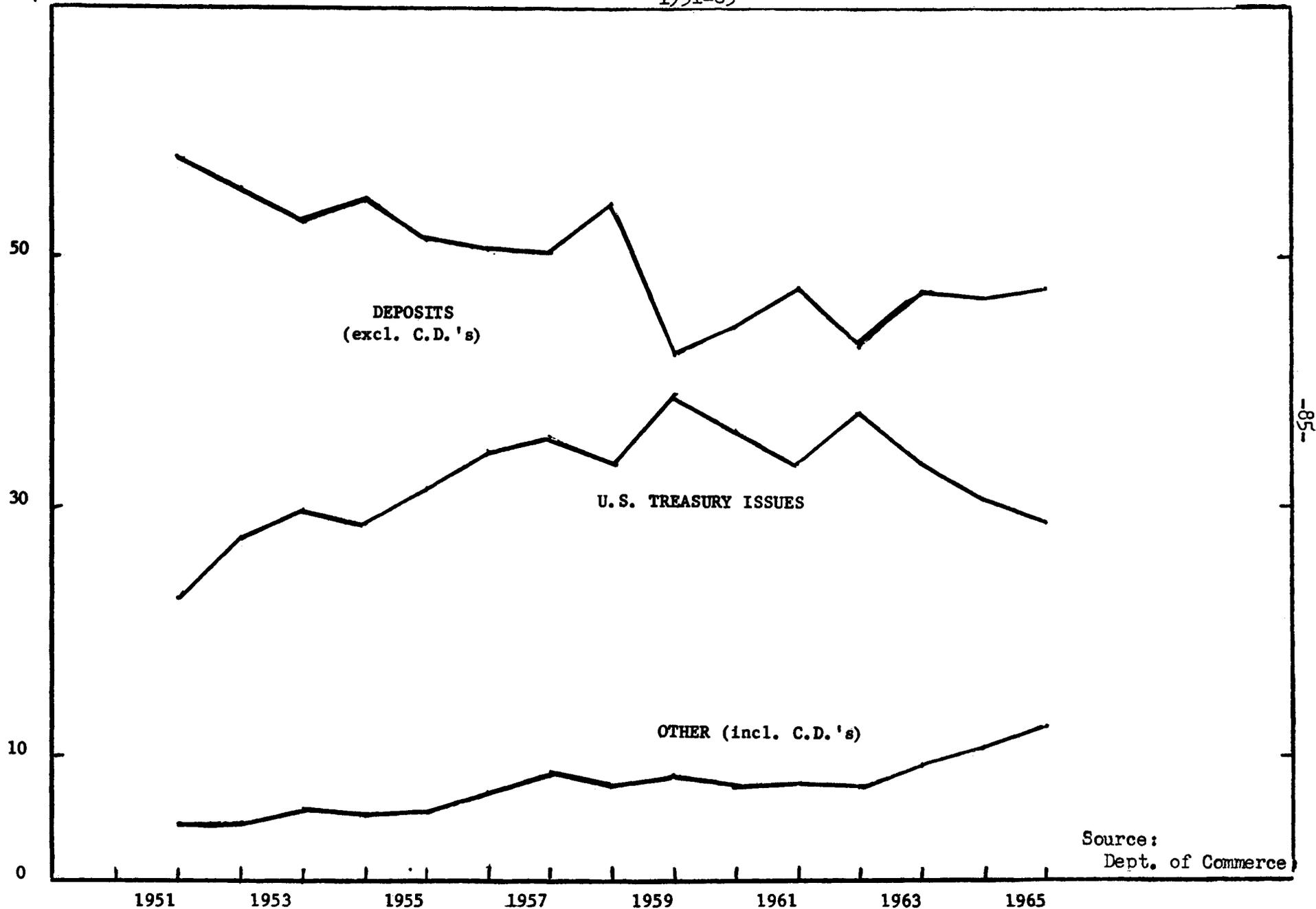
The Treasury bill share of aggregate foreign short-term dollar holdings rose from 23 per cent to 39 per cent, while the share of commercial bank deposits fell from 58 per cent to 42 per cent (Chart A-3). (The share of commercial paper and bankers' acceptances rose from 5 per cent to 8 per cent.) There was a sharp increase in the foreign demand for short-term U.S. Treasury issues in 1959 when yields on these securities climbed to a peak of 4-1/2 per cent, compared to 2-1/2 per cent banks were allowed to pay on three- to six-month time deposits.

Beginning in 1960, however, this trend reversed as higher deposit rates at commercial banks and the increasing use of negotiable certificates of deposit (beginning in 1963) attracted a relatively larger share of short-term foreign investment in the United States. Although foreign holdings of Treasury bills and certificates rose from \$7.5 billion at the end of 1959 to \$8.3 billion in 1965, their share of total short-term foreign assets in the U.S. fell from 39 per cent to 29 per cent (Charts A-2 and A-3). On the other hand, the share of bank deposits in the total rose from 42 per cent to 47 per cent.

The greatest demand for short-term U.S. Treasury issues comes from foreign monetary authorities, which hold dollar assets in the United States as a part of their international reserves (Chart A-4). Foreign official holdings of short-term Treasury issues rose from \$4.9 billion (57 per cent of total foreign official holdings) in 1954 to \$8.8 billion (71 per cent of total foreign official holdings) in 1965 (Chart A-5). In 1959 when yields on short-term Treasury issues rose sharply relative to other assets, foreign

CHART A-3 - U.S. SHORT-TERM LIABILITIES TO FOREIGNERS  
 (Major Classes of Liabilities Expressed as Percentage Share of Total Liabilities)  
 1951-65

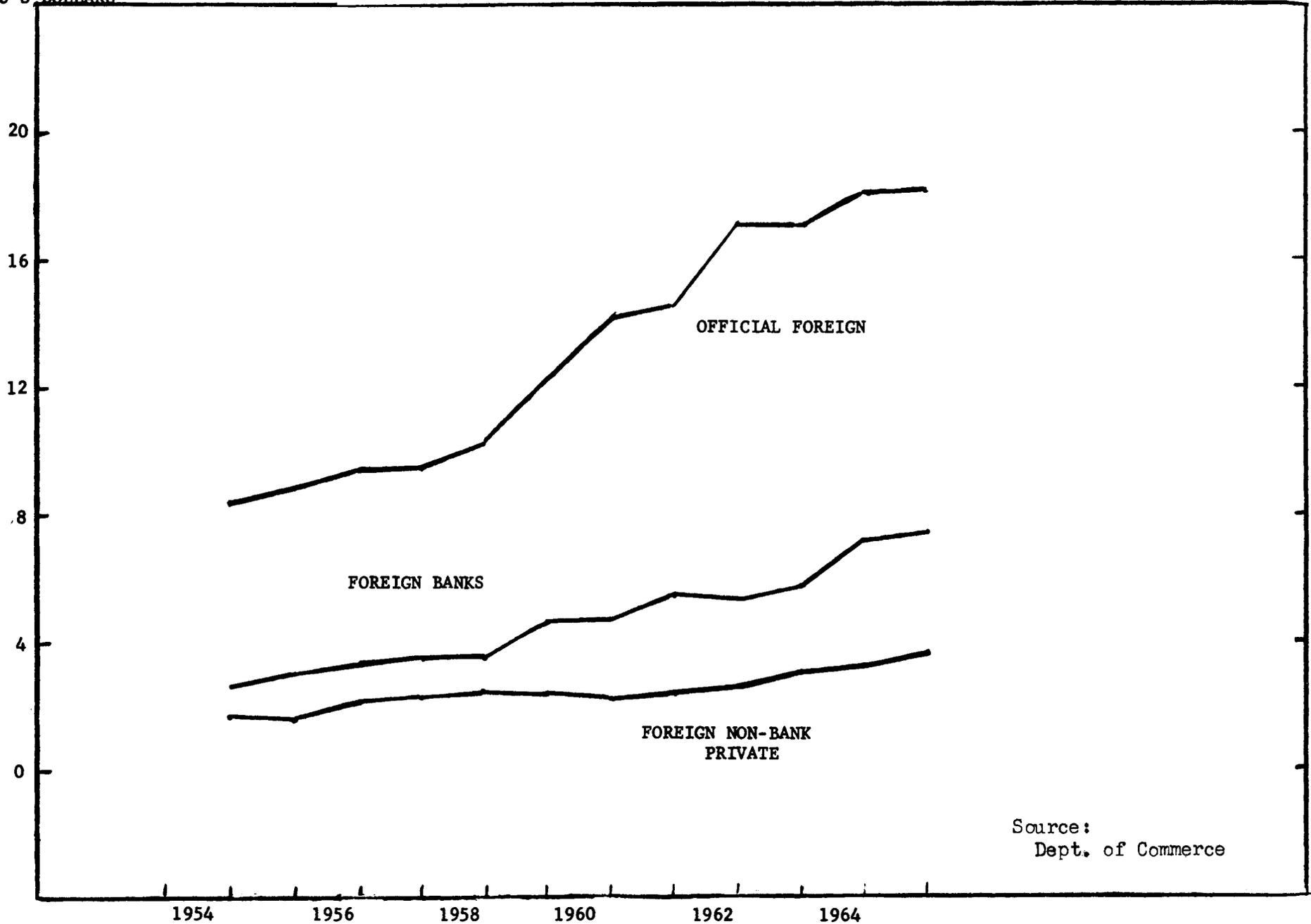
Per cent



Source:  
 Dept. of Commerce

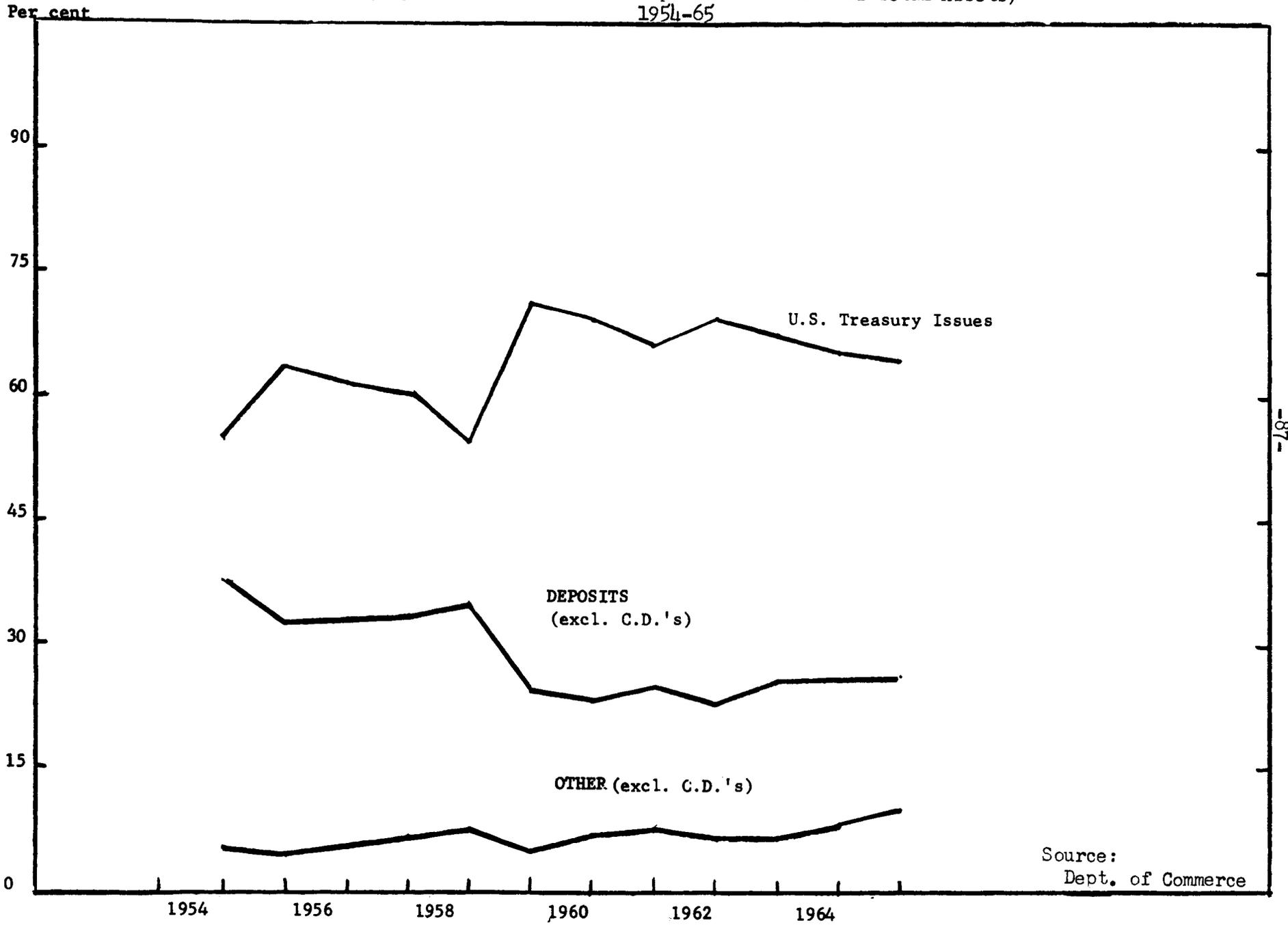
BILLIONS  
U S DOLLARS

CHART A-4 - SHORT-TERM LIABILITIES TO FOREIGNERS REPORTED BY BANKS IN THE UNITED STATES  
1954-65



Source:  
Dept. of Commerce

CHART A-5 - OFFICIAL FOREIGN SHORT-TERM DOLLAR HOLDINGS IN THE UNITED STATES  
 (Major Classes of Assets Expressed as Share of Total Assets)  
 1954-65



Source:  
 Dept. of Commerce

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official holders actually decreased their holdings of other types of assets in order to acquire Treasury issues. Since then, however, their demand for these issues has been relatively weaker than the demand for other types of marketable assets, principally certificates of deposit which have shown more favorable rate trends.

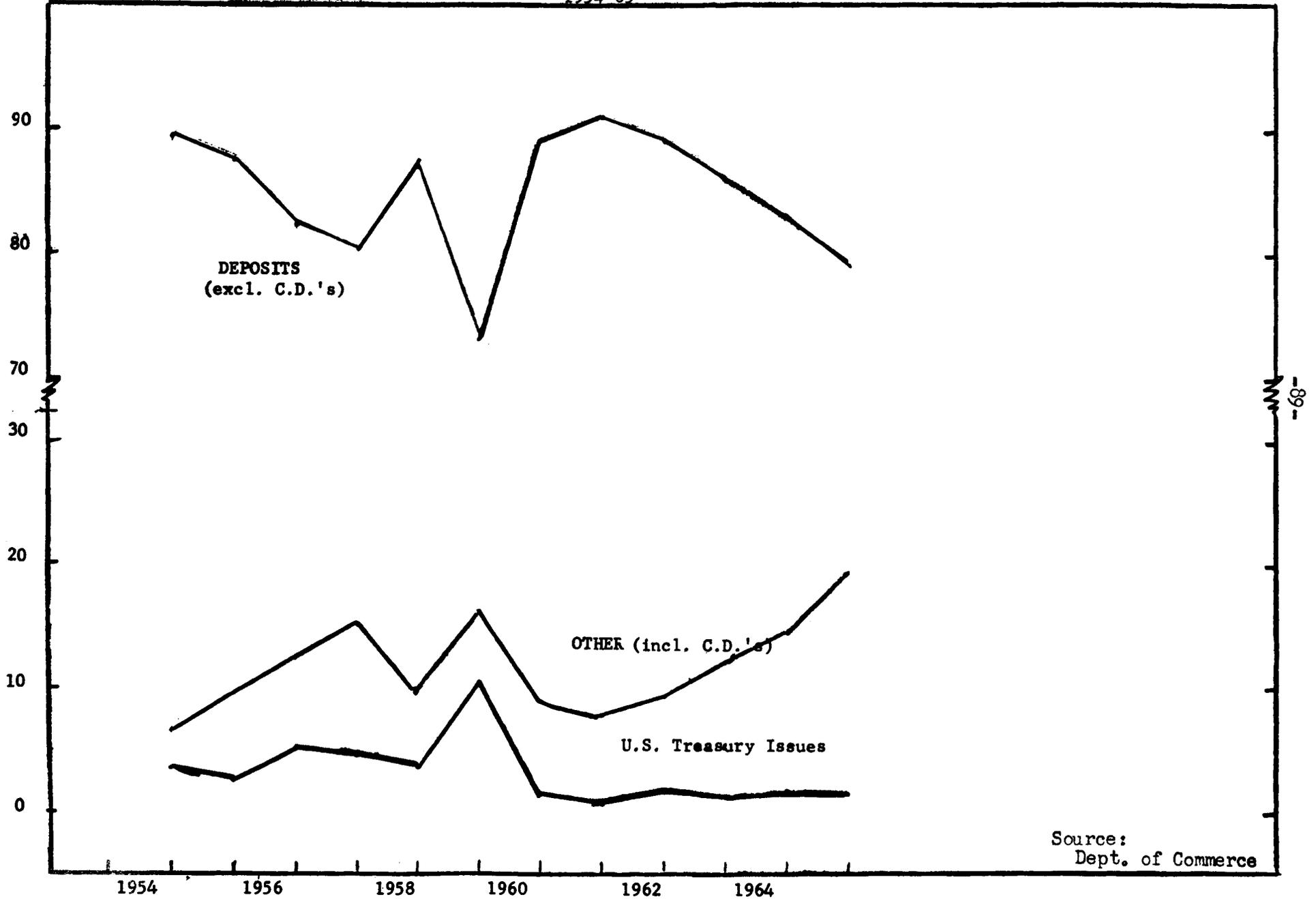
Foreign commercial banks are not large buyers of Treasury issues but hold most of their assets in the U.S. in bank deposits and certificates of deposit (Chart A-6). In 1959, however, they did make large net purchases of Treasury issues due to their attractive yields and raised their holdings of these issues to roughly 16 per cent of their total assets in the United States. In 1960 these holdings of Treasury issues fell sharply and since then have averaged between 1 and 2 per cent of total holdings due to preference for higher yielding assets both in the U.S. and abroad.

Private foreign non-bank investors have never held a large volume of short-term Treasury issues. At their highest point in 1958 these assets totaled only \$306 million or roughly 12 per cent of total dollar assets of foreign private non-bank holdings (Chart A-7). At the end of 1965 they had fallen to only \$87 million as the need for larger working balances and tighter credit conditions and higher interest rates abroad caused holders to sell off Treasury issues.

In summary, since 1960 the foreign demand for short-term U.S. Treasury issues has not been as strong as it was previously because of more attractive yields on an increasing number of alternative investment

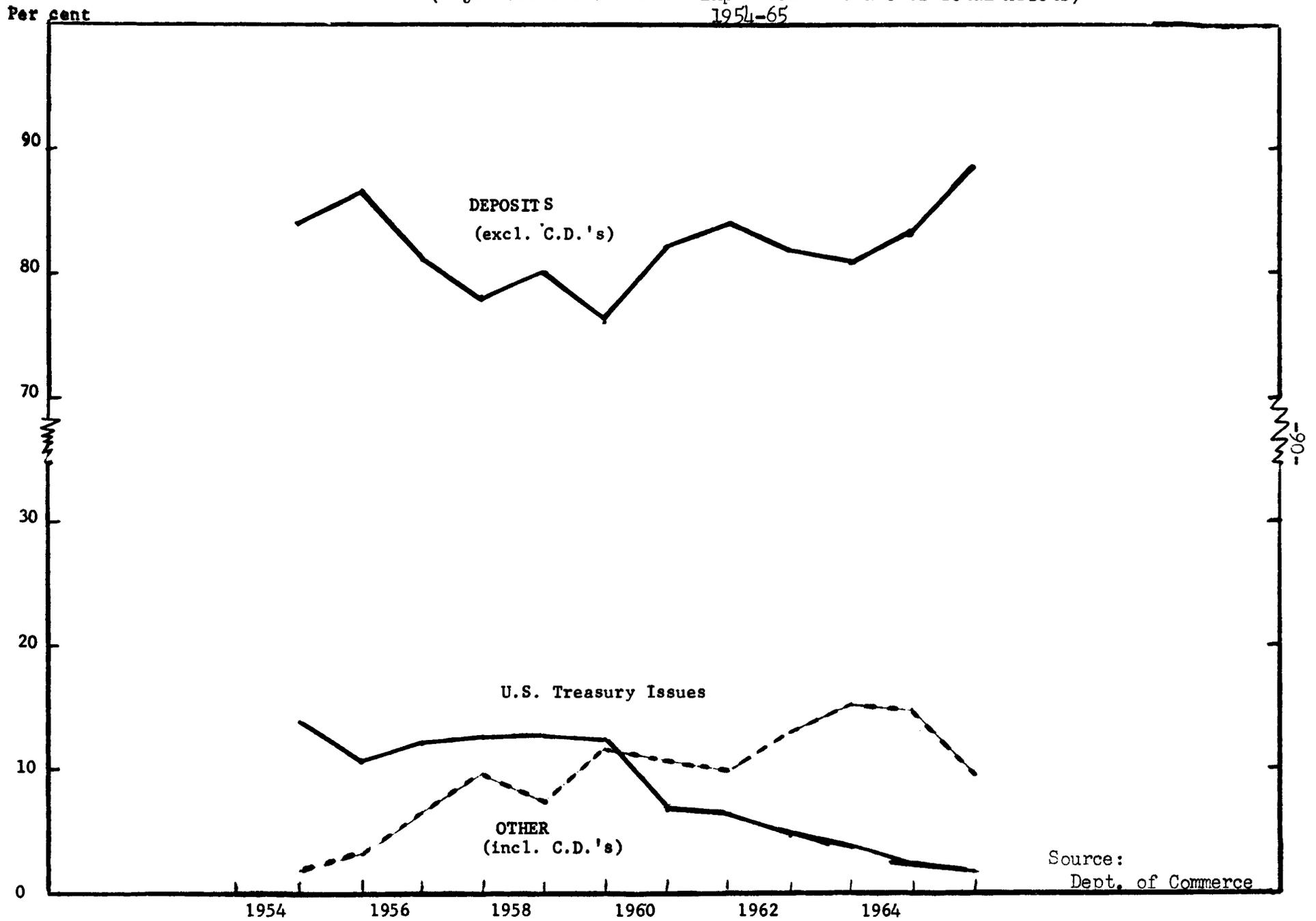
Chart A-6 - FOREIGN COMMERCIAL BANK SHORT-TERM DOLLAR HOLDINGS IN UNITED STATES  
 (Major Classes of Assets Expressed as Share of Total Assets)  
 1954-65

Per cent



Source:  
 Dept. of Commerce

CHART A-7 - FOREIGN NON-BANK PRIVATE SHORT-TERM DOLLAR HOLDINGS IN THE UNITED STATES  
 (Major Classes of Assets Expressed as Share of Total Assets)  
 1954-65



Source:  
 Dept. of Commerce

opportunities both in the United States and abroad. All classes of foreign investors--central bank, commercial bank and private non-bank--have shown a decreasing demand for short-term U.S. Treasury issues since 1960.

Foreign demand for long-term U.S. Treasury issues has also declined since 1963 due primarily to decreased holdings by foreign monetary authorities and international organizations. Foreign holdings of marketable U.S. government notes and long-term bonds rose sharply from \$875 million in 1951 to \$2.6 billion in 1961. However, in 1962 these were reduced roughly \$550 million due mostly to heavy sales by the IMF and IBRD. Foreign monetary authorities increased their purchases of long-term U.S. Treasury issues in 1963, but since then all classes of owners have reduced holdings.

#### Developments in the international financial environment

Since the late Fifties the international financial scene has been marked by an increasing degree of financial market integration and growing payments freedom, although since 1963 U.K. and U.S. balance of payments problems have resulted in increased restrictions on capital flows. Favorable economic conditions throughout the industrialized world contributed substantially to the trend toward greater world-wide financial integration.

The declaration of non-resident external convertibility in Europe in 1958 is often cited as an event which suddenly energized international financial flows that had long been dammed up and is thought to have particular significance for foreign balances in the United States. Actually, the liberalization of exchange controls which permitted foreign non-official parties to build-up dollar investments began before 1958. Furthermore, the

declaration of convertibility was not important to the investment actions of foreign monetary authorities, the largest foreign investors in U.S. financial assets. Foreign commercial banks did increase their dollar holdings roughly one-third in 1959, no doubt encouraged by the unusually high interest rates in the United States that year. (Their holdings of short-term Treasury issues increased \$361 million in 1959.) But foreign non-bank investors were not influenced either by their new-found liberties or the high U.S. interest rates and actually decreased their short-term dollar assets slightly. (Their holdings of short-term Treasury issues decreased \$11 million in 1959.)

The less restrictive and more integrated nature of international finance today has implication mainly for the non-official foreign demand for U.S. Treasury issues. Because of the key role of the dollar as an international reserve asset, foreign monetary authorities normally turn to assets in the United States for their foreign exchange investments. However, the development of the Euro-dollar deposit market since 1958 has attracted a large volume of foreign central bank funds and currently (1966) is the most attractive alternative to assets in the United States for foreign monetary authorities. Internally, the development of the certificate of deposit has proved an attractive alternative to U.S. Treasury issues for foreign official accounts.

The development of the Euro-dollar market has especially important implications for the demand for U.S. financial assets (including U.S. Treasury issues) by non-official foreign investors. Major commercial banks in important financial centers around the world accept dollar-denominated

deposits from non-bank customers as well as inter-bank deposits. Rates paid on these deposits are higher than on comparable investments in the United States and at times the differential between Euro-dollar and U.S. rates has reached very attractive levels. In 1966 foreign branches of U.S. banks in London started issuing dollar-denominated certificates of deposit in the London market. A secondary market is being developed which will make these assets--which carry higher yields than their counterparts in the United States--even more attractive to both U.S. and foreign investors.

The Euro-dollar market is the most important factor making for greater integration of the international financial system. It is the vehicle through which the money market of the United States is linked with money markets in other currencies. Through the Euro-dollar market, changes in conditions in one financial center may be felt more widely throughout the world.

Greater freedom in international finance has also encouraged international investment in financial centers other than in New York. Local currency money-market investments in Canada have for a long time attracted U.S. investors and more recently Europeans. Foreigners also own considerable amounts of local currency deposits in several Continental countries and in Japan in the form of free yen deposits.

Also, numerous factors of a non-financial nature have encouraged greater inter-linkage of major financial markets and less dependence on assets in the United States, especially for the non-official investor. The

growth of international business operations has encouraged the development of foreign balances in a great number of centers, including the United States. Improved communications have linked important financial centers into practically one world-wide market and played an important role in creating greater interest in foreign investment opportunities. In addition, the rapid expansion of the overseas branch network of U.S. commercial banks has contributed to more inter-linked international finance.

#### Summary and conclusions

The economic and financial rehabilitation of Europe and booming economic activity throughout the industrialized world since has permitted the development of a less restrictive international currency system than existed throughout most of the Fifties. At the same time, the volume of internationally-held financial assets has grown at a rapid rate.

Because of the prominent role the dollar plays as an international reserve asset, foreign monetary authorities have continued to demand financial assets in the United States, increasing their total holdings from \$12.3 billion in 1959 to \$18.1 billion in 1965. Foreign official holdings of short-term U.S. Treasury issues have not grown as strongly as before 1959, however, due in part to relatively more attractive yields on other assets in the U.S. market and the development of the Euro-dollar deposit as an investment alternative outside the U.S. Foreign official holdings of long-term U.S. Treasury issues on balance increased during the first half of the Sixties.

Foreign commercial banks have increased their financial assets in the United States roughly 60 per cent since 1959 but reduced their Treasury securities to a negligible amount. The increased attractiveness of investing in the Euro-dollar market and U.S. certificates of deposit and the greater need for deposit balances in New York banks to support their foreign operations have decreased their demand for Treasury issues.

Foreign non-banks have also decreased their holdings of short-term Treasury issues to a negligible amount since 1959. Tight monetary conditions abroad and higher yields have attracted foreign funds from the United States, and more attractive yields on other types of U.S. securities have drawn foreign non-bank funds out of short-term Treasury issues. Since 1961, foreign private and international holdings of long-term Treasury issues have been falling also.

Generally speaking, the high level of economic activity in the industrial world since 1959 has increased the total demand for financial assets and the volume of internationally-held assets. However, except for foreign monetary authorities, foreigners have been reducing their holdings of short-term U.S. Treasury issues. In the long-term market, foreigners bought Treasury issues net in 1961 and 1963 but sold them net in other years. Overall, in the whole period 1960-1965, foreigners increased their total holdings of both short- and long-term marketable U.S. Treasury issues only about \$800 million.

In addition to marketable U.S. Treasury issues, foreign central banks and governments also purchased special non-marketable bonds and notes (denominated in both foreign currencies and U.S. dollars) issued

by the U.S. Treasury to relieve pressures on the U.S. gold stock. These holdings rose from \$251 million equivalent at the end of 1962--the first year they were issued--to a peak of \$1,692 million equivalent at the close of 1965. However, during the first half of 1966, outstanding securities in the hands of official foreign agencies were reduced to \$1,101 million equivalent.