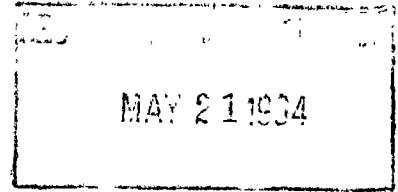




BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON



May 21, 1964.

CONFIDENTIAL (FR)

TO: Federal Open Market Committee

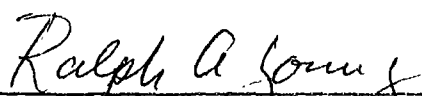
SUBJECT: Volume and
character of System open
market transactions, 1954-63.

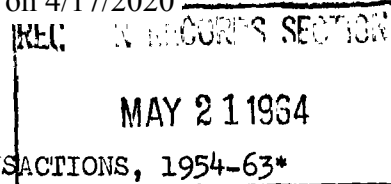
FROM: Mr. Young

From time to time, staff memoranda dealing with historical or current aspects of System open market operations may be of special interest to Committee members. One such memo by Stephen H. Axilrod and Janice Krummack of the Government Finance Section of the Board's Division of Research and Statistics is attached.

This memo reviews open market operations during 1961-63 as compared with those of the period 1954-60, with particular attention to their apparent effect on the behavior of short-term interest rates (e.g., the 3-month Treasury bill rate). However, it does not undertake to examine the full complex of factors that have influenced short-term rates in the previous twelve years; nor has it dealt with the influence of structural changes in the money market (e.g., the growth of negotiable time CD's) over this period on the pattern of bill rate fluctuations, developments which have been reported on at various meetings by Mr. Stone. Other staff studies are needed to illuminate further this intriguing problem, and, if this one serves to stimulate their preparation, it will have served a useful purpose.

Attachment


Ralph A. Young, Secretary
Federal Open Market Committee.



VOLUME AND CHARACTER OF FEDERAL RESERVE SECURITY TRANSACTIONS, 1954-63*

In the last three years of the decade 1954-63, Federal Reserve open market transactions were distinguished by their large volume and by their distribution across all maturity classes of the U. S. Government securities market. Such transactions were associated with a steadily growing economy that nevertheless failed to attain completely satisfactory levels of employment and resource utilization, a persistent balance of payments deficit, and unusually moderate fluctuations in interest rates. Short-term interest rates--typified by the 3-month Treasury bill rate--showed a very moderate upward movement in the 1961-63 period of cyclical expansion and their day-to-day and week-to-week fluctuations also became quite narrow, especially in the years 1962 and 1963.

This configuration of events led to considerable speculation about the extent to which Federal Reserve operations played a contributory or passive role. Some said that operations were not expansive enough for the domestic economy. Others averred that too much Federal Reserve credit was being supplied to the economy and the "excess" was spilling over our boundaries into foreign financial centers. Meanwhile, many who were concerned with the technical performance of our financial markets thought that the character of Federal Reserve operations contributed to an undesirable day-to-day stability of interest rates.

* This paper was prepared by Stephen H. Axilrod, Chief, and Janice Krummack, Economist, of the Government Finance Section of the Board's Division of Research and Statistics.

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The problems raised are well known and have been widely discussed. This paper does not attempt any broad reassessment of all the issues raised by the past three years' attempt simultaneously to achieve domestic and international objectives. And it does not discuss the question of whether policy was too easy or too tight. Rather, given the policy stance of the past three years as a reference point, it sketches in the main characteristics and features of the associated Federal Reserve open market operations. This approach sheds faint, but useful, light on some of the problems mentioned above.

In particular, the size of the net supply of Federal Reserve credit in the past three years has to be evaluated against changes in the technical factors using credit in helping to appraise whether the amount of Federal Reserve credit was "excessive" or not. But apart from the net change in Federal Reserve credit, the gross volume and character of open market operations have important implications for the technical performance of credit markets and for the range of day-to-day interest rate fluctuations.

They are only one among many influences on interest rates, of course, but in evaluating their impact on rate fluctuations, especially of short-term rates, it is necessary to assess whether (a) the increased volume of System open market transactions in the past three years is commensurate with an increased need as demonstrated by greater fluctuations in market factors affecting reserves, or whether (b) the increased volume might also be explained by buy and sell operations that tended to narrow interest rate fluctuations beyond the range which would have resulted from a simple off-setting of reserve factors.

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Summary of Findings

The following main points emerge from the material presented:

(1) The average annual supply of Federal Reserve credit in 1961-63 was extremely large (\$2.3 billion) as compared with 1954-60 (\$185 million) and practically all of it was supplied through open market operations. Outflows of currency into circulation and of gold to foreign countries from a technical point of view increased the need for open market operations to offset the bank reserves that were thereby drained. Federal Reserve credit was also required to support the large expansion of bank credit that was partly generated by the increased public preference for time and savings deposits in those three years and especially after the Regulation Q revision at the beginning of 1962. The need for open market operations to supply reserves was especially marked since only a minor use was made of the reserve requirement policy instrument as a means of supplying funds for bank credit expansion.

(2) The gross volume of Federal Reserve open market operations also expanded sharply in 1961-63, with total transactions (purchases and sales taken together) averaging \$28.2 billion as compared with \$14.9 billion in the earlier period. The greater volume of operations occurred at a time of unusual stability in the Treasury bill rate--not so much in 1961 when the range of weekly fluctuation was still fairly wide but mainly in 1962 and 1963 when the week-to-week fluctuation in the bill rate became very narrow.

(3) Associated with the greater volume, there were changes in the character of operations, some of which may have influenced the bill rate pattern. Both outright transactions and repurchase agreements increased; the former rose the most on average in the period, but repurchase agreements became extremely large by 1963 and may have reduced day-to-day fluctuations of the bill rate in that period. Transactions with foreign accounts have risen relative to total outright transactions, reflecting relatively more purchases from such accounts; such purchases tend to shield the market from downward rate pressures associated with System buying activity in the market. And with regard to transactions in coupon issues maturing in more than a year, these were principally purchases, were relatively most important in 1961, and diminished in importance in ensuing years; when made, however, they too kept some downward pressure off bill rates.

(4) The large and diversified System gross transactions of 1961-63 cannot be completely explained by greater week-to-week fluctuations in volatile reserve factors such as Federal Reserve float and currency in circulation or by the larger net increase in required reserves over the period. Nevertheless, the volatility of reserve factors was greatly enlarged in 1961-63

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partly because banks' ability since late 1960 to count all vault cash as reserves led to larger fluctuations in currency in circulation affecting reserves, as explained in the text.

(5) A part of the greater volume of System open market transactions especially in 1962 and 1963 led to diminished week-to-week fluctuations in free reserves as compared with earlier years. Apart from the way in which operations were carried out, this reduced fluctuation in free reserves, given the comparative stability of the economy, tended to dampen interest rate movements--partly because it helped to stabilize market expectations and partly because the System permitted less play for very short-run changes in supply-demand conditions.

(6) There are many other factors, of course, besides the volume and character of System open market operations which influenced interest rates in 1961-63, and it has not been the purpose of this paper to examine them nor to assess their relative importance. Among such factors were Regulation Q changes and their aftermath. Treasury operations were another. And the comparatively unchanged stance of monetary policy--as typified by relatively small movements of free reserves and the discount rate over a three-year period--was yet another. Treasury and Federal Reserve policies and pronouncements encouraged interest rate stability in the market, and they are essential background against which the impact of System operations have to be judged. Nevertheless, the analysis here suggests that if short-term interest rates are in fact to fluctuate more on a day-to-day basis it may require a degree less activity on the part of the Account Management, although greater rate fluctuations are likely to occur naturally if economic developments lead to more frequent policy changes than in recent years.

Supply and Use of Federal Reserve Credit

Substantially more Federal Reserve credit (net) was supplied to the economy in each of the past three years than in any of the previous seven, with the exception of the recession-recovery year of 1958. As may be seen from Table 1, Federal Reserve credit reflective of monetary policy operations (that is, changes in security holdings and in discounts and advances) rose \$1.9 billion in 1961, \$1.6 billion in 1962, and \$3.3 billion in 1963, as compared with an average annual increase of about \$185 million in the 1954-60 period. Practically all of the Federal Reserve credit

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Table 1

FACTORS AFFECTING SUPPLY OF FEDERAL RESERVE CREDIT

(Annual changes in millions of dollars)^{1/}

Year	Supply of F. R. Credit (other than float)	Factors Accounting for Supply of F. R. Credit					
		Increase in total member bank reserves	Decrease (+) in float	Gold outflow (+)	Increase in currency in circulation ^{2/}	Increase of Treasury deposits at F. R.	Other ^{3/}
1954	- 764	-641	26	317	- 219	-159	- 90
1955	139	- 39	-397	22	516	- 9	49
1956	59	295	-244	- 253	510	29	-280
1957	- 780	-115	190	- 827	157	- 78	-107
1958	2,173	-521	- 53	2,206	439	85	■
1959	1,093 ^{4/}	33	70	1,081	404	54	-245
1960	- 614 ^{4/}	351	-239	1,528	244	- 2	-203
1961	1,901	835	-256	1,025	671	- 8	-366
1962	1,624	- 78	-377	951	1,078	73	- 23
1963	3,256	690	-136	416	2,003	292	- 10

^{1/} Based on averages of daily figures for December.

^{2/} Before 1961 represents currency in circulation outside the Treasury and Federal Reserve. In 1961 and after, when all member bank vault cash could be counted as reserves, represents currency in circulation outside the Treasury, Federal Reserve, and member banks.

^{3/} Includes changes in Treasury currency outstanding less Treasury holdings of cash, foreign and other deposits at the Federal Reserve and other Federal Reserve accounts.

^{4/} In 1959 and 1960 the supply of Federal Reserve credit is smaller than the factors accounting for the supply since the permission given to count increasing portions of vault cash and reserves during those years added to member bank reserves without at the same time adding to Federal Reserve credit. The increase in vault cash counted as reserves in 1959 was \$304 million and in 1960 was \$2,291 million.

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supplied in recent years was through open market operations; member banks increased their borrowing by quite small amounts. In some other years, such as 1955, all Federal Reserve credit had been supplied through member bank borrowings, as open market operations absorbed reserves.

Some of the larger amounts of Federal Reserve credit supplied during the past three years reflect the relatively easy monetary policy of the period, on the one hand, and the greatly enlarged public preference for time deposits, on the other hand. The large inflow of time deposits to banks required a large expansion in the reserve base even though the percentage reserve requirement behind the deposits is small. But there are other explanations, too, for the Federal Reserve credit growth.

One explanation relates to the use of the reserve requirement instrument as compared with open market operations in carrying out policy. Reserve requirement changes were used more frequently in the years before 1961. In 1954, for instance, reserves for bank credit expansion were provided on balance over the year mainly by reductions in reserve requirements--reductions that were large enough to permit a very sizable growth in bank credit even though Federal Reserve credit and total member bank reserves declined. In 1960, too, the permission given member banks to count vault cash utilized already outstanding funds to increase member bank reserve availability, and therefore total Federal Reserve credit could decline over the year even though bank credit rose.

In the 1961-63 period, the reserve requirement instrument was used only once, and large Federal Reserve credit expansion was therefore necessary to support growth in commercial bank credit. The one use

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occurred in the fall of 1962 when \$780 million of reserves were released through a one percentage point reduction in the requirement against time deposits. Even in 1962, though, there was a large expansion of Federal Reserve credit. This was because a substantial amount of credit was needed to offset the impact on bank reserves of outflows of gold to foreign countries and of currency in circulation to the public.

The amount of bank reserve absorption from changes in the gold stock and in circulating currency taken together was a feature of recent years--since 1958 in fact--and accounted in substantial part for the enlarged flow of Federal Reserve credit. Currency and gold absorbed only slightly more bank reserves in the 1961-63 period than in the 1958-60 period, an average of \$2.0 billion per year as compared with \$1.9 billion. In the earlier period, gold outflows were the major factor, but in the more recent period increases of currency in circulation came to be the major factor.

Neither gold outflows nor outflows of currency into circulation were permitted to contract member bank credit and deposits. Thus, these outflows in 1961-63 added substantially to the need for expansionary open market operations since reserve requirements were not much reduced. In supplying credit through open market operations, the System, it should be noted, made substantial inroads into the stock of gold that remained uncommitted to the domestic gold reserve requirement. For instance, in 1963 the \$3.3 billion increase in Federal Reserve credit itself absorbed

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about \$800 million of the \$3.6 billion of gold that had been uncommitted at the end of the previous year (given the 25 per cent requirement for Federal Reserve note and deposit liabilities).

The intensive use of open market operations throughout the 1961-63 period also added slightly more downward pressure on short-term interest rates than would have occurred if it had been possible to make more frequent use of reserve requirement reductions. But in view of the balance of payments problem, the Federal Reserve made efforts to modify such pressures by extending operations into longer-term securities.

Gross Transactions in U. S. Government Securities

The rise in the net supply of Federal Reserve credit over the past three years was accompanied by sharply increased gross Federal Reserve security transactions--open market purchases and sales taken together. Including both outright transactions and repurchase agreements, the 1954-60 annual average of gross transactions was \$15.0 billion but by 1961-63 the annual average had risen to \$28.2 billion as Table 2 shows. Most of the increased System security purchases and sales of the past three years represented greater outright transactions. Such transactions rose from a \$5.6 billion annual average in 1954-60 to \$15.0 billion in 1961-63, but repurchase agreements also rose from an annual average of \$9.4 billion to one of \$13.2 billion and were especially large (\$18.1 billion) in 1963.

The rise in outright transactions included, of course, substantial increases in both System purchases and System sales of Government securities. Average annual purchases rose from \$3.6 billion in 1954-60

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Table 2

GROSS TRANSACTIONS OF THE SYSTEM OPEN MARKET ACCOUNT 1/
(In billions of dollars)

Year	Total Transactions	Total Outright	Repurchase agreements	Redemptions
1954	9.6	4.3	5.4	2.0
1955	11.5	3.6	7.9	1.3
1956	14.3	5.1	9.2	.9
1957	18.3	4.7	13.5	1.0
1958	17.1	9.4	7.7	1.6
1959	12.4	4.4	7.9	.9
1960	21.4	7.5	13.8	1.4
1961	24.7	15.2	9.5	1.0
1962	28.6	16.6	12.0	1.4
1963	31.4	13.3	18.1	1.2
Annual Average during:				
1954 - 1960	14.9	5.6	9.4	1.3
1961 - 1963	28.2	15.0	13.2	1.2

Note: Details may not add to totals because of rounding.

1/ On a commitment basis.

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to \$9.2 billion in 1961-63, and sales rose from an average of \$2.0 billion a year to \$5.8 billion, as shown in Appendix Table A. Meanwhile, redemptions of maturing issues by the System were little changed between the two periods.

Gross transactions are always much larger than net transactions, depending as they do on the amount of short-run up and down movement in currency in circulation, float, and other reserve factors. A later section of the paper will evaluate the extent to which the rise in gross transactions was in fact a reflection of greater short-term fluctuations in reserve factors. But the rise in gross transactions was also to some degree a result of the changes in the underlying credit conditions and in the trends of the reserve factors discussed in the previous section. This was reflected most strongly in System buying, and net purchases (net sales and redemptions) as a percentage of total purchases rose from 6 per cent in 1954-60 to 24 per cent for the last three years.

In fact, in 1961 and 1962 net purchases of securities maturing in more than a year provided all the Federal Reserve credit to support bank credit and money expansion during the periods. It was only in 1963 that System transactions in the bill and short-term coupon areas provided credit on balance to the economy. Gross short-term transactions were very large, but purchases tended to offset sales and redemptions since operations in that end of the market were mainly "defensive" (to offset temporary fluctuations in reserve factors). By contrast, transactions in coupon issues maturing in more than a year were mainly on one side of the market.

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Maturity distribution of outright transactions. The sharp rise in gross transactions of the System in 1961 coincides--in part by chance--with the formal abandonment of the bills preferably policy in February of that year. In the ensuing period through 1963, System purchases of greater than one-year maturities totaled \$6.1 billion, substantially dwarfing \$255 million in sales of these maturities, as shown in Appendix Table B. As a result, the "dynamic" open market operations of the System--i.e., those that contributed to the net expansion of bank reserves over a year--were accomplished mainly in the long-term market, and the operations themselves had a minimum downward impact on short-term interest rates and a maximum downward effect on long-term rates. During only two periods of the preceding seven years, by contrast, did the System venture into longer maturities--in the summer of 1958 and the final months of 1960; purchases of the longer-term issues during these periods amounted to \$178 million and sales totaled \$14 million.

The System has stayed within the short-term market area in its transactions that have been related mainly to week-to-week fluctuations in reserve factors because that end of the market has the largest capacity to absorb continuous operations with minimum risk of unwarranted market interest rate expectations and of System domination of the market.^{1/} Thus, gross transactions in the short-term area were quite large in 1961-63, even though

^{1/} The absorptive capacity of the market can be indicated by available transactions data. In 1962 and 1963, average annual Government security transactions reported by dealers amounted to \$241 billion in the within 1-year maturity area, \$33 billion in the 1-5 year range, and \$26 billion in over-5-year securities.

net purchases were relatively small, and gross outright transactions in coupon issues maturing within one year and in Treasury bills together have far outweighed those in long-term securities, as shown in Table 3.

Table 3
System Purchases and Sales by Maturity Category
(As a percentage of total purchases and sales)

Year	Purchases				Sales			
	Treasury bills	Coupon issues			Treasury bills	Coupon issues		
		Within 1 year	1-5 years	5 years and over		Within 1 year	1-5 years	5 years and over
1954-60 ^{1/}	95.3%	4.3%	0.4%	0.1%	97.9%	2.0%	0.1%	--
1961	63.6	6.6	21.1	8.7	74.1	24.3	1.6	--
1962	69.3	11.0	16.0	3.7	92.4	6.0	1.6	--
1963	82.8	0.6	9.6	7.0	97.7	1.2	1.1	--

^{1/} Annual average.

The increase in transactions that did occur outside the short-term area after 1960 was almost entirely on the purchase side; on the sales side, a relative decline in bill sales during 1961 was offset by a rise in sales of coupon issues maturing within a year. The continued larger share of Treasury bills and short-term coupon issues in System sales as compared with purchases during 1961-63--and the correspondingly larger share of longer-term issues in purchases--was consistent with System efforts to, at a minimum, keep downward pressures off short-term rates. It also involved efforts to put direct upward pressures on such rates at times through the operations themselves, rather than only through changes in reserve availability.

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By 1962 and especially 1963 there was a movement back to the percentage patterns shown in the table for the 1954-60 period. The market itself kept short-term interest rates somewhat higher in the past two years. In 1962 the increased commercial bank intermediation associated with the increase in rates paid on time and savings deposits served to put upward pressure on short rates and downward pressure on long rates, as banks' investment preference moved away from the short toward the long end of the market. In 1963, a change in the Federal Reserve discount rate and the associated reduction in reserve availability helped bring short-term rates to still higher levels. These developments all served to reduce the need to supply bank reserves for credit growth through operations in long-term securities.

Transactions with dealers and foreign accounts. As gross outright transactions have risen, System transactions with dealers and with foreign accounts have both shared in this rise, though the mix has changed somewhat. Average annual transactions with dealers have increased from \$4.2 billion in 1954-60 to \$11.0 billion in 1961-63, while transactions with foreign accounts rose from an annual average of \$1.3 billion to \$4.0 billion, a smaller absolute but a larger percentage increase than dealer transactions. As a result, System transactions with foreign accounts--the bulk of which are in bills but also include some coupon issues--have risen somewhat as a percentage of total transactions, as shown in Table 4. This rise was made possible by the considerable enlargement in foreign holdings of U. S. Government securities as the balance of payments position of foreign countries improved.

Table 4
 Transactions with Dealers and Foreign Accounts
 (As a percentage of total transactions)

Years	Total transactions		Purchases		Sales	
	With dealers	With foreign accounts	From dealers	From foreign accounts	To dealers	To foreign accounts
Annual avg. during:						
1954 - 60	76.1%	23.9%	85.2%	14.8%	59.9%	40.1%
1961 - 63	73.3	26.7	78.9	21.1	64.2	35.8

Transactions with foreign accounts have the same bank reserve impact as transactions with dealers, but, in the opinion of some observers, less market interest rate effect. Transactions directly with foreign accounts may involve less chance of expectational rate movements than if the System sold into the market to execute (say) foreign account sale orders and at the same time bought in the market for its own account to supply reserves. If the market does not see either the selling or buying transactions, there will certainly be no rate impact; whereas if they see both, it is not certain that the rate effects will cancel out and it is possible that undue weight will be given to the System's own transactions.

System operations with foreign accounts generally take place when foreign orders and System need to provide or absorb reserves coincide. Thus, there may be little reason to attach great significance to the fact that a modest rise in transactions with foreign accounts as compared with all transactions was accompanied by a relative increase in purchases from foreign accounts and a relative decrease in sales, as shown in the table.

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But it is true that if the System were using foreign accounts to any active extent as a way of keeping downward pressures off short-term rates, one would expect purchases from foreign accounts to rise relative to purchases from dealers. The figures do indicate that this occurred in 1961-63 on average (as a result of relatively large transactions in 1961 and 1963 mainly).

Repurchase agreements. The most notable fact about the data on the volume of repurchase agreements is their sharp rise from 1961 to 1963, as shown in Table 2. By 1963 the volume of repurchase agreements was greatly above the average volume for the preceding nine years and was also considerably in excess of the earlier high in 1960.

The specific direction of effect on market interest rates of the very extensive use of repurchase agreements last year--together with the sizable though less extensive use in 1962--depends on what is assumed to happen in the absence of RP's. If one argues that the availability of favorable financing terms to dealers kept the pressure of large and not necessarily desired (from dealer perspective) bill positions off the market (and dealer bill positions averaged around \$2.5 billion in 1962 and 1963 as compared with \$1.9 billion in 1961), one would conclude that repurchase agreements kept upward pressure off bill rates.

If, however, the repurchase agreements were primarily to supply reserves--as most in fact are--these reserves would have otherwise been supplied by System bill purchases and soon absorbed by bill sales (to have a reserve effect similar to RP's). The purchase would have temporarily

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reduced dealer financing needs and thereby, like repurchase agreements, kept upward pressure off bill rates. The sale, however, would have restored dealer bill holdings and added to financing needs, thereby again putting upward pressure on bill rates, in the same way as maturing RP's would. Only if the RP's were continuously available independently of reserve need would upward rate pressures seem to be alleviated.

But to go one step further, suppose that dealers were content with their sizable bill positions in view of the pre-existing bill rates, their short-run expectations, and customer demand. Outright purchases by the System instead of RP's would then put downward pressure on interest rates in the process of temporarily reducing inventories below the desired levels. Dealers could not be certain that the System would very soon be selling bills again (whereas they can be certain that the RP will mature), so that they would attempt to restore their inventory or would become less willing sellers in the market--in either case rates would continue under downward pressure. The reverse occurs when the System does turn around and sell the security. Thus, there would be more interest rate fluctuation if RP's were used less.

The extensive use of repurchase agreements in effect protected the market from these possibilities that would lead to greater day-to-day interest rate fluctuations. Moreover, the availability of favorable financing, especially at times when dealers may be hard pressed to find money, may have prompted dealers to hold more inventories than they otherwise

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would have at existing market rates, and this too increased the market's capacity to ride out temporary changes in customer demand and supply with only minimum interest rate changes. But, by the same token, the reduced sensitivity of day-to-day interest rates means that it became more difficult to use the market as an indicator of changes in short-run demand and supply conditions.

Week-to-week fluctuations in reserve factors

In evaluating whether and to what extent the large System open market transactions of 1961-63 have tended to reduce week-to-week fluctuations in the bill rate, it is necessary to gauge the need for such transactions against the increased week-to-week variations in reserve factors. While week-to-week variations partially reflect the trend that develops over a year in reserve factors, they also, and mainly, reflect the continuing temporary and seasonal movements which determine the volume of System "defensive" operations. Especially important in this respect are Federal Reserve float, currency in circulation, and Treasury deposits at the Federal Reserve, all of which are highly volatile on a week-to-week daily average basis. ^{1/} (Gold is significant in the longer run, but does not show sizable week-to-week fluctuations).

^{1/} The within-week movements of the reserve factors should not affect System gross transactions significantly since the reserve targets of monetary policy--principally free reserves--are expressed as an average of daily figures for the week. The intra-weekly movement would have an impact on System transactions to the extent that the within-week pattern is not correctly anticipated and therefore leads to, for example, both purchases and sales during a week. Within-week movements of money market indicators--such as the Treasury bill rate, the Federal funds rate, and the volume of Federal funds transactions--may also affect the volume of transactions if the Account Management is attempting to maintain a more or less steady "tone" in such conditions.

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The increased annual gross fluctuation of these volatile factors does indeed count for a good part of the rise in System transactions. Measures of the range of fluctuation, shown in Table 5, are derived by summing for the year ^{1/} the week-to-week increases and decreases in these factors. Complementing the Table, Charts 3-5 which are appended, display the week-to-week changes in these factors for the first and last year of the data period 1954-63.

Float. The gross fluctuation in float has risen from an annual average of \$9.5 billion in the 1954-60 period to an average \$12.8 billion in 1961-63, with the net change over a year remaining close to zero, of course. From a fluctuation of \$7.3 billion in 1954, float rose to \$13.0 billion in 1963, with the week-to-week fluctuation illustrated in Chart 3. The rise was not a gradual one, however, for an earlier peak in fluctuation had been reached in 1956, and was not surpassed until 1961. During the past three years the volume of float was at a sustained high level.

The principal explanation for the fact that the gross fluctuation in float reached a new higher range in the 1961-63 period seems to lie with increased check writing. The annual rate of increase in debits to demand deposits at all reporting centers in 1961-63 rose to about 10 per cent from the 7 per cent rate that had obtained in 1954-60.

^{1/} The annual figure is not exact since the data is derived from statement week changes which do not coincide exactly with the first and last day of the calendar year.

Table 5

GROSS FLUCTUATIONS^{1/} IN FLOAT, CURRENCY IN CIRCULATION, & TREASURY DEPOSITS

(In billions of dollars)

Year	Float			Currency in Circulation			Treasury Deposits		
	Increases	Decreases	Total	Increases	Decreases	Total	Increases	Decreases	Total
1954	3.6	3.7	7.3	2.4	2.6	5.0	3.3	3.5	6.8
1955	4.7	3.9	8.6	2.8	2.2	5.0	2.8	2.8	5.6
1956	5.6	5.9	11.5	2.9	2.5	5.4	1.8	1.9	3.7
1957	5.2	5.2	10.4	2.8	2.7	5.5	2.0	2.0	3.9
1958	4.1	4.0	8.1	3.3	2.8	6.1	1.8	1.8	3.6
1959	4.8	4.7	9.5	3.2	2.8	6.1	1.4	1.3	2.7
1960	5.7	5.3	11.0	3.4	3.1	6.5	1.5	1.4	2.8
1961	6.2	6.0	12.2	4.8	4.6	9.4	1.5	1.6	3.2
1962	6.8	6.5	13.3	5.5	4.4	9.9	1.5	1.3	2.8
1963	6.5	6.4	13.0	6.4	4.3	10.7	2.0	1.7	3.7
Annual average during:									
1954 - 1960	4.8	4.7	9.5	3.0	2.7	5.6	2.1	2.1	4.2
1961 - 1963	6.5	6.3	12.8	5.6	4.4	10.0	1.7	1.5	3.2

Note: Detail may not add to totals due to rounding.

^{1/} Annual sum of week-to-week increases and week-to-week decreases; derived from statement week averages of daily figures.

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Currency in Circulation. Like float, but in an even more exaggerated form, gross short-term fluctuations in currency in circulation affecting bank reserves have been more pronounced in recent years. In 1961-63, such fluctuations jumped to an average of \$10 billion, as compared with an annual average of \$5.6 billion in 1954-60 (and a range that was only \$5.0 to \$6.5 billion over the seven year period). The definition of currency in circulation relevant to analysis of the need for Federal Reserve credit has changed over the decade. Banks were permitted to count vault cash as part of their reserves beginning with partial reserve credit in 1959 and allowing full credit in the latter months of 1960. As a result, for the 1961-63 period, currency in circulation refers to holdings of currency outside member banks, the Federal Reserve, and the Treasury, whereas for earlier years member bank vault cash was a part of currency in circulation since changes in vault cash affected total bank reserves. ^{1/}

The enlarged week-to-week fluctuation of currency in circulation during 1961-63 seems to have been traceable to at least two factors. One was the earlier mentioned increase in public preference for currency. The average annual net increase of currency in circulation in the recent period was equal to about 12 per cent of the gross fluctuation in currency that occurred during a year, as compared with 5 per cent in the earlier years.

^{1/} A precise measure of currency in circulation affecting reserves would exclude changing amounts of vault cash in the transition period 1959-60. This presents difficult statistical problems, however, and was not attempted for these purposes. Such a measure would not change any of the analysis, especially since the bulk of vault cash could not be counted as reserves until toward the end of 1960.

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In other words, the short-term fluctuation was enlarged because it occurred under conditions of changing long-term preferences for cash in hand. To the extent that the greater preference for currency reflected a greater need for currency for transactions purposes, it would also have tended to enlarge the seasonal swings; not only outflows of currency into circulation would have become larger but also inflows from circulation. In any event, both outflows and inflows increased.

The vault cash provision was a second and major influence on the extent to which currency fluctuations came to affect reserves. In earlier years when vault cash could not be counted as reserves, the amount of cash banks did hold provided a cushion which enabled them to satisfy customer currency needs before, and in the very short run perhaps without, making large calls on their reserve balances. Now, however, bank vault cash is not only a means for supplying customer cash needs but it is also a part of bank primary reserves. One result of this dual function is that outflows of currency into circulation have an immediate impact on banks' total reserves, whereas formerly these outflows would have immediately affected measures of bank liquidity and would not have affected the reserve base until banks felt it necessary to call on reserve balances.

Treasury deposits at the Federal Reserve. There was little change in the gross fluctuation of Treasury deposits at the Federal Reserve after 1955. Initiation of the mechanism for making C bank calls in July of that year led to a considerable decline in short-term fluctuations in the Treasury's

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balance at the Federal Reserve. These fluctuations fell from \$6.8 billion in 1954 to \$3.7 billion in 1956, as the C bank mechanism enabled the Treasury to eliminate the lag between the date of call and its effect on the balance. The Treasury has since used C bank calls to keep better day-to-day control over its balance, although control is by no means perfect because receipts and payments affecting the balance are difficult to predict on a daily basis.

In 1963, the target level of the balance was raised from \$500 million to \$900 million. Though a higher target balance does not necessarily result in greater short-term fluctuations, the higher balance does afford more leeway so that less emphasis might be placed on a minimization of deviations from the target. It also provides a little more flexibility for use of marginal changes in the balance as a means of affecting reserves-- for instance, the balance could be built up toward the end of those statement weeks when it may not be desirable to undertake open market sales of securities because they would have to be immediately reversed at the beginning of the next week. Fluctuations were in fact larger in 1963 than in the previous five years.

Nevertheless, for 1961-63 as a whole the average annual fluctuations on a week-to-week basis fell to \$3.2 billion from \$4.2 billion in 1954-60. Thus the need for larger gross security transactions by the System which derived from the greater short-term fluctuations in float and currency were to a minor degree canceled by the greater short-term stability in the Treasury's balance.

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The factors taken together. It is possible that the movements of the three factors in any week could be largely offsetting in their reserve effect. This was not the case, however. As shown in the first column of Table 6, the reserve effect of gross fluctuations in float, currency, and Treasury deposits taken together averaged \$16.2 billion in 1961-63, or about 50 per cent more than the \$10.7 billion average in 1954-60.

It would appear from the foregoing that the need for Federal Reserve operations increased in the 1961-63 period in large part because of structural changes in the economy. The permission to count vault cash as reserves increased the week-to-week fluctuations of currency in circulation as they affect reserves. This could be a long-lasting change.

The other changes are not so obviously long lasting. The enlarged preference for currency may abate, although the reasons for the greater preference are not clear--certainly not as clear as was the case in the Korean war period of 1951-52--and therefore expectations of a return to a net currency outflow more like the 1954-60 period cannot be strongly based. And with respect to float, there is no reason (other than a change in collection procedures) to expect it to diminish significantly, but again it is not clear whether the next few years will bring a continuation of the accelerated rise in check writing evident in 1961-63, a return to the more moderate rise of earlier years, or even a period of no increase as automation and more efficient transport reduce check collection lags.

Table 6

GROSS RESERVE FLUCTUATIONS AND SYSTEM TRANSACTIONS ^{1/}

(In billions of dollars)

Year	Reserve Effect of Float, Currency in Circulation, and Treasury Deposits Taken Together			Free Reserves			Gross Transactions (Weekly average basis)		
	Increases	Decreases	Total	Increases	Decreases	Total	Increases	Decreases	Total
1954	5.5	5.2	10.7	4.6	4.8	9.4	2.5	5.7	8.2
1955	5.5	5.4	10.9	3.5	3.9	7.4	2.9	3.2	6.1
1956	5.3	5.8	11.1	3.5	3.6	7.0	3.1	2.8	5.9
1957	6.5	6.3	12.9	3.9	3.8	7.7	3.1	4.1	7.3
1958	3.7	4.8	8.5	1.9	2.1	4.0	5.3	3.2	8.5
1959	4.8	5.1	9.8	2.0	2.3	4.3	3.1	2.7	5.7
1960	5.1	5.7	10.8	3.5	2.4	5.9	4.7	4.6	9.3
1961	7.8	7.8	15.5	2.5	2.8	5.3	6.6	4.7	11.3
1962	8.0	8.9	16.8	1.8	1.8	3.6	7.9	5.2	13.1
1963	7.0	9.4	16.4	1.4	1.5	2.9	9.0	5.9	14.9
Annual average during period:									
1954 - 1960	5.2	5.5	10.7	3.3	3.3	6.6	3.5	3.8	7.3
1961 - 1963	7.6	8.7	16.2	1.9	2.0	3.9	7.8	5.3	13.1

Note: Detail may not add to totals because of rounding.

^{1/} See first footnote of Table 5.

^{2/} Includes both outright transactions and RP's, for detail see Appendix Table C.

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System Transactions, Reserve Factors, and Free Reserves

The enlarged fluctuation in volatile reserve factors during 1961-63 does not completely account for the greater volume of System open market transactions in the period. The first column of Table 6 indicates a \$5.5 billion greater need for Federal Reserve transactions in 1961-63 than in 1954-60--a relative increase of about 50 per cent. ^{1/} The last column shows that weekly average Federal Reserve gross transactions (including redemptions) have risen absolutely by \$5.8 billion, which represents an 80 per cent rise. ^{2/} Thus, the relative rise in gross transactions (on a weekly average basis) was larger than the relative rise in the need for such transactions from looking at the volume of reserve factors.

It is possible, of course, that there was some change in the relation between System transactions and reserve factors between the two periods. In 1961-63 reserve factor movements could have been more out of

^{1/} If the changes in gold over a year were taken into account virtually nothing would be added to the \$5.5 billion difference because gold outflows were large in the latter part of the 1954-60 period. Inclusion of required reserves would add another \$500 million to the difference because of the greater net expansion of such reserves in the past three years on average.

^{2/} Gross transactions in this table differ from total transactions in Table 2 in three respects. First they are based on the week to week change in the weekly average of System holdings and therefore purchases and sales that occur during a statement week are netted. Secondly, they include redemptions in the total. And thirdly, they are on a statement week and not a calendar year basis.

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line with System reserve targets than in the earlier period and hence required more System operations; in fact, the greater net supply of Federal Reserve credit in the 1961-63 period is one such indication.

Nevertheless, there was apparently more of an increase in Federal Reserve transactions during 1961-63 than was called for by the relative growth in the volume of reserve factors, including greater growth in required reserves. This was associated with smaller week-to-week fluctuations in free reserves. Again referring to Table 6, it can be seen that free reserves fluctuated only \$3.6 billion and \$2.9 billion in 1962 and 1963.

To some extent, this very small fluctuation, as compared with earlier years, is attributable to the minimal changes made in the posture of System policy. But, apart from this, it would appear that the System's capacity to control free reserves may have increased. Improvement in procedures for projecting reserve factors, including required reserves would be one reason.

Another reason may be found in the development of a more efficient Federal funds market. As funds came to be more actively traded in the past two years, some of the erratic week-to-week fluctuations in free reserves previously attributable to changes in reserve distribution between county and city banks were ironed out. In addition, the Federal funds market provided the Account Management with another and very sensitive indicator of market tone against which they could evaluate daily projections of reserve factors. The assessment of projected figures in light of market tone apparently at times enabled the Account Management to undertake operations which in effect anticipated later revisions in the projected and also actual figures.

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A further point bearing on interpretation of the size of transactions can be brought out. Gross System transactions in Table 6 are summed from purchases netted against sales within a week, while those in Table 2 include all purchases and all sales. As compared with 1954-60, Table 2 gross transactions (with redemptions added) in 1961-63 are much larger than Table 6 transactions. From this it would appear that the System did more purchasing and selling within a given week in 1961-63 than it did earlier. ^{1/}

The greater intra-week activity was seemingly in part related to efforts to keep money market conditions, and especially at times the Treasury bill rate, relatively stable, as indicated by the Federal Open Market Committee directives of that period. In carrying out this policy, there were a minor amount of swap operations between short- and long-term securities designed to help stabilize short-term rates. There were also some offsetting operations in short-term securities themselves--partly because projections of reserve factors during a week still contained unanticipated errors and therefore perhaps required a reversal of operations toward the end of a week but also because of more direct efforts to limit interest rate movements. Finally, the increased use of repurchase agreements helped keep the market stable,

^{1/} The volume of transactions can also be gauged against the number of days the System was in the market during a year. In the three years from 1958 to 1960, the System made outright transactions in the market on 88, 45 and 81 days respectively, which represented 35 per cent, 18 per cent, and 32 per cent of trading days. In the years 1961 to 1963, the System was in the market 115, 120, and 87 days respectively--or 46 per cent, 48 per cent, and 34 per cent of all trading days. Thus, the market saw System trading activity on more days in 1961-63 than in 1958-60. So far in 1964 (through April) the System has been in the market 33 per cent of all trading days.

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but it also led to enlarged total transactions because RP's would sometimes, for example, be withdrawn earlier than expected and therefore necessitate additional reserve supplying operations.

Concluding Comment: Operations and Interest Rates

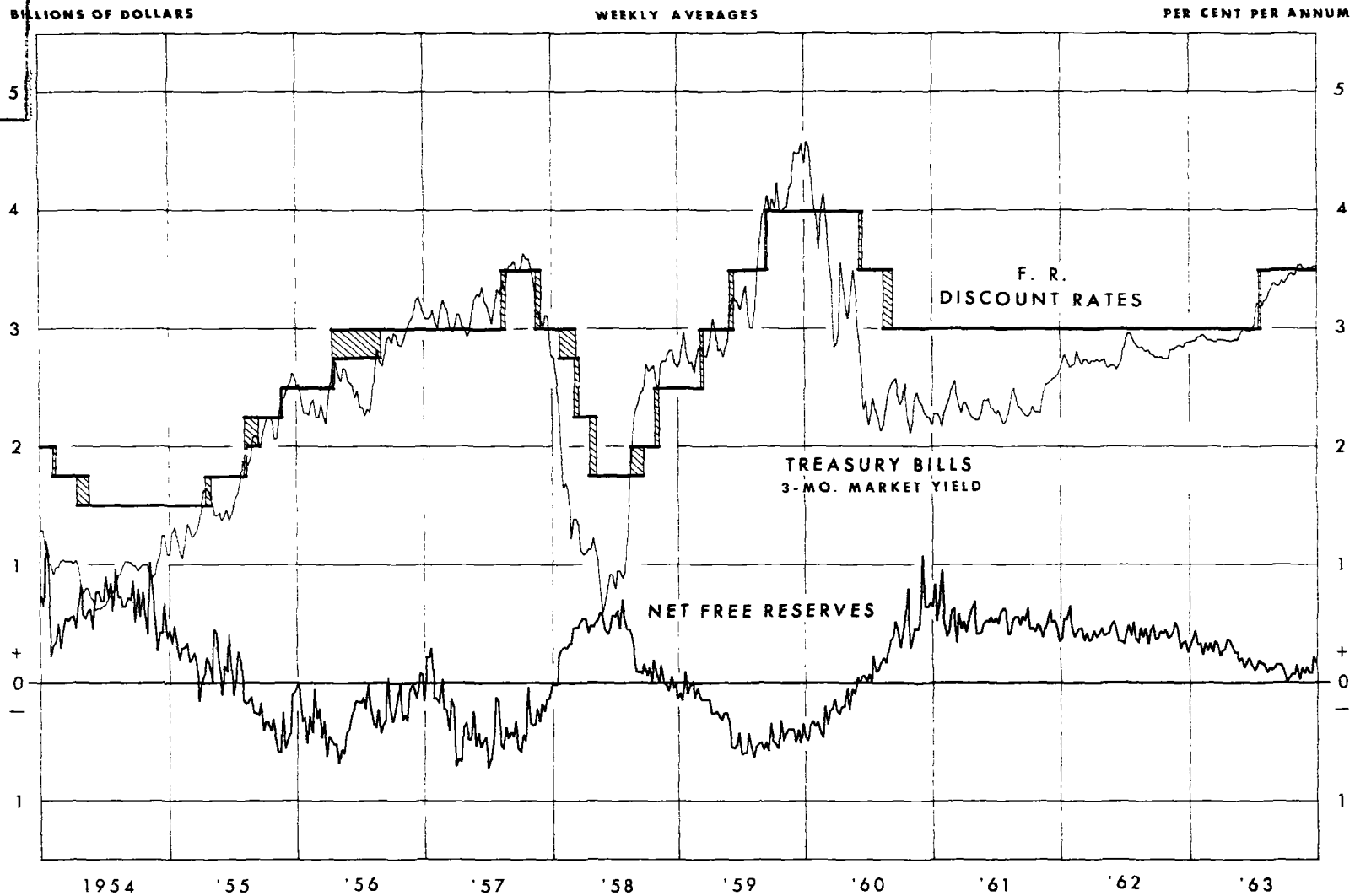
The preceding sections of the paper have shown how tendencies in the factors affecting reserves in the past three years led, in conjunction with the posture and purposes of monetary policy, to an increase in System open market operations. The widened scope for operations has been accompanied by a change in the character of operations, with operations undertaken outside the short-term area, greater transactions with foreign accounts, and increased use of repurchase agreements. These devices have all been used at times to modify pressures on short-term interest rates in view of the System's concern with the balance of payments and with money market conditions. In the process, short-term interest rates began to show less and less fluctuation over the years. As Chart 1 shows, the week-to-week fluctuation in the Treasury bill rate became quite small by 1962 and 1963.

In those years the impact of System concern with money market conditions--and perhaps just as or more importantly the evident Treasury concern with the level of the bill rate (as manifested in its cash borrowings in the weekly bill auction to help keep a desired degree of pressure on the rate)--apparently built a stability of expectations into the attitudes of active market participants. And this itself tended to reduce fluctuations in the bill rate, as dealers and others became less willing to "bet" that changes in rates would tend to cumulate to any significant extent in one direction.

REC'D BY RECORDS SECTION
MAY 21 1964

Chart 1

INTEREST RATES AND FREE RESERVES



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The dampened fluctuations of free reserves, especially in 1962 and 1963, illustrated in Chart 2, probably helped to sustain stabilizing market interest rate expectations. Free reserves are taken by the market as a significant indicator not only of Federal Reserve policy but also of short-term market conditions, and limited fluctuations in free reserves over a number of weeks would therefore tend to keep active market participants from expecting significant immediate changes in short-term interest rates.

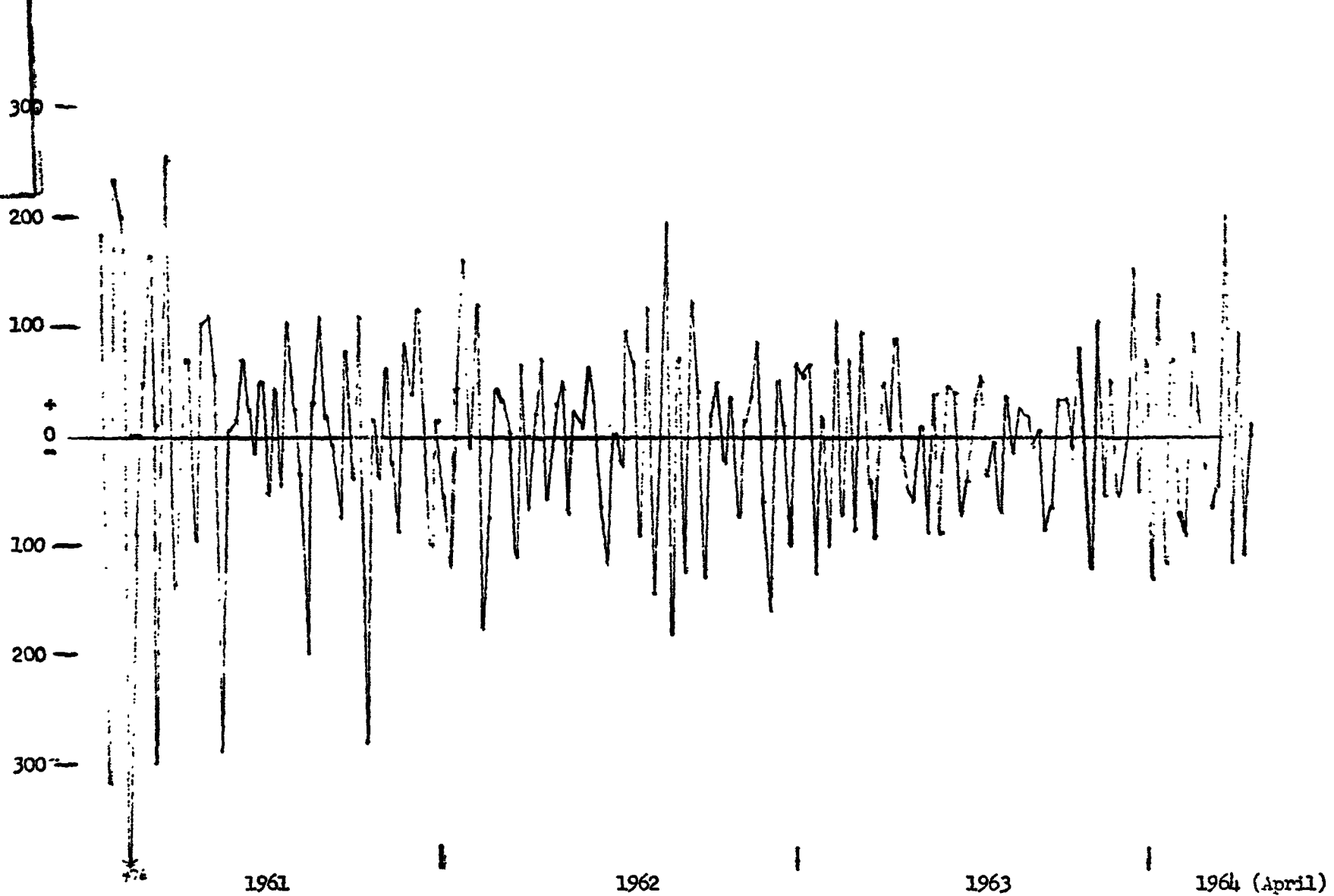
But perhaps more fundamentally the diminished week-to-week variations in free reserves meant that the System was permitting less play for marginal changes in supply-demand conditions that would be reflected in short run interest rate movements. The development of comparative stability in both free reserves and interest rates was facilitated, however, because underlying economic and credit demand-supply conditions showed little basic change in the course of 1962-63, after allowing for the initial change associated with the Regulation Q revision. As a result the average level of interest rates would not in any event have been expected to change much. Thus there were not substantial market pressures tending to move free reserves and interest rates, and the marginal dampening of both through System operations not only was facilitated by such an environment but also may have been inevitable given the announced concerns and goals of Federal Reserve and more generally Administration policy.

It has not been the purpose of this paper to propose a complete explanation for the short-term interest rate stability of 1962-63. Rather, the purpose was to indicate whether System operations themselves were a

CHART 2
WEEK TO WEEK FLUCTUATIONS IN FREE RESERVES, 1961-1964

REC'D RECORDS SECTION
MAY 21 1964

(In millions of dollars)



Note: Based on weekly averages of daily figures.

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contributory factor. Thus, we did not discuss the basic credit demand-supply conditions of the period, only noted the basic Federal Reserve and Treasury policy posture, and did not examine in any real detail such factors as the changes in Regulation Q at the beginning of 1962 and mid-1963, the evolution of the market for time certificates of deposit, and the growing use of the Federal funds market--all of which no doubt contributed in varying degree to the moderation of short-term rate movements.

Even so, the analysis of this paper suggests that the character of System operations was adapted so that it became easier to keep bill rate movements in a narrow range. It also suggests that this end was accomplished in part by limited fluctuations in free reserves. If short-term interest rates are to fluctuate more in future--as they gave some sign of doing in March and April of 1964--our analysis suggests that it may require a degree less activity (and also perhaps a different kind of activity, such as less use of foreign accounts or repurchase agreements) on the part of the System Account Management. But it must also be noted that greater rate fluctuations will also occur naturally when the posture of monetary policy changes, and especially if economic developments should make it necessary for changes to become more frequent than they were in the previous three years.

Appendix Table A

OUTRIGHT PURCHASES AND SALES^{1/} OF SYSTEM OPEN MARKET ACCOUNT
(In billions of dollars)

FEDERAL RESERVE BOARD
 MAY 21 1964

Year	With Dealers			With Foreign Accounts			Total		
	Purchases	Sales	Total	Purchases	Sales	Total	Purchases	Sales	Total
1954	2.8	1.1	3.9	.1	.3	.4	2.9	1.4	4.3
1955	2.1	1.0	3.1	.1	.4	.5	2.2	1.3	3.6
1956	2.8	1.3	4.2	.3	.7	1.0	3.1	2.0	5.1
1957	2.0	1.4	3.4	.4	.9	1.3	2.4	2.3	4.7
1958	5.9	1.6	7.4	.9	1.0	1.9	6.8	2.6	9.4
1959	2.2	.4	2.7	.6	1.1	1.8	2.9	1.6	4.4
1960	3.5	1.6	5.1	1.2	1.2	2.5	4.7	2.9	7.5
1961	6.9	3.5	10.4	2.2	2.6	4.8	9.1	6.1	15.2
1962	8.2	4.3	12.6	1.6	2.4	4.0	9.8	6.7	16.6
1963	6.7	3.3	10.0	2.1	1.2	3.3	8.8	4.5	13.3
Annual average during:									
1954 - 1960	3.0	1.2	4.2	.5	.8	1.3	3.6	2.0	5.6
1961 - 1963	7.3	3.7	11.0	2.0	2.1	4.0	9.2	5.8	15.0

Note: Detail may not add to totals due to rounding. Data on a commitment basis.

^{1/} Sales exclude redemptions.

RECORDS SECTION
MAY 21 1964

Appendix Table B

MATURITY DISTRIBUTION OF SYSTEM GROSS TRANSACTIONS^{1/}

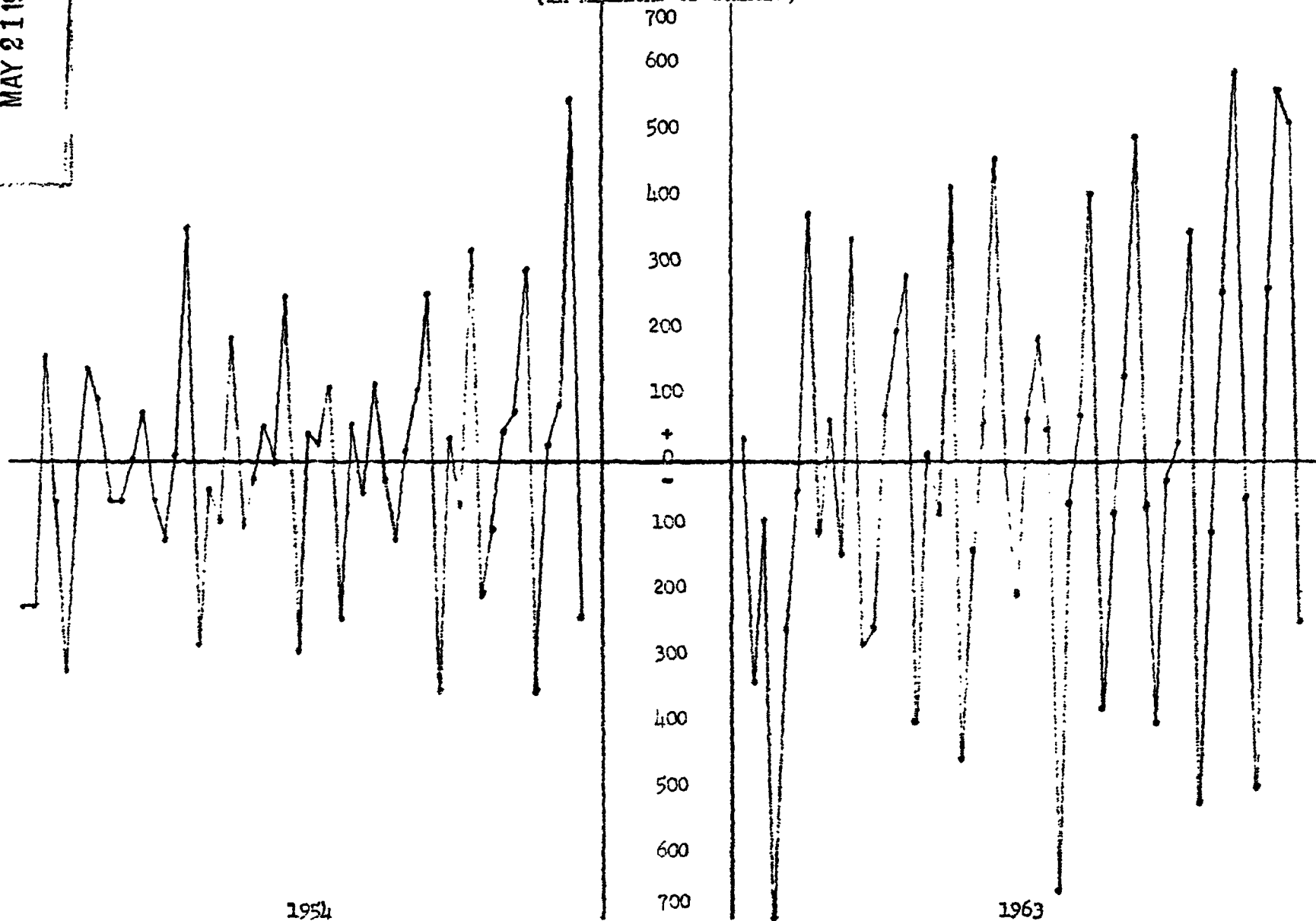
(In millions of dollars)

Year	Treasury Bills			Other within 1 year		1 - 5 years		5 years and over	
	Purchases	Sales	Redemptions	Purchases	Sales	Purchases	Sales	Purchases	Sales
1954	2,903	1,354	1,978						
1955	2,009	1,416	1,257	167					
1956	3,125	2,018	888						
1957	2,407	2,161	984		153				
1958	5,489	2,633	1,590	1,200		10		55	
1959	2,866	1,610	901						
1960	4,370	2,631	1,445	202	218	113	14		
1961	5,794	4,486	1,015	600	1,475	1,923	97	788	
1962	6,813	6,211	1,353	1,085	402	1,569	108	363	
1963	7,280	4,429	1,152	56	54	843	50	611	

^{1/} On a delivered basis.

REGIONS SECTION
MAY 21 1964

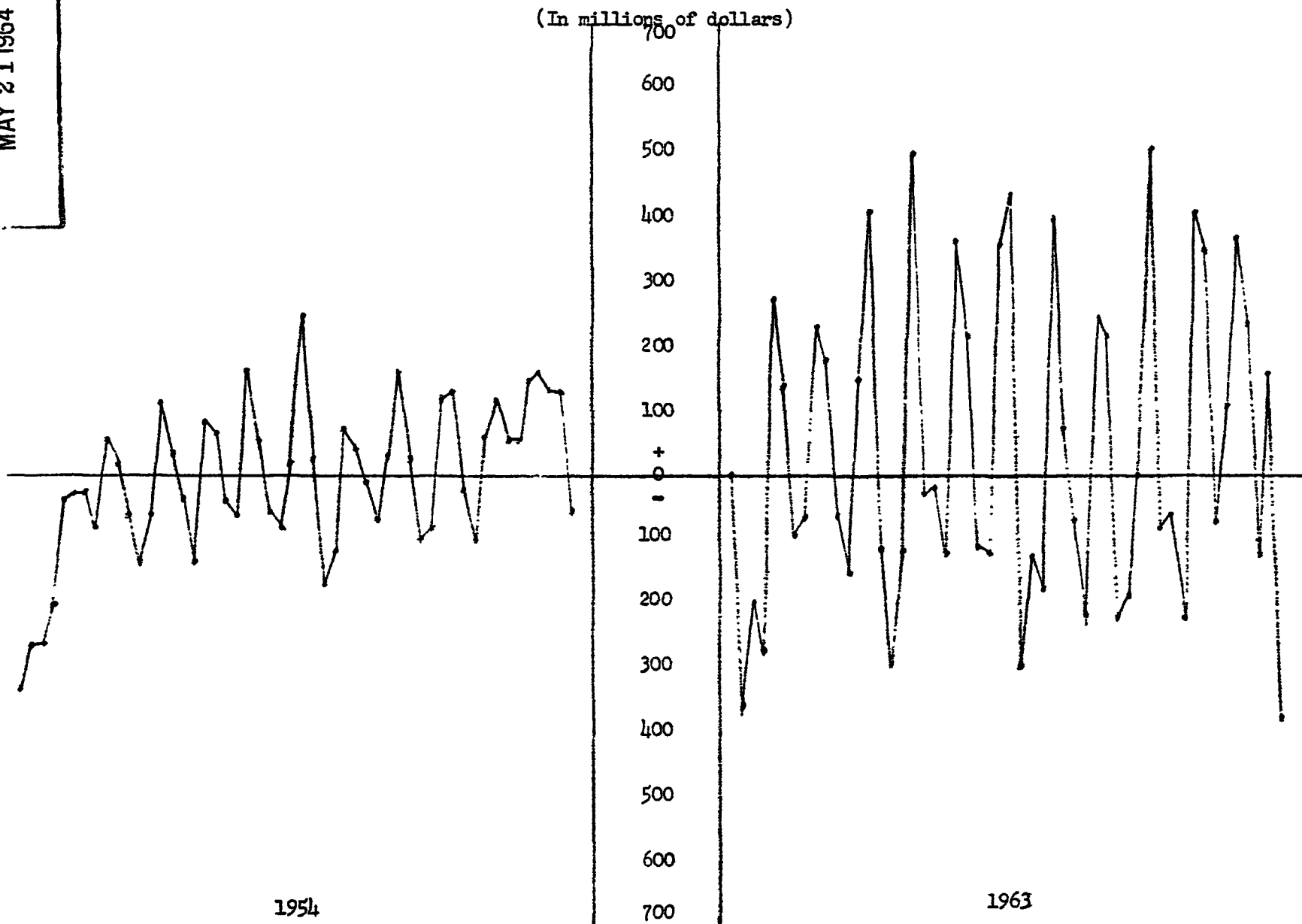
CHART 3
WEEK TO WEEK FLUCTUATIONS^{1/} IN FLOAT, 1954 and 1963
(In millions of dollars)



^{1/} Based on weekly averages of daily figures.

RESERVE SECTION
MAY 21 1964

CHART 4
WEEK TO WEEK FLUCTUATIONS ^{1/} IN CURRENCY IN CIRCULATION, 1954 and 1963

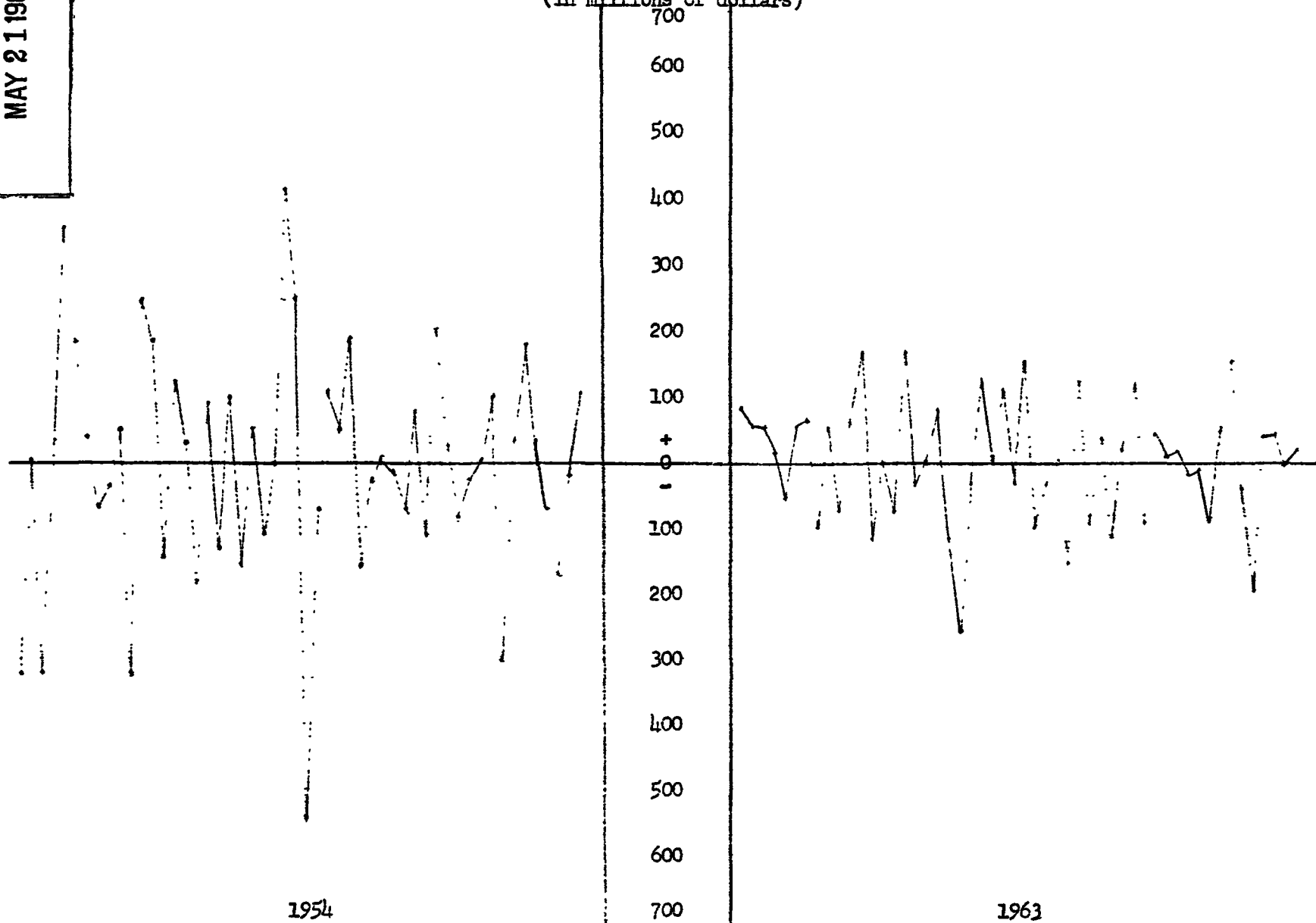


^{1/} Based on weekly averages of daily figures.

CHART 5

WEEK TO WEEK FLUCTUATIONS^{1/} IN TREASURY DEPOSITS AT THE FEDERAL RESERVE, 1954 and 1963

(In millions of dollars)



RECORDS SECTION
MAY 21 1964

^{1/} Based on weekly averages of daily figures.