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AN EMPIRICAL VIEW OF "EVEN KEEL"

by

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The words "even keel" refer to the policy pursued by the Federal Reserve in relation to Treasury financings. In practical terms "even keel" has meant that, for a period encompassing the announcement and settlement dates of a large new security offering or refunding by the Treasury, the Federal Reserve has not made new monetary policy decisions (as contained in announcements from the Board of Governors or as specified in the second paragraph of the policy directives of the Federal Open Market Committee) that would impede the orderly marketing of Treasury securities and significantly increase risks of market disruption from sharp changes in market attitudes in the course of a financing.^{1/} Financial markets as a whole are highly sensitive to the reception of Treasury financings because of the sheer size of offerings, the involvement of the U.S. Government's credit, and the key role of the Government securities market in liquidity and portfolio adjustments of investors.

* The views expressed in this paper do not necessarily represent those of the Federal Reserve System. Parts of this paper are drawn from a previously unpublished paper on the subject prepared by the author and Joseph E. Burns.

^{1/} Discussion of the "even keel" policy has usually been focused on its relation to tightening actions. But in practice the policy also influences the timing of easing actions. For instance, a discount rate reduction in the middle of a Treasury financing period may be avoided because it might encourage undue speculative activity.

"Even keel" should be sharply distinguished from the old pre-1951 policy of pegging interest rates on U.S. Government securities. The "even keel" policy does not provide any assurance that particular interest rates on new or outstanding Treasury issues will be maintained. Rather, the "even keel" approach only helps to smooth the process of marketing several billion dollars of Treasury issues (even more in the case of advance or pre-refundings). It provides those who help underwrite Treasury issues (such as banks and nonbank U.S. Government security dealers) with a short period of time in which market forces rather than new monetary policy decisions are the main factors affecting interest rates. Those who make markets in U.S. Government securities are by no means assured of stable interest rates on the new issues, but they do have some time to contact customers with no more than a normal market risk on their temporary holdings of securities.

Because of the relatively limited nature of the Federal Reserve's "even keel" commitment, the definition of the commitment in terms of financial variables is to a degree equivocal. The timing of "even keel", the behavior of interest rates and other monetary variables, and the extent of Federal Reserve open market operations depend in large part on the type of market and market psychology that develops in anticipation or in the wake of the Treasury financing involved. The purpose of this paper is to review the behavior of key financial variables during the three years from 1966 through 1968 in an effort to determine how much variation or stability they show during "even keel" periods in comparison with other periods.

This empirical approach is designed to shed some light on the variations in financial variables that have been tolerated under the constraint of "even keel". But the results are necessarily limited by inability to quantify market attitudes, changes in which will influence the tolerance with which the market views differing degrees of variations in interest rates, reserves, and related measures. The results are also limited in part by the "crude" nature of the empirical analysis of the paper, which consists of charting time series for the relevant variables and of scanning these series for differences in behavior. While such an approach has obvious limitations, its advantage is that "even keel" periods can be easily viewed in relation to longer-term trends and turning points in such trends. Moreover, fluctuations of a variable within an "even keel" period are also discernible. And questions as to the exact dating of "even keel" periods can be minimized since the chart would indicate the direction of change if one or two weeks were added to, or subtracted from, the beginning or end of "even keel" periods.

The timing of "even keel" and type of Treasury issue

The policy directives of the Federal Open Market Committee provide a basis for dating "even keel" periods and for relating them to the type of Treasury security offering. Such directives during "even keel" periods would refer to Treasury financings as a factor to be taken into account in the conduct of open market operations. Generally the directive would also stipulate that operations should be directed to maintenance of prevailing money market conditions. But it is also

possible that the operations could be directed toward tightening or easing. This could occur, for example, if the directive were written for a policy period that begins pretty well in advance of the anticipated Treasury financing announcement, thereby permitting some adjustment in policy prior to the financing period. Or this could occur to permit some shading toward restraint or ease depending on the developing market attitude toward the financing, including the speed with which the financing is distributed in the secondary market and the extent to which the market is tending to discount potential Federal Reserve action in advance.

The time span of, and money market stability during, "even keel" has varied in the past with the nature of the Treasury financing, with the market environment, and with the urgency behind the need for a monetary policy change. For purposes of this study, the interval from a week before the announcement of terms to a week after settlement date has been taken as the basic unit of time for an "even keel" period, but shortened when necessary to be consistent with the dating of FOMC directives referring to Treasury financings. The various relevant dates that bear on "even keel" are shown in Table 1.

In practice, "even keel" might extend somewhat beyond one week after settlement date if an especially large volume of new securities were left overhanging the market, while if the new offering was small or well distributed "even keel" might end at settlement date. And the period might not begin until two or three days before announcement date, depending on market conditions as they affect the Treasury's ability to appraise

TABLE I
TREASURY FINANCINGS DURING "EVEN KEEL" PERIODS

Dates Related to "Even Keel"				Description of Offering			
Directive date	Announcement date	Books opened	Settlement date	Type of offering	Size of offering ^{1/} (billions \$)	Maturity of offering	Attrition or pilotment ratio
<u>1 9 6 6</u>							
12 /14/65 1/11	1/5	1/10	1/19	Cash	1.5	10m	.14(AL) ^{2/}
1/11 2/8	1/26	1/31-2/2	2/15	Rights (incl. pre-refunding)	13.7	18m 4y 9m	7.4 ^{3/} / .17(AT)
4/12 5/10	4/27	5/2 -5/4	5/15	Rights	2.5	18m	.46(AT)
7/26	7/27	8/1-8/3	8/15	Rights (incl. pre-refunding)	8.1	1y 4y 9m	4.3 ^{3/} / .20(AT)
10 11/1	10/5	10/11	10/18	T.A. ^{4/}	3.5	185d 247d	--
11/1	10/27	11/1	11/15	Cash	3.2	1y 3m 5y	.30(AL) .10(AL)
<u>1 9 6 7</u>							
1/10 2/7	1/25	1/30	2/15	Cash	3.9	1y 3m 5y	.10(AL) .07(AL)
5/2	4/26	5/1 -5/3	5/15	Rights (incl. pre-refunding)	9.1	1y 3m 5y	.19(AT)
6/20	6/28	7/5	7/11	T.A.	4.0	255d 286d	--

TABLE I (cont'd.)

Dates Related to "Even Keel"				Description of Offering			
Directive date	Announcement date	Books opened	Settlement date	Type of offering	Size of offering (billions \$)	Maturity of offering	Attrition or allotment ratio
7/18	7/26	7/31	8/15	Cash	3.8	1y 3m	.35(AL)
8/15	8/17	8/22	8/30	Cash	2.6	3y 5-1/2m	.38(AL)
10/3	9/22	10/3	10/9	T.A.	4.4	196d 259d	--
10/24	10/25	10/30	11/15	Cash	4.8	1y 3m 7y	.36(AL) .07(AL)
<u>1 9 6 8</u>							
2/6	1/31	2/5	2/15	Rights	12.0	7y	.28(AT)
	2/8	2/13	2/21	Cash	4.1	15m	.39(AL)
4/3	5/1	5/6	5/15	Rights	3.9	7y	.30(AT)
	5/1	5/8	5/15	Cash	3.2	15m	.28(AL)
7/16	7/31	8/5	8/15	Cash	5.1	6y	.18(AL)
10/8	10/23	10/28	11/15	Rights	5.5	18m	.33(AT)
10/29						6y	

1/ To the public.

2/ AL = Allotment ratio; AT = Attrition ratio.

3/ Amount exchanged in pre-refundings in billions of dollars.

4/ Tax anticipation bill.

pricing of the new issues. On balance, the basic unit of time for "even keel" in this study probably tends to err on the generous side.

"Even keel" has been applied quite consistently to coupon issue financings, which are generally large in size. A period of two to three weeks normally elapses between announcement of the offering and payment. The Treasury sets the price and coupon rate when the offering is announced; a few days later books are open and the public places its orders; and a week and a half or more passes before payment or settlement date on the new issue

In contrast to offerings of coupon issues, the "even keel" constraint has not been regularly a feature of FOMC directives around Treasury bill financing periods. When it has been, the period has generally been shorter than for coupon issues, although it has also overlapped a coupon issue period and thereby lengthened the time when "even keel" has been applied in consecutive weeks. "Even keel" has been noted in directives at times when bill issues for cash have been large and/or when short-term markets have been likely to be under particular strain. During the three years 1966-1968, there were three instances in which the "even keel" constraint was noted in the directive in relation to Treasury bill financings raising net new cash, out of twelve such financings in the period (other than simply additions to the regular weekly or monthly bill actions). The three financings varied between \$3-1/2 billion and \$4-1/2 billion in size.

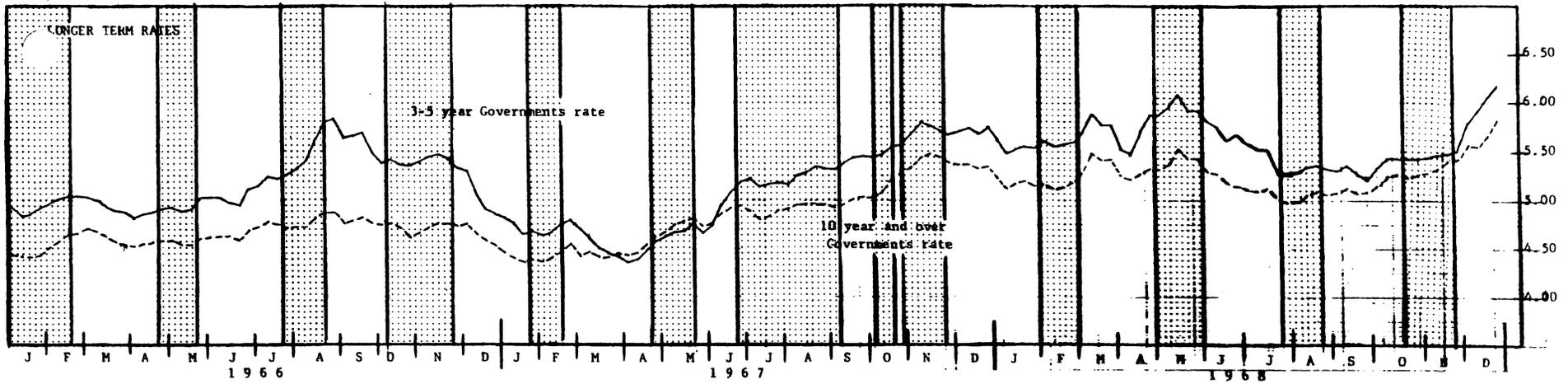
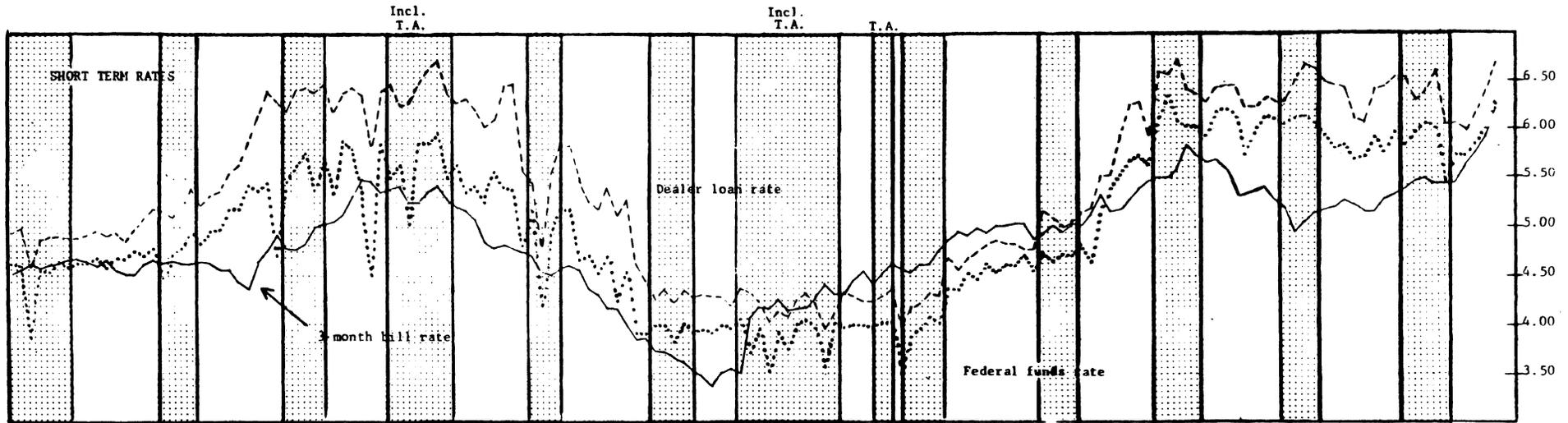
There are a number of reasons for keeping the "even keel" period short in relation to bill financings and for applying it less

rigorously, if at all. First, the bill is auctioned, so that there is less need to hold markets stable between announcement date and auction date; in a coupon financing, on the other hand, the new issue is priced by the Treasury at announcement in the expectation that market attitudes will not shift significantly in the interval (typically 5 days in recent financings) until the books are open. Second, the risk of price fluctuation to holders of bills, which mature in a year or less, is smaller than to holders of intermediate-term or long-term coupon issues. And third, the time span between auction and payment for bills is generally about one week, while for coupon issues it is typically ten to fourteen days; this is a technical matter, but presumably it reflects the shorter period normally required to distribute a new bill issue as compared with a longer-term obligation.

"Even keel" and interest rates

Interest rates have shown a relatively large amount of movement during "even keel" periods. Movements of interest rates are shown in Chart 1, with "even keel" time spans represented by the shaded areas. It is not without interest that the "even keel" period defined as noted above take up roughly 40 per cent of the 36 months plotted. Normal quarterly refundings themselves would lead to "even keel" for about one-quarter of the year, with the actual result being a little more or a little less depending on market conditions and also the requirements of monetary policy. When the Treasury raises cash, or undertakes advance refundings outside the regular quarterly refunding period, monetary policy is affected at rather more frequent intervals.

CHART 1
INTEREST RATES



NOTE: "Even keel" periods are represented by shaded areas.

Day-to-day money rates. Short- and long-term interest rates show different patterns of movements during "even keel" periods and also differ in relation to their behavior outside such periods. Day-to-day rates, like the Federal funds and dealer loan rates, sometimes fluctuate rather sharply within an "even keel" period, just as they do in other periods. For instance, the Federal funds rate fluctuates in response to week-to-week shifts in the distribution of reserves between country and city banks. However, these rates generally do not show either an upward or downward trend in "even keel" periods. Trend movements in such rates-- that is, a clear upward or downward tendency persisting for some weeks-- generally occur in the periods between "even keel".

While an absence of trend movements in day-to-day money rates is a characteristic of "even keel" periods, there have been a few exceptions during the period under review. In "even keel" periods during the winter and spring of 1966, directives sought some reduction in reserve availability, while taking into account forthcoming or current Treasury financings. These directives covered the mid-February and mid-May refundings. Federal funds and dealer loan rates did not in the event show a rising trend in the first of these periods, but in the "even keel" period covering from about the third week in April to the third week in May, an upward trend in Federal funds and dealer loan rates was in practice permitted to develop.

Because the April-May period illustrates a modest tightening of policy during "even keel", it is worthwhile to note the results of the financing and market factors bearing on it. The financing involved was a \$2.5 billion rights exchange (in terms of public holdings) involving an offering of a single 18-month note. The attrition rate for this

offering was a very large 46 per cent, the highest attrition rate by far in the period covered. Of course, April-May 1966 was a period of sharply rising loan demands in credit markets, so that the unfavorable reception might be partly attributed to cash needs of commercial banks and other holders of the maturing issue. In addition, the market was disappointed at that time by a fading in hopes for a program for fiscal restraint. Finally, the offering was priced to have a 10-12 basis point yield advantage over the outstanding market, which represents only a normal yield spread between new offerings and outstanding issues of a comparable maturity. All in all, there appear to be a variety of market factors accounting for the poor reception of the issue, but tightening of monetary policy, as expressed by money market conditions, and expectations of further tightening certainly contributed.

Bill rates. Treasury bill rates, as indicated by the yield on the 3-month bill, tend to display roughly the same kind of behavior--both in terms of fluctuation and trend--during an "even keel" period as is characteristic of the span of surrounding weeks and months. In 1965, a year not shown on the chart, bill rates--not to mention other rates--showed little movement in or outside "even keel" periods. In the 1966-1968 period, however, bill rates moved relatively widely both in and outside "even keel" periods.

As examples of cyclical-trend movements in bill rates during the past three years in "even keel" periods, there were upward movements in the rate during the late July - late August 1966 period and in the May 1968 period; there were downward movements in the late January - late

February 1967 period and in the late April - May 1967 period. It is likely that the more evident trend movement in the 3-month bill rate, as compared with day-to-day money rates, in "even keel" periods reflects the role of expectations in determining interest rates. With a 3-month horizon, investors in 3-month bills are more likely to be influenced by what monetary policy--and also other factors such as debt management and business credit demands--may be expected to do in the period ahead. Consequently, "even keel" policies would become correspondingly less important in influencing these interest rates during the weeks in which "even keel" is in effect.

Longer-term rates. Longer-term rates, as typified by the yields on 3-5 year Government securities and on such securities maturing in over 10 years, would also tend to be less influenced than day-to-day money rates by current monetary policy, and longer-term rates do show trend movements both in and outside "even keel" periods. They have both risen and fallen in "even keel" periods, the direction being generally consistent with the overall tendency of surrounding periods. Rate movements appear to have generally been larger in magnitude outside "even keel" periods, but this is by no means always the case.

For instance, there was a very sharp rise in the yield on intermediate-term Governments in the mid-July - late August period of 1966. This was a relatively large refunding, including a pre-refunding, that zeroed in on the intermediate-term coupon area. Moreover, the financing took place in a period when financial market pressures were building to a peak; and certain tightening monetary policy measures,

including increases in reserve requirements announced in late June and mid-August, were put into effect quite close to the refunding period. With respect to open market operations, the FOMC directive on July 26 indicated an "even keel" stance and no change in money market conditions.

While "even keel" was technically in effect in this financing, the sharp rise of interest rates in the maturity area containing one of the new issues offered in the refunding reflects the general expectation of the time that financial markets were facing a credit crunch. This expectation, in turn, was partly a reflection of the monetary policy actions that appeared to be in train before the "even keel" period, and in prospect afterwards. Thus, a technical "even keel" condition did not forestall a tightening of financial markets; nor was it accompanied, at that time, by any expansion in the monetary base (member bank reserves balances plus currency held by banks and the public), bank credit, or money supply.

Sharp downward movements in longer-term interest rates began in the middle of the May 1968 "even keel" period and continued until the August period. Brightening prospects for fiscal restraint legislation contributed to the turn-around. And the decline was sustained by an accommodative open market policy, as indicated by the mid-June and mid-July directives. These directives stipulated that open market operations should accommodate tendencies for short-term rates to decline (in mid-June) and for less firm money market conditions to develop (in mid-July). The mid-July directive took cognizance of the forthcoming

August refunding in the operating paragraph. But the mid-June directive did not take note of an early July \$4 billion tax bill financing, as the market atmosphere of the time clearly posed no marketing problem for even a very large bill financing for cash.

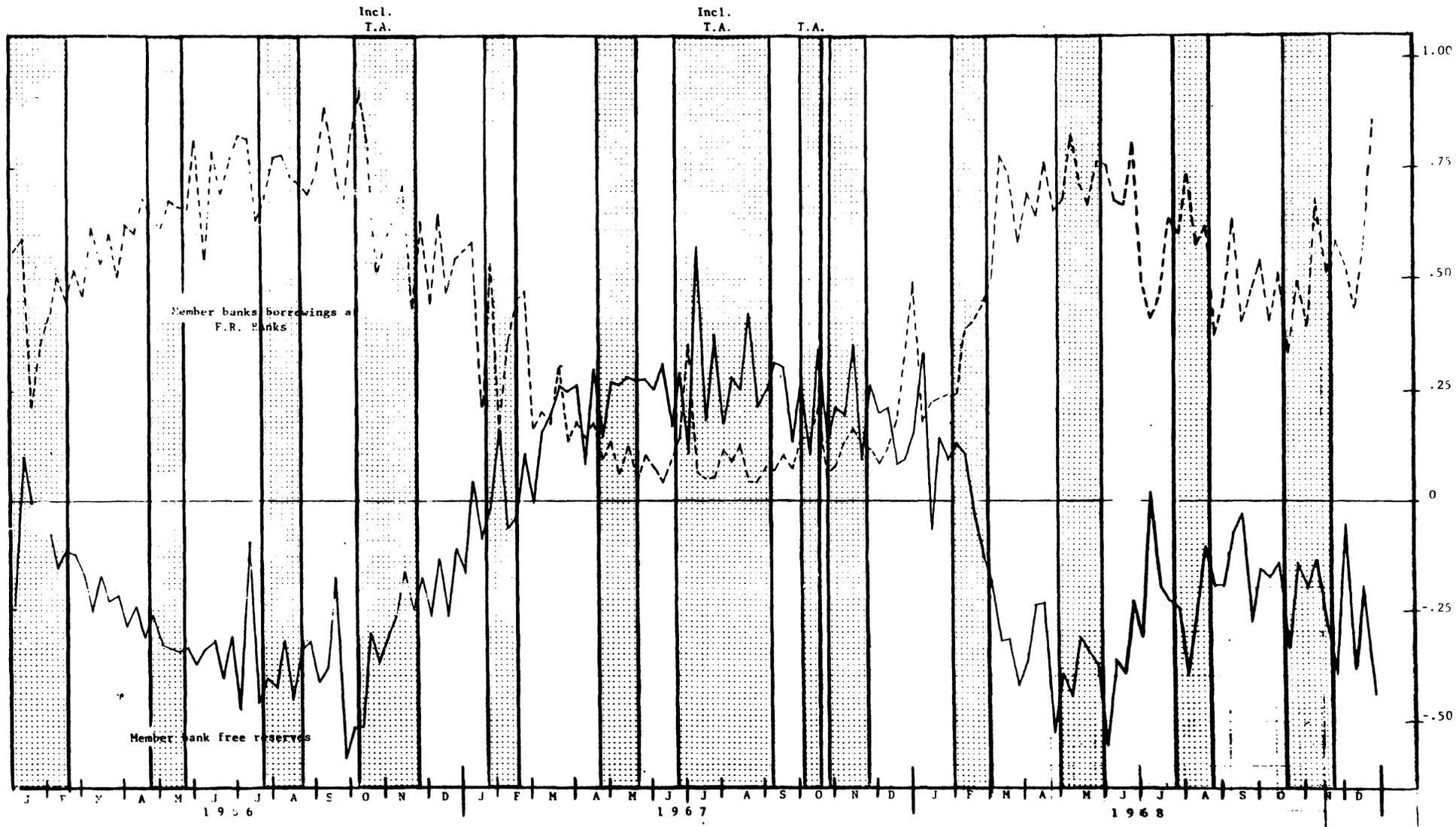
Marginal reserve measures

Free reserves and member bank borrowings shown in Chart 2, behave somewhat the same in "even keel" periods as does the cost of one day money--i.e., Federal funds and dealer loan rates. They tend to show less cyclical or trend movement than the 3-month bill rate and longer-term market rates in "even keel" periods, but they do fluctuate widely and occasionally do move persistently in one direction.

Free reserves showed downward movements in February and May 1966 periods, for example, when the FOMC was tightening in terms of reserve availability, while taking account of Treasury financing. On the other hand, free reserves rose, and member bank borrowings declined, in a "even keel" period of October-November 1966, beginning the trend movement in those variables that lasted until the spring of 1967.

In 1968, net borrowed reserves deepened, and member bank borrowings rose, during the "even keel" period in February. The FOMC directive of February 6, 1968 sought to maintain firm conditions in the money market, but permitted operations to be modified to the extent permitted by the Treasury financing if bank credit appeared to be expanding as rapidly as projected. The expansion of bank credit in that period apparently was sufficiently large to lead to some diminution in the extent to which reserves were supplied by open market operations (i.e., through nonborrowed reserves) relative to demand.

CHART 4
MARGINAL RESERVE MEASURES
(In billions of dollars)



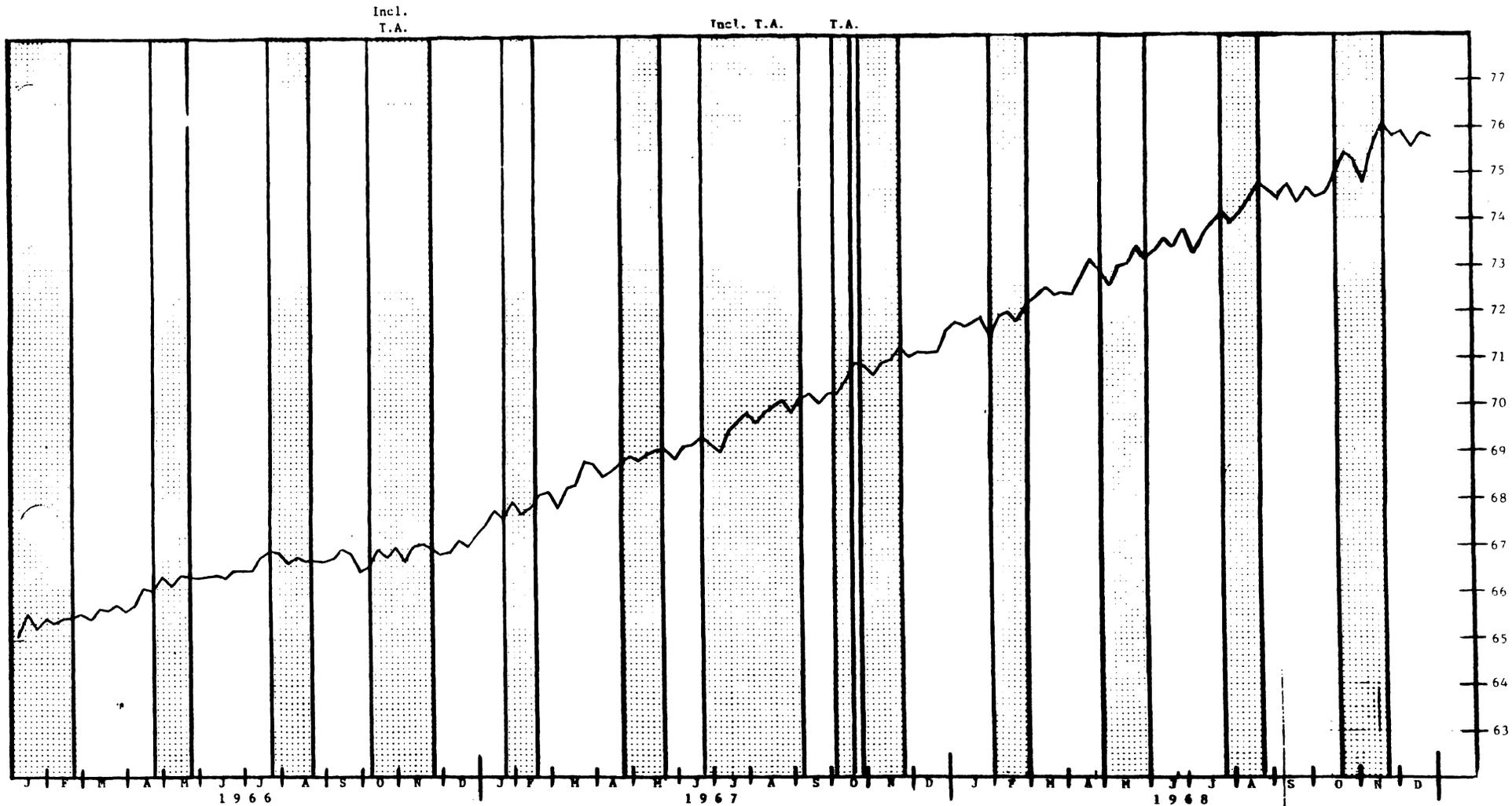
NOTE: "Even keel" periods are represented by shaded areas.

Monetary aggregates

The relation between "even keel" and monetary aggregates (monetary base, bank credit proxy, and money supply) is both highly complex and erratic. As shown in Chart 3, it is difficult to perceive significant differences in behavior of the monetary base in "even keel" periods as compared with surrounding periods. In the summer and fall of 1966, the monetary base showed virtually no growth in or outside "even keel" periods. Beginning in late 1966, the monetary base began to expand, and a more or less steady expansion persisted for the ensuing two years, with the rise in "even keel" periods seemingly little different from the rise outside such periods.

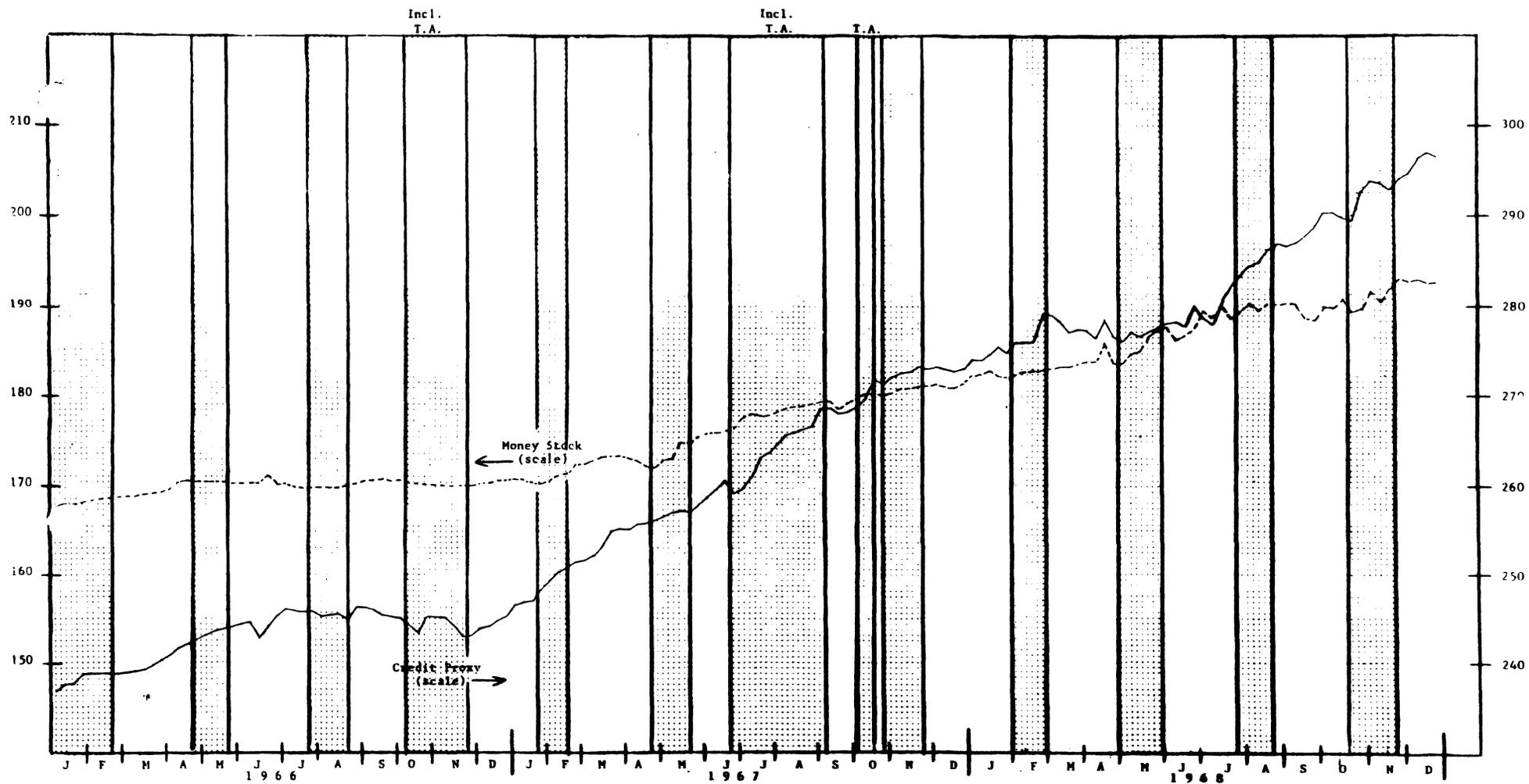
It is true that in October of 1967 there was a relatively sharp increase in the monetary base during an "even keel" period, as was also the case in November 1968. The October 1967 period comprises a \$4-1/2 billion tax bill offering. The relationship to "even keel" was less direct than with an ordinary "even keel" constraint. The second paragraph of the directive of October 3, 1967 noted that operations should be directed to maintaining prevailing conditions in the money market with a proviso that operations should be modified to the extent permitted by Treasury financing to moderate any apparent tendency for bank credit to expand significantly more than currently expected. Apparently bank credit (as measured on a proxy basis weekly by total member bank deposits) did not rise significantly more than expected, although the increase in the period was quite sharp as shown in Chart 4. Growth of bank credit did slow in subsequent weeks.

Chart 3
MONETARY BASE ^{1/}
 (billions of dollars, seasonally adjusted)



^{1/} Consists of member bank deposits at Reserve banks and currency held by banks and the nonbank public.
 NOTE: "Even keel" periods are represented by shaded areas.

Chart 4
 BANK CREDIT AND MONEY STOCK
 (billions of dollars, seasonally adjusted)



NOTE: "Even level" periods are represented by shaded areas.

While the monetary base appears to show relatively little difference in behavior in "even keel" as compared with other periods, there are somewhat more frequent occurrences of differential behavior for bank credit and money supply measures, (weekly figures on a daily average basis).^{1/} The February 1968 coupon financing was an instance of accelerated bank credit growth in an "even keel" period. This financing was a combination "rights" exchange and cash financing, with the cash part settled a week later than the exchange. About \$4 billion of new money was raised in the financing. The large net new cash demand made the financing similar in effect on bank credit to the tax bill financing noted above. There was, however, a contraction in outstanding bank credit for some weeks subsequent to the Treasury financing.

Bank credit also appeared to show an accelerated expansion in the October-November 1968 "even keel" period. The mid-November financing did raise about \$2 billion of new money. The accelerated rate of credit expansion continued into December, sustained by issuance of a \$2 billion tax bill by the Treasury for payment in early December--a financing that was not "even-keeled" in the sense of recognition in FOMC directives.

It would appear that "even keel" is often associated with accelerated bank credit expansion in periods when "even keel" is applied

^{1/} Technically, differences in behavior between bank credit, money supply, and the monetary base may be explained by changes in deposit mix or in deposit distribution between country and city banks. But the monetary base series comes from a different source than the credit and money supply series, and the seasonal factors could also be inconsistent.

in financings that raise large amounts of net new cash and when at the same time market interest rates are low enough relative to Regulation Q ceilings that individual banks do not feel constrained in their ability to obtain time deposits and thus in their capacity to invest in U.S. Government securities as well as to make loans. In the long "even keel" period in the summer of 1967, there was an accelerated bank credit expansion which helped finance about \$6-1/2 billion of new cash raised by the Treasury (\$4 billion in tax bills and the remainder in coupon issues). On the other hand, through the summer and early fall of 1966, bank credit showed no tendency to expand--"even keel" or not--despite about \$8 billion of net new cash raised by the Treasury, practically all through new bill issues. In this period, banks were unable to compete effectively for time deposits.

The money supply, too, showed more rapid growth at times in "even keel" periods than in surrounding periods. A number of periods where this seems the case may be cited--February, 1967; May, 1967; May, 1968; and October-November, 1968. It is not simple to develop an explanation for this phenomenon. One might hypothesize that the process of exchanging securities, or issuing new securities, at times leads to enlarged holdings of cash balances as investors prepare for and consummate payments--either cash payments directly to the Treasury, or payments to other investors and underwriters for buying "rights" or in

secondary market distribution of the new issues. Some confirmation of that explanation might come from noting that money supply growth slowed or contracted following each of the "even keel" periods noted above.

Conclusions

(1) "Even keel" has been applied consistently to coupon issues financings. With respect to bill financings, "even keel" has been applied in large financings, but only in certain market situations, and has been generally ignored in small financings.

(2) There is nothing in the material analyzed to suggest that "even keel" is necessarily a fixed period or that it excludes some shading of policy toward restraint or ease.

(3) "Even keel" has been consistent with varying movements of bank credit, money supply, and interest rates. If any variable were to be taken as an objective indicator of "even keel", at least as it has unfolded in recent experience, one would select the cost of one day money, and assign marginal reserves to a secondary, but important, role. These are the variables most in the minds of market participants, and also the ones that show the least trend movement during "even keel" periods (after allowing for normal day-to-day or week-to-week fluctuations)--although even here market participants would tend to recognize that financing demands related to the distribution of newly offered Treasury securities would themselves tend to exert upward pressure on day-to-day money rates.

(4) There have been fairly wide day-to-day fluctuations in money market variables during "even keel" periods, and there have also even been some trend movements reflecting efforts by the FOMC to tighten or ease while taking account of Treasury financings. At times, this has been accomplished while not changing the attitudes of market participants because trend movements have been disguised for a few weeks by the large fluctuations that market participants are used to or because they have encompassed only a small portion of an "even keel" period as defined for purposes of this analysis.

(5) While the wide variations in behavior of the variables examined suggests that the "even keel" commitment is not only flexible in terms of timing but also in terms of credit conditions, any sharp movements permitted in day-to-day money market conditions, or even under some circumstances in interest rates, is likely over the short-run to risk an unsuccessful Treasury refunding in the sense of an unexpectedly large attrition or high allotment ratio.

(6) Bill rates and intermediate- and long-term rates are influenced by changes in the supply of securities and by expectations as well as by monetary policy. Thus, it is not surprising that bill rates and other yields show movements independent of "even keel". However, it may be that their movements during financings would be more exaggerated without the "even keel" constraint. But whether the trend of interest rates over a relatively long period would be any different without "even keels" is quite another, and an unresolved, issue.

(7) The behavior of monetary aggregates in "even keel" periods has not been consistent. But when they have diverged from their behavior outside "even keel" periods, it has been in the direction of relatively greater expansion, though often offset by slower growth or contraction in subsequent weeks. The relatively greater expansion, when it occurs, may not be a function of "even keel", however. It may more basically be a function of the way monetary policy is conducted--with or without "even keel". In general, monetary policy attempts to encourage credit conditions in the economy consistent with sustainable economic growth. The credit conditions sought by the Federal Reserve influence the interest rates the Treasury has to offer on its securities and the type of buyer--e.g., bank or nonbank--attracted to these securities. Treasury credit demands, like such demands from businesses or consumers, tend to fall in part on banks, who may either buy Treasury securities or help finance those who do. And money supply may also expand as an aspect of the financing and distribution process. Thus, credit demands or refinancings by the U.S. Government at times have led to an accelerated expansion in bank credit or money. But the extent to which this occurs will be affected by the existing tautness or ease of credit markets as influenced by monetary policy; in 1966, for instance, net cash borrowing by the Treasury did not lead to expansion in bank credit or money. In any event, the significance of any accelerated expansion of monetary variables in "even keel" periods--as in other periods--cannot be assessed

without evaluating the credit conditions with which they are associated and the appropriateness of these conditions to the economic goals being sought.