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Federal Reserve 'Even Keel' Policy: an Historical and Empirical Analysis.

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Federal Reserve "Even Keel" Policy:
An Historical and Empirical Analysis

A Dissertation

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Louisiana State University and
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in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Economics

by

Thomas J. Lengyel
B.A., University of Connecticut, 1966
M.A., University of Connecticut, 1967
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ABSTRACT

In recent years, economists have shown concern with a number of aspects of the relationship between debt management and monetary policy. After the famous Treasury-Federal Reserve Accord of March, 1951, the central bank undertook a series of steps which eventually led to the emergence of the "even keel" policy, an open market operating strategy which replaced the policy of lending direct support to Treasury financings. The purpose of this research project has been to provide a detailed and comprehensive analysis of "even keel" policy over an extended period.

In light of this objective, an extensive historical analysis of the evolution of the "even keel" strategy was conducted. This analysis focused special attention on the changing role of the central bank with respect to the strategies it has employed during Treasury financing operations. It was concluded that the "even keel" policy became an operational concept with the adoption of the "bills only" guidelines on March 4-5, 1953. At this time, the Trading Desk was instructed to refrain, during Treasury financing periods, from any purchases of "rights," "when-issued" securities, or outstanding securities of comparable maturity to those being offered in exchange. In addition, the System, during Treasury financings, extended repurchase agreements to non-bank dealers and avoided any actions indicative of a shift in the stance of monetary policy. The inauguration of "operation twist" in
1961 did not alter the "even keel" strategy as it was practiced under the "bills only" guidelines.

The research also included a detailed empirical analysis of the "even keel" policy during the January, 1960-August, 1968, period. The empirical analysis first concentrated on the relationship between central bank policy and Treasury operations. Special emphasis was placed upon determining under what circumstances the System maintained an "even keel" in the money market. It was found that the central bank usually pursued an "even keel" strategy during both advanced and regular refundings, regardless of the volume of the offer or the type of security involved in the financing. The System has normally "even keeled" cash refundings and cash offers involving coupon issues, but rarely such operations in Treasury bills. The seasonal pattern of "even keel" directives was explained by the timing of major refundings and the level of adjusted Treasury operating balances.

Secondly, the empirical analysis concentrated upon a statistical evaluation of a number of alternative definitions of "even keel" policy. Employing one-way analysis of variance techniques, it was found that the "even keel" strategy was implemented through the use of repurchase agreements with non-bank dealers. However, these reserve injections were not sufficient to either ease or stabilize money market conditions during "even keel" periods, as reflected in the behavior of marginal reserves and short-term interest rates. Strong evidence was found that the "even keel" strategy did entail the avoidance of overt shifts in credit policy during Treasury financing periods. The System
has normally limited the implementation of its quantitative credit control weapons to those intervals between major Treasury operations.
CHAPTER I

INTRODUCTION

The purpose of this introductory chapter is twofold. It first enumerates the major issues and questions concerning the Federal Reserve's "even keel" policy which are examined in detail in the analysis. Secondly, this section presents the organizational outline followed in the study, while simultaneously previewing some of the major conclusions reached in the historical and empirical analysis.

The Major Issues

The term "even keel" has come to be associated in recent years with that Federal Reserve System policy which has been implemented during Treasury financing periods. The "even keel" strategy evolved gradually in the years following the Treasury-Federal Reserve Accord as a replacement for the central bank policy of direct support purchases. As its name implies and as later analysis shows, the "even keel" strategy is an attempt by the central bank authorities to maintain a steady course in credit control policy during Treasury financing periods. The major rationale for the "even keel" strategy has been the necessity of the central bank to undertake actions aimed at smoothing the marketing process of Treasury financing operations.
The recent literature dealing with Federal Reserve "even keel" policy has raised a number of major issues and questions to which this analysis has addressed itself. The historical and empirical analysis which follows attempts to clarify a number of issues which are discussed below.

The first question to be examined is how the "even keel" policy evolved. Why was the "even keel" strategy deemed the appropriate policy to pursue during Treasury financings? When was the "even keel" strategy established and how has this policy been altered as major innovations in monetary policy have occurred? What is the purpose of the "even keel" strategy? How is this strategy implemented?

A second issue examined in this study concerns the question of when the "even keel" policy is employed. That is, under what conditions does the central bank maintain an "even keel" posture in the money market? What type of Treasury operations call forth an "even keel" directive? Does the size of the securities offered in the Treasury operation influence the decision of the System as to whether or not to issue an "even keel" directive?

The final and major issue to be examined in the analysis concerns the definition of "even keel" policy, as well as the implications of this strategy for credit control policy. Does the "even keel" policy entail explicit support of Treasury operations? Does the implementation of an "even keel" policy result in a one-way shift toward ease? Is the stability of money market conditions the primary goal of this policy? Does the maintenance of an "even keel" affect the timing of monetary policy actions? Does the "even keel" policy preempt
shifts in the stance of credit policy? This study attempts to clarify these issues and questions within the organizational framework detailed below.

The Study Plan

Chapter II traces the historical evolution of "even keel" policy within the framework of the changing relationship between debt management and monetary policy. It emphasizes the gradual adaptation of central bank policy to the changing environment of the 1950's. The shift from a pegged to a free government securities market was examined in order to determine when the "even keel" policy emerged as an operational concept. Special consideration is given to the Treasury-Federal Reserve Accord, the transition to free markets, and the "bills only" policy. The analysis concludes that the "even keel" strategy became operational on March 4-5, 1953, with the adoption of the "bills only" guidelines. By this date, both the general guidelines for open market operations and the operating techniques utilized by the Trading Desk during Treasury financings, which later came to be associated with the maintenance of an "even keel," had been established.

The major objective of Chapter III was to provide the reader with a more detailed picture of the "even keel" strategy during the 1960-1968 period. This section focuses on the major innovations in System open market policy and Trading Desk operating techniques that are of special relevance to "even keel" policy. It was found that the inauguration of "operation twist" did not alter the major characteristics
of the "even keel" strategy as it was practiced under the "bills only" guidelines.

This section of the analysis also discusses some of the alternative definitions of "even keel" policy found in the literature. In addition, an explanation of the basic rationale which underlies this strategy, as well as a discussion of the time span covered by "even keel" directives, is offered. Finally, Appendix A details the procedure followed in identifying "even keel" directives, as well as offering an exhibition and explanation of some typical current economic policy directives.

The quantitative analysis is initiated in Chapter IV which deals with various relationships between "even keel" policy and Treasury operations during the 1960-1968 period. This section of the analysis attempts to identify the major determinants of "even keel" policy, that is, under what circumstances has the central bank pursued an "even keel" policy. The major factors evaluated include the type of financing technique employed, the volume of the offer, and the type of securities involved in the Treasury operation. Of these factors, the type of financing technique employed in a particular operation seems to have the most influence on central bank policy. In addition to a discussion of the procedure employed in dating "even keel" periods, this section also attempts to explain the frequency and seasonal pattern displayed by "even keel" directives during the 1960-1968 period. Money market conditions, Treasury financing activity, and Treasury operating balances were the factors that explained both the yearly and monthly frequency patterns of "even keel" policy.
Chapter V empirically tests the alternative definitions of "even keel" policy. After a detailed discussion of the statistical testing procedure employed in the analysis, the implementation of "even keel" policy is examined. It was found that the "even keel" strategy was implemented primarily through the extensive use of repurchase agreements during the 1960-1968 period. A detailed explanation of three distinct definitions of "even keel" policy, categorized as falling within either the "support" or "neutrality" school, follows. Each of these definitions is tested in terms of the behavior of marginal reserves and short-term interest rates. The results of these tests support most strongly the "neutrality" school interpretation of "even keel" policy which views that strategy in terms of the avoidance of overt monetary policy actions during Treasury financing periods.

Chapter VI reviews and summarizes the entire analysis. This section synthesizes the results of the empirical tests and presents the author's definition of "even keel" policy based upon the quantitative analysis of this Federal Reserve open market operating strategy during the 1960-1968 period. This chapter concludes with a discussion of some of the major implications of the "even keel" strategy for monetary policy.
CHAPTER II

THE HISTORICAL EVOLUTION OF FEDERAL
RESERVE "EVEN KEEL" POLICY

The Major Modifications in Monetary
and Debt Management Policies

The "even keel" policy of the Federal Reserve System has been
a pragmatic and gradual evolution of an open market operating tech­
nique, a refinement emerging from an atmosphere of changing views as
to the proper integration of monetary theory and debt management
policy. In order to fully comprehend and appreciate the significance

1For the purposes of this paper, a clear distinction is made
between debt management and monetary and fiscal policy. Debt manage­
ment consists of all actions of the Federal government which directly
influence the composition and terms of the publicly held Federal debt,
whether initiated by the Treasury or the Federal Reserve System.
Fiscal policy entails the manipulation of tax receipts and government
expenditures, whether discretionary or automatic, by the Federal
government. Fiscal policy actions ultimately determine the level of
Federal government debt outstanding. Monetary policy encompasses
those actions taken by the Federal Reserve System which affect the
money supply, bank credit, and the reserve positions of member banks.
The major tools employed by the System are variations in the reserve
requirement ratio, manipulation of the discount rate, and the purchase
and sale of government securities in the open market. The net amount
of debt bought and sold by the central bank in the conduct of its open
market operations is a matter of monetary policy as opposed to debt
management. This definition of debt management does not include so­
called non-interest bearing "debt," either in the form of currency held
outside the Federal government or non-Federal government deposits at
the Federal Reserve banks.

Similar definitions have been employed. See, for example,
Thomas R. Beard, "Debt Management: Its Relationship to Monetary Policy,
and implications of "even keel" policy as practiced by the System during the January, 1960, through August, 1968, period, it is necessary to trace its development in an historical context. The following pages will delineate the major modifications in monetary and debt management policies since 1946, with the intention of emphasizing the rationale for the emergence of this Federal Reserve operating strategy.

A. The Pre-Accord Pegging

The necessity of financing the huge deficit incurred as a result of World War II forced the Federal Reserve System to lend direct support to Treasury efforts to market debt instruments used to finance that deficit. In the postwar period, the System continued its wartime policy of pegging the yields on government securities, fearing that investors would not willingly hold the large war debt and anticipating that debt markets were highly susceptible to destabilizing speculative fluctuations. In some quarters it was feared that instability of security prices would destroy public confidence in the government's credit and undermine investment incentives. The System,

---

in light of these considerations, committed itself to a policy of maintaining a fixed pattern of yields on government securities.

From 1946 to 1951, the Federal Reserve, serving as the residual buyer of Treasury securities, became the ultimate underwriter of the Federal government's debt. All Treasury financings were guaranteed success as the System stood committed to purchase in unlimited amounts those securities not absorbed by the private sector in order to insure the maintenance of yield levels. This pegging policy, initially considered appropriate in light of the unusual wartime conditions, was pursued long after the necessity for direct support had probably vanished.

The emergence of inflationary pressure in the postwar economy caused consternation among both academic economists and Federal Reserve officials as to the propriety of this pegging policy. The pegging policy adopted by the System was criticized for a number of reasons. The subordination of the central bank to the Treasury led to consequences that were unacceptable in light of inflationary developments. With monetary management relegated to insuring the liquidity of the public debt through the stabilization of security prices, all debt instruments, regardless of their nominal maturities, were rendered virtually as liquid as the shortest-term instrument. In addition, the entire government debt became a composite of debt instruments, all of which were only slightly less liquid than money. Finally, with respect to the money supply, the availability of money was regulated by the spending and investment decisions of government bondholders.\(^2\) The

System was rendered impotent to maintain the effective regulatory influence upon the monetary aggregates requisite to the pursuit of countercyclical objectives. The conflict between Federal Reserve officials, concerned with controlling inflationary pressures, and Treasury authorities, who regarded the minimization of interest rate cost, rather than countercyclical debt management, as their primary goal, reached an apex with the outbreak of the Korean War in 1950.

The initiation of hostilities brought, on one hand, a boom in speculative activity which raised market rates and again meant that support of government securities at prior rates would lead to an expansion in the money stock that the System could not control; and, on the other, a possibility of large government deficits, which made the Treasury exceedingly sensitive to the state of the market for government securities. Although neither possibility was realized, the fear of the former by System officials led them to seek the authority necessary to regulate both the money supply and credit availability.³

B. The Accord

As a result of a series of discussions between Treasury and Federal Reserve officials, the now-famous Treasury-Federal Reserve Accord was reached. The wording of the official joint statement, issued on March 4, 1951, may be worthwhile to recall:

The Treasury and the Federal Reserve System have reached full accord with respect to debt management and monetary policies to be pursued in furthering their common purpose to assure the successful financing of the Government's requirements and, at the same time, to minimize monetization of the public debt.\footnote{Gaines, Debt Management, pp. 62-66.}

The agreement became feasible, especially at this time, as there were no maturities of Treasury securities scheduled for the first five calendar months of 1951.

In monetary history the Accord was a landmark. The two agencies agreed, under the wording of the official joint statement, that the central bank continue to recognize a responsibility to assure that the main objective of debt management would be achieved, i.e., that the government's cash requirements would be financed. But the agreement also clearly acknowledged the necessity for an independent central monetary authority, one free to regulate the money supply and credit availability, at its own initiative, in order to pursue economic stabilization. The Accord ended the period which was characterized by the subordination of Federal Reserve credit control objectives to Treasury interest rate goals. The agreement effectively converted the public debt from an extension of the money supply into a body of financial assets of varying degrees of liquidity.\footnote{William McChesney Martin, Jr., "The Transition to Free Markets," Federal Reserve Bulletin, Vol. XXXIX (April, 1953), pp. 330.}

The Accord marked the triumph of those who advocated placing the power to regulate monetary aggregates in the hands of System officials. The Accord was the first step toward a flexible monetary
policy implemented through the initiative of the central bank. In addition, this agreement was the first tentative warning to the monetary authorities that the System had to fashion a positive policy with respect to the appropriate conduct to be followed during Treasury financing periods. The Accord was the first step in the establishment of an independent central bank. The evolution of the "even keel" strategy, as the proper program to utilize during Treasury financings, took some time.

C. The Transition to Free Markets

With the announcement of the Accord on March 4, 1951, the Federal Open Market Committee (F.O.M.C.) moved toward the freeing of the government securities market. At the F.O.M.C. meeting held on May 17, 1951, an ad hoc subcommittee (hence referred to as the Craft Subcommittee) was authorized to study the effects of System operations upon the functioning of the government securities market. In the 22-month period which elapsed between the appointment of the Craft Subcommittee and the adoption of its recommendations on March 4-5, 1953, the behavior of the System and Treasury authorities might best be described as a pragmatic conversion to a free government securities market.\(^6\)

The transition to an autonomous market was a gradual process characterized by close Treasury-Federal Reserve cooperation. The policy pursued by the System through the remainder of 1951 placed

primary emphasis on the maintenance of price-yield stability of short-
term government securities. Specifically, System officials agreed
not to raise the discount rate above 1-3/4 percent during 1951. The
conduct of open market operations, up until the Treasury refunding of
December, 1952, entailed the lending of direct support to Treasury
financings. This support took the form of central bank purchases of
"rights" to new issues, new issues on a "when issued" basis, and out-
standing securities in the market comparable to the new issues.

Despite central bank underwriting, the majority of Treasury offerings
through the end of 1952 consisted of short-term securities. The
Treasury conducted the bulk of its financing needs through the medium
of 1-7/8 percent certificates. The Treasury refrained from issuing
securities of more than one year to maturity until February, 1953, so
as not to interfere with continuing portfolio adjustments to the new
and reduced liquidity characteristics of intermediate and longer-term
government issues.

During this transition period, the actions of the Federal
Reserve with respect to direct support operations and the Treasury
practice of confining financing operations to certificates, are
explicable in light of the objectives of the two agencies as expressed
by Secretary of the Treasury John W. Snyder. Secretary Snyder sum-
marized those objectives as follows:

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7 Gaines, Debt Management, p. 66.
9 Gaines, Debt Management, p. 69.
10 Ibid., p. 66.
Throughout the period since the close of World War II the Treasury and the Federal Reserve System were agreed upon the fundamental objective of maintaining a high level of production, employment, and income with as great price stability as possible under the varying conditions which existed in the economy. The related objectives which were involved as the postwar period proceeded were a matter of agreement between the two agencies. They included: (1) maintenance of confidence in the credit of the Government; (2) maintenance of a sound market for the securities of the United States Government; (3) restraint, during much of the period, of overall credit expansion; (4) increase in the ownership of Government securities by nonbank investors and reductions in the holdings of the banking system; (5) adjustment from time to time in the wartime pattern of interest rates, as this became appropriate.11

The result of the emphasis on maintaining "confidence in the Government's credit" and a "sound" securities market was the continuation of a trend toward shortening the maturity structure of the debt. The Report of the Craft Subcommittee underscored the limitations placed upon the central bank in effectuating credit control policy while the System was committed to a policy of direct support. The ability of the System to restrict credit expansion was effectively curtailed by the necessity of making sizable and frequent support purchases. In addition, it was felt that support operations did establish a pegged market, at least during the Treasury financing period.12

The importance of these arguments has been questioned and the commitment of the System to temporary pegging may have resulted in a


psychological market phenomenon which ultimately led to a smoother transition to free markets.\textsuperscript{13}

Due to the criticisms of direct support operations, officials of the two agencies experimented with various methods of minimizing or eliminating official intervention in the government securities market. In connection with a small refunding operation, the System decided in December, 1952, to refrain from purchasing maturing securities, or "rights" as they were called. In February, 1953, when the Treasury refinanced a large maturity with an attractive offer, no support purchases were made by the central bank. The success of both financings demonstrated the feasibility of reliance on freely fluctuating markets rather than on official intervention.\textsuperscript{14}

The curtailment of System direct support of Treasury financings marked the second step in the evolution of the "even keel" policy. Up until December, 1952, the Federal Reserve maintained essentially the same policy of direct support operations as was practiced prior to the Accord. The strategy of direct support purchases was gradually

\textsuperscript{13}It has been argued that the transition to a free government securities market was aided by a probably mistaken notion on the part of market participants, that there was still a minimum price support level (at 96 on 2-1/2 percent long-term securities) below which the Federal Reserve authorities would not allow the market price to fall. Although there was no officially stated minimum support price, the barrier was not broken until December, 1952. The belief in this phantom support price by market participants probably did lend some support to the relatively moderate degree of price-yield fluctuation that occurred during the transition period. See, for a similar analysis, Gaines, Debt Management, p. 67.

\textsuperscript{14}Martin, "Transition to Free Markets," p. 333.
abandoned as the transition to free markets was completed. With the abandonment of this policy, the necessity of developing a substitute operating technique became apparent. The recommendations of the Craft Subcommittee proposed a positive policy to replace the direct support program. However, it was some time before the System adopted a positive solution to the problem.

D. The "Bills Only" Policy

The "bills only" or "bills preferable" policy was the governing rule employed by the System for the conduct of open market operations during the 1953-1960 period. The acceptance of this operational doctrine completed the evolution initiated by the March, 1951, Treasury-Federal Reserve Accord in establishing an independent central monetary authority whose operations were to be executed in the environment of a free government securities market. The Craft Subcommittee Report, submitted to the F.O.M.C. on November 12, 1952, laid the groundwork for the unanimous adoption of the "bills only" policy in March, 1953.15

The findings of the Craft Subcommittee with respect to the effect of System open market operations on the government securities market were concerned primarily with the operational efficiency of the market. The recommendations were aimed at improving market performance. The relevant passage in the Craft Subcommittee Report was:

The Subcommittee finds that a disconcerting degree of uncertainty exists (in the Government securities market), ..., an uncertainty that is detrimental to the development of depth, breadth, and resiliency of the market. In the judgment of the Subcommittee, this uncertainty can be eliminated by an assurance from the Federal Open Market Committee that henceforth it will intervene in the market, not to impose on the market any particular pattern of prices and yields but solely to effectuate the objectives of monetary and credit policy, and that it will confine such intervention to transactions in very short-term securities, preferably bills.

Thus, the Craft Subcommittee characterized an efficiently functioning market as one possessing "depth, breadth, and resiliency." These traits were defined in terms of the orders on dealers' books. The market is said to possess "depth" when there are orders, either

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17 Besides these more technical criteria, it is generally agreed that an adequate functioning government securities market would have the capacity to accommodate Treasury financings, Federal Reserve open market operations, and private investment transactions. Such a market would be characterized by continuity in trading at prices which reflect supply and demand and would not exhibit the sustained sharp price movements that might reflect investor or dealer unwillingness to maintain an active, functioning market. For this view, see Louise Freeman Ahearn, "Government Securities Market Performance in the Wake of Official Operations in Coupon Issues Day-to-Day Performance," a staff study of the Report of the Joint Treasury-Federal Reserve Study of the U.S. Government Securities Market (Washington, D.C.: Federal Reserve System, 1969), p. 4.
actual orders or orders that can be readily uncovered, both above and below the market. The market has "breadth" when these orders are in volume and come from widely divergent investor groups. It is "resilient" when new orders pour promptly into the market to take advantage of sharp and unexpected fluctuations in prices. The solution proposed to counteract the uncertainty in the market, stated that the F.O.M.C. should conduct open market operations solely to effectuate monetary and credit control objectives. In addition, the Craft Subcommittee recommended that these transactions be confined to the short-term end of the market. The philosophy underlying these proposals was that the System should minimize the degree of intervention it exercised in the market.

While laying down these guidelines for the normal conduct of open market operations, the Craft Subcommittee also made more specific recommendations with respect to the operating techniques to be employed by the Trading Desk during Treasury financing periods. Specifically, that the F.O.M.C. should direct the Account Manager to:

... agree to suspend during these periods (of 'sufficiently infrequent' Treasury financings) any open market operations in which it normally might be engaged ... in particular, to "refrain from any sales in the market beginning with the period of the Treasury's preliminary announcement of the general terms ..." and "... to prevent a rise in open market Treasury bill rates from exceeding the highest rates that had prevailed during the period between the

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preliminary announcement and the announcement of the specific terms.\textsuperscript{19}

These passages from the Craft Subcommittee Report delineate the conception of not only the now-defunct "bills only" policy, but the first official statement of a conscious attempt to outline the appropriate open market strategy to be utilized by the Trading Desk during Treasury financings. This operating technique was designed to replace the practice of making direct support purchases during Treasury financings while at the same time preventing the appearance of "disorderly markets" during such operations.\textsuperscript{20} Although these recommendations have been cited as direct causes of the curtailment of the System's support purchases during the December, 1952, and February, 1953, refundings, they were not adopted intact by the F.O.M.C.\textsuperscript{21}

The official pronouncement marking the start of the "bills only" policy was unanimously adopted at the F.O.M.C. meeting held in March, 1953. The statement detailed the following operational guidelines:

(1) Under present conditions, operations for the System Account should be confined to the short end of the market (not including correction of "disorderly markets");

(2) It is not now the policy of the Committee to support any pattern of prices and yields in the


\textsuperscript{21}Rudolph Thunberg, "'Even Keel': The Reconciliation of Monetary Policy and Debt Management" (an unpublished manuscript, Federal Reserve Bank of New York), p. 4.
government securities market, and intervention in the government securities market is solely to effectuate the objectives of monetary and credit policy (including correction of "disorderly markets");

(3) Pending further study and further action by the Committee, it should refrain during a period of Treasury financing from purchasing (1) any maturing issues for which an exchange is being offered, (2) "when-issued" securities, and (3) outstanding issues of comparable maturity to those being offered for exchange.22

The three policies adopted in March were made, in effect, continuing operating policies in September, 1953. The F.O.M.C. approved a motion that these policies be followed until suspended or modified by further action of the Committee. It adopted a fourth continuing directive in December, 1953: "Transactions for the System Account in the open market shall be entered into solely for the purpose of providing or absorbing reserves (except in the correction of 'disorderly markets'), and shall not include offsetting purchases and sales of securities for the purpose of altering the maturity pattern of the System's portfolio."23 An analysis of these directives sheds light upon the underlying philosophy of System authorities concerning the conduct of open market operations. In addition, they denote a major step in the evolution of "even keel" policy.

The "bills only" policy, encompassing the associated prohibition against both swaps and the direct System support of new offerings, enumerated the general ground rules under which the F.O.M.C. would


operate until 1960. The major goals of the "bills only" policy included the establishment of an independent central bank and free government securities market. System officials sought an open market operating technique which would be consistent with a laissez-faire philosophy emphasizing minimal System intervention in the government securities market, while at the same time it would promote the more efficient functioning of that market.

The "bills only" policy emphasized the objective of minimal intervention by declaring that the sole purpose of open market operations was to effectuate the objectives of monetary and credit control. The System specifically stated that it had no intention of influencing the prices of particular securities or maintaining any particular rate structure. Further, what operations were necessary for monetary and credit control policy were to be confined to the short-term end of the market, preferably bills. By confining operations to the bill sector, the impact of central bank activity would be kept as broad and impersonal as possible. That is, the short-term market, which is characterized as being highly price elastic, can more easily absorb System operations with a minimal degree of price fluctuation.

These operational guidelines were to be adhered to, except in the case of "disorderly markets." Emphasis shifted from defining and

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maintaining an orderly market to efforts directed at correcting only disorderly conditions in the government securities market. This alteration in emphasis was consistent with, and reflective of, the goal of minimal intervention. 26

The "bills only" policy had, as an important correlative goal, the improvement in the performance of the markets made by government securities dealers. Improvement in the government securities market was generally pursued in terms of reducing the degree of uncertainty in the market. To this end, the System decided in 1953 to confine its operations to the short end of the market and to terminate swapping transactions in the central bank's Treasury bill portfolio.

In addition to the rather specific objections to direct support purchases, it was felt that System operations in other than the shortest end of the market (except those necessary in the correction of disorderly conditions) would interfere unduly with the operational excellence of the market. 27 Central Bank operations in the intermediate or long-term securities market, by increasing the degree of price uncertainty faced by market participants, would reduce the "depth, breadth, and resiliency" of the market. 28


28 The argument that the operational excellence of the market would be impaired by official operations outside the short-term securities market is as follows. System operations are normally absent in the markets for intermediate and long-term issues. This factor reduces the degree of uncertainty faced by the market participants with respect to price fluctuations. System operations are normally transacted in the short-term market, a highly price elastic market, which can more easily absorb official operations with a minimal degree of price fluctuation.
The adoption of the fourth policy directive in December, 1953, did not reflect a change in the objectives for which open market operations were to be used, so much as an effort to prevent swap transactions. In November, 1953, some swap transactions had been authorized to achieve a better maturity distribution of the System's Treasury bill portfolio. At the next meeting of the F.O.M.C. on December 15, 1953, the directive prohibiting swaps was adopted. The majority of the Committee opposed swap transactions on the basis that they would create confusion and uncertainty and thereby militate against the better functioning of the government securities market.  

Thus, during the 1953-1960 period, the F.O.M.C. was firmly committed to an open market policy which emphasized minimal System intervention in the government securities market, a policy commonly

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(continued) Thus, given both the interest rate expectations and level of System operations necessary for credit control purposes, the pursuit of the "bills only" policy would generate the minimal amount of price fluctuations, thus reducing the degree of uncertainty faced by the underwriters and investors. Quite simply, the investors have one less participant to deal with in the intermediate and long-term markets.

Restricting operations to the short end of the market reduces the degree of uncertainty in a free government securities market. This argument, of course, has no validity in a pegged market where no uncertainty exists, save the possible collapse of the government. However, a pegged government securities market and an independent central bank are mutually exclusive goals.


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referred to as "bills only." In a period of less than three years, open market policy had shifted from one extreme to the other, from intervening as necessary to maintain a pegged market, to fostering a free market with a minimum of System intervention.  

The Emergence of the "Even Keel" Strategy

The primary purpose of this section of the analysis is to establish as accurately as possible the date on which "even keel" policy emerged as the open market operating technique utilized during Treasury financings. The "even keel" policy evolved as a consequence of the movement toward an independent central bank operating within a free government securities market. A review of the major alterations which occurred in open market policy during the 1950's does reveal a number of steps which eventually led to the inauguration of the "even keel" strategy.

Although this historical analysis will review the major changes in open market policy, special emphasis will be placed on the variations in the open market operating techniques which were employed during Treasury financing periods. This emphasis is necessitated by the fact that the "even keel" policy is the strategy pursued by the System during Treasury operations. Thus, the analysis attempts to highlight the basic changes in System behavior during financing periods in order to identify a date which marks the inception of "even keel" policy.

\[30\text{Ibid., p. 119.}\]
Sometime between the period encompassing the Craft Subcommittee recommendations which were presented to the F.O.M.C. on November 12, 1952, and the initial use of the term in the minutes of the F.O.M.C. meeting held on December 12, 1957, "even keel" emerged as a positive operating strategy. Keeping in mind the fact that the "even keel" policy replaced the direct support program, these two dates mark the outer bounds of the period within which the "even keel" policy was inaugurated. The recommendations of the Craft Subcommittee have been cited as the cause of the curtailment of System support purchases during both the December, 1952, and February, 1953, Treasury refundings. Thus, these proposals effectively denote the demise of the direct support program. On the other hand, the date of the initial use of the term "even keel" can be cited as the terminal point in the interval within which "even keel" had become an operational concept. The actual use of the term would imply and hopefully necessitate that the Account Manager could translate it into an operational concept. These two dates then mark solely the outer limits of the period to be scrutinized.

The temptation of designating either of the above dates as marking the commencement of "even keel" policy was avoided. Rather, a critical analysis of official F.O.M.C. statements was undertaken in order to more accurately identify the inauguration of this open market strategy. In order to sharply contrast the changes in System

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31 In any evolutionary process, whether economic, political, or biological in nature, it is difficult to identify a precise date which accurately marks the birth of a new policy or life form. Any analysis attempting this feat, however, must avoid two major pitfalls.
behavior during Treasury financing periods, the historical analysis
starts during the period prior to the Treasury-Federal Reserve Accord.
This investigation is executed primarily in terms of the changes in
the F.O.M.C. directives authorizing transactions for the System Ac-
count. The analysis will trace the important developments in Federal
Reserve policy throughout three major periods; these intervals include
the pre-Accord days, the transition to free markets, and the post
"bills only" era.

A. The Pre-Accord Period

In the period preceding the Treasury-Federal Reserve Accord,
the System was committed to the objective of maintaining a fixed
price-yield pattern on government securities. For the period follow­
ing the close of World War II until the F.O.M.C. meeting held on
March 1-2, 1951, the maintenance of a pegged government securities

31(continued) One error the historical researcher is apt to
make would be the designation of the date which marked the demise of
the original policy as the same date which denoted the birth of the
new policy. Commonly, there exists an interval or gap between these
two moments, quite often an interlude within which neither policy is
operational. For example, the overthrow of the Czarist regime in
Russia did not coincide with the inauguration of communism, rather
these two steps were separated by the interval of Bolshevik rule.
Analogously, the Craft recommendations on November 12, 1952, marking
the curtailment of the direct support program, did not simultaneously
initiate the "even keel" strategy.

The second pitfall would involve identifying the labeling of
a new policy as denoting the inception of that policy in an opera­
tional sense. It is conceivable that a new policy or strategy might
well be operational prior to the instant on which a name is adopted
for it, just as the birth of a child predates its christening. Thus,
the initial use of the term "even keel" does not simultaneously
identify the first moment on which that strategy was implemented by
the System. It is possible that those open market tactics, which on
December 12, 1957, were labeled as "even keel" policy, were already
an established Trading Desk operating technique.
market was the primary goal which determined central bank operations. This policy is succinctly summarized in the F.O.M.C. directives to the executive committee which enumerated the guidelines under which the authority to effect transactions in the System Account was granted. A typical directive, such as the one issued at the F.O.M.C. meeting held on January 31, 1951, read as follows:

The executive committee is directed, until otherwise directed by the Federal Open Market Committee, to arrange for such transactions for the System open market account, either in the open market or directly with the Treasury (including purchases, sales, exchanges, replacement of maturing securities, and letting maturities run off without replacement), as may be necessary, in the light of current and prospective economic conditions and the general credit situation of the country, with a view to exercising restraint upon inflationary developments, to maintaining orderly conditions in the Government security market, to relating the supply of funds in the market to the needs of commerce and business, and to the practical administration of the account; provided that the aggregate amount of securities held in the account at the close of this date other than special short-term certificates of indebtedness purchased from time to time for the temporary accommodation of the Treasury shall not be increased or decreased by more than 2 billion dollars.

The executive committee is further directed, until otherwise directed by the Federal Open Market Committee, to arrange for the purchase for the System open market account direct-from the Treasury of such amounts of special short-term certificates of indebtedness as may be necessary from time to time for the temporary accommodation of the Treasury; provided that the total amount of such certificates held in the account at any one time shall not exceed 1 billion dollars.\(^{32}\)

\(^{32}\)Federal Reserve System, Annual Report, 1951, p. 95. The author has taken the liberty of underlining sections of the directive. These phrases are of particular importance with respect to the development of the "even keel" policy.
This particular directive, with only minor alterations, was issued at successive F.O.M.C. meetings spanning November 27, 1950, through December 8, 1952.

Avoiding excessive detail, System open market policy prior to the Accord espoused a policy whose implementation required substantial and continuous purchases of both long-term and short-term securities. During periods between Treasury financings, the System made substantial purchases of long-term bonds which were being offered on the market by institutional investors. The purpose of these operations was to prevent price declines in order to maintain orderly conditions in the government securities market. Federal Reserve purchases during December, 1950, and January, 1951, were particularly large and resulted in a 7 billion dollar increase in the volume of commercial bank loans since August, 1950.  

Direct support purchases during Treasury refundings was a common System operating procedure. In light of the objective of maintaining orderly markets, substantial support purchases, particularly for the maturing issues, were undertaken, with the express purpose of lending aid to Treasury refundings. Throughout the period, purchases of both short-term and long-term securities were consistently made during financing periods in order to enable the Treasury to successfully market its new issues.

Consternation with respect to the propriety of the support program reached a crescendo by early 1951. The dilemma of maintaining a pegged market in the face of inflationary developments led to

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Ibid., p. 96.
discussions between monetary and fiscal authorities. The announcement of the Accord delineated the start of the second major period in the analysis of the evolution of "even keel" policy.

B. The Transition to Free Markets Period

At the F.O.M.C. meeting on March 1-2, 1951, the Committee unanimously approved the public announcement of the Accord. The official statement read as follows:

The Treasury and the Federal Reserve System have reached full accord with respect to debt management and monetary policies to be pursued in furthering their common purpose to assure the successful financing of the Government's requirements, and, at the same time, to minimize monetization of the public debt.\(^{34}\)

This statement reflects the mutual agreement between the two agencies, that the main objectives to be sought were the maintenance of a broad and healthy market for Treasury securities and the restraint of further inflationary expansion of bank credit.\(^{35}\) Although no substantial changes occurred in the form or wording of the F.O.M.C. directives up through and including December 8, 1952, System policy underwent some important alterations. These changes can be traced via statements made in the summary of the discussion leading to the F.O.M.C. directives.

The major innovation in open market policy was the curtailment of continuous direct support purchases. The System gradually discontinued purchases of short-term and long-term securities during the periods between Treasury financing operations. The pending task of

\(^{34}\)Ibid., p. 98.

\(^{35}\)Ibid., p. 99.
refunding the large volume of short-term securities maturing or callable in the near future presented an immediate problem. The solution adopted called for the System to immediately reduce or discontinue purchases of short-term securities, allowing the short-term market to adjust to a position at which banks could depend on borrowing from the Federal Reserve in order to make the necessary adjustments in their reserves. By the end of March, 1951, the short-term market operated without System support purchases. The freeing of the short-term market was accomplished with the aid of the System maintaining a 1-3/4 percent ceiling on the discount rate throughout the remainder of 1951. 36

The large volume of long-term bonds overhanging the market and being offered for sale daily in March, 1951, presented the other immediate problem. The solution adopted involved a Treasury offer to exchange them for a nonmarketable 2-3/4 percent, 29-year bond, which was redeemable at the holder's option before maturity only by conversion into a 5-year marketable Treasury note. The System agreed to make a limited volume of open market purchases after the announcement of the exchange. With the objective of maintaining orderly conditions in the market, the System purchased substantial amounts of long-term restricted 2-1/2 percent Treasury bonds. The purchases, initially at fixed support prices, within a period of a few days were rapidly reduced in volume and carried out on the basis of a scale-down of prices. By the closing of the books on April 6, 1951, the fixed support

36 Ibid., pp. 100, 104.
policy for long-term bonds was abandoned. Thus, within one month of the Accord, both the short-term and long-term government securities markets operated without continuous open market purchases.

During the transition to free markets, the nature of System open market operations during Treasury financing periods also underwent a major adaptation. Direct support operations involving System purchases of "rights" to new issues, new issues on a "when-issued" basis, and outstanding securities in the market comparable to the new issues were slowly abandoned. By the end of 1952, Treasury financings were carried out without direct support purchases. In accommodating the Treasury, the System came to rely increasingly on the use of repurchase agreements. A brief review of these developments is illuminating in the analysis of "even keel" policy.

In the period between March, 1951, and October, 1951, Treasury financing operations were substantial in both the short-term and long-term markets. Between May and October alone, over 18 billion dollars of maturing notes and bonds had been refunded in four financing operations, and 2 billion dollars of new money had been raised by means of increases in the weekly Treasury bill offerings. In June and September, substantial purchases were made by the System to aid the Treasury. The Federal Reserve purchases of both short-term and long-term securities were reduced to amounts (often substantial) needed at times to aid Treasury refunding operations plus occasional small

37 Ibid.
amounts for orderly market purposes, which purchases were largely offset by sales or redemptions at other times.\textsuperscript{38}

The F.O.M.C. meeting on October 4, 1951, reiterated the general stance of System policy which had been adopted by the Committee on May 17, 1951. The same directive was adopted with a view to the pursuit of a "neutral" policy by the System which would permit market forces of supply and demand to operate with a minimum of Federal Reserve intervention.\textsuperscript{39} At this meeting, the Committee also repeated its authorization for each Federal Reserve Bank to enter into repurchase agreements with non-bank dealers in government securities. Such agreements were to cover only short-term Treasury obligations, be for periods of 15 days or less, be made at rates close to the average issuing rate on the most recent issue of 3-month Treasury bills, and be for the purpose of aiding temporary money market adjustments. It was apparent that this instrument would become increasingly important as one of the mechanisms available to the System in executing open market policy. It was emphasized that repurchase agreements would be used in the interest of orderly conditions in the government securities market. It was felt that this instrument would enable dealers to absorb as much of the buying and selling in the market as possible and to carry the necessary inventory of securities to provide a market, leaving the System as only a residual buyer.\textsuperscript{40}

Between October 4, 1951, and November 12, 1952, there was little change in System policy. Although little support was given to

\textsuperscript{38}Ibid., p. 106.  
\textsuperscript{39}Ibid., p. 107.  
\textsuperscript{40}Ibid., pp. 107-108.
the Treasury's exchange offering, for which the subscription books were opened on December 3, 1951, the System generally made purchases to aid the Treasury in its refundings.\footnote{Federal Reserve System, \textit{Annual Report}, 1952, p. 91.} Large Treasury financings in June, August, and September, 1952, brought forth substantial System purchases.\footnote{Ibid., p. 96.} Although increased emphasis was placed on the repurchase agreement mechanism, the System still aided the Treasury via direct purchases of government securities during financing periods. Up to this point, "even keel" policy was nonexistent.

On November 12, 1952, the recommendations of the Craft Subcommittee were presented to the F.O.M.C. Those proposals and their partial adoption represent a major evolutionary step in analysis of "even keel" policy. The Craft Subcommittee proposed a set of operational guidelines for the conduct of open market transactions during Treasury refundings, as well as the interim periods between such dates. As previously noted, the recommendations were aimed at improving the efficiency of the government securities market.

The F.O.M.C. adopted partially the suggestions of the Craft Subcommittee at the meeting held on March 4-5, 1953. In addition to a change in the directive, the F.O.M.C. also adopted three policies with respect to operations for the System Account. These developments mark the inauguration of the "bills only" policy.
C. The "Bills Only" Policy

The proposals of the Craft Subcommittee for open market operations between Treasury financing periods were adopted intact by the F.O.M.C. The new operating procedure was reflected by a change in the wording of the F.O.M.C. directive to the Account Manager. The change provided that the System should arrange for transactions in the System open market account, with a view, among other things, "to correcting a disorderly situation in the Government securities market," rather than as previously, "to maintaining orderly conditions in the Government security market."43 The F.O.M.C. further adopted the following policies:

(1) Under present conditions, operations for the System Account should be confined to the short end of the market (not including correction of "disorderly markets");

(2) It is not now the policy of the Committee to support any pattern of prices and yields in the Government securities market, and intervention in the Government securities market is solely to effectuate the objectives of monetary and credit policy (including the correction of "disorderly markets").44

Thus, it can be seen from the official statements of record that the inauguration of the "bills only" policy represented the official F.O.M.C. adoption of the view that open market operations should be implemented with the objective of minimizing System intervention in the government securities market.

The Craft Subcommittee's recommendations with respect to the appropriate open market operating techniques to be employed during

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Treasury financings were only partially adopted by the F.O.M.C.

The Craft Subcommittee recommended that the F.O.M.C.:

... agree to suspend during these periods (of "sufficiently infrequent" Treasury financings) any open market operations in which it normally might be engaged ..., in particular, to "refrain from any sales in the market beginning with the period of the Treasury's preliminary announcement of the general terms ..." and "... to prevent a rise in open market Treasury bill rates from exceeding the highest rates that had prevailed during the period between the preliminary announcement and the announcement of the specific terms."

It was felt that this policy would replace the direct support program previously utilized during financing periods while, at the same time, it would prevent the appearance of "disorderly markets." Although this recommendation has been cited as being responsible for the curtailment of direct support purchases during the December, 1952, and February, 1953, financings, it was not officially adopted by the F.O.M.C.

At the F.O.M.C. meeting on March 4-5, 1953, the Committee adopted the following policy regarding the conduct of open market operations during Treasury financings. The policy officially adopted stated that:

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45 Craft Subcommittee, Report, in U.S., Congress, The Federal Reserve System After Fifty Years, Hearings, p. 2052. It should be carefully noted that the proposal of the Craft Subcommittee was more specific in nature than the policy actually adopted by the F.O.M.C. on March 4-5, 1953. The recommendation specified a policy in terms of the desired behavior of a single money market indicator, the Treasury bill rate. The policy adopted, on the other hand, contained no reference to any particular money market variable. The author does not imply, however, that the Craft Subcommittee proposal was superior to the policy actually adopted by the F.O.M.C.

46 Thunberg, "'Even Keel': The Reconciliation," p. 4.
(3) Pending further study and action by the Committee, it should refrain during a period of Treasury financing from purchasing (1) any maturity issues for which an exchange is being offered, (2) "when-issued" securities, and (3) outstanding issues of comparable maturity to those being offered for exchange.\(^47\)

It is the contention of the author that this policy, though negative in one sense, can be interpreted as being the new set of guidelines which the System adopted to govern the conduct of the Trading Desk during financing periods.\(^48\) Thus, the official adoption of this policy delineates the birth of the "even keel" strategy. It is the conclusion of this analysis that, even though the strategy was not christened until December 12, 1957, "even keel" policy became operational on March 4-5, 1953.\(^49\)

Although this conclusion is not universally accepted, it can be defended on a number of grounds.\(^50\) First, direct support purchases


\(^48\) This policy is negative only in the sense that the guidelines adopted at this meeting specified what the F.O.M.C. should not do during financing periods. The policy was stated in terms of what type of open market operations were inappropriate, and thus prohibited, during periods when the Treasury was an active participant in the market. This is not to imply that just because the program was stated negatively that it did not have operational significance. On the contrary, the policy adopted did specify certain operating procedures which were not to be employed by the Desk.

\(^49\) The period between the recommendations of the Craft Subcommittee and the inauguration of the "bills only" policy on March 4-5, 1953, has been treated as the interlude between the demise of the direct support program and the birth of the "even keel" strategy which replaced it. Although open to question, it is felt that inauguration of a new policy requires the official sanction of the full Committee.

\(^50\) The conclusions of Yohe and Gasper disagree with the author's analysis. They point out that in 1957 a Subcommittee on Treasury Relations was established within the F.O.M.C. Although frequent mention was made in the Minutes of the F.O.M.C. of this Subcommittee's deliberations, a report is neither referred to or included in the Minutes. Yohe and Gasper contend the "even keel" as an explicit
to aid Treasury financings were not practiced by the System after the December, 1952, refunding, except in correcting "disorderly conditions" in the government securities market.\textsuperscript{51} The System deviated from its policy of minimal intervention on only two occasions in the 1953-1960 period.\textsuperscript{52} Secondly, repurchase agreements with non-bank dealers had come to be recognized after October 4, 1951, as an important policy instrument. "Defensive" open market operations, in the form of the extension of repurchase agreements to non-bank dealers during large Treasury financings, had been used to smooth the money market impact of such operations.\textsuperscript{53} The System, in addition, had

\textsuperscript{50} (continued) operating strategy was worked out in that Subcommittee. They further conclude that there is some evidence that "even keel" policy began to evolve as early as 1955. See, specifically, Yohe and Gasper, "The 'Even Keel' Decisions," p. 2.

\textsuperscript{51} A disorderly market has been defined as a "situation in which selling feeds on itself, that is, a situation in which a fall in prices, instead of eliciting an increase in the amount of securities demanded and a decrease in the amount supplied, elicits the reverse, a falling away of bids and a rise in both the number and the size of offerings." The quotation is taken from a statement submitted by the Board of Governors to the Joint Economic Committee, See U.S., Congress, Joint Economic Committee, Employment, Growth, and Price Levels, Hearings, before the Joint Economic Committee, 86th Cong., 1st sess., 1959 (Washington, D.C.: Government Printing Office, 1959), pp. 1278-1279.

\textsuperscript{52} The System purchased 168 million dollars of "when-issued" certificates in November and December, 1955, in order to facilitate the Treasury refunding during a period of money market stringency. Chairman Martin justified intervention because "disorderly conditions" seriously threatened the market. The System purchased a large amount of securities involved in the Treasury refunding during July and August, 1958, in order to facilitate that financing. In this instance the justification for these purchases was that "disorderly conditions" had actually emerged in the market. See Thunberg, "'Even Keel': The Reconciliation," p. 5.

specifically avoided overt shifts in monetary policy because of financing operations, especially in terms of citing Treasury activity as a factor which militated against a tightened stance in credit policy. Thus, by March 4-5, 1953, those general policies and specific operating procedures which in subsequent years have come to be associated with the "even keel" strategy were already employed by the System. The fact that no Treasury refunding failed during the 1953-1957 period is considered sufficient evidence that the System did pursue a policy which, if it did not specifically aid the Treasury, at least did not hinder the Treasury. Thus, this study concludes that "even keel" policy became operational with the inception of the "bills only" policy.

Summary and Conclusion

This analysis has attempted to delineate the major innovations which have occurred in monetary policy with respect to the effect of these developments on the evolution of "even keel" policy. Special emphasis was placed upon the changing relationship between System open market operations and Treasury financings. The major conclusion of the author's research is that the "even keel" strategy developed as part of the general evolution of System open market policy. This study has identified March 4-5, 1953, as being the date upon which "even keel" became an operational phenomenon. Although disagreement is possible, it is hoped that the method of analysis was proper.

What is of crucial importance in the analysis is the purpose for which it was undertaken. The object of this study was to impart
to the reader a general understanding of what "even keel" policy entails in the context of reviewing the changing environment of which it was a product. In light of this analysis, it may be concluded that:

"Even keel" is to Federal Reserve support of Treasury financings as "bills only" is to the conduct of open market operations; they are operating techniques "least inconsistent with the rule of nonintervention" in the Government securities market.54

CHAPTER III

FEDERAL RESERVE "EVEN KEEL" POLICY IN THE SIXTIES

This chapter attempts to provide the reader with a broad understanding of "even keel" policy during the 1960's. In order to accomplish this task, this section focuses upon three related topics. First, an historical analysis of the major developments in monetary policy is presented. Emphasis is placed upon those evolutionary changes which occurred in both System open market policy and Trading Desk operating techniques that are of special relevance to "even keel" policy. Secondly, a discussion of some alternative definitions of the "even keel" policy which have appeared in the literature is offered. And, finally, an explanation of the basic rationale which underlies this strategy, as well as a discussion of the time span covered by "even keel" operations, is presented.

"Operation Twist" and "Even Keel" Policy

The major change in Federal Reserve open market policy during this period consisted of the replacement of the "bills only" guidelines by the "operation twist" or "nudge" policy. The emergence of "operation twist" was the inevitable consequence of the economic and financial developments which forced the monetary authorities to recognize the
limitations imposed upon their ability to pursue a countercyclical credit policy within the framework of confining open market operations exclusively to the short-term end of the government securities market. Criticism of the "bills only" policy grew as changes in both internal and external conditions dictated. ¹ "Operation twist" represented not only a basic change in System policy, but also led to alterations in the open market operating techniques employed by the System.

The economic environment of the late 1950's and early 1960's brought Federal Reserve officials face to face, once again, with the dilemma of monetary policy objectives which called for conflicting System actions. Although the 1960-1961 recession was a relatively mild one, it was especially disturbing to the monetary authorities because the economy had never fully recovered from the 1957-1958 recession.

Up until the F.O.M.C. meeting on March 1, 1960, the System had pursued an open market policy, first adopted on May 26, 1959, which emphasized the restraint of inflationary credit expansion. The F.O.M.C. policy directive issued on January 26, 1960, in Clause b, instructed the Account Manager to conduct open market operations with a view to

"... restraining inflationary credit expansion in order to foster sustainable economic growth and expanding employment opportunities ...," a policy consistent with the prevailing economic conditions. However, as the internal situation deteriorated, the System was forced to alter its policy.

As 1960 progressed, aggregate demand, production, and employment fell. Simultaneously, both the level and rate of unemployment increased, while the consumer and wholesale price indexes remained stable. In light of these classic recessionary developments, System officials recognized the need to rearrange the priority list of monetary policy objectives. As time passed, the pursuit of the goals of full resource utilization and sustained economic growth supplanted the now-nonexistent inflationary problem as the chief concern of the System. These objectives clearly called for an easing of credit policy. However, another problem developed which complicated the task of the Federal Reserve.

The recession developed against a backdrop of a substantial balance of payments deficit. The deficit averaged over 3 billion dollars annually between 1958 and 1960, a condition which was considerably aggravated during 1960 and 1961 by large outflows of short-term

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capital. 4 The authorities felt that the international differentials in short-term interest rates that developed during 1960 were the major cause of the capital outflow. The high priority placed upon international considerations caused System officials to include improvement in the balance of payments as the third major goal of credit policy. 5 This external objective called for a tightening in the stance of monetary policy.

Thus, the economic conditions which developed in the early 1960's presented a major policy dilemma. 6 In order to stimulate

4 Ibid., p. 130.

5 The extraordinary degree of importance attached to international considerations by System officials is well-illustrated by the following quotation: "The hard facts of recent balance-of-payments developments, in the context of the international role of the dollar, have revised the basic framework for monetary policy in the United States. As an objective of monetary policy, the defense of the international value of the dollar has come to occupy a position alongside the goal of stable domestic growth." See Federal Reserve Bank of New York, Annual Report, 1961, p. 7.

6 Although outside the immediate concern of this analysis, the reader should be made aware of certain qualifications to the dilemma, as well as some alternative solutions which have been proposed to reconcile the conflict between internal and external goals.

First of all, a policy dilemma exists only if the value judgment which ranks internal and external objectives as equally important is accepted. If, for example, System officials had held the goal of achieving balance of payments equilibrium in a position subordinate to the objective of maintaining full employment and stable growth, then no dilemma would have existed. Had this value judgment been accepted, the monetary authorities would have been required to pursue an expansive credit policy. On the other hand, a restrictive policy would have been implemented had System officials ranked internal goals below international considerations.

Secondly, a number of alternative reconciliations have been proposed by authors who accept the System's equal ranking of external and internal goals. The solutions are based upon an integration of a number of policies to be used in order to achieve the reconciliation of multiple objectives. Their proponents generally adhere to the premise that the successful achievement of multiple policy goals requires the implementation of, at least, an equal number of policy
internal recovery, the System was required to pursue an easy monetary policy to supply an ample amount of reserves to encourage credit expansion. The external deficit required, conversely, that the System maintain a tight credit policy to limit the availability of funds in order to obtain a realignment of international short-term interest rates. In order to cope with the economic conditions, the Federal Reserve System pursued three courses of action. These entailed alterations in Clause b of the economic policy directive, changes in the operating techniques employed by the Desk and, finally, the curtailment of the "bills only" policy guidelines.


\(^6\)The changes that occurred in Clause b of the F.O.M.C. directive to the Federal Reserve Bank of New York reflect the change in the stance of monetary policy. Clause b essentially instructs the Account Manager in the manner in which open market operations are to be carried out in light of external and internal economic conditions. During 1960, Clause b was altered at the F.O.M.C. meetings held on March 1, March 24, August 16, and October 24. Clause b was reworded in 1961 at the meetings held on April 18, June 6, and August 22. See Federal Reserve System, Annual Report, 1960, pp. 41, 54, 61, and 67; and Federal Reserve System, Annual Report, 1961, pp. 55, 62, and 73.
restrictive monetary policy reflected in the previously quoted directive issued on January 26, 1960, was substantially modified on March 1, 1960. The revision authorized on that date directed that open market operations should be conducted with a view to "... fostering sustainable growth in economic activity and employment, while guarding against excessive credit expansion ...," a policy shift toward less restraint. This trend toward an increasingly expansive monetary policy was reinforced at the F.O.M.C. meetings held on March 24 and August 16, 1960. The changes which occurred in Clause b up to this point had been authorized by the Committee in light of the deterioration in the internal economic conditions and the need for the System to pursue a policy to promote domestic recovery. At the F.O.M.C. meeting held on October 25, 1960, the System officially mentioned the balance of payments problem. At that meeting, Clause b was revised to read that open market operations should be conducted with a view to "... encouraging monetary expansion for the purpose of fostering sustainable growth in economic activity and employment while taking into consideration current international developments ...." Throughout the remainder of 1960 and 1961, the directive, though altered in light of the gradual domestic recovery, continued to contain explicit references to both internal and external policy targets. Thus, the System did adapt to changed circumstances by altering the stance of its policy. However, the major monetary experiment of the period, the inauguration of "operation twist," emerged as a result of

9 Ibid., p. 67.
a series of pragmatic adjustments made in the open market operating techniques employed by the Desk.

The general form of the F.O.M.C. policy directive to the Federal Reserve Bank of New York remained essentially unchanged until a new format was adopted by the Committee on December 19, 1961. A typical directive prior to this date instructed the Bank:

(1) To make such purchases, sales, or exchanges (including replacement of maturity securities, and allowing maturities to run off without replacement) for the System Open Market Account in the open market or, in the case of maturing securities, by direct exchange with the Treasury, as may be necessary in the light of current and prospective economic conditions and the general credit situation of the country, with a view (a) to relating the supply of funds in the market to the needs of commerce and business, (b) to restraining inflationary credit expansion in order to foster sustainable economic growth and expanding employment opportunities, and (c) to the practical administration of the Account; provided that the aggregate amount of securities held in the System Account (including commitments for the purchase or sale of securities for the Account) at the close of this date, other than special short-term certificates of indebtedness purchased from time to time for the temporary accommodation of the Treasury, shall not be increased or decreased by more than $1 billion;

(2) To purchase direct from the Treasury for the account of the Federal Reserve Bank of New York (with discretion, in cases where it seems desirable, to issue participations to one or more Federal Reserve Banks) such amounts of special short-term certificates of indebtedness as may be necessary from time to time for the temporary accommodation of the Treasury; provided that the total amount of such certificates held at any one time by the Federal Reserve Banks shall not exceed in the aggregate $500 million.\(^{10}\)

The above directive, or one of essentially similar form, was reissued at successive F.O.M.C. meetings up until December 19, 1961. During

\(^{10}\text{Ibid., p. 35.}\)
this period, the economic policy directive was authorized in conjunc-
tion with the three "bills only" policy guidelines, which had been
adopted by the F.O.M.C. at meetings held between March 4-5, 1953, and
December 15, 1953.

These "bills only" guidelines emphasized that open market
operations, except in the case of "disorderly conditions," should
generally be confined to the short end of the market and that System
intervention in the market was solely to effectuate the objective of
monetary and credit policy, not to support any pattern of prices and
yields in the government securities market. The "bills only" guide-
lines also entailed the prohibitions against swap transactions, as
well as during Treasury financing periods prohibitions against pur-
chases of (1) maturing issues for which an exchange was being offered,
(2) "when-issued" securities, or (3) outstanding issues of comparable
maturities to those being offered for exchange. Although the actual
demise of the "bills only" policy directives did not take place until
December 19, 1961, a gradual shift in operating techniques emerged in
late 1960.

Within the framework of the general form of the economic
policy directive and the "bills only" guidelines, a number of important
changes occurred. The System altered Clause b, as previously enumer-
ated, in order to adapt the stance of credit policy to the changed
economic circumstances. In the latter part of 1960, the Federal
Reserve, aiming simultaneously at the dual objectives of achieving
domestic recovery and external payments balance, undertook a series
of departures which eventually led to the abandonment of the "bills
only" policy. It had become apparent that the F.O.M.C. had to adopt and pursue some objectives, however limited, with respect to interest rates, an aim that had been scrupulously avoided during the "bills only" period. Beginning in late 1960, it had become an important goal of the Committee to minimize further declines (or to foster some rise) in short-term interest rates, particularly the rate for 3-month Treasury bills, which were widely held to be the major criteria of international rate relationships. 11

In October, 1960, the F.O.M.C. faced a situation where seasonal needs required that the System would have to supply a large amount of reserves to maintain the desired degree of ease; however, at the same time, the 3-month Treasury bill rates were considerably lower than abroad. 12 It was recognized by the authorities that one way to minimize the downward pressure on short-term rates was to spread System purchases of securities to supply reserves over a wider range of maturities, rather than concentrating purchases in the very sector of the market where it was desired to keep rates up. 13 Accordingly, in the fall of 1960, the System purchased short-term government securities other than Treasury bills for the first time since July and August, 1958. Specifically, coupon issues maturing within 15 months


were purchased along with Treasury bills, in order to provide reserves; and very short-term coupon issues, equivalent to Treasury bills in maturity, were sold on occasion in dealing with downward pressures on rates in that area.\textsuperscript{14}

The F.O.M.C. departed further from the "bills only" policy at its meeting on February 7, 1961. At that time, it authorized the Account Manager to purchase up to 500 million dollars of government securities with maturities of up to 10 years and to alter the maturity composition of the System's portfolio by selling short-term and buying longer-term maturities. Swap transactions, it was felt, might be desirable should sales of short-term securities be needed to affect short-term rates at a time when the System did not want to absorb reserves.\textsuperscript{15}

The Committee agreed that it should make public its decision to depart, at least temporarily, from the long-standing policy of confining operations to the short end of the market and refraining from engaging in swap transactions. Thus, on February 20, 1961, the date of the initial operations in longer maturities, the Chairman of the F.O.M.C. authorized the Account Manager to issue the following press release:

\begin{quote}
The System Open Market Account is purchasing in the open market U.S. Government notes and bonds of varying maturities, some of which will exceed 5 years. \\
Price quotations and offerings are being requested of all primary dealers in U.S. Government securities.
\end{quote}

\textsuperscript{14}Ibid., p. 19.

\textsuperscript{15}Anderson, Federal Reserve Policymaking, 1914-1964, pp. 131-132.
Determination as to which offerings to purchase is being governed by the prices that appear most advantageous, i.e., the lowest prices. Net amounts of all transactions for System Account will be shown as usual in the condition statements issued every Thursday.

During recent years transactions for the System Account, except in correction of disorderly markets, have been made in short-term U.S. Government securities. Authority for transactions in securities of longer maturity has been granted by the Open Market Committee of the Federal Reserve System in the light of conditions that have developed in the domestic economy and in the U.S. balance of payments with other countries.  

The plan was to make moderate purchases in the 1 to 5-1/2 year maturity sector first and later in 5-1/2 and 10 year maturities. The System officials stressed that the purpose of conducting operations in coupon issues was not to maintain or peg any particular price-yield level on either short-term or long-term securities. Rather, supplying reserves by purchases outside the short-term area would relieve the direct downward pressure on short-term rates, thus reducing or reversing the outflow of short-term capital. In addition, to the extent that purchases outside the short-term end of the market softened intermediate or long-term rates or prevented them from rising as much as otherwise, the flow of funds into the capital and mortgage markets would be encouraged.  

Thus, the major objective of operations in coupon issues was not the maintenance of any pattern of rate levels, but, instead, the purpose of those operations was to influence the flow of funds in both  

the long and short ends of the market. This view of the purpose of coupon operations is summarized in the words of the Board of Governors, who stated:

... purchasing of securities in the intermediate- and longer-term areas, as contrasted with the short-term area, offered the possibility of supplying reserves without creating direct pressure on short-term rates. Also, such purchases, by having a moderating influence on long-term interest rates relative to short-term rates, might have the effect of facilitating the flow of funds through the capital and mortgage markets, thereby encouraging the progress of recovery. Accordingly, the combination of domestic and international circumstances confronting the Committee seemed to call for a high degree of flexibility in open market operations.18

At the meeting held on March 28, 1961, the F.O.M.C. authorized the Account Manager to conduct operations in securities with maturities in excess of 10 years, in amounts not to exceed 500 million dollars. One reason cited for this authorization was that the increased flexibility in open market operations would afford the System a better opportunity to evaluate the effects of its operations in coupon issues. This special authorization to operate in longer-term securities was renewed at each F.O.M.C. meeting until December.19

Although the "bills only" policy had, for all practical purposes, been dead since the initial operations in coupon issues on February 20, 1961, the F.O.M.C. did not vote to terminate the three continuing policy directives until December 19, 1961. The reasons for taking this step have been enumerated in the official record. In view

of the external deficit, the System felt that greater flexibility might be needed in the future to adapt operating techniques to changing economic conditions. This was the primary reason given for the action. A second factor cited was that the "bills only" directives, which were designed to clarify the role of open market operations and thereby assist in the transformation from a pegged to a free market, had served their purpose. The transition had been successfully completed. Finally, when the three continuing directives had been adopted, the Executive Committee met only four times a year. After the Executive Committee was abolished in mid-1955, the authorities felt that the continuing directives were now no longer necessary. 20

On December 19, 1961, the F.O.M.C. issued a new continuing authority directive to the Federal Reserve Bank of New York to replace the three "bills only" guidelines. Since this date, the general format of the F.O.M.C.'s directive to the Account Manager has consisted of both the continuing authority directive and the current economic policy directive. The continuing authority directive, reviewed each March at the first meeting of the new F.O.M.C., is subject to revision by the F.O.M.C. at any time. It outlines the general policy guidelines which govern the conduct of open market operations. The continuing authority directive, first issued on December 19, 1961, has been re-issued in substantially the same form ever since. It read as follows:

1. The Federal Open Market Committee authorizes and directs the Federal Reserve Bank of New York, to the extent necessary to carry out the current economic policy directive adopted at the most recent meeting of the Committee.

20Ibid.
(a) To buy or sell U.S. Government securities in the open market for the System Open Market Account at market prices and, for such Account, to exchange maturing U.S. Government securities with the Treasury or allow them to mature without replacement; provided that the aggregate amount of such securities held in such Account (including forward commitments, but not including such special short-term certificates of indebtedness as may be purchased from the Treasury under paragraph 2 hereof) shall not be increased or decreased by more than $1 billion during any period between meetings of the Committee;

(b) To buy or sell prime bankers' acceptances in the open market for the account of the Federal Reserve Bank of New York at market discount rates; provided that the aggregate amount of bankers' acceptances held at any one time shall not exceed $75 million or 10 per cent of the total of bankers' acceptances outstanding as shown in the most recent acceptance survey conducted by the Federal Reserve Bank of New York;

(c) To buy U.S. Government securities with maturities of 24 months or less at the time of purchase, and prime bankers' acceptances, from non-bank dealers for the account of the Federal Reserve Bank of New York under agreements for repurchase of such securities or acceptances in 15 calendar days or less, at rates not less than (a) the discount rate of the Federal Reserve Bank of New York at the time such agreement is entered into, or (b) the average issuing rate on the most recent issue of 3-month Treasury bills, whichever is the lower.

2. The Federal Open Market Committee authorizes and directs the Federal Reserve Bank of New York to purchase directly from the Treasury for the account of the Federal Reserve Bank of New York (with discretion, in cases where it seems desirable, to issue participations to one or more Federal Reserve Banks) such amounts of special short-term certificates of indebtedness as may be necessary from time to time for the temporary accommodation of the Treasury; provided that the total amount of such certificates held at any one time by the Federal Reserve Banks shall not exceed $500 million.  

The current economic policy directive is discussed in Appendix A, which also details the methodology employed in this analysis for identifying "even keel" directives.

Thus, it can be seen that "operation twist" emerged as a result of an evolution in operating techniques aimed at adapting open market operations to the changing economic environment of the early 1960's. "Operation twist" was an official attempt at manipulation of the interest structure. System policy with respect to short-term rates was clear. The minimization of downward pressure on short-term interest rates, but not the establishment of a particular floor, was considered appropriate. The short-term interest rate policy was designed to keep domestic rates competitive with those abroad in order to stem the outflow of short-term funds. Downward pressure on long-term rates, at least relative to short-term rates, was sanctioned to promote domestic recovery.22

The author's interpretation, that the major target of "operation twist" was to influence the flow of funds rather than to maintain any interest rate levels, is confirmed by the policy statement made by Chairman Martin in a speech given on April 11, 1961, to the Reserve City Bankers in Boca Raton, Florida. Noting the public's fixation with the rate aspects of the new policy, he said that the System's objective was actually to influence flows of funds in international and domestic

markets: "... in respect to short-term rates, whether the outflow of funds to foreign centers is being stemmed; and in respect to long-term rates, whether the flow of capital into productive investment activities is being facilitated."\textsuperscript{23}

The impact of "operation twist" on the interest rate structure falls outside the scope of this paper. However, it is important to understand the relationship between "even keel" policy and the philosophy which governed open market operations during the 1960's. The demise of the "bills only" policy and the birth of "operation twist" is a reflection of the partial abandonment of the laissez-faire doctrine endorsed by the System during the March, 1953, to February, 1960, period. Even though the System now officially advocated operations outside the short end of the market, a review of the historical record clearly shows that it was not the intention of the monetary authorities to reinstate the inflexible policies which it employed prior to 1953. Conversely, "operation twist" was designed to impart a greater degree of flexibility to monetary policy. The inauguration of "operation twist" did not mark the return to a doctrine which espoused the strict regulation of the government securities market.

Although the initiation of System operations in both the intermediate and long-term markets did represent an important innovation in monetary policy, "operation twist" cannot be interpreted as a complete abandonment of the laissez-faire doctrine. This view of "operation twist" is supported by an examination of the main objectives of the policy, as well as its implementation during the 1960's. The purpose of this section is to review briefly a number of facets of "operation twist".

\textsuperscript{23}Cooper, "Techniques of the Trading Desk," p. 21.
"Operation twist" specifically altered open market operations in that it authorized the Trading Desk to conduct transactions outside the bill sector and to carry out swap transactions. However, the main objectives of such transactions during the interlude between Treasury operations did not entail the maintenance of a particular price-yield level. Operations in longer-term securities were undertaken primarily to correct the balance of payments deficit. Net acquisitions of coupon issues were relatively larger in the early 1960's, when the need to avoid downward pressure on short-term yields was greatest. In addition, operations in coupon issues were not designed to take the place of operations in bills. Although the net purchases (purchase less sales) of coupon issues grew in relative importance during the 1961-1965 period as compared with the 1956-1960 interval, still about 65 percent of total net purchases were carried out in the bill sector. 24

In addition to these major characteristics of "operation twist," a number of new operating techniques were developed which provide further evidence to support the interpretation that the new policy

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represented only a partial abandonment of the laissez-faire doctrine. The methods of approach to the market during the early stages of expanding operations beyond Treasury bills were necessarily experimental and were limited by the inherent peculiarities of coupon issues as contrasted with Treasury bills. In general, it was found that the market for coupon issues was normally quite thin and frequently one-sided, and that the prices of securities were much more responsive to official operations than were rates for Treasury bills. Accordingly, the Desk quickly abandoned the use of the "go-around" technique for the purchase of coupon issues. Instead, the Desk purchased the majority of intermediate and long-term securities by responding to offers made at the dealers' initiative. In addition, in buying coupon issues for the System, the Desk consistently tried to exert as little immediate influence on prices as possible and generally did not enter the market unless conditions would permit coupon purchases without undue price effects. In order to minimize direct price effects, the System confined purchases to those periods when there was a readily available supply of securities and rarely purchased securities for itself at rising prices. Finally, the Desk consciously attempted to leave some supply of securities in the market after its buying to avoid preempting all of the securities available in the market at a given time.  

In conclusion, during the interludes between Treasury financings, both the major objectives of "operation twist," as well as the operating techniques employed by the Desk in its implementation,

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support the view that this policy represented only a partial abandon-
ment of the laissez-faire doctrine. System intervention in the long-
term market was undertaken on a limited basis in order to deal pri-
marily with the balance of payments problem. When operations in
coupon issues were deemed appropriate, such operations were conducted
with techniques designed to minimize the market impact of official
transactions. Thus, operations in coupon issues were undertaken with
a view to minimizing System intervention in the market between Treasury
operations.

"Operation twist" did not represent a major alteration in
System policy with respect to Treasury financing operations. The
System authorized the Desk to purchase directly from the Treasury
limited amounts of short-term certificates of indebtedness for the
temporary accommodation of the Treasury, a practice which had been
followed during the 1953-1960 period. Specifically, during periods
of Treasury financings, the System followed essentially the same policy
employed during the "bills only" period. The Desk continued to avoid
any outright trading for the System in issues involved in Treasury
financings or issues of comparable maturity. The System had no inten-
tion of supporting any particular pattern of prices and yields,
especially in the intermediate and long-term areas where new financing
operations were being undertaken. The Federal Reserve System did not
adopt "operation twist" in order to reinstate the System in the role of
the ultimate underwriter of the Federal government debt. "Operation
twist" did not entail any System commitment to support Treasury

\[26\text{Ibid., pp. 21-22.}\]
refundings by purchases of "rights" to new issues, "when-issued" securities, or issues of comparable maturity to those being offered in exchange.  

In retrospect, the major innovation in monetary policy during the 1960's did not substantially alter "even keel" policy as it was practiced under the "bills only" policy. The maintenance of an "even keel" policy during Treasury financing periods has never entailed direct System support of Treasury refundings. The remainder of this chapter attempts to clarify, in a somewhat more positive methodological approach, more precisely what the "even keel" strategy does entail.

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27At this point, the reader should be reminded that the Trading Desk conducts its open market operations for either the System Account, Treasury Investment Accounts, or the Foreign Account. The latter need not detain us, but the others must.

Those operations undertaken by the Desk for the System Account constitute the majority of all transactions. The purpose of these open market operations is to influence reserve levels of member banks, in order to implement the credit policy deemed appropriate by the Federal Open Market Committee. The Desk avoided outright trading for the System Account in issues involved in Treasury financings or issues of comparable maturity under both the "bills only" and "operation twist" policies.

The Desk also conducts operations for the Treasury Investment Accounts. In conducting such open market operations, the Desk acts as an agent of the Treasury, carrying out those transactions desired by Treasury authorities. The Desk, in handling the buying orders for the Treasury Investment Accounts, quite often finds itself supporting Treasury financings. Much of the buying for this account was undertaken in direct support of Treasury financings and frequently involved an attempt to exercise a constructive influence on the tone of the market, even to the extent of holding price levels temporarily. The Desk, in conducting operations for this account, often purchased both "rights" or "when-issued" securities. Although such purchases do entail direct support of Treasury operations, it should be clear that the support is provided by the Treasury, not by the central bank. Such operations were undertaken both before and after the inauguration of "operation twist." See Cooper, "Techniques of the Trading Desk," pp. 15-18; 27-28.
"Even Keel" Policy Defined

The rest of this chapter will discuss some alternative definitions found in the literature, in addition to reviewing the rationale for an "even keel" directive and commenting briefly on the time span of an "even keel" period. Later analysis will quantitatively test these alternative definitions.

Although the literature specifically concerned with Federal Reserve "even keel" policy is relatively scant, close inspection of it reveals several interpretations of the meaning of the "even keel" strategy. A representative sampling of definitions would include the following:

(1) Federal Reserve Chairman Martin (1959):

... during, immediately before, and immediately after dates when the Treasury is engaged in a debt

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Two other manuscripts exist, but could not be made available to the author for various legitimate reasons. These two manuscripts are, Stephen H. Axilrod and Joseph H. Burns, "The Behavior of Interest Rates, Bank Credit, and Marginal Reserve Measures During 'Even Keel,' 1965 - mid-1967," (an unpublished confidential memorandum, Federal Reserve Bank of New York); and Norman N. Bowsher, "'Even Keel' as a Constraint on Monetary Action," (an unpublished manuscript, Federal Reserve Bank of St. Louis, November 6, 1967).
... overt System actions ... have not been taken. Maintenance of an "even keel" ... has helped to prevent any interference with Treasury financing as a result of changes in monetary conditions. It has also contributed to market conditions that facilitated the pricing of new Treasury offerings.29

(2) Tilford C. Gaines (1962):

... the Federal Reserve System pursues an "even keel" policy for a few weeks before and after each major Treasury financing in order not to alter either basic supply-demand relationships or investor expectations during the financing period.30

(3) First National City Bank of New York (1967):

The "even keel" policy assumes that the marketing of a Treasury issue tends to raise market rates, unless offset by Federal Reserve purchases of securities or other reserve-supplying operations. "Even keeling" is supposed to perform a type of temporary underwriting function: The reserve base of the banking system is enlarged to enable the money markets to digest the Treasury offerings with a minimum disturbance to interest rates.31

The vagueness of what it means for the Account Manager to maintain an "even keel" during a Treasury financing operation is apparent in these statements. To add to the confusion, the term is also sometimes used to connote money market stabilizing operations during periods of year-end seasonal pressures, which will not be specifically


covered in this study. An evaluation of these definitions will be undertaken in order to raise some important questions, to be answered later, with respect to a more quantitative explanation of "even keel" policy.

A review of the various definitions of "even keel" policy indicates that two basically different schools of thought exist with respect to the appropriate relationship between the conduct of monetary policy and the financing operations of the Treasury. The first interpretation to be discussed stresses the concept that "even keel" operations entail an open market operating strategy aimed at facilitating or aiding Treasury operations. The other school of thought interprets "even keel" policy as a conscious effort by the monetary authorities to implement monetary policy with a view to avoid hindering Treasury operations. In the discussion which follows these two interpretations can be loosely labeled the "support" and "neutrality" schools.

The interpretations of "even keel" policy which the author places in the "support" school view the "even keel" strategy as a form of System aid for Treasury financings. The Trading Desk conducts its open market operations during Treasury financing periods with a view to facilitating the marketing of a new issue by performing an underwriting


33 The reader should note immediately the inherent danger of these two labels. As will become clear, the specific definitions categorized under the "support" school do not define "even keel" policy as consisting of the type of direct System support purchases which characterized Federal Reserve policy prior to the Accord. Nor do those classified within the "neutrality" school view "even keel" operations as being conducted without regard to Treasury financings. The labels are employed as a convenient method of distinguishing between two separate interpretations of "even keel" policy, the difference between which should become clear as the analysis proceeds.
function. This interpretation explains that "even keel" policy consists of a form of temporary underwriting for Treasury operations. Specifically, the System through the use of open market operations would undertake reserve-supplying operations with the purpose of enlarging the reserve base of the banking system to allow the money markets to digest the Treasury offerings with minimal interest rate disturbance. Such an interpretation basically views the "even keel" strategy in terms of a one-way shift toward ease during Treasury financings.34

This definition can be empirically tested. It could be supported if, during "even keel" periods, the volume of repurchase agreements or net purchases were significantly higher than during concurrent periods not characterized by an "even keel." In addition, further justification of this view could be attained if the behavior displayed by selected money market indicators showed that the degree of pressure in the money market eased during financing periods.

The majority of the different definitions encountered in the literature can be loosely classified within the "neutrality" school. The appropriate relationship between monetary policy and debt management operations espoused by this school is the maintenance of a limited degree of independence. That is, while Federal Reserve System policy is such that the authorities do not feel that their money-creating power should be employed to lend direct support to Treasury financings,

34For a closer look at this interpretation of "even keel" policy, see, for example, Axilrod, "Empirical View of 'Even Keel,'" p. 2; Monthly Economic Letter, p. 99; and Thunberg, "'Even Keel': The Reconciliation," pp. 11-12.
System officials do recognize that concurrent monetary policy may well affect Treasury operations. The money market is felt to be quite sensitive to Treasury offers due to the sheer magnitude of the financings, the involvement of the U.S. government's credit, and the key role played by government securities in the process of liquidity and portfolio adjustment. Bearing in mind that there exists a connection between the stance of monetary policy and the success of Treasury operations, most authors view "even keel" policy as, if not a form of central bank support or aid to financings then, at least a conscious effort on the part of the System to undertake no actions that would contribute to a Treasury offer encountering poor acceptance in the government securities market. Two different interpretations of "even keel" policy, based upon this general "neutrality" concept, are discussed below.

One common definition of "even keel" policy which has been encountered frequently in the literature is that the maintenance of an "even keel" in the money market during a Treasury financing period

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36 The definition of a successful Treasury operation is an illusive concept. As a general rule, a successful debt management operation must accomplish the financing of the deficit on terms (price, maturity, etc.) reasonable to both the Treasury authorities and investors. A quantitative measure of success in a time series analysis is limited by the changing financial and economic environment within which successive Treasury offerings take place. In addition, the quantitative measures employed vary with respect to the alternative types of financing techniques used by the Treasury. Some quantitative measures are explained and defended by the author in the following chapter and, should the reader feel the necessity of consulting that discussion, he should refer to Chapter IV.
calls for the avoidance of any overt System policy actions. That is, any overt policy action that might be interpreted by the money market participants as indicative of a shift in the stance of credit policy is to be avoided during a Treasury financing period.\footnote{This view or interpretation of "even keel" policy appears in a number of works. See, for example, Axilrod, "Empirical View of 'Even Keel,'" p. 1; Thunberg, "'Even Keel': The Reconciliation," p. 1; and U.S., Congress, Employment, Growth, and Price Levels, Hearings, p. 1785.} This particular view is most commonly couched in terms of the necessity of not announcing new policy decisions (as contained in announcements from the Board of Governors or as specified in the second paragraph of the current economic policy directive of the F.O.M.C.) 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.\footnote{Axilrod, "Empirical View of 'Even Keel,'" p. 1.} Specifically, "even keel" policy is felt to influence the timing of policy actions, confining the System to undertaking any overt policy action during the intervals between Treasury financings. It is felt that any tightening of credit policy during the financing period would seriously impair the success of an offering through altering basic supply and demand relationships, as well as the expectations of the money market participants.\footnote{It should be noted that "even keel" policy might also be interpreted as influencing the timing of not only tightening, but also easing actions. For example, a discount rate reduction in the middle of a Treasury financing period may be avoided because it might encourage undue speculative activity in the government securities market. See Axilrod, "Empirical View of 'Even Keel,'" fn. 1, p. 1.}

This interpretation of "even keel" policy can be tested by reviewing the historical record. This definition would be supported...
if it were found that the majority of changes, especially increases, in both the discount rate and the required reserve ratio occurred during those intervals not designated as "even keel" periods. In addition, if by a review of the Record of Policy Action - the Federal Open Market Committee in the Annual Report it can be found that the necessity of maintaining an "even keel" policy has preempted shifts in monetary policy, then this interpretation would be further validated.

Finally, a second definition within the "neutrality" school has been identified by the author. This particular interpretation has been indirectly suggested by the work of others, as well as by the review of the current economic policy directives. This interpretation views "even keel" policy as an open market operating technique.

used in the implementation of short-run monetary policy. The histori­
cal record clearly shows that the operating instructions given to
the Account Manager in the second paragraph of the F.O.M.C. current
economic policy directive have been couched in terms of a desired
degree of pressure in money market conditions or money market tone.
During "even keel" periods, the Account Manager is invariably directed
to maintain the existing degree of pressure in the money market.

Thus, this would indicate that the "even keel" strategy would

call for open market operations directed at maintaining steady con­
ditions in the money market. This definition can be readily tested
by an analysis of the behavior of a number of money market indicators
during both "even keel" and alternate periods. The primary indicators
to be studied would include net open market purchases, repurchase
agreements, short-term interest rates, and marginal reserve measures.
This definition would be supported if the behavior of these policy
targets was such that one could conclude that the maintenance of an
"even keel" entailed System operations aimed at stabilizing money mar­
ket indicators.

A more detailed discussion of these alternate definitions will

follow. At the outset, it should be emphasized that these definitions
of "even keel" policy are not mutually exclusive concepts. It is pos­
sible that a given "even keel" period may be characterized by more
than one definition with an equal degree of accuracy or, on the other
hand, different "even keel" periods may best be described by the same
definition. Before proceeding to the quantitative analysis of the
alternative definitions of "even keel" policy offered here, an evalu­
ation of the rationale for an "even keel" directive must be presented.
The Rationale for "Even Keel"

The rationale most commonly cited in defense of the central bank maintaining an "even keel" posture during Treasury financing periods ultimately rests on one major premise. This premise is that the implementation of credit control policy by the Federal Reserve System can have an important effect upon Treasury debt management operations. System officials recognize that monetary policy cannot be conducted without considering policy actions with respect to their effect on concurrent Treasury financing operations.

The rationale justifying the "even keel" strategy recognizes three basic facets of Treasury financing operations which must be taken into account by central bank officials in conducting monetary policy. They are:

1. Treasury deficits must be financed and refunding operations completed.

2. Such financings should be undertaken on terms that are acceptable to private investors; that is, the Treasury must "meet the test of the market."

3. Direct Federal Reserve support of Treasury financings should be avoided.41

The Federal Reserve System maintains an "even keel" position in order to sustain the orderly marketing of Treasury securities. Because of the massive size of most Treasury financing operations and the sensitivity of the money market to Treasury activity and the policy actions of the monetary authorities, it is felt that reasonably stable conditions must be maintained in the money and credit markets if the financings are to be successful. Therefore, it is the policy of the

41 Thunberg, "'Even Keel': The Reconciliation," pp. 1-2.
System to avoid those policy actions which tend to create uncertainties or upset the money market during Treasury financing periods. 42 The "even keel" strategy is aimed at smoothing the process of marketing large Treasury issues.

The purpose of maintaining orderly money market conditions during the financing period is to avoid upsetting the expectations of the government securities dealers. The government securities dealers operate on a slender equity to funds ratio. The "even keel" strategy aims at enhancing the ability of the dealers to "make a market" in the new Treasury offerings by minimizing the degree of uncertainty faced by the market participants. It provides the underwriters with a short period of time during which basic market supply and demand forces rather than monetary policy are the main factors affecting investor expectations. "Even keel" policy allows the securities dealers sufficient time to contact customers, with no more than a normal market risk upon their temporary holdings. 43 Thus, the major rationale underlying "even keel" policy is that the conduct of monetary policy during Treasury financings must be such that it sustains the orderly marketing of Treasury securities. The rationale for "even keel" policy can be further clarified by an examination of the time span of the "even keel" period.

The Time Span of "Even Keel"

The time span covered by a specific "even keel" directive is difficult to identify with precision. The length of an "even keel"

42 Ibid., p. 2.
43 Axilrod, "Empirical View of 'Even Keel,'" p. 2.
period in calendar days varies somewhat due to a number of factors. The type of financing technique employed by the Treasury, whether a rights or cash financing, alters the duration of the "even keel" period. In addition to the type of financing technique, both the volume of a particular offer and the types of securities offered in a financing operation are factors taken into consideration by the Account Manager in the implementation of an "even keel" strategy. As a general rule, cash financings, large volume offers, and Treasury operations involving long-term securities call forth an extension of the time span during which an "even keel" policy is maintained. Other factors, such as the reception the financing encounters in the money market and changing economic conditions necessitating shifts in the stance of credit policy, may also alter the time span of an "even keel" period.

The "even keel" period, with few exceptions, encompasses the entire Treasury financing period. The interval encompassed by the

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44 A rights financing would include both exchange offers and advance refundings. An exchange offer entails an optional right granted to holders of specified outstanding issues to exchange those securities on the maturity date at face value for the new issues being offered. An advanced refunding operation entails an optional offer to the holders of specified outstanding issues to exchange those securities prior to the maturity date for the new issues being offered by the Treasury. A cash financing includes both cash offers and cash refundings. A cash offer consists of the offer of a new security by the Treasury with payments to be made in cash with no rights involved. The Treasury also sells new issues through cash refundings or cash and exchange offers. This method or financing technique entails the offer of a new issue with payment to be made in either cash or maturing outstanding issues. A more thorough discussion of these financing techniques will be presented in the next chapter.

45 The length of the Treasury financing period varies with respect to the method of financing employed. The Treasury financing period for a rights financing may be defined as the time span extending from the day after the announcement of the offer to the day the books are closed. A cash financing involves a longer Treasury
"even keel" period usually extends from a few days before the public announcement of the terms of a financing operation to around approximately the settlement or payment date—a span, generally, of about three weeks in length. Various empirical studies have employed different basic "even keel" periods, but all agree that the "even keel" period does encompass the Treasury financing period. A detailed account of the methodology utilized in this analysis for dating "even keel" periods is elaborated in the next chapter.

The "even keel" period, which encompasses the Treasury financing period, can conceptually be subdivided into three distinct intervals. Each interval or subperiod gives rise to separate and distinct reasons which call for the maintenance of an "even keel." A discussion of these intervals should clarify further the overall rationale which justifies the "even keel" strategy.

The first interval covers the period which extends from a few days prior to the announcement until the day of the announcement of


46 Thunberg, "'Even Keel': The Reconciliation," p. 1.

47 The basic unit of time employed in dating "even keel" periods has varied between three days to one week prior to the announcement of terms until three days to one week after the settlement date. See, for example, Axilrod, "Empirical View of 'Even Keel,'" p. 47 and Gustus, "Monetary Policy, Debt Management, and Even Keel," p. 8.
the specific terms of the financing to the public. This preannouncements interval brings together Treasury and System officials, as well as money market participants, in discussion aimed at canvassing the market. Suggestions of both System officials and market participants in the determination of the terms (volume, price, and maturity, etc.) of the new issue. The Treasury seeks those terms that will best meet the financing requirements of the Treasury, as well as the "test of the market." The maintenance of an "even keel" during this period is necessary to permit the Treasury officials to adequately gauge the market as a prerequisite of composing the terms of the financing. Any abrupt changes in monetary policy during this period would cause money market repercussions, altering investor expectations, and thus complicating the task of gauging the market. The result would probably be terms that were either too easy from the Treasury's viewpoint, i.e., those that might increase the cost of the financing or shorten the composition of the public debt or, on the other hand, terms too severe to meet the "test of the market."^48

The second interval encompasses the interlude between the public announcement of the specific terms and the date the subscription books are closed. This particular period is most critical in the determination of the degree of acceptance the offering will encounter in the money market. It is during this time that both bank and non-bank government securities dealers canvass customers to gauge the market's appetite to determine their underwriting subscriptions for a cash financing. In a rights financing, the underwriters must locate

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^48 Thunberg, "'Even Keel': The Reconciliation," p. 2.
the holders of rights and purchase the rights of those investors who do not wish to exercise their exchange option. Essentially during this period, the investor must decide whether or not to accept the terms offered by the Treasury. Obviously, any central bank actions which could be interpreted as a tightening of credit policy would seriously hinder the success of the financing operation.\(^{49}\)

The final interval of the "even keel" period encompasses the time period starting on the day after the closing of the books and extending a few days beyond the settlement or payment dates. The maintenance of the "even keel" strategy during this subperiod is necessary to allow the underwriters sufficient time to distribute their allotment of the new issue to the ultimate investors. The pursuit of an "even keel" during this period is crucial with respect to the success of future Treasury financings. Any shift in monetary policy, reflected in an increase in interest rates (a reduction in price) on the securities involved in the financing, would cause the bank and non-bank securities dealers to suffer severe capital losses. The large capital losses would probably lead the dealers to reduce their propensity to participate in future Treasury financings. Other things equal, a reduction in the willingness of the securities dealers to make a market for future issues would force the Treasury to compose more lenient terms in future offerings or accept the alternative of decreased sales.\(^{50}\)

\(^{49}\)Ibid.

\(^{50}\)Ibid.
Summary and Conclusions

This chapter has attempted to provide the reader with a general understanding of the "even keel" strategy during the 1960's. This analysis has concentrated upon the relationship between "even keel" policy and the major innovations in monetary policy, as well as presenting a number of different interpretations of "even keel" policy. In summarizing, a number of points should be reviewed.

First, the replacement of the "bills only" guidelines with the "operation twist" policy did not alter the basic character of the "even keel" strategy. The operations in coupon issues authorized by "operation twist" were not aimed at maintaining price-yield levels in the government securities market. The Trading Desk, during the 1960's, continued its policy of eschewing the purchase of "rights" to new issues, securities on a "when-issued" basis, and issues of comparable maturity to those securities being offered during Treasury financing periods.

The discussion of the alternative definitions of "even keel" policy resulted in the classification of those definitions within either the "support" or "neutrality" schools. This classification will facilitate the empirical evaluation of "even keel" policy which follows. Finally, the discussion of the rationale and time span of "even keel" policy has established that the primary purpose of this policy is to smooth the marketing process of Treasury financings. What this means, in terms of the behavior of selected money market variables, will be examined later.
APPENDIX A

THE IDENTIFICATION OF "EVEN KEEL" DIRECTIVES
AND THE NATURE OF THE CURRENT ECONOMIC POLICY DIRECTIVE
OF THE FEDERAL OPEN MARKET COMMITTEE

The purpose of this Appendix is twofold. The primary objective
is to detail the methodology employed by the author in identifying the
"even keel" directives of the F.O.M.C. during the January 1, 1960 -
August 28, 1968, period. In conjunction with this aim, it is necessary
to familiarize the reader with the nature of the current economic
policy directives which, during the December 19, 1961 - August 28,
1968, interval, formed the immediate guidelines for the conduct of
open market operations.

The Identification of "Even Keel" Directives

Monetary policy had been implemented during the entire January
1, 1960 - August 28, 1968, period through a series of economic direc-
tives issued by the F.O.M.C. to the Account Manager at the Federal
Reserve Bank of New York. However, within this period the F.O.M.C.
employed two general formats of instructions to the Account Manager.
Although basically similar in substance, the two formats necessitated
the utilization of a slightly different approach in identifying "even
keel" directives.
The format of the instructions issued to the Federal Reserve Bank of New York during the January 1, 1960 - December 5, 1961, period consisted of two distinct parts. These two facets entailed instructions for the conduct of open market operations on two separate levels. The continuing authority directive, which throughout the entire period consisted of the three "bills only" guidelines, enumerated the general operating policies which the Desk was to employ in conducting transactions for the System Account. The specific level of operating instructions was embodied in the policy directive of the F.O.M.C. This policy directive, which was reviewed at each meeting of the F.O.M.C., as opposed to the continuing authority directive which came under review only on an annual basis, provided the major tool employed in identifying "even keel" directives.

The policy directive appears in the Record of Policy Actions - the Federal Open Market Committee in the Annual Report of the Board of Governors of the Federal Reserve System, along with a brief summary of the discussion leading to the directive. The policy directive consisted of two paragraphs, the first of which contained Clause b, instructing the Account Manager as to the appropriate targets to which open market operations should be directed.

The identification of "even keel" directives during this period was a fairly simple matter. In such a directive it was found that Clause b of the policy directive contained reference to either an actual or forthcoming Treasury financing as a factor to be taken into account in the conduct of open market operations. An "even keel" directive could also be readily identified from the summary of the discussion
leading to the policy directive. In this case, the summary usually denoted the desirability of maintaining an "even keel" in light of a Treasury financing operation. The "even keel" directives identified by this process are listed in Table 1.

The format of the instructions issued by the F.O.M.C. to the Account Manager during the December 19, 1961 - August 28, 1968, interval was slightly different. The instructions again consisted of two distinct parts. The continuing authority directive which replaced the "bills only" guidelines was reissued in substantially the same form throughout the entire period. The continuing policy directive which underwent annual review instructs the Account Manager as to the general guidelines to be employed in conducting open market operations. The specific operating instructions are embodied in the current economic policy directives.

Since December 19, 1961, dynamic short-run monetary policy has been implemented through the current economic policy directives of the F.O.M.C. This directive is reviewed and revised, usually at three-week intervals between F.O.M.C. meetings, in accord with the development in both internal and external economic conditions. During the December 19, 1961 - August 28, 1968, interval, scrutiny of the current economic policy directive provided the primary basis for identifying "even keel" directives.

The directive consists of two paragraphs: the first being a statement of the broad economic goals to be achieved and an outline of the economic conditions reviewed by the F.O.M.C. in determining the tone of the directive, and the second, an enumeration of the intermediate objectives to be attained by open market operations. The
TABLE 1
"EVEN KEEL" DIRECTIVES,
JANUARY, 1960 - AUGUST, 1968

<table>
<thead>
<tr>
<th>Year</th>
<th>Dates of Directives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>January 26, March 22, July 6, July 26, September 13, October 4</td>
</tr>
<tr>
<td>1961</td>
<td>June 6, July 11, September 12, October 3, October 24</td>
</tr>
<tr>
<td>1962</td>
<td>January 9, January 23, February 13, April 17, July 31, August 21, September 11, October 23</td>
</tr>
<tr>
<td>1963</td>
<td>January 8, January 29, February 12, March 5, March 26, April 16, August 20, September 10, October 22</td>
</tr>
<tr>
<td>1964</td>
<td>January 7, January 28, March 24, April 14, May 5, June 17, July 7, July 28, October 20, November 10, December 15</td>
</tr>
<tr>
<td>1965</td>
<td>January 12, April 13, May 11, July 13, August 10, September 28, October 12, November 2, December 14</td>
</tr>
<tr>
<td>1966</td>
<td>January 11, February 8, April 12, May 10, July 26, October 4, November 1</td>
</tr>
<tr>
<td>1967</td>
<td>January 10, February 7, May 2, June 20, July 18, August 15, October 3, October 24</td>
</tr>
<tr>
<td>1968</td>
<td>February 6, April 30, July 16</td>
</tr>
</tbody>
</table>

1 The dates cited refer to the date of the F.O.M.C. meeting at which the "even keel" directive was authorized. These dates do not indicate the initial day of the "even keel" period. These dates concur closely with the findings of others. See Warren J. Gustus, "Monetary Policy, Debt Management, and Even Keel," Business Review of the Federal Reserve Bank of Philadelphia (January, 1969), pp. 1-4; and William P. Yohe and Louis C. Gasper, "The 'Even Keel' Decisions of the Federal Open Market Committee" (an unpublished manuscript, Duke University, Durham, N.C., 1969), Appendix A, p. a1). 

intermediate objectives are stated in terms of the desired movements in such variables as member bank reserves, bank credit, the money supply, and interest rates. The current economic policy directive and a rather detailed summary of the discussion leading to it appear in the Record of Policy Actions - the Federal Open Market Committee in the Annual Report.

The identification of "even keel" directives was again rather simple. The summary of the discussion, coupled with the current economic policy directive, provided sufficient material to determine whether or not the System was maintaining an "even keel" policy. These two sources contained either specific references to maintaining an "even keel" per se or to conducting open market operations in light of an imminent or forthcoming Treasury financing operation. Those "even keel" directives which were identified since December 19, 1961, are also listed in Table 1.

The Current Economic Policy Directive

As previously detailed, dynamic short-run monetary policy since December 19, 1961, has been implemented through the current economic policy directive. This directive gives specific operating instructions to the Account Manager in qualitative terms. These instructions compose the dynamic facet of Federal Reserve policy and indicate the guidelines to be followed by the Trading Desk in the day-to-day conduct of open market operations. The first paragraph enumerates the economic conditions reviewed by the F.O.M.C. The second paragraph contains the operating instructions.
The operating instructions are usually stated in terms of a desired degree of pressure in the money market to be achieved by the operations of the Trading Desk. The degree of pressure desired by the F.O.M.C. is specified in terms of either maintaining the existing degree of pressure or achieving either a firmer or easier degree of money market pressure. The choice is dependent upon whether the F.O.M.C. feels that the economic environment justifies a shift in the stance of monetary policy. In addition to specifying the tone to be maintained in the money market, the directive often refers to desired movements in certain money market indicators such as aggregate or marginal bank reserves, Treasury bill rates, bank credit as measured by the bank credit proxy variable, and occasionally references to unsettled conditions in the securities and foreign exchange markets.

In order to familiarize the reader with the form and content of the current economic policy directive, a number of typical directives are presented below. A few words of explanation accompany the directives to provide not only an interpretation of the meaning of the directive in terms of the stance of monetary policy, but also to show the ease with which an "even keel" directive can be identified.

The first directive to be discussed was issued at the F.O.M.C. meeting held on February 13, 1962. It stated:

It continues to be the current policy of the Committee to permit further bank credit and monetary expansion so as to promote fuller utilization of the economy's resources, together with monetary conditions consistent with the needs of an expanding domestic economy, taking into account this country's adverse balance of payments as well as a possible Treasury financing.

To implement this policy, operations for the System Open Market Account during the next 3 weeks
shall be conducted with a view to maintaining a supply of reserves adequate for further credit expansion, while minimizing downward pressures on short-term interest rates. In view of the possibility of a Treasury financing, emphasis shall be placed on maintaining a steady money market.¹

The first paragraph indicates that the System continued unchanged, a moderately expansive monetary policy. Both the directive and the summary of the discussion leading to it emphasized three major considerations that were reviewed by the F.O.M.C. in the unanimous decision to continue monetary policy unchanged for the next three weeks. It was felt that the slight pause in domestic recovery was not serious enough to call forth a shift toward greater ease. However, the possibility of a move toward lesser ease which external considerations might have called for was militated against because of the pause in the domestic recovery process. The possibility of a Treasury advance refunding also was a factor cited in favor of holding the posture of monetary policy unchanged.

This current economic policy directive is a typical "even keel" directive. Note that both paragraphs mention the possibility of an imminent Treasury financing operation. The operation referred to was an advance refunding operation which the Treasury announced on February 15, 1962. The second paragraph emphasized, in light of possible Treasury activity, the need to maintain a steady money market. In addition, it specified the F.O.M.C.'s desires with respect to the appropriate behavior of both aggregate reserves and short-term interest rates.

The second directive cited was issued at the F.O.M.C. meeting held on October 20, 1964. It reads as follows:

It is the Federal Open Market Committee's current policy to accommodate moderate growth in the reserve base, bank credit, and the money supply for the purpose of facilitating continued expansion of the economy, while fostering improvement in the capital account of U.S. international payments, and seeking to avoid the emergence of inflationary pressures. This policy takes into account the further expansion in economic activity, tempered by a work stoppage at a major automobile company; relative stability in broad community price averages; even though additional price increases have occurred in some materials markets; and indications that the vigorous money supply expansion of recent months continued in the first half of October. It also gives consideration to current estimates that the deficit in the U.S. balance of payments in the third quarter continued at a high rate, although not quite as high as in the preceding quarter.

To implement this policy, and taking into account the forthcoming Treasury financing, System open market operations shall be conducted with a view to maintaining about the same conditions in the money market as have prevailed in recent weeks, while accommodating moderate expansion in aggregate bank reserves.\(^2\)

The first paragraph and the summary of the discussion leading to the directive indicated that the System continued unchanged its moderately expansionary monetary policy. The F.O.M.C. was concerned with facilitating continued expansion on the domestic scene; however, increased fears of inflationary developments were cited. Although some disagreement existed within the Committee, they unanimously voted to continue unchanged the present stance of monetary policy with the majority of the Committee citing imminent Treasury activity as the deciding factor.

Again, the directive clearly calls for the maintenance of an "even keel" in the money market. The second paragraph specifically

mentions a forthcoming Treasury financing, referring specifically to a 9.250 billion dollar cash offer of an 18-month, 4 percent Treasury note which the Treasury announced on October 28, 1964. In addition to emphasizing the need to maintain about the same conditions in the money market, the directive also called for a moderate expansion in aggregate bank reserves, as well as minimizing the downward pressure on short-term interest rates.

The detailed directive issued by the F.O.M.C. at a meeting held on July 26, 1966, is rather unique in a number of its facets. It reads as follows:

The economic and financial developments reviewed at this meeting indicate that over-all domestic economic activity appears to be expanding somewhat more rapidly than in the second quarter despite weakness in residential construction, with industrial prices rising further. Total credit demands continue strong and financial markets, particularly for mortgages, remain tight. Despite the statistical improvement resulting largely from special transactions, the balance of payments situation continues to reflect a sizable underlying deficit. In this situation, it is the Federal Open Market Committee's policy to resist inflationary pressures and to strengthen efforts to restore reasonable equilibrium in the country's balance of payments, by restricting the growth in the reserve base, bank credit, and the money supply.

To implement this policy, while taking into account the forthcoming Treasury financing, System open market operations until the next meeting of the Committee shall be conducted with a view to maintaining about the current state of net reserve availability and related money market conditions; provided, however, that if required reserves expand more rapidly than expected and if conditions associated with the Treasury financing permit, operations shall be conducted with a view to attaining some further gradual reduction in net reserve availability and firming of money market conditions. 

The first paragraph emphasizes the consternation of the authorities over inflationary pressures. The Committee agreed to continue unchanged the moderate contractionary stance monetary policy had assumed. The objectives sought were the resistance of inflationary pressure and the restoration of reasonable external equilibrium. It is the opinion of the author that these considerations would normally have led the authorities to pursue a more restrictive policy had not the necessity of maintaining an "even keel" intervened.

This particular directive has been designated by the author as an example of an "even keel" strategy pre-empting a shift in monetary policy. The summary of the discussion leading to the directive showed a general desire within the Committee to keep a tight rein on bank credit expansion. There was recognition, however, that the imminent Treasury financing constituted an important reason for continuing about the current state of net reserve availability and money market conditions in accordance with the customary practice of maintaining an "even keel" during Treasury financings. Some members, citing inflationary movements in a number of indicators, expressed the view that a good case could be made for gradual tightening at this time. The Treasury operation seems to have been a deciding factor in the decision of the authorities not to tighten monetary policy.

The directive was designated as calling for an "even keel." Mention of an imminent Treasury operation appears in the second paragraph. The reference was to a 14,893 billion dollar multiple exchange offer involving a Treasury certificate of indebtedness and a Treasury note. The Treasury publicly announced the financing on July 27, 1966.
The "even keel" directive called for the maintenance of about the same level of net reserve availability and related money market conditions. The directive is unique in that it is one of the earlier uses of the proviso clause. The proviso clause gives specific operating instructions to the Account Manager to govern his conduct during the interim period between F.O.M.C. meetings. In this particular case, the F.O.M.C. authorized the Account Manager to reduce net reserves and firm money market conditions provided required reserves expand more rapidly than expected. It should be emphasized that the authorization to tighten was conditional upon not only excessive required reserve expansion, but was limited by the degree of the Treasury's financing success. The Account Manager could tighten up only if the success of the Treasury financing was assured.

The final directive discussed was issued on April 2, 1968. It read:

The information reviewed at this meeting indicates that over-all economic activity has expanded at a very rapid pace in early 1968, with prices rising substantially, and that prospects are for a continuing rapid advance in activity and persisting inflationary pressures in the period ahead. Since late fall, growth rates of bank credit, the money supply, and time and savings accounts at financial institutions have moderated considerably. Speculative activity in gold and foreign exchange markets which was intense in early March, abated after the midmonth agreement on gold policy by gold pool members and appears to have slackened further following the Stockholm agreement regarding Special Drawing Rights. The foreign trade surplus, however, has remained at a sharply reduced level in recent months and the imbalance in U.S. international payments continues to be a matter of serious concern. Most market interest rates have fluctuated widely, although rising on balance, in reaction to international financial developments, the firming of monetary policy, and uncertainties regarding military and fiscal prospects. In this situation, it is the policy of the Federal Open
Market Committee to foster financial conditions conducive to resistance of inflationary pressures and attainment of reasonable equilibrium in the country's balance of payments.

To implement this policy, System open market operations until the next meeting of the Committee shall be conducted with a view to attaining slightly firmer conditions in the money market; provided, however, that operations shall be modified if bank credit appears to be deviating significantly from current projections or if unusual liquidity pressures should develop.\(^4\)

The magnitude of inflationary pressure, the balance of payments deficit, and the impending possibility of restrictive fiscal legislation were the major factors taken into account by the Committee in the unanimous adoption of a shift in policy. The Committee voted to instruct the Account Manager to increase the degree of pressure in the money market. The lack of any Treasury operation is significant in that it was one factor which permitted the shift toward a more restrictive credit policy. This directive was included in order to contrast it with the previous "even keel" directives. Clearly, from both the directive and summary of the discussion leading to it, this directive did not call for an "even keel." No mention was made of any Treasury financing, nor did any Treasury activity occur at this time.

CHAPTER IV

"EVEN KEEL" POLICY IN RELATION TO TREASURY OPERATIONS: 1960-1968

The purpose of this section of the analysis is to review and evaluate in detail a number of aspects of "even keel" policy with respect to Treasury financing operations during the 1960-1968 interval. Special emphasis is given to the relationship between "even keel" directives and the type and volume of Treasury financings. The chapter also analyzes both the frequency and the seasonal pattern exhibited by "even keel" operations and offers an explanation in terms of both Treasury activity and money market conditions. Finally, this section discusses some of the major problems encountered in dating "even keel" periods and presents the solutions adopted by the author.

The specific interval covered in the analysis extends from January 1, 1960, through August 28, 1968. January 1, 1960, was chosen as the point to initiate the study for two reasons. First of all, by that time the "even keel" strategy had become a well-established operating procedure, as evidenced by the preceding historical analysis. The primary factor in designating this date as a starting point was concerned with the availability of data. The weekly statistics on the Federal Funds rate were not available prior to this date, mainly because the Federal Funds market had not developed sufficiently to the point where a market interest rate could be identified. It should also be noted that the December, 1959, Treasury financing operation which involved the exchange offer of a Treasury note was taken into consideration by the author as it called forth an "even keel" directive which spanned the January 1 to January 12, 1960, period. Finally, August 28, 1968, was designated as the terminal point in the study because the statistical definition of free reserves, one of the primary money market indicators analyzed, was changed on September 14, 1968.

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"Even Keel" Policy and Treasury Operations

Although the Treasury is an active participant in the government securities market each month during the year, the Federal Reserve System pursues an "even keel" strategy for only a fraction of all Treasury financing operations. Both the financing technique employed, as well as the volume of a particular offer, are major determinants of System policy, that is, whether the Trading Desk does or does not maintain an "even keel" posture. In addition, other factors such as the general condition of the money market as gauged by System officials are taken into consideration in determining the policy of the central bank. The financing operations of the Treasury during the 1960-1968 period have been carefully reviewed and categorized on the basis of the financing technique employed. The four major classifications include advance refundings, regular refundings, cash refundings, and cash offers. After an analysis of the empirical data available, a rather clear behavior pattern emerges with respect to both the technique and volume of Treasury financings and the actions of the Federal Reserve System.

A. Advance Refundings

The advance refunding technique is a rather recent innovation in Treasury financing, first utilized in June, 1960. 2

2The first advance refunding was announced to the public on June 6, 1960. The operation, a junior type, consisted of the limited offer of a note and bond to be exchanged for a 2-1/2 percent bond maturing on 11/15/61. Of the 11.177 billion dollars outstanding, the exchange was limited to 4,500 billion dollars of which 4,215 billion dollars were allotted. The first senior advanced refunding operation was announced by the Treasury on September 9, 1960. This financing
refunding entails the offer of an optional right to the holders of specified outstanding issues; the right to exchange their holdings for new securities of longer maturity. The primary rationale for employing this new financing technique was the desire on the part of Treasury officials to lengthen the maturity structure of the debt. It was felt if an exchange was offered before the outstanding securities had come to serve a liquidity function in investors' portfolios, the difficulty of floating a new long-term security would be minimized. Specifically, it was reasoned that the maturing securities were held mainly by short-term investors who were not interested in purchasing long-term bonds. Those investors who did wish to exchange for the new long-term bonds would be required to purchase "rights" to the new issues or "when-issued" securities from dealers. This transfer of ownership involves a considerable amount of market churning. The senior advance refunding technique minimizes the changes in ownership and the amount of new cash funds required to purchase the long-term bonds.

(continued) Involved the offer of three new bonds which were eligible to be exchanged for four issues of 2-1/2 percent bonds maturing between 6/15/67 and 12/15/69. Out of the 12.473 billion dollars outstanding eligible for exchange, 3.976 billion dollars were allotted.

Advance refundings are of three distinct types, depending on the length of time to maturity of the outstanding issues involved in the operation. Senior advance refundings involve securities with over 5 years left to maturity. The Treasury has also conducted junior and pre-refunding operations. Junior advance refundings include outstanding issues with 1-5 years to maturity and pre-refundings involve securities maturing in less than 1 year. However, a particular advance refunding may actually be a combination of any two of these types.

The advance refunding technique was adopted in 1960 as a means to minimize the immediate market impact of a long-term debt operation.\(^5\)

During the 1960-1968 period, the Treasury undertook a total of 15 advance refunding operations. Of these, 10 operations consisted of a single type; there being 2 senior refundings, 2 junior refundings, and 6 pre-refundings. The other 5 advance refundings involved a combination of components, consisting of 1 junior-senior refunding and 4 junior-pre-refunding operations. In addition, 4 of the 15 advance refundings consisted of limited offers. Reference to Table 2 provides a concise chronological summary of these operations denoting the announcement dates, the type of operation and securities offered, the volume outstanding and exchanged, and the exchange ratio as well as indicating the presence or absence of an "even keel" directive.

Examination of the table reveals that System policy has normally called for the maintenance of an "even keel" policy during Treasury advance refundings. During the period, 12 of 15 advance refundings were accompanied by an "even keel" directive. The 3 advance refundings that were not "even keeled" include 2 limited junior refundings and 1

TABLE 2
- SUMMARY -
TREASURY ADVANCE REFUNDINGS,
JANUARY, 1960 - AUGUST, 1968

<table>
<thead>
<tr>
<th>Date of Public Announcement</th>
<th>Type of Operation¹</th>
<th>Type of Securities Offered</th>
<th>Volume Outstanding (billions)</th>
<th>Volume Issued in Exchange (billions)</th>
<th>Per Cent Exchange</th>
<th>Even Keel Directive</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/06/60</td>
<td>Junior (Limited)</td>
<td>Note, Bond</td>
<td>$11.177</td>
<td>$4.215</td>
<td>37.0%</td>
<td>No</td>
</tr>
<tr>
<td>9/09/60</td>
<td>Senior</td>
<td>Bonds</td>
<td>12.473</td>
<td>3.979</td>
<td>31.7%</td>
<td>Yes</td>
</tr>
<tr>
<td>3/15/61</td>
<td>Junior (Limited)</td>
<td>Bonds</td>
<td>19.436</td>
<td>6.044</td>
<td>31.1%</td>
<td>No</td>
</tr>
<tr>
<td>9/07/61</td>
<td>Senior</td>
<td></td>
<td>7.616</td>
<td>3.758</td>
<td>49.4%</td>
<td>Yes</td>
</tr>
<tr>
<td>2/15/62</td>
<td>Junior-Senior</td>
<td>Bonds</td>
<td>18.739</td>
<td>5.198</td>
<td>27.8%</td>
<td>Yes</td>
</tr>
<tr>
<td>9/05/62</td>
<td>Pre-refunding</td>
<td>Note, Bond (Limited)</td>
<td>26.619</td>
<td>7.860</td>
<td>29.6%</td>
<td>Yes</td>
</tr>
<tr>
<td>2/20/63</td>
<td>Pre-refunding</td>
<td>Note, Bonds</td>
<td>29.045</td>
<td>8.007</td>
<td>30.3%</td>
<td>Yes</td>
</tr>
<tr>
<td>9/04/63</td>
<td>Pre-refunding</td>
<td>Bonds</td>
<td>32.139</td>
<td>6.740</td>
<td>21.0%</td>
<td>Yes</td>
</tr>
<tr>
<td>1/08/64</td>
<td>Pre-refunding</td>
<td>Bonds</td>
<td>24.723</td>
<td>2.971</td>
<td>12.1%</td>
<td>Yes</td>
</tr>
<tr>
<td>7/08/64</td>
<td>Pre-refunding</td>
<td>Bonds</td>
<td>41.746</td>
<td>9.274</td>
<td>22.2%</td>
<td>Yes</td>
</tr>
<tr>
<td>12/30/64</td>
<td>Pre-refunding</td>
<td>Bonds</td>
<td>33.077</td>
<td>9.747</td>
<td>29.5%</td>
<td>Yes</td>
</tr>
<tr>
<td>1/26/66</td>
<td>Pre-refunding</td>
<td>Notes</td>
<td>28.758</td>
<td>9.806</td>
<td>34.1%</td>
<td>Yes</td>
</tr>
<tr>
<td>7/27/66</td>
<td>Pre-refunding</td>
<td>Certificate, Note</td>
<td>14.893</td>
<td>10.138</td>
<td>68.4%</td>
<td>Yes</td>
</tr>
<tr>
<td>4/26/67</td>
<td>Pre-refunding</td>
<td>Notes</td>
<td>22.142</td>
<td>11.758</td>
<td>53.1%</td>
<td>Yes</td>
</tr>
<tr>
<td>1/31/68</td>
<td>Pre-refunding</td>
<td>Note</td>
<td>24.351</td>
<td>5.145</td>
<td>21.2%</td>
<td>No</td>
</tr>
</tbody>
</table>

¹In a limited offer, the Treasury reserves the right to set a specified limit on the volume of subscriptions it will accept in exchange on a given outstanding issue.

pre-refunding. Perusal of the table shows that the Federal Reserve System makes little distinction between the various types of operations or securities offered or the size of the operations as measured by the volume of securities outstanding.

The System has usually "even keeled" these Treasury financing operations whether consisting of senior, junior, or pre-refunding components, or a combination of them. The central bank has also pursued an "even keel" whether the securities eligible for exchange were certificates of indebtedness, notes, or bonds, or some combination of the above. The Trading Desk has not made any distinction with respect to the amount of eligible securities. The System has "even keeled" operations as large as 41.746 billion dollars and as small as 7.616 billion dollars, whereas the System did not "even keel" an offer involving an amount eligible for exchange as large as 24.331 billion dollars. In addition, the presence or absence of an "even keel" directive does not seem to influence the exchange ratio. Those operations which were not accompanied by an "even keel" had exchange

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6 The percentage of outstanding securities that are exchanged for new securities can, with extensive qualification, be used to measure the success of the financing. Those outstanding issues not exchanged will at maturity have to be redeemed by the Treasury. However, the Treasury is not forced to make an immediate payment as the maturity date occurs some time after the advance refunding operation is concluded. Thus the Treasury is not immediately forced to raise cash as it would be in a regular refunding operation. Thus the exchange ratio is not the reverse of the percent of attrition in a regular refunding. In addition, the terms set by the Treasury in an advance refunding are not necessarily aimed at achieving a 100 percent exchange ratio. Treasury officials might clearly be aiming at different exchange ratios in different advance refunding operations. This implies that in two different operations, officials might equally well be pleased with different exchange ratios.
ratios of 37.8 percent, 31.1 percent, and 21.2 percent, well within the average range of 35.3 percent for the "even keeled" advance refundings.

In conclusion, it can be expected that the Trading Desk will pursue an "even keel" strategy during Treasury advance refundings. The sole determinant of the "even keel" directive seems to be the technique of financing, i.e., advance refunding. The System clearly deems as appropriate an "even keel" strategy during an advance refunding.

B. Regular Refundings

A regular refunding operation or exchange offer is a financing technique where the holders of outstanding issues are offered the option of exchanging these securities at maturity for a like face amount of a new issue. In a regular refunding, as in an advance refunding, no cash is involved, with payment for the new securities being made in a like face amount of the maturing issue. During the 1960-1968 period the exchange financing was the most common technique utilized by the Treasury to refund maturing coupon issues. A total of 20 such operations were undertaken by the Treasury.

A summary of the regular refundings appears in Table 3. It can be seen that the Federal Reserve System has usually "even keeled"

7 In addition to exchange offers, the Treasury has conducted optional exchange offers. In an optional exchange operation, holders of the maturing issue are given an exchange option between more than one new security. While this financing technique reduces cash-ins of maturing issues, it is subject to the disadvantage of partially transferring control over the maturity structure of the debt to the public.
<table>
<thead>
<tr>
<th>Date of Public Announcement</th>
<th>Type of Securities Offered</th>
<th>Volume Outstanding (billions)</th>
<th>Volume Issued in Exchange (billions)</th>
<th>Percentage Rate of Attrition</th>
<th>Even Keel Directive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/28/60 Certificate, Note</td>
<td>$11.561</td>
<td>$11.099</td>
<td>4.00%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>4/28/60 Certificate, Note</td>
<td>6.413</td>
<td>5.786</td>
<td>9.8%</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>10/27/60 Note, Bond</td>
<td>10.844</td>
<td>10.313</td>
<td>4.90%</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>11/18/60 Bond</td>
<td>.750</td>
<td>.144</td>
<td>80.0%</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>7/13/61 Notes, Bond</td>
<td>12.536</td>
<td>11.804</td>
<td>6.3%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>11/02/61 Note, Bonds</td>
<td>6.963</td>
<td>6.542</td>
<td>5.91%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>11/17/61 Bond</td>
<td>.970</td>
<td>.316</td>
<td>67.4%</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>2/01/62 Certificate, Note</td>
<td>11.731</td>
<td>11.312</td>
<td>3.58%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>4/26/62 Certificate, Note, Bond</td>
<td>11.683</td>
<td>11.003</td>
<td>5.83%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>10/25/62 Certificate, Note, Bond</td>
<td>10.980</td>
<td>10.494</td>
<td>4.46%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>11/15/62 Bonds</td>
<td>.458</td>
<td>.074</td>
<td>83.8%</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>1/30/63 Certificate, Bond</td>
<td>9.465</td>
<td>9.230</td>
<td>2.48%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>4/24/63 Certificate, Note</td>
<td>9.495</td>
<td>8.866</td>
<td>5.56%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>7/24/63 Note</td>
<td>6.600</td>
<td>6.399</td>
<td>3.04%</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>1/30/64 Notes</td>
<td>8.373</td>
<td>8.013</td>
<td>4.34%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>4/29/64 Note, Bond</td>
<td>10.614</td>
<td>10.085</td>
<td>4.99%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>4/28/65 Note, Bond</td>
<td>8.436</td>
<td>7.976</td>
<td>5.61%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>7/28/65 Note, Bond</td>
<td>7.268</td>
<td>7.635</td>
<td>3.21%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>4/27/66 Note</td>
<td>9.317</td>
<td>8.135</td>
<td>12.70%</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>5/01/68 Note</td>
<td>8.047</td>
<td>6.749</td>
<td>16.30%</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

1Attrition is the accepted measure of the market's reception of an exchange offer. The percentage rate is a ratio of the volume of the market securities which were not exchanged for the new issue over the total volume of mature securities which were eligible for exchange.

these operations. In 14 of 20 cases, the Treasury refunding operation was accompanied by an "even keel" directive. Of the 6 operations not "even keeled," 3 consisted of extremely small exchanges involving the conversion of F and G series savings bonds, the volume of outstanding securities eligible for exchange being respectively, .750, .970, and .458 billion dollars. Thus, eliminating these 3 small operations, the System "even keeled" 14 of 17 refundings.

There is some evidence that the volume of a given operation had some influence upon the central bank's decision to maintain an "even keel" stance. Specifically, in those operations involving an offer consisting of Treasury certificates of indebtedness and either notes or bonds, 6 of 7 operations coincided with an "even keel" directive. The average volume of those operations that were "even keeled" was 10.819 billion dollars compared to 6.413 billion dollars for the other. Closer scrutiny of these 7 financings reveals a consistently critical volume of 9,000 billion dollars above which called forth an "even keel" and below which did not. In addition, the average rates of attrition, the generally accepted measure of success in an exchange financing, were 4.32 percent for the 6 "even keeled" operations and .98 percent for the financings which were not "even keeled."

In those operations which involved only notes and bonds, there were a total of 13 financings. Of these, 8 were "even keeled." However, upon elimination of the 3 small bond offers in 1960, 1961, and 1962 involving exchanges for F and G series savings bonds, it was found that 8 of 10 operations can be designated as having called forth an "even keel" directive. No critical volume was discerned, as for
example, one offer of 6.963 billion dollars was "even keeled" and another of 10.844 billion dollars was not. The average rate of attrition on the "even keel" group was 7.45 percent; whereas, on the other group which consisted of two offers, it was 3.97 percent.

The conclusions reached with respect to the relationship between "even keel" policy and the 17 regular refundings (excluding the 3 offers involving the F and G series savings bonds) during the 1960-1968 period were as follows. For those operations involving certificates of indebtedness, a critical volume of 9,000 billion dollars was identified, but no critical volume was found for operations involving just notes and bonds. For both groups, contrary to expectation, the rate of attrition was noticeably higher when the Federal Reserve maintained an "even keel" posture. In addition, the rate of attrition was found to be substantially higher after 1966, a result partially explained by the rising level of interest rates during this subperiod. Finally, there seems to be no distinction between the probability of an "even keel" directive occurring and the particular type of security (certificate, note, or bond) involved in the financing.

It would probably be expected that the System would be more apt to pursue an "even keel" strategy the longer the maturity of the new issue. It also might be expected that the attrition ratio would be lower when an "even keel" accompanied a refunding operation. The fact that neither of these phenomena were observed might be explained by the actual marketing process utilized in regular refunding operations. During the discussions that take place between Treasury authorities, System officials, and other participants in the government securities market prior to the public announcement of the terms of the
financing, the Federal Reserve authorities come to a judgment as to the degree of receptivity that the tentative financing will receive in the money market. Should the market be judged to be in a receptive mood, Treasury officials might tend to sell longer-term issues. At the same time, Federal Reserve officials might be less apt to pursue an "even keel" because money market conditions were such that the financing would not be expected to encounter poor acceptance by investors. Thus, the lower rate of attrition observed during "non-even keel" periods would reflect the System's expertise in gauging the money market. It must be emphasized, however, that even if the purpose of the "even keel" strategy is to support or facilitate Treasury operations and the rate of attrition is higher during "even keel" periods, it cannot be concluded that the "even keel" policy has been a failure. In order to reach this conclusion, it would have to be assumed that the rate of attrition on a particular financing would have been lower had the System maintained an "even keel." There appears to be no quantitative method available to test such a hypothesis.

In conclusion, it seems apparent that the majority of all advance and regular refundings have called forth "even keel" directives during the 1960-1968 period. There is further evidence that the larger the volume of a regular refunding, the more likely is the System to pursue an "even keel" strategy. There is no evidence that either an advance or regular refunding operation will be received more readily by money market participants when the central bank maintains an "even keel" policy. Finally, no relationship can be found between "even keel" policy and the type of security offered to the public in either an advance refunding or exchange offer. It now seems
appropriate to examine the relationship between central bank policy and Treasury financing operations which involve payment in cash. 

C. Cash Refundings

The Treasury has consistently utilized the cash refunding or cash and exchange financing technique throughout the 1960-1968 interval for the purpose of refunding maturing debt or raising new cash. In a cash and exchange financing, payment for the accepted tenders must be completed on a specified date, in either cash or immediately available funds or in a like face amount of securities maturing on that date. In analyzing the probability of an "even keel" during cash refunding operations, two major classifications with respect to the type of securities offered by the Treasury were distinguished. These two categories consisted of cash refundings involving bills and coupon issues.

The subcategory of cash and exchange offers of bills included the old series of one-year Treasury bills issued on a cash and exchange basis during the 1960-1968 period. The new cycle of 9-month and one-year Treasury bills jointly offered since September-October of 1966 are included in the same group. Finally included in this bill category were tax anticipation bills (TAB). The TAB's mature in less than one year, just prior to the quarterly tax dates providing cash to investors for tax obligations. Prior to April, 1966, at which time the Treasury specified that all Treasury bills, including TAB's, were subject to payment in cash, immediately available funds or in a like face amount of mature Treasury bills, two TAB's were offered on a cash
payment basis. The offers have been included in the cash refunding category for convenience.

System policy with respect to the pursuit of an "even keel" strategy during a cash refunding involving bills is quite clear. As evident from the summary of such operations in Table 4, the Federal Reserve System has rarely issued an "even keel" directive, except in those financings involving TAB's.

The System has generally not "even keeled" those operations entailing the regular bill roll-over financings of the Treasury. None of the 24 financings involving the new cycle of 9-month and one-year Treasury bill offers were "even keeled." Similarly, only 5 of the 39 operations involving the older series of one-year bills coincided with an "even keel" directive. Each of these 5 operations has been designated as being "even keeled" on one of two bases. Either specific mention was made of the bill operation in the F.O.M.C. current economic policy directive or the summary of the discussion leading to it or the financing period of the bill offer closely coincided with another financing operation which was specifically designated as being responsible for an "even keel" directive. It seems safe to conclude that the central bank seldom maintains an "even keel" for Treasury bill cash refundings.

Table 4 reveals that the System is more likely to "even keel" TAB offers, especially as the volume of the financing increases. During the 1960-1968 period, the Treasury carried out 31 cash refundings involving TAB's. Of these, 17 out of 31 were "even keeled" by the central bank. Apparently, a critical volume was quite consistently employed by the System in determining "even keel" policy. If the
<table>
<thead>
<tr>
<th>Type of Security</th>
<th>Number of Offers</th>
<th>Average Volume of Offers</th>
<th>Average Offer (billions)</th>
<th>Average Acceptance Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Denoted as Even Keelal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One-year Treasury Bill - old series</td>
<td>5</td>
<td>$1.500</td>
<td><strong>2.09</strong></td>
<td></td>
</tr>
<tr>
<td>Nine-month Treasury Bill - new series</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One-year Treasury Bill - new series</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tax Anticipation Bills</td>
<td>17</td>
<td><strong>1.880</strong></td>
<td><strong>2.34</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Denoted as Not Even Keelal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One-year Treasury Bill - old series</td>
<td>34</td>
<td>$1.500</td>
<td><strong>2.15</strong></td>
<td></td>
</tr>
<tr>
<td>Nine-month Treasury Bill - new series</td>
<td>24</td>
<td><strong>.500</strong></td>
<td><strong>2.47</strong></td>
<td></td>
</tr>
<tr>
<td>One-year Treasury Bill - new series</td>
<td>24</td>
<td><strong>.960</strong></td>
<td><strong>1.99</strong></td>
<td></td>
</tr>
<tr>
<td>Tax Anticipation Bills</td>
<td>14</td>
<td><strong>1.78</strong></td>
<td><strong>1.94</strong></td>
<td></td>
</tr>
</tbody>
</table>

1 The acceptance ratio is a crude measure of market reception of an offer. It was computed as the ratio of the volume of tenders received over the volume of tenders accepted.

2 The figures exclude two offers where the volume of tenders received were not available in computation of the average acceptance ratio. The average volume of offer was computed by combining as one, offers of multiple issues.

offer was equal to or larger than 2.500 billion dollars, the System pursued an "even keel" strategy; whereas, if the volume of the TAB offer was less than 2.500 billion dollars, then no "even keel" occurred. In both the new and old Treasury bill series, as well as the TAB offer, there was little difference in the acceptance ratios with respect to the presence or absence of an "even keel" directive.

A number of cash refundings were undertaken which involved coupon issues, including offers of certificates of indebtedness, notes, and bonds, or various combinations of the above. Table 5 reveals that the Federal Reserve System has in 10 of 13 such cash refundings pursued an "even keel" policy. Those financings that were "even keeled" ranged in size from 3.000 billion dollars to 12,200 billion dollars in volume, with the majority of operations ranging within the 7.000 billion dollars to 10,000 billion dollars range. The 3 offers which were not designated as "even keels" were 7.750, 6.900, and 2.170 billion dollars in volume. Thus, little credibility can be placed on selecting some critical volume as a determinant of "even keel" directives. Neither can any relationship be conclusively established with respect to an "even keel" directive influencing the money market's reception of a given cash refunding.

The only tenable conclusions advanced are that the System has usually maintained an "even keel" posture during cash refunding operations which involved certificates of indebtedness, notes, or bonds. The System has not considered the "even keel" policy as appropriate during regular roll-over operations which involved 9-month and one-year Treasury bills. Finally, the central bank has frequently "even keeled" financings involving TAB's, especially when the volume of the
<table>
<thead>
<tr>
<th>Date of Public Announcement</th>
<th>Type of Public Securities Offered</th>
<th>Volume Outstanding (billions)</th>
<th>Volume of Total Subscriptions (billions)</th>
<th>Volume of Accepted Subscriptions (billions)</th>
<th>Acceptance Ratio</th>
<th>Even Keel Directive</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/28/60</td>
<td>Certificate</td>
<td>$7.750</td>
<td>$17.389</td>
<td>$7.829</td>
<td>2.22</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Note</td>
<td>1.000</td>
<td>5.183</td>
<td>1.070</td>
<td>4.84</td>
<td>No</td>
</tr>
<tr>
<td>2/02/61</td>
<td>Note</td>
<td>6.900</td>
<td>19.000</td>
<td>7.324</td>
<td>2.59</td>
<td>No</td>
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<tr>
<td>4/27/61</td>
<td>Certificate</td>
<td>5.250</td>
<td>26.700²</td>
<td>5.510</td>
<td>2.94</td>
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<tr>
<td>7/26/62</td>
<td>Certificate</td>
<td>6.500</td>
<td>20.155</td>
<td>6.852</td>
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<td></td>
<td>Bond</td>
<td>1.500</td>
<td>6.743</td>
<td>1.743</td>
<td>3.86</td>
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<td>Bond</td>
<td>0.750</td>
<td>3.15</td>
<td>0.734</td>
<td>1.00</td>
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</tr>
<tr>
<td>10/23/63</td>
<td>Note</td>
<td>7.600</td>
<td>20.690</td>
<td>7.977</td>
<td>2.59</td>
<td>Yes</td>
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<tr>
<td>7/29/64</td>
<td>Note</td>
<td>4.000</td>
<td>14.850</td>
<td>4.240</td>
<td>3.67</td>
<td>Yes</td>
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<tr>
<td>10/28/64</td>
<td>Note</td>
<td>9.250</td>
<td>21.900</td>
<td>9.579</td>
<td>2.38</td>
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<tr>
<td>1/27/65</td>
<td>Note</td>
<td>2.170</td>
<td>10.636</td>
<td>2.258</td>
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</tr>
<tr>
<td>10/27/65</td>
<td>Note</td>
<td>9.700</td>
<td>12.067</td>
<td>9.748</td>
<td>1.24</td>
<td>Yes</td>
</tr>
<tr>
<td>10/27/66</td>
<td>Note</td>
<td>2.500</td>
<td>5.860</td>
<td>2.635</td>
<td>2.21</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Note</td>
<td>0.600</td>
<td>14.029</td>
<td>1.734</td>
<td>8.10</td>
<td>Yes</td>
</tr>
<tr>
<td>1/25/67</td>
<td>Note</td>
<td>5.500</td>
<td>19.915</td>
<td>5.586</td>
<td>3.57</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Note</td>
<td>2.000</td>
<td>22.135</td>
<td>2.006</td>
<td>11.00</td>
<td>Yes</td>
</tr>
<tr>
<td>7/26/67</td>
<td>Note</td>
<td>9.600</td>
<td>15.660</td>
<td>9.913</td>
<td>1.58</td>
<td>Yes</td>
</tr>
<tr>
<td>10/25/67</td>
<td>Note</td>
<td>10.700</td>
<td>16.645</td>
<td>10.738</td>
<td>1.46</td>
<td>Yes</td>
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<tr>
<td></td>
<td>Note</td>
<td>3.000</td>
<td>10.285</td>
<td>3.366</td>
<td>3.02</td>
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<tr>
<td></td>
<td>Note</td>
<td>5.100</td>
<td>23.569</td>
<td>5.474</td>
<td>4.30</td>
<td>Yes</td>
</tr>
</tbody>
</table>

1 The acceptance ratio was computed as the ratio of the volume of subscriptions tendered over the volume of subscriptions accepted. A separate breakdown of the volume of subscriptions received was not available in this operation.

offering exceeded the critical value of 2,500 billion dollars. Thus, an "even keel" strategy can be expected in a cash refunding involving either coupon issues or a large TAB offer.

D. Cash Offers

The final type of Treasury financing technique to be examined is the cash offer. A cash financing involves the offer of a new security with payment for that security to be made on a specified date in either cash or immediately available funds. This technique, other factors equal, is usually considered to be the most disruptive to the government securities market, that is, the immediate market impact entails the greatest degree of market churning as investors are required to raise new cash in the market. Although the cash financing technique eliminates the problem of attrition inherent in a regular refunding operation, there is the possibility that some investors who might have been induced to roll-over their holdings in an exchange refunding may leave the market because of the difficulty of raising cash for payment. During the 1960-1968 period, a wide range of securities has been sold by this method to raise new cash.

Before analyzing the cash financings of the Treasury in detail, it might be expected that the Federal Reserve System would be more likely to pursue an "even keel" policy during a cash financing as opposed to the alternative financing techniques previously discussed. In addition, it would also be expected that the larger the volume of a cash offer, as well as the longer the maturity of the securities offered, the greater would be the probability of an "even keel"
directive. The findings encountered in the following analysis generally agree with these predictions.

The Treasury has employed the cash financing technique in a number of operations involving Treasury bills. There were 12 operations involving cash offers of one-year Treasury bills. None of these operations, all of which consisted of a 1,000 billion dollar magnitude, were "even keeled." There were also 6 operations involving bill strip offers. Of these, only 1 operation, involving a large offer of 1,800 billion dollars, was accompanied by an "even keel."\(^8\) The average size of the bill strip offers was large when accompanied by an "even keel" directive (1,800 billion dollars vs. 1,000 billion dollars). However, because of the small sample size, it is difficult to say that the volume of the offer was a major determinant of central bank policy.

During the 1960-1968 period, 11 cash operations involving coupon issues were undertaken by the Treasury. As is revealed in Table 6, 8 of the 11 operations were accompanied by an "even keel"

---

\(^8\) Great difficulty was encountered with respect to determining whether two "even keel" directives were the result of two bill strip offers. The "even keel" directive issued on June 6, 1961, by the F.O.M.C. was identified as being directly attributed to the 1,800 billion dollar strip offer of that month. Specific mention was made of this bill strip offer in the summary of the discussion leading to the directive and no other Treasury activity was noted in the securities market at this time. Thus, it was concluded that the System pursued an "even keel" for this particular bill strip offer.

The "even keel" directive of October 24, 1961, was judged not to be related to the 0.800 billion dollar bill strip offer of November. Although the summary of the discussion made no mention of the bill strip offer, it did refer to a 0.803 billion dollar exchange offer. The financing period of these two offers coincided closely. However, it is the opinion of the author that the "even keel" directive was attributable solely to the exchange offer rather than the bill strip offer.
<table>
<thead>
<tr>
<th>Date of Public Announcement</th>
<th>Type of Securities Offered</th>
<th>Volume Outstanding (billions)</th>
<th>Volume of Total Subscriptions (billions)</th>
<th>Volume Allotted (billions)</th>
<th>Acceptance Ratio</th>
<th>Even Keel Directive</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/31/60 Bond</td>
<td>Bond $ .500</td>
<td>$ .470</td>
<td>$ .470</td>
<td>1.00</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>9/07/61 Note</td>
<td>Bond $ 2.000</td>
<td>2.211</td>
<td>2.211</td>
<td>3.00</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>1/03/62 Bond</td>
<td>Bond $ 1.250</td>
<td>1.718</td>
<td>1.114</td>
<td>1.54</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>4/05/62 Bond</td>
<td>Bond $ 1.000</td>
<td>6.827</td>
<td>1.258</td>
<td>5.44</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>12/20/62 Bond (Syndicate)</td>
<td>Bond $ .250</td>
<td>.250</td>
<td>.250</td>
<td>1.00</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>3/20/63 Bond (Syndicate)</td>
<td>Bond $ .300</td>
<td>.300</td>
<td>.300</td>
<td>1.00</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>6/06/63 Bond</td>
<td>Bond $ 1.250</td>
<td>16.300</td>
<td>1.900</td>
<td>8.58</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>3/26/64 Note</td>
<td>Bond $ 1.000</td>
<td>10.227</td>
<td>1.066</td>
<td>10.20</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>1/05/66 Certificate</td>
<td>Bond $ 1.500</td>
<td>10.133</td>
<td>1.652</td>
<td>6.12</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>8/17/67 Note</td>
<td>Bond $ 2.500</td>
<td>6.004</td>
<td>2.509</td>
<td>2.40</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>2/08/68 Note</td>
<td>Bond $ 4.000</td>
<td>9.874</td>
<td>4.278</td>
<td>2.30</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

1 The acceptance ratio was computed as a ratio of the volume of total subscription over the volume of subscriptions allotted.

directive. The variance between the size of the offerings reveals no consistent relationship between volume and the probability of an "even keel." As evidenced by the acceptance ratio, "even keel" policy seems to have little noticeable impact on the market's receptivity of a cash offer.

In review, it can be concluded that the probability of an "even keel" directive in a cash offer is determined primarily by the type of security issued in the financing. An "even keel" can consistently be expected to occur in a cash financing when the security offered is either a certificate of indebtedness, note, or bond. Conversely, it is quite rare for a cash offer of a one-year Treasury bill or bill strip offer to be accompanied by an "even keel."

The Frequency and Seasonal Patterns of "Even Keel" Directives

The methodology employed in this analysis in identifying "even keel" directives is relatively simple and has already been discussed in detail in Appendix A in the preceding chapter. To review briefly, the primary source consulted by the author was the Record of Policy Actions - the Federal Open Market Committee in the Annual Report of the Board of Governors of the Federal Reserve System. Specifically, scrutiny of either Clause b of the policy directive or the second paragraph of the current economic policy directive, in conjunction with the summary of the discussion leading to the directives, usually proved sufficient to identify an "even keel" directive. A typical "even keel" directive read:
To implement this policy, and in view of the forthcoming Treasury financing, System open market operations during the next 2 weeks shall be conducted with a view to maintaining about the same degree of firmness in the money market that has prevailed in recent weeks and to offsetting downward pressures on short-term interest rates, while providing for continued moderate reserve expansion.9

During the 1960-1968 period, 66 of 151 F.O.M.C. directives were designated by the author as calling for an "even keel" policy. This constitutes approximately 45.7 percent of all such directives.10

Thus, it should be recognized immediately that almost half of the directives given to the Account Manager are couched in terms of maintaining an "even keel." During the 1960-1968 period, an evaluation of both the monthly and yearly patterns of "even keel" directives yields some informative results.

Perusal of Table 7 shows that the frequent "even keel" years fall within the interval encompassing 1962-1967, inclusively. During this six-year period, 52 of 103 or 50.5 percent of all F.O.M.C. directives entailed an "even keel." In each year during this time span in excess of 40.0 percent of the directives were "even keel" directives,

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10This figure is closely comparable to the findings of other authors. For example, Bosher finds 48 percent of the F.O.M.C. directives during the 1962-1968 period called for "even keels." During the same period, Yohe and Gasper identified 42 of 86 directives or 48.8 percent as "even keels." This author's analysis designated 43 of 89 directives as being "even keels." See, William P. Yohe and Louis C. Gasper, "The 'Even Keel' Decisions of the Federal Open Market Committee," Financial Analysts Journal (November-December, 1970), p. 3 and fn. 13, p. 11.
TABLE 7
"EVEN KEEL" DIRECTIVES AS A PERCENTAGE OF TOTAL F.O.M.C. DIRECTIVES,
JANUARY, 1960 - AUGUST, 1968

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>1/2</td>
<td>0/2</td>
<td>2/2</td>
<td>2/2</td>
<td>2/2</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>0/1</td>
<td>10/14</td>
<td>71.4%</td>
</tr>
<tr>
<td>February</td>
<td>0/1</td>
<td>0/1</td>
<td>1/1</td>
<td>1/1</td>
<td>0/1</td>
<td>0/1</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>5/9</td>
<td>55.5%</td>
</tr>
<tr>
<td>March</td>
<td>1/2</td>
<td>0/2</td>
<td>0/2</td>
<td>2/2</td>
<td>1/2</td>
<td>0/2</td>
<td>0/2</td>
<td>0/2</td>
<td>0/2</td>
<td>4/17</td>
<td>23.5%</td>
</tr>
<tr>
<td>April</td>
<td>0/1</td>
<td>0/1</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>0/1</td>
<td>1/3</td>
<td>6/11</td>
<td>54.5%</td>
</tr>
<tr>
<td>May</td>
<td>0/2</td>
<td>0/1</td>
<td>0/2</td>
<td>0/2</td>
<td>1/2</td>
<td>1/2</td>
<td>1/2</td>
<td>1/2</td>
<td>0/1</td>
<td>4/15</td>
<td>26.6%</td>
</tr>
<tr>
<td>June</td>
<td>0/1</td>
<td>1/2</td>
<td>0/2</td>
<td>0/1</td>
<td>1/1</td>
<td>0/1</td>
<td>0/2</td>
<td>1/1</td>
<td>0/1</td>
<td>3/12</td>
<td>25.0%</td>
</tr>
<tr>
<td>July</td>
<td>2/2</td>
<td>1/1</td>
<td>1/2</td>
<td>0/2</td>
<td>2/2</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>10/13</td>
<td>76.9%</td>
</tr>
<tr>
<td>August</td>
<td>0/1</td>
<td>0/2</td>
<td>1/1</td>
<td>1/1</td>
<td>0/1</td>
<td>1/2</td>
<td>0/1</td>
<td>1/1</td>
<td>0/2</td>
<td>4/12</td>
<td>25.0%</td>
</tr>
<tr>
<td>September</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>0/2</td>
<td>1/2</td>
<td>0/1</td>
<td>0/1</td>
<td>5/10</td>
<td>50.0%</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>1/2</td>
<td>2/2</td>
<td>1/2</td>
<td>1/2</td>
<td>1/1</td>
<td>1/1</td>
<td>1/1</td>
<td>2/2</td>
<td>10/13</td>
<td>76.9%</td>
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<tr>
<td>November</td>
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<td>0/1</td>
<td>0/2</td>
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<td>1/2</td>
<td>1/2</td>
<td>0/2</td>
<td>3/13</td>
<td>23.1%</td>
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</tr>
<tr>
<td>December</td>
<td>0/2</td>
<td>0/2</td>
<td>0/2</td>
<td>0/2</td>
<td>1/2</td>
<td>1/1</td>
<td>0/1</td>
<td>0/1</td>
<td>2/12</td>
<td>16.7%</td>
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<table>
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<tr>
<th></th>
<th>Yearly</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
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<td>5/18</td>
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<tr>
<td>September</td>
<td>8/19</td>
<td>9/19</td>
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<tr>
<td>October</td>
<td>11/19</td>
<td>9/17</td>
</tr>
<tr>
<td>November</td>
<td>7/15</td>
<td>8/15</td>
</tr>
<tr>
<td>December</td>
<td>3/12</td>
<td>66/151</td>
</tr>
<tr>
<td>Total</td>
<td>35.3%</td>
<td>27.8%</td>
</tr>
<tr>
<td>Yearly</td>
<td>42.15</td>
<td>47.3%</td>
</tr>
<tr>
<td>September</td>
<td>57.9%</td>
<td>52.9%</td>
</tr>
<tr>
<td>October</td>
<td>46.5%</td>
<td>53.3%</td>
</tr>
<tr>
<td>November</td>
<td>53.3%</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

with 1964 exhibiting 11 of 19 identified as such. Conversely, the infrequent "even keel" years were 1961, with 27.8 percent, and 1968, with 25.0 percent. This pattern is largely attributable to the inactivity of the Treasury in floating long-term securities during these years. Economic conditions, especially the tightening of monetary policy, and rising short-term interest rates probably accounted for the lack of Treasury activity in the first half of 1968, and thus little necessity for the System to pursue an "even keel" strategy.

A symmetrical pattern emerges with respect to the monthly distribution of "even keel" directives. The frequent "even keel" months include January, 71.4 percent; April, 54.5 percent; July, 76.9 percent; and October, 76.9 percent, those months being characterized as normally representing the low points in Treasury operating balances. On the other hand, the infrequent "even keel" months include March, 23.5 percent; June, 25.0 percent; August, 25.0 percent; November, 23.1 percent; and December, 16.7 percent. This pattern is explained largely by the fact that March, June, and December, along with September, are the quarterly tax receipt months, and thus account for high Treasury operating balances.

Of much greater difficulty and analytical significance is the methodology and the results obtained from the technique employed in dating "even keel" periods as compared to identifying "even keel" directives. The basic "even keel" unit or period employed in this study was the interval beginning three days prior to the Treasury's announcement of the specific terms of the relevant financing operation and ending three days after the payment or settlement date. This basic "even keel" unit was varied from time to time in accord with a number
of alternative factors. The primary sources consulted were the
Record of Policy Actions - the Federal Open Market Committee in the
Annual Report and the Treasury Financing Operations in the Treasury
Bulletin. The first was employed primarily to identify an "even keel" strategy and the second, to determine the dates of the Treasury financing period.

The basic "even keel" period was altered due to a number of variables, including the type and size of the Treasury operations, shifts in the stance of monetary policy, and the dates of the F.O.M.C. meetings. Both the method of financing, as well as the volume of a given Treasury operation, have an effect on the length of an "even keel" period. First of all, the financing technique directly influences the length of the Treasury financing period. Rights financings terminate on the settlement date, whereas cash financings end on the payment date. As a general rule, the "even keel" period was extended three days beyond either the settlement or payment date.

However, when either advance refundings or exchange offers were large (in excess of 18 or 20 billion dollars) or when a particular financing operation was specifically mentioned as receiving a poor market reception, then the "even keel" period was often extended to a point five days beyond the settlement date. In both cash refundings and cash offers, little difference in volume was encountered and thus the basic "even keel" unit was not altered.

The actual dates of F.O.M.C. meetings influenced the dating of "even keel" periods in two ways. First, in the case of consecutive "even keel" directives, the "even keel" period had to be adjusted to avoid the problem of overlapping. For example, assume the F.O.M.C.
issued an "even keel" directive at successive meetings held on October 1 and October 23, with the summary of the discussion leading to the directives referring to two Treasury exchange financings whose respective announcements and settlement dates were October 4 to October 24 and October 20 to November 15. In this case, the two "even keel" periods would be designated as October 1 to October 22 and October 23 to November 18. It was necessary to use the dates of the F.O.M.C. meetings as the cut-off dates of the "even keel" period in order to eliminate any overlapping which would have exaggerated the true number of "even keel" days. Secondly, assume an "even keel" directive was issued on July 1 to assist in an advance refunding which was announced to the public on June 30, with the settlement date specified as July 25. Normally, the "even keel" period would be identified as stretching from June 27 to July 28. However, if an F.O.M.C. meeting was held on July 23 and at that meeting the instructions called for a change in the stance of monetary policy, while either no mention was made of the advance refunding or it was noted that the financing was being well-received by the public, then the "even keel" period would be dated as June 27 to July 23. Thus, both the dates of the F.O.M.C. meeting, as well as shifts in policy, called for some adjustments to be made in the basic "even keel" unit.

It should be noted, however, that the dates of the meetings did not take precedence over the actual Treasury financing periods in determining the length of an "even keel" period. If an F.O.M.C. meeting on April 12 called for the maintenance of an "even keel" strategy with reference to a cash offer announced on April 8 with payment to be consummated on April 26, then the "even keel" period would
run from April 5 to April 29. The Treasury financing period was considered the primary determinant of the length of an "even keel" period, as the Account Manager has a significant amount of discretionary power to act in accord with the dictates of day-to-day money market conditions in between the specific instructions issued to him by the F.O.M.C.

In conclusion, then, it is the Treasury financing period as enumerated in the Treasury Bulletin which usually determines the dates of an "even keel" period. Using the basic 3-day "even keel" unit, adjusted when necessary as described above, it was found that the average "even keel" period extended over a time span of approximately 22 days, with the longest one covering 31 days and the shortest, 8 days. Most "even keel" directives are in force for the 3-week interlude between F.O.M.C. meetings, an interval which, as a rule, coincides closely with Treasury financing periods.

The frequency and seasonal distribution of "even keel" business days is depicted in Table 8. The table clearly shows how frequently the System pursues an "even keel" policy. During the 1960-1968 period, 999 of 2262 or 44.2 percent of all business days were identified as "even keel" days. The general pattern which emerges with respect to both the yearly and monthly distributions is similar to the results depicted in Table 7, but some subtle differences should be noted.

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11Business days are defined as days the Federal Reserve Banks are open. This includes all Mondays through Fridays, with the exception of Christmas. There are between 260 and 262 business days in each year and between 20 and 23 in each month.
TABLE 8
"EVEN KEEL" BUSINESS DAYS AS A PERCENTAGE OF TOTAL BUSINESS DAYS,
JANUARY, 1960 - AUGUST, 1968

<table>
<thead>
<tr>
<th></th>
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<td>January</td>
<td>13/21</td>
<td>0.22</td>
<td>17/23</td>
<td>20/23</td>
<td>19/23</td>
<td>19/21</td>
<td>21/21</td>
<td>9/22</td>
<td>3/23</td>
<td>121/199 = 60.8%</td>
</tr>
<tr>
<td>February</td>
<td>8/21</td>
<td>0.20</td>
<td>20/20</td>
<td>20/20</td>
<td>13/20</td>
<td>0/20</td>
<td>11/20</td>
<td>10/20</td>
<td>11/21</td>
<td>93/182 = 51.1%</td>
</tr>
<tr>
<td>March</td>
<td>6/23</td>
<td>0/23</td>
<td>4/22</td>
<td>21/21</td>
<td>6/22</td>
<td>0/23</td>
<td>0/23</td>
<td>0/23</td>
<td>0/21</td>
<td>37/201 = 18.4%</td>
</tr>
<tr>
<td>April</td>
<td>14/21</td>
<td>0/20</td>
<td>16/21</td>
<td>22/22</td>
<td>22/22</td>
<td>9/22</td>
<td>4/21</td>
<td>4/20</td>
<td>2/22</td>
<td>93/191 = 48.7%</td>
</tr>
<tr>
<td>May</td>
<td>0/22</td>
<td>0/23</td>
<td>6/23</td>
<td>11/23</td>
<td>14/21</td>
<td>17/21</td>
<td>13/22</td>
<td>12/23</td>
<td>14/23</td>
<td>87/201 = 43.7%</td>
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<tr>
<td>June</td>
<td>1/22</td>
<td>10/22</td>
<td>0/21</td>
<td>0/20</td>
<td>10/22</td>
<td>0/22</td>
<td>0/22</td>
<td>4/22</td>
<td>0/20</td>
<td>25/193 = 12.9%</td>
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<tr>
<td>July</td>
<td>18/21</td>
<td>16/21</td>
<td>5/22</td>
<td>0/23</td>
<td>23/23</td>
<td>8/22</td>
<td>4/21</td>
<td>19/21</td>
<td>1/23</td>
<td>9/197 = 47.7%</td>
</tr>
<tr>
<td>August</td>
<td>12/23</td>
<td>1/23</td>
<td>23/23</td>
<td>9/22</td>
<td>14/21</td>
<td>13/22</td>
<td>14/23</td>
<td>23/23</td>
<td>14/22</td>
<td>123/202 = 60.9%</td>
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<tr>
<td>September</td>
<td>15/22</td>
<td>17/21</td>
<td>20/20</td>
<td>21/21</td>
<td>0/22</td>
<td>7/22</td>
<td>0/22</td>
<td>4/21</td>
<td>84/171 = 49.1%</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>17/21</td>
<td>19/22</td>
<td>11/23</td>
<td>10/23</td>
<td>9/22</td>
<td>21/21</td>
<td>13/21</td>
<td>22/22</td>
<td>127/175 = 72.5%</td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>0/22</td>
<td>11/23</td>
<td>5/22</td>
<td>14/21</td>
<td>17/21</td>
<td>18/22</td>
<td>12/22</td>
<td>15/22</td>
<td>92/175 = 52.5%</td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>0/22</td>
<td>0/21</td>
<td>1/21</td>
<td>0/22</td>
<td>13/23</td>
<td>9/23</td>
<td>0/22</td>
<td>0/21</td>
<td>23/175 = 13.1%</td>
<td></td>
</tr>
</tbody>
</table>

Yearly: 104/261 74/261 128/261 148/261 162/262 121/261 97/260 122/260 45/175 999/2262 = 44.2%
Total: 39.8% 31.2% 49.1% 56.6% 61.1% 46.3% 37.3% 46.8% 25.7%

1Includes December, 1959, "Even Keel" encompassing January 1-12.

First of all, the frequent "even keel" years include the interval from 1962 to 1965 and 1967, inclusively. In each of these years, "even keels" were in force during more than 45.0 percent of the total number of business days. Again, 1964, with 160 of 262 days or 61.1 percent of all business days being identified as "even keels," is the year exhibiting the most frequent use of this strategy. The infrequent "even keel" years are, again, 1961, with 31.2 percent, and 1968, with 25.7 percent. This yearly pattern is largely attributable to the variable degree of market activity by the Treasury. During the frequent "even keel" years, the Treasury undertook a greater number of financing operations; whereas, in the infrequent "even keel" years, especially in 1968, the debt management operations of the Treasury were curtailed. Rising interest rates and more restrictive monetary policy, coupled with the interest rate ceiling on bonds, made it difficult for the Treasury to meet the "test of the market."

Although the yearly patterns of "even keel" directives and "even keel" business days are similar, the monthly distribution is slightly different. The monthly pattern that emerges can be explained in terms of both the volume of Treasury operating balances and major Treasury refunding operations. Table 9 summarizes these two factors, both of which seem to explain the majority of the author's observations. As before, January, 60.8 percent; April, 48.7 percent; July, 47.7 percent; and October, 72.5 percent, are designated as frequent "even keel" months. These particular months coincide closely with low points in Treasury operating balances. In addition, February, 51.1 percent; May, 43.7 percent; August, 60.9 percent; and November, 52.5 percent, must also be categorized as frequent "even keel" months.
TABLE 9
MAJOR TREASURY REFUNDINGS1 AND LOW POINTS IN
ADJUSTED TREASURY OPERATING BALANCES,2
JANUARY, 1960 - AUGUST, 1968

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>January</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>AL</td>
<td>AL</td>
<td>L</td>
<td>L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>February</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>March</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>June</td>
<td>A</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>L</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L</td>
</tr>
<tr>
<td>August</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>RL</td>
<td>RL</td>
</tr>
<tr>
<td>September</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>AL</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>November</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>RL</td>
<td>RL</td>
<td>RL</td>
<td>RL</td>
</tr>
<tr>
<td>December</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>L</td>
</tr>
</tbody>
</table>

1 Maturing coupon issues in excess of 3 billion dollars (R) and advance refundings (A).
2 End-of-month operating balances minus net cash borrowing that totals to less than 3.9 billion dollars (L).

SOURCES: Yohe and Gasper, "The 'Even Keel' Decisions," p. 5, Table 4; Beard, U.S. Treasury Advance Refundings, p. 2, Table 1.
This can be explained primarily by the maturing coupon issues falling within these months. Finally, September with 72.5 percent is explained by both the overlapping of August refunding operations, as well as the September advance refundings during 1961-1963. The infrequent "even keel" months are March, 18.4 percent; June, 12.9 percent; and December, 13.1 percent, these being, along with September, the quarterly tax payment dates.

Summary and Conclusion

This chapter has dealt with one major facet of "even keel" policy, the intimate relationship between this System strategy and the financing operations of the Treasury. This subject has been analyzed in two parts; the first dealing with the relationship between "even keel" policy and the type of Treasury financing, and the second, with the frequency and seasonal pattern of "even keel" directives. Some important conclusions must be reviewed.

During advance and regular refunding operations, the System has generally maintained an "even keel" in the money market regardless of the type of securities involved in the financing or the volume of the operation as measured by the amount of securities eligible for exchange. There was some evidence that the volume of regular refundings, involving certificates of indebtedness, had some influence on whether the central bank issued an "even keel" directive. During Treasury financings involving both cash refundings and cash offers, the System normally "even keeled" those operations involving coupon issues regardless of the volume of the financing. Although regular bill roll-overs were seldom accompanied by an "even keel" directive,
Cash refundings of TAB's were "even keeled" when the volume of the operation exceeded 2.500 billion dollars. Thus, the "even keel" policy can be most commonly expected to be implemented during most advance and regular refunding operations and during cash refundings and cash offers involving coupon issues.

The frequency and seasonal pattern of "even keel" directives can most readily be explained by Treasury operating balances. The frequent "even keel" months usually concur with low points in Treasury operating balances, while infrequent "even keel" months coincide with quarterly tax dates. The yearly pattern can usually be explained by the activity of the Treasury and conditions in the money market.
CHAPTER V

AN EMPIRICAL ANALYSIS OF "EVEN KEEL" POLICY:

JANUARY 6, 1960 - AUGUST 28, 1968

The purpose of this section of the study is to empirically test the alternative definitions of "even keel" policy which have appeared in the literature. First, an explanation of the statistical testing procedures employed in the analysis is presented. After this, three alternative definitions of "even keel" policy are reviewed and empirically tested. Finally, the chapter concludes with a synthesis of the results, leading to a more precise definition of "even keel" policy.

Statistical Procedure

The primary statistical test utilized in the evaluation of the various definitions of the "even keel" strategy was an analysis of variance for one-way design. The program employed (BMD O IV) computes an analysis of variance table for one variable of classification, with unequal group sample sizes.¹ A brief description of the analysis

of variance test is necessary to understanding the results and conclusions concerning the appropriate interpretation of the "even keel" strategy.

The purpose of the one-way analysis of variance is to test the null hypothesis about the equality of means of several universes. The F-ratio for \( H_0: \mu_1 = \mu_2 \ldots = \mu_k \) is computed as the ratio of the between mean square to the within mean square. The formula for the F-ratio is:

\[
F = \frac{\sum_{i=1}^{k} n_i (\bar{X}_i - \bar{X})^2 / (k-1)}{\sum_{i=1}^{k} \sum_{j=1}^{n_i} (X_{ij} - \bar{X}_i)^2 / (N-k)} = t^2
\]

where the equality \( t = \sqrt{F} \) holds only when the total sum of squares is divided into two, and only two, parts.

This statistical procedure readily adapts itself to the evaluation of the various interpretations of "even keel" policy. By examining the behavior patterns displayed by a number of money market variables over the 1960-1968 period, it was possible to determine more precisely what the "even keel" strategy entailed. The purpose of the one-way analysis of variance test was to determine whether selected money market variables behaved differently during "even keel" periods as opposed to other times when such "even keel" directives were not in force. By comparing the mean of a variable during "even keel" weeks with the mean of that same variable during "non-even keel" weeks, it was possible to quantitatively analyze the Federal Reserve's "even keel" policy.

The selection of the appropriate money market indicators to be examined was based upon the alternative definitions of "even keel" policy tested, as well as theories concerning the implementation of
short-run monetary policy. The primary variables analyzed included repurchase agreements, net open market purchases, marginal reserve measures, and short-term interest rates.

The analysis of variance program was run on both original data and first difference data. Analysis of the original data revealed differences in the behavior patterns of the magnitude or level of the variable. First difference data was computed on the basis of the formula

\[ X_{t-1} - X_t = |DX_t| \]

where \( X \) = original value of the data and \( DX \) = the first difference value of the variable. Thus, the analysis of variance of first difference data identified variations in the degree of fluctuations of the variable during "even keel" and "non-even keel" weeks. The data input, original or first difference, was determined in accord with the definition being tested.

Finally, the program was run on each money market variable over a number of different time series. It was felt that an analysis of only the January 6, 1960-August 28, 1968, time period ignored the possibility of various behavior patterns being displayed as a result of differences in the stance of monetary policy. The entire 452-week period was broken down into 6 subperiods as shown in Table 10, based on the annual growth rate of the money supply. The growth rate of the money supply was used as a proxy variable for the stance of monetary policy, i.e., whether it was neutral, expansive, or restrictive. The examination of the data within the subperiods allows us to deal with possible differences in the implementation of "even keel" policy during tight and easy money periods.
### TABLE 10
GROWTH OF THE MONEY SUPPLY¹
COMPOUNDED ANNUAL RATES OF CHANGE
(SEASONALLY ADJUSTED)

<table>
<thead>
<tr>
<th>Periods of No Marked and Sustained Change in Rates of Change</th>
<th>Number of Weeks</th>
<th>Annual Rates of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/6/60 - 5/25/60</td>
<td>21</td>
<td>- 2.3%</td>
</tr>
<tr>
<td>6/1/60 - 12/27/61</td>
<td>83</td>
<td>+ 2.4%</td>
</tr>
<tr>
<td>1/3/62 - 8/29/62</td>
<td>35</td>
<td>+ 0.3%</td>
</tr>
<tr>
<td>9/5/62 - 3/30/66</td>
<td>187</td>
<td>+ 4.5%</td>
</tr>
<tr>
<td>4/6/66 - 12/28/66</td>
<td>39</td>
<td>- 0.3%</td>
</tr>
<tr>
<td>1/4/67 - 8/28/68</td>
<td>87</td>
<td>+ 7.3%</td>
</tr>
</tbody>
</table>

¹The money supply is defined as private demand deposits plus currency held by the public.

The Implementation of "Even Keel" Policy

In attempting to quantitatively define "even keel" policy, as a prelude to the comparison of the alternative interpretations, it is necessary to determine how the Federal Reserve System implements this strategy. The operating techniques available to the Trading Desk must be scrutinized to see which of these techniques is used to implement the "even keel" strategy. Both the "support" and "neutrality" schools' interpretations of "even keel" policy, analyzed later, are concerned with the degree of reserve-supplying operations undertaken by the Trading Desk during Treasury financing periods. An examination of the techniques employed by the System in supplying reserves is the first step in the empirical analysis of "even keel" policy.

Two primary methods of imparting marginal ease in the money market are available to the Trading Desk. First, the System may undertake outright purchases of government securities. This method, assuming all other reserve factors are unchanged, creates a permanent addition to the reserve base of the banking system that can only be extinguished by future open market sales of government securities. The Trading Desk also has the option of supplying reserves on a temporary basis by entering into repurchase agreements with non-bank government securities dealers. Both of these reserve-supplying tools can be implemented at the initiative of the Trading Desk. An examination of the behavior of net open market purchases and repurchase

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agreements reveals the method by which the "even keel" strategy is carried out.

The System has the option of making reserve injections through outright purchases of government securities. If the "even keel" strategy is implemented through outright open market transactions, it would be expected that the level of net open market purchases (purchases minus sales) would be found to be substantially higher during "even keel" weeks than during "non-even keel" weeks. However, as Table 11 clearly shows, the System did not consistently employ this technique to supply reserves during "even keel" periods. The null hypothesis, that the mean levels of net open market purchases were identical during both "even keel" and "non-even keel" periods, cannot be rejected in light of the extremely low F-ratios computed for all of the periods tested. It can be concluded that the "even keel" strategy does not entail reserve injections through the medium of outright open market transactions.

The System probably avoided recourse to outright transactions because of the possibility that market participants might interpret open market purchases of government securities as indicative of a shift in monetary policy. As will be seen later, the System shies away from overt policy actions indicative of a shift in monetary policy during "even keel" periods. The behavior of net open market purchases may well have been influenced by a number of other factors considered more important than Treasury operations, thus explaining the fact that net open market purchases were not significantly higher during "even keel" weeks. There is no empirical evidence to support the hypothesis that
<table>
<thead>
<tr>
<th>Time Period Tested</th>
<th>Sample Group</th>
<th>Size</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Degrees of Freedom</th>
<th>F-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/6/60-8/28/68</td>
<td>EK-197</td>
<td>63.9216</td>
<td>$49,6467</td>
<td>$277,5168</td>
<td>1,450</td>
<td>0.3004</td>
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<td>1/6/60-5/25/60</td>
<td>NEK-255</td>
<td>-40,2500</td>
<td>-65,1111</td>
<td>124,7511</td>
<td>1,19</td>
<td>0.0894</td>
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<tr>
<td></td>
<td>EK-9</td>
<td>75,4815</td>
<td>264,0940</td>
<td>223,8324</td>
<td>1,81</td>
<td>0.9791</td>
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<tr>
<td>6/1/60-12/27/61</td>
<td>NEK-56</td>
<td>23,6250</td>
<td>-40,2500</td>
<td>124,7511</td>
<td>1,19</td>
<td>0.0894</td>
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<tr>
<td></td>
<td>EK-27</td>
<td>63,1875</td>
<td>285,1958</td>
<td>223,8324</td>
<td>1,33</td>
<td>0.3608</td>
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<tr>
<td>1/3/62-8/29/62</td>
<td>NEK-19</td>
<td>8,9474</td>
<td>249,0929</td>
<td>223,8324</td>
<td>1,33</td>
<td>0.3608</td>
</tr>
<tr>
<td>9/5/62-3/30/66</td>
<td>NEK-90</td>
<td>74,7333</td>
<td>290,2063</td>
<td>223,8324</td>
<td>1,33</td>
<td>0.3608</td>
</tr>
<tr>
<td></td>
<td>EK-97</td>
<td>37,5258</td>
<td>292,2034</td>
<td>223,8324</td>
<td>1,33</td>
<td>0.3608</td>
</tr>
<tr>
<td>4/6/66-12/28/66</td>
<td>NEK-28</td>
<td>73,8214</td>
<td>361,2944</td>
<td>223,8324</td>
<td>1,33</td>
<td>0.3608</td>
</tr>
<tr>
<td></td>
<td>EK-11</td>
<td>34,9091</td>
<td>291,5542</td>
<td>223,8324</td>
<td>1,33</td>
<td>0.3608</td>
</tr>
<tr>
<td>1/4/67-8/28/68</td>
<td>NEK-50</td>
<td>129,9400</td>
<td>272,6890</td>
<td>223,8324</td>
<td>1,33</td>
<td>0.3608</td>
</tr>
</tbody>
</table>

The data consists of the averages of daily figures in million dollars for the week ending on Wednesday.

the "even keel" strategy entails reserve injections through the medium of outright open market transactions.

The behavior of Federal Reserve repurchase agreements was a key variable to be examined in analyzing how the "even keel" strategy is implemented. The repurchase agreement is a contract between the System and non-bank government securities dealers that involves a sale of securities by dealers to the System, and a simultaneous promise by the dealers to repurchase those same securities at a later date. The instrument is callable by both parties for a period of up to 15 days, the maximum legal length of the contract. The difference in the price at which the two transactions are completed, or rates of discount in the case of repurchase agreements involving Treasury bills, provides a contractual return to the System for the interval between the sale and repurchase dates. This return to the System or cost to the dealer is usually equal to or slightly below the discount rate. 3

The repurchase agreement has contributed an additional degree of flexibility to money market management. This instrument has become heavily relied upon by the Trading Desk during Treasury financing periods. 4 This method of supplying reserves is especially appropriate


for a number of reasons. First, reserves are provided only on a temporary basis, the reserves being automatically recaptured upon termination of the contract. This is of particular importance when the Account Manager feels that the stance of monetary policy does not call for additional expansion of the reserve base. Secondly, the use of repurchase agreements lends some precision to the allocation of new funds. Dealers under the heaviest pressure (i.e., those encountering the most difficulty in obtaining funds from alternative sources) may be given direct assistance through selective repurchase agreements, whereas the utilization of outright purchases would involve the allocation of new funds indiscriminantly to all dealers.\footnote{Scott, Government Securities Market, p. 106.}

The behavior of this money market variable was tested by the analysis of variance program. If "even keel" policy is implemented through the use of repurchase agreements as the tool for supplying reserves to the money market during Treasury financings, then it would be expected that the levels of repurchase agreements would be significantly higher during "even keel" weeks. The one-way analysis of variance program run on the original data indicates differences in the volume of repurchase agreements during "even keel" and "non-even keel" periods. The results of this test are shown in Table 12.

This test supports, with some qualifications, the hypothesis that the Federal Reserve System supplies reserves to the money market during "even keel" periods through the repurchase agreement instrument. First, viewing the entire 1/6/60-8/28/68 interval, the null hypothesis of equal means can be rejected at the 5 percent level of significance.
### TABLE 12

**VARIABLE: REPURCHASE AGREEMENTS**

**ORIGINAL DATA INPUT**

<table>
<thead>
<tr>
<th>Time Period Tested</th>
<th>Sample Group Size</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Degrees of Freedom</th>
<th>F-Ratio $^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/6/60-8/28/68</td>
<td>EK-197</td>
<td>$123,5584</td>
<td>$136,1800</td>
<td>1,450</td>
<td>4.5964**</td>
</tr>
<tr>
<td>5/25/60-6/1/61</td>
<td>EK-9</td>
<td>61,1111</td>
<td>90,3693</td>
<td>1,19</td>
<td>0.1686</td>
</tr>
<tr>
<td>12/27/61-6/1/62</td>
<td>NEK-12</td>
<td>75.5833</td>
<td>71.3766</td>
<td>1.81</td>
<td>0.0226</td>
</tr>
<tr>
<td>3/30/66-9/5/66</td>
<td>NEK-90</td>
<td>134.7010</td>
<td>140,8897</td>
<td>1.185</td>
<td>2.1135</td>
</tr>
<tr>
<td>12/28/66-4/6/66</td>
<td>NEK-28</td>
<td>147,6364</td>
<td>111,6075</td>
<td>1.37</td>
<td>0.8566</td>
</tr>
<tr>
<td>1/2/67-8/28/68</td>
<td>NEK-50</td>
<td>175.8378</td>
<td>165,7218</td>
<td>1,85</td>
<td>3.6098*</td>
</tr>
</tbody>
</table>

$^1$The data consists of the averages of daily figures in million dollars for the week ending on Wednesday.

$^2$A single asterisk * indicates that the actual computed F-ratio exceeded the critical value at the 10 percent level, and a double asterisk ** at the 5 percent level.

with a computed F-ratio of 4.5964. The mean level or volume of repurchase agreements during "even keel" weeks, as would be expected, was larger than during "non-even keel" weeks (123.5584 vs. 96.6863 million dollars). The only other period where the null hypothesis could be rejected at the 10 percent level was the 1/4/67-8/28/68 period. The same behavior pattern, with the mean level of repurchase agreements during "even keel" weeks exceeding the mean level during "non-even keel" weeks (175.8378 vs. 113.9400 million dollars), was observed. Thus, for the entire 452-week period, as well as the 87-week subperiod, the behavior of repurchase agreements supports the hypothesis.

Although during only one of six subperiods was it possible to reject the null hypothesis of equal means at the 10 percent level, it should be noted that during the 313-week interval encompassing 9/5/62-8/28/68 the mean level of repurchase agreements was larger during "even keel" weeks. Thus, although some of the subperiods did not display F-ratios high enough to reject the null hypothesis at the 10 percent level the magnitude of repurchase agreements conforms to the hypothesis.

In conclusion, the empirical evidence supports the hypothesis that the "even keel" strategy has been implemented through the

---

6 Two additional tests seem to support the hypothesis that "even keel" policy has been implemented through repurchase agreements. Simple graphical time series observations reveal that the level of repurchase agreements are related to "even keel" directives. The magnitude of this variable was found to be substantially higher during "even keel" weeks than during alternative periods. In addition, an analysis of the deviations from a 9-week running average also supports this hypothesis. During the 255 weeks not designated as "even keel" weeks, it was found that 167 observations fell below the 9-week average. Conversely, of the 197 "even keel" weeks, 99 observations exceeded the 9-week average.
extensive use of repurchase agreements. Generally, the level of repurchase agreements has been higher during "even keel" weeks as opposed to those weeks when such directives were not in force. There is no evidence to support the hypothesis that the "even keel" policy has been implemented via outright open market purchases. Thus, the Trading Desk, during the major Treasury financing periods, imparts marginal ease to the money market by extending the volume of repurchase agreements to non-bank government securities dealers.

An Empirical Evaluation of Alternative Definitions of "Even Keel" Policy

Three major interpretations of "even keel" policy appear in the literature. Two of these definitions grouped within the so-called "support" and "neutrality" schools differ primarily in terms of the magnitude of the reserve injections associated with the implementation of "even keel" policy. The "support" school interpretation views "even keel" policy as entailing reserve-supplying operations sufficient in volume to ease money market conditions. One "neutrality" school definition envisions the "even keel" strategy as consisting of reserve injections aimed at offsetting any tendency for a tightening in the degree of pressure in the money market during Treasury financings. This interpretation may be carried to the point where "even keel" policy is viewed as an attempt to stabilize money market conditions via reserve-supplying operations. Thus, the primary difference in these two definitions is the purpose for which reserve injections are undertaken.
The third definition, also classified within the "neutrality" school, is somewhat independent of the behavior of open market transactions. This interpretation views the "even keel" policy as entailing the avoidance of any overt monetary policy actions during Treasury financing periods. That is, "even keel" policy simply consists of refraining from any shift in central bank policy during Treasury financings. The empirical evidence which follows lends the greatest degree of support to the "neutrality" school definition that "even keel" policy entails the avoidance of overt policy actions.

The "Support" School

The first interpretation of the "even keel" strategy to be discussed stresses the concept that the "even keel" policy entails an open market operating strategy aimed at facilitating or aiding Treasury operations. This view of "even keel" policy explains that policy in terms of temporary underwriting for Treasury financings. Specifically, the Trading Desk conducts its open market operations during Treasury financing periods with a view to facilitating the marketing of a new issue by performing an underwriting function. Although this interpretation does not imply the utilization of direct support purchases, it does imply that the System would undertake reserve-supplying operations explicitly for the purpose of enlarging the reserve base of the banking system to allow the money markets to digest the Treasury offering with minimal interest rate disturbance.
Such an interpretation views the "even keel" strategy in terms of a one-way shift toward ease during Treasury financings.7

This particular interpretation of "even keel" policy lends itself readily to a number of empirical tests. An analysis of the behavior of a number of money market variables was undertaken in order to test the veracity of this definition of "even keel" policy. The results of these tests detailed below lend little support to this interpretation.

The "support" school interpretation of "even keel" policy can be broken down into two components. The first implication is that the "even keel" strategy consists of reserve-supplying operations during Treasury financings. Reference to Tables 11 and 12 indicate that the Trading Desk does inject reserves into the money market during Treasury operations, primarily through the use of repurchase agreements. The question then arises, if the "even keel" policy does entail reserve injections, are these operations of sufficient magnitude to effect the levels of marginal reserve measures and short-term interest rates? If the "support" school definition is correct, then a one-way shift toward ease in the money market should be reflected in the behavior of free reserves, member bank borrowings, and the Federal Funds and Treasury bill rates.

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7This particular interpretation has appeared within the works of a number of authors. See, for example, Stephen H. Axilrod, "An Empirical View of 'Even Keel,'" (an unpublished manuscript, Board of Governors, Federal Reserve System, April 22, 1969), p. 2; Monthly Economic Letter, September, 1967, p. 99; and Rudolph Thunberg, "'Even Keel': The Reconciliation of Monetary Policy and Debt Management," (an unpublished manuscript, Federal Reserve Bank of New York), pp. 11-12.
The behavior of the level of free reserves was an important variable to be considered in testing the "support" school hypothesis. If the interpretation of "even keel" policy in terms of a one-way shift toward ease is correct, then the level of free reserves should be found to be significantly higher during "even keel" weeks than alternative periods when an "even keel" directive was not in force. The evidence on free reserves, as shown in Table 13, is somewhat ambiguous when this variable is treated as an independent, short-run monetary policy target.

It was found for the entire 452-week period spanning 1/6/60-8/28/68 that the null hypothesis of the equality of mean levels of free reserves could not be rejected with an extremely low F-ratio of 0.2988. Though free reserve levels were higher during "even keel"

TABLE 13
VARIABLE: FREE RESERVES1
ORIGINAL DATA INPUT

<table>
<thead>
<tr>
<th>Time Period Tested</th>
<th>Sample Group</th>
<th>Optional Listing</th>
<th>Analysis of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>1/6/60-8/28/68</td>
<td>EK-197</td>
<td>$129,7462</td>
<td>$274,9512</td>
</tr>
<tr>
<td></td>
<td>NEK-255</td>
<td>114,1137</td>
<td>320,4668</td>
</tr>
<tr>
<td>1/6/60-5/25/60</td>
<td>EK-9</td>
<td>-318,8887</td>
<td>100,5204</td>
</tr>
<tr>
<td>(-2.3%)</td>
<td>NEK-12</td>
<td>-190,0000</td>
<td>145,3472</td>
</tr>
<tr>
<td>6/1/60-12/27/61</td>
<td>EK-27</td>
<td>416,4072</td>
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</tr>
<tr>
<td>(+2.4%)</td>
<td>NEK-56</td>
<td>484,6428</td>
<td>206,7010</td>
</tr>
<tr>
<td>1/3/62-8/29/62</td>
<td>EK-16</td>
<td>440,1875</td>
<td>78,6707</td>
</tr>
<tr>
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<td>NEK-19</td>
<td>423,9473</td>
<td>65,0114</td>
</tr>
<tr>
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<td>EK-97</td>
<td>108,9588</td>
<td>183,7960</td>
</tr>
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<td>(+4.5%)</td>
<td>NEK-90</td>
<td>61,1222</td>
<td>175,9684</td>
</tr>
<tr>
<td>4/6/66-12/28/66</td>
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<td>-343,3635</td>
<td>94,4767</td>
</tr>
<tr>
<td>(-0.3%)</td>
<td>NEK-28</td>
<td>-320,4641</td>
<td>117,8264</td>
</tr>
<tr>
<td>1/4/67-8/28/68</td>
<td>EK-50</td>
<td>90,5946</td>
<td>252,2842</td>
</tr>
</tbody>
</table>

1. The data consists of the averages of daily figures in million dollars for the week ending on Wednesday.

2. A single asterisk * indicates that the actual computed F-ratio exceeded the critical value at the 10 percent level, and a double asterisk ** at the 5 percent level.

weeks, the difference was not significant. Thus, for the entire period the behavior of free reserves does not lend any credibility to the "support" school definition of "even keel" policy.

Looking at the six subperiods, the evidence on free reserve behavior is contradictory. During the rather short interval 1/6/60-5/25/60, the null hypothesis of equal means could be rejected at the 5 percent level of significance with a computed F-ratio of 5.1825. During this interval, contrary to the "support" school interpretation, the level of free reserves was actually lower during "even keel" weeks (-318.8887 vs. -190.000 million dollars). Instead of a one-way shift toward ease, money market condition as reflected in free reserve levels actually tightened during Treasury financing operations. Conversely, the null hypothesis of the equality of means could be rejected at the 10 percent level during both the 9/5/62-3/30/66 and 1/4/67-8/28/68 intervals. In each of these cases, spanning a combined period of 274 weeks, the mean level of free reserves during "even keel" weeks was higher than the mean during alternative weeks (108.9588 vs. 61.1222 million dollars and 90.5946 vs. -6.8000 million dollars). During these subperiods, the behavior of free reserves reflected an easing of money market conditions during "even keel" periods, a finding consistent with the "support" school. A number of possible resolutions of these contradictory results are possible.

The first resolution involves the integration of "even keel" policy with the stance of monetary policy. During the 1/6/60-5/25/60 interval the annual growth rate of the money supply was -2.3 percent. The historical record shows that the System chose to follow a restrictive monetary policy with the F.O.M.C. directives consistently calling
for "restraint of excessive inflationary credit expansion" throughout most of the period. The Trading Desk seems to have pursued a restrictive policy during both "even keel" and "non-even keel" weeks, giving priority to stemming inflation over facilitating Treasury financings. Reference to Tables 11 and 12 shows that both net open market purchases (-65,11111 vs. -40,2500 million dollars) and repurchase agreements (61,1111 vs. 75,5833 million dollars) were lower during "even keel" weeks than alternative periods. This would seem to indicate that the Trading Desk, within the framework of pursuing a restrictive monetary policy, went to great lengths during Treasury financing operations to avoid the appearance of any shift toward ease in the stance of monetary policy. This was accomplished by avoiding the outright purchase of government securities and minimizing the level of repurchase agreements during "even keel" periods. Thus, the System in pursuing a restrictive monetary policy erred on the side of tightness with respect to the free reserve target during "even keel" periods to avoid any action which might be interpreted as a shift toward an easing in monetary policy.

During the 9/5/62-3/30/66 and 1/4/67-8/28/68 intervals, the annual growth rate in the money supply was 4.5 percent and 7.3 percent, respectively. During both of these intervals the Trading Desk erred on the side of ease with respect to the free reserve target during Treasury financings. During the 9/5/62-3/30/66 period the

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9 A much simpler but equally valid explanation might be offered to explain the lower levels of free reserves during "even keel" weeks found in the 1/6/60-5/25/60 period. This 21-week period is so short that the results might be statistically invalid.
historical record shows that the System was quite concerned with promoting a reduction in long-term interest rates to promote domestic recovery and expansion of employment. The System concentrated primarily on a long-term interest rate target allowing free reserve levels (indeed, if any attention was given this target) to increase in order to avoid the appearance of any tightening of monetary policy.

During the major portion of the 1/4/67-8/28/68 period, the Federal Reserve System pursued an expansionary credit policy, inflationary pressures not being recognized until late 1967. During this same interval, the mean level of repurchase agreements during "even keel" weeks was significantly higher (175,8378 vs. 113,9400 million dollars) than during alternative periods. Noting that the majority of "even keel" weeks during this period fell within 1967 when the stance of monetary policy was expansive, the System again seems to have erred on the side of ease with respect to the free reserve target in order to promote full employment. Here, the System used repurchase agreements to facilitate Treasury operations and avoid any appearance of a move to tighten credit policy.

Thus, generally, the evidence does not support the hypothesis that "even keel" policy entails reserve injections which result in increases in the level of free reserves. For the entire period, no statistical evidence can be found to support this hypothesis. Although the levels of free reserves were significantly different during some subperiods, the evidence seems to indicate the general stance of monetary policy takes precedence over the need to facilitate Treasury operations. With respect to the free reserve target, it was found that during periods of restrictive credit policy the Desk erred on the side
of tightness and during intervals of expansive monetary policy, the System erred on the side of ease. The "support" school interpretation would have suggested that the Federal Reserve System, during "even keel" periods, would consistently inject reserves to increase the level of free reserves. This interpretation is not supported by the observed behavior of free reserves.

In conclusion, the different behavior of free reserves during tight and easy money periods can be resolved by a single rule. The general stance of monetary policy, as dictated by the ultimate targets of full employment and price stability, is the major determinant of the observed behavior of free reserves. During tight money periods free reserve levels are substantially lower during "even keel" weeks. Thus, the price stability target was given precedence over any desire to facilitate Treasury financings. During easy money periods, the level of free reserves was significantly higher during "even keel" weeks. Here, the necessity of promoting full employment augmented any increase in free reserve levels that may have been desirable in order to promote a Treasury financing. Thus, the "even keel" policy cannot be interpreted, in light of the behavior of free reserves, as a one-way shift toward ease.

The "support" school definition of "even keel" policy can also be tested by analyzing the behavior of member bank borrowings. The hypothesis tested would state that during an "even keel" period the Trading Desk would supply reserves in an amount sufficient to ease money market conditions. Treating member bank borrowings as an independent, short-run policy target, it would be expected that the mean
level of member bank borrowings would be lower during "even keel" weeks than weeks in which such a directive was not in force.

The evidence on member bank borrowing as shown in Table 14 tends to refute the "support" school definition. During the 1/6/60-8/28/68 period the null hypothesis of the equality of means could not be rejected even at the 10 percent level. The same was the case in 5 of the 6 subperiods examined covering a total of 265 weeks. In general, it can be concluded that the level of member bank borrowings is not significantly lower during "even keel" weeks as opposed to "non-even keel" weeks.

During the 9/5/62-3/30/66 subperiod, the null hypothesis was rejected at the 5 percent level, with a computed F-ratio of 5.2342. In this subperiod, the level of member bank borrowings behaved as the "support" school would have predicted. The level of borrowings was significantly lower during "even keel" weeks (301.5464 vs. 354.5999 million dollars). It should be noted that during this period the Federal Reserve System was pursuing an expansive monetary policy concentrating upon an interest rate target. Thus, any easing in money market conditions during "even keel" periods as reflected in lower levels of member bank borrowing was consistent with the general stance of monetary policy.

It can be concluded from the above evidence that "even keel" policy does not entail reserve injections of sufficient magnitude to lower the level of member bank borrowings during Treasury financing periods. The empirical observations show that the behavior of marginal reserves, both free reserves and member bank borrowings, when treated as independent monetary policy targets do not conform to the behavior
<table>
<thead>
<tr>
<th>Time Period Tested</th>
<th>Sample Group Size</th>
<th>Sample Mean</th>
<th>Standard Deviation</th>
<th>Degrees of Freedom</th>
<th>F-Ratio $^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/6/60-8/28/68</td>
<td>EK-197 335,5449</td>
<td>$306.9846$</td>
<td>$232.5753$</td>
<td>1,450</td>
<td>1.6191</td>
</tr>
<tr>
<td>1/6/60-5/25/60</td>
<td>EK-9   649,1665</td>
<td>765.8887</td>
<td>146.9237</td>
<td>1.19</td>
<td>2.7334</td>
</tr>
<tr>
<td>6/1/60-12/27/61</td>
<td>EK-27  $129,6786$</td>
<td>163,1481</td>
<td>135,8340</td>
<td>1.81</td>
<td>1.3140</td>
</tr>
<tr>
<td>1/3/62-8/29/62</td>
<td>EK-16  $82,0000$</td>
<td>82,0000</td>
<td>34,9552</td>
<td>1.33</td>
<td>0.7497</td>
</tr>
<tr>
<td>9/5/62-3/30/66</td>
<td>EK-97  354,5999</td>
<td>301,5464</td>
<td>162,9079</td>
<td>1.185</td>
<td>5.2342**</td>
</tr>
<tr>
<td>4/6/66-12/28/66</td>
<td>EK-11  670,5713</td>
<td>719,9089</td>
<td>96,1055</td>
<td>1.37</td>
<td>1.4768</td>
</tr>
</tbody>
</table>

$^1$The data consists of the averages of daily figures in million dollars for the week ending on Wednesday.

$^2$A double asterisk ** indicates that the actual computed F-ratio exceeded the critical value at the 5 percent level.

patterns that would be required to verify the "support" school interpretation of "even keel" policy.

Finally, in evaluating the "support" school hypothesis which interprets "even keel" policy as a one-way shift toward ease, it was necessary to examine the behavior of short-term interest rates. The hypothesis tested would state that during an "even keel" period, the Trading Desk would undertake reserve injections in a volume sufficient to ease money market conditions. Treating both the Federal Funds rate and the Treasury bill rate (3-month) as independent, short-run policy targets, it would be expected that the mean level of these short-term interest rates would be significantly lower during "even keel" weeks than alternative weeks when such a directive was not in force.

The evidence on short-term interest rate behavior, as shown in Tables 15 and 16, does not lend any credibility to the "support" school interpretation of "even keel" policy. First, in examining the Federal Funds rate it was found that the null hypothesis of equal means could not be rejected even at the 10 percent level in either the entire 452-week period or any of the 6 subperiods. It must be concluded that the mean level of the Federal Funds rate was not significantly different during "even keel" weeks, implying that the reserve-supplying operations of the System were not large enough to lower the levels of this short-term interest rate during Treasury financings.

The behavior of the Treasury bill rate coincided closely with that of the Federal Funds rate. During the entire 1/6/60-8/28/68 interval and 5 of 6 subperiods, the null hypothesis of equal means could not be rejected at the 10 percent level. Only during the 6/1/60-12/27/61
TABLE 15

VARIABLE: FEDERAL FUNDS RATE\(^1\)
ORIGINAL DATA INPUT

<table>
<thead>
<tr>
<th>Time Period Tested</th>
<th>Sample Group</th>
<th>Optional Listing</th>
<th>Analysis of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Size</td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>1/6/60-8/28/68</td>
<td>EK-197</td>
<td>3.6281%</td>
<td>1.0221%</td>
</tr>
<tr>
<td></td>
<td>NEK-255</td>
<td>3.6701</td>
<td>1.2146</td>
</tr>
<tr>
<td>1/6/60-5/25/60</td>
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<td>3.9389</td>
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<td>NEK-12</td>
<td>3.9133</td>
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<td>6/1/60-12/27/61</td>
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<td>2.3733</td>
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<td></td>
<td>NEK-56</td>
<td>2.1832</td>
<td>0.7090</td>
</tr>
<tr>
<td>(-2.3%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/3/62-8/29/62</td>
<td>EK-16</td>
<td>2.5837</td>
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</tr>
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<td></td>
<td>NEK-19</td>
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</tr>
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<td>(+0.3%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9/5/62-3/30/66</td>
<td>EK-97</td>
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<td>NEK-90</td>
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</tr>
<tr>
<td>(+4.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/6/66-12/28/66</td>
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</tr>
<tr>
<td></td>
<td>NEK-28</td>
<td>5.2361</td>
<td>0.4095</td>
</tr>
<tr>
<td>(-0.3%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4/67-8/28/68</td>
<td>EK-37</td>
<td>4.5840</td>
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</tr>
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<td>NEK-50</td>
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</tr>
<tr>
<td>(+7.3%)</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) The data consists of the averages of daily figures in percent per annum for the week ending on Wednesday.

<table>
<thead>
<tr>
<th>Time Period Tested</th>
<th>Sample Group Size</th>
<th>Optional Listing</th>
<th>Analysis of Variance</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>1/6/60-8/28/68</td>
<td>EK-197</td>
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<td>0.8961%</td>
</tr>
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<td></td>
<td>NEK-255</td>
<td>3.6317</td>
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<td>3.5500</td>
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<td>NEK-19</td>
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<td>NEK-28</td>
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<td>0.6675</td>
</tr>
</tbody>
</table>

$^1$The data consists of market yields in percent per annum computed from daily closing bid prices. Bills are quoted on bank discount rate basis.

$^2$A single asterisk * indicates that the actual computed F-ratio exceeded the critical value at the 10 percent level.

period, exhibiting a computed F-ratio of 3.2233, could the null hypothesis be rejected at the 10 percent level. The mean level of the Treasury bill rate was lower during "even keel" weeks than "non-even keel" weeks (2.3178 percent vs. 2.3762 percent). Although during this 83-week subperiod, the Treasury bill rate did behave as the "support" school would have predicted, in light of the overall behavior exhibited by short-term interest rates, this observation is not interpreted as sufficient evidence on which to verify the "support" school definition. The behavior of short-term interest rates does not conform to the predictions of the "support" school.

The definition of "even keel" policy in terms of a one-way shift toward ease cannot be supported by the behavior of either marginal reserve measures of short-term interest rates. Although strong evidence exists that the "even keel" strategy is implemented through the extension of repurchase agreements to non-bank government securities dealers, there is little empirical evidence to show that these reserve injections result in an easing of money market conditions during "even keel" periods. The behavior of the major money market variables examined does not consistently conform to the behavior pattern that would be predicted by the "support" school. Therefore, as a creditable explanation of the "even keel" strategy, the "support" school definition must be rejected.

The "Neutrality" School

A number of the different interpretations of "even keel" policy can be classified as belonging to the "neutrality" school. The
appropriate relationship between monetary policy and debt management expounded by this school is the maintenance of limited degree of independence between central bank and Treasury policy actions. That is, while System policy is such that the authorities do not feel that their money-creating power should be employed to lend direct support to Treasury financings, System officials do recognize that concurrent monetary policy may well affect Treasury operations. The money market is felt to be quite sensitive to Treasury offers due to the sheer magnitude of the financings, the involvement of the U.S. Government's credit, and the key role played by government securities in the process of liquidity and portfolio adjustment.\(^\text{10}\) Bearing in mind that there does exist a connection between monetary policy and the market's reception of Treasury financings, many view "even keel" policy as, if not a form of central bank support or aid to financings, at least a conscious effort on the part of the System to undertake no actions that would contribute to a Treasury offer encountering poor acceptance in the government securities market. Two rather distinct interpretations of "even keel" policy, based upon this "neutrality" concept can be identified. Each are discussed and evaluated in the following pages.

A. The Money Market Condition or Stabilization Hypothesis

The first "neutrality" school interpretation of "even keel" policy to be empirically examined has been labeled the money market condition or stabilization hypothesis definition. This particular

\(^{10}\) Axilrod, "Empirical View of 'Even Keel,'" p. 1.
Interpretation is the result of a synthesis of a number of works in conjunction with the historical review of the current economic policy directives.\textsuperscript{11} This interpretation views "even keel" policy as an open market operating technique used in the implementation of short-run monetary policy during Treasury financing periods. The review of the historical record clearly shows that the operating instructions given to the Account Manager in the second paragraph of the F.O.M.C. current economic policy directive are couched in terms of a desired degree of pressure in money market conditions or simply money market tone. During "even keel" periods, the Trading Desk is invariably instructed to maintain the existing degree of pressure in the money market.

The chain reaction of monetary policy in one official view of the Federal Reserve System is as follows:

Changes in the availability and cost of reserves are reflected immediately in money market conditions. Their influence spreads to bank credit and money, to interest rates in markets for longer-term debts, and to the entire range of spending financed by borrowed funds. In the end, the ultimate target of policy actions—total income and spending, total output and employment, the general level of prices and international trade and capital flows—come to be influenced.

This view has loosely been labeled as the money market condition theory of monetary management. It is not a fully developed theory. Instead, it is a method of viewing ex post changes in individual money market time series as indicators of changes in money market tone. To be accepted as a theory, even on the basis of a partial equilibrium analysis, some tenable set of relationships must be established between the links composing the chain.

Although a complete analysis of the money market condition theory of monetary management is outside the scope of this study, a brief review of this theory is essential to the evaluation of this particular interpretation of "even keel" policy. Specifically, part of this chain reaction of monetary policy postulated by these theorists must be examined.

First, the Federal Reserve System, at its own initiative, can manipulate a set of variables which can alter the cost and availability of reserves to member banks. These variables include the familiar quantitative tools of monetary policy—open market operations, the discount rate, and the required reserve ratio. System manipulation of these quantitative tools, especially open market operations, are

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reflected in the behavior of a set of variables referred to as the money market indicators. These include the marginal reserve measures, especially free reserves and member bank borrowings, as well as short-term interest rates, specifically the Federal Funds and Treasury bill rates.

The theoretical relationship between the degree of money market pressure, as measured by the above money market indicators, and changes in the intermediate variables, which include the rate of growth of bank credit and the money supply and long-term interest rates, has been questioned by a number of authors. This relationship is the key link in the chain, the link upon which the money market condition theory of monetary management rests. Finally, changes in the intermediate guides influence the ultimate targets of credit control policy, the levels of income, employment, and prices.

The hypothesis tested in this analysis deals with one definition of the "even keel" strategy which centers around the first link

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13 The works of a number of authors seem to disprove the existence of this link which postulates that increased (decreased) pressure in the money market, other factors equal, indicates a set of events which tends to decrease (increase) the rate of growth of bank credit and money and to increase (decrease) long-term interest rates. See in particular, Richard G. Davis, "Open Market Operations, Interest Rates, and Deposit Growth," Quarterly Journal of Economics, Vol. LXXIX (August, 1965), pp. 431-454; and A. J. Meigs, Free Reserves and the Money Supply (Chicago: University of Chicago Press, 1962).

14 This link in the chain is explained by the money market condition theorists by a combination of interest arbitrage operations, securities dealers' inventory adjustments, and adjustment of the liquidity positions of banks and financial institutions. It is beyond the scope of this paper to test the existence of this link. Rather, this analysis is concerned with establishing and verifying the existence of the link between the manipulation of the quantitative tools and variations in selected money market indicators.
in the chain postulated by the money market condition theory. The historical record reveals that during the 1960-1968 period, "even keel" directives have consistently called for "... the conduct of open market operations during the next three weeks, with a view to maintaining about the existing degree of pressure in the money market." Quite simply, then, the question is--does the "even keel" policy entail an open market operating strategy whose purpose is to maintain stable conditions in the money market during Treasury financings?

Referring again to Tables 11 and 12, it was concluded that the "even keel" strategy was implemented primarily through repurchase agreements with non-bank government securities dealers. Previous analysis has rejected the "support" school hypothesis that System reserve injections during financing periods resulted in easing in money market conditions. What now must be tested is whether System reserve-supplying operations were undertaken in order to stabilize money market conditions during "even keel" periods. Has the utilization of repurchase agreements led to the stabilization of money market conditions as measured by marginal reserves and short-term interest rates?

The testing procedure again employed was the analysis of variance program previously discussed. To test for the degree of stability exhibited by marginal reserves and short-term interest rates first difference data expressed in absolute values was employed. The analysis tests the degree of fluctuation displayed by selected money market variables during "even keel" weeks in comparison with periods when such directives were not in force.
The money market condition or stabilization hypothesis views "even keel" policy as an attempt to stabilize money market conditions during Treasury financing periods. This hypothesis would predict that the degree of fluctuations displayed by money market indicators, as measured by the mean levels of the absolute first differences, would be less during "even keel" weeks than alternative periods. The evidence lends little credibility to the stabilization hypothesis.

Table 17 summarizes the behavior of free reserves during the 1960-1968 period. Treating free reserves as an independent short-run policy target, there is little evidence that the System has succeeded in stabilizing this indicator during "even keel" periods. During the entire 1/6/60-8/28/68 period, as well as 5 of 6 subperiods, the null hypothesis of equal means could not be rejected at the 10 percent level with extremely low computed F-ratios. Only during the relatively short 1/6/60-5/25/60 period could the null hypothesis be rejected at the 10 percent level with an F-ratio of 4.1831. Although during this 21-week interval the volume of fluctuation was significantly lower during "even keel" weeks (61,444 vs. 119,583 million dollars), as the stabilization hypothesis would predict, this fact is not interpreted as strong evidence to support this definition of "even keel" policy.

The overall behavior of free reserves during the 1960-1968 period shows no significant difference in the degree of fluctuation displayed by this variable during "even keel" and "non-even keel" weeks. The reserve injections undertaken by the Trading Desk did not result in the stabilization of free reserve levels during Treasury financing.
## TABLE 17

**VARIABLE: FREE RESERVES\(^1\)**

**FIRST DIFFERENCE DATA INPUT**

<table>
<thead>
<tr>
<th>Time Period Tested</th>
<th>Sample Group</th>
<th>Tested</th>
<th>Optional Listing</th>
<th>Analysis of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sample</td>
<td>Size Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>1/6/60-8/28/68</td>
<td>EK-197</td>
<td>NEK-255</td>
<td>$86,6294</td>
<td>$78,4931</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>90,2235</td>
<td>87,6079</td>
</tr>
<tr>
<td>1/6/60-5/25/60</td>
<td>EK-9</td>
<td>NEK-12</td>
<td>61,4444</td>
<td>43,3621</td>
</tr>
<tr>
<td>(-2.3%)</td>
<td></td>
<td></td>
<td>119.5833</td>
<td>76,2263</td>
</tr>
<tr>
<td>6/1/60-1/27/60</td>
<td>EK-27</td>
<td>NEK-56</td>
<td>109.0370</td>
<td>105.1673</td>
</tr>
<tr>
<td>(+2.4%)</td>
<td></td>
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<td>109.6786</td>
<td>120.4702</td>
</tr>
<tr>
<td>1/3/62-8/29/62</td>
<td>EK-16</td>
<td>NEK-19</td>
<td>75,0000</td>
<td>53,6644</td>
</tr>
<tr>
<td>(+0.3%)</td>
<td></td>
<td></td>
<td>63,4737</td>
<td>40,4603</td>
</tr>
<tr>
<td>9/5/62-3/30/66</td>
<td>EK-97</td>
<td>NEK-90</td>
<td>68,6598</td>
<td>55,4666</td>
</tr>
<tr>
<td>(+4.5%)</td>
<td></td>
<td></td>
<td>60,1778</td>
<td>41,1879</td>
</tr>
<tr>
<td>4/6/66-12/28/66</td>
<td>EK-11</td>
<td>NEK-28</td>
<td>69,1818</td>
<td>65,4596</td>
</tr>
<tr>
<td>(-0.3%)</td>
<td></td>
<td></td>
<td>112,5714</td>
<td>106,7892</td>
</tr>
<tr>
<td>1/4/67-8/28/68</td>
<td>EK-37</td>
<td>NEK-50</td>
<td>133,7297</td>
<td>103,4747</td>
</tr>
<tr>
<td>(+7.3%)</td>
<td></td>
<td></td>
<td>113,1200</td>
<td>93,9472</td>
</tr>
</tbody>
</table>

\(^1\) The data consists of an average of daily figures in million dollars for the week ending on Wednesday.

\(^2\) A single asterisk * indicates that the actual computed F-ratio exceeded the critical value at the 10 percent level.

periods. It may be concluded that the manipulation of repurchase agreements by the Trading Desk during "even keel" weeks was either not aimed at stabilizing free reserves or, if stabilization was the target, the System was not successful in achieving that goal.

Another key variable to be examined in testing the stabilization hypothesis of the "even keel" strategy was member bank borrowings. Treating this variable as an independent target of short-run monetary policy, the stabilization hypothesis would postulate that the System would minimize the degree of fluctuation in member bank borrowing during "even keel" weeks.

Looking at Table 18, the behavior of this variable again lends little support to the money market condition or stabilization hypothesis. During the entire 1/6/60-8/28/68 period, the extremely low computed F-ratio of 0.0077 indicates that the amount of fluctuation in this variable was no different during "even keel" weeks than alternative periods. During both the 1/3/62-8/29/62 and 4/6/66-12/28/66 subperiods the null hypothesis of equal means could be rejected at the 5 percent level with F-ratios of 4.8039 and 5.1461, respectively. The degree of fluctuation in member bank borrowings in each instance was significantly lower during "even keel" weeks (24,5625 vs. 61.3684 and 62.7273 vs. 112.9286 million dollars, respectively). Thus, during both of these intervals covering a period of 74 weeks, this variable displayed behavior consistent with the stabilization hypothesis. Considering the relatively short time period involved in conjunction with the overall behavior of member bank borrowings, little credence for the stabilization hypothesis can be found.
<table>
<thead>
<tr>
<th>Time Period Tested</th>
<th>Sample Group</th>
<th>Optional Listing</th>
<th>Analysis of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>1/6/60-8/28/68</td>
<td>EK-197</td>
<td>$86.6193</td>
<td>$91.1813</td>
</tr>
<tr>
<td></td>
<td>NEK-255</td>
<td>87.3255</td>
<td>79.9938</td>
</tr>
<tr>
<td>1/6/60-5/25/60</td>
<td>EK-9</td>
<td>73.8889</td>
<td>43.5616</td>
</tr>
<tr>
<td></td>
<td>NEK-12</td>
<td>112.2500</td>
<td>104.3457</td>
</tr>
<tr>
<td>6/1/60-12/27/60</td>
<td>EK-27</td>
<td>53.7778</td>
<td>56.4836</td>
</tr>
<tr>
<td></td>
<td>NEK-56</td>
<td>50.0714</td>
<td>46.6212</td>
</tr>
<tr>
<td></td>
<td>NEK-19</td>
<td>61.3684</td>
<td>62.9728</td>
</tr>
<tr>
<td>9/5/62-3/30/66</td>
<td>EK-97</td>
<td>109.9278</td>
<td>105.1305</td>
</tr>
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<td></td>
<td>NEK-90</td>
<td>98.6222</td>
<td>79.4802</td>
</tr>
<tr>
<td></td>
<td>NEK-28</td>
<td>122.9286</td>
<td>83.9124</td>
</tr>
<tr>
<td>1/4/67-8/28/68</td>
<td>EK-37</td>
<td>86.5135</td>
<td>90.3889</td>
</tr>
<tr>
<td></td>
<td>NEK-50</td>
<td>92.6600</td>
<td>92.1376</td>
</tr>
</tbody>
</table>

¹The first difference data in absolute values is computed from the averages of daily figures in million dollars for the week ending Wednesday.

²A double asterisk ** indicates that the actual computed F-ratio exceeded the critical value at the 5 percent level.

The behavior of marginal reserve measures, both free reserves and member bank borrowings, during the 1960-1968 period, cannot be interpreted as strong evidence on which to verify the stabilization hypothesis. With the exception of 3 relatively short subperiods, no significantly greater degree of stability is displayed by these marginal reserve measures during "even keel" weeks in comparison with periods when such directives were not in force. Thus, the stabilization hypothesis which views the "even keel" policy as entailing the stabilization of marginal reserves must be rejected.

Finally, the behavior of short-term interest rates was examined. Treating both the Federal Funds and Treasury bill rates as independent targets of short-run policy, the stabilization hypothesis would predict a smaller degree of week-to-week fluctuation during Treasury financing periods. The behavior of short-term interest rates lends virtually no support to the stabilization hypothesis.

Perusal of Tables 19 and 20 clearly shows that short-term interest rates were not stabilized during "even keel" weeks. In only one subperiod, 1/4/67-8/28/68, could the null hypothesis of equal means be rejected at the 5 percent level with a computed F-ratio of 4.1338 for the behavior of the Federal Funds rate. In this instance, the behavior of the Federal Funds rate was contrary to the predictions of the stabilization hypothesis, with the amount of fluctuation larger, not smaller, during the "even keel" weeks (0.2262 percent vs. 0.1450 percent). Generally, it was found that short-term interest rates behaved no differently during "even keel" weeks than alternative periods when such directives were not in force.
### TABLE 19

**VARIABLE: FEDERAL FUNDS RATE**

**FIRST DIFFERENCE DATA INPUT**

<table>
<thead>
<tr>
<th>Time Period Tested</th>
<th>Sample Group Size</th>
<th>Optional Listing</th>
<th>Analysis of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>1/6/60-</td>
<td>EK-197, NEK-255</td>
<td>0.1871%</td>
<td>0.2587%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2235</td>
<td>0.2695</td>
</tr>
<tr>
<td>1/6/60- 5/25/60</td>
<td>EK-9, NEK-12</td>
<td>0.0756</td>
<td>0.1897</td>
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<tr>
<td>(-2.3%)</td>
<td></td>
<td>0.0925</td>
<td>0.1129</td>
</tr>
<tr>
<td>6/1/60-12/27/60</td>
<td>EK-27, NEK-56</td>
<td>0.4544</td>
<td>0.3766</td>
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<tr>
<td>(+2.4%)</td>
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<td>0.4589</td>
<td>0.3268</td>
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<tr>
<td>1/3/62-8/29/62</td>
<td>EK-16, NEK-19</td>
<td>0.3056</td>
<td>0.3560</td>
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<tr>
<td>(+4.3%)</td>
<td></td>
<td>0.2295</td>
<td>0.2358</td>
</tr>
<tr>
<td>9/5/62-3/30/66</td>
<td>EK-97, NEK-90</td>
<td>0.0845</td>
<td>0.1362</td>
</tr>
<tr>
<td>(+4.4%)</td>
<td></td>
<td>0.1063</td>
<td>0.1700</td>
</tr>
<tr>
<td>4/6/66-12/28/66</td>
<td>EK-11, NEK-28</td>
<td>0.2227</td>
<td>0.2389</td>
</tr>
<tr>
<td>(-0.3%)</td>
<td></td>
<td>0.3214</td>
<td>0.3111</td>
</tr>
<tr>
<td>1/4/67-8/28/68</td>
<td>EK-37, NEK-50</td>
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<tr>
<td>(+7.3%)</td>
<td></td>
<td>0.1450</td>
<td>0.1519</td>
</tr>
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</table>

¹The first difference data in absolute values is computed from a seven-day average in percent per annum for the week ending on Wednesday.

²A double asterisk ** indicates that the actual computed F-ratio exceeded the critical value at the 5 percent level.

<table>
<thead>
<tr>
<th>Time Period Tested</th>
<th>Sample Group</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Degrees of Freedom</th>
<th>F-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/6/60 - 8/28/68</td>
<td>EK-197</td>
<td>0.0538%</td>
<td>0.0735%</td>
<td>1,450</td>
<td>2.5240</td>
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<tr>
<td></td>
<td>NEK-255</td>
<td>0.0651</td>
<td>0.0770</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/6/60 - 5/25/60</td>
<td>EK-9</td>
<td>0.1989</td>
<td>0.1752</td>
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<td>0.4489</td>
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<td>(-2.3%)</td>
<td>NEK-12</td>
<td>0.2433</td>
<td>0.1295</td>
<td></td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
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<td></td>
</tr>
<tr>
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<td>NEK-19</td>
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</tr>
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<tr>
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<td>NEK-90</td>
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<td>0.0340</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/6/66 - 12/28/66</td>
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</tr>
<tr>
<td>(-0.3%)</td>
<td>NEK-28</td>
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<td>0.0671</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>0.1007</td>
</tr>
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<td>(+7.3%)</td>
<td>NEK-50</td>
<td>0.0778</td>
<td>0.0658</td>
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<td></td>
</tr>
</tbody>
</table>

1 The first difference data in absolute values of market yields in percent per annum is computed from daily closing bid prices. Bills are quoted on bond discount rate basis.

In conclusion, the money market condition or stabilization hypothesis definition of "even keel" cannot be supported by the facts. This particular view of the "neutrality" school which interprets "even keel" policy as an open market strategy consisting of reserve injections aimed at the stabilizing marginal reserves and short-term interest rates during financing periods must be rejected. The overwhelming evidence indicates that the major money market indicators behave no differently in terms of the magnitude of fluctuation displayed during "even keel" periods.

The evidence supporting the stabilization hypothesis is quite weak. Although the behavior of repurchase agreements might indicate that the Federal Reserve System is attempting to stabilize money market conditions, the actual behavior of marginal reserves and short-term interest rates does not indicate that the Trading Desk enjoys any success in achieving that goal. This conclusion must be qualified somewhat. The fact that the empirical evidence does not show that money market indicators were stabilized during "even keel" periods does not answer the question of whether these variables would have fluctuated more in the absence of Trading Desk operations during "even keel" periods. The possibility that the use of repurchase agreements was instrumental in preventing a greater degree of fluctuation in marginal reserves and short-term interest rates from being observed during "even keel" weeks must be recognized. However, no empirical test would seem to exist for analyzing this possibility. Thus, within the framework of what behavior can be tested, the stabilization hypothesis must be rejected.
B. The Avoidance of Policy Changes

The final interpretation of "even keel" policy to be examined in the analysis can also be classified as falling within the "neutrality" school. This definition of the "even keel" strategy which has frequently appeared in the literature is that the maintenance of an "even keel" posture in the money market during a Treasury financing period calls for the avoidance of any overt System policy actions. That is, any overt policy action that might be interpreted by money market participants as indicative of a shift in the stance of credit policy is to be avoided during Treasury financing periods. This view is usually couched in terms of the necessity of not announcing new policy decisions (as contained in announcements from the Board of Governors or as specified in the second paragraph of the current economic policy directive of the F.O.M.C.) that would impede the orderly marketing of Treasury securities and significantly increase risks of market disruption from sharp changes in market attitudes during the course of the financing period. Specifically, "even


16 Discussion of "even keel" policy has usually been focused on its relation to tightening actions. But in practice, the policy may also influence the timing of easing actions. For example, it might be argued that a discount rate reduction in the middle of a Treasury financing period may be avoided by the System because it might encourage undue speculative activity in the government securities market. See Axilrod, "Empirical View of 'Even Keel,'" p. 1.
"keel" policy is felt to influence the timing of central bank policy actions, the System being confined to undertaking any overt policy action during those intervals between Treasury financings. It is felt that any tightening of credit policy during the financing period would seriously jeopardize the success of an offering through altering basic supply and demand relationships or investor expectations.\(^{17}\)

This interpretation of the "even keel" policy was tested by careful review of the historical record. The author examined the major changes in credit control policy during the 1960-1968 period to determine if the timing of overt policy actions was influenced by "even keel" directives. Special emphasis was placed on changes in both the discount rate and the required reserve ratio, the quantitative tools which are usually designated as having a large psychological market impact. In addition, the author scrutinized the Record of Policy Actions - the Federal Open Market Committee in the Annual Report in order to determine if the maintenance of an "even keel" policy has been a major factor or consideration which has preempted shifts in the stance of monetary policy. The results of this analysis strongly support this particular definition of "even keel" policy.

Table 21 summarizes the 9 changes in the discount rate which the System made during the 1960-1968 period. In only one instance did a discount rate change occur during an "even keel" period. The discount rate reduction made effective on 8/12/60 fell within the "even

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Level of Discount Rate</th>
<th>Net Change of Discount Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/11/59</td>
<td>4.0%</td>
<td></td>
</tr>
<tr>
<td>6/10/60</td>
<td>3.5%</td>
<td>- 0.5%</td>
</tr>
<tr>
<td>8/12/60*</td>
<td>3.0%</td>
<td>- 0.5</td>
</tr>
<tr>
<td>7/17/63</td>
<td>3.5%</td>
<td>+ 0.5</td>
</tr>
<tr>
<td>11/24/64</td>
<td>4.0%</td>
<td>+ 0.5</td>
</tr>
<tr>
<td>12/06/65</td>
<td>4.5%</td>
<td>+ 0.5</td>
</tr>
<tr>
<td>4/07/67</td>
<td>4.0%</td>
<td>- 0.5</td>
</tr>
<tr>
<td>11/20/67</td>
<td>4.5%</td>
<td>+ 0.5</td>
</tr>
<tr>
<td>3/22/68</td>
<td>5.0%</td>
<td>+ 0.5</td>
</tr>
<tr>
<td>4/19/68</td>
<td>5.5%</td>
<td>+ 0.5</td>
</tr>
</tbody>
</table>

1. The discount rate quoted applies to the Federal Reserve Bank of New York only.

2. The asterisk * indicates an effective date which falls within an "even keel" period.

keel" period spanning the 7/26/60-8/15/60 interval. The "even keel" directive was implemented during an $8.750\text{ billion dollar}$ cash financing involving a note and certificate of indebtedness. The financing was announced on 7/28/60 with the subscription books open during 8/1/60-8/2/60 with the payment or settlement date designated as 8/15/60. The F.O.M.C. meeting held on July 26, 1960, called for the maintenance of an "even keel" in the money market. Three overt policy actions were undertaken just after the July 26th meeting; these included a .5 percent reduction in the discount rate, a reduction in the required reserve ratio of central reserve city banks from 18 percent to 17.5 percent effective on 9/1/60, and a reduction in the margin requirement from 90 percent to 70 percent on 7/28/60. These overt policy actions were aimed, as stated at the F.O.M.C. meeting held on August 16, 1960, at "encouraging monetary expansion for the purpose of fostering sustainable growth in economic activity and employment.\textsuperscript{18}

Thus, although the change did take place during an "even keel" period, it should be noted that the overt policy action came at the tail end of the financing period and represented an easing in the stance of monetary policy. Therefore, it may be concluded that "even keel" policy does entail the avoidance of overt policy actions, the only exception occurring in the final phase of a Treasury financing period.

Table 22 summarizes the changes in the reserve requirement ratio which have occurred during the 1960-1968 period. A total of 8

## TABLE 22

**RESERVE REQUIREMENTS OF MEMBER BANKS**  
(PERCENT OF DEPOSITS)  
**JANUARY 1, 1960 - JULY 13, 1966**

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Net Demand Deposits</th>
<th>Time Deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central Reserve City Banks</td>
<td>Reserve City Banks</td>
</tr>
<tr>
<td>4/24/58</td>
<td>18.0%</td>
<td>16.5%</td>
</tr>
<tr>
<td>9/01/60</td>
<td>17.5</td>
<td>...</td>
</tr>
<tr>
<td>11/24/60</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>12/01/60</td>
<td>16.5</td>
<td>...</td>
</tr>
<tr>
<td>10/25/62,*</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>11/01/62</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

**JULY 14, 1966 - AUGUST 28, 1968**

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Net Demand Deposits</th>
<th>Time Deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reserve City Bank</td>
<td>Country Banks</td>
</tr>
<tr>
<td></td>
<td>Under $5 million</td>
<td>Over $5 million</td>
</tr>
<tr>
<td>3/02/67</td>
<td>16.5%</td>
<td>16.5%</td>
</tr>
<tr>
<td>3/16/67</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>1/11/68, 1/18/68</td>
<td>...</td>
<td>17.0</td>
</tr>
</tbody>
</table>

1. When two dates are shown, the first applies to the change at central reserve or reserve city banks and the second, to the change at country banks.

2. The asterisk * indicates an effective date which falls within an "even keel" period.

alterations were made in the various ratios applicable to different banks and deposits. In only one case, the 1 percent reduction in the reserve requirement ratio made effective on 10/25/62 and 11/1/62, was an overt policy action undertaken during an "even keel" period. This particular action occurred under somewhat unusual circumstances.

The "even keel" period extended from 10/22/62-11/17/62. It encompassed the Treasury financing period for a regular refunding which was announced on 10/25/62 with the settlement date on 11/15/62. In addition to the 11,000 billion dollar exchange offer, the Cuban missile crisis was another factor taken into consideration in implementing an "even keel" strategy. The announcement by the B.O.G. of the reduction in the reserve requirement ratio was made at the B.O.G. meeting held on October 18, 1962. Thus, the announcement of the overt policy action preceded the F.O.M.C. "even keel" directive, although the reserve requirement ratio change was to be made effective during the "even keel" period. Thus, it may be concluded that the "even keel" strategy clearly entails the avoidance of both changes in the discount rate and reserve requirement ratio during Treasury financing periods. The only two exceptions involved shifts toward an easier credit policy.

Finally, it must be determined whether or not the "even keel" policy consistently influences the timing of shifts in the stance of monetary policy. It seems safe to conclude that the timing of adjustments in both the discount and the reserve requirement ratio are influenced by "even keel" policy. The F.O.M.C. can also change credit policy through the use of open market transactions. The Record of
Policy Action - the Federal Open Market Committee in the Annual Report was carefully scrutinized to see if the maintenance of an "even keel" preempted shifts in monetary policy.

The 66 "even keel" directives which were issued during the 1960-1968 period have been classified into five groups. These include directives designated as preempting either any shift in policy, a shift toward ease, or a shift toward tightness. In addition, a small number of "even keel" directives were identified as coinciding with policy changes while a larger number of "even keel" directives were issued at times when the F.O.M.C. was not considering any shift in credit control policy. Table 23 summarizes the results of this analysis.

It can be seen that a total of 39 of 66 "even keel" directives were designated as having preempted policy changes. The majority of these, 29, preempted, as would be expected, shifts toward tightening monetary policy. A typical example which clearly indicates that the "even keel" strategy has influenced the timing of policy changes is shown in the summary of the discussion leading to the current economic policy directive of April 16, 1963.19

Thus, in approximately 59 percent of the cases, the maintenance of an "even keel" policy has been a major factor which has been considered by the F.O.M.C. in ruling out changes in the stance of

19... some members who otherwise might have preferred to move toward a slightly lesser degree of ease felt that such action would be undesirable at this time because of the aftermath of the Treasury bond auction and impending large refunding operations." See Federal Reserve System, Annual Report, 1963, pp. 76-77.
<table>
<thead>
<tr>
<th>Year</th>
<th>&quot;Even Keel&quot; Directives</th>
<th>&quot;Even Keel&quot; Directives</th>
<th>&quot;Even Keel&quot; Directives</th>
<th>&quot;Even Keel&quot; Directives</th>
<th>&quot;Even Keel&quot; Directives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>3/22/60</td>
<td></td>
<td>1/26/60, 7/26/60</td>
<td></td>
<td>7/6/60, 9/13/60, 10/4/60</td>
</tr>
<tr>
<td>1963</td>
<td>1/29/63, 2/12/63, 3/26/63, 4/16/63, 3/5/63</td>
<td>8/20/63, 9/10/63</td>
<td></td>
<td></td>
<td>1/8/63, 10/22/63</td>
</tr>
<tr>
<td>1964</td>
<td>1/7/64, 5/5/64, 11/10/64</td>
<td></td>
<td></td>
<td>1/28/64, 3/24/64, 4/14/64, 6/17/64, 7/7/64, 7/28/64, 10/20/64, 12/15/64</td>
<td></td>
</tr>
<tr>
<td>1965</td>
<td>1/12/65, 7/13/65, 9/28/65</td>
<td></td>
<td></td>
<td>4/13/65, 5/11/65, 8/10/65, 10/12/65, 12/14/65</td>
<td></td>
</tr>
<tr>
<td>1968</td>
<td>2/6/68</td>
<td></td>
<td></td>
<td>7/16/68</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL: 6 | 29 | 4 | 2 | 25

monetary policy. The "even keel" policy has usually mitigated against a shift toward tightness. In only two cases did an "even keel" directive coincide with an actual shift in F.O.M.C. credit control policy.

Summary and Conclusion

In summarizing the empirical analysis of "even keel" policy, a number of important conclusions stand out. During the 1960-1968 interval, the "even keel" strategy has generally been implemented by the extensive use of repurchase agreements with non-bank government securities dealers. These reserve injections have not been of sufficient magnitude to significantly affect the behavior of the major money market indicators.

The "support" school interpretation of "even keel" policy has been rejected because the empirical evidence does not reveal a consistent easing in money market conditions during "even keel" periods. The "neutrality" school definition of "even keel" policy is partially supported by the evidence. The view that the "even keel" strategy entails the stabilization of marginal reserves and short-term interest rates cannot be verified. However, the definition that the maintenance of an "even keel" posture in the money market during a Treasury financing period calls for the avoidance of any overt System policy actions can be supported. In addition, strong evidence exists to indicate that the "even keel" policy has preempted shifts in the stance of monetary policy.

The picture of the "even keel" policy which emerges from the examination of the 1960-1968 period is as follows. The "even keel"
policy entails the avoidance of any policy action during major Treasury financings, which might be interpreted as indicative of a shift in the stance of credit policy. Though there is some evidence that the System does employ repurchase agreements to supply reserves to the money market during "even keel" periods, there is little evidence to support the hypothesis that the "even keel" strategy is aimed at easing or stabilizing money market conditions. Finally, the necessity of maintaining an "even keel" posture during Treasury financings has been one factor cited as influencing the timing of monetary policy actions. Thus, Federal Reserve "even keel" policy cannot be viewed as a strategy employing explicit support operations aimed at easing or stabilizing money market conditions. Rather, the "even keel" policy must be interpreted in terms of an implicit support entailing primarily the avoidance of changes in credit policy during Treasury financing periods.
CHAPTER VI

SUMMARY AND CONCLUSION

The literature dealing with the relationship between debt management and monetary policy since the Treasury-Federal Reserve Accord has been extensive. One aspect of this topic, the policy pursued by the central bank during major Treasury financing operations, has been largely ignored. Accordingly, this study attempts to clarify a number of facets of the so-called "even keel" policy, the central bank operating strategy which has come to be considered the appropriate policy to be employed by the System during Treasury financing operations. The historical and empirical analysis undertaken has revealed a number of important findings which can now be summarized.

The Emergence and Evolution of "Even Keel" Policy

The "even keel" policy of the Federal Reserve System has been a pragmatic and gradual evolution of an open market operating technique, a refinement emerging from an atmosphere of changing views as to the proper integration of monetary theory and debt management policy. During the period preceding the Accord, the central bank was committed to a policy of maintaining a fixed price-yield pattern on government securities. This program, implemented through an open
market policy of direct support purchases, came under an increasing
degree of criticism as inflationary pressures grew.

The authorities, realizing the inconsistency of a program of
direct support purchases coupled with the need for a credit control
policy able to combat inflation, reached the now-famous Treasury-
Federal Reserve Accord on March 4, 1951. The Accord marked a major
change in the relationship between the Treasury and the central bank,
a change which gradually, during the period of the transition to free
markets, resulted in the curtailment of support purchases.

The proposals of the Craft Subcommittee were partially adopted
by the System at the F.O.M.C. meeting held on March 4-5, 1953. At
this meeting, which marked the inauguration of the "bills only" policy,
the System adopted the guidelines for an open market policy committed
to intervention in the government securities market solely to effectu­
ate the objectives of monetary and credit policy, including the cor­
rection of disorderly markets as opposed to the previous policy of
maintaining a fixed price-yield pattern in the government securities
market.

At this same meeting, the F.O.M.C. adopted specific operating
guidelines to be followed by the Trading Desk during Treasury financ­
ing periods. The Trading Desk was instructed to refrain from purchas­
ing any maturing issues for which an exchange is being offered, "when­
nissued" securities, and any outstanding issues of comparable maturity
to those being offered for exchange. The adoption of these specific
operating instructions, governing the conduct of open market operations
during Treasury financing periods, marked the birth of the "even keel"
strategy. Although not christened until December 12, 1957, the historical analysis concludes that the "even keel" strategy had been established as an operational concept by March 4-5, 1953.

This conclusion can be defended on a number of grounds. First, by that date direct support purchases during Treasury financings had been terminated. Secondly, the practice of extending repurchase agreements to non-bank government securities dealers in order to smooth the money market impact of Treasury operations had become an established Trading Desk operating procedure. Finally, by that date the System had come to practice the policy of avoiding overt shifts in monetary policy during Treasury financing periods. Thus, by March 4-5, 1953, those general policies and specific operating techniques which in subsequent years have come to be associated with the "even keel" strategy were already employed by the System.

The economic conditions which developed in the early 1960's presented a major policy dilemma. The monetary authorities were faced with the dual problems of promoting internal recovery, while correcting the external balance of payments deficit. To cope with this dilemma, at the F.O.M.C. meeting held on February 20, 1961, the System adopted "operation twist" to replace the "bills only" policy. "Operation twist" authorized the Trading Desk to conduct open market operations in coupon issues, not to maintain any particular rate level, but rather to influence the flow of funds in both the long and short ends of the market. "Operation twist" represented only a partial abandonment of the laissez-faire doctrine associated with the "bills only" policy.
"Operation twist" did not represent a major innovation in System open market policy during Treasury financing periods. The policy did not entail any System commitment to support Treasury financings. Under "operation twist," the Trading Desk continued its policy of refraining from the purchase of "rights" to new issues, "when-issued" securities, and issues of comparable maturity to those being offered for exchange. In retrospect, the initiation of "operation twist" did not substantially alter the "even keel" strategy as it was practiced under the "bills only" guidelines.

"Even Keel" Policy and Treasury Operations

Although the Treasury is an active participant in the government securities market each month during the year, the Federal Reserve System pursues an "even keel" strategy for only a fraction of all Treasury financing operations. Both the financing technique employed, as well as the type of securities involved in the operation, were found to be the primary determinants of System policy, that is, whether the F.O.M.C. does or does not issue an "even keel" directive.

It has been found that the System has generally pursued an "even keel" policy during Treasury advance refundings. This strategy has accompanied 12 of 15 such operations. Neither the volume of the offer nor the type of operation (senior, junior, or pre-refunding) seem to influence central bank policy. The System has also normally issued "even keel" directives during regular refundings. Of the 17 major regular refunding operations undertaken by the Treasury, 14 called forth an "even keel" directive. Thus, for both advance
refunding and regular refunding operations, the System has usually maintained an "even keel" posture.

The primary determinant of central bank policy during Treasury operations involving cash can be identified as the type of security involved in the operation. During cash refundings involving coupon issues, the System has issued an "even keel" directive in 10 of 13 instances. Conversely, cash refundings involving bills were seldom "even keeled." Only offers involving TAB's were accompanied by an "even keel" and then only when the size of the offer equaled or exceeded 2.500 billion dollars. Cash offers of Treasury bills were very seldom "even keeled" while such offers involving coupon issues, in 8 of 11 instances, called for "even keel" directives. Thus, for both cash refundings and cash offers involving coupon issues, the Federal Reserve can be expected to implement its "even keel" policy.

The yearly frequency pattern of "even keel" policy during the 1960-1968 period is best explained by the influence of money market conditions on Treasury financing activity. The infrequent "even keel" years were identified as 1961 and 1968 and were characterized as periods of stringent money market conditions. The rising level of interest rates, coupled with the interest rate ceiling on coupon issues, forced the Treasury to curtail its activity.

The monthly pattern of "even keel" directives can most readily be explained by the cash operating balances of the Treasury. The frequent "even keel" months were designated as January, April, July, and October, these particular months coinciding with the normal annual low points in Treasury operating balances. March, June, and December
were identified as the infrequent "even keel" months, a finding ex-
plained by the fact that these months, along with September, are
quarterly tax receipts dates. The fact that September was found to
be a frequent "even keel" month can be explained primarily by the
overlapping of August refundings and the three September advance
refundings during the 1961-1963 interval.

The Empirical Tests of "Even Keel" Definitions

Three distinct interpretations of "even keel" policy were
identified in the literature. Though not truly mutually exclusive
definitions, they were deemed as sufficiently different to be catego-
rized within either the "support" or "neutrality" schools. The em-
pirical evidence strongly supported only one of these interpretations.

Before reviewing the evidence on these definitions, the
analysis of the implementation of "even keel" policy must be mentioned.
Primarily through the one-way analysis of variance procedure, it was
found that the Trading Desk used repurchase agreements with non-bank
dealers as the instrument for maintaining an "even keel" posture.
The level of repurchase agreements was found to be significantly
higher during "even keel" weeks than those weeks when such a directive
was not in force. Thus, during Treasury financing periods, the System
normally injected reserves through the extension of repurchase agree-
ments to non-bank government securities dealers.

The first definition of "even keel" policy tested, the "sup-
port" school interpretation, views "even keel" policy as a one-way
shift toward ease during financing periods. The results of the
one-way analysis of variance program run on the original data does not support this interpretation. The level of both marginal reserves and short-term interest rates did not display any significant shift toward easing during financing periods. Thus, the "support" school interpretation of "even keel" strategy was rejected.

The second definition tested was classified within the "neutrality" school. The money market condition or stabilization hypothesis viewed the "even keel" strategy as consisting of the maintenance of stable money market conditions during Treasury financing periods. Again, the behavior of both marginal reserves and short-term interest rates did not support the stabilization hypothesis. The results of the one-way analysis of variance test on first difference data did not reveal any significant difference between the degree of fluctuation displayed by money market indicators during "even keel" and "non-even keel" weeks. The stabilization hypothesis could not be supported.

The final definition of "even keel" policy, also classified within the "neutrality" school, was verified by the evidence. This interpretation viewed the "even keel" strategy as entailing the avoidance of overt System policy actions during financing periods. It was found that changes in both the discount rate and the required reserve ratio were only very rarely undertaken during "even keel" periods. The only occasions where such policy actions were undertaken by the System during financing periods, it was found that the shift in credit control policy was consistently toward ease. Finally, there was additional evidence that the necessity of maintaining an "even
keel" posture during Treasury operations mitigated against a shift in monetary policy. In 39 of 66 "even keel" directives, the necessity of maintaining steady money market conditions in light of Treasury financing activity, was one factor cited as having precluded a shift in credit control policy which might have been deemed appropriate in view of internal or external economic conditions. Thus, the evidence supports the view that the "even keel" policy entails the avoidance of overt policy actions during Treasury financing periods.

The Implication of "Even Keel"

Strategy for Monetary Policy

It has been shown during the 1960-1968 period that the Federal Reserve's "even keel" policy has been implemented in terms of holding the posture or stance of monetary policy constant during Treasury financing periods. The "even keel" strategy has consisted primarily of the avoidance of overt policy actions during financing periods. The System has limited the implementation of its discretionary policy actions to the intervals between Treasury financings.

Bearing in mind that approximately 43.7 percent of all the F.O.M.C. current economic policy directives called for the maintenance of an "even keel" in the money market, the major implication of the "even keel" strategy is that it limits the degree of flexibility of credit control policy. During "even keel" periods, the central bank authorities have avoided changes in the stance of monetary policy. In some cases, shifts in credit policy deemed appropriate in light of other economic conditions have been delayed until the end of the
Treasury financing period. Thus, the maintenance of an "even keel" policy in some cases has lengthened the inside lag of monetary policy.

Before concluding that the "even keel" strategy imposes a serious constraint on the flexibility of monetary policy, two facts must be considered. First, during most of the periods when "even keel" directives were in force, the necessity of maintaining an "even keel" was only one of many factors cited which preempted shifts in credit policy. In many of these cases, it is doubtful, even in the absence of Treasury activity, whether the members would have reached a consensus resulting in a shift in policy. Secondly, recognizing the fact that the stance of monetary policy can affect the outcome of a Treasury financing, the constraint upon credit policy imposed by the "even keel" strategy may be a small price to pay for the orderly marketing of the Treasury's offer.
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VITA

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Major Field:  Economics

Title of Thesis:  Federal Reserve "Even Keel" Policy: An Historical and Empirical Analysis

Approved:

[Signatures]

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

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Date of Examination:

October 13, 1971