FINANCIAL MANAGEMENT AND THE 1966 CREDIT CRUNCH:

A STUDY OF FINANCIAL MYOPIA

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FINANCIAL MANAGEMENT AND THE 1966 CREDIT CRUNCH: A STUDY OF FINANCIAL MYOPIA

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CHAPTER I

INTRODUCTION

> But when you talk about people and the way they relate to money--that's a stream that will never dry up.
>
> Walter A. Guzzardi, Jr.

This dissertation is an analysis of the way businessmen "relate to money."[1] Specifically, it analyzes the factors contributing to the business sector's demand for funds during the period 1964-1966 in order to determine the role this demand played in the financial panic of 1966.

Procedure

This dissertation divides itself into two broad sections. One is the macroeconomic section, in which aggregate data are examined in order to see the interplay between demand and supply forces in the economy. The other is the microeconomic section, in which business decision making is examined to relate the individual firm's activity to the economy as a whole.

Specifically, the flow of the study will be to verify several propositions. These propositions follow:

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[1] Walter A. Guzzardi, Jr., "The Pecuniary Culture," Saturday Review, January 11, 1969, p. 77.

1. Severity of the financial squeeze of 1966 was increased by corporate management's financial myopia.

2. The financial squeeze was the result of an excess of demand for loanable funds over supply.

3. The Federal government increased its demand for loanable funds as a result of spending for the Vietnam War.

4. With demand finally beginning to press on capacity, business increased its demand for funds in order to expand plant and equipment.

5. The Federal Reserve restricted the supply of loanable funds to combat inflation.

6. Resulting pressures between these demand and supply forces induced banks to liquidate secondary reserves, congested the new issues market, and contributed to illiquidity of financial intermediaries.

7. Many business firms floating bonds or requesting bank loans in 1966 had not anticipated their financial needs. They appear to have been catapulted into the financial markets by ad hoc decisions to expand capacity. This was financial myopia.

With the verification of these propositions, the primary proposition will be verified: Financial myopia of corporate management increased the severity of the financial squeeze of 1966.

Overview and Analogy

Viewing financial events of mid-1966, one is impressed with the surge of bond flotations occurring in the face of rapidly rising interest rates and an increasingly congested new issue calendar. The overriding question which arises from this view is, Why did management enter the financial markets when it did? Why did management fail to acquire its finance in 1964 or in early 1965, when the external market was calm and interest rates were stable? The evidence points to the conclusion that management was not anticipating its financial needs correctly.

The problem is one of timing the firm's acquisition of long-term finance. When should management initiate steps to acquire long-term funds? To do so before such funds are needed carries a cost of excess liquidity. The firm is burdened with excess cash which is held completely idle or invested in lower yielding instruments. Too, the firm must make interest payments on its borrowed funds. On the other hand, to wait too long to marshall large-scale finance involves a risk of high financing costs, or even exclusion, from a congested bond market. The thrust of this dissertation is to indicate that management takes too little effort to anticipate its financial needs. Acquisition of finance is timed without sufficient regard to the probable unavailability of funds. The finance function simply follows mechanically in the wake of the investment decision so that,

given liquidity conditions such as those of 1966, financial instability can increase from an unanticipated demand for fixed assets by business.

Perhaps an analogy can help to illustrate the question. On the banks of the Mediterranean is a rather large vineyard. Workers in this vineyard are exposed to the elements, so that when a rainstorm occurs they become drenched. Located about 100 yards away is a group of seven trees. These trees offer protection from the rain, but only half of the workers can get beneath the trees at one time. Now, whenever the clouds begin to form, the workers begin to anticipate rain. But when do they bolt for the protective shield of the trees? Do they wait until the first drop of rain falls? Since there are enough trees for only half of the workers, to wait too long means to go without protection from the rain and so to get wet. Conversely, to move for shelter too soon means to lose working time and, hence, income.

In the financial management of a firm, long-term funds are like the protective covering of the trees. When they are needed, they are needed very badly. Yet, during periods of financial stringency credit is rationed and not all firms are able to acquire finance, that is, to find protection from the rain beneath the trees. For the firm moving into the bond market too late, finance is either extremely expensive or unavailable. For the firm moving into the market too soon, the cost is assumption of a fixed expense before such

an assumption is absolutely necessary. The cost of delaying acquisition was in 1966 greater than the cost of premature acquisition.

So far as the financial environment of 1966 is concerned, it seems as though management, reading some critical level of capacity utilization, reacted en masse to the triggering force of rising output by deciding to expand investment. This decision made, management then surged into the external market to acquire the necessary finance. But, alas, the spaces under the trees were already occupied. Firms leaped into a market undergoing extreme restrictive pressure from the Federal Reserve. The point is this: By not anticipating their financial needs, but letting these needs be determined automatically by a need to expand fixed assets, management was financially myopic. Being financially myopic, management increased the severity of the financial squeeze of 1966.

Significance of the Study

This study is significant at the microeconomic and macroeconomic levels. At the former level, the study emphasizes the insufficient role the financing decision plays in the investment process. By such emphasis, this study draws attention to the need for a greater coordination of the investment decision with the acquisition of funds. At the macroeconomic level, this study contributes to an understanding of the interaction between the real and monetary variables of the economy. It does so by concentrating on the

decision-making process of management, a process which spans the real and monetary sectors of the economy. Every asset must be financed, so that by deciding to expand his firm's capital stock a businessman must obtain financing. Hence, decisions emphasizing real assets (portfolio selection) affect the financial sector as well, and the financial sector may be adversely affected whenever a decision is reached without analyzing conditions in the financial markets. Likewise, the firm, itself, may be adversely affected by such shortsightedness if management is unable to provide for suitable financing, for example because the firm cannot gain access to the bond market. By analyzing this relationship between decisions to expand assets and to acquire finance, this study responds to a need for research cited by the National Bureau of Economic Research: There is a need for knowledge of ". . . the interrelations between financial and real variables in . . . the economy."[2]

Rather than examining the investment process during this period as though it were a mechanical phenomenon, the process is vivisected into its component parts with emphasis on the role of the businessman. Specifically, the businessman makes the decisions to invest and to acquire the necessary finance. In order to expand our understanding of the

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[2]"Recommendations for Further Research," Research in the Capital Markets, National Bureau of Economic Research, Journal of Finance, XIX (Supplement: May, 1964), 7.

period 1964-1966, this study concentrates on his decision criteria and on the relative importance he places on these criteria.

Additional significance of the study is found in the emphasis on a cost involved in management's failure to anticipate a firm's financial needs. The myopic manager may find his firm unable to acquire funds from financial markets experiencing contraction because of monetary policy. This point is worth emphasizing. To the extent that in the future greater reliance may be placed on monetary policy rather than fiscal policy to control the economy, financial managers must be alert to impending policies and to their implications for credit availability. As Weston notes,

> Thus, the combination of an economic environment in which there is secular long-term growth and in which there may be alternating periods of tight and easy money, requires that the financial manager not only anticipate his needs but acquire funds in a way that he is not forced to the capital markets at inopportune times.[3]

Assumptions and Limitations

This study will concentrate on the financial markets and their interaction with the real factor of investment. In so doing, the study will confine itself to the domestic financial markets and their particular role, rather than examining operation and activities of foreign capital markets.

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[3]J. Fred Weston, "Financial Implications of Growth," The Controller (March, 1958), p. 120.

This limitation should not imply that the foreign markets were of little importance during this period. It is imposed to maintain a manageable area of study which can be examined rigorously.

Only the period 1964-1966 is examined in this study. This limitation is imposed for three reasons. First, it represents a period of time in which the tools of monetary and fiscal policy were utilized in a distinct and pronounced manner. An expansionary fiscal policy collided head-on with a restrictive monetary policy. Second, there is a large amount of data available covering the period. Third, the period is recent enough so that management will be able to recall events of the period in some detail. An additional reason for limiting the study to this period can be advanced. It was the period in which the credit crunch occurred.

The following pages utilize accelerator analysis an an explanation of investment over the period. Hence, autonomous investment, which occurs as a result of technological advancement, is not included as an explanatory variable. The study assumes that technological breakthroughs and their resulting investment played at best a secondary role over the period.

Methodology

The deductive method of scientific analysis will be incorporated. The reasoning will advance from the general to the particular. The general is the macroeconomic environment for the period 1963-1966. This period was one of

changing financial conditions, culminating in a financial panic. After examining the forces which were brought to bear on the financial markets during this period, this study turns its attention to the role of business and, primarily, to the businessman, himself. In examining the businessman, this study looks first at the businessman and his decision technique in general. Then, it concentrates on one specific decision area, the investment decision. Hence, the methodology employed is deductive.

Sources

Both library and empirical research are used in verifying the propositions. Propositions two and three will be verified by examining public documents; primary sources are the Economic Report of the President and Federal Reserve Annual Reports. In addition, other sources are relied upon to help interpret and support this proposition. These are the Committee for Economic Development, the Federal Reserve Bank of St. Louis, and comments selected from private publications.

Proposition four is substantiated by using both empirical data and a statistical model. This model is presented and supported from the literature of economics. The data are derived from the Economic Report of the President, Federal Reserve Annual Reports, and the National Industrial Conference Board. Comments and data from other sources are presented in order to lend further support to the verification.

These sources are financial publications, academic journals, economics and financial books.

Verification of propositions five and six relies primarily on Federal Reserve data. However, to establish a better understanding of the empirical data, an explanation of monetary theory involved is presented. Theory is gleaned from academic journals and other publications. Again, where such sources would contribute to an understanding of events, comments from other sources are introduced.

Proposition seven is confirmed by a search of the literature and use of a questionnaire. The search of the literature relies on academic journals, textbooks, and results from surveys of the National Industrial Conference Board. An additional source used to verify proposition seven is the results of a questionnaire. In May of 1969, a questionnaire was sent by this writer to all firms issuing bonds whose names were entered on the new issues calendar during the period 1965-1966.[4] There was a total of 316 such firms. Some 166 companies replied--a 52 per cent response rate. Table I classifies the responding firms into broad industrial groupings. Data from the questionnaire will be brought into the discussion of this study at various points. Comments from some of the respondents will also be included

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[4]The new issues calendar is described below, pp. 101-104. and in Appendix B. A detailed description of both the respondents and the questionnaire can be found in Appendix A.

TABLE I

INDUSTRY CLASSIFICATION 166 RESPONDENTS

Type	Number	Percent of Total
Utility	78	47
Industrial	65	39
Transportation	9	05
Real Estate	1	01
Finance	13	07

because they lend some insight into the thinking of financial executives responding to the questionnaire.

One important restriction must be placed on using these responses, a restriction springing from the sample, itself. This sample does not represent all firms entering or trying to enter the bond market in 1965-1966 although it is a census of firms listed on the new issues calendar. The calendar reflects the judgment of the editor of The Commercial and Financial Chronicle. If in his opinion the issue stands a chance of reaching the market, he will enter it on the calendar; if not, he does not list it.[5] Consequently, the firms represent those which are least likely to be shut out of the market, i.e., to be subject to severe credit rationing.

[5]See the letter reproduced in Appendix B from Sidney Brown of the Chronicle to this writer.

Outline of the Study

Chapter II of this study examines the two demand forces of loanable funds. The Federal government initiated a "Keynes cum growth" fiscal policy in 1964 to bring the economy to a level of full employment. The decline in Federal revenues resulting from this policy coincided with an increase in expenditures for Vietnam. The result was an increase in the demand for loanable funds. Because of the pressure of rising output on capacity, businesses were catapulted into the external financial market as their internally generated funds (retained earnings plus depreciation) became inadequate to finance capital expenditures.

Chapter III emphasizes the role of the Federal Reserve over the period. Specifically, this role was generally one of expansionary policies until the last quarter of 1965, at which time the Federal Reserve restricted the supply of reserves to the banking system. The Federal Reserve was attempting to restrain the pace of borrowing in order to dampen inflation and to ameliorate deterioration in the balance of payments. By restricting the flow of reserves, the Federal Reserve contributed to instability in financial markets. Banks began to liquidate their secondary reserves in an attempt to obtain reserves with which to make business loans. Financial intermediaries became illiquid as customers withdrew funds to place in higher yielding instruments. Investment bankers found it difficult to distribute new

issues. Corporations surged into the bond market in their quest for funds. The market reached panic proportions as the demand for liquidity became intense. Then, the panic subsided quickly: The Federal Reserve made it clear it would supply reserves to commercial banks through the discount window to ensure an orderly contraction of business loans, and fiscal policy assumed a stance at least nominally restrictive.

Chapter IV is a summary and recapitulation of the argument of Chapters II and III. It separates an examination of the financial decision making process (which follows) from an examination of the financial environment.

Chapter V begins the process of examining the role of financial decision making. This study is concerned with financial myopia and its consequence, a financial panic. To support this contention, Chapter V examines evidence from economic literature which indicates that the entrepreneur does not pursue his objectives rationally. He often bases his decisions on ephemeral factors, seeming to assume the present to be a valid predictor of the future. Only when there is a change in the environment of sufficient magnitude to capture his attention does the businessman respond. His response can destabilize the economy. In addition, this chapter will use the same literature to show how individual decisions relate to the economy as a whole. It will link the microeconomic decision with macroeconomic instability

to indicate how financial myopia of a single entrepreneur can reinforce financial myopia of another which, taken in the aggregate, destabilizes the financial market. Chapter V, then, examines economic literature in order to illuminate the irrational bases of the investment process and to link these bases at the microeconomic level to the economy as a whole.

Whereas Chapter V examines the entrepreneur and the impact of his decisions from the economics literature, Chapter VI concentrates on financial literature to determine the degree of foresight exercised in the capital-budgeting process. First, the investment decision is examined. It is seen that although fairly sophisticated techniques exist for evaluating investment proposals, businessmen tend to rely on the payback technique. The payback technique emphasizes the short-run because it concentrates on near-term gains. When these gains appear to be large and certain, businessmen decide that investment expansion is justifiable and so are catapulted into the capital market. By concentrating on present cash flows and projecting them into the near future to determine the profitability of investment, the payback technique of capital budgeting dovetails with economic accelerator analysis. Rising output and cash flows generate optimism in the business sector so that investments, which at lower levels of operation were at best marginal, become profitable. The businessman, consequently, accepts an

investment proposal on the basis of expected profits which were projected from the current high level of business activity. Extrapolation of present conditions into the future, a process emphasized in the payback technique, has the potential to induce a surge of financial demands. This potential depends, among other things, on widespread use of the payback technique, a requisite that financial literature verifies as being fulfilled. Second, the treasury function is examined. An examination of the literature supports the contention that businessmen often make the investment decision without anticipating their financial needs. Finally, evidence is presented to support the contention that businessmen pay little regard to timing their long-term debt issues. Financial managers do not appear to concern themselves with interest rates and overlook the possibility of capital rationing.

Chapter VII consists of a summary and conclusions. It will also offer some comments on the direction in which this study points for future research.

CHAPTER II

THE DEMAND FOR LOANABLE FUNDS

> It is in real, not monetary, factors that one must search for a satisfactory explanation.
> Alvin Hansen

This chapter analyzes the real forces in the economy which manifested themselves in a demand for loanable funds. The purpose of this chapter, then, is to examine the two primary sources of demand for loanable funds over the period 1961-1966, government and business. In so doing, propositions three and four will be verified:

The Federal government increased its demand for loanable funds as a result of spending for the Vietnam War.

With demand beginning to press on capacity, business increased its demand for funds in order to expand plant and permanent additions to working capital.

This chapter and the succeeding one will, taken together, verify proposition two.

In describing the financial pressures of the period, this chapter will indicate a penalty for a firm's failure to plan capital expenditures with regard to the availability of finance: When management does not plan adequately for its financial needs, it leaves itself exposed to the vicissitudes of the market. Specifically, when management

makes no attempt to anticipate its financial needs, and so to acquire finance in a favorable market climate, it at best must pay a high cost of finance; at worst it may be completely barred from acquiring finance.

On Panics

Panics are unique neither to finance nor to 1966. They have occurred in various areas of business activity and in different periods of time. A panic can be defined as Juglar defined it in the nineteenth century:

> A panic may be broadly stated as due to overtrading, which causes general business to need more than the available capital, thus producing general lack of credit.[1]

Juglar has presented an acceptable description of the credit crunch which occurred in 1966. This was a brief period of time surrounding the third quarter of 1966. Minsky explains the term credit crunch to be ". . . a colorful way of describing intense pressure upon banks and other financial institutions. . . ."[2] Like most panics, or credit crunches, this one was a culmination of a series of events occurring over an extended period of time.

The series of events leading to the financial panic consisted of an investment boom erected upon an expansive

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[1]Clement Juglar, A Brief History of Panics, 3rd ed., translated by DeCourcy W. Thom (New York, 1966), p. 3.

[2]Hyman Minsky, "The Crunch of 1966--Model for New Financial Crises?" Trans-Action (March, 1968), p. 44.

fiscal policy and followed by a restrictive monetary policy of the Federal Reserve. Emphasizing this interaction between expansive fiscal policy and restrictive monetary policy, Balles says,

> Far from being a 'freak' year, the causes of the tight money episode of 1966 seem to be deeply rooted in the new economics and its unwarranted faith in flexible tax rates as a balance wheel in the economy.[3]

Monetary policy had to be used, it will be demonstrated in Chapter III, because the "balance wheel" of fiscal flexibility failed to operate.

Fiscal Policy

Two factors contributed significantly to the Federal government's role in expansion of the 1960's. These were the Internal Revenue Act of 1964 and the Vietnam War.

Internal Revenue Act of 1964

The Internal Revenue Act of 1964 cut income tax rates in order to bring the economy to a full-employment position.[4] Significantly, this decline in tax rates, and thus in revenues flowing to the Federal government, occurred at a time when the Federal budget was already experiencing a

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[3]John J. Balles, "Tight Money and the New Economics," Financial Analysts Journal, XXIII (March-April, 1967), 33.

[4]Walter W. Heller, New Dimension of Political Economy (Cambridge, 1966), p. 65. The following five pages have profited greatly from Heller's analysis of the tax environment of the period. See Ibid., pp. 64-107.

deficit (see Table II and Figure 1). This, then, was a high point of the New Economics: government was already

TABLE II

FEDERAL GOVERNMENT BUDGETS, 1964-1966*
(BILLIONS OF DOLLARS)

	Receipts		Expenditures		Surplus or Deficit	
Quarter	NIA**	HEB**	NIA**	HEB**	NIA**	HEB**
1964-I	115.3	126.8	117.8	117.0	-2.5	9.8
II	112.2	120.4	118.5	117.8	-6.3	2.6
III	115.4	121.8	118.1	117.5	-2.7	4.3
IV	117.2	124.0	117.8	117.3	-0.6	6.7
1965-I	123.2	125.8	118.8	118.3	4.4	7.5
II	124.8	127.0	120.2	120.0	4.7	7.0
III	123.4	125.0	126.5	126.3	-3.1	-1.3
IV	127.4	126.7	128.5	128.5	-1.1	-1.8
1966-I	136.4	134.0	135.0	135.1	1.4	-1.1
II	141.4	139.5	138.4	138.9	3.0	0.6
III	145.3	143.0	146.5	146.8	-1.2	-3.8
IV	147.0	146.2	151.1	151.5	-4.1	-5.3

*Source: Federal Reserve Bank of St. Louis, Federal Budget Trends, November 7, 1969, p. 3.

**NIA is the national income accounts budget. HEB is the high-employment budget.

experiencing an enlargement of its debt, but economists were saying what was needed was an even larger deficit. Why was this so? Primarily, reduction in tax rates and enlargement of the deficit were necessary to balance the full employment budget, i.e., to have government receipts equal expenditures when the economy is (or would be) operating at a full employment level.

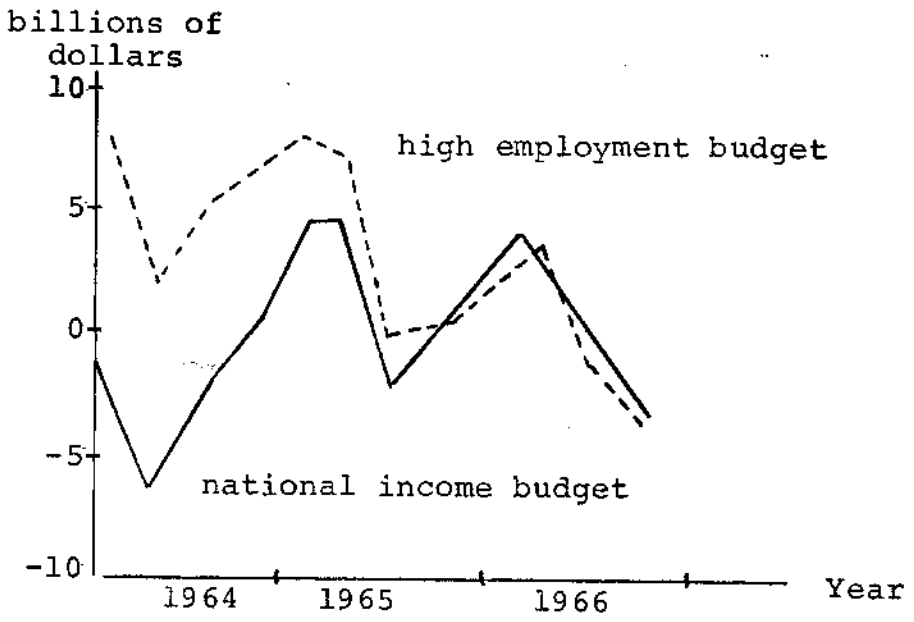

Fig. 1--Comparison of high-employment and national-income budgets, 1964-1966. Source: Table I.

An actual government deficit means little. A proper measure of the impact of government expenditures is what the federal budget would be at full employment (i.e., 4 percent unemployment) with the existing tax structure. This measure is the high employment budget. Hence, in spite of the fact that the government may be experiencing, say, an actual $1 billion deficit, comparing present government expenditures with tax revenues that would result from current tax rates at an unemployment rate of 4 percent may reveal a different picture. Indeed, a high employment surplus may exist.

Now, the propensity for the government sector to siphon off revenue from the private sector through taxing without reinjecting it is referred to as fiscal drag. Economic growth means higher incomes. Higher incomes move individuals

to progressively higher tax brackets so that greater amounts of revenue flow to the Treasury from tax collections. Fiscal policy exerts a drag on economic growth if these revenues are not reinjected into the financial stream. This point was noted by Hamberg:

> The significance of this fiscal behavior is that large chunks of incremental income have been removed from the stream of private expenditures without being offset by sufficient increments in Government spending.[5]

The proper fiscal policy objective to pursue, then, is to balance the high employment budget. When it is balanced, fiscal drag is eliminated. The high employment budget can be balanced by either increasing government expenditures or by decreasing tax rates. Both of these techniques were embodied in the Internal Revenue Act of 1964. Figure 1 shows the relative deficits as measured by the national income and the full employment budgets. Notice that a balanced high employment budget was attained in mid-1965. As Heller says, "Tax cuts of $19 billion, less $3 billion of payroll tax increases, were the major form of the dividend."[6] A total of $48 billion in fiscal dividends (increased expenditures

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[5]D. Hamberg, "Fiscal Policy and Stagnation Since 1957," Southern Economic Journal, XXIX (January, 1963), 214.

[6]Heller, p. 71.

or decreased revenues) was deployed over the period 1960-1965.[7]

Figure 2 illustrates the relationship between potential and actual gross national product. From 1958 to 1965, the

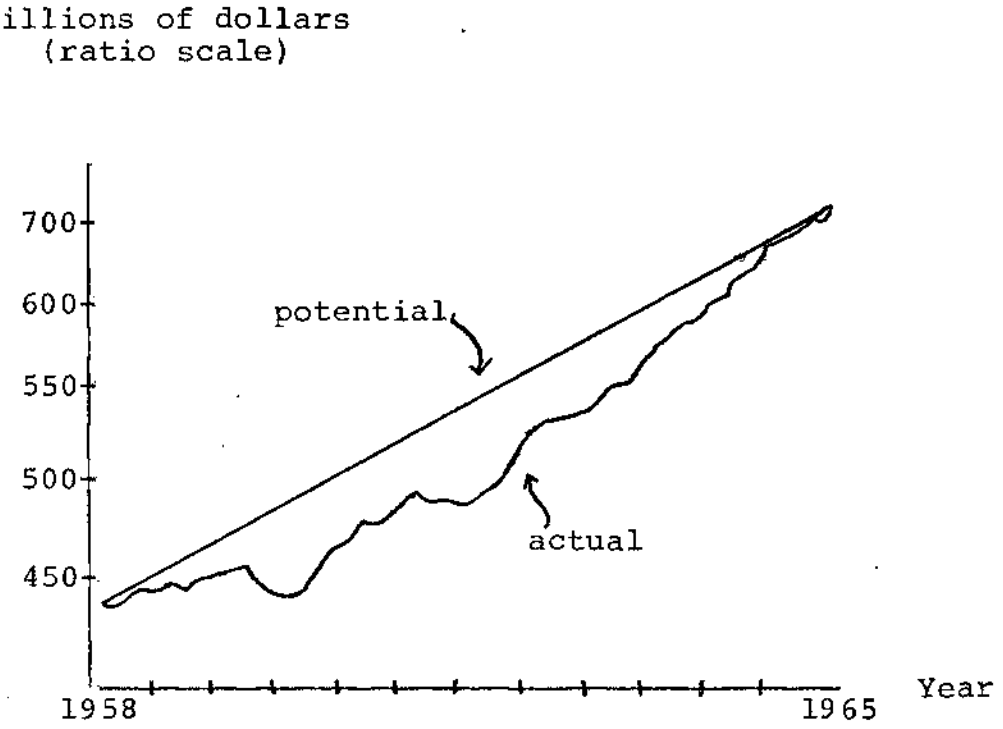

Fig. 2--Gross national product, actual and potential. Source: Economic Report of the President, January, 1967, p. 43.

cumulative gap totaled $260 billion.[8] The potential output trend represents an unemployment rate of 4 percent and growth in gross national product of 3-1/2 percent to 4 percent

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[7] Ibid. It should be pointed out that passage of the tax cut came in the few months preceding the national elections, a sequence of events implying political motivation to use tax cuts.

[8] Economic Report of the President (January, 1967), pp. 42-44.

annually. The level of potential output increases with time because of both increased accumulation of capital and increased labor force.[9]

Heller is profuse in his praise of the "Keynes-cum-growth" economic policy demonstrated in 1964.[10] Unfortunately, however, the ultimate conclusions of the implementation of the tax cut will never be known with certainty, for the Vietnam War intervened. "And until Vietnam intervened," Heller comments, "the tax cut had brought us back to a 'balanced budget in a balanced economy'. . . ."[11]

Vietnam Expenditures

Expenditures for Vietnam began to increase rapidly in mid-1965. In the second quarter of 1965, total expenditures for national defense were $49.1 billion; by the fourth quarter of 1966 they had increased to $65.5 billion, or an increase of approximately 32 percent.[12] On an annual compounded basis, the increase in defense expenditures from 1965-I to 1966-II was 21.1 percent.[13] Total Federal

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[9] See, for example, Joan Robinson, The Accumulation of Capital (New York, 1966), p. 173.

[10] Heller, p. 70.

[11] Ibid., p. 72.

[12] Economic Report of the President (January, 1967), Table B-1, p. 213.

[13] "Federal Budget Trends," Federal Reserve Bank of St. Louis Review, November 7, 1969, p. 7.

government expenditures over the same period increased 16.5 percent at an annual rate compounded,[14] while gross national product in current dollars expanded at an annual rate of 9.6 percent.[15]

Such an increase as this in defense spending, or in Federal government expenditures, is not necessarily significant. For example, when unemployment exists so that resources are available, then an expansion in money demand can simply set these idle resources in motion. On the other hand, an increase in aggregate demand when the economy is fully employed is another matter. The increased demand for resources must bid against existing demand, with the result being an increase in the price level. This situation existed when expenditures accelerated for Vietnam in mid-1965. By increasing, these expenditures ". . . reinforced the previously planned fiscal stimuli and the forward momentum of a strong economy close to full employment."[16]

Reflecting a lack of coordination between the administration and the central bank, the Federal Reserve saw its expectations of an easing of pressures in financial markets dashed as the Federal government surged into the market to acquire finance:

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[14] Ibid., p. 5.

[15] "National Economic Trends," Federal Reserve Bank of St. Louis, October 31, 1969, p. 8.

[16] Economic Report of the President (January, 1967), p. 46.

> In July escalation of the war in Viet Nam, coming as it did on top of the unexpectedly favorable performance of the economy, suddenly reversed these midyear expectations as to interest rates. Bond yields rose generally--particularly for U.S. Government securities, which had previously lagged behind other yields.[17]

Government Demand for Funds

An upsurge in expenditures for military hardware came on the heels of the Internal Revenue Act of 1964 which had slowed the flow of funds to the Federal government. Consequently, the Federal government had to resort to deficit financing (selling government securities in the open market) in order to acquire the necessary finance with which to make payments. The cash budget of the Federal government reflected the flow of finance in the period. In the calendar year 1966, the cash deficit rose to $5.7 billion, the highest level since 1961.[18] "The step-up of $12 billion in defense outlays accounted for more than one-half of the $23 billion increase in total Federal cash payments."[19] Table II shows the pattern of cash receipts and disbursements for the years 1965 and 1966. The two bottom rows of figures indicate the use of a surplus or the source for a deficit. For example,

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[17] Annual Report of the Board of Governors of the Federal Reserve System, 1965 (Washington, D.C., 1966), p. 47.

[18] Annual Report of the Board of Governors of the Federal Reserve System, 1966 (Washington, D.C., 1967), p. 49.

[19] Ibid.

TABLE III

U.S. TREASURY FINANCE, CASH BASIS, 1965-1966, BILLIONS OF DOLLARS*

	1965**				1966**			
	I	II	III	IV	I	II	III	IV
Cash receipts	30.7	37.7	29.2	25.8	33.3	46.2	34.6	31.1
Cash payments	28.3	32.6	33.1	34.0	34.6	36.2	41.3	38.8
Surplus, or deficit (-)	2.4	5.1	- 3.9	- 8.1	- 1.3	10.0	- 6.7	- 7.7
Less: Change in cash balance	2.0	3.1	- 4.3	- 2.3	- .1	6.6	- 4.1	- 2.5
Equals: Net cash borrowing or replacement (-)	- .5	- 2.0	- .4	5.7	1.0	- 3.7	2.4	5.1

*Source: Annual Report, 1966, p. 50.

**Figures may not add due to rounding.

in 1965-IV the Federal government experienced a deficit of $8.1 billion which was financed with $2.3 billion from Treasury cash balances and with $5.7 billion from the financial markets. Notice that 1966-II breaks the deficit pattern. The surplus generated in this quarter resulted primarily from the acceleration of tax payments from businesses together with the seasonal rise in receipts because of annual personal income tax payments.[20] Although the accelerated payments from the business sector lessened Federal government demand for external funds from the sale of bonds, demand was shifted to the corporate sector. As Hoadley says,

> Funds expected to be available to finance private business plans suddenly were drawn away by the federal government. This in turn necessitated new heavy borrowing, placing additional pressures on commercial banks. In short, to help ease the federal deficit, the government actually induced a new large private deficit which had to be financed out of a taut money market.[21]

This comment by Hoadley receives additional significance whenever the financial processes of business over the entire period of 1964-1966 are examined. Hence, the next section of this chapter examines the demand for loanable funds from the business sector.

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[20] Ibid., pp. 46 and 51.

[21] Walter Hoadley, "Reappraisal and Readjustment Under Way Rather Than Recession," The Commercial and Financial Chronicle, June 29, 1967, p. 32.

Capital Goods Boom

It is now necessary to concentrate on the verification of proposition four:

With demand finally beginning to press on capacity, business increased its demand for funds in order to expand its fixed investments.

The technique followed will be to use accelerator analysis and apply it to empirical data for the period. After applying this model to the decision to expand fixed investments, the next step will be to relate the decision to the actual expenditure. These two steps are done in the first part of this section.

The second part of this section examines the relationship between expenditures and the demand for funds by the business sector. It will do so by constructing a model which introduces cash flow as an explanatory variable. These two parts of the section, taken together, will verify proposition four.

Acceleration of Investment

Early in 1964, the pace of growth in total spending was such that there was little upward pressure on the price level. Ample resources were available for the production process. As Robinson says, the economy was operating well within its "inflation barrier."[22] Money demand had not begun

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[22]Robinson, pp. 48-50, 91.

to exceed the productive capacity of the economy so that the price level was relatively stable.

Expansion of business investment for the period 1963-1966 can be explained through use of economic accelerator analysis. The accelerator, in its earliest formulation,[23] presented investment as a linear function of the change in output in the form[24]

$$I = a(\Delta Y)$$

where

I = investment

ΔY = change in output

a = coefficient of investment.

Hence, a change in output will necessitate a change in the volume of investment. However, an increase in sales may not necessarily lead to an expansion of investment. Such a change will induce investment only when the firm is operating at or near maximum capacity. Consequently, consideration in the basic model must be made of the level of capacity used by business. As Bourneuf has stated, "I think of the acceleration principle as stating that investment is positively correlated to output and negatively

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[23]For a history of accelerator theory, see Edwin Kuh, "Theory and Institutions in the Study of Investment Behavior," American Economic Review, LIII (May, 1963), 260-268.

[24]See Gardner Ackley, Macroeconomic Theory (New York, 1961), pp. 493-497. For detailed discussion of the accelerator in this study, see below pp. 28-29 and 136-143.

correlated to capital stock or capacity."[25] Taking capital stock into consideration, the model becomes $I = a(\Delta Y - \Delta K)$, where all variables are similar to the simpler version above and ΔK is the change in capital stock.[26]

The specific model used in this study to explain the increase in capital appropriations and, ultimately, expenditures of business is one developed by Hart.[27] Hart's modification of the usual accelerator model is to use a ratio of new orders to capacity as the determinant of appropriations for plant and equipment. He emphasizes the appropriation decision, rather than assuming investment to follow mechanically from the pressure of output on capacity. Hart has agreed with Almon, who says, "Appropriations are thought of as the final stage of approval for capital expenditures," in other words, "a confirmation of plans represented in the annual budget."[28] Hart uses what he calls the flow of new

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[25]Alice Bourneuf, "Manufacturing Investment, Excess Capacity, and the Rate of Growth of Output: Reply," American Economic Review, LVI (March, 1966), 172.

[26]See, for example, John R. Meyer and Robert R. Glauber, Investment Decisions, Economic Forecasting, and Public Policy (Boston, 1964), p. 26.

[27]Albert G. Hart, "Capital Appropriations and the Accelerator," Review of Economics and Statistics, XLVII (May, 1965), 123-136.

[28]Shirley Almon, "The Distributed Lag Between Capital Appropriations and Expenditures," Econometrica, XXXIII (January, 1965), 182. For their implicit concurrence, see Reynolds Sachs and Albert G. Hart, "Anticipations and Investment Behavior: An Econometric Study of Quarterly Time Series for Large Firms in Durable Goods Manufacturing," Determinants of Investment Behavior, edited by Robert Ferber (New York, 1967), pp. 519-520.

orders as one component of the independent variable instead of using current output. Current output is information already digested by the decision making process. That is, by the time actual output occurs, its impact on management has already been felt. "Current output," he writes, "in a sense represents obsolete information. . . . Hence, if a ratio of output to capacity is useful, a ratio of orders to capacity should be more so."[29] In other words, as he points out elsewhere, current and even recent output are ". . . retrospective information, whereas we want ex ante information."[30] Using new orders in his model, he believes, introduces an ex ante element into the framework.

Table IV shows the relationship between manufacturing output, capacity, and utilization rates for the years 1963-1966. The utilization rate is simply output divided by capacity. Since output is more volatile than capacity, the quotient increases as business activity expands. Businessmen attempt to satisfy increases in sales from existing capacity, and so increase the utilization rate. Capacity is computed by the Board of Governors, Federal Reserve System using output statistics (1957-1959 is the base period) and

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[29]Hart, "Capital Appropriations," p. 126.

[30]Hart, Relation of Manufacturer's New Orders to Output and Capacity," unpublished paper, April 11, 1968, p. 1.

TABLE IV

MANUFACTURING OUTPUT, CAPACITY, AND UTILIZATION RATES 1963-1966*

Year	Output	Capacity	Utilization
1963 I	121	147	82
II	125	149	84
III	126	150	84
IV	127	151	84
1964 I	129	153	85
II	133	154	86
III	135	156	87
IV	136	157	87
1965 I	141	159	89
II	144	162	89
III	146	165	89
IV	149	167	89
1966 I	155	170	91
II	158	173	91
III	160	176	91
IV	161	179	90

*Source: Economic Report of the President, January, 1967, p. 253. Base year 1957-1959 = 100.

utilization measures are obtained by McGraw-Hill, Inc.[31] McGraw-Hill surveys industries and asks the question, "How much of your capacity were you operating at the end of ___?"[32] The data are then combined to yield a capacity measure. For example, a company producing 100 units annually and whose management estimates that it is utilizing 90 percent of its

[31] See Frank de Leeuw, "A Revised Index of Manufacturing Capacity," Federal Reserve Bulletin, November, 1966, pp. 1605-1615.

[32] Ibid., p. 1611 n.

capacity has a computed capacity of $\frac{100}{.90}$ = 111 units of output per year. If subsequently the firm produces 91 units and is utilizing 70 percent of its capacity, total capacity available has risen to 130 units per year.[33]

Accelerator and Financial Markets.--To establish an overall view of the period and to begin statistical verification of proposition four, the following question can be posed: What is the relationship between the ratio of new orders to capacity (ORCAP) and instability in the financial market? In other words, assuming ORCAP to be a major decision criterion for capital goods expansion, how would this criterion relate with instability in the capital market? To answer this question, a correlation coefficient between AAA interest rates (from Table XIX) and ORCAP for 1964-1966 (see Table V) was computed.[34] Interest rates on AAA corporate bonds are used as a measure of credit availability

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[33]For a discussion of problems involved in measuring capacity, see Daniel Creamer, "Capital Expansion and Capacity in Postwar Manufacturing," Studies in Business Economics, No. 72, National Industrial Conference Board, 1961, pp. 17-19.

[34]A model similar to this one-step relationship can be found in Albert R. Koch, "A Method of Projecting Expenditures and Financial Requirements of Manufacturing Corporations Under Full-Employment Conditions," Conference on Research in Business, National Bureau of Economic Research (New York, 1952), pp. 121-138. Kaufman also includes capacity as a determinant of instability in external financial markets. Henry Kaufman, "Pressures on Capital and Money Markets to Increase in 1968," The Commercial and Financial Chronicle, October 5, 1967, p. 1f.

TABLE V

NEW ORDERS, CAPACITY, AND APPROPRIATIONS
1963-1966

	New Orders Flow*	Capacity**	Appropriations*** (millions of dollars)	ORCAP*
1963-I	124.0	147	2756	0.8387
II	125.9	149	3269	0.8444
III	125.6	150	3657	0.8348
IV	125.4	151	3941	0.8255
1964-I	130.1	153	4123	0.8485
II	135.5	154	4656	0.8745
III	137.1	156	4906	0.8765
IV	136.2	157	4344	0.8619
1965-I	143.6	159	5027	0.8968
II	145.9	162	5509	0.8967
III	147.1	165	5622	0.8897
IV	151.4	167	6108	0.9005
1966-I	158.0	170	6342	0.9261
II	161.5	173	6685	0.9306
III	161.4	176	5966	0.9147
IV	158.2	179	5961	0.8825

*Source: A. G. Hart, "Relation of Manufacturer's New Orders to Output and Capacity," unpublished paper, April 11, 1968, pp. 2-4. Base year 1958 = 100.

**Source: Table IV.

***"Quarterly Survey: Capital Appropriations," National Industrial Conference Board, Investment Statistics, 1968. In millions of dollars.

in the financial markets for the period.[35] Coefficient of correlation for the period was 0.8358. The t value for this coefficient was 3.237, indicating the correlation to be significant at the .01 level.

[35]Justification for this measure is found on pp. 102-107.

Using AAA interest as the dependent variable (Y) and ORCAP as the independent variable, a regression equation of $Y_t = -10.64 + 17.34\ X_{t-1}$ was derived. A change of .01 in ORCAP was associated with a 1.734 percent change in AAA bond interest rates. The coefficient of determination was 0.6987. The standard error of the estimate, which measures the variability of the observed points about the line of average relationship, was 0.2796. Interpreting this measure, given a level of ORCAP in 1966-I of 0.9261 the equation yields a point estimate of 5.42 percent in 1966-II. However, use of the standard error of the estimate permits an interval estimate. For example, 95 percent of the time, an ORCAP of 0.9261 will be associated with an interest rate that falls within 2 standard errors of the point estimate: 95 percent of the time an ORCAP of 0.9261 will be associated with an AAA interest rate in the next quarter of between 4.90 percent and 5.94 percent.[36]

The lag of one quarter can be thought of as the time period required for recognition of the need for expansion, appropriation of finance, and entry into the financial market. Here is statistical support, then, for proposition four. There appears to be an association between the

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[36]Although the coefficient of determination (R^2) is not impressively large and the interval is wide, the reader must be aware that demand for corporate debt money is only one side of the market. Supply played a major role. See below, pp. 44f.

pressure of new orders on existing capacity and a rising bond market.

The following pages will examine this association by constructing a statistical model. It breaks down into separate, distinct steps the association between the decision to expand fixed assets and the financial squeeze of 1966.

New Orders, Capacity, and Appropriations.--Table IV shows the pattern of appropriations for the years 1963-1967. These data are collected by the National Industrial Conference Board on a quarterly basis from the 1,000 largest manufacturers found in the 1957 Fortune magazine.[37] To test statistically the impact of new orders/capacity (ORCAP) on appropriations, the data were analyzed using an IBM 1620 computer.

The computed coefficient of correlation between ORCAP and appropriations was 0.9215. Since the t value of 3.568 was greater than 2.947 (t at the .01 level), the null hypothesis that the correlation was not significant was rejected and its alternative accepted: The correlation between ORCAP and appropriations was significant. We can conclude, then, that there exists a strong positive association between ORCAP and appropriations.

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[37]Morris Cohen, "The National Industrial Conference Board Survey of Capital Appropriations," The Quality and Economic Significance of Anticipations Data, National Bureau of Economic Research (Princeton, 1960), pp. 300-301.

Another statistical technique can be used to determine the portion of total variation among appropriations that can be associated with differences in the ORCAP ratio. Using the ratio of new orders to capacity as the independent (X) variable and appropriations as the dependent (Y) variable, the data yielded a regression equation of Y = 23866 + 32810X (X). A change of .1 in the ratio of new orders/ capacity (X) is associated with a change of $3.281 billion in appropriations (Y). The standard error of the estimate is 440.34. This result compares favorably with that obtained by Hart. His equation had a coefficient of determination of 0.8719 for the period 1954-1963.[38]

Appropriation and Expenditure.--Appropriating funds is one step in the capital budgeting process. Spending them is another. The relationship between appropriations and expenditures has been validated by several statistical studies.[39] "The ability of the appropriations data to predict actual expenditures is clear-cut . . ." writes Hart.[40]

Table VI shows the results of simple correlation analysis of appropriations and capital expenditures for 1964-1966.

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[38]Hart, "Capital Appropriations," p. 131.

[39]See, for example, ibid., pp. 127-129; Bourneuf; and Almon, "Lags Between Investment Decisions," pp. 201-205.

[40]Hart, "Capital Appropriations," p. 133.

TABLE VI

CORRELATION AND REGRESSION RESULTS, APPROPRIATIONS AND EXPENDITURES
1964-1966

Dependent Variable (Expenditures)	Constant	Coefficient of Regression	Independent Variable (Appropriations)	r	r^2	t	s.e.
Y_t	-224.58	0.8608	X_t	.935	.875	3.62	368.9
Y_t	- 23.97	0.8511	X_{t-1}	.960	.921	3.72	282.4
Y_t	262.64	.8271	X_{t-2}	.977	.955	3.79	202.5

The coefficient of correlation (r) of the relationship between the two variables increased as the lead of appropriations increased. Association between appropriations in quarter t-2 and expenditures in quarter t was stronger than that between appropriations in quarter t and expenditures in quarter t ($r = 0.9776$ versus $r = 0.9354$, respectively). All three coefficients were significant at the level of .01.

The regression equations are also included in Table VI. The highest coefficient of determination was in the equation for appropriations in quarter t-2 and expenditures in t($r^2 = 0.9557$). Here, approximately 95 percent of the changes in expenditures in quarter t can be associated with changes in appropriations in t-2.

Results of this simple model of the relationship between appropriations and expenditures show empirically closeness of the relationship between appropriations and expenditures of the period 1964-1966. Although it is not a distributed lag model, the model is sufficiently developed to indicate that there is indeed a close association between appropriations and expenditures.[41]

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[41]The high degree of association achieved in this simple regression relative to the complex distributed lag models is an example of a paradox sometimes found in economic analysis: A better explanation of relationships is derived from crude models of behavior than from complex ones. As Meyer says, "When predictions obtained from fully specified economic models are compared with ones obtained from simple . . . ones, the latter as often as not yield superior results." John R. Meyer, "The National Industrial Conference Board Survey of Capital Appropriations: Comment," The Quality and

Examination of empirical and statistical data for the years 1964-1966 has yielded the following information: Corporations seem to have responded to the pressure of new orders on existing capacity by deciding to expand their investments in fixed assets. This decision was followed by the actual expenditure. Now it is necessary to trace the impact of these expenditures on loanable funds in order to complete the verification of proposition four.

Corporate Demand for Funds

In order to finance expenditures for fixed investment in 1966, management had to marshall large-scale finance. From where could this finance come? One source available to firms is internally generated funds, and these funds are readily available. However, when internal funds become inadequate to finance the expenditure, the firm must move to external sources. Table VII shows the relationship between cash flow, which is working capital generated from operations (retained earnings plus depreciation), and actual capital expenditures. The increased demands for goods and services, coming from both the consumer sector, as demand increased with the decline in income taxes, and from the

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Economic Significance of Anticipations Data, National Bureau of Economic Research (Princeton, 1960), p. 321. T. Haavelmo also has noted the "lower degree of accuracy of the would be economic laws" found in sophisticated models than that found by "cruder" methods. "The Role of the Econometrician in the Advancement of Economic Theory," Econometrica, XXVI (July, 1958), 344-355.

TABLE VII

CORPORATE GROSS SAVING AND CAPITAL EXPENDITURES, 1963-1966*
(BILLIONS OF DOLLARS)

Year	Gross Saving	Capital Expenditures	
		Fixed Investment	Inventory
1963-II	$43.8	$38.9	$ 3.5
III	45.5	39.7	4.4
IV	45.2	41.1	4.6
1964-I	48.7	43.6	3.7
II	49.3	43.8	4.1
III	50.2	45.2	3.4
IV	49.4	47.4	7.0
1965-I	54.5	53.1	8.8
II	54.6	54.5	7.3
III	56.1	56.4	8.4
IV	57.8	59.6	7.5
1966-I	58.8	62.0	8.6
II	59.2	62.1	12.2
III	59.8	64.3	12.1
IV	63.5	64.6	16.4

*Source: Federal Reserve Bulletins, November, 1965, p. 1612; August, 1967, p. 1432.

government sector, as Vietnam spending increased, induced an expansive investment policy on the part of businesses. Expenditures for fixed assets and inventories began to exceed internally generated funds at an increasing rate.

With businesses becoming excess investors, they were forced into the external market in an attempt to find individuals or institutions which would place finance at their disposal.[42] As the gap between capital expenditures and

[42]For a discussion of the destabilization which can result when firms marshall large-scale finance, see Dennis

internal funds widened (see Figure 3), this search became ever more demanding.[43] During the early part of the decade, an ample supply of finance was available. Firms had sufficient internal funds and individuals were supplying finance to financial intermediaries, especially insurance companies and banks, at an adequate pace. In other words, the demand for loanable funds to use for expanding the capital base was matched, in real terms, by an equal supply. New money was not created in excess of the supply of real resources, so that output increased under conditions of relatively stable prices.

However, the pace of investment accelerated, beginning in 1964, and the rush began to obtain finance in order to acquire command over real goods and services. As Stevenson observed,

> Thus, it has become amply apparent that the total demand for goods and services has begun to race its wheels at a pace exceeding the economy's short-run supply capabilities.[44]

Robertson, "Some Notes on Mr. Keynes' General Theory of Employment," Quarterly Journal Economics, LI (November, 1936), 183n; Keynes, "Alternative Theories," pp. 246-247; and the comments by Bertil Ohlin, Ralph Hawtrey, and Robertson at the conclusion of Keynes, "Alternative Theories."

[43] It should be noted that another factor reducing the adequacy of corporate cash flow was the steadily advancing date of corporate income tax payments, moving toward a pay-as-you go basis. See the comment by Hoadly above, p. 27.

[44] Frederick W. Stevenson, "The Investment Environment at Year End," The Conference Board Record, December, 1966, p. 9.

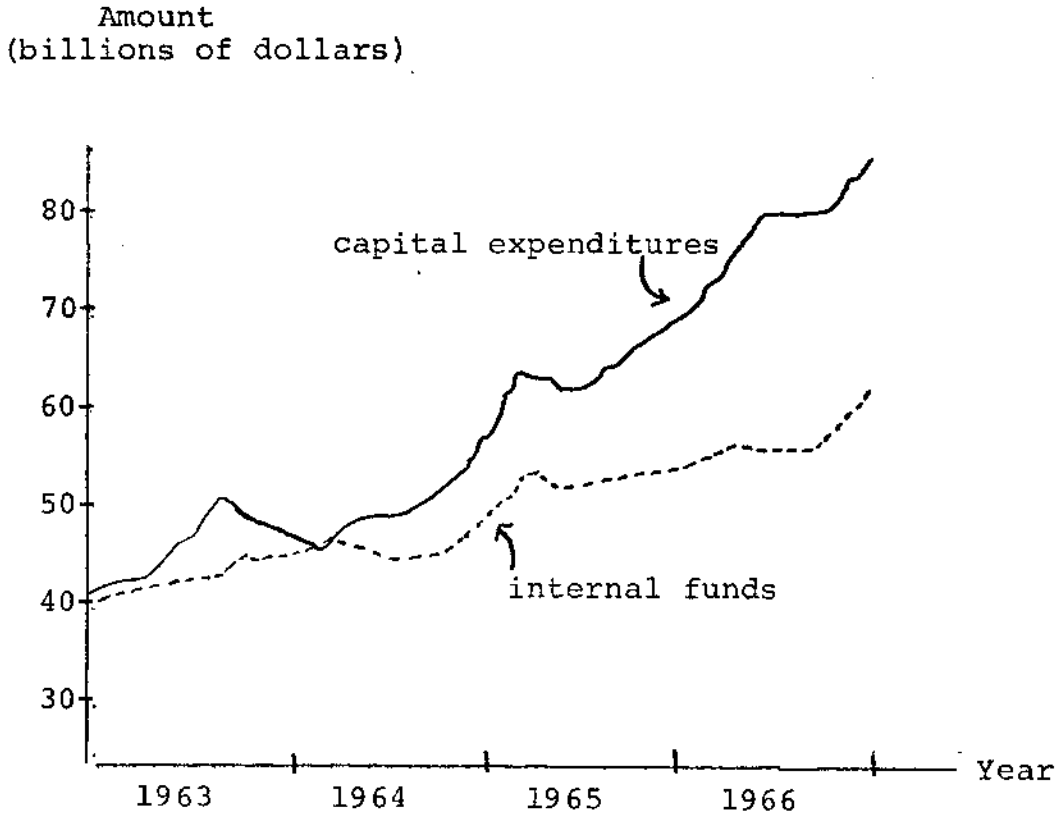

Fig. 3--Corporate nonfinancial business capital expenditures and internal funds, 1963-1966. Source: Table VIII.

Firms expanded investment and turned to banks as a source of finance. Table VIII shows the actual data upon which Figure 3 is constructed. The gap between capital expenditures and internal funds opened and appears to have been filled by bank loans. Dependence on banks by businessmen is examined in detail in Chapter VI;[45] however, at this point it should be noted that businessmen show little aversion to using bank finance for fixed asset expansion. As an electronics manufacturer is quoted by Mathes,

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[45]See pp. 163-166, 175-177.

TABLE VIII

CAPITAL EXPENDITURES, BOND PROCEEDS, AND BANK LOANS, 1965-1966* (BILLIONS OF DOLLARS)**

Year	Capital Expenditure	Expenditures Less Gross Saving	Bank Loans	Bond Proceeds
1965 I	$61.9	$ 7.4	$ 9.8	$ 4.4
II	61.8	7.2	8.8	5.3
III	64.8	8.7	7.4	7.9
IV	67.1	9.3	11.3	3.9
1966 I	70.6	11.8	6.3	12.4
II	74.3	15.1	14.5	9.3
III	76.4	16.6	4.8	10.8
IV	81.0	17.5	5.1	8.4

*Source: Federal Reserve Bulletin, August, 1967, Flow of Funds Table 4, p. 1432.

**Current dollars at annual rates.

> I prefer financing growth through the use of term loan funds. I like the discipline of a term loan, and I like the idea of working with a local bank and local bankers.[46]

And, as the president of an apparel manufacturing company is quoted, "I believe in bank borrowing to the limit permitted, and in being constantly in a debt position with respect to banks."[47] Use of this source of finance increased the current and intermediate liabilities of business firms. The increase in current liabilities was matched on the asset side of the balance sheet by an increase in long-term assets.

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[46]Sorrell M. Mathes, Growth Financing in the Smaller Firm, National Industrial Conference Board, Managing the Moderate-sized Company, Report No. 1 (New York, 1967), p. 16.

[47]Ibid. See also the comments cited on pp. 175-177.

By using a relatively short-term source (bank commercial loans) for the long-term use of plant and equipment, business lessened its liquidity.

Figure 4 illustrates the increasing illiquidity of business over the period 1962-1966. The ratio measures the

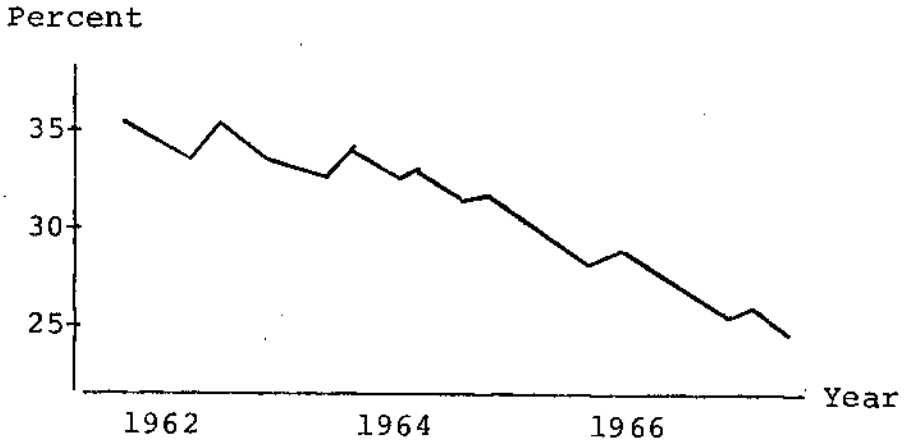

Fig. 4--Ratio of current assets less inventories to current liabilities, 1962-1966. Source: "Recent Shifts in Corporate Financing," Federal Reserve Bulletin, August, 1967, p. 1280.

relationship of current assets less inventories to current liabilities.[48] Illiquidity occurs because by using a temporary source to finance a permanent need necessitates refinancing of these assets at an early point in time. In other words, the firm may be forced back into the external market. So long as banks have sufficient reserves, businesses can refinance these loans with their banker. And banks had

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[48]Inventories are the least liquid of current assets. This measure is often called the "acid test ratio." See Robert K. Jaedicke and Robert T. Sprouse, Accounting Flows: Income, Funds, and Cash (Englewood Cliffs, 1965), p. 140.

sufficient reserves for meeting refinancing needs and new financing needs through 1966-I. However, as monetary policy became increasingly stringent, banks became an unavailable source of funds. In 1966-III and 1966-IV, the volume of bank loans to business dwindled to a trickle. Firms had to seek another source of funds to fill the expenditure gap of $11.8 billion and $12.4 billion during the last two quarters of the year.

This other source was long-term bonds. Firms surged into the bond market, contributing to an increase in the long-term interest rate. Figure 5 shows the relationship between various long-term interest rates. Businesses did not enter the market on their own terms, they were forced into a capital market unable to supply all the demands for funds pressing on it. These firms did not acquire their long-term finance when the market was calm and interest rates stable, but leaped into a frenetic market to support capital expenditures timed without sufficient forethought to the availability of finance. The flow of funds in 1964 and 1965 (before the actual squeeze) was similar to that of the period Hickman studied:

> Throughout most of the period of secular expansion 1900-1932, cash balances appear to have been drained off . . . so that corporations necessarily resorted to the banking system for short-term funds. . . .[49]

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[49] W. Braddock Hickman, Trends and Cycles in Corporate Bond Financing, National Bureau of Economic Research, Occasional Paper 37 (New York, 1957), p. 10.

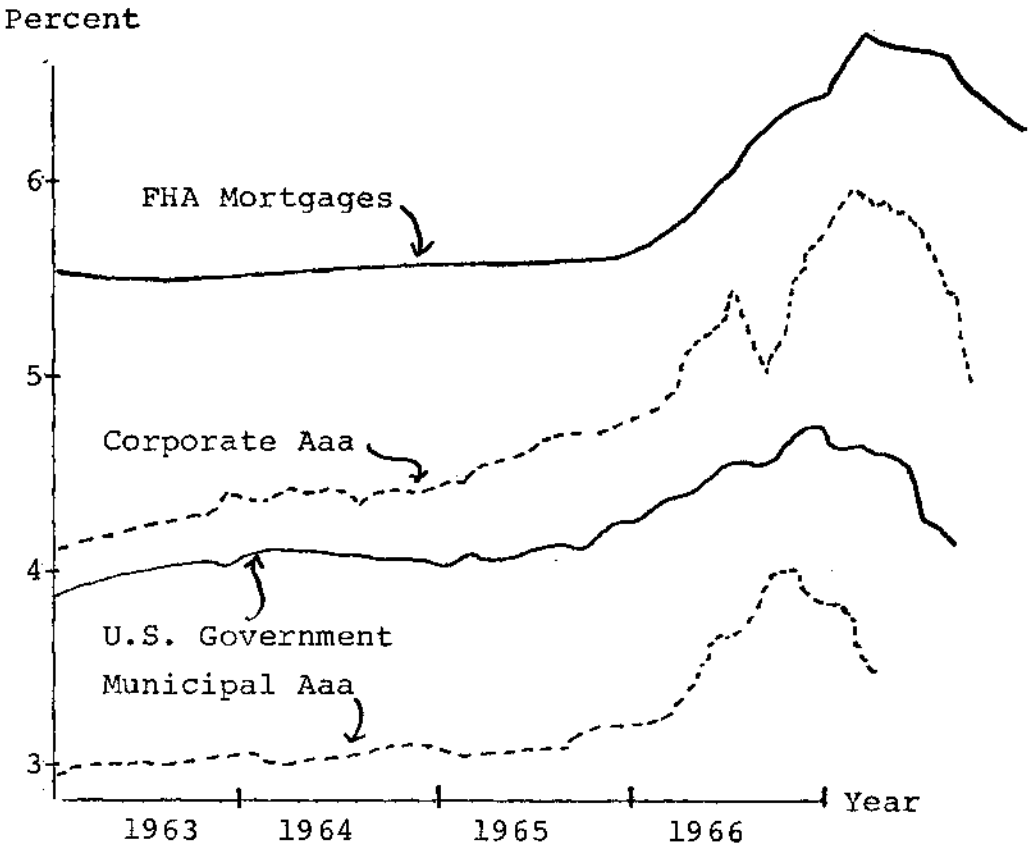

Fig. 5--Long-term interest rates, 1963-1966. Source: Federal Reserve Bulletin, February, 1967, p. 199.

Table IX classifies the responses to question number 1 in the questionnaire sent to firms on the new issues

TABLE IX

FIRMS FINANCING CAPITAL EXPENDITURES THROUGH DEBT ISSUES, 1964-1966

Type	Yes	No
Utility	67	8
All Others	36	46

calendar. This question read, "Was the bond flotation undertaken by your firm in the period 1964-1965 initiated to finance new plant (existing line) and equipment?" So far as utilities are concerned, the link between the debt issue and its use appears to be clear cut. For the other firms responding, the evidence points to a funding operation, switching bonds for bank loans.[50]

Table X shows the variables used to test statistically the association between corporate expenditures and acquisition of external debt finance. Impact of capital expenditures on external financial markets will depend upon

TABLE X

RATIO OF CORPORATE NONFINANCIAL BUSINESS EXPENDITURES TO CASH FLOW AND BANK LOANS PLUS BOND PROCEEDS 1964-1966* (BILLIONS OF DOLLARS)

Year	Expenditures ÷ Cash Flow	Corporate Bank Loans Plus Bond Proceeds
1964-I	0.971	$ 2.1
II	0.974	8.1
III	0.968	7.2
IV	1.101	12.2
1965-I	1.135	14.2
II	1.132	14.1
III	1.155	15.3
IV	1.161	15.2
1966-I	1.200	18.7
II	1.255	23.8
III	1.277	15.6
IV	1.276	13.5

*Sources: Federal Reserve Bulletins, August, 1966, p. 1242, and August, 1967, p. 1432.

[50]This point is pursued further on pp. 175-178.

availability of internal funds. Even though firms may be expanding their assets, little impact will be felt in the external markets so long as this expansion can be financed internally.[51] Table XI classifies the responses to question number 5 of this writer's questionnaire, "Did a shortage of internal funds at that time [1964-1966] cause you to forego any investments in plant and equipment you desired to make?"

TABLE XI

IMPACT OF INADEQUATE INTERNAL FUNDS ON INVESTMENT

Type	Affected	Unaffected
Utility	4	72
All Others	7	73

The respondents were essentially of a single mind. Lack of internal finance was no obstacle to expanding plant and equipment.

To include in the model availability of internal funds, a ratio of capital expenditures to cash flow is used as a variable. So long as this ratio is less than unity, internal funds in the aggregate are exceeding expenditures fixed investments. When this ratio exceeds unity, fixed investments are exceeding internal funds (retained earnings plus

[51] See Jacob Cohen, "Integrating the Real and the Financial Via the Linkage of Financial Flows," Journal of Finance, XXII (March, 1968), 1.

depreciation). As this ratio increases, a larger demand for external finance should be forthcoming from the business sector.[52]

The computed coefficient of correlation between expenditures/cash flow and external debt financing was 0.827. Testing to see whether or not the correlation was significant (i.e., not due to chance) yielded a t value of 3.20. Hence, the correlation was significant at the .01 level.

With the ratio of capital expenditures to cash flow the independent variable (X) and with external debt the dependent variable (Y), a regression equation of $Y = -32.97 + 40.84X$ was derived. The coefficient of determination of the equation was 0.685 and the standard error of the estimate was 3.006. An increase of .10 in expenditures/cash flow was associated with a $4.08 billion increase in external finance of the period.

Figure 6 illustrates the relationship between new appropriations, corporate bank loans, and bond proceeds for 1965-1966. The figure uses semi-logarithmic scale in order to emphasize relative changes in the variables. Of particular note is the relative stability of the rate of increase in appropriations in spite of the surges of expansion and contraction of bank loans. Management seems to have been

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[52] A rigorous examination of the impact on the bond market by corporate demands for loanable funds must wait until a discussion of the supply of loanable funds is presented. For this impact, see pp. 104-106.

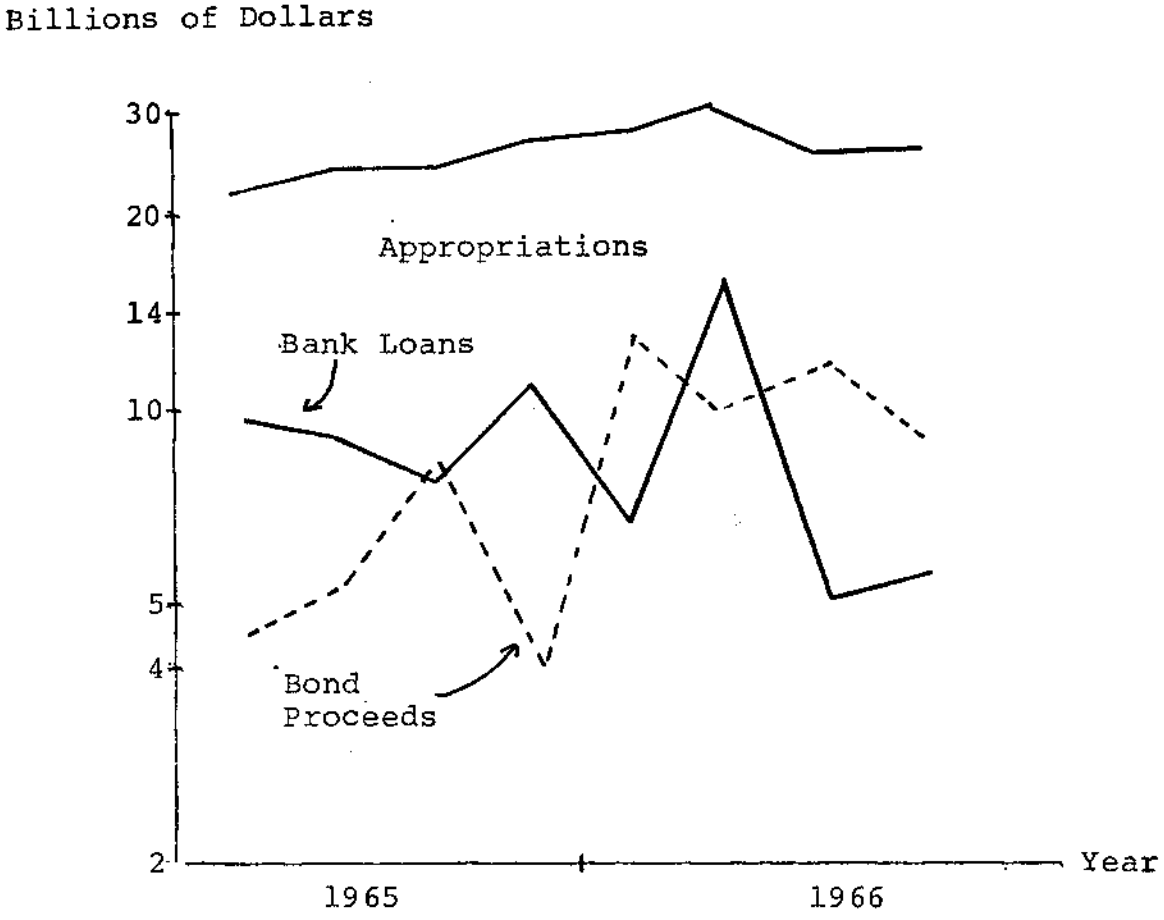

Fig. 6--Appropriations, bank loans, and bond proceeds, 1965-1966, billions of current dollars, annual rates. Source: Tables IV and VII.

oblivious to conditions in the financial community and so continued to appropriate funds for plant and equipment even when such funds obviously were not available. The instability of bond proceeds is significant. It does not reflect a smoothly functioning market, as one might assume. The proceeds were stable because of the amount of capital rationing occurring.[53]

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[53]Capital rationing is discussed in detail on pp. 60-73.

Statistical evidence thus supports the proposition that business increased its demand for funds in order to expand its fixed investments. Furthermore, there is evidence that the decision to expand plant and equipment was made without regard to the availability of finance.

Impact of Funds Acquisition.--What was the impact of successful acquisition of finance by corporations? The increase in funds made it possible for firms to bid more strongly for existing resources. Since the economy, in 1966, had attained a full-employment level, there were no additional resources free to enter the capital production process. Under conditions such as this, Robinson says, "There is then a head-on conflict between the desire of entrepreneurs to invest and the refusal of the system to accept the level of real wages which the investment entails. . . ."[54] Business, government, and consumers began to spend funds accumulated from previous periods (savings) and generated in the present period (credit). The net result was that money was spent at a rate in excess of the goods and services available. The result was inflation.[55]

> The remarkable economic record of the years 1961-1965 demonstrates clearly that, when surplus labor and plant capacity abound, fiscal and monetary policies to expand demand can reduce unemployment substantially, and at stable prices.

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[54]Robinson, p. 48.

[55]See pp. 81-82 for a detailed discussion.

> But, in 1966, as unemployment hovered just below 4 percent of the labor force, prices rose at a clearly unacceptable rate.[56]

In 1966, then, "The economy caught up with its economic potential. . . ."[57]

A more detailed discussion of conditions in the bond market must wait until Chapter III. However, at this point the reader should note that the financial markets were, indeed, affected by the surge of demand for finance by businesses. As we have seen, this demand was induced by an increase in expenditures for capital goods. Empirical data, therefore, seem to indicate that management is not anticipating its financial needs, but is letting these needs be determined by ad hoc decisions to invest. In other words, management sees an opportunity to reap profits by investing, decides to invest, then surges into the financial markets to acquire the necessary finance. Capital-investment decisions are timed without regard to the availability of finance. Further support of this point will be presented in Chapters IV and VI.

Conclusion

This chapter had as its objective verification of propositions three and four. In the first part of the chapter, demand for loanable funds by the government was

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[56] Economic Report of the President, p. 99.

[57] Ibid., p. 44.

traced to expansion of Vietnam expenditures coupled with a contraction of government revenues. This contraction was part of the planned fiscal policy to achieve maximum employment. The first part of the chapter, then, verified proposition three:

The Federal government increased its demand for loanable funds as a result of spending for the Vietnam War.

The second part of the chapter dealt with an increase in demand for loanable funds emanating from the business sector of the economy. To trace this demand from the decision to expand fixed assets, statistical models were constructed. The first model indicated the positive effect of new orders to capacity on the decision to expand fixed assets during the years 1964-1966. A coefficient of correlation of 0.9215 was obtained. This coefficient was significant at the .01 level.

A second model related the decision to expand fixed assets (appropriation) with actual expenditures. Here, simple correlation analysis yielded a coefficient of correlation of 0.9776. The correlation was significant at the .01 level. A third model was constructed to take the study a step further. This model related external debt financing to expenditures. However, to take into consideration corporate liquidity, cash flows were introduced as a variable. Simple correlation between external debt financing and expenditures/cash flow yielded a coefficient of correlation of 0.827. The correlation was significant at the .01 level.

Tracing the impact of new orders/capacity to appropriations, appropriations to expenditures, and expenditures to acquisition of external debt finance by firms has verified proposition four:

With demand finally beginning to press on capacity, business increased its demand for funds in order to expand plant and equipment.

Before the origin of this action is sought at the microeconomic level, the next chapter will verify propositions five and six. The first part of Chapter III will examine monetary policy in order to show contraction of the supply of loanable funds. The last part of Chapter III will examine the financial pressures which occurred, with emphasis placed on the role corporations played in increasing these pressures.

CHAPTER III

MONETARY POLICY, THE SUPPLY OF LOANABLE FUNDS, AND THE FINANCIAL SQUEEZE

> In short, the Crunch was both an instrument of policy and a result of that policy.
>
> Hyman Minsky

The previous chapter examined the two primary sources of demand for loanable funds. It was pointed out that demand for finance by government and business was well beyond the supply these sectors, themselves, were able to furnish. In other words, they were forced to turn elsewhere for their finance. Elsewhere was the financial community. This chapter examines the supply of loanable funds emanating from the financial sector; it pays particular attention to the role of the Federal Reserve System in determining this supply. In addition, this chapter notes the impact of monetary policy on financial intermediaries. Finally, it shows the conclusion of the panic and the measures which brought this panic to its conclusion. So far as the verification of the propositions is concerned, this chapter will verify propositions five and six:

The Federal Reserve restricted the supply of loanable funds to combat inflation.

Resulting pressures between these demand and supply forces induced banks to liquidate secondary reserves, congested the new issues market, and contributed to the illiquidity of financial intermediaries.

Chapters II and III taken together verify proposition two, viz. The financial squeeze of 1966 was the result of an excess of demand over supply of loanable funds.

Monetary Theory

In any society, money serves three functions.[1] First, it serves as a medium of exchange in order to facilitate the flow of goods among the society's sectors. A banking system can supply society with a readily recognizable form of money and so furnish a universally acceptable medium of exchange. For example, Federal Reserve notes, which are the liability of the Federal Reserve System, furnish the United States with a convenient and readily acceptable medium of exchange. The second function of money is its use as a standard of value. Goods and services are denominated in a standard unit so that relative values can be quickly derived. For example, it is much more convenient to say that a piece of balsa wood is $.50, a can of tennis balls is $2.50, and sheet music is $1.00 than it is to say a piece of balsa wood is worth 1/5 of a can of tennis balls and 1/2

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[1] A discussion of the functions of money can be found in D. H. Robertson, Money, rev. ed. (Chicago, 1957), pp. 2-7.

a sheet of music, sheet music is worth two pieces of balsa wood and 2/5 of a can of tennis balls. With the array of goods existent in a commercial society like that of the United States, the exchange of goods would obviously be hampered without a money available to standardize values. Here, again, a banking system can serve a socially desirable function by supplying society with a standard of value.

The third function of money is to serve as a store of value, permitting members of society to preserve their purchasing power and so be able to make purchases at a future point in time. So long as income recipients are saving, they are not consuming current output, and so long as current output is not being consumed (i.e., purchased), businesses are investing in inventory, fixed assets, or some other asset. These investments can be either planned (for example, purchase of a lathe) or unplanned (for example, increase in inventory due to an overexuberant estimate of future sales). Within this function, a banking system serves to facilitate the flow of finance from savers to borrowers who can utilize the finance in a productive way, for example, to expand the level of output.[2] In other words, rather than savings lying

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[2]This discussion glosses over the possible depressing effect of saving, which lowers the volume of sales and so may induce businessmen to cut back on current production. The net result from the increase in saving may be a decline in productivity rather than an increase. Joan Robinson notes a contrast between the social contribution of saving in an undeveloped country (where saving is desirable) and an industrial country (where it may be undesirable). "Thrift, in

unproductively idle as individuals hoard, savings can be deposited at banks, which, in turn, can then create new money to finance business enterprise. The net result is to keep the flow of finance intact and in motion so that output and expenditures continue to expand.

Now, whenever businessmen wish to invest in a volume of capital goods in excess of the finance they have available internally (i.e., from operations), they must acquire such finance from external sources, trade creditors, individuals, and financial institutions. The rate of interest serves the purpose of bringing into balance the demand supply forces of debt. Just as the sale of tennis balls is equal to the purchase of tennis balls, so also is the sale of bonds equal to the purchase of bonds.[3] Nothing is needed to insure equality between purchase and sale. But something is needed to insure equality between the amount of bonds sellers are willing to place on the market and the amount buyers are willing to purchase. In a perfect capital market, the supply of and demand for finance are balanced by interest

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itself, is a deflationary, depressive, factor in a market economy; it is helpful to accumulation [of capital] only in so far as the propensity to invest is strong enough to be tending to generate inflationary conditions. When the propensity to invest is weak, thrift only makes it all the weaker." Joan Robinson, Economic Philosophy (Garden City, New York, 1962), p. 107.

[3] Cf. the analogy used in Dennis Robertson, "Alternative Theories of the Rate of Interest: Rejoinder," Economic Journal, XLVII (September, 1937), 429.

rates. So long as the expected profitability of investments exceeds the cost of capital, businessmen will continue to demand finance. Financial institutions will supply this finance, but will charge a higher price (interest) to reflect the pressures on the capital market. The allocation of finance then depends upon the strength of demand for finance from the business community. And this demand, in turn, is a function of management's evaluation of investment proposals. The perfect capital market will thus permit those firms who are willing to bid sufficiently for it to acquire finance. As Hart has noted, "On the assumption of a perfect and purely competitive capital market, each firm is confronted with a market rate of interest at which it can get all the capital financing it chooses."[4]

Credit rationing introduces a greater degree of imperfection into financial markets than would otherwise exist. Rather than acting on the demand for finance by moving its cost (interest) above the expected return from the investment for which this finance was to be used, the money market restricts the supply of finance at a given interest rate.

Credit rationing works through financial intermediaries and even individuals to equalize the demand for and supply of loanable funds. Allocation of finance is not accomplished by interest rates, per se, but by responses of economic units

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[4]Albert G. Hart, "Assets, Liquidity, and Investment," American Economic Review, XXXIX (May, 1949), 172.

to changes in interest rates and by changes in the subjective evaluation by the creditor of the debtor. A creditor will assess a borrower's ability to pay, importance as a customer, and desirability as a customer. If in the creditor's judgment the loan will be profitable and mutually advantageous, the loan will be completed. Elaboration of credit rationing as it operates through both judgmental factors and interest-rate movements follows.

Judgmental

Judgment of the creditor is associated with Kalecki's principle of increasing risk. This principle, writes Boulding, "states that as a firm expands by the aid of borrowed capital the chance of loss of its own capital increases."[5] This is so because introduction of leverage into the firm's financial structure increases the impact a change in sales has on earnings. Now, the creditor, viewing the increased leverage in the firm's financial structure, will be concerned about the income producing potential of the firm and its ability to make interest and principal payments. As the firm acquires an increasing proportion of debt in its financial structure, the fears of the creditor increase. To compensate for these fears, the creditor will undertake steps to protect his interest in the firm, steps

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[5]Kenneth E. Boulding, A Reconstruction of Economics (New York, 1962), p. 126.

which curtail the financial freedom of the firm and which increase the cost of capital to the firm. As Robinson has said, Kalecki took ". . . risk over from the demand side (where it lies rather uneasily in Keynes' scheme) to the supply side. . . ."[6]

When the debt ratio seems in the judgment of the creditor to be unduly large, the creditor can ration finance in one of several ways. He can simply refuse to make the loan so that ". . . the creation of securities is blocked not by a rise in the rate of interest on them but by their inability to find a purchaser at the conventional rate of interest."[7] An alternative technique is simply to charge an interest rate that varies positively with the debt ratio, all things being equal. Two firms operating in the same industry with similar asset structures would face differing interest charges, the one with the greater debt in its capital structure paying a higher rate. This is one of the primary factors upon which bond ratings are based.[8]

In addition, a creditor can place restrictions on the borrower, restrictions which may not show up in an explicit

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[6]Joan Robinson in the introduction to Michael Kalecki, Studies in the Theory of Business Cycles, 1933-1939 (New York, 1966), p. xi.

[7]Boulding, p. 282.

[8]Moody's Industrial Manual (July, 1968), p. vi. See also Benjamin Graham, David L. Dodd, and Sidney Cottle, Security Analysis, 4th ed. (New York, 1962), pp. 353-355 and 384-385.

computation of the cost of finance. Banks often require a borrower to maintain a compensating balance, i.e., a minimum checking account balance. "From the point of view of the banking system as a whole," suggest Shapiro and Baxter, "the compensating-balance requirement . . . should merely be looked upon as a device to raise the effective rate of interest."[9] And so it does. For example, if a firm needs $200,000 and must maintain a minimum balance of 15 percent, it must borrow approximately $235,000 (.85x = $200,000). Assuming the stated rate of interest to be 6 percent, the effective rate of interest is 7 percent ($14,100/$200,000). As a part of its rationing function, the compensating balance increases as business expands, so that at the peak of a boom, the balance can become quite large, hence serving to ration the volume of usable funds placed at the disposal of enterprise.[10]

In the bond market, restrictions can come in the form of a sinking fund, so that the firm must make a periodic payment of cash to a trustee for the retirement of the bonds.[11] Too, the bond issuer can have increasingly stringent

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[9]Harold T. Shapiro and Nevins D. Baxter, "Compensating-Balance Requirements: The Theory and Its Implications," Southern Economic Journal, III (January, 1964), 267.

[10]Jack M. Guttentage and Richard G. Davis, "Compensating Balances," Essays in Money and Credit, Federal Reserve Bank of New York, 1964, p. 61.

[11]See Robert W. Johnson, Financial Management, 3rd ed. (Boston, 1966), p. 490, for an illustrative example.

security requirements placed on his issue, usually at the suggestion of the investment banker.[12] These requirements involve such factors as circumscribing the right to issue superior debt (a closed-end mortgage); introducing an after-acquired-property clause in which the debtor must pledge the bond as a lien against not only real property currently owned, but also real property subsequently acquired; vetoing election of officers; restricting divident payments; and limiting other managerial prerogatives.[13]

Interest Induced

It no doubt is true that a change in interest rates does affect some profit calculations. However, according to the theory of capital rationing, primary impact of an interest rise is on the supply of finance.

"A change in interest rates may make itself felt less by affecting profit calculations," states Lutz, ". . . than by affecting the behavior of financial institutions which lend the funds or act as intermediaries between the borrowers and the ultimate lenders."[14] Hence emphasis is placed on

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[12]Merwin H. Waterman, Investment Banking Functions (Ann Arbor, Michigan, 1958), p. 152. See pp. 70-72 for a further comment on the role of the investment banker.

[13]J. Fred Weston and Eugene F. Brigham, Managerial Finance, 2nd ed. (New York, 1966), pp. 430-431.

[14]Friedrich A. Lutz, "The Interest Rate and Investment in a Dynamic Economy," American Economic Review, XXXV (December, 1945), 828-829. The reader should note that initiation of credit rationing introduces non-market allocation of finance in the economy. In other words, judgment of

the change in interest rates and its impact on financial institutions.[15]

Corridors of Financial Linkage.--The process of equalizing demand and supply of loanable funds begins in the short-term market.[16] Changes in short-term interest rates can be brought about by the actions of monetary policy to affect bank reserves. Keynes noted the impact of short-term rates of interest on long-term rates: "In fact, however, experience shows that . . . the influence of the short-term rate of interest on the long-term rate is much greater than anyone . . . would have expected."[17]

How does the influence of short-term interest rates relate to long-term rates? It does so through corridors of linkage between the two markets. Many borrowers may use either long-· or short-term loans. Many lenders are flexible between lending at short- or long-term. Both borrowers and

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the creditor replaces market mechanism so that finance flows to firms most favored in the eyesof creditors.

[15]See, also, a comment similar to Lutz's in Irwin Friend, "Determinants of the Volume and Composition of Saving with Special Reference to the Influence of Monetary Policy," Impacts of Monetary Policy, Commission on Money and Credit (Englewood Cliffs, 1963), p. 674.

[16]See "Influence of Credit and Monetary Measures on Economic Stability," Federal Reserve Bulletin, March, 1953, pp. 232-233.

[17]Keynes, Treatise, II, p. 353. See also Joan Robinson, "The Rate of Interest," Econometrica, XIX (January, 1951), 101-102.

lenders compare alternatives and act in what they consider to be their best interests. This action works to equalize borrowing returns and costs. The primary corridor between short- and long-term rates involves speculation about the future movement of rates in a specific market.[18] For example, assume that monetary policy exerts upward pressure on short-term rates as the central bank sells short-term securities in the open market. Anticipating an increase in the long-term interest rate, individuals who hold securities will be anxious to liquidate long-term securities from their portfolios because this is where large capital losses occur.[19]

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[18] Keynes, Treatise, II, 357. Linkage between long-term and short-term interest rates and markets is much more controversial than the above comments imply. The "institutional theory" of such economists as J. M. Culbertson posits that risk aversion and market imperfections make the two markets independent. The "expectations theory" of, e.g., David Meiselman and Reuben Kessel, posits that, when expectations alter, individuals can and will switch from one market to another and so maintain a linkage between the two markets. See a discussion of the distinction between the two theories in Burton G. Malkiel, "The Term Structure of Interest Rates," American Economic Review, LIV (May, 1964), 532-534. The analysis in the next three pages draws heavily on the expectations approach.

[19] The price of fixed income securities moves opposite to the rate of interest, and the price change of the security (i.e., the present value change) varies directly with the maturity period. For example, the yield on a perpetual bond paying $50 per annum with a $1000 par value will have a yield of 5 percent. If the market rate of interest increases to 7 percent, the market price of the perpetuity must adjust in order to furnish purchasers with a yield equal to that on competing instruments (here, 7 percent). Consequently, the price of the perpetuity must decline to $714 ($50/x = .07). Conversely, the price swing on a short-dated instrument is much less severe. For example, a $1000 par value, $50 coupon bond scheduled to mature in four years will have a market

Impact of the liquidation of long-term securities is to bring about the very feature that holders of these securities wished to avoid, that is, capital losses. Here, then is an example of a self-fulling prophecy.[20] Individuals holding long-term securities anticipate an upward movement in the interest rate on long-term securities. They know that an upward movement in interest rates is reflected in a fall in the price of the existing security, which means that a potential capital loss exists. In order to avoid the capital loss, individuals (and institutions) sell securities, thereby driving down the price and increasing the yield on the security. Acting on their expectations, individuals

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value of $1000 (this is equivalent to the present value of an annuity of $50 for four years and of $1000 at the end of four years discounted at 5 percent). Now, if the rate of return on competitive instruments moves to 7 percent, individuals will shift out of the 5 percent return instrument into those which promise a 7 percent return. Such a process will drive down the price of the security in our example to a rate of return of 7 percent (the $50 interest payment is fixed in the indenture, the legal agreement between borrower and lender). The price of the instrument will fall to $932 (the present value of an annuity of $50 for four years and of $1000 at the end of four years discounted at 7 percent). The capital loss on this instrument is 6.8 percent, while on the perpetuity it is 28 percent. It is not surprising that individuals desire to liquidate their long-term securities when interest rates begin to move upward.

[20]Robinson cites examples of self-fulling prophecies in which "thinking makes it so," and in which "A general expectation that something will happen may cause it to happen (even if the expectation has no objective basis)." Joan Robinson, Accumulation of Capital, p. 66. See also ibid., p. 59.

cause a decline in the market value of their securities, hence bringing about the very event they anticipated.[21]

Another way in which long- and short-term interest rates are linked is through the operations of financial institutions and intermediaries. The emphasis here is not so much on expectations as on operations by economic units to preserve or to increase profit. The term financial institutions as used here refers to commercial banks, insurance companies, investment bankers, and savings and loan associations.[22]

Commercial banks hold in their investment portfolios an array of financial assets ranging from short-term Treasury bills to business term loans to long-term municipal bonds. When monetary policy becomes restrictive and bank free reserves decline, commercial banks adjust their portfolios by curtailing their purchases of securities in order to

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[21]It is worth noting that a conclusion to be reached from this brief discussion of interest-rate linkage is that the rate of interest is a highly psychological phenomenon, dependent upon expectations. Such a conclusion has been reached by Keynes, "It is evident, then, that the rate of interest is a highly psychological phenomenon," and by Shackle, ". . . The price of bonds . . . is 'inherently restless,' for it depends mainly, almost solely, on guesses about its own immediate future course." J. M. Keynes, General Theory, p. 202, and G. L. S. Shackle, A Scheme of Economic Theory (Cambridge, 1965), p. 90.

[22]Each of these is discussed in more detail. See pp. 69-72.

continue making loans to businesses.[23] In addition, banks can liquidate holdings of long-term Treasury instruments and municipal bonds. Banks thus put downward pressure on prices of the long-term securities and increase the yield on them.[24]

In the debt capital market, corporate funds are acquired to a great extent from insurance companies.[25] Whenever short-term rates move rapidly upward in response to monetary policy, individuals borrow the cash value of their insurance policies and place funds in higher yielding instruments.[26] For example, an individual who can borrow at 4 percent would be following the dictates of prudence if he did so to invest in securities earning 5-1/2 percent, especially if the latter were so liquid as a saving account or certificate of deposit. In this way, a movement in the short-term rate of interest is transmitted to long-term rates: Insurance

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[23]See Roger W. Spencer, "Adjustments of Selected Markets in Tight Money Periods," Project for Basic Monetary Studies, Working Paper No. 10, Federal Reserve Bank of St. Louis, June, 1969.

[24]This interpretation is in opposition to the "locked-in" theory of monetary policy effectiveness in which banks avoid a capital loss on their security holdings and are locked into their existing portfolio. Being locked into this portfolio, they cannot continue to expand business loans. The data for the period 1964-1966 casts grave doubts on such an interpretation of monetary policy effectiveness. See below, pp. 113-115, and Annual Report, 1966, pp. 65-67.

[25]"Interest Rates in U.S. Capital Markets," Federal Reserve Bulletin, November, 1966, pp. 1584-1585.

[26]Ibid., p. 1587.

companies cannot buy new bonds and mortgages and may even be forced to liquidate some of their current holdings.

Investment bankers finance their inventory of bonds during the distribution process with short-term loans from banks.[27] These loans are based on the Federal funds rate and so their cost moves with the latter. Hence, whenever the funds rate moves upward, investment bankers are forced to pay a higher interest rate on the money they acquire to finance bond inventories during the distribution process. To compensate for this increased cost in order to protect profit margins, investment bankers will lower their bid price on new issues. When the issue is resold on the open market, the spread will be maintained. In this way, a movement of the short-term rate affects the long-term rate. In addition, as the long-term rate moves upward, investment bankers risk suffering a capital loss on the bonds they hold in inventory during distribution.[28] If they anticipate an upward movement in interest rates, they will thus either lower their bid price accordingly or suggest the issuer delay floating his issue. When the latter occurs, capital is rationed to the firm.[29]

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[27]This point is elaborated further below, p. 108.

[28]Neil Jacoby and J. Fred Weston, "Financial Policies for Regularizing Business Investment," Regularization of Business Investment, National Bureau of Economic Research (Princeton, 1954), p. 418. See also Keynes, "Alternative Theories," p. 248.

[29]Roland I. Robinson, "Forecasting Interest Rates," Journal of Business, XXVII (January, 1954), 91.

The firm seeking finance is unable to make its investment not because there has been a diminution of expected profitability, but because it is unable to acquire the necessary finance. The pace of investment is, therefore, restricted by the limited capacity of financial institutions.[30] "It is," writes Keynes, "to an important extent, the 'financial' facilities which regulate the pace of new investment."[31] Capital rationing restricts the flow of finance rather than destroying the desire of businessmen to invest, so that "It is a large and rapid rise in the rate of investment, not a high rate of investment, which the finance limit prevents."[32] This is the process to which Keynes made reference: "It is the supply of available finance which, in practice, holds up from time to time the onrush of 'new issues.'"[33] And, according to Smith, because it retards merely the pace of investment, capital rationing

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[30]Smith has pointed out that use of the monetary tool to ration credit may prove to be a source of embarrassment to the Central Bank if it causes too much congestion in the bond market. Should this happen, the Central Bank is then force "to ease up on the breaks" and, hence, to spread restraint over a longer period of time, perhaps causing "a disastrous break in business expectations." Warren Smith, "On the Effectiveness of Monetary Policy," American Economic Review, XLVI (September, 1956), 599. We shall see below how perceptive Smith's comment was (p. 109).

[31]J. M. Keynes, "Alternative Theories of the Rate of Interest," Economic Journal, XLVII (June, 1937), 248.

[32]Joan Robinson, The Accumulation of Capital, 2nd ed. (New York, 1966), p. 51.

[33]Keynes, "Alternative Theories," p. 248.

". . . brings about its own cure--that is, if issues are postponed, this helps to stabilize the rate [of interest] temporarily and set the stage for their later issuance."[34] In the absence of any diminution of profit expectations, once interest rates stabilize, the fringe of unsatisfied borrowers is ready to surge back into the market. Just as Smith warned, Keynes also noted that unwise use of this tool may have adverse implications for employment and output:

> The control of finance is, indeed, a potent, though sometimes dangerous, method for regulating the rate of investment (though much more potent when used as a curb than as a stimulus). Yet this is only another way of expressing the power of the banks through their control over the supply of money--i.e., of liquidity.[35]

As it applies to this dissertation, the above discussion has analyzed the theory behind the policy which the Federal Reserve initiated in 1966. Just as theory indicates, we shall see below that the monetary mechanism can slow the pace of investment. And, just as Smith indicated, a congested bond market can cause the central bank to lessen its restraint.[36] Once the restraint is lessened, the surge of demand for loanable funds then returns so that expansion continues. The next section of this chapter shows empirical

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[34]Smith, p. 599. For example the flood of issues in 1967.

[35]Keynes, "Alternative Theories," p. 248. He makes much the same statement in his General Theory, p. 158.

[36]See above, p. 71n.

evidence supporting the above theory. More importantly, the next section will verify propositions five and six.

Monetary Policy

Our picture drawn in Chapter II of the pressures in the financial markets was not complete. There was an additional force prevalent other than that emanating from demand for real resources by the Federal government and by business. This additional force was the Federal Reserve, which exercised a restrictive monetary policy in 1966. The restraint, coupled with the demands for finance from government and business, created conditions which caused the panic.

Monetary Tools

Monetary tools available to the Federal Reserve for manipulating the economy consist of both quantitative and qualitative types.[37] These tools are utilized, the Annual Report, 1964, points out, ". . . so as to contribute both to continued orderly and sustainable expansion in the domestic economy and to further improvement in the U. S. balance of payments. . . ."[38] To accomplish its task, the Federal Reserve uses monetary variables in an attempt to control the

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[37]The following discussion is a description of basic monetary policy implementation. The reader can find such a discussion in any economic principles textbook, e.g., George L. Bach, Economics, 5th ed. (Englewood Cliffs, 1966), pp. 112-122.

[38]Annual Report of the Board of Governors of the Federal Reserve System, 1964, p. 9.

real factors of employment, output, and income. As the Federal Reserve says,

> It is through their influence on credit conditions, liquidity, and the level and structure of interest rates that central banks such as the Federal Reserve make their maximum contribution toward the achievement of the ultimate economic goals of nations.[39]

Selective instruments.--The selective tools now at the Federal Reserve's disposal consist primarily of the margin requirement, which is the downpayment on purchases of securities, and moral suasion, which is the power of the Federal Reserve to control activities of member banks by exhorting the banks to take proper action. In a sense, moral suasion involves a veiled threat: The Federal Reserve has the power to enforce its suggestions in a rigorous manner, should the need arise, but banks can act on suggestion and thus avoid the unpleasant consequences of overt monetary policy.

General instruments.--These instruments consist of the discount rate, reserve requirements, and open market operations. All were utilized throughout the 1960's; however, primary reliance was on open market operations. The discount rate is an administered interest rate reflecting policy decisions by the Board of Governors. It is not a penalty rate in the sense that banks are typically charged an

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[39] Ibid.

interest rate above that in the market place; they are not required by law to use the discount service. It serves as a basic rate for discounts and advances made to member banks wanting to acquire reserves for a short period of time. This rate is set by the Federal Reserve Banks in each district subject to the approval of the Board of Governors, Federal Reserve System. Utilization of this source of funds is at the initiative of the member bank. Just how little is known outside the banking community (if not within) of the operation of the discount policy of the Federal Reserve System is indicated by Minsky: ". . . The rules guiding the administration of the window are mysterious if not devious."[40]

Open market operations, which are at the initiative of the Federal Reserve System, serve two functions. They control the volume of bank reserves influencing the supply of loanable funds, and they affect the rate of interest directly through their impact on security prices. Any new security issues must compete with those in the existing, or secondary, market. As Robinson says,

> The yield on bonds in the placement market determines the terms on which new bonds can be sold. Thus by fixing the rate of direct loans (the discount rate) and operating upon the market for bonds, the banks can determine (within limits) the rates of interest at which finance can be obtained by excess investors.[41]

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[40]Minsky, p. 49.

[41]Robinson, Accumulation, p. 236.

Hence, by selling and buying existing securities, the Federal Reserve establishes the rate at which debtors will acquire new finance. The sale of a bond lowers its price and increases its yield approximately in keeping with the following relationship:[42]

$$r = \frac{C + \frac{P_1 - P_2}{n}}{\frac{P_1 + P_2}{2}}$$

where

r = approximate yield

c = annual dollar interest

P_1 = face value of the instrument

P_2 = market price of the instrument

n = years to maturity

The sale of securities on the market will drive P_2 down, thus increasing the value of $\frac{P_1 - P_2}{n}$ and, therefore, raising r, the approximate yield.

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[42]Johnson, p. 282. More accurately, the relationship can be expressed by the equation

$$V = \sum_{i=1}^{n} \frac{c}{(1+r)^i} + \frac{P}{(1+r)^n}$$

where V is the present value of the bond, n is the number of interest periods, c is the dollar size of each payment, r is the market rate of interest, and P is the bond principal due at maturity.

The impact on bank reserves is direct in open market operations. However, severity of its impact depends upon whether banks or individuals purchase the securities. If banks purchase them, there is absorption of reserves in the banking system so that banks must reduce their existing liabilities by the full multiple, assuming no excess reserves. This will be done by banks calling in loans or not renewing loans as they mature. When, on the other hand, bonds are purchased by individuals, not only are bank reserves absorbed, but also deposit liabilities of the system decline. Consequently, banks need not reduce their liabilities by the full reserve multiple (i.e., the reciprocal of the reserve ratio). The ultimate impact of open market operations is the same in either case, but with the purchase or sale of securities by the banks, themselves, the response is much greater than otherwise.

The Record

Relative stability of money market rates from the third quarter of 1963 through the third quarter of 1965 is indicated by the movement of the three rates in Figure 7. Increase in the bill rate reflected the Federal Reserve's sale of short-term instruments in an attempt to keep short-term rates high and long-term rates low. This was a specific technique undertaken in order to benefit the United States

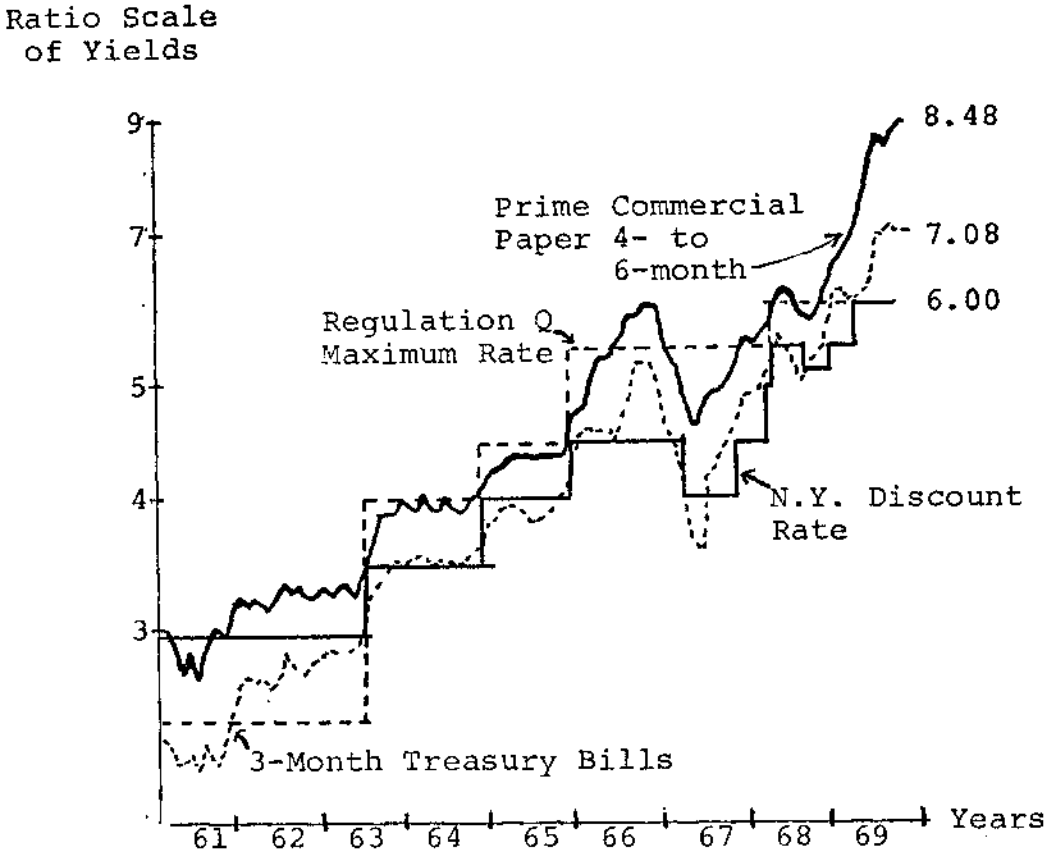

Fig. 7--Money market rates. Source: Federal Reserve Bank of St. Louis Review, October, 1969, p. 2.

balance of payments.[43] Short-term rates were kept high to induce foreign depositors to keep funds in the United States. Long-term rates were kept low, i.e., the Federal Reserve avoided absorbing bank reserves by selling long-term bonds, in order to avoid interfering with economic growth. Too, open market purchases of long-term bonds were made "To promote further bank credit and monetary expansion while avoiding sustained downward pressures on short-term interest

[43]For a discussion of "Operation Twist," as this technique is called, see Walter W. Haines, Money, Prices and Policy, 2nd ed. (New York, 1966), pp. 648-651.

rates."[44] Table XII shows the maturity distribution of open-market transactions for the years 1962 through 1966. Beginning with 1964, the only short-term instrument (less than one year) sold to absorb reserves was Treasury bills. Of particular note was the pattern of sales of long-term instruments. After 1963 none was sold.

In 1964, the Federal Reserve assumed an easy monetary stance to support the expansionary fiscal policy of the Internal Revenue Act of 1964.[45] That is, it supplied bank reserves and permitted the money supply to grow faster.[46] Since there were resources available to use in the production process, this increase in the money supply did not lead to an upward movement in the price level:

> The broad stability in commodity prices during 1964 was noteworthy in view of the stimulative effects of the large reduction in Federal income taxes on both individuals and corporations and the accommodative posture of monetary policy.[47]

However, as the economy expanded with the increase in demand for war material and consumer goods, bottlenecks began to

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[44] Annual Report of the Board of Governors of the Federal Reserve System, 1962, p. 7.

[45] See above, pp. 18-23, for a discussion of this Act.

[46] Annual Report, 1964, p. 5.

[47] Ibid.

TABLE XII

OUTRIGHT TRANSACTIONS IN U.S. GOVERNMENT SECURITIES
BY THE FEDERAL RESERVE, MATURITY BASIS, 1962-1966*
(MILLIONS OF DOLLARS)

	Within 1 Year		1-5 Years		5-10 Years		Over 10 Years	
Year	Purchases	Sales	Purchases	Sales	Purchases	Sales	Purchases	Sales
1962	7,898	6,613	1,569	108	326	-	37	-
1963	7,336	4,483	843	50	543	-	68	-
1964	9,438	5,437	465	-	440	-	111	-
1965	8,958	4,227	500	-	340	-	90	-
1966	15,376	10,297	208	-	50	-	17	-

*Sources: Board of Governors, Federal Reserve System, Annual Report, Table V, respective years.

occur in the production process.[48] These bottlenecks appeared in mid-1965, ". . . when the sudden increase in defense requirements for Vietnam led to a marked acceleration in economic activity."[49]

With aggregate supply at relatively full employment levels, the result of expanding aggregate demand was to increase consumer and wholesale price levels, as Table XIII shows. Inflation had become a threat to stability of both

TABLE XIII

CONSUMER AND WHOLESALE PRICE INDICES
1962-1968*

Year	Wholesale	Consumer
1962	100.6	105.4
1963	100.3	106.7
1964	100.5	108.1
1965	102.5	109.9
1966	105.8	113.1
1967	106.1	116.3
1968	108.7	121.1

*Source: Federal Reserve Bulletin, February, 1969, p. A64.

the market allocation process and the balance of payments.[50]

[48]See Alvin H. Hansen, Monetary Theory and Fiscal Policy (New York, 1949), pp. 157-160, for a description of the occurrence of bottlenecks in an expanding economy.

[49]Economic Report of the President, p. 45.

[50]For some observations by a central banker on price stability as the primary objective of monetary policy, see Louis Rasminsky, The Role of the Central Banker Today (Washington, D.C., 1966), pp. 28-31.

The Federal Reserve moved to contain the expansion of the money supply within reasonable bounds. Consequently, at the beginning of 1965, the Board of Governors moved toward a firmer policy regarding the expansion of bank reserves. The squeeze had begun.

> With the domestic economy strong, with demands for bank credit very large, and with the need to provide support to the balance of payments program, the Federal Open Market Committee in February and March voted to move toward attaining somewhat firmer conditions in the money market in an effort to moderate the rapid growth of bank reserves and credit.[51]

Pressures on Financial Institutions

The impact of monetary policy over the period 1965-1966 fell into two fairly distinct classifications with one impact following immediately after the other. Both impacts appear to have been a result of specific policies of the Federal Reserve. In the first part of the period, the impact was on savings and loan associations and insurance firms. The impact was strong on these institutions rather than spilling over into the banking community because the Federal Reserve aided banks by increasing interest rates banks could pay on interest-bearing deposits and so caused funds to bypass and to flow away from insurance companies and associations. In the second part of the period, beginning in February, 1966, the impact spread into the banking

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[51] Annual Report, 1965, p. 15.

community. Banks began to be squeezed financially because the Federal Reserve stopped raising allowable interest rates on deposits, thus necessitating a restructuring of bank reserves. Each of these impacts will be examined in more detail.

Regulation Q and Disintermediation.--Beginning in 1961, certificates of deposit (CD's) expanded in usage into an important, national monetary instrument.[52] Use of CD's permits the banking system to expand its excess reserves. Minsky refers to this element of the period as the efficiency factor.[53] Banks selling CD's to depositors are required to maintain a lower reserve ratio on the deposit than on demand deposits.[54] Consequently, ability of the banking system to lend will be enhanced to the extent that banks can sell CD's. And their ability to sell CD's depends upon the interest rate they pay on such deposits relative to other returns available to the depositor, notably Treasury bills,

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[52]Richard C. Fieldhouse, "Certificates of Deposit," Essays in Money and Credit, Federal Reserve Bank of New York, 1964, p. 42.

[53]Minsky, p. 45.

[54]See the discussion in Joint Economic Committee, "Recent Federal Reserve Action and Economic Policy Coordination," 89th Congress, 1st Session (Washington, 1966), pp. 253-254. Also, much of the following theoretical material is based on Robert H. Parks, "Monetary Policy and the Creation of Near-Money," Financial Analysts Journal, XXI (September-October, 1965), 85-93.

commercial paper, and deposit rates at other institutions.[55] This interest rate is, in turn, administered by the Board of Governors through Regulation Q, which grants to the Board the power to regulate interest payable on time deposits at commercial banks.[56]

At first glance, an increase in Regulation Q would seem merely to make banks more competitive in the financial markets with other institutions, notably with savings and loan associations. It is that and much more. Associations hold their own deposits in the form of demand deposits at commercial banks. Hence, whenever a depositor withdraws his funds from the association the following adjustments take place on the books of the association and of the bank. Before any shifting occurs, the balance sheets are as in step 1 of Figure 8. The bank at present holds no time deposits and has only the demand deposit of the association. With a reserve requirement of 20 percent against demand deposits and 5 percent against time deposits, the bank has no excess reserves and can make no more loans. Now assume the rate on CD's becomes so attractive that the shareholder of the association withdraws his $100 to buy a CD. The respective balance sheets would then be as in step 2. Notice

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[55]"Recent Federal Reserve Action," pp. 96-97, and 182.

[56]"Deposit Interest Rate Regulation and Competition for Personal Funds," Federal Reserve Bank of St. Louis Review, November, 1966, pp. 17-20.

SAVINGS AND LOAN		COMMERCIAL BANK	
		RESERVES	Demand Deposit $200
		Total $40	
1. Demand Deposit $100	Share $100	Demand Deposit $40	
		Time Deposit 0	
		Excess 0	
		RESERVES	Demand Deposit $100
		Total $40	Time Deposit $100
2. Demand Deposit 0	Share 0	Demand Deposit $20	
		Time Deposit $ 5	
		Excess $15	
		RESERVES	Demand Deposit $175
		Total $40	Time Deposit $100
3.		Demand Deposit $35	
		Time Deposit $ 5	
		Excess 0	

Fig. 8--Relationship between savings and loan associations and commercial banks

that total reserves of the commercial bank have not changed. However, there has been a restructuring of bank reserves. Total reserves are constant, required reserves decline, and the net, excess reserves, increases. This restructuring of the bank's reserves occurred merely because there has been a change in its liabilities: An individual has purchased a CD with funds he withdrew from his savings and loan deposit. But the bank now can expand credit by the amount of its excess reserves, $15 (Total Reserves of $40 less required reserves of $25).

Type	Required	Amount	Total
Demand Deposit	.20	$100.	$20.
Time Deposit	.05	$100.	$ 5.
		Total Required	$25.

For this bank, then, its role has been to shrink the money supply by $100 and then to expand it by $75, assuming it lends its excess reserves to someone wanting a demand deposit. If this bank were a monopoly bank, i.e., the only bank, its balance sheet would appear as in step 3. Loans have increased by the reciprocal of the reserve requirement times the excess reserves. The money supply is now $175. The net reduction is thus $25, but bank credit has expanded by $75.

Figure 7 (p. 78) shows the pattern of various yields for the period 1963-1966. Over this period, Regulation Q was raised twice in order to protect the flow of funds into

commercial banks. Both times, the administered rate payable was increased after the rate payable for CD's in the secondary market had begun to exceed it and after the three-month Treasury bill rate had moved to a position of near equality with the old, allowable rate. Hence, as market rates continued their upward climb, the allowable rates payable were increased in order to protect commercial banks.[57] But this increased rate, coupled with increased market rates, began to take a heavy toll in terms of financial intermediary deposits. Savings and loan associations and insurance companies began to experience withdrawals of deposits as alternative rates began to exceed the rates they would charge for loans and rates they could pay for deposits. Table XIV uses flow of funds data to show the increasing illiquidity and disintermediation of financial institutions. In Flow of Funds data a use is shown as a net change in an asset and a source is shown as a net change in a liability. Hence, Table XIV shows changes in balance sheet items, not totals.

For insurance companies, financial pressure is illustrated graphically by the changes in both assets and liabilities. The decline in government securities and municipal

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[57]This point is made in the verbal clash between Honorable Wright Patman, Chairman of the House Banking and Currency Committee, and William M. Martin, Chairman of the Board of Governors of the Federal Reserve System, in "Recent Federal Reserve Action," pp. 165-167.

TABLE XIV

SELECTED FLOWS OF FUNDS OF FINANCIAL INSTITUTIONS, 1965-1966*
(BILLIONS OF DOLLARS)

	Year and Quarter							
	1965				1966			
	I	II	III	IV	I	II	III	IV
Life Insurance Companies								
Uses								
Government securities	.2	- .7	- .9	- .4	- .2	- .1	- .7	0
Municipal bonds	- .2	- .2	- .4	- .3	- .5	- .6	- .2	- .2
Corporate bonds	2.1	2.1	3.2	3.2	4.8	1.7	2.6	.3
Mortgages	5.3	4.5	4.6	4.9	5.4	5.4	5.0	2.9
Sources								
Life reserves	4.5	4.7	4.7	4.6	4.6	4.5	4.7	4.6
Pension Reserves	2.0	2.1	2.1	2.1	2.2	2.2	2.4	2.4
Savings and Loan Associations								
Uses								
Money	- .2	.1	.5	- .1	- .6	- .4	- 1.0	- .1
Government securities	1.0	.5	- .2	.6	1.2	- .8	.7	1.0
Mortgages	9.0	9.2	8.8	8.4	8.4	5.1	.6	0
Sources								
Deposits	8.2	7.6	8.7	9.1	5.8	2.5	1.4	4.7
Federal Home Loan Bank Loans	1.5	1.5	.5	- .8	2.8	1.8	1.1	2.0

TABLE XIV--Continued

	Year and Quarter							
	1965				1966			
	I	II	III	IV	I	II	III	IV
Commercial Banks								
Uses								
Government securities	- 2.6	-10.2	- 1.7	5.3	- 1.9	.5	- 5.7	-4.2
Commercial loans	19.3	13.9	12.9	19.4	8.0	21.3	2.4	6.1
Security credit	2.4	1.2	- 8.7	5.5	- 1.6	1.3	1.1	-1.2
Sources								
Demand deposits	7.0	.1	- 5.4	20.5	- 8.0	10.8	- 6.5	4.1
Time deposits	22.7	17.6	21.4	18.4	14.9	20.9	11.2	5.8

*Source: Federal Reserve Bulletin, May, 1967, pp. 856-857.

bonds represents the liquidation of these assets in order to generate cash. The cash was needed to provide the funds demanded by individuals borrowing on the cash surrender value of their life insurance policies. Liquidation of securities was necessary because insurance companies maintain only a nominal pool of cash. Their cash inflows are extremely stable and predictable (due to the contractual obligation of insurance policies) and, usually, their expenditures are also stable and predictable (the statistical predictability of deaths). These two factors combine to induce insurance companies to structure their asset portfolios heavily in earning assets, for to keep cash (a non-earning asset) implies a diminution of profits. Liquidation of municipal bonds is more significant than of government securities because of the relative capital losses implied. Government securities were no doubt comprised of some short-term instruments so that upward movements in interest rates had only a negligible impact on their present value.[58] These could be liquidated with only minimal loss. However, municipal bonds are longer dated instruments than most government securities. Ceteris paribus, the capital loss was probably greater on the municipal bonds than on the government securities.

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[58]For an analysis of this relationship, see pp. 66n-67n.

Insurance companies also continued to acquire corporate bonds throughout the period, but at a slower rate beginning in 1966-I. They liquidated municipals and governments and continued to press for the profitable corporate bonds being issued. Significantly, the decline in net acquisition of corporate bonds by insurance companies forced corporations out of this direct placement market and into the public market, increasing the congestion in the bond market.[59] Insurance companies also continued to acquire mortgages over the two-year period, but after 1966-II, the rate turned downward. The borrowing on cash surrender values of policies is reflected in the actual decline in growth of life reserves beginning in 1965-III.

Impact of monetary policy is also easily traced by examining the flow of funds through savings and loan associations. Cash holdings declined every quarter except two, 1965-II and 1965-III. Although mortgage acquisition continued at an $8 billion to $9 billion rate in 1965, in 1966 monetary restraint began to cause associations to be unable to continue mortgage acquisition. Government securities were liquidated to generate cash in 1965-III and 1966-II. The flow of deposits into associations reached a maximum in 1965-IV and then turned downward. The trickle in 1966-II and 1966-III indicates the disintermediation of associations,

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[59]See pp. 101-106 for a discussion of this congestion.

as depositors bypassed them to place finance directly in the market. Associations also were affected by the relative interest rates payable on mortgages in their existing portfolios and rates necessary to acquire deposits. The imbedded rates on old, existing mortgages were at rates much lower than that of 1966, hence as the rate allowable on their deposits increased it began to exceed the average rate of return on their portfolios, impairing profitability. Associations were approaching an insolvency dilemma. "To stay solvent," writes Karecken, "they must hold on to their deposits. But to do this, they must pay higher and higher returns to depositors and, in so doing, run the risk of insolvency."[60]

Bank Illiquidity and Monetary Policy.--After the increase in Regulation Q in December, 1965, the Federal Reserve made no further attempts to change it. Consequently, as competing market rates began to exceed the rate banks could pay on CD's, banks began to experience a runoff of their time deposits. Figure 7 shows the relationship between yields on CD's in the secondary (existing) market and the rate on new CD's in the primary market (Regulation Q). No one wanted to buy a CD at 5-1/2 percent when he could obtain one at 6-1/4 percent, or could purchase commercial paper and

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[60]John H. Karecken, "The Mix of Monetary and Fiscal Policies," Journal of Finance, XXII (May, 1967), 145.

Treasury bills at a greater rate than that on CD's.[61] Table XIV, pages 88-89, indicates the financial pressures brought to bear on the commercial banking system. Banks were net liquidators of government securities throughout the period except in 1965-III and 1966-II: They sold government securities in an attempt to generate reserves. This secondary reserve liquidation probably was undertaken to support the lending activities of the banks. Notice that commercial loans increased every quarter; however, the increase showed much greater instability in 1966 than in 1965.[62]

How changes in interest rates paid on bank deposits affected the flow of funds into banks is portrayed in Table XIV. During 1965, time deposits increased each quarter at a very high rate. The pattern for demand deposits was in stark contrast to that of time deposits. Demand deposits increased the first two quarters of 1965, then actually decreased in 1965-III. Much of this pattern between the two types of deposits was probably due in part to the impact of changes in interest rates payable at banks. The decline in demand deposits in 1965-III and 1966-II and the continuing increase in time deposits conforms well with

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[61] In September, 1966, the rate on four to six-month prime commercial paper was 5.89 percent and on six-month Treasury bills 5.79 percent. Federal Reserve Bulletin, May, 1967, p. 815.

[62] Commercial loans are discussed in detail on pp. 43-46 and 175-178.

the above theoretical explanation of the impact of Regulation Q and financial intermediaries.[63] Contraction of monetary holdings of savings and loan associations and even the decreased growth of reserves of life insurance companies coincides with the actual contraction and decrease in growth in demand deposits and continued growth in time deposits at commercial banks.

Growth in time deposits at commercial banks slowed considerably in 1966. In the last half of 1966, the flow became a trickle as interest rates on competitive instruments began to exceed the rates banks could pay. Continued increase in deposits at commercial banks and restraint in growth of bank reserves caused banks to become short of sufficient reserves to support their deposit liabilities. In addition to liquidating their secondary reserves, banks turned to the Federal Reserve System for reserves. Since the Federal Reserve was neither supplying sufficient reserves through open market operations (by buying government securities) nor increasing the efficiency of reserves by lowering the reserve requirement, banks were forced to use the discount window. Figure 9 shows the pattern of excess reserves and borrowed reserves for the period 1964-1966. In February, 1965, banks found themselves borrowing more from the Federal

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[63]See above, pp. 83-87.

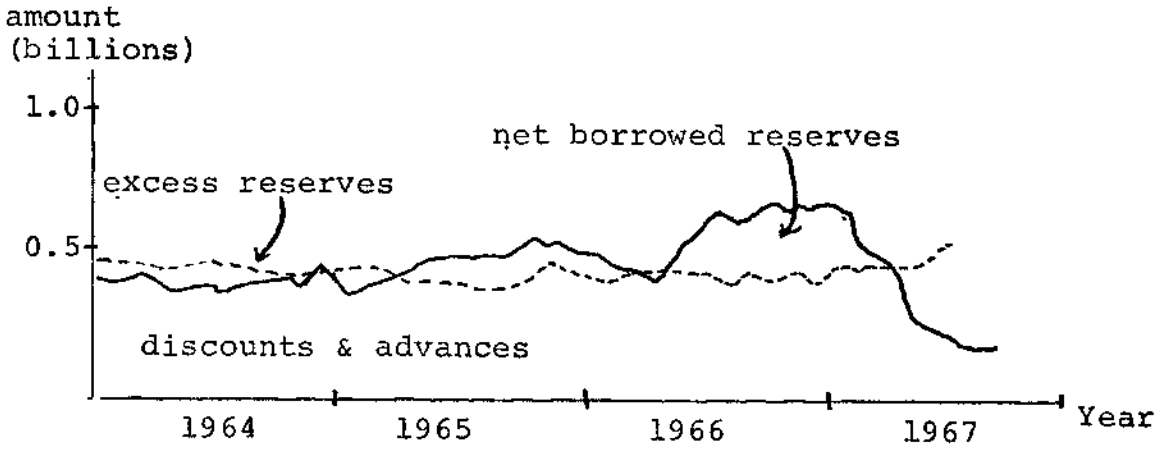

Fig. 9--Net borrowed reserves. Source: "Recent Credit and Monetary Developments," Federal Reserve Bulletin, July, 1967, p. 1076.

Reserve than they had in excess reserves.[64] Toward the end of the year, however, the Federal Reserve increased the reserves of commercial banks, bringing them into a position of equality between borrowings and excess reserves (i.e., net borrowed reserves became zero). "Nevertheless, interest rates rose from July to early January as demand outpaced the overall supply of funds."[65]

For the entire year, total reserves of member banks increased 5 percent. This increase supported an expansion of 10 percent in bank credit, 5 percent in money supply (demand deposits plus coins and notes), and 16 percent in time and savings deposits.[66]

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[64]For an explanation of this measure, see The Federal Reserve System, Board of Governors, Federal Reserve System (Washington, D.C., 1963), pp. 222-223.

[65]"Rapid Monetary Growth Continues," Federal Reserve Bank of St. Louis Review, January, 1966, p. 3.

[66]Annual Report, 1965, p. 19.

In 1966, the Federal Reserve pursued a resolute course of restraint in its implementation of monetary policy. The year can be divided into five fairly distinct periods:[67]

1. January 1-February 8: Transition to a firmer posture;

2. February 9-June 7: Gradual but steady increase in pressure on bank reserve positions;

3. June 8-September 13: Peaking of financial market pressures;

4. September 14-November 22: Relaxation of market tensions;

5. November 23-December 31: Modest but overt move toward ease.

This segmenting of the year can be seen by referring to Figures 5 and 7 and to Table XV. Table XV shows the impact of monetary policy on the money supply for a fifteen-month period beginning in June, 1965. Total money supply from June, 1965, to June, 1966, expanded by 5.8 percent. For the three-month period after June 1, 1966, the money supply actually declined by 1.4 percent.

Corporate bond market.--A look back at Figure 5 will remind the reader how peaceful the corporate bond market was until the end of 1965. The demand for long-term debt capital by corporations was not excessive. Table XVI shows the

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[67] Annual Report, 1966, p. 205.

TABLE XV

SELECTED MONETARY INDICATORS*
(ANNUAL RATES OF CHANGE)

Item	June 1965 to June 1966	June 1966 to September 1966
Money Supply	5.8%	-1.4%
Demand Deposits	5.5	-3.5
Currency	6.9	5.5
Time Deposits	12.8	8.6
Money and Time Deposits	9.0	3.2

*Source: Federal Reserve Bank of St. Louis Review, October, 1966, p. 4.

TABLE XVI

TOTAL NET ISSUES OF CORPORATE BOND FLOTATIONS, 1963-1966*
(BILLIONS OF DOLLARS)

Year	Amount
1963	$ 3.6
1964	5.4
1965	5.4
1966	11.4

*Source: Federal Reserve Bulletin, November, 1968, p. A69.2.

dollar volume of corporate bond flotations from 1963 through 1966. Since banks were capable of supplying finance, it seems as though corporations were content to tap this source rather than bonds. Management seemingly did not anticipate, much less plan for, a curtailment of finance availability from banks and the pressures that would result from such

curtailment. Bank loans were envisioned as a veritable Dogpatch ham.[68] In the financial community, businessmen looked on bank loans as a perpetual source of funds. Use what they would, there would still be plenty available to serve as a perpetual source of liquidity. In early 1965, corporations were motivated to invest by the pressure of output on capacity.[69] As investment expenditures exceeded internally generated funds, firms turned to banks as the source of finance. Banks responded, it was seen in Chapter II, by expanding their loans to businesses.[70] However, in mid-1965, the Federal Reserve restricted the flow of reserves to commercial banks (Figure 9). With this source of external finance less available, firms were forced into the bond market. Interest on long-term Aaa bonds surged upward 14 basis points during the fourth quarter of 1965. Interest rates continued their upward surge with only brief pauses until the third quarter of 1966.

Table XVII supplements Table XVI by showing the change in the pattern of marketing new corporate bond issues. Public offerings in the table are those which are sold on the open market to the general public, i.e., to individuals and any financial institutions wanting to bid for them.

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[68]The reader might recall that this ham was a perpetual source of sustenance for the citizens of Dogpatch. Eat what they would, as much ham remained for future consumption as there was at present.

[69]See pp. 31-32.

[70]See p. 43.

TABLE XVII

CORPORATE BOND OFFERINGS BY TYPE OF OFFERING, 1965-1968*
(MILLIONS OF DOLLARS)

Year and Quarter	Public		Private		Total
	Amount	Percent	Amount	Percent	
1965-I	905.1	35.1	1673.4	64.9	2578.5
II	1864.5	45.2	2259.0	54.8	4123.5
III	1574.4	44.6	1954.5	55.4	3528.9
IV	1225.5	35.1	2263.8	64.9	3489.3
1966-I	1793.7	40.2	2659.5	59.8	4453.2
II	1941.6	48.2	2083.2	51.8	4024.8
III	2256.0	58.1	1626.6	41.9	3882.6
IV	2047.2	62.1	1246.8	37.9	3294.0
1967-I	3200.2	62.6	1909.3	37.4	5109.5
II	4016.7	73.7	1433.6	26.3	5450.3
III	4603.1	74.3	1592.6	25.7	6195.7
IV	3107.4	59.2	2135.2	40.8	5242.6
1968-I	2465.2	59.1	1705.1	40.9	4170.3
II	3104.5	64.8	1686.9	35.2	4791.4
III	2606.7	65.2	1390.0	34.8	3996.7
IV	2562.1	57.5	1894.0	42.5	4456.1

*Source: Statistical Bulletins, Security and Exchange Commission, 1965-1968.

Private offerings are those which are placed privately in large blocks directly with a large buyer, primarily insurance companies.[71] Of particular interest in Table XVII is the large proportion of corporate bonds which were placed privately in 1965. The smallest proportion of bond offerings placed privately during 1965 was 54.8 percent in the second

[71]By placing securities privately, a corporation avoids having to file a registration statement (S-1) with the Securities and Exchange Commission in compliance with the Securities Act of 1933.

quarter. Insurance companies, the major source of private-placement demand for corporate bonds, throughout 1965 accelerated their acquisition of corporates. To do so, they were forced to liquidate their holdings of government securities and municipal bonds.[72] The situation changed in 1966. As financial disintermediation increased and insurance companies began to experience more pronounced liquidity problems,[73] corporate bond flotations were forced into the open market. These flotations were undertaken by firms seeking new finance and by firms wanting to fund bank loans. Pressure of new orders on capacity occurring when corporations had insufficient liquidity to finance investment needs caused an increased demand for external finance.[74] Since banks were experiencing liquidity problems as certificates of deposits were cashed in (alternative interest rates moved above that allowable on CD's), they became a less available source of funds. Since insurance companies were having liquidity problems, the private placement market for long-term debt financing deteriorated. The result of these two factors was to channel corporate debt financing demands inot the open market. The bond market became congested.

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[72]See Table XIII and the discussion on pp. 91-92.

[73]See pp. 83-86 for a discussion of disintermediation.

[74]See pp. 40-50 for a discussion of corporate demand for loanable funds.

Table XVIII emphasizes the variability of entries on the new issues calendar during 1966.[75] This table shows actual flotations during the week (t) and the issues anticipated on each of four successive weeks preceding the issue week. For example, the week of March 7 had a volume of $178 million taxable bonds issued by eight issuers. Four weeks before March 7 (t-4), $69 million worth of new issues were entered as corporations sought a place on the calendar. By entering the calendar early (here, four weeks in advance), the firms hoped to be assured of a day of issue. With such notification, the market can be prepared for the forthcoming issue. Within three weeks of the actual flotation week (t-3), a total of $138 million was anticipated, indicating a net addition of $69 million in the calendar. Then, with two weeks left before the actual flotation, $239 million in new issues were scheduled. Between weeks t-2 and t-1, $75 million in bonds were cancelled. Finally, when the week arrived a total of $178 million was issued.

Significance of the table is the increasing instability as the panic period approached. At the height of the panic, when the interest rate increased 46 basis points in four months (see Table XIX), cancellations became, in the words of The Commercial and Financial Chronicle, "as common as

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[75] See Appendix C for a discussion of the primary material used in constructing this table.

TABLE XVIII

NEW ISSUES CALENDAR, ACTUAL AND FOUR WEEK ANTICIPATED,*
TAXABLE BONDS (MILLIONS OF DOLLARS)

1966 Week Beginning	Actual** (t)	Anticipated			
		1 Week (t-1)	2 Weeks (t-2)	3 Weeks (t-3)	4 Weeks (t-4)
1-3	181 (4)	192			
1-10	179 (9)	154 (8)	66		
1-17	89 (8)	95 (8)	128	105	
1-24	111 (6)	116	159	110	82
1-31	84 (4)	89 (5)	98	92	89
2-7	243 (8)	243	151	43	35
2-14	114 (7)	118	116	59	55
2-21	120 (7)	163 (10)	146	75	25
2-28	122 (6)	78	167	213	72
3-7	178 (8)	164 (8)	239	138	69
3-14	273 (11)	332	346	212	149
3-21	67 (3)	78 (6)	127	52	52
3-28	371 (5)	283 (5)	395	386	399
4-4	128 (7)	95	218	105	94
4-11	393 (10)	363 (9)	136	126	120
4-18	83 (5)	83 (5)	80	200	200
4-25	77 (3)	81 (4)	91	75	70
5-2	258	255	238	211	61
5-9	128 (5)	108	108	108	96
5-16	105 (5)	118	84	93	72
5-23	54 (4)	66	59	55	53
5-31	213	143	206	175	128
6-6	76	126	125	63	94
6-13	239	220	93	65	89
6-20	409 (10)	386	386	232	4
6-27	282 (7)	283	417	268	116
7-5	21	60	150	50	8
7-12	227 (9)	220	192	102	97
7-18	9	23	77	80	44
7-25	120	138	176	99	86

TABLE XVIII--Continued

1966 Week Beginning	Actual** (t)	Anticipated			
		1 Week (t-1)	2 Weeks (t-2)	3 Weeks (t-3)	4 Weeks (t-4)
8-1	397	337	349	325	325
8-8	204	221	299	211	25
8-15	227	253	106	102	143
8-22	262	273	268	142	136
8-29	225	230	144	108	10
9-6	53	65	106	100	50
9-12	242	339	364	332	202
9-19	129	88	69	72	67
9-26	286	247	250	280	170
10-3	79	45	125	135	86
10-10	123	149	253	68	93
10-17	217	300	156	80	66
10-24	135	136	143	159	200
10-31	351	296	300	208	153
11-7	35	10	14	14	4
11-14	233	309	242	183	145
11-21	43	43	21	27	23
11-28	112	67	73	172	64
12-5	570	583	511	280	120
12-12	536	529	442	129	125
12-19	2	2	2	-	-
12-26	-	-	-	4	4

*Source: The Commercial and Financial Chronicle, Monday issues, 1966.

**Figure in parentheses represents number of issues.

Kansas."[76] This was during the third quarter of 1966. Firms were attempting to acquire finance at the very worst possible time, creating so much congestion in the bond market that

[76]The Commercial and Financial Chronicle, August 1, 1966, p. 2.

TABLE XIX

AVERAGE YIELD ON NEW ISSUES OF HIGH-GRADE CORPORATES ADJUSTED TO Aaa BASIS* (1963-1966)

Month	1963	1964	1965	1966
January	4.16%	4.50%	4.37%	4.82%
February	4.15	4.27	4.38	4.95
March	4.17	4.35	4.42	5.19
April	4.21	4.46	4.42	5.08
May	4.27	4.42	4.48	5.18
June	4.23	4.37	4.55	5.43
July	4.28	4.36	4.56	5.68
August	4.22	4.33	4.58	5.75
September	4.25	4.44	4.65	5.89
October	4.27	4.43	4.66	5.76
November	4.34	4.43	4.64	5.77
December	4.40	4.44	4.82	5.75

*Source: The Weekly Bond Buyer, January 9, 1967, p. 37.

many were forced to cancel their issues. The Federal Reserve Bank of New York describes the month of August, when $1,315 million in taxable issues came to the market, as follows:

> With no apparent end to the demand for funds and the upsurge in interest rates, conditions in the financial markets seriously deteriorated in August and some observers even saw the threat of a financial panic.[77]

The panic environment was evidenced on the new issues calendar not only by the dollar volume of flotations and the volume of cancellations, but also by the pattern of interest rates on corporate bonds over the period. Table XIX shows

[77]"The Strains and Stresses of an Overheated Economy," Annual Report of the Federal Reserve Bank of New York, 1966, p. 8.

the average yield on new issues of corporate bonds in grades Aaa, Aa, and A adjusted to Aaa basis. It uses all new corporate bond offerings rated by Moody's Investor Service except serial bonds, convertible debentures, and bonds with warrants. Yields to investors from Aa and A bonds are converted to Aaa basis by subtracting the spread between Moody's average yields on outstanding bonds of the three top grades during the issue month, e.g., the spread between the top three grades in the secondary market may be 20 basis points so that an Aa issue yielding 6.24 percent would be adjusted downward to 6.04 percent. The adjusted yields are then weighted by size of offering and averaged. In this table, the impact of financial strains in the period is brought home graphically. The movement of the rate of interest is just as Roland Robinson has indicated it should be under these circumstances:

> It will be reflected in the open-market yields of outstanding obligations, but it has been induced by the new-issues supply becoming 'excessive,' i.e., the market becoming 'congested.' As a result, increases in long-term interest rates often come as a series of jerks or saw-tooth jumps.[78]

From the low point of September, 1963, the Aaa yield jerked upward to a record 5.89 percent in September, 1966. The total increase was 174 basis points. Even more impressive was the increase between September, 1965, and the

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[78]Roland I. Robinson, "Forecasting Interest Rates," p. 92.

same month in 1966. Here, the increase was 124 basis points. A striking 70 percent of the total forty-three month increase came in the last twelve months of the period.

The function of a rising interest rate is to restrict capital formation, hence serving to forestall or spread an unsustainable increase in capital spending over a period of time.[79] When needed expansion becomes too much for the economy to handle in one fell swoop, the monetary authority can tighten the supply of bank reserves and so increase the interest rate. It is the interest rate which can communicate the availability of resources for capital formation to the business sector. Consequently, there should be a decline in investment expenditures, a slowing of the pace of investment. Yet, for several months, the rising interest rate did not perform its function. Large corporations simply pressed all the harder for finance. Small firms were bumped off the new issues calendar. Congestion and panic increased.

Financial myopia evinced during the period can be further illustrated by examining the role utilities played. Utility firms have a very stable demand for their output, making it possible for them to predict with greater accuracy their future financing needs.[80] Yet, as Table XX indicates,

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[79]See pp. 60-72 for a discussion of the theory involved.

[80]See Michael Gort, "The Planning of Investment: A Study of Capital Budgeting in the Electric-Power Industry," Journal of Business, XXIV (April-July, 1951), 79-95, 181-202.

TABLE XX

UTILITY BOND ISSUES AND INVESTOR ACCEPTANCE*
(1963-1966)

Year Quarter	Number of Issues	Average Percentage Sold First Day	Investor Acceptance	
			Terminated, Sold-Off	Sold Out, Premium
1963-I	7	33	4	3
II	11	23	7	4
III	6	39	4	2
IV	6	34	5	1
1964-I	5	51	2	3
II	7	30	3	4
III	10	26	6	4
IV	2	65	1	1
1965-I	5	54	3	2
II	7	44	6	1
III	8	57	6	2
IV	7	72	3	4
1966-I	15	52	10	5
II	18	32	17	1
III	8	49	5	3
IV	13	47	3	9

*Source: "Utility Bond Issues and Investor Acceptance," Internal Report of Salomon Brothers & Hutzler, winter, 1968.

even utilities jumped into the congested bond market. The number of issues in the first two quarters of 1966 exceeded that for all of 1965.

The pattern was much the same for other sectors of corporate enterprise. Management failed to anticipate its financial needs and was caught short: with a capital shortage in prospect it surged into the financial market to finance its expansion of fixed assets and working capital.

With pressure applied by the Federal Reserve to bank reserves, firms were forced into the bond market, causing congestion and cancellations. Investment bankers performed their classical function of adjusting the volume of new issues to the market. Fearful of having to take inventory losses or of being unable to maintain a firm price and strong market for the issues of their clients (the issuer), investment bankers suggested delays in issuing to their clients.[81] When the client was powerful enough to force his way into the market, the investment banker would purchase the issue at a sufficiently low bid to ensure resale at a profit. Consequently, the interest rate on corporate issues boomed upward as firms crowded into the market. The upward surge in turn increased disintermediation; disintermediation caused banks and financial intermediaries to liquidate their holdings and to restrict the supply of funds. With financial institutions unable to supply corporate demands for liquidity, still more firms were forced into the bond market, the result being increased congestion. The process was self-reenforcing. A full-fledged panic was developing.

Business success at acquiring finance and using it to expand its plant and equipment induced not only inflation,

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[81] Keynes, Treatise, II, 368, and Lutz, p. 830, have mentioned these two points. See also the discussion on pp. 70-71.

but also overcapacity.[82] Table IV illustrated manufacturing utilization rates. The pace of investment was too rapid for too long a time, causing the business community to accumulate excessive capital.

Table XXI shows the pattern of appropriations for plant and equipment by manufacturers. During most of the period, manufacturers' appropriations continued to increase. With the appropriation, management plunged into a financial market experiencing the extreme conditions already described. Not until the third quarter was the upward trend in new appropriations broken. Monetary policy accomplished its objective of slowing the pace of investment, but had brought the economy to the brink of financial disaster.

September Song

With the demand for liquidity seemingly insatiable, the Federal Reserve was forced both to enlist the aid of fiscal policy and to slacken its stranglehold on bank reserves in order to avert collapse of the financial markets. Each of these is discussed in turn.

Monetary ease.--With conditions in the money and capital markets at a panic pitch, the Board of Governors

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[82]Christy has pointed out that overcapacity is the real villain of a boom. As he says, ". . . Danger from [inflation and the collapse of speculation] is probably less acute and enduring than that resulting from overinvestment." George A. Christy, "Three Risks of Ample Liquidity," The Commercial and Financial Chronicle, May 7, 1964, p. 4.

TABLE XXI

MANUFACTURERS CAPITAL APPROPRIATIONS, 1965-1967, SEASONALLY ADJUSTED* (MILLIONS OF DOLLARS)

	I	II	III	IV
		1965		
Opening backlog	6,124	6,554	6,932	7,357
Newly approved	2,521	2,588	2,693	2,871
Canceled	103	109	92	169
Capital expenditure	1,988	2,101	2,176	2,272
Closing backlog	6,554	6,932	7,357	7,787
		1966		
Opening backlog	7,787	8,026	8,534	8,239
Newly approved	2,853	3,029	2,441	2,772
Canceled	211	71	108	197
Capital expenditure	2,403	2,450	2,628	2,716
Closing backlog	8,026	8,534	8,239	8,098
		1967		
Opening backlog	8,098	7,873	7,831	7,920
Newly approved	2,675	2,793	2,786	3,059
Canceled	193	169	178	183
Capital expenditure	2,707	2,666	2,519	2,643
Closing backlog	7,873	7,831	7,920	8,153

*Source: National Industrial Conference Board, Investment Survey, 1968, pp. 7-9.

wrote what Conklin calls an "epoch-making declaration of policy."[83] A letter, dated September 1, 1966, was sent to all member banks, signed by the president of the Reserve bank in the member bank's district, assuring them that banks experiencing deposit losses would be extended credit through

[83]Conklin, p. 104.

the discount window for longer periods than usual.[84] This privilege would be granted if the bank made efforts to adjust its liquidity needs by ". . . holding down the growth of business loans rather than by further substantial liquidation of tax-exempt and other securities."[85] With this reassurance, the psychology of the market was noticeably cooled.[86] In addition, beginning September 14 the Federal Reserve initiated policies to contribute toward a "relaxation of market tensions."[87] The System provided reserves to commercial banks beginning in early November, and "further prompt injections of reserves over subsequent days continued to help avoid undue tautness. . . ."[88]

Fiscal restraint.--In order to reduce further the financial strains of the period, the Federal government introduced measures of fiscal restraint. In a message to Congress on September 8, 1966, President Johnson promised that the Federal government would try to reduce its expenditures for civilian programs by some $3 billion in fiscal

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[84]"Recent Bank Credit and Monetary Developments," p. 190.

[85]Annual Report, 1966, p. 234.

[86]The text of the letter is reproduced in full in Appendix D.

[87]Annual Report, 1966, p. 248.

[88]Ibid., p. 256.

1967 (July 1, 1966-June 30, 1967).[89] In addition, Federal agencies were to secure new funds through the Treasury rather than direct flotation of securities in the open market; such a procedure would reduce the government's contribution to upward pressure on interest rates.[90] The President also recommended that the 7 percent investment tax credit for new equipment and the accelerated depreciation of structures be suspended for those acquisitions occurring between September, 1966, and December, 1967.[91] It was hoped that these measures would moderate both the booming demand for capital assets and the rising pressure on the money and credit markets. Coupled with the Federal Reserve's letter of September 1, 1966, and relaxation of restraint, they seem to have done just that.

Conclusion and Summary

This chapter has examined conditions in the financial market during the period 1964-1966. During this period, the Federal Reserve followed a stop and go monetary policy. First, the Federal Reserve supported an expansive fiscal policy. It supplied reserves to commercial banks and permitted the money supply to expand. As the economy became

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[89] See the discussion in Economic Report of the President, January, 1967, pp. 58-59.

[90] See the discussion in The Commercial and Financial Chronicle, September 5, 1966, p. 2.

[91] Ibid.

overly exuberant from military expenditures and a capital goods boom, the Federal Reserve became concerned about the instability of the price level and the deterioration of the United States balance of payments. This concern manifested itself in a reversal of its previously expansive policy. The Federal Reserve began to restrict the flow of reserves to commercial banks in the second quarter of 1965, eased up on its restraint, then became resolute in its restriction at the beginning of 1966.

As the supply of reserves to banks slowed, interest rates moved upward. However, businesses continued to press for finance. Financial pressure was shifted from the short-term market of bank loans to the long-term market, as businesses seeking new loans for new investment or new loans to replace maturing loans (refunding) were forced out of commercial banks and into the bond market. However, banks did not desire to alienate their favorite customers, so in an attempt to acquire reserves and so to make more business loans, banks began liquidating their portfolios of municipal and U.S. government bonds.[92] As the Board of Governors pointed out,

> Commercial bank holdings of U.S. Government securities declined at a faster rate during the first 6 months of 1966 than any corresponding period since the present business expansion

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[92] Annual Report, 1966, pp. 65-67.

> began in 1961. Banks reduced their holdings by $3.2 billion . . . an annual rate of about 11 per cent.[93]

Further downward pressure on bond prices and an increase in the rate of interest resulted. Since the Federal Reserve was not supplying new reserves to the system, the sale of bonds by banks merely shifted existing reserves between banks. The pressure was spread throughout the banking system. A bank with sufficient reserves would find itself short of reserves as its customers purchased bonds and wrote checks on their accounts to pay for the bonds. Consequently, the second bank would be forced to seek reserves. And, in addition to using the discount window, it would in turn resort to selling bonds from its portfolio. Rather than cooperating with the Federal Reserve's expressed objective of restraining business loans, the banking industry fought against it.

The financial pressures, then, shifted to the bond market. The bond market is a much narrower financial market than is the banking community.[94] With some 13,000 commercial banks in the United States to call on, excess investors can

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[93]"Recent Credit and Monetary Developments," Federal Reserve Bulletin, July, 1966, p. 942.

[94]For an analysis of the varying abilities of the money market and the capital market to absorb financial demands (i.e., the breadth and resiliency of the two markets), see Ralph A. Young and Charles A. Yager, "The Economics of 'Bills Preferably,'" Quarterly Journal of Economics, LXXIV (August, 1960), 370-382.

usually find convenient accommodation in the banking community. The supply of loanable funds is here a broad flow of finance. Like the Amazon, it moves as a rule smoothly and can be tapped without upsetting its flow. However, the bond market is not so broad. It is composed primarily of insurance companies and it centers in New York.[95] Diverting the financial demands of business from the banking community to the bond market was rather like diverting the Amazon into the Trinity. The flow became not only turbulent, but also excessive. The result was what one would expect. Interest rates on corporate bonds jerked upward rapidly and congestion strangled the market almost to the point of nonexistence. Cancellations of issues became the rule rather than the exception.

The market reached panic proportions as demands for liquidity became virtually insatiable. Just as Keynes has pointed out, there is no such thing as liquidity for the system as a whole. Someone must hold the bonds and, hence, be illiquid.[96] Yet, in the third quarter of 1966, bonds were like hot potatoes, bouncing from one creditor to another, as everyone tried to become liquid. Rising interest rates failed to perform their function of restricting the supply

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[95] A discussion of this market is in Herbert E. Dougall, Capital Markets and Institutions (Englewood Cliffs, 1965), pp. 108-116. See also above, p. 96.

[96] J. M. Keynes, The General Theory of Employment, Interest, and Money (New York, 1964), p. 155.

of new issues; they continued to appear. How high the interest rate would ultimately have gone can only be conjectured. With the failure of banks to cooperate with the Federal Reserve and so ration credit, no doubt it would have been exceedingly high.

The Federal Reserve witnessed a panic developing and justifiably feared the ultimate consequences. Just as Smith pointed out could happen,[97] the congestion in the bond market forced the Federal Reserve to lessen its restraint. The Federal Reserve opened the discount window for a longer than usual period and curtailed its desired policy of shrinkage of the reserve base. In the fourth quarter of 1966, the corporate interest rate actually declined, and bank loans to business expanded. The Central Bank had backed out on its objective of killing the expansion. During the first two quarters of 1967 the fringe of unsatisfied borrowers surged back into the financial market and the pace of investment subsequently resumed its pace once again. The result was a return of inflation.

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[97] See p. 71n.

CHAPTER IV

SUMMARY AND RECAPITULATION OF THE ARGUMENT

Chapters II and III have been long and perhaps tedious. Hence, it may be useful to see where we stand in the dissertation. The following pages will summarize succinctly the two previous chapters, then will recapitulate the argument in terms of verification of the primary hypothesis.

Summary

These two chapters have sought to indicate conditions in the financial markets for a brief period of time. The impact of Vietnam expenditures and the Internal Revenue Act of 1964 created boom conditions throughout the economy. With government demand increasing and business investment expanding, the financial markets became a source for the necessary finance with which to command real resources. The banking system supplied this finance.

As the money supply began to expand more rapidly than the pace of output, prices began to increase. Consequently, the Federal Reserve stepped into the financial market and began to apply pressure on the supply of bank reserves. In the beginning, such a policy did not have the desired effect. The business community simply pressed all the harder for finance. Banks cooperated with business by liquidating some

of their assets, especially municipal and government bonds, in order to improve their reserve position and so to continue lending. However, continued pressure from the Federal Reserve eventually absorbed the excess reserves of the system, but at too rapid a pace. Near-panic occurred as banks continued to liquidate their secondary reserves and as congestion in the bond market increased from the surge of new issues.

Relative calm returned to the financial community, however, when fiscal policy assumed a restrictive posture and monetary policy lessened its stranglehold. The President recommended suspension both of accelerated depreciation and of investment tax credits and promised a reduction in "unnecessary" government expenditures, hence, lessening the demand for loanable funds. The Board of Governors notified member banks that discounts and advances were available for a longer period of time than usual so that contraction of loans could progress at an orderly pace. This action lessened the contraction of the supply of loanable funds. The relative increase in supply and decrease in demand for loanable funds ended the financial panic.

Recapitulation

At this stage of the dissertation, it may be enlightening to see exactly where we stand in the verification of the major proposition. The primary proposition, that severity

of the financial squeeze of 1966 was increased by management's financial myopia, is partially verified. Chapters II and III have described the financial squeeze, showing that the squeeze resulted from an excess of demand over supply of loanable funds. Hence, these two chapters verified propositions two, three, four, five, and six.

The study so far has demonstrated that the financial squeeze was indeed increased by business demand for loanable funds. Of course, not all businesses surged into the financial markets during the period leading up to and surrounding the credit crunch. However, like a herd of sheep a large number of firms did act in unison by flocking into a frenetic financial market. A sufficiently large number acted in such a way as to destabilize the corporate bond market, to heighten pressure on commercial banks by demanding more loans, and to increase the severity of the financial squeeze in general.

It is now necessary to turn our attention exclusively to proposition seven. We have seen that decisions of corporate management increased the severity of the financial squeeze of 1966, now we must see if these decisions were a result of financial myopia. This study now will marshall evidence to indicate that the surge of financial demand by businesses resulted from management's failure to anticipate its financial needs.

Before leaving the discussion of these two empirical chapters and moving to an examination of the evidence supporting proposition seven, the reader should note this significant point: The very actions of management detailed above can be used to support the assertion that management was financially myopic. The data suggest that a large segment of management was motivated to invest by an immediate increase in its operating rate. The investment decision made, management then surged into the financial community. Such a cause and effect relationship is what we would expect of a firm which makes no attempt to anticipate its financial needs. Investment and financing functions are not integrated. The finance function simply follows in the wake of the investment decision. No attempt is made to forecast the cost or availability of finance months or even year into the future, and investment decisions are timed without regard to interest rates or the state of the money markets. The following two chapters will verify this myopic financial activity by referring to the literature of economics and finance and by interpreting a questionnaire.

CHAPTER V

FINANCIAL MYOPIA: AN ECONOMIC VIEWPOINT

> . . . We can see most clearly how illusory is any attempt by economists to expel from their field the subjective, the conventional, the non-rational, the fruits of the play of imagination.
>
> G. L. S. Shackle

Chapter V begins the process of marshalling evidence to support the contention that the businessman acted in a financially myopic way in 1966. In this chapter, the reader is presented with information emphasizing both the lack of rational planning on the part of businessmen and the way in which businessmen interact with one another. Along with the next chapter, Chapter V will verify proposition seven:

Most business firms floating bonds or requesting bank loans in 1966 had not anticipated their financial needs. They appear to have been catapulted into the financial markets by ad hoc decisions to expand capacity. This was financial myopia.

This chapter is iconoclastic. It examines the businessman through the eyes of several economists who, to say the least, have been something less than adulatory in their appraisal of the entrepreneur. In doing so, this chapter

shows what Bagehot calls a "malevolent sense,"[1] for it will take ". . . pleasure in remarking the foolish opinions, the narrow notions, and fallacious deductions which seem to cling to the pompous and prosperous man of business."[2]

Observations on two characteristics of the businessman are presented in the following pages. The first is that businessmen often are not motivated to action as a result of a thorough study or far-sighted evaluation of alternatives. In other words, they react to changes in a situation by making ad hoc decisions. The second characteristic is the degree of gregariousness of the businessman, meaning that businessmen imitate one another by using similar decision-criteria and by socially interacting, so that the result of their actions is often other than what was anticipated. This second characteristic is important because it relates microeconomic decisions made during 1966 to the macroeconomic credit crunch. Had only a few corporate financial executives sought external finance during 1966, the credit crunch would not have been so severe. However, when a large number of firms sought finance simultaneously, the result was a credit crunch of panic proportions.[3]

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[1]Walter Bagehot, "Shakespeare--The Man," cited in Bagehot's Historical Essays, edited by Norman St. John-Stevas (Garden City, New York, 1965), p. xx.

[2]Ibid.

[3]Boulding uses the term "macroeconomic paradox" to describe propositions which are true when applied to a single

Animal Spirits

"Animal spirits" is a term used in this study to describe a sentiment of the businessman;[4] it is a psychological tendency which indicates that the businessman does not base his course of action upon a careful weighing of far-sighted factors, but rather determines it on ad hoc circumstances. Changes in his environment motivate him to action in an immediate sense, in the heat of the moment, rather than rationally in the cool shade of intellectual detachment. He reacts emotionally on a short view of things, rather than deliberately on a long view. This seeming irrationality, in turn, springs at least in part from the fact that the future is uncertain.

Uncertainty

Uncertainty consists of a lack of knowledge about the outcome of future events, for example, ". . . the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention, or the position of private wealthowners in the social system in 1970."[5] As Shackle

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unit but which are untrue when applied to a system as a whole, op. cit., p. 173. This is analogous to the fallacy of composition in logic.

[4]Bagehot refers to "animal spirits" in his description of Falstaff, a character in a comedy by William Shakespeare. See Walter Bagehot, "Shakespeare--The Man," Literary Studies by Walter Bagehot, edited by George Sampson (New York, 1911), I, 132.

[5]J. M. Keynes, "The General Theory of Employment," Quarterly Journal of Economics, LI (February, 1937), 214.

points out, uncertainty is another name for ignorance.[6] Probability, on the other hand, is reducible to an explicit value because all alternatives can be included in the calculation, for example, the probability of winning in roulette. Shackle says, ". . . Probability . . . is adapted to discovering the tendencies of a given system under indefinitely repeated trials or experiments."[7] The stuff of uncertainty, however, is another proposition: "About these matters," continues Keynes "there is no scientific basis on which to form any calculable probability whatever."[8]

Outcome of a business decision cannot be known, nor can a tendency of the system be discovered under indefinitely repeated trials. The complete model cannot be reproduced. Yet, a decision must be made by the businessman concerning his investment policy. To do nothing means that he has decided that his firm's current asset structure is optimum. Hence, a decision is called for in every situation.

Since such is the case, businessmen react to changing situations around them not after calm calculation of the alternatives and subsequent outcomes, but spontaneously: "Most, probably, of our decisions . . ." points out Keynes "can only be taken as a result of animal spirits--of a

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[6] G. L. S. Shackle, Expectation in Economics (Cambridge, 1949), p. 116.

[7] Ibid., p. 6.

[8] Keynes, loc. cit.

spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities."[9]

With uncertainty dominating the economic environment and with animal spirits the dictator of action, how can decisions by the entrepreneur be reached with any degree or semblance of certainty? Is there no scheme which ties the framework together for a businessman? Yes, there is. "Animal spirits" as the outstanding sentiment of a businessman rests upon an evaluation of the present as an image of the future. Using the present as a picture of the future, a businessman has some basis upon which to make decisions:

> We assume that the present is a much more serviceable guide to the future than a candid examination of past experience would show it to have been hitherto. In other words we largely ignore the prospect of future changes about the actual character of which we know nothing.[10]

Actions and events in the present, then, serve as decision variables in the economic environment. "One may remember the past," writes Shackle, "but this remembering is done in the present."[11] The conclusion is obvious: "Present

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[9] J. M. Keynes, The General Theory of Employment, Interest, and Money (New York, 1936), p. 161. (Italics added)

[10] Keynes, "The General Theory," p. 214.

[11] G. L. S. Shackle, A Scheme of Economic Theory (Cambridge, 1965), p. 189. See, also, George Katona, Psychological Analysis of Economic Behavior (New York, 1951), pp. 243-244.

thoughts and acts, so far as our consciousness can tell us, are all that is. To be is to be in the present."[12]

One of the comments by a respondent to this writer's questionnaire implies the use of the present as a guide to the future. "Forecasts," wrote a Treasurer of a public utility firm, "take the form of charting trends of money costs from current market and forecasting cash flow based upon estimates of funds generated internally as well as money needs for plant construction."

Investment and Animal Spirits

In order to emphasize its contribution to the financial squeeze of 1966, the role of animal spirits in both financial and business investment must be examined.

Financial investment.--Academic writers often point out that the value of a security is equal to the present value of its future cash inflows.[13] By emphasizing such a technique, these writers impute an air of rationality into the selection of securities which does not in fact exist. The weakness of placing so much emphasis on such a rational technique is that it conceals the problem of estimating the

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[12]Shackle, Scheme, p. 189.

[13]See, for example, Weston and Brigham, Managerial Finance, pp. 297-304, and Eugene F. Brigham and Myron J. Gordon, "Leverage, Dividend Policy, and the Cost of Capital," Journal of Finance, XXIII (March, 1968), 86.

dollar inflows to use in the discounting process.[14] Since, as Christy notes, "all estimates fade rapidly into a fogbank of uncertainty,"[15] the investor in fact is forced to rely on short-term techniques. The market valuation of a security thus ". . . shows a strong bias towards the assumption that whatever conditions and results have been characteristic of the present and recent past," Keynes says, "will be lasting and permanent. And the Bond Market is not exempt from the same weakness."[16] So it is that ". . . the apparent certainties of the short period, however deceptive we may suspect them to be, are much more attractive. . . ."[17]

Because participants in the market place do not anticipate future events by accurately evaluating the consequences of present events, they are subject to occasionally abrupt changes in their evaluations. If some variable alters so that its relationship with other variables changes significantly, a widespread change may occur in the expectations of the market place. A new "conventional judgment"[18] springs

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[14]For a discussion of this problem, see George A. Christy, "Capital Budgeting Theory: A Fact and Two Analogies," North Texas State University Business Studies, fall, 1968, pp. 119-136, especially pp. 122-123.

[15]Ibid., p. 125.

[16]J. M. Keynes, A Treatise on Money, II (New York, 1930), 358.

[17]Ibid.

[18]Keynes, "General Theory," p. 214.

full blown from the restructuring of expectations. Under these conditions, where the market place is subject to the vicissitudes of expectations, a premium falls to the speculator capable of determining in which direction "mob psychology"[19] will carry security prices. The cunning investor does not lean against the wind in the sense of selling when others are buying. He buys on the assumption (or hope) that others will also buy and so drive the price of his security upward. Profit is gained, then, by anticipating the ebb and flow of waves of expectations in the market place and, as Keynes says, by acting in such a way as "to ape unreason proleptically."[20]

> . . . The vast majority of those who are concerned with the buying and selling of securities know almost nothing whatever about what they are doing. They do not possess even the rudiments of what is required for a valid judgment, and are the prey of hopes and fears easily aroused by transient events and as easily dispelled. This is one of the odd characteristics of the Capitalist System under which we live, which, when we are dealing with the real world, is not to be overlooked.[21]

The socially optimum allocation of finance becomes only a fortuitous happenstance. One will allocate his finance to the security he believes will be the next favorite of the market. And this is true not only of the stock market, but

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[19] Keynes, General Theory, p. 158.

[20] Keynes, Treatise, II, 361.

[21] Ibid., pp. 360-361. (Italics added)

also of the bond market. As Shackle observes, ". . . The price of bonds has a unique peculiarity, we may say that it is 'inherently restless,' for it depends mainly, almost solely, on guesses about its own immediately future course."[22]

By purchasing a security, either stock or bond, the speculator seeks a return not so much from the dividend rate or the interest yield, but from the capital gain. Speculation then dominates enterprise:

> Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done.[23]

Once the destabilizing surge begins, opinion (conventional judgment) can keep the prices moving. Reality is unable to overcome the momentum of price movement. As Keynes remarked,

> If everyone agrees that securities are worth more, and if everyone is a 'bull' in the sense of preferring securities at a rising price to increasing their Savings-deposits, there is no limit to the rise in price of securities and no effective check arises from a shortage of money.[24]

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[22]Shackle, Scheme, p. 90. Cf. the comment by Keynes above, p. 127.

[23]Keynes, General Theory, p. 159.

[24]Keynes, Treatise, I, 256. Veblen was quite pungent in his criticism of "imagined future events" which determine the value of securities. See Thorstein Veblen, The Theory of Business Enterprise (New York, 1904), p. 76.

Examining the financial environment in 1966, the observer is struck with the almost total deterioration of the bond market.[25] Although an analysis of the role speculation played during this period is beyond the scope of this study, it is interesting to conjecture what this role was. Once the price of bonds began to decline, some investors no doubt anticipated a further decline and acted on this anticipation. As the decline accelerated, others began to anticipate a further decline, hence acting on the grounds that the present price movement is a measure of future price movements. And those who saw that such an assumption was irrational could not afford to go against the majority and buy bonds. Indeed, the premium fell to those who "aped unreason proleptically" and avoided buying bonds. Even disposing of present holdings was considered shrewd because the investor could repurchase his bonds once the downward price movement ended. Someone else could absorb the capital loss. The greater the number who believed the downward movement would continue and acted accordingly, the greater the downward movement became. The greater the downward movement became, the greater the number became who believed it would continue. Connect this opinion with the surge of demand for loanable funds by business and government in 1966 and it is not difficult to conceptualize a financial panic.

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[25] See above pp. 101-106.

Business investment.--Animal spirits probably play a role in determining the volume of business investment. Shackle, in commenting on Keynes' General Theory, has made some perceptive comments which apply to this discussion of animal spirits. Shackle concentrates on what he calls a contrast between the method and the meaning of the General Theory. His comment is worth citing in detail:

> There is an arresting contrast between the method and the meaning of Keynes' book. The method is the analysis of equilibrium, the endeavour to account for men's actions as a rational, calculated and logically justifiable response to circumstances which in all relevant essentials they thoroughly know. The meaning is that such rationality is in the nature of things impossible and baseless, because men confront an unknown and unknowable future.[26]

Is it any wonder, then, that businessmen should be dominated by their animal spirits? The fabric of business enterprise seems to be indeed flimsy. Keynes noted that

> Enterprise only pretends to itself to be mainly actuated by the statements in its own prospectus, however candid and sincere. . . . Thus, if animal spirits are dimmed and the spontaneous optimism falters, leaving us to depend on nothing but a mathematical expectation, enterprise will fade and die. . . .[27]

The engine of progress, at least in the material sense of the word, in a capitalist system depends upon the animal spirits of the entrepreneur. With expansion and contraction

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[26]Shackle, Scheme, p. 44.

[27]Keynes, General Theory, pp. 161-162. Cf. the comment in Veblen, p. 101.

of expenditures depending to some extent upon something so ephemeral as the animal spirits of the businessman, one should not be surprised either at the economically destabilizing role of investment, or at the role business played in the financial squeeze of 1966:

> It is not surprising that the volume of investment, thus determined, should fluctuate widely from time to time. For it depends on two sets of judgments about the future, neither of which rests on an adequate or secure foundation--on the propensity to hoard and of opinions of the future yield of capital assets.[28]

Boulding has presented an analytical device which implies animal spirits on the part of the businessman.[29] His concept of the surge phenomenon can, therefore, be interpreted as a supporting element for the major proposition of this dissertation: Severity of the financial panic of 1966 was increased because of corporate management's financial myopia. Let us see how this may be so. Boulding proposes that there is not a fixed planning period in the investment process, but rather a "range of inertia"[30] in which management considers it to be unnecessary to make adjustments. When the decision criteria, whatever they may be, exceed the boundaries of this range, adjustments will then be suddenly made.

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[28]Keynes, "General Theory," p. 218.

[29]Kenneth Boulding, A Reconstruction of Economics (New York, 1962), pp. 219-222.

[30]Ibid., p. 220.

> In such a case whether the 'surge' phenomenon is observed or not depends on the extent of the range of inertia: the smaller this range the less likely is the system to set up 'surges'. . . . If, however, adjustments are not made until they have to be drastic to deal with the situation then we may easily get surges.[31]

Shackle, in turn, offers a complementary analytical device for Boulding's "surge phenomenon." This is Shackle's concept, "focus-gain."[32] Specifically, a focus-gain is the realization by an individual that his previous expectations were incorrectly pessimistic. Realization of events proves that he has indeed miscalculated the future so that he is surprised, if not delighted, at the outcome of events.[33] Conversely, a focus-loss is the realization that his previous expectations were overly buoyant. For example, a businessman who had estimated his firm's capacity in early 1966 to be adequate, or perhaps excessive, realized a focus-gain when he suddenly found output so excessive as to create a shortage of capacity. His expectations about the pace of future output contained either a misjudgment or were incomplete: "Thus an important surprising event," writes

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[31] Ibid.

[32] Shackle, Expectation, pp. 17-19. Katona calls this a "reorganization of the psychological field." Psychological Analysis, p. 237.

[33] Ibid., pp. 18-20.

Shackle, "will require him more or less to create afresh his structure of expectations."[34]

Shackle's focus-gains and Boulding's surge phenomenon can help one to understand the credit crunch of 1966. The surge of new corporate bond issues which appeared on the horizon in early 1966 and which continued in the face of rapidly rising interest rates, was the result of a focus-gain. Before 1965, businessmen did not seek to acquire permanent external finance because there was not sufficient pressure from new orders on capacity and because there was more-than-ample internal finance available. However, as economic activity increased, pressure of output on capacity exceeded the range of inertia. Firms realized that the expansion would be permanent, requiring additional capacity. To finance the desired investment expenditures, firms surged into the financial market. The suddenness, magnitude, and violence of this surge provoked a rapid rise in borrowing costs and raised the threat of a possible shortage of long-term borrowable funds. This, in turn, accelerated the stampede and increased the severity of the financial squeeze in 1966.

The conclusion to be reached from this brief survey from economic literature on animal spirits is twofold.

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[34] Ibid., p. 73. Katona has also commented on the propensity of the businessman to react suddenly and swiftly to a change in environmental factors. See Katona, Psychological Analysis, pp. 242-243.

First, economic activity cannot be reduced to a set of mechanical relationships universally applicable. Second, to the extent that much of the activity of businessmen can be explained only by referring to the dictates of irrationality in the form of spontaneous decisions, then we have some basis from the literature to support the contention that businessmen do not anticipate their financial needs. As Veblen so trenchantly asserted,

> . . . Short-sightedness and lack of insight beyond the conventional routine seem to be fairly universal traits of the class of men who engage in the larger business activities.[35]

Groupthink

Another thread of thought useful in this study running through economic literature involves a concept which can be referred to as Groupthink. This is a term describing use of similar criteria by businessmen in the decision making process.[36] And, in addition, Groupthink relates the impact of individual decisions by the businessman to the total economic structure.

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[35]Veblen, p. 100. Why should these seem to be universal traits? There are in this world thinkers and doers. The doers often accomplish more of the world's work through their energy, even being wrong, than the thinkers do sitting in their armchairs and being right.

[36]Veblen has noted the tendency for "general practice" to force competitors to make similar decisions. See ibid., p. 51.

A look at the record of events during 1964-1966 indicates that if enough businessmen react to a situation in a similar way, destabilization can occur.[37] Businessmen, the reader will recall, seemed to react to the pressure of output on capacity by deciding to invest. In order to finance investment expenditures, they surged into external financial markets and increased financial pressures of the period. Using as a framework Groupthink, one would say that too many financial managers were following the same criteria to determine their firm's financial needs. The decision of one manager reenforced that of another so that the result was a financial logjam of major proportions.

This concept of Groupthink will be analyzed using literature from two areas of economics: accelerator analysis and the cumulative process. Each one of these is discussed in turn.

The Accelerator

Accelerator theory was first presented as an explanation of the business cycle, for example in the writings of Clark,[38] Harrod,[39] and Hicks.[40] Indeed, Hicks went so far

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[37] See above, pp. 112-116.

[38] John Maurice Clark, Strategic Factors in Business Cycles (New York, 1934), pp. 165-171.

[39] Roy Harrod, Trade Cycle (Oxford, 1936), pp. 100-102.

[40] John R. Hicks, A Contribution to the Theory of the Trade Cycle (Oxford, 195), especially pp. 37-55. Hicks

as to assert, "In the real theory it is the accelerator which is ultimately responsible for producing the cycle."[41]

It was pointed out above that accelerator analysis relates investment expenditures to changes in output.[42] Once output begins to expand (say as a result of consumer demand financed with incomes springing from military expenditures by government) there is added pressure on existing capacity in the business sector. As expenditures increase, the pressure of output on capacity eventually necessitates an increase in outlays for plant, equipment, and inventory. These outlays, in turn, reenforce the upward thrust of the economy.[43] Once full employment is reached, the strains of the system created by additional expenditures by business can set off inflation. "The essence of the theory enunciated," writes Harrod, "is that the cycle results from the operation of the Relation and the Multiplier."[44]

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berates Keynes' omission of the accelerator from the General Theory. He says Keynes based a general theory on an exceptional period of unique circumstances ". . . the one case in which the rule does not work." Ibid., p. 52.

[41] Ibid.

[42] See above, pp. 28-34.

[43] The reader should glance once more at events of 1964-1966 in order to appreciate relevance of the theory, see pp. 76-109.

[44] Harrod, p. 102. Harrod referred to the accelerator as "the Relation."

Empirical evidence.--Accelerator theories have been widely tested. In spite of the fact that some accelerator studies have been less than completely satisfying, "More sophisticated models and analytical methods," states Smyth, "have almost invariably produced results favourable to the accelerator principle."[45] These sophisticated models, incorporating lagged relationships, generally have indicated that liquidity is of little consequence in expanding the level of desired investment by businessmen.

Liquidity models emphasize financial obstacles or incentives to investment.[46] They set as central to the inducement to invest such factors as interest rates and internal flows of funds.[47] The study by Ezekial of investment in plant and equipment for 1921-1940 indicated that no statistically significant relationship existed between investment and interest rates.[48] The most significant relationship was that between profits in one year and investment in the following year.[49] Early studies by a group of

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[45]David Smyth, "Empirical Evidence on the Acceleration Principle," Review of Economic Studies, XXXI (June, 1964), 193.

[46]Hart, "Capital Appropriations," p. 123.

[47]Kuh, p. 263.

[48]Mordecai Ezekial, "Statistical Investigations of Saving, Consumption, and Investment," American Economic Review, XXXIII (June, 1942), 272-307.

[49]Significantly, Hart refers to the ratio new orders/capacity (used in Chapter II of this study) as a proxy for profits. See Hart, "Capital Appropriations," p. 130n.

Oxford University economists indicated that investment was insensitive to the cost of funds.[50] More recently, Jorgenson and Seibert,[51] Eckstein,[52] and Meyer and Glauber[53] have reported that liquidity models yield disappointing results. In other words, financial constraints play only a minor role in an explanation of investment stimulation.

The best results have been tests regarding capacity utilization as determinant of investment: "Invariably the capacity model has yielded good results," writes Smyth, "the percentage of variance of investment explained being high and standard errors or regression coefficients low suggesting that they are reliably estimated."[54] Bourneuf,[55]

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[50] R. S. Sayers, "Business Men and the Terms of Borrowing," Oxford Economic Papers, XXX (March, 1940), 23-31, and H. O. Henderson, "The Significance of the Rate of Interest," Oxford Economic Papers, I (October, 1938), 177-187. Both are cited in George A. Christy, "Interest Rates and the Growth-Stability Paradox," unpublished doctoral dissertation, School of Business Administration, University of Texas, Austin, Texas, 1962, p. 161.

[51] D. W. Jorgenson and C. D. Siebert, "A Comparison of Alternative Theories of Corporate Investment Behavior," American Economic Review, LVII (September, 1968), 681-712.

[52] Otto Eckstein, "Manufacturing Investment and Business Expectations," Econometrica, XXXIII (April, 1965), 420-424.

[53] John R. Meyer and Robert R. Glauber, Investment Decisions, Economic Forecasting, and Public Policy (Boston, 1964), pp. 22-26.

[54] Smyth, pp. 197-198.

[55] Alice Bourneuf, "Manufacturing Investment, Excess Capacity, and the Rate of Growth of Output," American Economic Review, LIV (September, 1964), 607-625. See also her "Reply," American Economic Review, LVI (March, 1966), 171-172.

Eisner,[56] Eckstein,[57] Jorgenson,[58] Almon,[59] Jorgenson and Siebert,[60] and Hart[61] have all obtained statistically significant results using various forms of capacity models.[62]

Accelerator and interaction.--The investment process is not a closed system in the sense that it is devoid of human judgment. On the contrary, the businessman plays a significant role in this process. Because the businessman

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[56]Robert Eisner, "Investment: Fact and Fancy," American Economic Review, LIII (May, 1963), 237-246.

[57]Eckstein, pp. 420-424.

[58]D. W. Jorgenson, "Capital Theory and Investment Behavior," American Economic Review, LIII (May, 1963), 247-259. See also his "Anticipations and Investment Behavior," The Brookings Quarterly Econometric Model of the United States, edited by James S. Duesenberry, et al. (Chicago, 1965), pp. 186-242.

[59]Shirley Almon, "The Distributed Lag Between Capital Appropriations and Expenditures," Econometrica, XXXIII (January, 1965), 178-196, and "Lags Between Investment Decisions and their Causes," Review of Economics and Statistics, L (May, 1968), 193-206.

[60]Jorgenson and Siebert, pp. 681-712.

[61]Hart, pp. 172-174.

[62]The present (1969) demand by firms for capital goods may appear to belie the results of the capacity models. But it is not that capacity models have failed, but that new cost trends have changed businessmen's conception of over- and under-capacity. With capacity in use at 82 percent to 85 percent, the current capital-goods boom can be explained by managements' desire to invest now and so avoid future higher prices for capital goods. Also, management wants to replace increasingly expensive labor with capital, as Ernest Marsh of Santa Fe Industries comments, "Capital expenditures are required to produce labor savings, and the higher costs of employment not only dictate new offsets but make some expenditures justifiable where they would not have produced

performs a decision-making function in the investment process, social interaction among businessmen can influence the scope and direction of investment and, hence, the economy.

Mack, in her examination of the investment process, has emphasized what she calls "patterns of interaction between information and action."[63] These patterns relate the decision criteria used by the businessman to his response. Emphasis is placed not on a mechanical link between, say, capacity utilization and investment expenditures, but on the way the businessman responds over time to changes in these criteria. Her emphasis, then, is similar to that of Boulding and Shackle.[64] But Mack applies her framework of interaction and action to accelerator analysis and to the widespread response resulting from flows of information among businessmen. She cautions economists to remember to include the human element when they examine the investment process:

> Man is a social animal; he is affected in his thinking, feeling and acting by his perceptions of the thinking, feeling, and acting of other men. If an acting-reacting sequence gets under way, there is no reason at all to assume that individuals will react to the situation and to

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adequate savings at the labor costs of a few years ago." Cited in John C. Perham, "What's Behind the Capital Spending Boom? Dun's Review (June, 1969), p. 31.

[63]Ruth Mack, Information, Expectations, and Inventory Fluctuations (New York, 1967), p. 270. See also her "Ecological Processes in Economic Change: Models, Measurement, and Meaning," American Economic Review, LVII (May, 1968), 40-54.

[64]See above, pp. 132-134.

> one another in a fashion that can be described in terms of linear behavior.[65]

Because of this dynamic social process of interaction, it is impossible to reduce the criteria-decision-investment flow to a mechanical model.

An economy experiences surges of capital expenditures that cannot be explained completely by accelerator analysis because of the social interaction in the business sector. By looking at this interaction, one can link a surge of investment demand to the speed of light, or, at worst, to the speed of a few telephone calls:

> It explains, I believe, a phenomenon that has troubled students for many years--the fact that though the logic of the accelerator principle calls for progressive acceleration (in timing as well as volume) as demand moves step-wise to earlier stages, empirical evidence fails to show it.[66]

Cole[67] has analyzed the psychology of the businessman and has concluded that the businessman is ". . . shaped by the ideas currently dominant. . . ."[68] The entrepreneur is not an automaton dominated by the vagaries of his environment, neither is he apart from this environment. Although his responses are often influenced by transitory phenomena,

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[65]Mack, Information, p. 271.

[66]Ibid., p. 270

[67]Arthur H. Cole, "The Entrepreneur," American Economic Review, LVII (May, 1968), 60-63. Cf. Mack, Information, p. 270.

[68]Ibid., p. 61.

always they are rooted in at least seemingly rational behavior. As Cole says, "Analysis of the business world reveals the existence of numerous endemic or built-in modes of action or reaction. . . ."[69]

Relative to this dissertation, accelerator analysis suggests that the businessman is not fully alert to small changes in his environment. Much decision-making is "by the numbers" rather than based upon a rational, incisive examination of present and anticipated events. Planning, in other words, is lacking. Or where planning does exist, it is based on the widespread use of similar criteria and uncritical acceptance of prevailing forecasts of the economic future.

Cumulative Process

The cumulative process can be used to support the observation that businessmen use similar criteria to determine their investment needs and react in similar ways. In addition, the cumulative process graphically illustrates the impact on the economy of this interrelation of decision criteria.

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[69] Ibid., p. 62. Katona refers to these "modes of action" as "habitual behavior." See Psychological Analysis, p. 243. It goes without saying that the observance by economists of social interaction, or Groupthink, is not a recent phenomenon. A. Smith noted, "People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public. . . ." Adam Smith, An Inquiry into the Nature and Causes of the Wealth of Nations, edited by Edwin Cannan (New York, 1937), p. 128.

Wicksell presented the cumulative process in order to emphasize dominance of the natural rate of interest as determinant of an economy's ability to grow.[70] The natural rate of interest is determined by productivity and thrift, the real forces in the economy. Hence, the natural rate can be thought of as the rate of interest at which the demand for loanable funds and the supply of planned savings are equal.[71] Now, the relationship between the natural rate and the market rate of interest has the power to determine the level and direction of economic activity. The monetary authorities can manipulate the market rate of interest[72] in order to change its relationship with the natural rate. For example, if idle resources are avilable for use in the production process, then the level of thrift in real terms is high. The economy is not producing to its maximum potential and therefore resources are being "saved." When the central bank lowers the market rate of interest to a point below the natural rate, businessmen are quick to take advantage of the disparity by acquiring finance and putting idle resources to work. The higher level of employment, then, diminishes the

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[70]Knut Wicksell, Interest and Prices (London, 1936), pp. 101-103.

[71]Hansen and Robinson refer to the natural rate of interest as the rate of profit. Alvin Hansen, Monetary Theory and Fiscal Policy (New York, 1949), p. 89, and Joan Robinson, Accumulation, p. 397.

[72]See above, pp. 73-77.

level of real savings (idle resources) in the economy and additional increments of employment have progressively lower productivity. Consequently, the real rate of interest increases. Attempts by the monetary authority to maintain a low market interest rate will lead to inflation, as businessmen compete for scarce resources to use in production and as consumers compete for scarce consumer goods. Cumulative inflation will set in until the economy explodes into hyperinflation or until some process halts it, for example an increase in the market rate above the natural rate.[73]

Robinson summarizes the natural rate of interest as follows:

> In an untranquil world, there is, at any moment, a low level of interest such that, if it obtained, inflation would set in . . . and a high level such that if it obtained it would be regarded as intolerable and some kind of reaction would set in to get it brought down. These two levels, which are governed, roughly speaking, by the prospect of profit on investment, are all that remains of the 'natural rate of interest' in an untranquil world.[74]

Insofar as groupthink is concerned, the cumulative process makes a twofold contribution. First, it implies use of similar criteria by businessmen to determine their investment activity (the relationship between the natural and market rates of interest) and, second, it helps to relate decisions reached separately by businessmen to the economy as a whole. This second point bears emphasizing. According

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[73]Hicks, pp. 139n-140n.

[74]Robinson, Accumulation, pp. 399-400.

to Shackle, the cumulative process ". . . was the first to make expectations an explicit, formal and entirely essential part of a mechanism of economic events."[75] Basically, this process consists of a cause-effect relationship in which expectations held by businessmen cause them to take action which ". . . in their outcome as a whole, falsify those expectations in a given direction and so induce new expectations which again are self-falsified in the same direction, and so on."[76] Businessmen recognize the chance for greater profits in the business upswing (as output presses on capacity) so that, as Clark said,

> . . . Actual interests lie in doing the things which bring on the cycle, so long as they are acting as individual businessmen or representatives of individual business interests. A businessman who refused to expand his sales on the upswing would gain nothing, and one who refused to retrench on the downswing would probably go bankrupt.[77]

Hence, businessmen reached the same conclusion (potential profits), based on the same criteria (pressure of output on capacity), and responded similarly (by increasing investment).[78]

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[75]Shackle, Scheme, p. 193.

[76]Ibid., p. 49. [77]Clark, p. 164.

[78]An example may help to illuminate the process. Assume production for an industry is 500 units. Five firms produce all of the output, with each firm producing 100 units. Now, if the demand for this industry expands 10 percent to 550 units, each firm could expand output 10 percent and maintain its share of the market without suffering from excess capacity. However, should the management of each firm

In addition to wholesale prices increasing as a result of overinvestment, there is also an increase in retail prices. The result of businessmen reacting together to expand their investment expenditures is to generate higher money wages in the economy. Higher wages lead to increased expenditures. Without an expansion of consumer goods, increased expenditures push prices up, or, as Robinson says, the inflation barrier[79] is penetrated:

> There is then a head-on conflict between the desire of entrepreneurs to invest and the refusal of the system to accept the level of real wages which the investment entails; something must give way. Either the system explodes in a hyper-inflation, or some check operates to curtail investment.[80]

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desire to satisfy the total increase in demand, then the results can be economically destabilizing. Each firm expands capacity by 50 units, which places new order pressure on its suppliers which, in turn, causes suppliers to place pressure on their suppliers, and so on. The result of the overexuberance by the original group of firms is to set in motion a chain of events which results in inflation and which sows the seeds for a reversal of the process. The added capacity by each original firm (50 units each) is excessive so that each sees advantages in cutting back on output and expansion of plant and equipment. The original movement and resulting destabilization, then, were initiated as a result of over-anticipation and even excessive self-confidence by each businessman. He believed that he could get the jump on his competition and satisfy the total increase in demand. Veblen was referring to this phenomenon when he pointed out, "Business depression and exaltation are, at least in their first incidence, of the nature of psychological fact. . . ." Veblen, p. 91.

[79] Robinson, Accumulation, p. 243.

[80] Ibid.

In 1966, rather than hyper-inflation occurring, monetary restraint served to check the pace of investment.[81] The Federal Reserve diminished the volume of bank reserves in the system. Like a small pebble tossed into a peaceful pond, this shortage of reserves affected short-term then spread into long-term interest rates. The result was a near financial panic.

Conclusion

Objective of this chapter was to present literature from economics which indicated that the businessman is often inclined to make decisions on a subjective, even irrational, basis. It was hoped that by looking at two characteristics which cling to the businessmen (animal spirits and Group-think), we would have some support for the contention that management failed to anticipate its financial needs in the period 1964-1966.

One must be careful to avoid the fallacy of division. This fallacy says that what applies to the whole will apply to any single part. We have seen that in his overall actions the businessman often fails to make decisions rationally. Can we say that he must, therefore, fail to anticipate his financial needs? No, we cannot. However, with the marshalling of evidence indicating that businessmen

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[81] See above, pp. 112-116. Robinson refers to this check as the finance barrier. See her Accumulation, p. 50.

are subject to animal spirits and Groupthink, first the reader has greater insight into events of 1966. Second, the study has grasped the end of a piece of string which, if followed diligently, will take us through the labyrinth of events in 1966 so that we will be able to reach its source. In other words, by pursuing the irrationality of decisions in general, presented in this chapter, the study has begun the task of indicating the cause of the businessman's contribution to the financial squeeze in 1966. It will next concentrate on the lack of planning and sophistication often found in the financial decision-making process. Once proposition seven is verified, the study will be complete and we shall conclude that the financial squeeze of 1966 was increased by management's financial myopia. As Shackle has said,

> It is in such a context that we can see most clearly how illusory is any attempt by economists to expel from their field the subjective, the conventional, the non-rational, the fruits of the play of imagination.[82]

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[82]Shackle, Scheme, p. 95.

CHAPTER VI

FINANCIAL MYOPIA: A FINANCIAL VIEWPOINT

> There are in fact two planning periods, a shorter one concerned with acquiring finance and a longer one concerned with using it.
>
> G. L. S. Shackle

This chapter completes verification of proposition seven. It does so by emphasizing the three following points: First, a divorcement of treasurer from controller functions separates decisions to invest from decisions to finance and, thus, enlarges the danger of surges. Second, there is widespread use of the payback technique for ranking and selecting investment proposals. Heavy emphasis on near-term returns coupled with a wave of optimism will result in a surge of investment activity. This groupthink tendency by financial managers induces a bunching of capital investments in boom periods. Finally, this chapter presents evidence that companies pay little regard to timing their long-term debt issues. Financial managers do not appear to concern themselves with interest rates and overlook the possibility of capital rationing.

Recapitulation and Relationship with Previous Chapter

The previous chapter used economic literature to indicate a propensity of the businessman to act on the dictates

of intuition and subjective evaluation rather than on the calculated outcome of potential probabilities. That chapter also indicated the degree of concerted action among businessmen and the tendency for them to react to changes in circumstances. This propensity to act on the basis of animal spirits was traced in the literature to the prevalence of uncertainty in the economic environment. Because of uncertainty, a businessman often bases his decisions on the assumption that the present is the best measure of what is to come. A "range of inertia,"[1] as Boulding calls it, develops around present conditions. The businessman fails to react to changes in present conditions until this range is exceeded. Then, he reacts in excess.

Applying this framework to the financial squeeze of 1966, one can posit that investment needs were recognized only after they had become pronounced. Management seems to have made the decision to expand fixed assets without regard to the availability of credit and without concern for the illiquidity of the firm. The decision to invest catapulted firms into the financial marketplace.

Chapter VI marshalls evidence from financial literature to complete the verification of proposition seven. Evidence to follow falls into two categories. First, information from various sources indicates that there exists a schism

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[1]Boulding, p. 220. See above, p. 132.

between the treasury and controller functions. This literature includes both assertions by writers in the financial area and results of empirical investigations. Second, there is evidence that firms pay little regard to timing their long-term debt issues. Management ordinarily is not overly concerned with interest rates and forgets about the chance of credit rationing. Both of these categories support proposition seven:

Many business firms floating bonds or requesting bank loans in 1966 had not anticipated their financial needs. They appear to have been catapulted into the financial markets by ad hoc decisions to expand fixed assets. This was financial myopia.

Divorcement of Treasurer and Controller Functions

The following pages examine capital budgeting to concentrate on evidence which indicates a divorcement of the treasurer and controller functions. In so doing, this section will serve to expand a comment by Zakon and Henderson, "The separation of the decision to invest in a project from the decision as to the financing of a project is a time-honored tenet of corporate management."[2] Such a separation enlarges the possibility of surges because of widespread use of the payback technique of project evaluation by financial

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[2]Alan A. Zakon and Bruce D. Henderson, "Financial Myopia," California Management Review, XI (Winter, 1968), 87.

management. It will be pointed out that such use favors a bunching of capital investment in boom periods and, therefore, increases economic and financial instability.

Capital Budgeting Process

"Capital budgeting," write Weston and Grigham, "involves the entire process of planning expenditures whose returns are expected to extend beyond one year."[3] These expenditures are reflected in a change in the composition of a firm's assets. Funds to finance these assets are provided from either an increase in liabilities and equity or liquidation of another asset.[4] Because both the asset structure and the financial structure of the firm are altered, capital budgeting requires two functions, the treasurer function (concern with the acquisition and disposition of finance) and the controller function (concern with the ranking and selection of investment proposals). Management evaluates potential profitability of an asset, i.e., the use of funds, and provides for financing of this asset, i.e., the source of funds.

Capital budgeting, then, incorporates controller and treasurer functions. The treasurer function consists of procurement and management of funds; the controller function

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[3] J. Fred Weston and Eugene F. Brigham, Essentials of Managerial Finance (New York, 1968), p. 124.

[4] See Ezra Solomon, The Theory of Financial Management (New York, 1963), p. 11.

consists of budgetary planning and control.[5] Optimum capital budgeting is achieved when these two functions are integrated and coordinated. And they are successfully integrated and coordinated when the following steps are taken.[6]

1. Anticipating and selecting investment plans which maximize the net present value of the firm.

2. Anticipating what sources will be required to execute the investment plans of the interprise.

3. Determining how much of these resources will be generated by the business itself and how much must be obtained externally.

4. Determining the best means of obtaining additional resources when they are required.

5. Establishing the best means of applying all resources (internal and external) to execute the operating plans.

Each of the steps is a process, that is, it must be done continually in the operation of the firm. It is important to see that in an investment decision the two functions are always performed. What is the distinguishing

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[5]Robert Jerrett, Jr., "Total Financial Planning," Financial Planning for Greater Profits, American Management Association, Report No. 44 (New York, 1960), p. 45. See also Solomon, pp. 11-12.

[6]Cf. Jerrett, pp. 44-45, and T. Carter Hagaman, "Forecasting in Financial Planning," Financial Executive (July, 1968), p. 28.

characteristic, then, between an investment program which successfully integrates and coordinates treasurer and controller functions and one which does not? It is anticipation. Successful integration and coordination result when management anticipates its need for new capital assets and its need for finance. As Jacoby and Weston say,

> Capital budgeting and financial planning are interrelated operations. Since the essence of financial policy formation is planning, financial administration must be . . . closely geared to investment planning.[7]

Financially myopic firms fail to integrate successfully the controller and treasurer functions. Investment decisions are often based on transitory phenomena, or are made only after a change in the economic environment is of sufficient magnitude to rouse management from its lethargy.[8] Springing into action, management seeks to expand the productive capacity of its firm.[9] And, because inadequate planning surrounds the process, the search for finance is unplanned.

The next several pages examine evidence from capital budgeting literature that indicates a dichotomy exists

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[7]Neil H. Jacoby and J. F. Weston, "Financial Policies for Regularizing Business Investment," Regularization of Business Investment, National Bureau of Economic Research (Princeton, 1954), p. 380.

[8]Joan Robinson posits the degree of entrepreneurial lethargy as a significant determinant of investment activity. See her Accumulation of Capital, pp. 85-86.

[9]Using terminology from Chapter V, one would term this a realization of a focus gain resulting when variables exceed a range of inertia. See above, pp. 132-135.

between the treasurer and controller function and, within the controller function, there is emphasis on the payback technique of evaluating investment proposals.[10]

The Controller Function

Evaluation of investment alternatives constitutes the controller function in the capital-budgeting process. The techniques employed for this evaluation range from the mathematically sophisticated to the intuitive.

Evaluation techniques.--In financial practice, there are four primary techniques to evaluate investment proposals. These are the internal rate of return, the net present value, the average rate of return, and the payback.[11] The first two represent theoretically acceptable forms of investment evaluation, the last two do not. Present value and internal rate of return consider the time schedule of both outlays and receipts of funds over the economic life of the project.

All four techniques can be illustrated with an example. Table XXII shows the proceeds generated by an investment of $2,000. The net present value, which is the present value of the cash inflows less the present value of cash outflows, can be found by solving the equation,

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[10] See Jacoby and Weston, pp. 380-381.

[11] Much of the following is based on James T. S. Porterfield, Investment Decisions and Capital Costs (Englewood Cliffs, 1965), pp. 20-41.

TABLE XXII

BENEFITS RESULTING FROM A $2000 INVESTMENT

Year	1	2	3	4
Operating Income	$1000	$1000	$1000	$1000
Less: Depreciation	500	500	500	500
Income before taxes	500	500	500	500
Less: Tax (50%)	250	250	250	250
Net Income	250	250	250	250
Add: Depreciation	500	500	500	500
Cash Flow	$ 750	$ 750	$ 750	$ 750

$$\frac{\$750}{(1+.10)} + \frac{\$750}{(1+.10)^2} + \frac{\$750}{(1+.10)^3} + \frac{\$750}{(1+.10)^4} - \$2{,}000. = \text{NPV}.$$

Here, .10 represents the firm's cost of capital. The equation reduces to $2,367. - $2,000 = $367.

The internal rate of return method determines the rate of discount which equates the present value of future cash inflows to the present value of the cash outlays. In other words, it determines the discount rate that makes the net present value equal to zero.[12] The hypothetical investment represented in Table XXII would be solved with the net present value formula as follows:

[12] Weston relates the internal rate of return method to the Keynesian marginal efficiency of capital schedule. J. Fred Weston, The Scope and Methodology of Finance (Englewood Cliffs, 1966), pp. 105-106. See also Dudley Dillard, The Economics of John Maynard Keynes (Englewood Cliffs, 1948), pp. 135-137.

$$\$2,000 = \frac{\$750}{(1+i)} + \frac{\$750}{(1+i)^2} + \frac{\$750}{(1+i)^3} + \frac{\$750}{(1+i)^4}$$

Here, the objective is to solve for i. In this example, i = 18.5 percent. If i is less than the firm's cost of capital, the investment proposal should be rejected; if i is greater, it should be accepted.

These two techniques implicitly assume an ability to forecast future cash flows of a proposal which does not in fact exist. In reality, a firm is faced with an uncertain level of future sales. The uncertainty increases as sales, and the resulting cash flows, are estimated further into the future. As Christy notes, "This kind of decision-making environment favors . . . use of project selection methods appropriate to a short planning horizon. . . ."[13] The payback technique is such a method. The payback period is the length of time required to recapture through cash flows an initial outlay. For the example illustrated in Table XXII, the payback period is,

$$\frac{\$2,000}{\$750 + \$750 + \$500} = 2 \text{ years, } 8 \text{ months.}$$

Two years and eight months elapse before the firm recaptures its initial outlay of $2,000. Will the firm accept the investment proposal and spend the $2,000? It depends on the cutoff point management uses to differentiate acceptable from unacceptable proposals. If management employed a

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[13]George A. Christy, Capital Budgeting: Current Practices and Their Efficiency (Eugene, Oregon, 1966), p. 70.

cutoff point of three years, it would accept the project; if two years, reject it. Managerial prerogatives would be exercised. Advantages of this technique are (1) it is easy to calculate, and (2) it places a premium on proximate cash flows, those which can be measured with a relatively high degree of accuracy.[14]

The average rate of return on investment in the hypothetical investment can be determined in one of four ways: returns before taxes on total investment, returns before taxes on average investment, returns after taxes on total investment, and returns after taxes on average investment. The return on investment in the example will range from 50 percent (return before taxes on average investment = $500/$1,000) to 10.25 percent (return after taxes on total investment = $250/$2,000). The average rate of return technique fails to consider the time value of money. Earnings are considered without reference to the time period of their receipt. Weston and Brigham dismiss this technique as completely unacceptable. They point out,

> There are also a number of "average rate of return" methods that are encountered in practice. We consider them all to be fundamentally unsound and have elected not to discuss them here.[15]

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[14]The reader should note that this technique fails both to consider any returns beyond the cutoff point and to include the time value of money.

[15]J. Fred Weston and Eugene Brigham, Managerial Finance, 3rd ed. (New York, 1969), p. 178n.

Prevalence of payback technique.--How widespread is the use of the payback technique and what is its significance? The results of several empirical studies indicate this technique to be, as Porterfield says, "sanctified by widespread practice."[16] In his study of the utility industry, Gort noted that firms' investment techniques were characterized by a dominance of proximate cash flows.[17] In other words, the techniques stressed immediate future cash receipts to the virtual exclusion of distant receipts. By emphasizing the short-run, these firms rank the risk of making the wrong decision and, so, of overexpanding. Looked at in terms of the model constructed above in Chapter II, management sees new orders expanding and pressing against capacity, so that it springs into action by deciding to invest.[18] As Gort points out in a study subsequent to his 1949 survey of the electrical utility industry:

> A high rate of growth in demand increases expectations of continued growth. This reduces estimates of the risk of long-term commitments in that if requirements for capacity are overestimated and commitments for new capacity prove excessive, continued growth will eventually eliminate the excess capacity created. Moreover, the higher the rate of growth in demand, the less is the ability of a firm to meet the required increases in output through normal

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[16] Porterfield, p. 21.

[17] Gort, p. 82.

[18] See pp. 28-40.

> reserve capacity. Consequently, potential losses from delayed investment outlays are increased.[19]

Management springs into action in hopes of obtaining sufficient capacity for meeting demand. Management is forced to respond with a sense of immediacy because it has failed to anticipate its investment needs adequately.

Christy, in a survey of 243 companies, found widespread use of the payback technique among his 108 respondents.[20] This simple technique was used by firms varying in both size and industry classification. He found that firms using sophisticated techniques had, on the average, returns no higher than those using payback:

> The payback method, dismissed by most academic writers as at best a screening device, holds up as well in these statistics as the vaunted (and supposedly 'scientific') discounted cash flow methods.[21]

Sophisticated investment evaluation techniques appear to be neither necessary nor sufficient conditions for an expanding and growing business.

For the economy, however, use of the payback technique has definite consequences, adverse consequences, at that. By emphasizing proximate cash inflows, management is induced

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[19]Michael Gort, "Systematic Errors in Budgeting Capital Outlays," Review of Economics and Statistics, XLIV (February, 1962), 73.

[20]Christy, "Capital Budgeting Theory," p. 120.

[21]Ibid., p. 121.

to expand investment expenditures when these inflows so warrant. Given a short payback cutoff point, investment is warranted when the inflows are sufficiently high. And when are they sufficiently high? Certainly not in the depths of a recession, when sales are low or falling. Investment is warranted at the peak of a boom when sales are expanding and expectations are buoyant. Such investment may serve only to cause excessive capacity to be added, which, in turn, may cause any subsequent slow-down in activity to be all the greater. A policy such as the payback technique can be financially destabilizing to the economy because it induces a bunching of financing needs in peak business periods and a contraction during slack periods.[22] As Dean has noted,

> The notion that opportunities are much richer in prosperity is widespread and understandable. The amount of added capacity needed for a current boom can be foreseen with much greater clarity and certainty than the amount needed for a vaguely distant boom. Forecasts about the latter may be discounted down to nothing.[23]

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[22]See Albert G. Hart, "Government Measures Designed to Promote Regularization of Business Investment," Regularization of Business Investment, p. 451, and Bert G. Hickman, "Government Measures Designed to Promote Regularization of Business Investment: Comment," Regularization of Business Investment, p. 457. The reader should compare for himself the way in which the payback technique at the level of the firm dovetails with accelerator analysis at the level of the total economy. See above, pp. 136-143.

[23]Joel Dean, "The Concept and Economic Significance of Regularization of Business Investment," Regularization of Business Investment, p. 61.

Evidence, then, exists from both the literature of capital budgeting and from empirical findings that the payback technique is widely used and can be cyclically reenforcing. Applying this evidence to the investment environment of 1965-1966, one can conclude that failure by management to anticipate its investment needs contributed to the financing crunch which occurred.

The Treasurer Function

The previous section on the controller function indicated that a lack of anticipation of investment needs exists. And, since project selection and financial planning are interrelated, to the extent the controller function is subject to myopia, the treasurer function is, too.[24] However, there is evidence that even where the controller function is well developed, the treasury function may still be anemic. This section, then, will emphasize the often observed characteristic of financial managers to pay little regard to timing their long-term debt issues. Interest rates do not appear seriously to concern them and they forget about the possibility of credit rationing. This is implicit in a comment by Shackle, "There are in fact two planning periods, a shorter one concerned with obtaining finance and a longer

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[24]See the statement by Jacoby and Weston above, p. 155.

one concerned with using it."[25] Perhaps Twomey has best indicated why a well developed investment evaluation program can exist with an atrophied treasury function. He says,

> Traditional forms of investment evaluation--return on investment, discounted cash flow, and net present value--consider an investment project in isolation and independently of total corporate objectives. They are concerned with a single objective: maximization of profits. In dealing with this single objective, these methods assume that what is in the best interest of the part--the value of a specific project--is in the best interest of the whole.[26]

Other studies have indicated that acquisition of finance is not an integrated part of the capital budgeting process, and, because of the schism, is not anticipated. Katona, in an examination of the investment process at the microeconomic level, noted a schism between the treasurer and controller functions.[27] From his survey of 275 large firms ($1 million net worth and over),[28] he concluded that for these firms the controller function completely dominated the treasurer function. The controller function, he found, was performed primarily by production managers and/or by marketing men. They were the ones capable of determining when capacity was

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[25] G. L. S. Shackle, "Recent Theories Concerning the Nature and Role of Interest," Economic Journal, LXXI (June, 1961), 221.

[26] John J. Twomey, "An Operating Approach to Capital Investment Evaluation," Financial Executive (September, 1968), p. 37.

[27] George Katona, Business Looks at Banks (Ann Arbor, 1957), 139-142.

[28] Ibid., p. 10.

fully utilized or when new markets were available to exploit. Then, after the decision to invest was made, they turned to the treasurer and told him to acquire the necessary finance.

> During the past ten years executives in charge of engineering or marketing have usually made the decisions about adding or not adding to capacity, and about the rate of expansion. Having done so, they 'instructed' the executives in charge of finance to provide the necessary funds.[29]

Investment was timed without regard to availability of finance. Hence, the function of financial officers often was reduced to errand boy. "They are instructed to provide the money needed. . . . The executive in charge of money matters still is not in the driver's seat as a rule."[30]

One striking impression left by Gort's findings in the electrical utilities industry was a lack of emphasis by these firms on anticipation of financial needs.[31] No attempt was made by management to keep informed about conditions in the financial markets and to assure sufficient liquidity for investment. ". . . The officials interviewed," he noted, "did not consider it their function to forecast changes in money rates."[32]

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[29] Ibid., p. 141.

[30] Ibid., pp. 141-142. Cf. a similar observation in Ray W. McDonald, "The Financial Executive and Senior Management," Financial Executive (March, 1969), p. 17.

[31] Gort, "The Planning of Investment."

[32] Ibid., p. 200. See also a similar statement in ibid., pp. 185-186.

Rationalization of myopia.--How can a failure by management to anticipate financial needs and to assure the firm of sufficient liquidity be rationalized? There are two explanations. The first is existence (or presumed existence) of a broad capital market; the second, existence of expansive monetary and fiscal policies. Each will be discussed briefly.

As stated above, the treasurer function consists of identifying the best sources of funds and establishing the timing of funds acquisition.[33] It follows that this function will be well developed only when it is considered necessary or profitable to develop it. However, where there is no possibility of credit rationing there is no fear on the part of management to concern itself with timing its acquisition of finance. The financial manager believes that the finance will be available so long as he is willing to pay the going price, i.e., the market rate of interest. Certainly, the rate of interest may increase, but there are factors which make higher interest costs of little consequence to the corporation (these are discussed below[34]). Investment alternatives can be selected with little regard to the availability of finance. If there are inadequate internal funds available, management can tap the external financial market.

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[33]Jerrett, p. 48. See also above, p. 154.

[34]See pp. 168 and 171.

A second justification of an atrophied treasury function is to be found in perpetually expansive monetary and fiscal policies. In the former, a central bank supplies reserves to the commercial banking system in an attempt to guarantee liquidity. Beginning in 1942 the Federal Reserve System supplied reserves to commercial banks (primarily through open market operations) to support all maturities of government securities at par.[35] Consequently, there was little if any danger of a capital loss resulting from the sale of government securities by bond holders. Banks could dispose of their portfolio holdings, obtain primary reserves from the Federal Reserve, and make loans to business enterprise. Businessmen could make their investment decision without concern for credit availability because it was always available.

In 1951, the U.S. Treasury and the Board of Governors, Federal Reserve System, reached an "accord."[36] The Federal Reserve was no longer required to support the price of government securities. It could use open-market operations to absorb bank reserves. Gort noted the role an expansive monetary policy had played in inducing corporate treasurers

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[35]See pp. 73-77 above for a discussion of monetary policy.

[36]See Lester V. Chandler, The Economics of Money and Banking, 5th ed. (New York, 1969), pp. 491-493. The accord removed the Federal Reserve from the undesired role of "engine of inflation" in the economy.

he interviewed to fail in their responsibility to anticipate availability of finance:

> . . . The officials interviewed did not consider it necessary to predict changes in bond yields. . . . The view was largely based on the narrow limits within which short-term changes in interest rates have occurred in the past years and on a central role the United States Treasury has played in determining those rates.[37]

There was, then, ostensibly no necessity to anticipate a firm's financial needs. Finance was available in an abundant supply. Businessmen demonstrated a propensity to place too much emphasis on present conditions, choosing to conclude that these conditions would continue indefinitely. "Finance is readily available and cheap now, and so it will be in the future," they seem to have concluded. Businessmen simply extrapolated the present into the future[38] so that no matter how emphatic government and Federal Reserve policy-makers were in avowing their dedication to steady growth and stable prices, businessmen seem to have ignored them.

Additional rationalization of a lack of emphasis on timing acquisition of debt finance can be found in the existence of an expansionary fiscal policy. The Employment Act of 1946 established as the Federal government's obligation to pursue economic policies which would ameliorate

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[37]Gort, "The Planning of Investment," pp. 185-186.

[38]Keynes refers to this propensity in his General Theory, pp. 148 and 152. See also the discussion of animal spirits for some insight into this propensity, above pp. 126-135.

unemployment and minimize the possibility of another major depression.[39] Specifically the Act made it the professed objective of the federal government to maximize employment, output, and purchasing power.

Now, one of the major disadvantages of using debt in a firm's capital structure is the possibility that future revenues may decline to such a point that the firm may be unable to meet principal and interest payments.[40] In such an event, the firm is bankrupt and is usually dissolved. Firms are, thus, loath to increase the degree of financial leverage because, should a recession occur, large losses might result. On the other hand when net revenues exceed interest expenses there is an advantage in using debt capital because then the earnings per share of the common shareholder can be increased significantly. The point is this: without the threat or risk of a recession and its resulting decline in sales and revenues, financial management is less disinclined to the use of debt in its corporate financial structure. And, there need be less emphasis placed on obtaining a low rate of interest because future revenues will be adequate to cover the cost of servicing the debt.

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[39] A readable summary of this Act and some observations on its impact is found in William C. Freund,"Educating the Electorate: The Employment Act After 20 Years," Challenge (November-December, 1965), pp. 30-33.

[40] This process was presented above in the discussion of Kalecki's principle of increasing risk. See pp. 61-62.

This argument, in conjunction with the tax deductibility of interest expense, serves to rationalize, first, increased use of debt financing relative to equity financing and, second, a lack of emphasis by financial managers on timing the acquisition of debt capital.

However, there is an additional element which serves to emphasize use of debt capital and which mitigates the need to time a firm's acquisition of debt. This element is inflation. An increase in the price level is another way of saying the purchasing of money has declined. Hence, inflation aids debtors relative to creditors by transferring future purchasing power from creditors to debtors.[41] A debtor who borrows $500 now and repays $500 next year when prices have, say, doubled repays only one-half as much in terms of real purchasing power. The $500 the creditor receives buys only $250 worth of goods. Emphasis is placed on obtaining finance and using it to acquire real goods and services now. So long as the creditor fails to protect himself against inflation (by increasing his interest rate to cover the deterioration of purchasing power), the debtor will continue to demand finance. And so long as the debtor expects inflation to continue to accelerate, he will want debt capital. The net result of all of this is that no emphasis is placed on timing the acquisition of finance and so

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[41]George L. Bach, Inflation (New York, 1958), pp. 26-27.

minimizing interest expense. A premium is placed on duping creditors, spending money now, and beating the price increases.[42]

In reality, credit rationing does exist. And the day when the economy was assured of perpetual liquidity may have passed. One need only look at events of 1966 to recognize these facts.[43] Consequently, these two factors require that, as Weston has said, ". . . the financial manager not only anticipate his needs but acquire funds in a way that he is not forced to the capital markets at an inopportune time."[44] In reality, then, there is indeed a premium placed on anticipating a firm's financial needs.

Table XXIII can emphasize the importance of timing in acquiring external finance. This table contrasts the dollar amount of interest expense per year between the date of issue and a subsequent date. For example, Allied Chemical floated its debt on April 14, 1966. Had it waited until August 31, 1966, its interest rate would have advanced 45 basis points. In dollar amounts, the increased interest

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[42]The inflation argument is related to the expansionary fiscal policy argument above. As Ball says, "The removal of major depressions increases the prospect of secular inflation." His argument is similar to the one propounded by this writer. R. J. Ball, Inflation and the Theory of Money (Chicago, 1964), pp. 258-260.

[43]See above, pp.

[44]J. Fred Weston, "Financial Implications of Growth," The Controller (March, 1958), p. 120.

TABLE XXIII

COMPARISON OF INTEREST COSTS ON SELECTED ISSUES BETWEEN SALE DATE AND SUBSEQUENT DATE*

Sale Date	Issuer	Amount (Millions of Dollars)	Yield (%)		Dollar Difference (Thousands of Dollars)
			At Issue	8/31/66	
4/4/66	Houston Power	$ 40	5.12	5.82	$280
4/13/66	Baltimore Gas	$ 30	5.07	5.80	219
4/14/66	Allied Chemical	$150	5.20	5.65	675
5/3/66	Weyerhauser	$150	5.20	5.53	495

*Source: Weekly Bond Buyer, September 6, 1966, p. 30.

would be $675,000 per year. Of course, these are four large firms. The cost was even greater for firms unable to float their issue. For some it may have been bankruptcy.[45]

The financial panic of 1966 occurred fifteen years after the Treasury-Federal Reserve "accord." Yet, one is impressed with the overpowering evidence that management still failed to anticipate its financial needs and acquire finance early. Management acted as though the supply of loanable funds was unending. It evidently overlooked the possibility of capital rationing and looked only at interest rates, per se. These often do not seem to provide either incentive or deterrent to investment. As a bakery executive has commented,

> The question of tight money standing as an obstacle to business expansion puzzles me. our experience is that a desirable company growth is the result of continual investment in automation plus a very necessary sales growth. This can only be accomplished through a continuously heavy investment, and the difference between the cost of paying 3% or 6% interest on this required capital investment is very small in relation to the overall picture.[46]

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[45]All-State Credit Corporation, for example, attempted to sell a $1.5 million debenture in 1966. It entered the new issues calendar in May, 1966 (see Appendix A). After being bumped from its position on the calendar for much of the year, All-State finally placed its issue. In January, 1968, it filed a bankruptcy petition, listing assets of $5.9 million and liabilities of $16.5 million. Moody's Bank & Finance Manual (April, 1968), pp. 1529-1530.

[46]Cited in Sorrell M. Mathes, Growth Financing in the Smaller Firm, Managing the Moderate-sized Company, Report No. 1, National Industrial Conference Board (New York, 1967), p. 8.

Several comments by respondents to this writer's questionnaire indicated that interest rates were a secondary consideration in the decision to invest. "Guessing the market" was considered a waste of time. As an assistant treasurer of a utility company said, "As a public utility, we must have adequate capacity to meet consumer demands at all times. We finance based on need for funds and not market conditions (we do not play market). It is extremely difficult to second guess market." His words were echoed by two other utility executives: "When we need money," wrote the vice president and secretary-treasurer of an electric utility, "we try to raise it. We do not try to outguess the market." And, referring to the 1966 financial market, a financial analysis manager of an electric utility pointed out, "We were aware of money market conditions, but we did not try to outguess the market. We generally go to the market when we need funds."

Assuming interest rates to be the only charge for funds, a businessman is rational in borrowing at, say, 4 percent or 6 percent indifferently if he can invest at 15 percent. And the activity is further sanctioned by the tax deductibility of interest expense, so that the real cost of borrowing is halved. The following discussion emphasizes this point:

> Solomon Fabricant: The danger of very high interest rates is that they may bring about a decline in a particular market by causing businessmen to delay or reduce their investment programs more than is desirable.

> O. Glenn Saxon: Not with a 50% or more tax write-off. At 6%, they really are paying less than 3% net. Those are probably the lowest interest rates for corporate bonds on record in normal peacetime.
>
> Jules Backman: That is a very important point. Actually, these higher rates are relatively unimportant to the businessman.[47]

What such a businessman and these economists overlook is the existence of capital rationing and the need for an equity base to support this borrowing.[48]

When profitable opportunities arise, a businessman often responds by following what Katona calls "established principles."[49] Evidence from the data covering 1964-1966 indicates that the established principle was to turn to bank financing. The volume of bank loans was sufficient to finance the expenditures for fixed assets and banks were

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[47]"Interest Rates and Monetary Policy, A Discussion by The Conference Board Economic Forum," Studies in Business Economics, No. 53 (New York, 1956), pp. 23-24. For some observations on corporate avoidance of equity markets because of the relative cost advantage from using debt and the avoidance of dilution, see the comments by Glenn G. Munn and Murray Shields in ibid., pp. 41-43.

[48]Interest rates have moved historically within conventional limits, the upper boundary set by notions concerning usury. Hence, if interest rates are not allowed to rise enough to limit demand to supply, rationing must take place. But rationing may be discriminatory.

[49]Katona, Business Looks at Banks, p. 141. Elsewhere he notes that ". . . businessmen often seek the easiest and least uncertain solution. . . ." Such activity means that ". . . behavior frequently remains habitual even when changes in conditions call for new decisions." Katona, Psychological Analysis, p. 230. See also the comment by Boulding below, p. 177.

generally willing to lend for this purpose.[50] After all, early stages of production are financed through bank loans,[51] so why not simply rely on this source to finance the plant and equipment, for example, through term loans? Such a rationalization is strongly suggested by a comment from a respondent to this writer's questionnaire, a vice president, finance, of an electric utility firm: "In regard to question #4, we acquire long-term funds at the time our short-term borrowings reach the limit of our ability to borrow in that manner." Convenience takes precedence over prudence. Katona found this activity to prevail in his sample:

> It has been shown in this study that bank credit has been frequently used to finance long-range projects. . . . In most cases the borrower counted on renewal of the bank loans at maturity.[52]

The pattern of investment activity and of acquisition of finance by firms over the period 1964-1966 implies that business activity is similar to other areas of activity in its response to change. An organism seems to be content so long as little effort need be expended to maintain its

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[50] See pp. 40-47.

[51] Arnold Sametz, "Trends in the Volume and Composition of Equity Finance," Journal of Finance, XIX (May, 1964), 450-452. See also the evidence presented in Edwin P. Harkins and Francis J. Walsh, Jr., Corporate Debt Management, Managing the Financial Function, Report No. 2, National Industrial Conference Board (New York, 1968), p. 14.

[52] Katona, Business Looks at Banks, p. 144 (italics added). See, also, the comments cited above, pp. 43-45.

relative position in its environment, economic or social. However, when the need for change becomes so pronounced that it can no longer be ignored (as in the need to acquire more production capacity), resistance to change crumbles. Resistance is then replaced with hyper-activity as firms attempt to acquire equipment and, perhaps more relevant to this study, to finance this equipment. Firms then follow the financing path of least resistance. They turn to the most convenient source of finance (at least they did so in the early stage of the 1964-1966 boom), internal funds. Once these are depleted, they then turn to the most convenient source of external finance, commercial banks. Obtaining long-term debt capital seems to be a source of last resort. Boulding has presented a general model of such financing activity in the following statement:

> It may well be that the great bulk of human behavior does not follow the patterns of sober, reflective maximization of advantage, but rather follows first the principle of inertia (nobody does anything unless he has to!) and secondly the principle of least resistance (if you have to do anything, you do the thing that is easiest to do).[53]

In 1966, monetary policy became restrictive and banks were without sufficient reserves to renew their revolving or term loans to business. As was pointed out above,[54] the result forced banks to liquidate their portfolios of government and municipal securities in an attempt to accommodate

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[53]Boulding, pp. 37-38.

[54]See above, pp. 42-43.

favorite customers, and forced some corporations into the bond market. The resulting panic induced the Federal Reserve to ease the financial pressure in order to avoid collapse of the financial community and of business.

Results of the questionnaire sent by this writer support the contention that the treasurer and controller functions in the firm are not integrated. Table XXIV is derived from question number four, "Did you attempt to acquire the long-term funds at the same time that the capacity addition was decided on?" The data are lopsided in the direction of "no."

TABLE XXIV

NUMBER OF RESPONDENTS THAT SOUGHT LONG-TERM FINANCE SIMULTANEOUSLY WITH DECISION TO INVEST

Firm	Sought Long-term Finance	Did Not Seek Long-term Finance
Utility	3	62
All Others	7	73

The firms simply did not believe it to be necessary to provide sufficient finance before undertaking the investment or to provide suitable financing once the capital asset was acquired. Little attempt was made to acquire long-term finance for the long-term assets so that the liquidity of the corporate sector deteriorated and set the stage for a frantic, unanticipated surge of bond flotations in 1966. Bank financing had served as the major source of funds.

When the Federal Reserve restricted the flow of reserves to the banking system, banks began to ration credit among their most favored customers. The result was that many firms were forced to switch from short-term bank loans to long-term bonds at the worst possible time. They were forced into the bond market not at their option, but at the insistence of necessity: there was nowhere else to turn. This switch was in some instances voluntary and in others dictated by the lack of accommodation at the bank. The questionnaire was not designed to differentiate between the two motives. Some comments by several respondents may prove to be illuminating:

> As a public utility, our company has a continuing construction program and need for capital funds which are first acquired through bank loans or other short-term financing and later funded with a permanent security issue.
>
> Senior Vice President, natural gas utility

> On several occasions we were able to adjust the issue date in response to changing economic conditions. However, our flexibility is generally limited to the temporary use of short-term borrowings to postpone a security issue for a few months. The net result of these factors is that we cannot be particularly sensitive to changes in the money market.
>
> Assistant Treasurer, electric utility

> Our purpose [for entering the bond market] was not plant and equipment expansion, but to switch short-term debt to long-term debt.
>
> Vice President, Finance, industrial

> We obtain loan commitments from banks which run for at least a year. These are updated every year.
>
> Treasurer,
> industrial

Conclusion

Evidence, both empirical and literary, points to the following interpretation of events for the period 1964-1966. Businesses were induced to expand their fixed assets as a result of the pressure of new orders on existing capacity. Many firms failed to anticipate the need for additional capacity, and so recognized this need only when it became pronounced. Such a failure may be partly explained by widespread use of the payback technique of investment evaluation. Management, having made the decision to expand fixed assets, then turned to the treasurer and instructed him to marshall the necessary finance. Since it was not available internally, the treasurer relied on his relationship with banks (habitual behavior) to dictate the source of finance. He marshalled the finance from the banking community. This action was predicated on the businessman's propensity to extrapolate present conditions into the future. The businessman saw that bank finance was readily available and so obtained finance from this convenient source, acting as though this source would be always available. However, it was not. In 1966, the Federal Reserve began to restrict the flow of reserves to commercial banks. Firms were forced into the bond

market in an attempt to acquire desperately needed finance. Firms seeking long-term debt to finance new investment had to compete with those seeking it to refund bank loans, and sellers of new issues had to compete for investors' dollars with bank and life insurance companies selling bonds out of their portfolios. Evidence supports the contention that severity of the financial squeeze of 1966 was increased by the financial myopia of corporate managements. Proposition seven is thus verified:

Many business firms floating bonds or requesting bank loans in 1966 had not anticipated their financial needs. They appear to have been catapulted into the financial markets by ad hoc decisions to expand capacity. This was financial myopia.

CHAPTER VII

SUMMARY AND CONCLUSION

With the verification of proposition seven, the study has come to an end. Now it is necessary to summarize the results of the investigation and to make some observations on these results. This chapter will carry out these necessities.

Summary

Chapter I of this dissertation established the general framework within which the study was carried out. Primarily, the objective of this chapter was to establish the seven propositions to be verified and to describe the questionnaire. The propositions were the following:

1. Severity of the financial squeeze of 1966 was increased by corporate management's financial myopia.

2. The financial squeeze was the result of an excess of demand over supply of loanable funds.

3. The Federal government increased its demand for loanable funds as a result of spending for the Vietnam War.

4. With demand finally beginning to press on capacity, business increased its demand for funds in order to expand plant and equipment.

5. The Federal Reserve restricted the supply of loanable funds to combat inflation.

6. Resulting pressures between these demand and supply forces induced banks to liquidate secondary reserves, congested the new issues market, and contributed to illiquidity of financial intermediaries.

7. Many business firms floating bonds or requesting bank loans in 1966 had not anticipated their financial needs. They appear to have been catapulted into the financial markets by ad hoc decisions to expand capacity. This was financial myopia.

The questionnaire was sent to 316 firms floating bonds and debentures in 1965-1966. The survey was a census of the firms listed in the new issues calendar of The Commercial and Financial Chronicle. A total of 166 responses were received, a rate of response of 52 percent. The results of the questionnaire were used at various points in the body of this dissertation to support the propositions.

Chapter II concentrated on verification of propositions three and four. To verify proposition three, the impact of the Vietnam War on fiscal policy was examined. In order to consider the financial consequences of the Vietnam war, however, it was necessary to relate the government expenditures over the period 1965-1966 with the flow of funds to the Treasury. The flow of funds was affected by the Internal Revenue Act of 1964. This Act diminished the finance

available to the Federal government by diminishing tax revenues flowing to the Treasury. The Federal government also increased social security payments as a part of its expansionary fiscal policy. Both policy measures were designed to overcome fiscal drag, a term describing the increased burden from a given fiscal policy coupled with a graduated income tax structure.

The Internal Revenue Act of 1964 was significant in the verification of proposition three because this Act diminished the supply of funds to the Treasury during the period that expenditures for Vietnam were increasing. Vietnam outlays by the Federal government began to increase rapidly in mid-1965. With expenditures accelerating and with revenues below what they would have been in the absence of the Act, the Treasury was forced to turn to deficit financing in order to finance its payments. Proposition three was, therefore, verified: The Federal government increased its demand for loanable funds as a result of spending for the Vietnam War.

Chapter II was concerned also with verification of proposition four. Here, the emphasis was on finding the causative factors which induced the demand for funds by business. A statistical model was constructed. The model traced the ratio of new orders/capacity (ORCAP) to instability in the bond market. First, to indicate the association between ORCAP and instability in the bond market, the

correlation between ORCAP and AAA interest rates for the period 1964-1966 was determined. The coefficient of correlation for the period was 0.8358, which was significant at the .01 level. Hence, there was statistical evidence that an association between ORCAP and instability in the bond market existed. The association was examined further by breaking down the investment-financing process into two sub-steps. The first sub-step incorporated accelerator analysis, which relates increases in investment to a change in output. In this model, the ratio of new orders/capacity was used as the independent variable and appropriations of finance as the dependent variable primarily because this relationship has received widespread validation in economic literature. The coefficient of correlation between ORCAP and appropriations was 0.9215, which was significant at the .01 level.

The next sub-step investigated the association between appropriations and expenditures. Here, the coefficient of correlation between the two variables was 0.935 for expenditures in the same quarter as appropriations. When expenditures trailed appropriations by one quarter, the coefficient increased to 0.960. And, when expenditures trailed appropriations by two quarters, the coefficient increased to 0.977. All coefficients were significant at the .01 level. Hence, there seemed to be an association between appropriations and expenditures, just as other studies had indicated.

In order to relate expenditures with external finance, and so to complete verification of proposition four, it was necessary to consider corporate liquidity. The rationale behind this statement goes as follows: So long as businessmen have sufficient funds to cover their expenditures for plant and equipment, they need not necessarily resort to external sources to finance the expenditures. However, when expenditures exceed internal funds, there should be increased reliance on external finance. Beginning with this generalization, then, a correlation between the ratio of capital expenditures/cash flow and external finance (bank loans plus bond proceeds) was determined. The coefficient of correlation between the two variables was 0.827, which proved to be significant at the .01 level. Statistical evidence, therefore, supported proposition four: With demand finally beginning to press on capacity, business increased its demand for funds in order to expand plant and equipment.

Chapter III concentrated on implementation of monetary policy to verify proposition five. In order to give the reader some additional insight into the objectives pursued and policies undertaken by the Federal Reserve System, the concept of credit rationing was discussed. This concept describes the allocation of finance through non-price means, in other words through subjective evaluations by suppliers of finance rather than through interest charges, per se. The objective, in practice, becomes creation of a fringe of

unsatisfied borrowers who will be at the ready to make investments whenever finance becomes available. The central bank, then, wants to stretch investment out over a longer period of time rather than to kill it, and by providing for an unsatisfied fringe the central bank hopes to do just that. In order to contain increases in prices, the Federal Reserve Board of Governors, beginning in 1966, pursued a course of monetary restraint. Simply stated, the objective was to curtail aggregate demand by removing finance from the economy, for if an individual or firm cannot acquire finance, that is the end of it. Demand never manifests itself in effective demand, which is demand plus ability to pay. Throughout much of 1966, the Federal Reserve used open market operations to absorb bank reserves, i.e., it sold securities from its portfolio in order to soak up bank reserves. In addition, the Federal Reserve increased the discount rate so that banks seeking reserves from this source acquired less proceeds than the face value of the security.

An additional element was at work to restrict the supply of finance to capital markets. Regulation Q, which permits the Board of Governors to vary the rate paid on interest-bearing deposits at commercial banks, was increased over the period 1964-1965. Now, the importance of this increase was twofold. First, it permitted commercial banks to win deposits away from competing financial institutions. As the rate on certificates of deposits (CD's) exceeded that on

deposits at savings and loan associations, depositors withdrew funds from the latter and bought CD's. Too, as the rate continued to climb, individuals found it profitable to borrow on the cash value of their life insurance policies, so that life insurance companies witnessed a deterioration of their liquidity. Since insurance companies are important suppliers of corporate long-term debt capital (usually through direct placements) a source of long-term finance was lost to corporations. And, since savings and loan associations and insurance companies are the primary sources of mortgage funds, the residential construction market virtually collapsed with the disintermediation of these two financial institutions. The second important result from increased in Regulation Q was that it permitted banks to continue making loans, primarily short- to intermediate-term, to businesses. Financial pressure was placed in the long-term market, forcing an increasing amount of finance to be generated in short-term markets. Business loans from banks continued to expand, serving as the primary source of finance for capital expenditures. The bond market, in 1964-1965, was tapped only slightly by firms.

In mid-1966 pressure from the Federal Reserve began to squeeze bank reserves severely. Net borrowed reserves approached $.7 billion, as banks were forced to the discount window in increasing numbers. At this time, the Federal Reserve faced a dilemma: To increase Regulation Q would

relieve some of the financial pressures on commercial banks, but might completely disembowel savings and loan associations and insurance companies; conversely, to leave Regulation Q at its existing level might bring about financial disruption of the banking community because of CD holders' decisions to use finance elsewhere rather than to renw their CD's. A runoff of CD's was imminent. The Federal Reserve decided to ignore the pleas of commercial banks, choosing to leave Regulation Q at its existing level.

Banks were less able to acquire excess reserves from other financial institutions. In order to attract reserves, they were forced to sell from their investment portfolios government and municipal bonds. Downward pressure on prices of long-term securities resulted as banks scrambled to attract reserves. In addition, corporations were trapped in an illiquid predicament: They had used bank credit, a relatively short-term source, to finance capital expenditures, a long-term use. While banks had ample reserves, this financial myopia was not recognized. Firms could renew bank loans as they matured. In mid-1966, however, banks were unable to satisfy any new demands for credit, rationing credit among their most favored customers. The result was to force a surge of new issues into the bond market, new issues springing both from firms who wanted to finance <u>new</u> capital expenditures and from firms needing to refund bank loans. This surge of demand occurred in the face of deterioration of the

supply of loanable funds, as described above. The interest rate on AAA adjusted bonds spurted up 94 basis points between February and September, 1966. Cancellations of issues became the rule rather than the exception. Credit rationing became a real factor in the economy. Chapter III, then, verified propositions five and six: The Federal Reserve restricted the supply of loanable funds to combat inflation, and resulting pressures between these demand and supply forces induced banks to liquidate secondary reserves, congested the new issues market, and contributed to the illiquidity of financial intermediaries.

Chapter IV consisted of a summary of the argument to that point, and noted that verification of propositions three, four, five and six verified proposition two: The financial squeeze was the result of an excess of demand over supply of loanable funds.

The first three chapters established the fact that the financial squeeze of 1966 was increased because of actions taken by corporate financial managers. Chapters V and VI were concerned with tracing this action to financial myopia, a failure by financial managers to anticipate their financial needs properly.

Chapter V used economic literature to support the proposition that the businessman often acts in a myopic, or short-sighted way. Specifically, this chapter brought to bear observations by economists that the businessman is

often dominated by animal spirits, a sudden urge to action rather than inaction based on a subjective, even intuitive, evaluation of future conditions. This propensity to act by the dictates of animal spirits was explained at least partially by the existence of uncertainty: Because the businessman operates in an environment dominated by uncertainty, he clings to the belief that the present is the best acceptable guide to the future. With his vision locked myopically on the present, the businessman fails to plan for changes in the operation and financing of his firm. He is thus lulled into a sense of security, believing his present actions and level of operations to be sufficient to sustain his competitive position. Only when a variable changes significantly does he recognize that action is required to adjust his position and either regain his former position or improve it. Such a variable in 1966 was output relative to existing capacity. Just as accelerator analysis suggests, when output became so excessive as to require adjustment in the size of capital stock, the result was an increase in investment. Applying the analytical framework constructed in the development of the concept of animal spirits, it was pointed out that the pressure of new orders on capacity exceeded the businessman's planning range of inertia in which no adjustment to capital stock was required. When this range was exceeded, the businessman felt a sudden urge to action rather than inaction and surged into the financial

market to marshall the necessary finance for needed new investments. In addition, businessmen who had been relying on bank loans suddenly realized this source was unavailable and surged into the capital market.

Another thread of thought in economics which supported the contention that businessmen are financially myopic is groupthink. This is a term describing use of similar criteria by businessmen in their decision making process. Here, again, accelerator analysis was used. The accelerator relates output to investment and does so at the macroeconomic level. Groupthink is implicit because of the formulation of the model with output as determinant of investment for the business sector. In addition, the cumulative process, which depends upon the relationship between the natural and market rates of interest, implies groupthink. It does so because it depends for its operation on the widespread use of the rate of interest as a control of the pace of investment: Businessmen respond by increasing investment expenditures whenever the market rate of interest falls below the natural rate. In addition, the cumulative process relates decisions reached separately by businessmen to the economy as a whole. Expectations of increased profit induce businessmen to take actions which in their outcome can falsify those expectations because of inflation and overexpansion. Both concepts, animal spirits and groupthink, served to support the proposition that firms acted in a financially myopic way in 1965-1966.

Chapter VI utilized financial literature to verify proposition seven. Three main points were emphasized. First, a divorcement of treasurer from controller functions exists in many firms. This divorcement enlarges the danger of financial surges. The enlargement occurs because decisions to invest are not dependent upon availability of finance so that a decision to expand capacity results in an automatic demand upon the financial markets. Corporate treasurers are forced to seek the most convenient source of finance, usually commercial banks. Convenience then dominates propriety as businessmen rely on short-term finance for long-lived plant and equipment.

The second main point emphasized in Chapter VI was widespread use of the payback technique of evaluating investment projects. This technique emphasizes cash flows of the very near future to the virtual exclusion of distant flows. This groupthink tendency by corporate managers leads to a bunching of capital investment in boom periods, just as occurred in 1966. Finally, Chapter VI presented evidence that companies pay little regard to timing their long-term debt issues. Financial managers do not appear to concern themselves with interest rates and overlook the possibility of capital rationing.

The search of the literature contained in Chapters V and VI, together with the empirical results from the questionnaire, verified proposition seven: Many business firms floating

bonds or requesting bank loans in 1966 had not anticipated their financial needs. They appear to have been catapulted into the financial markets by ad hoc decisions to expand capacity. This was financial myopia. With the verification of propositions two through seven, proposition one follows: Severity of the financial squeeze of 1966 was increased by corporate management's financial myopia.

Conclusion

The conclusion to be drawn from this study falls into three categories, microeconomic, macroeconomic, and suggestions for further research.

Microeconomic

The microeconomic conclusion of this study is that businessmen are not anticipating their financial needs properly. In many firms the decision to invest is made as a result of a seemingly sudden change in economic relationships, for example, the level of new orders relative to capacity. There is a need for additional capacity at once, a need which places severe strains on the financial structure of the firm. Certainly a primary lesson of the financial squeeze of 1966 is the need for management to provide sufficient liquidity in the operation of the firm. Finance is not available in an infinite supply. In an economy in which an increased burden of control falls on the shoulders of monetary policy, managers will doubtless be faced with alternating

periods of credit ease and restriction. The prudent manager will seek to integrate the decision to invest with the decision to finance so that the treasurer will be able to acquire finance in an orderly, efficient way.

The treasurer, too, must be alert to the need to finance long-term investments from long-term sources. This does not necessarily mean that under all circumstances must he use long-term sources for long-term uses. For example, when he expects interest rates to decline, a prudent financial manager will want to use a short-term source of finance, e.g., bank loans, and then refund this source with a long-term one, e.g., bonds. By so doing, the firm avoids being locked into high interest costs. On the other hand, when interest rates are expected to increase, management must tap a long-term source early in order to avoid high interest costs and credit rationing. Congestion in the bond market and high interest rates are not a precipice that looms up suddenly and without warning. Rather they are reached through a series of undulating foothills consisting of a series of decisions and actions taken over an extended period of time, just as in the period 1964-1966. Hence, the alert financial manager can take advantage of a knowledge of the inter-relationship between real and monetary variables to acquire finance in a prudent way.

Macroeconomic

The macroeconomic conclusion of this dissertation is that credit rationing is a monetary tool which can be destructive to the economy. This is so because the congestion which it induces in the bond market causes some firms to be unable to acquire finance. Now, this is not necessarily destructive if the firm is seeking finance in order to make new investments because then the firm will simply cancel, perhaps temporarily, its project. The fringe of unsatisfied borrowers, in other words, will be created. However, when the firm is seeking long-term finance in order to refund a bank loan (which had financed a capital investment), then the inability to enter the bond market may be destructive. The firm must seek finance elsewhere, turning to other financial institutions (e.g., factors), merging with another firm, or pressing all the harder for a new bank loan or accommodation in the bond market. Management may end up with few or no prerogatives left after its creditors demand and receive oppressive restrictions. The impact of a desperate search for finance destabilizes financial markets and results in a greater degree of control of business enterprise falling into the domain of financial institutions.

An additional macroeconomic conclusion is evident. When the central bank fails to restrain the pace of investment, inflation and overcapacity can result. Once congestion becomes so great as to convince the central bank it must ease

up on the degree of restriction, the restraint must then be spread over a longer period of time than would otherwise have been necessary. The ultimate results may be a break in businessmen's expectations so that a downturn in output, income, and employment occurs. The inflation illness of the patient is cured but only by his death. The objective of credit rationing is not to halt investment, but to spread it over a longer period of time. To dampen expectations and so to halt investment conjures up images of the depression years of 1930-1934.

A final conclusion of this study is that the role of expectations in the economy is paramount and widespread. In a private enterprise economy, such as that of the United States, income, employment, and output depend to a great extent on activities of business firms. These activities, in turn, depend upon the decisions of individual businessmen who base their decisions not on what <u>is</u>, but on what they <u>think</u> is. In other words, the realities of the situation are secondary to the subjective evaluation of the businessman of what he thinks the situation to be. The importance of this point is that for any economic policy to be effective, it must affect the expectations of the businessman. The central bank and the Federal government must make their objectives known, must inform the public of the way in which they plan to achieve those objectives, and, perhaps most

important, adhere to that objective resolutely. These points apply equally to both short-run and long-run objectives.

Future Research

There is a need for more research into the interaction of individual economic behavior. How do decisions by one businessman interact with those of another and so set in motion a cumulative process? One thinks immediately of meetings between businessmen at the country club, Kiwanis, and other gatherings at which ideas are exchanged. Also, business schools are emphasizing fairly standardized investment techniques so that use of similar criteria is becoming widespread. These are merely conjecture and serve to emphasize the fact that the need for further research in the area exists.

The timing of monetary policy over the period and its resulting effectiveness need to be examined. Initiation of restraint might well have come too late in the upswing of 1964-1966 to restrain the pace of investment and, hence, inflation without enduring damage to business and employment. By coming late, monetary policy ran the risk of causing financial collapse and, ultimately, collapse of output, income, and employment. Doubtles the econometrician will want to construct various models in order to test the hypothesis that the effectiveness of monetary policy during this

period was associated with the timing of the initiation of policy measures.

Finally, more research is needed in the area of financing investment expenditures. Not merely the suitability of a source for a specific use, but development of the decision-making process needs to be elaborated. In other words, research into development of an investment-financing technique must be pursued so that the treasurer and controller functions can be more closely coordinated. Indeed, a relevant question is, Which function should be dominant, or should either be dominant? The answer might depend upon the size of the firm. Large firms have better access to the capital market than do small firms, especially during periods of credit rationing. Hence, one would expect greater need for a strong treasurer function in small firms than in large firms. Again, these are conjectures and serve merely to indicate a need for further research.

APPENDIX A

The following table is an alphabetical listing of respondents to the questionnaire. This table shows the name of the firm, type of industry the firm is in, total assets of the firm, and its relative position on the new issues calendar. This last point means that the firm has an assigned number indicating when it entered the calendar between January 1, 1965, and December 31, 1966. Numbers ranged from 1 to 316. For example, number 1 entered the calendar on January 1, 1965, number 45 on March 8, 1965, and number 316 on December 30, 1966. Consequently, this number can serve as a reference point for the calendar. Of the 316 firms in the sample, 166 responded.

TABLE XXV

RESPONDENTS TO QUESTIONNAIRE

Firm	Industry	Assets*	Position on Calendar
Alabama Power Co.	Utility	$ 846,867,066	23
Allied Chemical Corp.	Industrial	1,602,528,000	199
American Airlines	Transportation	1,363,464,692	56
American Electronic Laboratories, Inc.	Industrial	16,216,827	222
American Motor Inns	Real Estate	36,092,831	165
Arkansas Power & Light	Utility	460,931,206	13
Arvin Industries, Inc.	Industrial	84,922,985	109

TABLE XXV--Continued

Firm	Industry	Assets*	Position on Calendar
Associates Oil & Gas	Industrial	$ 27,774,000	84
Astrex, Inc.	Industrial	7,376,203	169
Baldwin-Montrose Chemical Co.	Industrial	35,436,295	34
Barber-Greene Co.	Industrial	54,135,322	294
Bayly Manufacturing Co.	Industrial	8,018,837	7
Beneficial Finance Co.	Finance	1,450,824,643	60
Bethlehem Steel	Industrial	990,918,000	314
Big "C" Stores	Industrial	26,233,892	138
Bobbie Brooks	Industrial	62,008,520	263
Boston Edison Co.	Utility	530,831,716	112
Boston Gas Co.	Utility	84,952,279	57
Budget Finance Plan	Finance	212,938,699	67
California Interstate Telephone Co.	Utility	99,105,192	92
Carolina, Clinchfield & Ohio Railway	Transportation	67,880,366	22
Carolina Power & Light	Utility	570,910,400	183
Cenco Instruments Corp.	Industrial	49,464,959	273
Central Hudson Gas & Electric Corp.	Utility	204,181,959	218
Central Illinois Light	Utility	238,088,608	143
Central Illinois Public Service Co.	Utility	345,471,460	33
Chicago Musical Instrument Co.	Industrial	49,079,031	176
Circle K Corp.	Industrial	9,472,712	254
Citizens Financial Corp.	Finance	94,477,420	149
Collins Radio	Industrial	205,318,000	315
Columbia Gas System	Utility	1,632,948,000	14
Commercial Solvents	Industrial	129,652,113	223
Commonwealth Edison	Utility	2,403,492,632	297
Community Public Service	Utility	75,124,045	201
Connecticut Light & Power	Utility	639,396,965	312
Consolidated Natural Gas	Utility	1,037,797,969	79

TABLE XXV--Continued

Firm	Industry	Assets*	Position on Calendar
Continental Telephone	Utility	$ 737,052,000	255
Control Data Corp.	Industrial	350,686,060	64
Crestmont Oil & Gas	Industrial	3,933,031	82
Dan River Mills, Inc.	Industrial	269,745,000	17
Dielectric Products Engineering Co.	Industrial	57,434,943	301
Dial Finance Co.	Finance	153,430,223	283
Douglas Aircraft Co.	Industrial	850,172,112	236
Electric Storage Battery	Industrial	171,413,456	238
Fabri-Tek, Inc.	Industrial	17,447,198	101
Fine Products Co.	Industrial	1,658,816	133
First Church Financing Co. of America	Finance	11,508,702	163
Fischer & Porter Co.	Industrial	36,956,483	261
Florida Power Corp.	Utility	507,051,167	118
Florida Power & Light	Utility	980,948,235	10
General Acceptance Corp.	Finance	595,658,029	36
General Mills	Industrial	366,841,000	91
General Motors Acceptance Corp.	Finance	7,790,464,971	135
General Telephone & Electronics	Utility	5,430,576,000	35
General Telephone of California	Utility	1,102,416,519	8
General Telephone of Florida	Utility	306,677,282	66
General Telephone of Wisconsin	Utility	93,023,644	161
Georgia Power Co.	Utility	1,032,554,120	24
Government Employees Financial Corp.	Finance	61,253,463	278
W. R. Grace & Co.	Industrial	1,578,353,000	18
W. T. Grant Co.	Industrial	455,092,163	70
Gulf Oil Corp.	Industrial	6,457,954,324	113
Gulf States Utilities	Utility	626,625,588	130
Harper & Row Publishers	Industrial	34,047,428	317
Hardee's Food Systems	Industrial	11,651,549	111
Honneywell, Inc.	Industrial	847,302,705	162
Idaho Power Co.	Utility	413,758,422	198

TABLE XXV--Continued

Firm	Industry	Assets*	Position on Calendar
Indiana Bell Telephone	Utility	$ 472,908,432	95
Indianapolis Power & Light	Utility	287,622,486	132
Instrument Systems Corp.	Industrial	23,304,540	210
International Minerals and Chemical Corp.	Industrial	418,730,416	148
Iowa Electric Light and Power Co.	Utility	208,262,893	262
Israel Hotels International, Inc.	Finance	17,980,862	102
Jersey Central Power & Light	Utility	468,610,886	89
John Deere Credit Corp.	Finance	328,026,314	126
Jones & Laughlin Steel	Industrial	1,092,800,000	172
Kansas City Power & Light	Utility	366,139,782	100
Kansas Gas & Electric	Utility	198,982,739	171
Laclede Gas Co.	Utility	185,880,798	184
Lear Jet Corp.	Industrial	25,113,813	195
Liggett & Myers Tobacco	Industrial	471,902,117	285
Lone Star Gas Co.	Utility	494,603,331	74
Louisville Gas & Electric	Utility	279,968,326	215
LTV Aerospace Corp.	Industrial	198,628,000	290
Lundy Electronics & Systems, Inc.	Industrial	10,938,249	202
Madison Gas & Electric	Utility	75,679,804	225
Magnavox	Industrial	202,896,547	97
Marathon International Finance Co.	Finance	30,723,083	177
Memorex Corp.	Industrial	30,980,000	257
Michigan Consolidated Gas	Utility	537,585,829	188
Mississippi Power Co.	Utility	182,067,264	243
Mississippi Power & Light	Utility	249,430,527	9
Missouri Edison	Utility	25,179,388	48
Missouri Power & Light	Utility	61,241,265	160
Montana Dakota Utilities	Utility	159,554,822	168

TABLE XXV--Continued

Firm	Industry	Assets*	Position on Calendar
Mountain States Telephone & Telegraph	Utility	$1,459,352,000	189
MSL Industries, Inc.	Industrial	90,498,000	320
New England Power	Utility	332,619,358	289
N.Y. State Electric & Gas	Utility	689,426,516	311
Niagara Mohawk Power Co.	Utility	1,387,599,904	287
Northeast Airlines, Inc.	Transportation	60,998,184	244
Northern Illinois Gas	Utility	559,602,127	31
Northern Natural Gas	Utility	519,141,741	134
Northern States Power Co. (Minnesota)	Utility	109,570,946	242
Northwestern Bancorporation	Finance	3,458,124,544	115
Northwestern Bell Telephone	Utility	1,263,870,213	250
Northwestern Public Service	Utility	48,174,420	240
Northwest Natural Gas	Utility	85,981,890	179
Occidental Petroleum	Industrial	779,132,000	217
Oklahoma Gas & Electric	Utility	396,170,061	11
Orange & Rockland Utilities, Inc.	Utility	179,829,025	63
Ozark Air Lines, Inc.	Transportation	35,401,443	227
Pacific Gas & Electric	Utility	3,473,719,571	72
Pacific Southwest Airlines	Transportation	100,025,935	286
Pan American World Airways	Transportation	1,280,334,000	256
Panhandle Eastern Pipe Line Co.	Utility	513,008,142	108
Pennsylvania Electric Co.	Utility	550,000,000	51
Permaglass	Industrial	4,880,252	309
Philadelphia Electric Power Co.	Utility	58,837,000	27
Phillips Petroleum Co.	Industrial	2,672,879,000	155

TABLE XXV--Continued

Firm	Industry	Assets*	Position on Calendar
Piedmont Aviation, Inc.	Transportation	$ 50,744,353	245
Public Service of Colo.	Utility	616,054,819	186
Public Service Co. Of Oklahoma	Utility	281,015,936	159
Public Service Electric and Gas Co.	Utility	2,003,787,532	80
Puget Sound Power & Light	Utility	339,322,555	129
Ramada Inns, Inc.	Industrial	45,418,572	234
Recognition Equipment	Industrial	20,500,000	259
Reeves Brothers, Inc.	Industrial	83,021,934	154
Reynolds Metals Co.	Industrial	1,475,927,319	193
Rockwell-Standard Corp.	Industrial	391,159,120	164
Rohr Corp.	Industrial	140,762,175	304
San Diego Gas & Electric	Utility	347,227,693	298
Scientific Data Systems	Industrial	97,991,000	291
Southern California Gas	Utility	519,959,516	310
Southern Indiana Gas & Electric	Utility	102,785,136	88
Spiegel, Inc.	Industrial	500,238,000	37
Standard Oil Co. (Indiana)	Industrial	3,848,934,000	269
Southwestern Bell Telephone	Utility	3,502,814,166	216
Seaboard Finance	Finance	538,165,000	316
Sierra Pacific Power Co.	Utility	137,134,659	84
Simplex Wire & Cable	Industrial	41,420,851	197
South Carolina Electric & Gas	Utility	350,256,366	119
Southern California Edison Co.	Utility	2,469,285,299	6
Southern New England Telephone Co.	Utility	609,056,000	252
Stauffer Chemical Co.	Industrial	409,973,338	180
J. P. Stevens	Industrial	532,493,509	43
Tampa Electric	Utility	290,887,097	175

TABLE XXV--Continued

Firm	Industry	Assets*	Position on Calendar
Tennessee Gas Transmission Co.	Utility	$3,589,437,247	106
Texas Eastern Transmission Corp.	Utility	1,456,209,979	173
Texas Oil & Gas	Utility	57,268,633	42
Texas Power & Light	Utility	476,076,963	3
Transcontinental Gas Pipe Line Corp.	Utility	979,739,336	98
Trinity Steel Co.	Industrial	17,043,349	157
Trunkline Gas Co.	Utility	415,586,304	264
Twentieth Century-Fox Film Corp.	Industrial	297,729,329	65
Tyco Laboratories, Inc.	Industrial	9,377,267	214
Union Electric Co.	Utility	952,481,709	187
United Air Lines	Transportation	1,495,895,000	26
University Computing Co.	Industrial	41,969,000	248
Van Dusen Aircraft Supplies, Inc.	Industrial	7,400,585	296
Virginia Electric & Power	Utility	1,164,267,784	15
Voss Engineering	Industrial	4,532,059	196
West Coast Airlines	Transportation	70,292,800	220
West Penn Power Co.	Utility	403,537,336	55
Wetterau Foods, Inc.	Industrial	25,176,732	85
Whirlpool Corp.	Industrial	401,196,000	293

The COMMERCIAL *and* FINANCIAL
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October 11, 1968

APPENDIX B

Professor Peyton Foster Roden
School of Business Administration
Division of Graduate Studies
North Texas State University
Box 16
Denton, Tex. 76203

Dear Professor Roden:

Mr. Morrissey asked me to reply to your queries regarding:

1. a congestion measure of the bond market during the credit crunch of 1966 (I assume August-November, 1966, inclusive);

2. the reason for the cancellations (and may I add postponements, changed methods of financing including delayed financing, etc.);

3. source for the Monday CHRONICLE's four-week visible data.

(1) There is no single congestion measure that I know of unless you were to construct a seasonally and non-seasonally adjusted flotation tabulation against which you would match a comparable offerings announcement series--knowing, of course, that financing plans do not always germinate for a variety of reasons. All this is significant, however, when there is a market rise in changed plans. Against this, of course, you would weigh appropriate interest cost changes or the interest rate trend.

(2) The reason for changed plans undoubtedly could only be documented by talking to underwriters and their clients seeking funds. It's safe to deduce that this is a final decision by the borrower when he can't give the underwriter terms commensurate with the added risk of being stuck with an unsalable inventory. Naturally a Wall Street firm will not take on an offering it believes is unsalable and against which the terms are never going to be high enough. Pity the underwriter who reneges on a deal he agreed to; he'd be a dead duck on the Street. The underwriter is not going to let himself be caught in a trap.

One way he can turn down a proposition is by demanding a price for his services which he knows will be unacceptable. Many syndications that went sour can be attributed to a miscalculation by a greedy group of syndicate heads who underestimated what the market was willing to pay. The status of take-downs make

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this quite clear. Moreover, you can count the number of syndicates that broke up with unsold inventories, and the dollar amounts, two, three, and even four weeks after the initial offering. This painful experience is not one that underwriters like to repeat. I'd sum this up by saying that the higgling and haggling of the issuer and the underwriter determines the cancellation with the market setting the environment within which the decision is made.

(3) The source for the CHRONICLE's visibles is all reputable announcements of flotations. We endeavor to provide a realistic insight into the demand for senior securities--including Federal Agencies but not Treasuries because of the Federal Reserve's role as a residual buyer of governments. When the Fed openly makes significant purchases of Federal Agencies, we may have to exclude such long term paper from our new issue visibles.

We have not as reliable a picture of tax-exempt announcements without dates as in the case of corporates--keeping in mind that all offering announcements are not firm and are subject to change. We look only into the foreseeable future which in calendar terms is around a year, and dependent on who is the company and/or the underwriter.

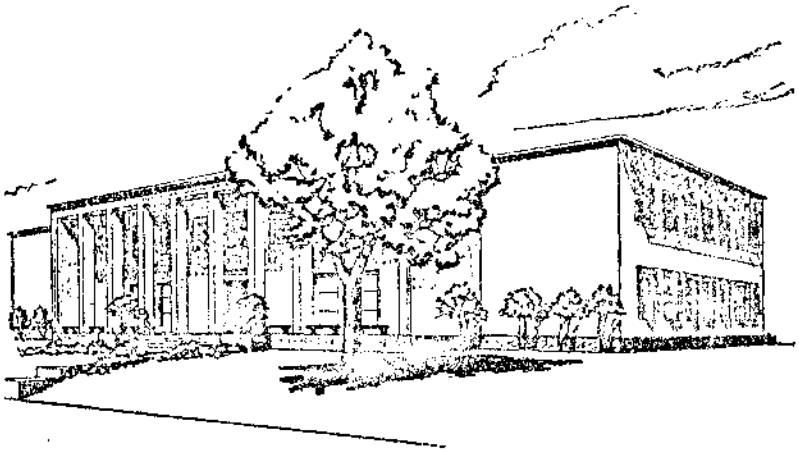
I'd advise anyone to use the SEC as a check on forthcoming new issues, and, particularly, for a tabulation of actual sales made. I've tried to get the SEC to break down offerings made more finely by type of debt paper, but they say they can't do more than they now provide. As you may have noticed, we exclude private placements, and mutual funds except tax-exempt and publicly offered real estate beneficial participations. We try to our best to exclude "cats & dogs" or anything else unlikely to see the light of day including registrations of more than one year which have not moved.

Should there be any question I have not answered or you would like to raise, please do not hesitate to let us know.

Sincerely yours,

Sidney Brown

Sidney Brown
Associate Editor



BAYLOR UNIVERSITY
HANKAMER SCHOOL OF BUSINESS
Department of Economics
Waco, Texas 76706 Box 6278

May 21, 1969

Dear Sir:

Enclosed is a questionnaire designed to determine some general techniques of financial decision-making followed by firms such as your own. The questionnaire is an integral part of research for my doctoral dissertation in the area of corporate financial management.

The questions deal with techniques you followed in deciding to issue your long-term debt of 1965-1966. I obtained the name of your firm from the new issue calendar of impending bond and debenture issues published in The Commercial and Financial Chronicle. Questions 1 through 9 refer to policy you followed in arriving at the decision to acquire finance in 1965-1966. Question 10 refers to policy you follow now.

Please complete the questionnaire and return it in the addressed, pre-stamped envelope enclosed. Average completion time of the ten questions is two minutes. However, if you have comments or questions concerning any of the questionnaire's aspects, please do not hesitate to use the space below question #10.

Your cooperation will be very much appreciated.

Yours very truly,

Peyton Foster Roden

Peyton Foster Roden

PFR:bmr
Encls.

Questionnaire

1. Was the bond flotation undertaken by your firm in the period 1964-1966 initiated to finance new plant (existing line) and equipment? If no, go to question #5.

_____yes _____no

2. When you decided to expand the plant and equipment financed with the above bond issue, at what level of capacity utilization were you operating this plant and equipment?

_____less than 75% _____75-79.9% _____80-84.9%

_____85-89.9% _____90-94.9% _____95-100%

3. How far ahead of the actual need did you decide to add the new capacity?

_____less than 3 months _____9 to less than 12 months

_____3 to less than 6 months _____12 to less than 18 months

_____6 to less than 9 months _____18 to less than 24 months

_____2 years or more

4. Did you attempt to acquire the long-term funds at the same time that the capacity addition was decided on?

_____yes _____no

5. Did a shortage of internal funds at that time cause you to forego any investments in plant and equipment you desired to make?

_____yes _____no

6. After you had decided on an issue date, did you change it? If no, go to question #9.

_____yes _____no

7. Which did you decide to do, accelerate the issue date or delay it?

_____accelerate _____delay

8. If you decided to change the borrowing date, was it at the suggestion of an investment banker?

_____yes _____no

9. Did the finance department of your firm make or obtain on a regular basis forecasts of future money costs and availability of credit for periods of one year or more ahead?

_____yes _____no

10. At the present time, does your finance department on a regular basis make or obtain forecasts of future money costs and availability of credit for periods of one year or more ahead?

_____yes _____no

Comment

Title or position of person completing questionnaire:

Return to

Peyton Foster Roden
Hankamer School of Business
Baylor University
Waco, Texas 76706

APPENDIX C

The Commercial and Financial Chronicle publishes each week in its Monday edition a table of scheduled new issues. This table includes a column for taxable bonds, for municipals, and for corporate stocks (see Table XXVI). The taxable column includes more than just corporate issues. It will often include such issues as World Bank bonds, issues of foreign governments, and issues of agencies of the Federal government. However, the editor attempts to exclude agency issues from the calendar, and when he does so, he will note it in a footnote. For example, in Table XXVI the taxable bonds column excludes $530 million F.N.M.A. certificates.

The municipals column excludes tax exempts of less than $1 million. In addition, the total excludes non-tax-exempt issues of municipal governments, e.g., city housing authority and school district issues.

Construction of Table XVIII in the body of this dissertation (see p. 102) consisted of tabulating each column by accumulating the specific data from weekly issues of the Chronicle. For example, the data from Table XXVI were used to tabulate the anticipated entries for June 6 through June 27. The taxable bonds amount for June 6-June 11 was $126 million, meaning $126 million were entered on the new issues calendar to be issued during this week.

TABLE XXVI

FOUR-WEEK COMPETITIVE AND UNDERWRITTEN VISIBLES*
(MILLIONS OF DOLLARS)

Week	Taxable Bonds	Municipals	Total Bonds	Stocks	Total Visibles
June 6-June 11	$ 126.50	$249.16	$ 375.66	$189.00	$ 564.67
June 13-June 18	93.79	217.81	311.61	86.17	397.78
June 20-June 25	231.94	171.85	403.79	26.68	430.48
June 27-July 2	116.30	328.82	445.12	16.80	461.92
Total**	$ 568.54	$967.65	$1,536.19	$318.66	$1,854.86
Last Week	$ 337.67	$711.87	$1,049.55	$555.74	$1,605.29
Year-Ago Week	1,351.75	530.73	1,882.49	883.56	2,766.04

*Source: The Commercial and Financial Chronicle, June 6, 1966, p. 2.

**Columns may not add due to rounding.

APPENDIX D

On September 1, 1966, the Board of Governors, Federal Reserve System, voted unanimously to send the following letter to member banks. The letter was signed by the president of the Reserve bank in the respective member bank's district.

The text of the letter follows:[1]

> It is the view of the Federal Reserve System that orderly bank credit expansion is appropriate in today's economy. However, that expansion should be moderate enough to help insure that spending--and particularly that financed by bank credit--does not exceed the bounds that can be accommodated by the nation's growing physical resources. An excessive expansion of bank credits would aggravate inflationary pressures that are already visible.
>
> While the growth of total bank credit and total bank lending has moderated somewhat as compared with last year, total bank loans plus investments have grown at an annual rate of over 8 per cent during the first 8 months of this year, and total bank loans at a rate of over 12 per cent. Meanwhile bank lending to business has increased at an annual rate of about 20 per cent.
>
> It is recognized that business demands for bank credit have been particularly intense. While such credit requests often appear justifiable when looked at individually, the aggregate total of credit-financed business spending has tended towards unsustainable levels and has added appreciably to current inflationary pressures. Furthermore, such exceedingly rapid business loan expansion is being financed in part by liquidation of other

---

[1] Board of Governors, Federal Reserve System, Annual Report, 1966, pp. 103-104.

banking assets and by curtailment of other lending in ways that could contribute to disorderly conditions in other credit markets.

The System believes that the national economic interest would be better served by a slower rate of expansion of bank loans to business within the context of moderate over-all money and credit growth. Further substantial adjustments through bank liquidation of municipal securities or other investments would add to pressures on financial markets. Hence, the System believes that a greater share of member bank adjustments should take the form of moderation in the rate of expansion of loans, and particularly business loans.

Accordingly, this objective will be kept in mind by the Federal Reserve Banks in their extensions of credit to member banks through the discount window. Member banks will be expected to cooperate in the System's efforts to hold down the rate of business loan expansion--apart from normal seasonal needs--and to use the discount facilities of the Reserve Banks in a manner consistent with these efforts. It is recognized that banks adjusting their positions through loan curtailment may at times need a longer period of discount accommodation than would be required for the disposition of securities.

This program is in conformity with the provision in Section 201.0, par. (e) of the Board's Regulation A governing lending to member banks:

"In considering a request for credit accommodation, each Federal Reserve Bank gives due regard to the purpose of the credit and to its probable effects upon the maintenace of sound credit conditions, both as to the individual institution and the economy generally. . . ."

Federal Reserve credit assistance to member banks to meet appropriate seasonal or emergency needs, including those resulting from shrinkages of deposits or of other sources of funds, will continue to be available as in the past.

A slower rate of business loan expansion is in the interest of the entire banking system and of the economy as a whole. All banks should be aware of this consideration, whether or not they need to borrow from the Federal Reserve. Management of bank resources in accordance with the principles outlined above can make a constructive contribution to sustained economic prosperity, and the Federal Reserve System is confident that the banks will give their whole-hearted support to this effort.

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