

MONETARY POLICY AND RESIDENTIAL  
CONSTRUCTION, 1966-1968

By

RAYMOND WAYMAN LEE

Bachelor of Arts

University of Oregon

Eugene, Oregon

1967

Submitted to the Faculty of the Graduate College  
of the Oklahoma State University  
in partial fulfillment of the requirements  
for the Degree of  
MASTER OF SCIENCE  
May, 1970

OKLAHOMA  
STATE UNIVERSITY  
LIBRARY  
OCT 12 1970

MONETARY POLICY AND RESIDENTIAL  
CONSTRUCTION, 1966-1968

Thesis Approved:

*Frank S. Steindl*

Thesis Adviser

*W. W. Winters*

*N. Durham*

Dean of the Graduate College

767428

## PREFACE

Past experiences have shown that the housing sector is subject to the influences of monetary policy. A study of the developments in 1965-1968, however, raised some doubt as to the truth of this observation. Economic background and monetary policy were similar in the two years of 1966 and 1968. Yet, the housing sector was seriously affected in one year and not in the other. This thesis is concerned with an analysis of the developments of this period and an attempt to find the reasons behind the differential performances of the housing sector in 1966 and 1968.

I would like to take this opportunity to express my sincere appreciation to Dr. Frank Steindl, my thesis adviser, for his guidance and suggestions in the preparation of this study, and to Dr. Rudolph Trenton, for his suggestions in improving the final draft.

I would also like to express my gratitude to Dr. Richard Leftwich, head of the Economics Department, and to Dr. Norman Durham, dean of the Graduate College, for the opportunity of pursuing graduate study at the Oklahoma State University.

Lastly, but not leastly, thanks are due Vay Lien, whose encouragement and patience greatly aided me in the course of my graduate study.

## TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION . . . . .	1
Statement of the Problem . . . . .	1
Scope of the Study . . . . .	2
II. CHARACTERISTICS OF THE HOUSING SECTOR . . . . .	4
Introduction . . . . .	4
Important Characteristics of Housing . . . . .	4
Residential Financing . . . . .	5
Determinants of Residential Construction . . . . .	9
Cost and Availability of Borrowing . . . . .	10
Income and Prices of Housing . . . . .	11
Housing and Profit Expectations . . . . .	12
The Volume of Residential Construction, An Analytical Approach . . . . .	12
III. MONETARY POLICY AND RESIDENTIAL CONSTRUCTION, A THEORETICAL APPROACH . . . . .	15
Introduction . . . . .	15
Monetary Policy Defined . . . . .	15
Policy Instruments of the Federal Reserve . . . . .	16
Regulation Q . . . . .	16
Effects of Monetary Policy on Housing . . . . .	20
IV. MONETARY AND HOUSING DEVELOPMENTS IN 1965-1968 . . . . .	25
Introduction . . . . .	25
Developments in 1965 . . . . .	25
Developments in 1966 . . . . .	28
Developments in 1967 . . . . .	32
Developments in 1968 . . . . .	34
Situations in 1966 and 1968 Compared . . . . .	36
V. SUMMARY AND CONCLUSIONS . . . . .	44
A SELECTED BIBLIOGRAPHY . . . . .	47

LIST OF TABLES

Table	Page
I. Private Nonfarm Mortgage Debt Held by Major Institutions in Percentage Distribution . . . . .	8
II. Monthly Rates of Private Housing Starts in Thousands of Units . . . . .	31
III. Major Source of Association Funds, in Millions of Collars . . . . .	41

LIST OF FIGURES

Figure	Page
1. Private Nonfarm Mortgage Debt, by Type of Loan . . . . .	6
2. The Quantity of Homes Constructed During a Short Period of Time . . . . .	13
3. An Increase in Housing Construction . . . . .	14
4. A Reduction in Housing Construction . . . . .	23
5. Long and Short-term Interest Rates . . . . .	27
6. Net Inflows of Savings into Major Institutions 1965- 1968, in Billions of Dollars . . . . .	30
7. Source of Association Funds . . . . .	43

## CHAPTER I

### INTRODUCTION

#### Statement of the Problem

Private housing is an important sector in the economy. In 1963, private residential construction expenditures were 4.5 per cent of the gross national product and 30 per cent of private domestic investment. Residential mortgage debt at the end of 1963 represented 20.9 per cent of the total debt, private and public, and 34.6 per cent of the private debt alone.<sup>1</sup> Variations in private housing construction, therefore, would be expected to have significant repercussions on the rest of the economy and would, therefore, be a cause for concern.

A number of studies have shown that monetary policy is a significant factor affecting residential construction.<sup>2</sup> In periods of monetary

---

<sup>1</sup>Savings and Loan Fact Book, 1966, pp. 20 and 46.

<sup>2</sup>See, for example, J. M. Guttentag, "The Short Cycles in Residential Construction," American Economic Review, LI (June, 1961), pp. 275-298; Sherman Maisel, "The Theory of Fluctuations in Residential Construction Starts," American Economic Review, LIII (June, 1963), pp. 359-379; and Jerome Dasso, "Tight Money and the Plight of the Homebuilding Industry," Oregon Business Review, XXV (October, 1966), pp. 1-4.

ease, the volume of housing starts tends to rise, whereas in times of monetary restraint, it falls off, sometimes sharply. Situations in 1953-54, 1955-57, and 1959-60 are good illustrations of this observation.

Recent experiences of monetary restraint were in 1966 and 1968. Their differential impacts on the housing sector in these two years have aroused this writer's interest to undertake this study. A similar economic and monetary background existed in 1966 and 1968. Yet, residential construction was affected much more in one year than in the other.

This study is concerned first with an analysis of the relationship between monetary policy and residential construction. It examines developments in the economy, in monetary policy, and in housing during the period 1965-1968 in an attempt to explain the differential performances of housing in 1966 and 1968.

#### Scope of the Study

The second chapter of this study considers the characteristics of housing. It also discusses its financing, and the determinants of residential construction in the short run.

The third chapter is devoted to monetary concepts such as the meaning of monetary policy, the common tools of monetary management, particularly Regulation Q, and the effects of monetary policy on housing.

In Chapter IV, developments in the economy, in monetary policy, and in housing from 1965 to 1968 are traced. The purpose is to explain those developments during 1966 and 1968 which are the concern of this thesis. The situations in these two years are then compared and

analyzed.

The final chapter is a summary and conclusion of the findings of this study.

## CHAPTER II

### CHARACTERISTICS OF THE HOUSING SECTOR

#### Introduction

A knowledge of the characteristics of the housing sector is essential to an understanding of the ways in which monetary policy affect housing. The present chapter discusses some of these characteristics and the manner in which housing is usually financed. It also considers the determinants of residential construction in the short run. Finally, an analytical approach to the determination of the volume of residential construction is also presented.

#### Important Characteristics of Housing

Certain characteristics make housing distinct from other goods. For one thing, housing is immobile, tied to particular plots of land in particular localities. This means surpluses in some localities cannot be transferred to meet scarcities in others. For one thing, housing is relatively expensive due to various costs involved in production. It is, perhaps, the biggest investment expenditure in the

lifetime of a household. According to a survey in 1962,<sup>3</sup> for the population as a whole, equity in owned homes accounted for 27 per cent of total wealth, a larger share of total wealth than any other asset. Among other things, this gives one an idea of the expensiveness of housing.

Few households buy a house with cash, and most builders rely on borrowed funds to build houses. The result is that both consumers and producers of housing depend upon credit for their activities. This distinct feature of housing is explored in the following section.

### Residential Financing

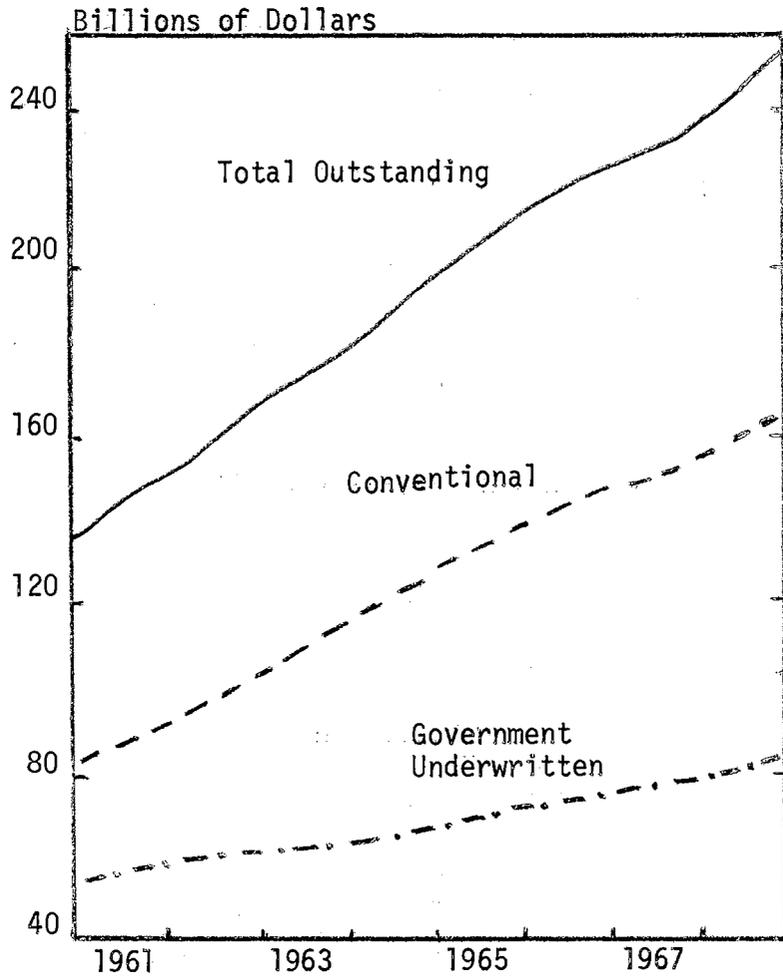
As early as the middle of the 1950's, a study by several economists already indicated an increased tendency to debt-financing in the housing sector. It also showed a rising ratio of net increases in residential mortgage debt to housing construction expenditures.<sup>4</sup> In 1965, a survey by the Federal Reserve showed that 95 per cent of new, one-family homes sold involved mortgage credit to some degree.<sup>5</sup> The rising trend of private nonfarm mortgage debt in the 1960's is indicated in Figure 1.

---

<sup>3</sup>Dorothy Projector and Gertrude Weiss, Survey of Financial Characteristics of Consumers (Washington, 1966), p. 10.

<sup>4</sup>Leo Grebler, David Blank, and Louis Winnick, Capital Formation in Residential Real Estate (Princeton, 1956).

<sup>5</sup>Board of Governors of the Federal Reserve System, "Monetary Policy and the Residential Mortgage Market," Federal Reserve Bulletin, LIII (May, 1967), p. 731.



Source: Federal Reserve Chart Book  
(April, 1969), p. 44.

Figure 1 - Private Nonfarm Mortgage Debt, by  
Type of Loan.

If home-buyers are dependent on borrowed funds for their activities, home-builders are even more so. They are typically small, and their activities are local in nature. Few of them have the capital they need to engage in home-building. It is also generally believed in this industry that no one should ever build new homes for sale with any of his own funds.<sup>6</sup> If he cannot obtain long-term loans, he will borrow short. It is not unusual for home-builders to borrow on short-term loans, and repay them with the proceeds of the permanent mortgage when the house is sold. Thus, one of the peculiarities of the housing sector is that both consumers and producers of housing are dependent on outside financing.

Construction and mortgage loans have traditionally been supplied by thrift institutions, the principal ones being savings and loan associations, mutual savings banks, and life insurance companies. These institutions, together with commercial banks, held more than 75 per cent of the total mortgage debt of recent years. Of these four institutions, savings and loan associations are the largest suppliers of mortgage loans. They invest practically all of their available funds in mortgages, their lending authority being limited by law and regulation. Because their main source of funds comes from savings inflows of depositors who can withdraw their funds quickly, savings and

---

<sup>6</sup>Sherman Maisel, "The Relationship of Residential Financing and Expenditures on Residential Construction," Conference on Savings and Residential Financing, 1965 Proceedings, ed. Marshall Ketchum (Chicago, 1965), p. 138.

loan associations have been labeled as "borrowing short and lending long." The other three financial intermediaries, namely, mutual savings banks, life insurance companies, and commercial banks, have more diversified lending authority than savings and loan associations, and can allocate available funds among different types of investments on the basis of the rates of return, risks, and other considerations. During recent years, however, their shares of mortgage loans, excepting those of life insurance companies, have increased considerably. A breakdown of home mortgage lending by type of lender is presented in Table I.

TABLE I  
PRIVATE NONFARM MORTGAGE DEBT HELD BY MAJOR INSTITUTIONS,  
IN PERCENTAGE DISTRIBUTION

Year End	Savings and Loan	Mutual Savings	Commercial Banks	Life Insurance Companies
1960	39.2%	13.0%	13.6%	17.6%
1961	40.8	13.1	13.1	16.8
1962	41.9	13.3	13.3	15.9
1963	43.4	13.6	13.7	15.0
1964	44.1	13.9	13.8	14.5
1965	44.2	14.1	14.3	14.0
1966	43.6	14.2	14.7	13.6
1967	43.8	14.2	14.7	12.7

Source: Savings and Loan Fact Book, 1968, p. 37.

## Determinants of Residential Construction

A large number of factors has been mentioned by economists, at one time or another, as possible determinants of the volume of nonfarm residential construction. These factors may conveniently be grouped into nine categories, as follows:<sup>7</sup>

1. Changes in population, including changes in the number, type, and size of households and in the age-sex composition.
2. Changes in income and employment.
3. Consumer asset holdings and their distribution, especially liquid assets and equities in existing houses.
4. Changes in the prices of housing, including the price of elasticity of housing relative to other prices and the shape of the construction supply and cost curves.
5. Relationship between occupancy costs and prices of dwellings, including credit availability and the cost of credit.
6. Consumer tastes and preferences.
7. Net replacement demand for dwelling units demolished or removed from the inventory.
8. Conditions in the existing housing supply, including vacancy rates, prices, rents, quality and location of existing units.

---

<sup>7</sup>This list is based on the one given in Grebler and Maisel, "Determinants of Residential Construction: A Review of Present Knowledge," Commission on Money and Credit, Impacts of Monetary Policy (Englewood Cliffs, 1963), pp. 476-477.

9. Reaction to changes in demand - builders' and investors' profit expectations and market structure and market information.

In considering the above factors, care must be taken to distinguish those which are more significant in determining long-run levels of housing construction from those which have an important bearing only on short-run changes. Since this study covers but a short period of time, only those factors which possibly cause short-run fluctuations in residential construction are discussed.

Of those factors mentioned above, most economists seem to agree cost and availability of borrowing, income, prices of housing, conditions in the existing supply, and builders' and investors' profit expectations are main sources of variations in residential construction in the short run. These factors are discussed below:

#### Cost and Availability of Borrowing

This is perhaps the most important variable causing short-run changes in housing construction. William Newman (1935) found this to be true for the period before World War II. John Lewis (1959), Leo Grebler (1951), Jack Guttentag (1960), Saul Klamon (1956), and Warren Smith (1958) reached similar conclusions regarding construction fluctuations during the period since World War II. Their general argument is this: cost and availability of funds to the housing sector have been greatly influenced by the level of general economic activity. When that level is high, the rising demand for funds by business and other sectors, some of which is less sensitive to increased cost of

borrowing,<sup>8</sup> tends to reduce the availability of funds for housing, which is held to be very sensitive to changes in the cost of borrowing because this cost is an important part of the price of a house. When the level of economic activity drops, the supply of funds is ample relative to demand, and credit for housing becomes readily available.

### Income and Prices of Housing

There seems to be no agreement among economists as to the importance of these two variables in short-run changes in residential construction. Whereas Grebler, Guttentag, Klamon, and Smith (referred to above) all assigned an insignificant place to these factors, statistical tests by J. M. Mattila, George Break, and others pointed to a positive and significant influence of income and prices of housing on construction.<sup>9</sup> The average income elasticity measured at the means was found to be between 2.0 and 3.0 for the period 1920-1958, meaning a one per cent increase in income was related to 2 to 3 per cent rise in construction. Richard Muth found that the combined elasticity of construction to income and price as high as 5.5.<sup>10</sup>

---

<sup>8</sup>A number of studies have shown that investments are insensitive to interest rates, for example, F. A. Lutz, "The Interest Rate and Investment in a Dynamic Economy," American Economic Review, XXXV (December, 1954), pp. 811-830, and J. R. Meyer and Edwin Kuh, The Investment Decision (Harvard, 1957).

<sup>9</sup>These statistical tests are discussed in Grebler and Maisel, p. 536.

<sup>10</sup>Richard Muth, "The Demand for Nonfarm Housing," The Demand for Durable Goods, ed. Arnold Harberger (Chicago, 1960), p. 76.

### Housing and Profit Expectations

Conditions in the existing supply of housing and builders' and investors' profit expectations have been given important places in both long and short-run construction variations. The analysis runs as follows: The supply of housing units is relatively fixed in the short run, with annual new construction at around 3 per cent of the existing stock. When exogenous forces cause an increase in demand for housing, the vacancy rate drops. When this rate reaches some zone, rents and house prices are bid up. As prices continue to climb, exceeding construction costs, expectation of profits by builders and investors also rise. New construction is encouraged.

Empirical verification of this analysis has been given by Leo Grebler (1951), Ramsay Wood (1946), Chester Rapkin, Louis Winnick, and David Blank (1953).

It seems safe to assume that changes in household formation and in population in general are unimportant in short-run construction fluctuations. Grebler, Guttentag, Klamann, and Smith (referred to previously) all assigned insignificant places to these variables in their studies. Apparently, changes in household formation and in population are usually too small in the short run to cause any significant fluctuations in construction.

### The Volume of Residential Construction, An Analytical Approach

The interaction of the demand for and the supply of housing determine the volume of housing construction in a given period of

time.<sup>11</sup>

On the demand side, it is assumed that all non-possessors of homes are possible home-buyers, and that they consider new and existing homes as close substitutes. On the supply side, two schedules exist. One represents the owners of existing homes, and the other, firms in the residential construction industry. Total supply is the sum of these two schedules. In Figure 2, the functions are assumed to be linear for the sake of simplicity.  $D$  represents the demand curve for housing.  $S_2$  describes the relationship between price and quantity of homes offered by owners of the existing stock. It is assumed that at some price, the

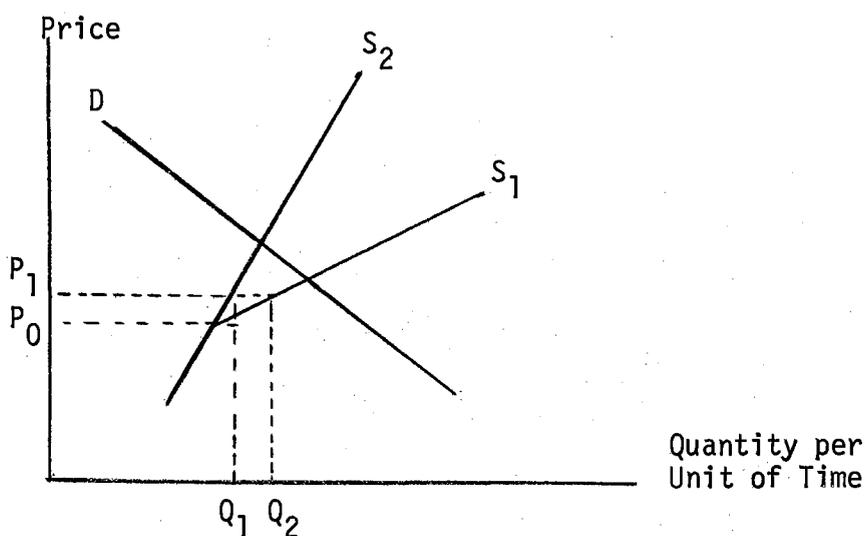


Figure 2 - The Quantity of Homes Constructed During a Short Period of Time.

<sup>11</sup>This part is based essentially on Coldwell Daniel III, "The Volume of Nonfarm Residential Construction: An Analytical Framework," Land Economics, XXXVI (May, 1960), pp. 202-207.

owner of a dwelling becomes a seller. It is also assumed that  $S_2$  becomes more inelastic as the limit of the existing stock is approached.  $S_1$  is total supply. The difference between total supply and the supply of existing homes represents the quantity of new housing which will be offered by construction firms at each price. There exists some price,  $P_0$ , which is sufficiently low that construction firms find it unprofitable to undertake any building activity at all. At price  $P_1$ , total supply of housing is  $Q_1$ , and total supply of existing homes is  $Q_1'$ , so that  $Q_1 - Q_1'$  is the quantity of new homes constructed.

Any time when any of the schedules shifts, the volume of residential construction will change. For example, in Figure 3, consider an increase in demand, resulting in a shift of the demand curve from  $D$  in the first period to  $D'$  in the second period. Consequently, the volume of residential construction increases from  $Q_1 - Q_1'$  in the first period to  $Q_2 - Q_2'$  in the second, and price is bid up from  $P_1$  in the first period to  $P_2$  in the second.

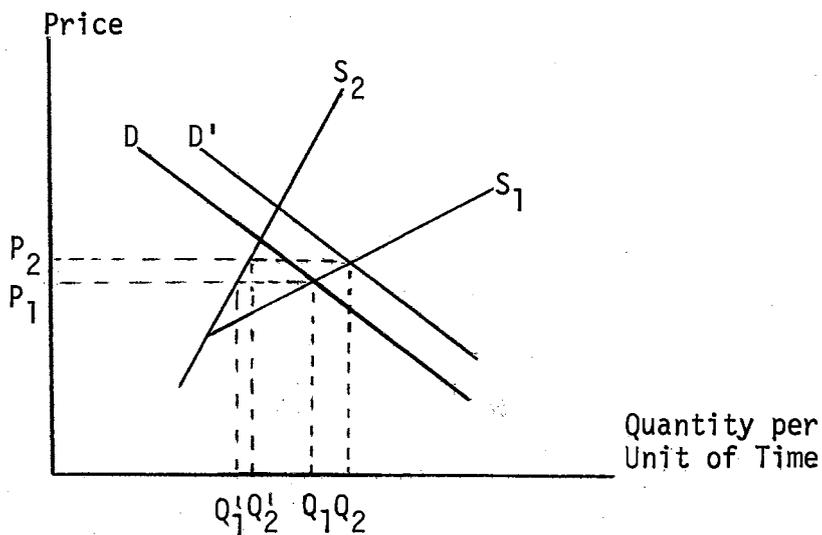


Figure 3 - An Increase in Housing Construction.

## CHAPTER III

### MONETARY POLICY AND RESIDENTIAL CONSTRUCTION, A THEORETICAL APPROACH

#### Introduction

Theoretically, monetary policy exercises its influence on housing through its effects on the cost and availability of borrowing to homebuyers and builders. The present chapter spells out this theory. The first part is concerned with concepts relating to monetary policy, its meaning, and its tools of management, particularly Regulation Q. The second part of this chapter is devoted to the main theme -- effects of monetary policy on housing.

#### Monetary Policy Defined

For the purpose of this study, monetary policy is taken to mean primarily actions of the Federal Reserve to regulate the tightness and easiness of credit conditions, and the behavior of the total supply of money (currency, bank deposits and other liquid instruments) for the purpose of achieving economic objectives.

In the United States, the Federal Reserve System has four main objectives in mind whenever it decides to pursue a particular policy.

Specifically, these objectives are the maintenance of full employment or nearly full employment, the maintenance of stable prices, the acceleration of economic growth, and the elimination of imbalances in international accounts. Whenever unfavorable conditions exist which hinder the achievement of any of these goals, the Federal Reserve would alter its policy in order to avoid disequilibrium in the economy.

### Policy Instruments of the Federal Reserve

The chief weapon of the Federal Reserve in carrying out a policy is open-market purchases or sales of government securities. But intermittently, other measures are also utilized. These include changes in the legal reserve requirement ratios against demand and time deposits, raising or lowering the discount rate at which banks can borrow from the Federal Reserve, moral suasion involving talks or letters to the banks regarding their lending activity, and Regulation Q governing maximum interest rates payable by commercial banks on savings and time deposits. Most of these instruments are quite well known. Not so widely discussed, but of importance to this study, is Regulation Q.

#### Regulation Q

The Bank Act of 1933 established Regulation Q, giving the Federal Reserve the power to fix the maximum rate of interest member banks pay on time and savings deposits. The purpose was to remove from commercial banks the use of deposit interest rates as a competitive device which was thought to have been a fundamental source of instability in the banking system of the 1920's. This authority of the Board to

regulate maximum interest rates was exercised only once between 1936 and 1961, and four times between 1961 and 1965. It is no wonder that so little has been known about this policy instrument.

Many of the implications of Regulation Q began to be realized after 1957 when changes in the maximum interest rates took place. It was found that savings and time deposits were quite responsive to interest rate differentials, and thus changes in the Regulation Q's interest rates would have a profound effect upon the volume of these deposits at commercial banks. As pointed out by Ritter in his study,<sup>12</sup> commercial bank time and savings deposits at the end of 1956 were only 50 billion dollars or about 25 per cent of total deposits, but in 1964, some eight years after the raising of maximum rates, time and savings deposits had expanded by 150 per cent to 125 billion dollars or about 45 per cent of total deposits. Whereas this increase could be attributed to many factors, a good portion must have been due to the improved competitive position of commercial banks following a change in the interest rate ceilings. Statistical tests also supported the hypothesis that deposit growth is positively related to deposit rates at commercial banks.<sup>13</sup>

---

<sup>12</sup>Lawrence Ritter, Regulation Q: Issues and Alternatives (Chicago, 1965), p. 13.

<sup>13</sup>See, for example, David Bond, "The Effects of a Change in the Ceiling Rates on Deposits at Commercial Banks," Yale Economic Essays, VII (Fall, 1967), pp. 139-194.

Both savings and time deposits are quite interest-sensitive. A survey by the Federal Reserve on savings deposit changes following an increase in interest ceilings in 1962 found that those banks which raised their interest rates to 4 per cent, the new maximum rate in 1962, averaged a 24 per cent rise in savings deposits during that year. Those who increased their interest rates to 3.5 per cent gained only 11 per cent in savings deposits. And those who did not change their interest rates at all had a growth rate of but 3 per cent.<sup>14</sup> A study of time deposit changes as a result of a rise in interest maximums also indicated similar results. Until 1962, time deposits comprised about one-fourth of total time and savings deposits. During the three years since the revision of maximum interest rates in 1962, time deposits expanded to constitute over one-third of total deposits.<sup>15</sup>

Savings deposits consist mainly of passbook savings of individuals and non-profit organizations. They are most competitive with deposits at mutual savings banks, shares of savings and loan associations, and credit union shares. Time deposits proper include time deposit open accounts, time certificates of deposits, and other special accounts. They represent short-term business and public funds seeking maximum yields. They are most competitive with short-term money market instruments such as Treasury bills and commercial paper. Because of the

---

<sup>14</sup>Caroline H. Cagle, "Interest Rates on Time and Savings Deposits," Federal Reserve Bulletin, XLIX (June, 1963), pp. 766-772.

<sup>15</sup>Lawrence Ritter, p. 13.

existence of these investments alternative to savings and time deposits at commercial banks, any change in the Regulation Q's ceiling rates would cause individual and corporate wealth owners to shift their funds into or out of commercial banks, depending upon whether interest rates on commercial bank deposits are significantly above or below interest rates on competitive investments. Any changes in Regulation Q would cause wealth-owners to adjust their portfolios, and hence the volume of the flow of funds into various competitive instruments is also affected.

The probable impact upon wealth owners' portfolios of a change in interest rates paid on time and savings deposits at commercial banks has been elaborated by David Bond based on the theory of choice involving risk.<sup>16</sup> His analysis is as follows: A wealthowner, given his attitude toward risk and income, selects from various possible investments that portfolio which maximizes utility. When the rate of return on one of the alternative assets increases, with the risk associated with the asset remaining the same, he will reconsider his portfolio. If the rise in the rate of return is large enough to overcome the cost of switching assets, he will readjust his portfolios, increasing the higher-yielding assets at the expense of other assets. Thus, for example, if interest rates on time and savings deposits rise, individuals would switch from holding assets such as thrift accounts, bonds, equities, and demand deposits to savings and time deposits. The future flow of savings will also be directed to these asset forms. Corporate

---

<sup>16</sup>David Bond, pp. 139-194.

wealthowners would behave in a similar manner. They will increase the holding of time deposits if faced with the same situation described above. It has been shown that corporations tend to limit cash balances to amounts that maximize interest income and minimize transactions costs.<sup>17</sup> Therefore, if interest rates on time deposits rise, they would decrease cash holdings and other short-term assets in favor of time deposits and certificates of deposits.

Regulation Q has become a powerful monetary tool of the Federal Reserve. Its revisions not only influence the volume of savings and time deposits at commercial banks, but the flow of funds into other market instruments would be affected as well, since increases in the flow of funds into one instrument are often at the expense of the others. As will be seen later in this study, changes in Regulation Q were at least partly responsible for a drastic decline in the volume of savings at savings and loan associations in 1966.

### Effects of Monetary Policy on Housing

It was mentioned in Chapter II that cost and availability of borrowing was an important determinant of residential construction in the short run. It is through these two variables that monetary policy exerts its influences upon the housing sector.

When the monetary authorities undertake a restrictive policy or,

---

<sup>17</sup>Ibid., p. 169.

in other words, when they tighten credit conditions and the money supply, through open-market sales of Government bonds, say, this action not only has a direct effect on the market price and yields of these bonds, it also has an effect on the market prices and yields of corporate bonds and other securities that are substitutes for Government bonds. Such sales directly raise the interest rates on the issues sold and tend to raise the yields on Government securities of other maturities and the interest rates of corporate bonds. Since bonds are substitutes for investments in mortgage loans, the raising of bond yields tends to channel funds away from mortgages and to raise mortgage rates.

During these periods of rising interest rates, the Federal Reserve tends to raise Regulation Q's ceiling rates, too; otherwise commercial banks would be unable to compete with other market instruments for savings funds. It was for this reason that ceiling rates had been repeatedly raised in the 1960's.<sup>18</sup> The raising of Regulation Q's ceilings would undoubtedly improve the competitive position of the commercial banks but, as pointed out earlier in the chapter, it would also affect the competitive advantages that other market instruments have previously been enjoying. It could cause the wealthowners to shift their funds from one asset to another.

Thrift institutions, particularly savings and loan associations,

---

<sup>18</sup>Paul Samuelson, "Money, Interest Rates and Economic Activity: Their Interrelationship in a Market Economy." Proceedings of a Symposium on Money, Interest Rates and Economic Activity, ed. The American Bankers Associations (New York, 1967), p. 58.

suffer most from the loss of savings deposits during periods of rising interest rates. They are reluctant to raise their interest rates on share accounts to competitive positions. There are several reasons for this. First, there exist informal ceilings on their interest rates imposed by the Federal Home Loan Bank Board through the use of regulatory restrictions on advances. In order to be able to borrow from the Board, savings and loan associations must abide by its regulations. Second, the nature of the assets and liabilities of savings and loan associations makes them unwilling to change their interest rates easily. Time deposits are nominally liquid, but savings and loan associations invest these funds in mortgages that have a duration which runs into decades. The interest rate payable on such mortgages is set at the beginning of the period at a frozen level, meaning it cannot be raised or lowered as market conditions change. This also means that the amount of revenue by savings and loans in a given period of time is relatively fixed. It makes it difficult for them to raise the yields on savings shares. Thus, when interest rates are rising, the marginal cost of attracting new savings by raising interest rates far exceeds marginal revenue. If interest rates are raised, not only new deposits, but all deposits must be paid at the new higher rate. The result of the associations' reluctance to raise interest rates on share accounts is that savings funds are diverted away from them. Their mortgage lending activity would, thus, have to be reduced.

Other lenders of mortgage loans, especially those with diversified lending authority, would shift away from these loans during such periods as well. Commercial banks, for example, will prefer business and

consumer loans to mortgage loans.<sup>19</sup> The reason is because the former two types are considered to be more profitable, have shorter maturity dates, and are associated with long-standing depositor relationships. Home building and buying, on the other hand, are deemed marginal risks.<sup>20</sup>

The result of a rise in cost and a reduction in availability of borrowing is that less homes will be constructed. This situation is shown in Figure 4, which is developed from the analysis in Chapter II. The assumptions are the same as before. Now, consider first a

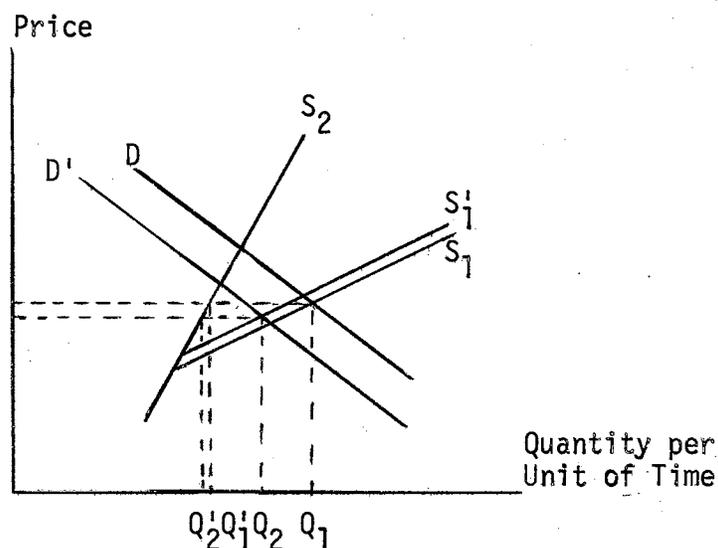


Figure 4 - A Reduction in Housing Construction.

<sup>19</sup>G. L. Bach, "How Discriminatory is Tight Money?" Banking and Monetary Studies, ed. Dean Carson (Homewood, 1963), pp. 254-290.

<sup>20</sup>Department of the Treasury, "Housing and Mortgage Markets in 1966," A Study of Mortgage Credit, United States Senate Committee on Banking and Currency, Subcommittee on Housing and Urban Affairs, Ninetieth Congress, First Session (Washington, 1967), p. 121.

reduction in demand as a result of a rise in interest rate and a reduction of loans available for borrowing. This would shift  $D$  in the first period to the left to  $D'$  in the second period. At the same time total supply will also shift from  $S_1$  in the first period to  $S'_1$  in the second, because the volume of housing construction also contracts for the same reason causing the shift in demand. The volume of residential construction thus reduces from  $Q_1 - Q'_1$  in the first period, to  $Q_2 - Q'_2$  in the second period.

## CHAPTER IV

### MONETARY AND HOUSING DEVELOPMENTS IN 1965-1968

#### Introduction

This chapter traces the developments of monetary policy and their impact on the performance of the housing sector from 1965 to 1968. A comparison of the situation and outcome in 1966 with those in 1968 is made. These two periods had many things in common. Yet, no crisis occurred in the housing sector in 1968 as it did in 1966.

#### Developments in 1965

The United States economy in 1965 was one of expansion. Total real output of the economy rose by 5.5 per cent.<sup>21</sup> The unemployment rate dropped to 4.1 per cent at the end of the year. Total personal income increased by 6.7 per cent and personal savings by 4.8 per cent

---

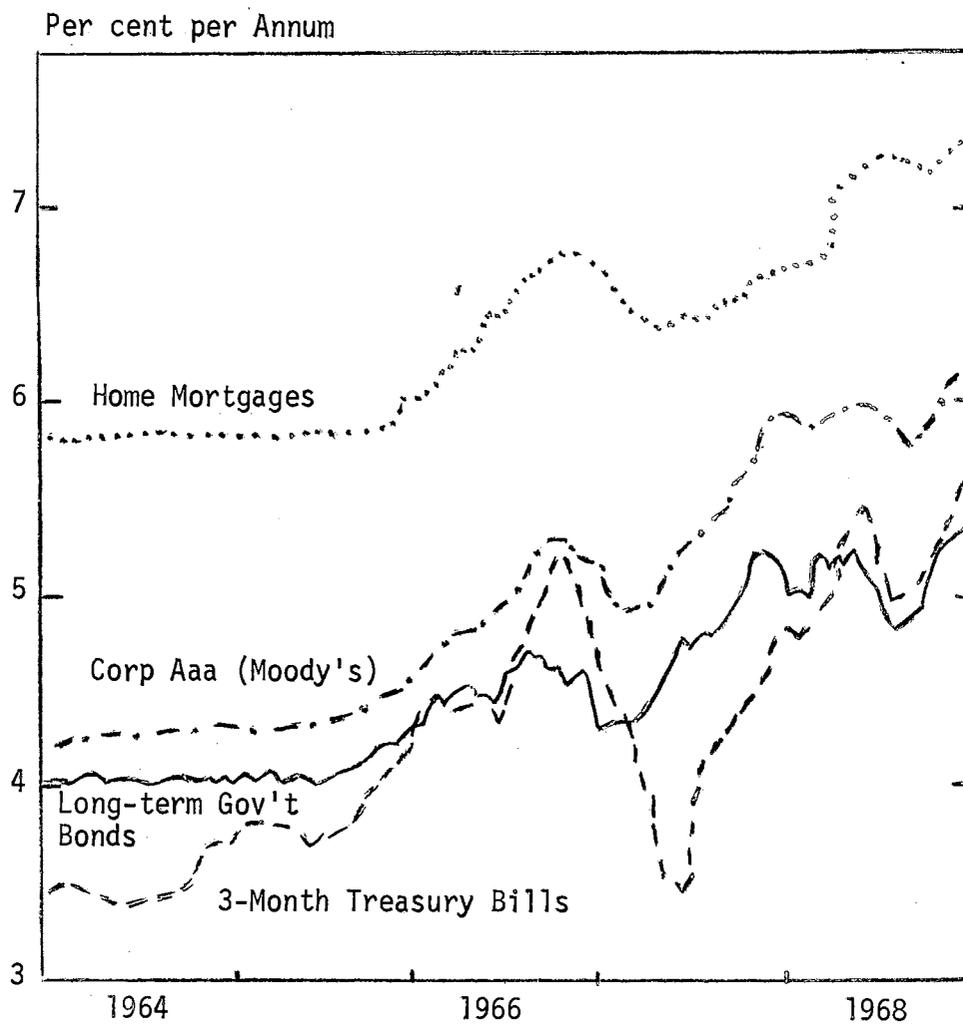
<sup>21</sup>Unless otherwise indicated, the following sources of information have been used in this part: Board of Governors of the Federal Reserve, Annual Report for 1965-1968; Federal Reserve Bank of New York, Annual Report for 1965-1968; Federal Home Loan Bank Board, Annual Report for 1964-1968; and Department of Commerce, Survey of Current Business, various issues.

from the levels of 1964. As the economy moved closer to full capacity, upward price pressures increased.

Against this background, monetary policy shifted over the year from mild ease to mild restraint. Interest rates began to climb as a result: rates on corporate securities early in 1965, rates on long-term Government bonds after midyear, and three-month Treasury bill rates in October. The rate on home mortgages, however, remained at about the same level as in 1964. The trend is illustrated in Figure 5. Bank reserves, however, were large, averaging an increase of 5 per cent over 1964. Savings flows into major institutions all showed a gain also; 15 per cent for commercial banks, 8 per cent for savings and loan associations, and 7 per cent for mutual savings banks. The money supply increased from 159.4 billion dollars in 1964 to 167.2 billion dollars in 1965, or an increase of about 5 per cent.

Private nonfarm construction was one sector which failed to show any significant advance in 1965. Housing starts decreased by 3 per cent from the 1964 level. This fall in housing construction, however, could not be attributed to changes in cost and availability of borrowing. As mentioned above, loanable funds were readily available in 1965. Interest rates on conventional mortgage loans remained fairly stable around 5.80 per cent since 1964 (see Figure 5, page 27). The residential construction cost index for 1965 was 115.2 compared with 111.6 for 1964, which means that average construction cost was rising only moderately in 1965. These monetary conditions could not have hindered housing activity.

An explanation for the reduction in housing starts is found on the supply side of housing. There was a surplus of homes built in the



Source: Federal Reserve Chart Book (April 1, 1969), pp. 24 and 28.

Figure 5 - Long and Short-term Interest Rates.

previous four years preceding 1965. This surplus situation can be seen from the fact that the housing vacancy rate had been rising since the early 1960's. It rose from 6.9 per cent in 1961 to 7.5 per cent in 1965. This implied that the supply of housing was rising faster than the demand for it.

#### Developments in 1966

The economy continued its expansion in 1966. Total real output of goods and services increased by 5.6 per cent over 1965. The economy approached full utilization of resources. The unemployment rate dropped below 4 per cent of the labor force. Personal income and savings climbed to new heights, reaching 598.3 and 30.4 billion dollars at annual rates respectively in the final quarter of the year. Consumer prices went up, too, averaging a rise of 4 per cent within a single year. Demand for output and credit continued to increase throughout 1966 and, before long, became excessive.

Beginning in December, 1965, the Federal Reserve Board undertook a series of actions trying to dampen the growth of credit. It raised the discount rate from 4 to 4.5 per cent. In mid-1966, reserve requirements for time deposits at commercial banks were raised; and in September, the Board resorted to moral suasion, asking the banks to reduce lending activity. All of these monetary actions created extreme tightness in the credit market. The money supply fell from 171.1 billion dollars in June to 169.2 billion dollars in December. Its annual growth rate in 1966 was but 2.2 per cent. Tightness in the market also caused interest rates to go up (see Figure 5, page 27). In

order that commercial banks could compete for savings and time deposits, the Federal Reserve raised Regulation Q's ceiling rate on savings certificates to 5.5 per cent in December, 1965.

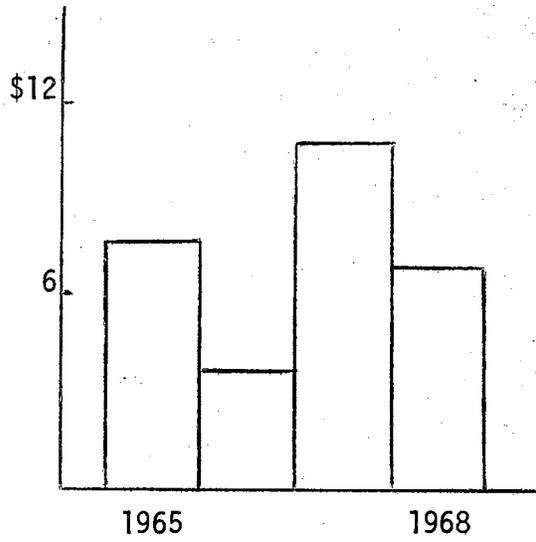
Savings flows into thrift institutions declined sharply. Not only had they to compete with direct market investments for savings funds, they also had to meet the challenge from commercial banks as a result of a change in Regulation Q. The result was that mortgage-oriented institutions suffered severely. "This was the first time in the post-World War II period that a marked drop in funds available to thrift institutions had occurred."<sup>22</sup> The extent of the decline in depository funds by major institutions is shown in Figure 6. As a consequence of this reduction in savings funds, lending activity by nonbanks, particularly savings and loan associations was greatly reduced. Private housing starts fell from an annual rate of about 1.5 million units early in 1966 to a rate below one million units in the final quarter of the year. This was the lowest rate of housing starts in twenty years.<sup>23</sup> Monthly rates of private housing starts are shown in Table II, page 31.

Changes in the other determinants of short-run housing construction were favorable to increasing activity. The vacancy rate dropped from 7.5 per cent in 1965 to 7.1 per cent in 1966, and the total number of unsold homes declined to below 200,000 units for the first time since 1961. These conditions, *ceteris paribus*, encouraged the building of more houses.

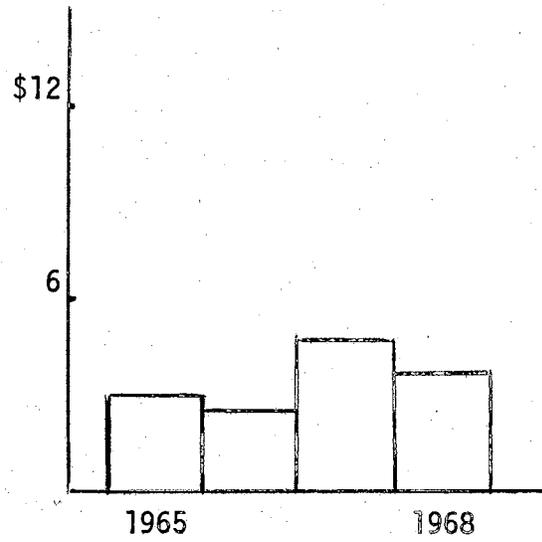
---

<sup>22</sup>Federal Home Loan Bank Board, Annual Report (Washington, 1966) p.1.

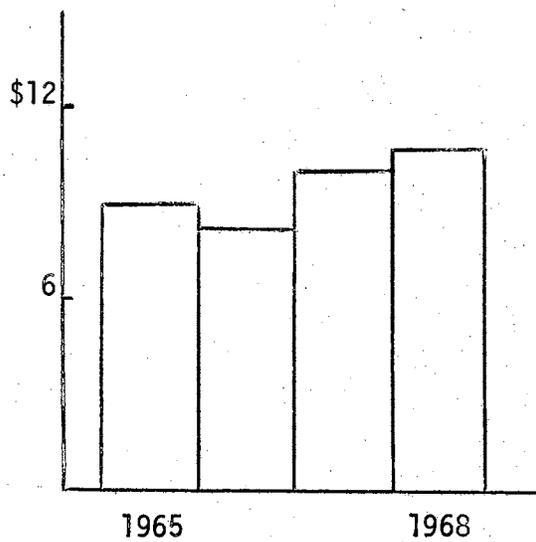
<sup>23</sup>Savings and Loan Fact Book (Chicago, 1967), p. 18.



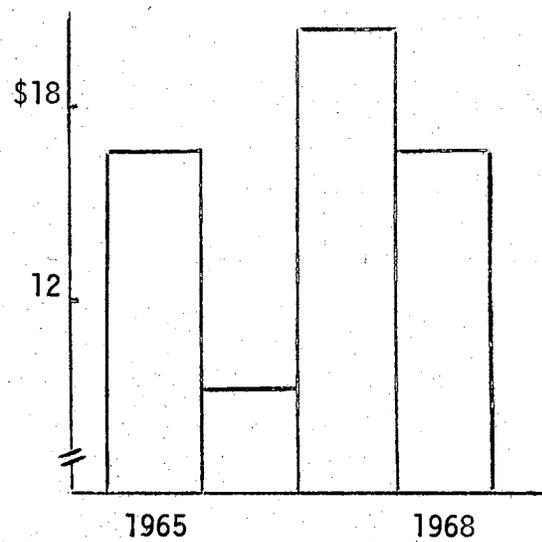
Savings and Loan Associations



Mutual Savings Banks



Life Insurance Companies (in the Form of Premiums)



Commercial Banks (in the Form of Savings and Time Deposits)

Source: Department of Commerce.

Figure 6 - Net Inflow of Savings into Major Institutions, 1965-1968, in Billions of Dollars.

TABLE II  
MONTHLY RATES OF PRIVATE HOUSING STARTS IN THOUSANDS OF UNITS

Month	1965	1966	1967	1968
Jan	1384	1403	1079	1430
Feb	1418	1381	1132	1499
Mar	1429	1400	1067	1479
Apr	1432	1356	1099	1562
May	1461	1232	1254	1345
June	1476	1161	1214	1348
Jul	1484	1061	1356	1507
Aug	1382	1088	1381	1496
Sep	1453	1020	1415	1570
Oct	1438	824	1478	1541
Nov	1443	956	1567	1689
Dec	1544	910	1235	1439

Source: Department of Commerce, Bureau of the Census.

## Developments in 1967

The economy expanded at a reduced rate in 1967. Total real output rose about 2.5 per cent. Despite this slowdown, the economy continued to use its resources at high levels. The unemployment rate remained under 4 per cent. Personal income went up 6.5 per cent, compared with 8.5 per cent in 1966, and the rate of saving (the ratio of personal saving to disposal income) jumped to 7.3 per cent in the first quarter of the year, the highest in a decade.<sup>24</sup>

Against these economic conditions, the Federal Reserve shifted to a policy of ease in late 1966 and during most of 1967. It increased total bank reserves by more than 6 per cent over the level in 1966, compared with only a 4 per cent rise in 1965. In March, reserve requirements against savings deposits at member banks were lowered. In April, it lowered the discount rate from 4.5 per cent to 4 per cent. The initial impact of the shift to monetary ease was a drop in interest rates on securities. However, when demand for funds by various sectors soared again after midyear, interest rates began to move up again (see Figure 5, page 27). The Federal Reserve continued its policy of ease, however, until in November, when it raised the discount rate back to 4.5 per cent in response to devaluation of the pound by Britain.<sup>25</sup>

---

<sup>24</sup>Federal Reserve Bank of New York, Perspective 1967 (New York, 1968), p. 4.

<sup>25</sup>Ibid.

Savings flows into financial intermediaries recovered sharply in 1967 when yields on market investments declined in response to a less restrictive monetary policy. As a result, more credit was available for the mortgage market. Housing starts rose steadily in 1967, after an initial lag. "The lag reflects the time required by lenders, builders, and buyers to begin to readjust plans in line with a shift in financial resources. This lag was intensified in 1967 by the near-collapse of the housing market in 1966."<sup>26</sup> A complete revival was achieved in September and October when housing starts reached a level of 1.4 million units (see Table II, page 34).

During the second half of 1967, market interest rates went up (see Figure 5, page 27), but savings institutions were not adversely affected. The Federal Reserve continued to supply reserves liberally, increasing total member bank reserves from 22,534 million dollars in June, to 23,830 million dollars toward the end of the year, or an increase of over 11 per cent, at an annual rate. The money supply was also boosted by a little over 5 per cent during the year. Savings flows into savings and loan associations showed a gain of 167 per cent over 1966, and 13 per cent over 1965. A rise in this major source of association funds meant that loans were more readily available to the housing sector in 1967 than previously. Housing starts continued to improve in the final quarter of 1967 (see Table II, page 31).

---

<sup>26</sup>Board of Governors, "Housing and the Residential Mortgage Market in 1967," Federal Reserve Bulletin, LIII (September, 1967), pp. 1471-72.

Besides changes in cost and availability of borrowing, conditions in housing supply in 1967 were favorable to increasing construction: the vacancy rate declined further from 7.1 in 1966 to 6.2 per cent in 1967, and the number of unsold homes dropped to 185,000 units, the lowest since 1961.

#### Developments in 1968

The economy continued to expand in 1968, but inflationary pressures gathered momentum. Total real output climbed 5 per cent over the previous year. Consumer prices continued to rise, averaging an increase of about 4 per cent in the year. Resources were used at a near-capacity level. Unemployment dropped to the lowest rate in 15 years. Personal income bounded up by over 9 per cent in 1968, but personal savings decreased slightly from the 1967 level.

Mounting inflationary pressures that had begun in late 1967 made the Federal Reserve turn to more restrictive measures. Open market operations were used to put pressure on the reserve positions of member banks. Consequently, member banks had to step up their borrowing at the Federal Reserve: from a total volume of 238 million dollars in 1967 to 765 million dollars in 1968, a rise of over three times the 1967 amount. Reserve requirements against demand deposits in excess of 5 million dollars were raised. The Board also boosted the discount rate twice, from 4.5 to 5, and then to 5.5 per cent. The growth rate of the money supply slowed down during the year from a rate of 5 per cent during the first half of 1968, to only 2.5 per cent toward the end of the year. As a result, interest rates rose, and exceeding the 1966 peaks

(see Figure 5, page 27). In May, most interest rates receded. The Federal Reserve loosened its policy, lowering the discount rate to 5.25 per cent. However, toward the final quarter of the year, it was evident that the economy was still advancing too rapidly. High credit demands pushed interest rates up to new heights. The Federal Reserve again increased the discount rate to 5.5 per cent.

In 1968, the Federal Reserve was careful in the use of Regulation Q for fear of repeating the grave consequences which occurred in 1966. The ceiling rates were raised on a graduated basis this time, from 5.5 per cent on deposits of the shortest maturities to 6.25 per cent on deposits of maturities of 180 days or more.

Housing continued its remarkable performance despite tight credit conditions during much of 1968. Starts for the year stood at 1.5 million units, an increase of 16 per cent over 1967.

Two main reasons accounted for this advance in housing construction in 1968. First, funds were available to the housing sector. Savings flows into thrift institutions diminished in 1968, as in previous periods of tight credit. For example, savings and loan associations experienced a reduction of 30 per cent in savings inflow in 1968. But these institutions struggled to maintain their sources of funds, the detail of which is discussed later in this chapter. Some intermediaries also helped the housing sector by committing more funds to mortgage lending. Mutual savings banks were among these intermediaries; they increased their mortgage loan commitment by 21 per cent in 1968, compared with a drop of 25 per cent in 1966. The overall effect was that housing activity was stimulated because of the

availability of loan funds.<sup>27</sup> Second, the vacancy rate fell to 5.4 per cent in 1968, the lowest rate in the 1960's. It, then, served as an impetus to increasing housing construction in 1968.

### Situations in 1966 and 1968 Compared

It can be seen from the previous section that the situations in 1966 and 1968 were similar in many respects. In both instances, inflationary pressures threatened a rapidly-growing economy, with consumer prices rising by 3.3 per cent in 1966 and 4.2 per cent in 1968. A restrictive monetary policy as reflected by rising interest rates and a slower growth rate of the money supply was in effect during most of the two years. Interest rates were much higher in 1968 than in 1966 (see Figure 5, page 27), and the money supply grew much faster in 1968 than in 1966, the former year having an annual growth rate of 6.5 per cent while the latter averaged only 2.2 per cent.

Real income rose in both 1966 and 1968. The amount of increase was greater in the former year: 4.9 per cent in 1966, compared with 2.8 per cent in 1968.

So far as the cost of borrowing is concerned, the interest rate on conventional home mortgage loans averaged 6.75 per cent in 1968, compared with an average of 5.5 per cent in 1966. Despite the lower interest rates in 1966, loans were more difficult to obtain in that

---

<sup>27</sup> Board of Governors, "Financial Developments in the Fourth Quarter of 1968," Federal Reserve Bulletin, LV (February, 1969), pp. 92-96.

year than in 1968. As discussed previously, the reason was that savings and loan associations, the largest suppliers of mortgage loans, experienced a sharp reduction in their sources of funds in 1966 when higher interest rates on direct investments and on savings and time deposits at commercial banks attracted loanable funds away from those associations. As a result of a reduction in available loans, many people were forced to postpone their housing demand in 1966.

On the supply side of housing, more houses should have been constructed in 1966 than in 1968, if construction cost was a significant determinant of construction and other things remained the same in both years. Average construction cost rose 7.6 per cent in 1968, while it was 4.6 per cent in 1966. However, other things did not remain the same in both years. The supply of housing was less adequate in 1968 than in 1966. This is reflected in the fact that the housing vacancy rate was 5.4 per cent in 1968, and 7.1 per cent in 1966; the number of unsold homes declined slightly from 195,000 units in 1966 to 186,000 units in early 1968. These conditions might have encouraged a stepup in housing activity in 1968. A further different phenomenon existed in the two years which affected housing supply. Construction funds were more readily available in 1968 than in 1966. Just as the availability of borrowing could cause a postponement of housing demand, it could also exert the same effect on supply. Home-builders had great difficulties in obtaining loan funds in 1966, and this shortage slowed housing activity in that year.

From the above comparisons, it is clear that availability of loans to the housing sector is a major determinant of the volume of construction. It was this factor which distinguished the performance of the

housing sector in 1968 from that in 1966. Thrift institutions were unable to supply loans in 1966 due to a curtailment of savings inflows. The reasons for this curtailment have been discussed in Chapter III. In 1966, the reduction of savings inflows into nonbanks was intensified by the successive actions of the Federal Reserve raising Regulation Q's ceiling rates on savings and time deposits at commercial banks. Significant outflows of savings from thrift institutions, particularly savings and loan associations, were noticed in late 1965 when the ceiling rates on certificates of deposits at commercial banks were first raised. However, it must be mentioned that the greatest competition for savings funds came from the security markets. In 1966, individual savings in the form of government, corporate, and other securities rose by 14.9 billion dollars -- three times the 1965 increase. On the other hand, growth in commercial bank time deposits was less than half the 1965 increase on a percentage basis.<sup>28</sup>

In 1968, the competitive position of commercial banks for savings was less advantageous than in 1966. After the experience of 1966, the Federal Reserve was careful in the use of Regulation Q. Instead of a flat raise in the ceiling rates as in 1966, it chose a graduated increase, with the lowest rate on deposits of the shortest maturity. The purpose was to narrow interest rate differentials between savings shares at associations and short-term savings deposits at commercial

---

<sup>28</sup>The American Bankers Association, Statement to the United States Senate Committee on Banking and Currency, Subcommittee on Housing and Urban Affairs, A Study of Mortgage Credit, Ninetieth Congress, First Session (Washington, 1967), pp. 143-150.

banks so that the incentive to shift funds from the former to the latter was minimized. Differentials in interest rates have been carefully studied by authorities concerned since 1966. The Federal Home Loan Bank Board, the Federal Reserve, and the Federal Deposits Insurance Corporation were given power, after 1966, to review, periodically, and after consultation with each other, to establish maximum interest rates on the important 'consumer type' depository claims. The purpose was to reduce fluctuations in the flow of funds into residential mortgage lenders, particularly savings and loan associations (arising from interest rate competitions).<sup>29</sup> As a result of this arrangement, commercial banks have no great advantages over thrift institutions in the competition for savings deposits.

In 1968, efforts of the associations to promote special high-rate and long-maturity accounts resulted in an increase in savings inflows. These special accounts existed in 1966, but very little was done to promote their popularity. They constituted only 8 per cent of all savings deposits at associations in 1966. By the end of 1968, such accounts had grown to constitute almost 24 per cent.<sup>30</sup> The bulk of the increase in savings at associations in 1968 was in such accounts. The result of a rise in the holding of these long-term deposits was that the danger of the sudden outflow of savings funds from associations

---

<sup>29</sup>Board of Governors, "Construction and the Mortgage Market," Federal Reserve Bulletin, LIV (October, 1968), p. 788.

<sup>30</sup>Richard Pickering, "Savings and Loan Industry -- A Review for 1968," Journal of the Federal Home Loan Bank Board, II (March, 1969), p. 8.

would be reduced.

A reduction in cash inflows experienced by associations in 1966 also contributed to the decline in their source of operating funds. Prepayment on outstanding mortgage loans fell off sharply as the reduced volume of new lending slowed turnover in older properties and as more buyers assumed outstanding loans in order to finance real estate transactions. In 1966, savings and loan associations experienced a decline in cash flows from loan retirements of nearly 5.8 billions dollars.<sup>31</sup> In 1968, cash flows from loan retirements did not decline. Associations also maintained their sources of funds by portfolio adjustments, increasing advances from the Federal Home Loan Banks, drawing down cash and deposit balances and retaining a larger amount of earnings for investment. The ability of associations to retain higher earnings was made possible by the rise in earning assets and increased rate of return on these assets in 1968.<sup>32</sup> The extent to which savings and loan associations were able to maintain their liquidity in 1968 is indicated in Table III and in Figure 6. As can be seen from this table, net savings receipts declined significantly in the second quarter of 1966, and there was a net outflow of savings in the third quarter. But at no time in 1968 were savings receipts less than those in 1966, and there was never any net outflow of savings in 1968. Loan repayments were also large and steady in all the four quarters of 1968, whereas they

---

<sup>31</sup>Board of Governors, "Monetary Policy and the Residential Mortgage Market," Federal Reserve Bulletin, LIII (May, 1967), p. 732.

<sup>32</sup>Richard Pickering, p. 8.

TABLE III  
 MAJOR SOURCE OF ASSOCIATION FUNDS, IN MILLIONS OF DOLLARS

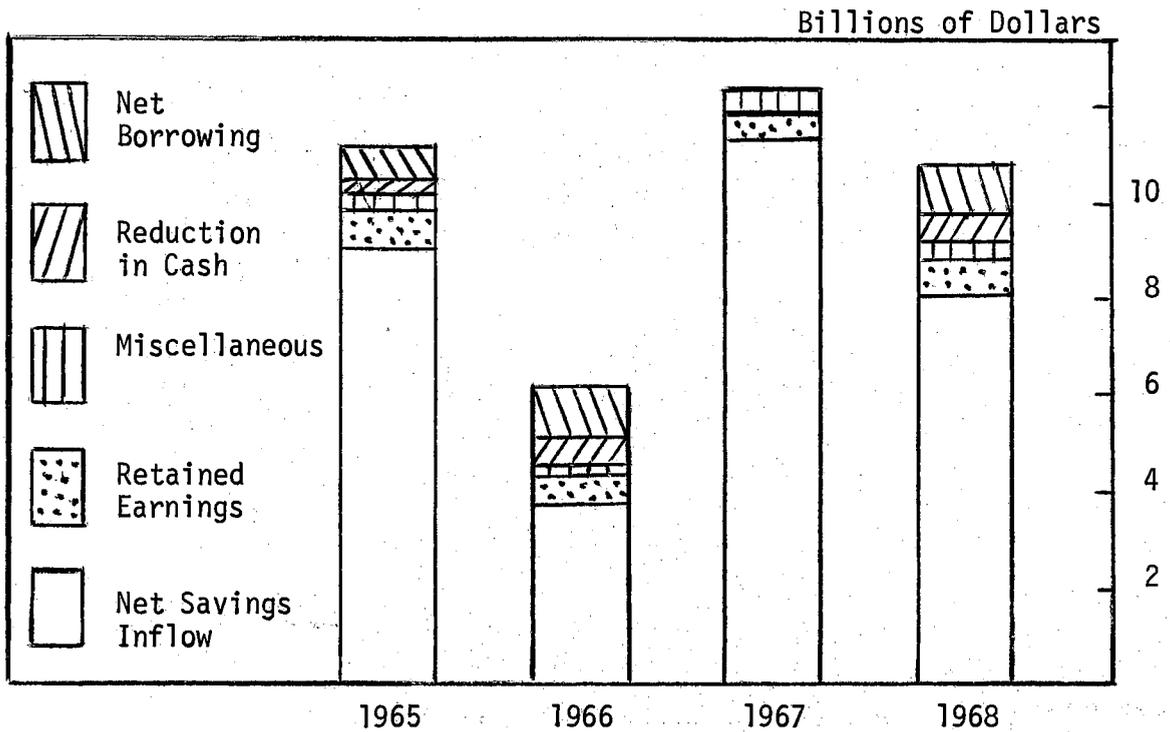
		Net Savings Receipts	Advances from FHLBB	Mortgages Repaid	Total
1965	1st Q	1908	- 577	3284	4615
	2nd "	2368	838	3813	7019
	3rd "	1199	214	4046	5459
	4th "	3038	194	3835	7067
1966	1st "	1321	- 301	3427	4447
	2nd "	797	1093	3537	5427
	3rd "	- 745	394	2314	1963
	4th "	2283	- 241	2661	4703
1967	1st "	1528	-1757	2735	2506
	2nd "	3546	- 874	3092	5764
	3rd "	1930	- 178	3474	5226
	4th "	2683	263	3146	6092
1968	1st "	1608	- 123	3187	4672
	2nd "	2114	614	3526	6254
	3rd "	934	145	3589	4668
	4th "	2786	230	3495	6511

Source: Federal Home Loan Bank Board.

showed a large reduction in the third and fourth quarters of 1966. Differences in other sources of funds in these two years are indicated in Figure 7. The most significant were in retained earnings and in miscellaneous sources besides savings receipts.

The inflexibility of usury laws in many states in 1966 also discouraged mortgage lending by thrift institutions. These laws limited interest rates on loans to individuals to 6 per cent. With higher interest rates available on alternative investments, there was little incentive to commit funds to mortgages subject to usury law limits. In 1968, some states, for example, New York, New Jersey, and Maryland, became more flexible with their usury laws, raising their ceiling limits when situations warranted. This proved beneficial to the housing market. Following the relaxation of the usury ceiling limits on home mortgage rates in several states in 1968, commercial banks and mutual savings banks expanded their mortgage lending, for they found it profitable to do so under the new laws. In 1968, commercial banks increased their mortgage lending by over 10 per cent, and mutual savings by 21 per cent. Undoubtedly, a portion of this increase can be attributed to the relaxation of usury laws.

Therefore, the difference in performance in the housing sector in the two years was the result of efforts taken by parties concerned. In 1968, the Federal Reserve took care that its Regulation Q would cause no adverse effects on the savings flows of mortgage-oriented institutions. On the other hand, these institutions, particularly savings and loan associations, took steps to insure their sources of funds. Also, the technical features of the housing market, such as vacancy rates and stock of homes, were more favorable to construction in 1968. Both the



Source: Journal of the Federal Home Loan Bank Board 2  
(March, 1969), p. 8.

Figure 7 - Source of Association Funds.

vacancy rate and the stock of new houses fell to their lowest levels since 1961.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

The purpose of this thesis has been to explore the background behind the differential performances of the housing sector in two similar economic and monetary situations in 1966 and 1968.

Monetary policy is said to exert a special effect on the volume of residential construction. Experiences in the past have shown this to be true.

Monetary policy is able to affect housing through its influences on two of the determinants of residential construction. These determinants -- cost and availability of borrowing -- are rather important because of the way housing is usually financed. Both home-buyers and home-builders depend heavily on long-term borrowing to finance their activity. Therefore, any time these variables change, housing construction will also be affected.

Housing loans have traditionally been supplied by thrift institutions such as savings and loan associations, mutual savings banks, life insurance companies, and commercial banks. Of these institutions, savings and loan associations are, by far, the largest suppliers of these loans.

The cost and availability of loans can be altered by monetary actions. When the monetary authorities tighten credit and the money

supply, the cost of loans goes up and their availability down. During such periods, the demand for loanable funds increases relative to supply and thereby driving up all interest rates, and the savings flow into mortgage-oriented institutions declines during such times. These institutions usually cannot compete with direct market investments for savings funds because of their limited ability to raise interest rates. The existence of usury laws, the long-term nature of the majority of their investments, and the consideration of marginal cost and marginal revenue in raising interest rates are some of the causes for their reluctance to increase yields on savings shares.

A reduction in savings flow into associations will be more serious if Regulation Q raises significantly the ceiling rates on savings and time deposits at commercial banks above those on savings shares at associations and other nonbanks. Interest-sensitive savers are likely to shift their funds from shares to deposits.

With a rise in interest cost and a reduction in available loan funds, many home-buyers and builders may have to postpone their activity.

The period 1966-1968 provides evidence for the above theory. Monetary restriction was effective in the two years of 1966 and 1968. Residential construction decreased drastically in 1966 as a result of high interest rates and a severe reduction in available loans due to an enormous decline in savings flows into thrift institutions, the latter resulting from the operation of Regulation Q. In 1968, both interest rates and savings flows into thrift institutions behaved in the same manner as in any previous periods of monetary restraint. However, the extent of the curtailment in savings flows was smaller this time as a

result of the care taken by the monetary authorities in the use of Regulation Q. The ceiling rates on deposits at commercial banks were raised in such a way that there was little incentive for short-term savers to shift their funds from savings shares to bank deposits. The reduction in savings flows was also made less severe by efforts of associations to attract new savings through the promotion of special accounts. Associations also struggled to maintain their sources of funds by increasing retained earnings which were realized in 1968. A larger repayment of loans in 1968 than in 1966 also helped to increase the liquidity of the associations. Relaxation of usury laws in many states also encouraged the flow of funds into mortgage markets, and tended to lead a few institutions to expand their mortgage lending. With adequate funds available to the housing sector, the volume of construction could be expanded.

Two conclusions can be drawn from the experiences of the period 1966-68:

1. Cost and availability of borrowing determine the volume of residential construction to a great extent in the short run.
2. Conditions in the supply of housing as reflected by the housing vacancy rate and the number of unsold homes seem important variables, at least during the period of this study. An inverse relationship existed between the volume of residential construction and the vacancy rate and also between the former and the inventory of unsold homes.

## A SELECTED BIBLIOGRAPHY

- American Bankers Associations. Statement to the United States Senate Committee on Banking and Currency, Subcommittee on Housing and Urban Affairs. A Study of Mortgage Credit. Ninetieth Congress, First Session. Washington: The U. S. Government Printing Office, 1967, 144-150.
- Bach, G. L. "How Discriminatory is Tight Money?" Banking and Monetary Studies, ed. Deane Carson. Homewood: Richard Irwin, Inc., 1963.
- Board of Governors of the Federal Reserve System. Annual Report, 1965. Washington: Board of Governors of the Federal Reserve System, 1965.
- \_\_\_\_\_. Annual Report, 1966. Washington: Board of Governors of the Federal Reserve System, 1966.
- \_\_\_\_\_. Annual Report, 1967. Washington: Board of Governors of the Federal Reserve System, 1967.
- \_\_\_\_\_. Annual Report, 1968. Washington: Board of Governors of the Federal Reserve System, 1968.
- \_\_\_\_\_. "Construction and the Mortgage Market." Federal Reserve Bulletin, LIV (October, 1968), 788-799.
- \_\_\_\_\_. Federal Reserve Chart Book. Washington: Board of Governors of the Federal Reserve System, April, 1969.
- \_\_\_\_\_. "Financial Developments in the Fourth Quarter of 1968." Federal Reserve Bulletin, LV (February, 1969), 92-96.
- \_\_\_\_\_. "Housing and the Residential Mortgage Market in 1967." Federal Reserve Bulletin, LIII (September, 1967), 1471-1472.
- \_\_\_\_\_. "Monetary Policy and the Residential Mortgage Market." Federal Reserve Bulletin, LIII (May, 1967), 728-740.
- Bond, David. "The Effects of a Change in the Ceiling Rates on Deposits at Commercial Banks." Yale Economic Essays, VII (Fall, 1967), 139-194.
- Cagle, Caroline. "Interest Rates on Time and Savings Deposits." Federal Reserve Bulletin, XLIX (June, 1963), 766-772.

- Daniel, III, Coldwell. "The Volume of Nonfarm Residential Construction: An Analytical Framework." Land Economics, XXXVI (May, 1960), 202-207.
- Dasso, Jerome. "Tight Money and the Plight of the Home-building Industry." Oregon Business Review, XXV (October, 1966), 1-4.
- Department of the Treasury. "Housing and Mortgage Markets in 1966." A Study of Mortgage Credit, U. S. Senate Committee on Banking and Currency, Subcommittee on Housing and Urban Affairs, Ninetieth Congress, First Session. Washington: The U. S. Government Printing Office, 1967, 118-127.
- Federal Home Loan Bank Board. Annual Report. Washington: Federal Home Loan Bank Board, 1965-1968.
- Federal Reserve Bank of New York. Annual Report. New York: Federal Reserve Bank of New York, 1965-1968.
- Federal Reserve Bank of New York. Perspective. New York: Federal Reserve Bank of New York, 1965-1968.
- Grebler, Leo. "The Housing Inventory - Analytic Concept and Quantitative Change." American Economic Review, XLIX (May, 1951), 555-568.
- Grebler, Leo, and Sherman Maisel. "Determinants of Residential Construction: A Review of Present Knowledge." Commission on Money and Credit, Impacts of Monetary Policy. Englewood Cliffs: Prentice Hall, 1963.
- Grebler, Leo, David Blank, and Louis Winnick. Capital Formation in Residential Real Estate. Princeton: Princeton University Press, 1956.
- Guttentag, Jack. "Credit Availability, Interest Rates and Monetary Policy." Southern Economic Journal, XXVI (January, 1960), 219-228.
- Guttentag, Jack. "The Short Cycles in Residential Construction." American Economic Review, LI (June, 1961), 275-298.
- Klaman, Saul. "Effects of Credit and Monetary Policy on Real Estate Markets: 1952-1954." Land Economics XXXII (August, 1956), 239-249.
- Lewis, John. Business Conditions Analysis. New York: McGraw-Hill, 1959.
- Lutz, F. A. "The Interest Rate and Investment in a Dynamic Economy." American Economic Review, XXXV (December, 1954), 811-830.

- Maisel, Sherman. "The Theory of Fluctuations in Residential Construction Starts." American Economic Review, LIII (June, 1963), 359-379.
- Maisel, Sherman. "The Relationship of Residential Financing and Expenditures on Residential Construction." Conference on Savings and Residential Financing, 1965 Proceedings, ed. Marshall Ketchum. Chicago: U. S. Savings and Loan League, 1965, 129-140.
- Meyer, J. R., and Edwin Kuh. The Investment Decision. Homewood: Richard Irwin, Inc., 1957.
- Muth, Richard. "The Demand for Nonfarm Housing." The Demand for Durable Goods, ed. Arnold Harberger. Chicago: University of Chicago Free Press, 1960, 29-80.
- Newman, William. "The building Industry and Business Cycles." Journal of Business, V (July, 1935).
- Pickering, Richard. "Savings and Loan Industry - A Review for 1968." Journal of the Federal Home Loan Bank Board, II (March, 1969), 6-13.
- Projector, Dorothy, and Gertrude Weiss. Survey of Financial Characteristics of Consumers. Washington: Federal Reserve Board, 1966.
- Rapkin, Chester, Louis Winnick, and David Blank. Housing Market Analysis. Washington: U. S. Housing and Home Finance Agency, 1953.
- Ritter, Lawrence. Regulation Q: Issues and Alternatives. Chicago: Association of Reserve City Bankers, 1965.
- Samuelson, Paul. "Money, Interest Rates and Economic Activity: Their Interrelationship in a Market Economy." Proceedings of A Symposium on Money, Interest Rates and Economic Activity. New York: The American Bankers Association, 1967.
- Savings and Loan Fact Book. Chicago: U. S. Savings and Loan League, various issues.
- Smith, Warren. "The Impact of Monetary Policy on Residential Construction, 1948-1958." A Study of Mortgage Credit. U. S. Senate Committee on Banking and Currency, Subcommittee on Housing and Urban Affairs, Eighty-fifth Congress, Second Session. Washington: The U. S. Government Printing Office, 1958.
- U. S. Department of Commerce. Survey of Current Business. Washington: Department of Commerce, various issues.
- Wood, Ramsay. "Housing Needs and the Housing Market." Housing, Social Security and Public Works, Board of Governors of the Federal Reserve. Washington: The Federal Reserve Board, 1946.

VITA <sup>2</sup>

Raymond Wayman Lee

Candidate for the Degree of

Master of Science

Thesis: MONETARY POLICY AND RESIDENTIAL CONSTRUCTION, 1966-1968

Major Field: Economics

Biographical:

Personal Data: Born in Macao, China, August 15, 1943, the son of Mr. and Mrs. Yiu-ting Lee.

Education: Graduated from La Salle High School, Hong Kong, in May, 1960; attended St. Martin's College, Olympia, Washington, from 1962 to 1964; received the Bachelor of Arts degree from the University of Oregon in 1967, with a major in Mathematics; completed requirements for the Master of Science degree at the Oklahoma State University in May, 1970.