

THE UNIVERSITY OF MANITOBA

HOUSING MARKET ANALYSIS AND POLICY PLANNING

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATES STUDIES
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF CITY PLANNING

DEPARTMENT OF CITY PLANNING

FACULTY OF ARCHITECTURE

WINNIPEG, MANITOBA

MAY, 1975

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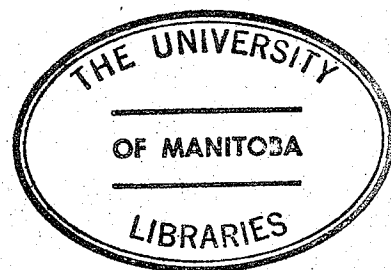
A dissertation submitted to the Faculty of Graduate Studies of
the University of Manitoba in partial fulfillment of the requirements
of the degree of

MASTER OF CITY PLANNING

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ACKNOWLEDGEMENTS

I wish to thank Mrs. E. Nickel, Mr. E. A. Flichel, and Mr. T. Partridge for giving me the opportunities to learn and to work in the Prairie Regional Office of the Central Mortgage and Housing Corporation.

My thanks also go to my wife, Catherine, for typing this thesis.

B.L.

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PREFACE

This thesis attempts to analyze housing and its markets from the eyes of government housing agencies, private developers and builders, city planning authorities and housing consumers. Methods of evaluating and interpreting the various demand and supply forces at work in the housing market are therefore presented with a view to enabling wide application of the techniques in decision making by all parties concerned. Main emphasis however will be placed on the use of market analysis by government housing agencies and planning departments in formulating their housing and development plans.

In time of a national housing crisis which is characterized by housing shortages and rising prices of land and housing, private and public bodies should see the problem in its proper perspective through housing market analysis. Obstacles to residential construction activities can then be identified and removed, and catalysts to housing supply and consumption introduced.

ONE. INTRODUCTION

Housing market analysis provides the factual basis and predictions for decision-making by private enterprises and public bodies in residential construction and development.

In the public sector, government housing agencies collect and analyze information on population and housing characteristics, housing stock, economic base, cost and availability of mortgage money, land, building materials, and labour for the dual purpose of examining the population's housing condition and the government's role in direct and indirect provision of housing. This analytical process serves not only to develop and/or expand needed housing policies and programs, but also to evaluate the effectiveness of these instruments and public investment.

City planning authorities are concerned with meeting present and future space and servicing requirements of urban development. Housing market analysis serves to generate forecasts of housing requirements, which can then be used in calculating residential land requirements, the derived demand for municipal and community services, and the cost involved in the provision of these services.

Since any tax or monetary incentives to buy or to build houses lead to consumption of land and municipal services,

city planners must be aware of the influence of government policies and programs on urban development and its space and service requirements. Although Neighbourhood Improvement and Residential Rehabilitation Programs may not require additional land or services, city planners can have a more intimate role to play in improving the quality of residential neighbourhoods.

In the private sector, developers and builders conduct market analysis as a means of investment decision making. Findings of housing market analyses are fed as inputs into other related economic studies, such as feasibility study, highest and best use study, marketability study and investment analysis. Such market analyses may vary in scope and depth as warranted by the size and nature of housing developments. Cost and availability of financing, land, labour and building materials are fully investigated while on-site analysis of the surrounding neighbourhoods is also performed to ensure a profitable return on residential real estate investment.

Prospective housing consumers, be they buyers or renters, do a certain amount of "comparison shopping" before paying for their best choice. Through comparative shopping, the consumers "analyze" the housing markets from a different viewpoint, usually with the help of realtors and rental agencies. However, it is not the way consumers analyze the housing market that is important to planners, but their housing satisfaction and preferences. For those prospective housing con-

sumers who are dissatisfied with their existing housing condition, the sources or causes of their dissatisfaction must be uncovered so that planning of housing and environment can be geared towards accommodating the wishes and changing needs of the people.

TWO. ECONOMIC BASIS FOR HOUSING ANALYSIS

Before dealing with the methodologies, it is appropriate to outline factors which are of significance in housing market analysis.

1. Housing is the composite of services and amenities rendered by a dwelling unit and its location.
2. There are two types of housing needs :
 - (a) Physical housing need is the quantity and quality of housing and its amenities considered necessary to bring the housing condition to a socially acceptable level.
 - (b) Financial housing need is the gap between the cost of an adequate housing unit and the proportion of the income that should not be exceeded to pay for it.

Housing needs should be differentiated from housing demand which expresses the desire for housing, for which people are willing and able to pay.

3. Housing is not an ordinary commodity and many of the distinctive features of the housing market result from its peculiar commodity characteristics. Insofar as they affect economic analysis, the effects of durability, non-homogeneity, spatial uniqueness and market imperfection warrent attention.
 - (a) The durability of housing means that it is an investment good, and that a very high proportion of the potential

supply is represented by the existing stock.

(b) The non-homogeneity of housing poses problem of aggregating demand schedules of individuals entering the market. The differentiations of housing types and tenure arrangements also present problems of comparability in market analysis. 1/

(c) Housing has the attribute, unique amongst consumer durables, of being fixed in location. Therefore, every house or at best small groups of houses, are unique goods. Since spatial relationships of a location and its neighbourhood characteristics often enter people's preference function with different weights, the phenomenon of spatial uniqueness introduces analytical problems. 2/

(d) Imperfection in the housing market is attributable to the non-homogeneity of housing, imperfect knowledge of market conditions and opportunities of housing and credit availability, externalities or "neighbourhood effect", and the intervention by public authorities in the form of regulations, subsidies, grants, etc.

4. Housing preferences are the choices made (with respect to housing-type, size, style, tenure, location and expenditures) after evaluating other combinations of qualitative features of housing that are within one's financial reach; demand is simply the expression of preferences.

1/ See Smith, W.F. Housing : The Social and Economic Elements, University of California Press, 1970, p.50.

2/ Kirwan, R.M. and Martin, D.B. "The economic basis for models of the housing market", Centre for Environmental Studies, London, Wp 62, 1970, p.12.

Housing preferences are revealed in market behavior but may be independent of objective factors such as household characteristics (e.g. income) and market phenomena (e.g. rent). For instance, individuals having the same household characteristics and work-place location may differ only in the value they set on travelling time, and therefore living in different locations.

5. Housing demand and supply are influenced by economic as well as non-economic variables such as social, demographic and institutional factors.
6. The demand for housing other than rental units is made up not only of a demand for shelter but also of an investment demand. Homeownership thus provides shelter as well as a hedge against inflation. The shelter demand is mainly governed by the number, size, age-sex composition and income of households in the study area now and in the future.

Existing housing satisfaction and housing expenditure, cost of living, inflationary expectations, cost and availability of mortgages, government housing policies and programs all have significant influence on effective demand for housing in the market. The additional explanatory factors needed to explain neighbourhood housing demand include employment locations, availability of public services including schools and hospital, environmental quality, accessibility to community facilities, and incidence of property tax.

Investment in a home is made attractive by the Federal Income Tax Act which exempts the principal residence from capital gains tax, and by the National Housing Act which provides mortgage insurance and other aids such as the Assisted Home Ownership Program. Some provincial governments also "subsidize" investment in home by making available home purchase grants. An increasing housing demand pressure is created by investors/speculators. The resulting turnover of residential property for capital gain objectives only worsen the house price inflation and lead to compounding of trading costs such as real estate commissions. 1/

7. The supply of housing consists of vacant units of housing stock and the flow supply of new and unoccupied units. Differentiation therefore must be made between resale/reabsorption of existing units and sale/absorption of new units. Housing construction in terms of the number of housing starts is a function of rent and price of new and existing units; cost and availability of money, land, labour, and building materials; vacancies, the number of newly completed and unoccupied units, and units under construction; and government housing policies and programs.
8. The housing market is a mechanism of allocating housing to households. It is divided into different sectors. The major divisions are between the private and public sectors and between the rental (housing service) and sales (housing

1/ Greater Vancouver Regional District, Seminar on Management of Growth, February 1974, p.c-4.

stock) sectors.

9. The housing market is often termed as the submarket of the (urban) land or real estate market. 1/ However, in this thesis, housing market is not referred to as a single market in a classical sense but a series of overlapping submarkets differentiated by location, type of dwelling, type of tenure, age, and quality. 2/

10. A housing submarket is composed of dwelling units which are close substitutes for one another, and are linked in a chain of substitution with links of varying length between them. "Thus, there is a location link, tenure link, type of structure link, value link, and so on... The combined distance of the links between the two markets reflects the degree to which price or rent changes in one market will not affect the other." 3/

Since the submarkets defined in terms of the objective characteristics of housing may not reflect the fact that substitutability exists in the eye of the consumer, they must be defined in terms of demand groupings rather than supply groupings. The search behavior of an individual household seeking accomodation will define a set of substitutable dwellings. In aggregate the mobility field of a particular group of households will also define that

1/ Ratcliff, R.U. Urban Land Economics, McGraw-Hill, N.Y. 1949, p.295.

2/ Duesenberry, J. Business Cycle and Economic Growth, McGraw-Hill, N.Y. 1958, p.135.

3/ Grigsby, W.G. Housing Markets and Public Policy, University of Pennsylvania Press, Philadelphia, 1963, p.37.

group's submarket. 1/ Thus, there are two definitions of spatial submarket of housing : "demand" spatial submarket and "supply" spatial submarket. Demand spatial submarket as seen by households may not necessarily be a contiguous area while supply spatial submarket is a contiguous residential area with similar locational characteristics.

11. Most macro-economic models of the housing market deal with aggregate supply and demand relationships, abstracting from the spatial dimension. The models are used to generate econometric estimates of the parameters of the various variables affecting housing and new residential construction. 2/ Elasticities of variables (e.g. housing starts) with respect to other variables (e.g. NHA mortgage rate) are generally calculated, analyzed with past trends, and used for prediction purposes.
12. Von Thunen's theory of location rent differentials (1826) serves as the foundation for today's micro-analytic modeling of the housing market. 3/ Many micro models treat the spatial dimension of the housing market explicitly and attempt to determine residential location in terms of

1/ Berridge, J.D. The Housing Market and Urban Residential Structure : A Review, Centre for Urban and Community Studies, University of Toronto, Research Paper No.51, 1971, p.45.

2/ Two such models can be found in L.B.Smith, Housing in Canada: Market Structure and Policy Performance, CMHC, Ottawa, 1971.

3/ An exposition of Von Thunen's location theory can be found in J.W.Alexander, Economic Geography, Prentice-Hall, 1963, pp.613-616. An example of its application is furnished by M.J.Beckmann, "Application of a Neoclassical Von Thunen Model to the Housing Market", the Annals of Regional Science, June, 1972.

minimizing the journey to work. These models are merely classical budget constraint models solving, for a given level of income, the combination of housing space, transport and all other goods that would maximize an individual's satisfaction or utility. 1/

Muth's general equilibrium model 2/ presents a comprehensive treatment of the economics of demand and supply in the housing market which satisfactorily accommodates such factors as spatial uniqueness, different housing types and the existence of a stock of houses of different ages and which accounts for phenomena like the price-distance function and the density gradient. Since the model demonstrates analytically the interactions between market phenomena such as price, density, occupancy rates and travel behavior, it provides "a bridge between the analysis of the determinants of demand and supply behavior at the margin and the analysis of housing demand and supply in the aggregate." 3/

13. Society may fail to achieve an efficient allocation of resources in housing because the indirect benefits and costs (i.e. externalities) are not considered in private housing market decisions. When the existence of such

1/ See Alonso, "A Theory of the Urban Land Market", Papers and Proceedings of Regional Science Association, Vol. VI, 1960, and Location and Land Use, Harvard University Press, 1964.
2/ Muth, R.F. Cities and Housing, University of Chicago Press, 1969.
3/ Kirwan and Martin, op.cit., p.32.

externalities results in too few housing units being produced and consumed — too few to maximize net social benefits, public intervention is justified. ^{1/}

14. It is a futile attempt to operate a housing policy which is concerned with occupancy rates, rents and prices independently of a planning policy which is concerned with the location of jobs and houses and transport improvements.

^{1/} Haveman, R.H. The Economics of the Public Sector, John Wiley & Sons, N.Y. 1970, pp.33-39.

THREE. METHODOLOGIES FOR HOUSING MARKET ANALYSIS

Housing market analysis is conducted for the purposes of investment decision making in the field of housing and related services. There are, however, several approaches to understanding the structure and performance of the housing market. This can be explained by the fact that the participants, namely the government housing agencies, investors, developers/builders, housing consumers, and city planning authorities, have their own objectives and criteria of investment, and consequently, the scope and level of market analysis they undertake.

Before presenting the methodologies, it is appropriate to introduce two conceptual models of the housing market and its basic principals and institutions in the housing production and allocation process. The two flow charts, diagrams 1 and 2, serve not only to define the interaction of the participants but also to delineate the scope of data collection for analysis.

The housing production and allocation process involves mainly the consumers, the three levels of government, and the housing development industry. Investors, lending institutions, and professionals such as planners and lawyers also play significant roles in the supply of housing.

The three levels of government virtually set the framework of the whole process. The Federal Government, through the Central

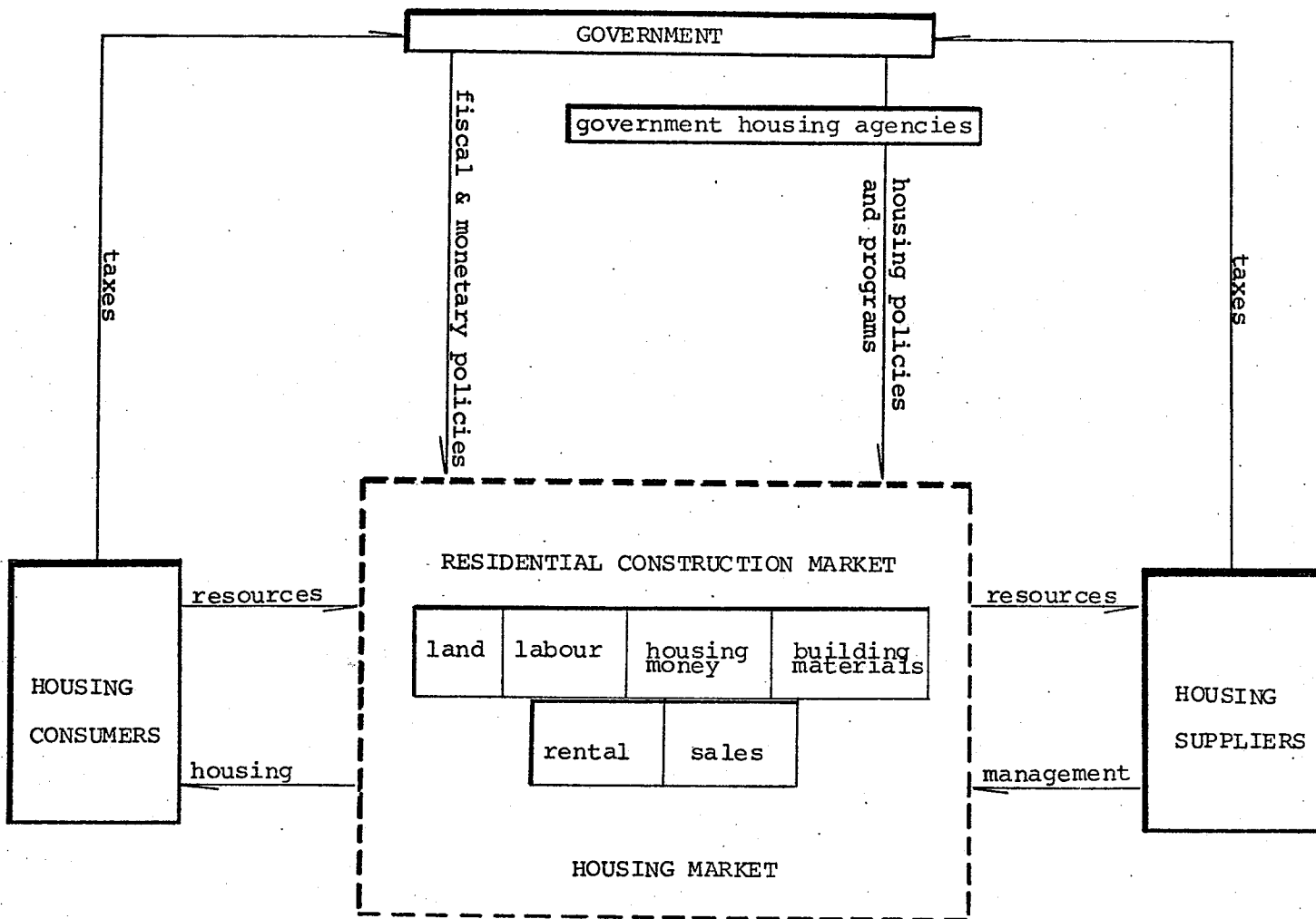


Diagram 1 A CONCEPTUAL MODEL OF THE HOUSING MARKET

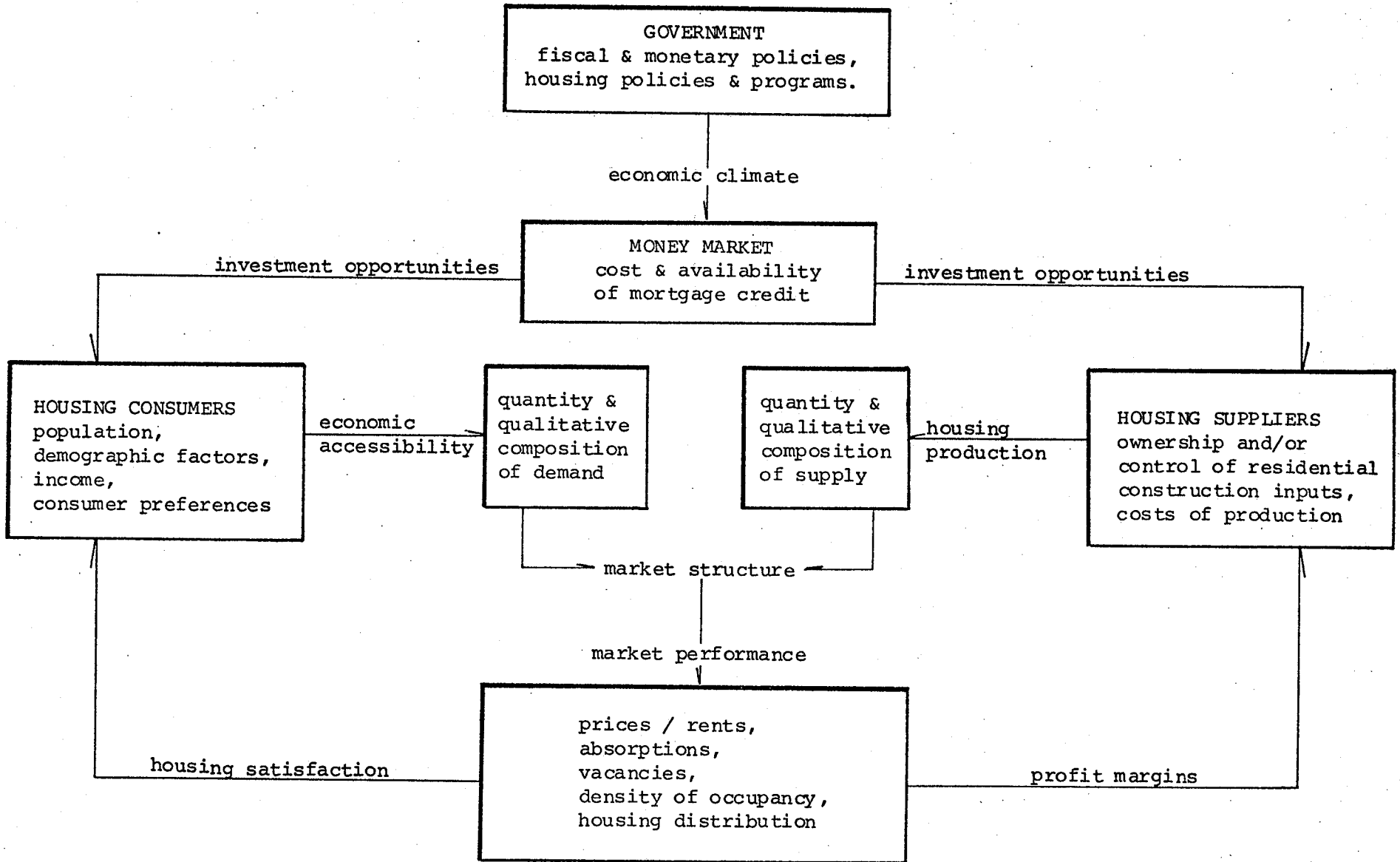


Diagram 2 MECHANISMS OF HOUSING PRODUCTION AND CONSUMPTION

Mortgage and Housing Corporation, sets building standards, and provides grants and loans to the provinces, municipalities, developers and consumers for the purchase and provision of housing.

The provincial governments may intervene directly or indirectly in the housing field. The N.D.P. government of Manitoba, for example, has established the Manitoba Housing and Renewal Corporation to develop and execute public housing and land assembly programs. Programs directed to relieving Manitobans in particular the lower income group from the high cost of housing include a property tax credit plan and homeownership subsidies of up to \$300 a year for qualifying families buying a home under the Federal Government's Assisted Homeownership Program.

The municipal governments regulate and control residential development by zoning and by setting servicing standards, residential densities, and subdivision design criteria. The other participants in the housing field have to operate within the above parameters as defined by the governments.

The development industry includes land developers, developer-builders and builders. In Winnipeg, all the principal participants in the housing industry are developer-builders with varying degrees of vertical integration in the construction and marketing of their housing units. These companies are involved

in all aspects of the housing production process, from land assembly and subdivision design to servicing of the lots, and from design of the houses to their sale or lease to the public. While decisions to build in the private sector are strongly influenced by CMHC programs, the lending institutions, the marketing and financial analysts, and the planning and design teams, the final investment decisions are made by the housing producers.

The following topics are usually included in housing market analyses. In specific situations, however, not all of these may be covered or others may be included.

1. Population and Housing Characteristics
2. Supply of Housing
3. Urban Land Supply and Development
4. Housing Money (Residential Mortgage) Market
5. Economic Base
6. Performance of Housing Markets
7. Consumers' Housing Preferences
8. Government Housing Policies and Programs
9. Cost and Availability of Residential Construction Inputs
10. Neighbourhood and Site Characteristics

All of the above factors must be studied in relation to each other and in relation to past developments. In this manner, both short- and longer-range market trends may be identified and used as the basis for estimating future probable market changes.