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# The Position of Housing in National Economic and Social Policy

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# The Position of Housing in National Economic and Social Policy

by LEO H. KLAASSEN and LELAND S. BURNS\*

*"The best security for civilization is the dwelling, and upon proper and becoming dwellings depends more than anything else the improvement of mankind. Such dwellings are the nursery of all domestic virtues, and without a becoming home the exercise of those virtues is impossible."*

—Benjamin Disraeli

It is difficult to disagree with so eloquent a declaration of the compelling need for housing as the one cited above, yet, like so many others who have pronounced similar dicta for housing, the former British Prime Minister errs by omission. Traditionally, justifications such as Disraeli's for more housing and higher standards have been voiced primarily as a social and only incidentally economic argument. The economic consequences of good housing may be no less impressive than the social and they are certainly more susceptible to empirical proof. We propose to reverse the traditional perspective and treat the economic aspects of housing as primary and the social as secondary. To delimit the housing problem and facilitate our analysis, we shall commence by stating two assumptions:

1. That housing is an investment good capable of generating income and influencing productivity.
2. That raising real per capita income is the prime target of economic policy, and housing is one of the tools of this policy.

## Housing as a Productive Investment

The literature of economics customarily distinguishes between two sorts of capital: that used for production, and that for consumption.<sup>1</sup> There is little difficulty in mentioning clear-cut examples of each kind of capital, but an exhaustive classification of all economic goods into either of the two groups is indeed a challenge. A refrigerator, no doubt, can be classified as a consumption good and a steel mill or a dam represents productive capital. The operating costs for a private automobile represent consumption expenditures by the owner, while the car itself contributes to the owner's productivity by shortening his travel time to and from work, shopping, and recreation. The automobile is but one of the numerous economic goods that may be placed in the consumption category only by the narrowest definition of the term. In the more important macroeconomic sense, the good makes a positive contribution to

\* The authors gratefully acknowledge the suggestions of Leo Grebler, Walter D. Harris, Jacob Marshak, and Frank Mittelbach.

<sup>1</sup> Cf. John Maynard Keynes, *The General Theory of Employment, Interest and Money*, N. Y., Macmillan Co., p. 226, in which the author specifically cites housing as an example of consumption capital.

production and thence to income. When one considers the myriad of goods which are normally attributed to consumption but which in fact increase real incomes, the distinction between consumption and production capital becomes little more than a semantic will-o'-the-wisp.

Furthermore, a precise distinction between the two kinds of capital is not only difficult but often unnecessary and perhaps even dangerous. To frame public policy on such a strict dichotomization may well overlook the possibilities for income generation implicit in a good classified in the "consumption" inventory. Policy oriented toward growth tends to emphasize that investment which yields the highest net returns; thus, so-called productive investment is favored. But this is only a partial view.

In this paper we shall assume that consumer goods, by increasing the productivity of their owner or user, increase output.<sup>2</sup> The assumption may hold only up to a certain level of consumption, but if we concern ourselves exclusively with lower income countries, it seems reasonable that general increases in consumption will add to the productivity of the worker and, in so doing, to the well-being of the whole nation.

Consumption capital goods present a rather special case in the whole range of consumption goods insofar as their average lifetime is much longer, and they constitute a bundle of services to be rendered to the consumer over his lifetime. The greater the durability of a good, the longer it takes to consume and, *ceteris paribus*, the higher will be the capital requirement per unit of consumption.

This places housing, a quasi-consumption good, in a very special position.<sup>3</sup> The useful life of a dwelling is generally 50 to 75 years, provided it is built to certain standards. Because of its relatively long life, disproportionately large capital outlays are required in relation to the annual returns generated. Although housing may heavily tax the supply of capital funds available, if such investment yields returns greater than alternative investments, it is economically justifiable to channel the supply into housing despite the high investment requirement per household.

We have assumed that workers' living conditions bear on their productivity both directly and indirectly via their willingness to work and the social climate. Accepting this assumption, it follows that housing, by improving living conditions, influences productivity. The sections that follow consider the derivative effects of this assumption and logic.

### The Influence of Improved Housing on Productivity<sup>4</sup>

Before the share of housing in the allocation of resources can be determined, we must first analyze the extent of this influence relative to

<sup>2</sup> This seems obvious for the lowest income groups—so much so that, to the authors at least, the assumption is more properly an allegation. Regrettably, the tempting task of empirical verification lies beyond the bounds of this paper, but is a challenge which should be accepted by future researchers.

<sup>3</sup> The only well-known economist who seems to have recognized the positive effect of consumption capital (as defined in the traditional sense) on the productivity of labor is Karl Marx. In his *Capital: A Critique of Political Economy, The Process of Capital Production*, translated from the 3d German ed. . . . Edited by Frederick Engels [and] revised and amplified according to the 4th German ed. . . . N. Y., Modern Library [c. 1906], pp. 569-574, housing is considered as only one ingredient of the "necessaries of life" and the contribution of these necessaries to productivity is largely implicit.

<sup>4</sup> The productivity of housing is not to be confused with the productivity of the house-building industry. Our definition considers housing as a catalyst increasing the output of its occupant, whereas productivity in the house-building industry refers to the output per worker engaged in construction of the dwelling.

the influences of other investments which compete for the supply of capital. A simple tool, the capital-output ratio has proved an effective device for determining investment priorities in lower income countries. This ratio measures the amount of capital needed per unit of output; in other words, the productivity of capital applied to a series of alternative investment opportunities.<sup>5</sup>

Our analytical approach<sup>6</sup> makes use of two capital-output ratios: one for investments in the housing sector, the other for all nonhousing investments. At first blush, the distinction might appear elementary, but it illustrates well the type of analysis required for effective decision-making on investment problems.

Our assumption can be reformulated more realistically by employing these useful tools. Let it be supposed that housing favorably affects these ratios. Housing generates income in the form of net rent, which is derived chiefly from interest charges. Nonhousing investment, on the other hand, generates an income resulting largely from the effort of labor. Labor's contribution to production from this sort of investment greatly exceeds its contribution to housing. Measured in terms of its contribution, that investment will be favored which produces the maximum increase in labor's output. Given our revised assumption then, investment in housing is a potent force acting to improve the capital-output ratio for industry, but conversely, investment in nonhousing bears little on the capital-output ratio of housing. To all intents, the impact of nonhousing investment on the productivity of housing is negligible, and perhaps even nil. For this reason, our analysis concentrates on the contribution made by housing to the nonhousing sector.

As a second assumption, let us suppose that the total amount of capital available for investment is fixed. The problem now becomes one of so distributing this sum between the two sectors that production is maximized.<sup>7</sup>

As a first step in solving this problem, let us concentrate upon the contribution of housing investments to the nonhousing sector. This contribution consists of the decrease in the capital-output ratios of all sectors of production and those for former as well as new investments. This decrease very likely tapers off as investment in housing increases, but there will always be some positive contribution. Because the supply of funds is limited, however, an increase in housing investments necessarily diminishes the capital available for investment in the nonhousing sector. Although the capital-output ratio decreases further, from a certain point on, available funds decrease at a relatively faster rate so that the total

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<sup>5</sup> For descriptions of the development and application of capital-output ratios, see, for example, E. D. Damar, *Essays in the Theory of Economic Growth*, N. Y., Oxford University Press, 1957; Albert O. Hirschman, *The Strategy of Economic Development*, New Haven, Yale University Press, 1958; and Jan Tinbergen, *The Design of Development*, Baltimore, Johns Hopkins University Press, 1958.

<sup>6</sup> For the algebraic treatment, see the Mathematical Appendix to this chapter.

<sup>7</sup> If the capital-output ratios of the two sectors were independent of the investments in the housing sector, the capital yield would be maximized by investing in the sector with the lower capital-output ratio. For example, the income increase would be maximized by investing all capital in the nonhousing sector whenever the capital-output ratio of that sector was lower than that of the housing sector. In this case, investments in housing may not always be economically rational. Whenever housing's contribution to income is less than nonhousing's, residential construction would have to be justified on noneconomic grounds.

contribution of nonhousing to total production from that point onward also starts diminishing.

The contribution of the housing sector itself is proportional to the investment in this sector, since its capital-output ratio is independent of the investment in housing. The optimum investment in housing is identified as that point where the marginal contribution of housing investments to the nation's total income just equals the decrease in contribution of the other sectors of the economy resulting from an additional investment in housing. This, then, becomes the decision rule for the allocation of funds among sectors.

One could argue that this reasoning furnishes a formal solution to the problem of determining the appropriate share of national resources to be made available for residential construction. But this is true only in a theoretical sense. Again, a formidable task lies ahead in testing this theory and its implications in the world of practice. The authors have sought to establish the important fact that such a task is a worthwhile undertaking in order to provide a more substantial basis for housing policy than that of the past. Estimating the functional relationships between living conditions and productivity seems more than ever a prerequisite for establishing a rational investment policy in the lower income countries.

### **The Significance of Labor's Contribution to Productivity**

Considering the conjoint input of capital and labor, the greater the proportion of labor, the greater will be the change in output with changes in labor's productivity. Assuming that output per worker is directly related to living conditions, it follows that the more the quantity and quality of housing are improved, the greater will be labor's productivity, and this improvement will be most significant in those industries where labor intensity is greatest. More specifically, the influence is proportional to industry's "labor quota."

This generalization holds only insofar as improved housing is equally available to all productive workers. Conceivably, policy could favor workers in occupations critical to a nation's economy rather than all workers regardless of their employment.<sup>8</sup> The policy chosen might lie between the two extremes of social justice and economic growth. The balance will, of course, differ from country to country depending upon the relative importance assigned to social and economic goals. Communist nations, for example, have sought rapid growth by pursuing the latter goal.

Clearly, worker incentives are of importance in raising the level of output. In certain industries, particularly those in which rates of output are machine dictated, personal incentives have little bearing on output; rather, the machine governs. Manufacturing furnishes an example of highly routinized production, whereas agriculture and construction provide examples of employment where incentives can significantly influence

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<sup>8</sup> Our reasoning assumes conditions of full employment or at least identical disparities between the demand for and supply of labor by sector. It was correctly pointed out in the discussion following the presentation of this paper that structural differences would temper the generality of the above policy.

output. Thus, the less routinized industries will enjoy greater capacity for greater output from increased incentives. Insofar as housing provides incentives, these are the industries that will produce at higher rates because of improved housing.

### Consequences for the Balance of Payments<sup>9</sup>

We have assumed that housing affects capital-output ratios of various investments. Equally important is the influence of residential construction on a nation's balance of payments position. On the one hand, a consideration we momentarily defer, the optimum balancing of investment between the two competing sectors is subject to the balance of payments position; on the other, but in the more positive sense, this position is influenced by investment itself. The reasoning runs as follows:

Any investment will likely require imports of capital goods consisting of equipment or the raw materials to be processed by the equipment, or both. The manufacture of these raw materials into semifinished and finished goods at lower cost reduces the prices of these goods on the domestic and international markets. With a reduction in prices, quantities purchased by other nations will increase relative to the demand elasticities of the products manufactured.

Lower income countries generally export agricultural products and raw materials and import manufactured goods. The volume of this trade, which typically represents a sizable portion of a country's gross national product, is often determined by the nations with which the country trades. Because such a country's economy depends to a great extent upon world prices for imports as well as for exports, its income is subject to variation with fluctuations in trade prices. This case, undoubtedly relevant for most Latin American countries, underscores the importance of stabilizing balance of payments conditions by creating surpluses to counter deficits.

Certain industries bear more directly on this problem than others, just as housing makes greater contributions to certain industries than to others. To the extent that housing increases productivity and improves the competitive position of industry in world markets, housing also contributes to a payments surplus. Again, labor intensity plays a major role.

Simplifying the problem, we might first dichotomize total industrial activity by labor quota and then by the contribution made per worker to a balance of payments surplus. The four categories that emerge are defined and exemplified as follows:

- HH: Both the labor quota and the contribution of labor to the balance of payments is high; agriculture and textile production would be examples for lower income nations.
- HL: The contribution to the balance of payments is high, but the labor quota is low; examples might include the production of raw materials, and especially oil, iron, ore, etc.

<sup>9</sup> A discussant of the paper noted that, except for passing reference, inflation has been omitted from consideration. The observation is correct, of course, and the implied criticism valid. Inflation could easily be introduced as a restriction operating in similar fashion as the balance of payments restriction. Probably investment in each sector will induce price increases of varying magnitudes. A tolerable rate of increase can be defined by the policy-maker and used as a parameter limiting the decision as in the case of the balance of payments restriction.

- LH: A low contribution to the balance of payments with a high labor quota, e.g., construction.
- LL: A low contribution to the nation's balance of payments position and a low labor quota; examples would be many types of heavy industry.

Per worker contribution to balance of payments	Industries' labor quota	
	High	Low
High	H H	H L
Low or Negative	L H	L L

Once the distribution of employment among a country's industries and the contribution of each industry to that nation's balance of payments are known, an analysis can be made of the influence of improved housing on the trade accounts of the nation.

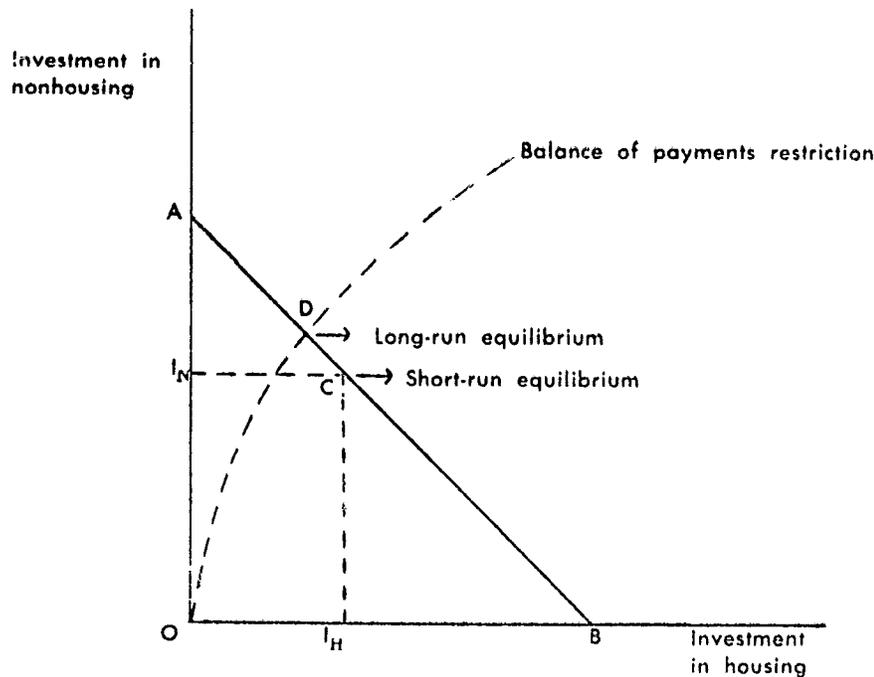
Investment in housing may adversely affect a balance of payments position. If such is the case, investment would be more effective if channelled into nonhousing. Excluding foreign currency reserves, an adverse balance of payments position could be maintained only in the short run. Sooner or later a surplus of sufficient proportions must be accrued to balance the deficits of previous years. Although our decision rule may be optimal in the short run, it may be less than optimal in the long. Similarly, housing investment may be optimal in the short run but its contribution to the balance of payments account so small that the long-run solution requires investment other than housing. Production in export-oriented industry may exercise a potent constraint on the level of house-building because of the relatively minor contribution of construction to foreign trade.

This suggests the restraint placed on the optimal decision by the nation's balance of payments position. The significance of this restraint can be explained graphically. Suppose that point C in Figure 1 gives the short-run solution where the contribution of investment to income is a maximum on budget line AB. The long-run solution, point D, requires that the payments account accrue no long-run deficits. Although the character of the balance of payments restriction can only be approximated, it seems more reasonable that it will restrict rather than encourage investment in housing.<sup>10</sup>

An important modification to this rule should be noted. The illustration assumes that all investment funds are domestically supplied. If, however, foreign capital is used, the surplus should enable the borrower

<sup>10</sup> The restriction cuts budget line AB to the left of point C, i.e., toward investment in nonhousing.

FIGURE 1



to satisfy capital and interest payments from accrued surpluses. In this case, the balance of payments restriction becomes more stringent,<sup>11</sup> but investment possibilities increase.<sup>12</sup> Whether this situation expands or restricts the possibilities for housing investments depends largely on the conditions under which the foreign capital was obtained.

### Consequences for the Level of Employment

Employment, an important indicator of a nation's viability, has been virtually neglected up to this point. However, it should be clear that the division of investment has important ramifications for the level of employment. As indicated, the income yielded by a housing unit consists almost totally of capital income in contrast to the production yielded by the nonhousing sector, where labor plays so important a role. Hence, employment increases almost proportionally to increases in the amount invested in nonhousing and decreases as funds are diverted from nonhousing. The latter effect could be compensated by directing nonhousing investment toward labor-intensive industries. Such a shift has definite implications for the balance of payments restriction as well.

Again, policy-makers are faced with reconciling different effects. Except for the short run, the balance of payments restriction would be weighted higher than employment increases. Whenever the balance of payments restriction dictates lower investments in housing than the employment restriction, housing investment should be adjusted to the

<sup>11</sup> The restriction shifts to the left.

<sup>12</sup> The budget line shifts to the right.

limits imposed by the payments restriction. In the reverse case, the employment restriction will govern.

The actual situation depends on two factors: the balance of payments position and the rate of population growth, the latter occasioning special problems when rapid. The higher the rate of population increase, the more urgent the need for additional housing; but, simultaneously, if the balance of payments position is favorable, the more imperative the need for creating additional employment opportunities. If however, population is increasing at a fairly slow rate and the balance of payments position is unfavorable, the latter restriction will dominate.

### Social Factors in Housing Policy

We assumed at the outset that raising real per capita income was the primary target of economic policy. This assumption represents a partial case where government policy is concerned solely with certain economic satisfactions. This is indeed an oversimplification, for other objectives may rank equally high. Important alternates include those implicit in the generic term, "social welfare."

First, a distinction should be made between the need for and the demand for housing. Demand is usually determined by the number of persons requiring a certain product and their ability to purchase that product. Mere population numbers may provide a convincing case for need, but without sufficient income to satisfy that need, there can be no demand. Need is thus a minimum quantity of space per person, whereas demand may be more or less than need depending upon the consumer's ability to pay. These relationships are represented graphically in Figure 2. Two demand functions and two need "floors" may be defined, one each for small and for large families. The demand of larger households will be less than that of smaller ones in the same income class because of their reduced ability to pay for housing—there are just too many mouths to feed. At the same time, their needs for shelter are greater since the number to be housed per unit is larger. The implication for low-income classes is that an increase in the size of the household causes a substitution of food expenditures for rent and a concomitant decrease in the size or quality of the housing unit. Within a given income class, larger families generally live in poorer houses than those of smaller families.<sup>13</sup> For this reason, low-rent housing policy is frequently directed toward the former.

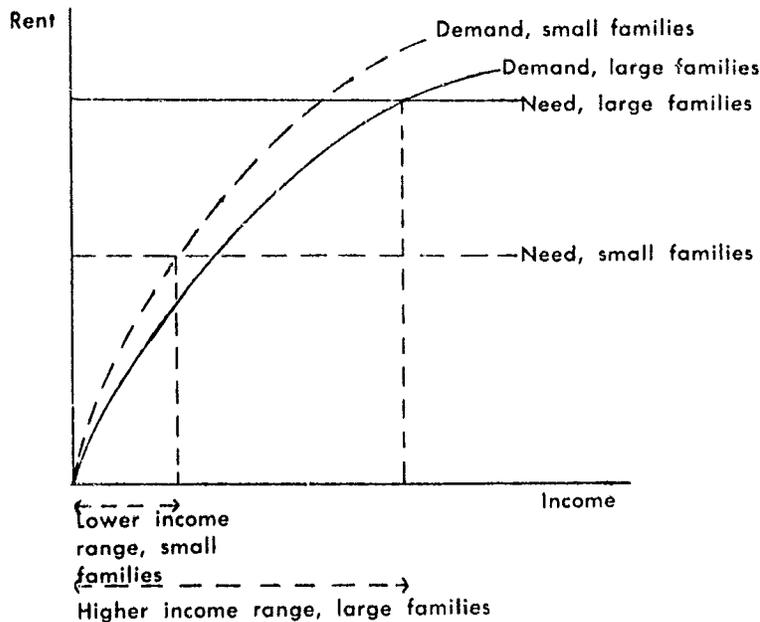
The area to the left of the intersection of the demand and need functions of Figure 2 then becomes the focus of government policy. The efficacy of the low-rent housing policy will determine the speed with which the gap between demand and need is narrowed.<sup>14</sup>

Housing policy might also be directed toward other special groups. These might be composed of persons who occupy positions of strategic importance in a nation's social structure. We have already suggested that certain occupational groups, such as workers in strategic industries, might enjoy favor for economic reasons, but policy might also favor certain elements in the social strata, such as middle-income groups. Embracing

<sup>13</sup> R. G. D. Allen and A. L. Bowley, *Family Expenditures*, London, P. S. King and Son, 1935, p. 19.

<sup>14</sup> Speed is also a function of population increase and changes in the distribution of income, two factors held constant in this illustration.

FIGURE 2



intellectuals, managers of medium-sized firms, government employees and higher technical and administrative personnel, these groups may be singled out for special consideration in housing policy because of their substantial contribution to social stability and economic progress. Improved performance may well be just as important for white- as for blue-collar workers. Usually, the financial position of the middle-income worker is such that he does not require substantial subsidy for minimum or above-minimum housing, but this does not preclude the need to make housing available to him. This suggests that not all housing resources should be channelled into units for low-income groups to the exclusion of housing for those in other income classes. Policy should be framed in such fashion that middle- as well as low-income families enjoy equal opportunity for at least minimum housing.

Thus, a second social advantage of housing becomes apparent: that housing, and perhaps more particularly homeownership, is a factor promoting social stability and social progress. Apart from their desirability as social goals, stability and progress contribute positively to any nation's economy.

So far, we have discussed the low- and middle-income groups. Of course, housing investments will also be made by higher income groups, but the decisions will be largely determined by income. As a result, such decisions are market oriented and not a prime consideration for government concern.

Deducting the market-determined amount from the supply of capital available for residential construction gives the quantity available for middle- and low-income groups. The allocation of this amount then becomes the focus of government policy. But the size of this residue determines how rapidly demand will equate need. The greater the availability of funds for satisfying need, the quicker its satisfaction. If the

period for satisfying need is too long, alternative policies are available: deficit spending (only a short-run possibility), inflation, or income redistribution.

### **Regional Aspects of Housing Policy**

The impact of housing on different regions of a nation is probably as important a consideration for government policy as the impact on different income, social, and occupational groups. Consider first the un-urbanized areas.

With the decrease of transportation costs over time, crossroad villages decline in favor of more highly urbanized regional communities. The centers of agricultural regions grow to the status of towns as workers from surrounding farms in-migrate. As these regions expand and transportation costs drop, the area penetrated expands. More and more agricultural workers seek the social, economic, and cultural advantages offered by cities, and, often more importantly, escape from their subservient positions as tenants. Improved transportation facilitates this move by making it possible for the farmer to live in town and continue to work in the field. The freedom and independence of the city or the regional community offer compelling motives for these farm-to-city shifts of residence.

Government can encourage or retard this tide by the regional orientation of its housing policy. By removing obstacles to free migration, by concentrating residential construction in regional centers and making it available in sufficient quantity and quality, government encourages the movement of workers from the farm. Similarly, by favoring these centers over metropolitan areas, farm out-migration can be effectively influenced, especially in farm areas with labor-intensive production methods. The policy may operate as a force for democratization by modifying the impact of social monopolies which so often characterize farm areas.

The concentration of new housing for farm workers in regional centers is only one of the possible uses of housing as an instrument of policy, as well as a target. In a broader sense, housing policy may be used also as a tool for influencing regional development or, particularly, for the distribution of economic activity and the redistribution of income among various regions of a nation. The provision of adequate shelter is a powerful inducement for migration, an inducement which can be marshalled to suit the development needs of a region needing more rapid economic growth.

A vital yet obvious requirement of industry is a labor force adequate in numbers and quality to serve its needs. Housing may be used as a magnet to attract this labor force and, with it, industry. Logical by-products are income increases for the area and a regional redistribution of income in favor of the developing area. The European Economic Community has made the public aware of what the economist has long known: that certain regions offer distinctive advantages for particular types of economic activity, or, in our terminology, the capital-output ratio of a given industry varies among regions. To the extent that industry will locate in that region where its capital-output ratio is lowest, national income will be increased. Insofar as the development of a region improves

macroeconomic productivity, housing may be credited as a principal causative force.

## Summary

We have endeavored in this paper to provide the analytical tools for formulating realistic housing policy and, in particular, answers to these basic questions:

- a. How large a share of a nation's total investment should be used for housing?
- b. What should be the role of government in allocating the share of total investment to housing?
- c. Toward what social and occupational groups should housing policy be directed?
- d. Toward which parts of the country should policy be oriented?

The answers to these four questions—how much, by whom, for whom and where—are requisites for the intelligent formulation of a nation's policy on housing. The answers are certainly interdependent and require a clear conception of the tools and targets of a national development program.

Our purpose has been to approach housing from a new standpoint: to treat investment in housing both as a tool of policy and as a target, rather than *only* as a target. Housing can be a potent instrument for securing broader national goals; for raising productivity and, with it, incomes; for bringing about social welfare and stability; and for encouraging the development of particular regions. The logical conclusion to our argument is that housing is not just an end in itself but also a means to the broader and more important end: balanced national and regional growth and social stability.

## Mathematical Appendix

As denoted by  $Y$  = national income or national production

$I$  = total investment (given)

$I_H$  = investment in residential building

$I_N$  = nonhousing investments

$C_H$  = capital invested in housing

$C_N$  = capital invested in nonhousing

$C_{H0}$  = capital invested in housing at the beginning of the year

$C_{N0}$  = capital invested in nonhousing at the beginning of the year

$\mu$  = net output per unit of capital in the nonhousing sector

$\rho$  = net output per unit of capital in the housing sector

$1/\mu$  and  $1/\rho$  are the respective capital-output ratios.

Then the following equations hold

$$I = I_H + I_N \quad (1) \text{ budget equation}$$

$$Y = \mu C_N = \rho C_H \quad (2)$$

$$\mu = \mu(I_H) \quad (3)$$

$$\rho = \text{constant} \quad (4)$$

Further it is assumed that

$$\frac{d\mu}{dI_H} > 0 \quad (a)$$

$$\frac{d^2\mu}{dI_H^2} < 0 \quad (b)$$

$$\text{From this follows } Y = \mu C_{NO} + \rho C_{HO} + \mu I - \mu I_H + \rho I_H \quad (5)$$

Differentiation yields

$$\frac{dY}{dI_H} = \mu' C_{NO} + I_N \mu' - \mu + \rho \quad (6)$$

where  $\mu'$  stands for  $\frac{d\mu}{dI_H}$

An extremum is reached for

$$I_N = \frac{I_H \mu'}{\mu'} - C_{NO} \quad (7)$$

which determines the level of  $I_N$  and because of (1) and of  $I_H$ .

$$\frac{d^2Y}{dI_H^2} = C_{NO} \mu'' + I_N \mu'' - 2\mu' < 0 \quad (8)$$

since  $\mu'' < 0$  and  $\mu' > 0$

The solution (7) therefore maximizes  $Y$ .

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