



LEADING SECTORS AND INSTITUTIONAL REFORM

James A. Hanson *

* Latin American Institute for Economic and Social Planning.

An earlier version of this paper appeared in the Journal of Economic Studies Vol. 3, N° 1 (May 1976). I since have benefitted from helpful communications with Roger Sandilands and Lauchlin Currie on the leading sector strategy. However the opinions expressed in this study are the exclusive responsibility of the author and of course may not coincide with those of the Latin American Institute for Economic and Social Planning (ILPES).

THE ECONOMIC AND INSTITUTIONAL FOUNDATIONS OF THE AMERICAN ECONOMY

James A. Harrison

The American economy has been the subject of much study.

Its early development is described in the Journal of Economic History, Vol. 1, No. 1, 1941. The author discusses the economic and institutional foundations of the American economy. He notes that the American economy is characterized by a high degree of competition and a strong emphasis on innovation. The author also discusses the role of government in the American economy and the impact of technological change.

(1941)

Introduction

One of the earliest and most famous works on development - Adam Smith's Wealth of Nations - placed extensive emphasis on the importance of growing demand and expansion of the market in the growth process, through its effect on division of labor, specialization, and technical progress. This emphasis, continued in Allyn Young's classic paper and Stigler's later work, has been neglected somewhat in neoclassical growth and development theory, which has generally followed the Harrod-Domar model in emphasizing constraints arising from the supply of capital or, more recently, the supply of foreign exchange. This view of the growth process has been most highly developed in the well known accounting explanations of growth by Abramowitz, Bruton, Denison, Solow, etc. However, even when these exercises are able to reduce the residual or unaccounted for portion of growth to less than fifty percent of the total, such as in the studies of Jorgensen and Griliches, they shed little light on the causes of differences in the rate of growth of factors of production or in the residual, as Nelson, as well as Currie, have noted.

In contrast to this neoclassical, supply oriented view of growth, the proponents of the leading sector strategy - Hirschman and Currie - explicitly start their analysis from the viewpoint of demand - investment demand in particular. They consider developing economies to be lacking in a growth mentality. Anticipating slow growth, investors purchase capital goods at a corresponding rate, for in their opinion any faster rate would be unprofitable in the prevailing environment of limited markets. However, this investment results in a self fulfilling prophecy of slow growth. Although higher rates of saving are potentially available,

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they remain untapped because, in contrast to the neoclassical view, investment and saving decisions are interrelated in an underdeveloped economy. The investors' perception of slowly growing demand and lack of opportunities reduces the rate of investment below potential saving. Saving as well as capital and labor are underutilized.

Through the intersectoral interdependence of the economy the problem becomes pervasive. The growth of demand for each sector is determined by the product of the appropriate income elasticity of final demand or the input output coefficient and the overall growth rate, but this latter factor is nothing more than the weighted sum of the sectoral growth rates. If the perception of slow growth is somewhat general, then even the fastest growing sectors in such an economy will be undynamic and the danger of low level equilibrium growth is obvious. The remedy, according to the proponents of the leading sector strategy - Currie and Hirschman - is a dramatic increase in the growth rate of a few, key, potentially dynamic sectors; then the rest of the economy will be pulled along through the aforementioned intersectoral relations. In this way the latent potential for growth in underutilized labor, capital, and saving will be realized.

While a Keynesian macroeconomist might consider this interpretation of slow growth to be a case of generalized excess supply, development economists have christened it a vicious circle. Slow growth leads to low rates of investment which leads to slow growth. As argued below, this difference between Keynesian and development economists is more than semantic. Unfortunately, development economists have not explained sufficiently the distinction between their diagnosis and policy recommendations and the standard Keynesian ones. If low investment rates were simply the result of inadequate demand, then growth could be stimulated by traditional Keynesian aggregate demand policies.

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However, if one follows the view of Patinkin and of Barro and Grossman that Keynesian shortages of aggregate demand are the result of inflexible prices and their corresponding effects on aggregate demand, then it is difficult to explain the lack of investment in the long run, when prices are presumably flexible, or reconcile its low level with inflation.

This paper argues that since empirical evidence suggests that aggregate demand policies in developing economies offer at best only temporarily more rapid growth, the problem of growth is not merely a lack of investment demand, as emphasized by the leading sector proponents. Instead the vicious circle described above results from structural defects of the less developed economy. From that point of view the correct policy is one of choosing a development strategy - selection of projects, institutional reform - which will remedy the structural defects. Seen from that perspective, the different leading sector approaches are basically recommendations for institutional reform, with varying possibilities for dealing successfully with the existing structural defects, and much less motivating devices for encouraging growth through intersectoral linkages. Under examination certain institutional reforms such as export promotion through realistic exchange rates and construction promotion through financial reform appear to have good possibilities for generating real growth in a leading sector and transmitting that growth to other sectors.

The Leading Sector: Neither Monetary
Expansion nor Big Push

To a person schooled on Keynesian economics, the correction of a situation of generalized excess supply requires a generalized expansion of aggregate demand, through, for example, government spending financed by monetary creation. Although critics of leading sector policies such as Nelson et al and Ranis have attempted to identify them with Keynesian public works programs, Currie has emphatically denied such an interpretation, arguing that generalized expansion of aggregate demand, through monetary expansion, will at best yield temporary increases in the growth rate, and more generally lead to inflation. Currie's view seems to be borne out by recent studies by Lucas, Barro, Fernández, and Carrizosa which indicate little or no short-run output response to unanticipated monetary growth and no significant long-run response, and by the well-known lack of cross-sectional correlation between long-run monetary growth and growth rates of Latin American countries.

Hirschman's position on this issue is not so firm.. In his Strategy an Economic Development he argues that the relative price movements required by his theory will be politically more acceptable if accompanied by inflation, bringing his position on inflation closer to the structuralist theory of inflation,

In an effort to emphasize the difference between his approach and a simple Keynesian expansion of aggregate demand, Currie has continually associated his version of the leading sector strategy with the name of Say, rather than Keynes. Unfortunately, in the context of his arguments the distinction between Sayian and Keynesian demand is not clear, particularly since Currie does not separate the Keynesian multiplier,

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with its attendant connotation of generalized excess capacity, and the discussion of excess capacity itself from the rest of his theory. In particular, Currie does not discuss how producers and investors might distinguish between and, therefore, react differently to increased demand based on increased monetary emission on the one hand and to increased demand arising from the expansion of a leading sector on the other. Even assuming that additional demand, based on additional monetary expansion, were always concentrated in a few industries, having no excess capacity, it is difficult to see how the resulting additional intermediate and final demand, generated by rising money incomes in these industries, could be distinguished by second round suppliers from second round demand generated by leading sectors, and thus have different effects. Of course, the distinction would be even harder to make if monetary expansion created generalized rises in money incomes in the first round, or if output, as well as prices rose. In the discussion of Currie's version of the leading sector strategy we will clarify this issue and demonstrate that a crucial element which differentiates the leading sectors' effect from that of Keynesian expansion of aggregate demand is institutional reform.

Although Rosenstein Rodan's classic article highlighting the role of intersectoral linkages in determining the profitability of investment is a common ancestor of both the balanced growth development strategy and the leading sector strategy, the idea, first expressed there, of a development strategy based on a large investment program in line with the income elasticities, intermediate demands and economies of scale, has received substantial criticism, from leading sector theorists in particular. As Sheahan points out, such "balanced" growth is not

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obviously more productive or even much different than an unbalanced growth or a leading sector approach, once we allow for international trade, and permit changing relative prices, to account for technical change and new products. One of Hirschman's criticisms of balanced growth goes deeper, that balanced growth presupposes the existence of an information system, of managerial skills and of entrepreneurial talent, which are incompatible with a state of underdevelopment, and probably even of development. In favoring government intervention through the market to promote broad strategies and a few leading sectors, rather than direct intervention in many industries, Currie implicitly takes the same view. Moreover, Currie explicitly limits the applicability of his strategy to those economies which already have a fairly large stock of social overhead capital, as opposed to those economies requiring a "big push" in this area. However, in line with their common lineage, both the balanced growth theorists and the leading sector proponents - Hirschman and Currie - feel that potential saving does not limit growth over a reasonable time horizon and the problem is one of investment demand, though of course actual saving equals the present, low level of investment.

The Leading Sector Strategy as Entrepreneurial
Development: Hirschman

If the leading sector strategy is not a Keynesian expansion of demand, nor a generalized "big push", then what is it? Both of the well-known proponents of the leading sector strategy - Hirschman and Currie - are in agreement with the balanced growth theorists that the slow growth in demand is an important and effective limitation on growth. However, their diagnoses of the reasons for slow growth in demand and their policy recommendations to correct it differ in important aspects. For that reason we consider them separately.

In the first part of his well known Strategy of Economic Development Hirschman attributes the vicious circle of slow growth, low rates of investment, slow growth to the absence of non-conventional input - organizational skills - which would act as a "binding force" for the more conventional inputs.

By defining this "binding force" as the ability to unite the factors necessary to implement new techniques and foresee the results of this process, Hirschman is careful to distinguish this scarce factor from the prevalence of risk taking behavior and overly optimistic expectations which, for example, have led to so many boom and bust cycles in primary production.

In Hirschman's view this structural defect creates the true vicious circle, for it guarantees that even these few, modern entrepreneurs would encounter limitations of slowly growing markets and/or supply restrictions, if they were so foolish as to expand their production rapidly. From this viewpoint breaking this second, more basic, vicious circle becomes the fundamental problem of growth in less developed countries.

To break both vicious circles, Hirschman advocates a strategy of unbalanced growth or leading sectors. Growth must be unbalanced, not only because of the lack of resources, particularly the organizational skills necessary for balanced growth, but because even if balanced growth could succeed somehow in its first stage, it would not raise the number of entrepreneurs to the level required for further self-sustained expansion. In Hirschman's view a sufficiently large entrepreneurial class can be developed only by providing on-the-job-training in decision-making, by forcing potential entrepreneurs to learn the proper reaction to stresses created by the interplay of markets in a dynamic economy through participation in those markets.

By choosing a sequence of investment projects which "maximize induced investment decisions", Hirschman's particular leading sector strategy seeks to minimize the lack of entrepreneurial resources, while at the same time correcting that structural defect through the development of additional organizational skills. Sectors for investment are to be chosen so as to reduce the need for investment decision-making, by making profitability more obvious through the provision of an assured market (backward linkage) and/or a ready supply of cheaper inputs (forward linkage). At the more micro level, in his more recent work, Development Projects Observed, Hirschman considers the optimum characteristics of projects for training entrepreneurs and argues that this training is not just an important side effect but necessary to the success of the project.

In Hirschman's view such an optimum sequence of projects would strike the proper balance between the latitude for decision-making which provides training for future decision-making, and the guidance necessary for the correct decisions required for rapid growth. Aside from focusing

government investment in industries which offer the "right" mix of backward and forward linkages, one suggested way of guaranteeing a market to uncertain, local entrepreneurs is a set of policies which manipulates final demand toward industries with high interindustry demands-backward linkages. Another suggested policy is a direct cut in those imports which, through their existence, have already established the existence of a market.

A major problem with Hirschman's general diagnosis and his policy prescriptions is their translation into concrete programs of action. The usual method of providing assured markets - beginning with protected assembly of consumer goods and proceeding to stages of more difficult import substitution - faces two problems. As Hirschman points out, not only do assembly plants have low linkages, but the dependence of assemblers of the first stage upon imported inputs leads them to resist the later stages of import substitution. Moreover, as pointed out by Hirschman in his work on import substitution, as well as by Macario and by Krueger, investment in later stages depends on guarantees of protection from import competition, leading entrepreneurs to spend their time seeking political favors rather than cutting costs. In fact, Hirschman himself has criticized the actual process of import substitution for its lack of entrepreneurial development. A strategy with greater emphasis on forward linkages confronts the apparently impossible task of reducing local prices below the world market. The government planner, electing, as Hirschman suggests, a "pump priming" industry in the "middle" range of forward and backward linkages, must be ready to sell at losses for some time, in order to raise the profitability of the purchasing industries to a level compatible with increased investment in them. Again Hirschman himself points out the difficulty in forcing government

officials to undergo the test of the market and experience loss. Finally, it is not clear how far the planner should go in trading direct productivity for a possible stimulation of entrepreneurship and its accompanying investment in other sectors via created stresses. At times Hirschman seems to argue that the greatest stress on the economy and the most obvious possibility for stimulating new investment through raising its profitability could be generated by locating a heavy industry plant at the most isolated point in the country. However, while this project might stimulate both construction of social overhead capital in the area and new productive investment to relocate supplier industries, the plant could also remain a costly white elephant and a drain on resources, as pointed out in Hirschman's provocative Development Projects Observed.

A second and more fundamental problem is the theoretical validity of Hirschman's diagnosis of the crucial structural defect. Is it true that entrepreneurs in developed countries are overly "pessimistic" and systematically "underinvest" given the institutional framework of the rest of the economy? While these entrepreneurs may be accused of neglecting the aggregate pecuniary external economies of their investment decisions, there remains the question of what would happen to their rate of return if investment were to proceed at a more rapid rate? Hirschman maintains an almost Keynesian view that slowly growing demand limits investment profitability. However, more rapid investment also would raise the capital-labor ratio and correspondingly lower the rate of return or productivity, a neoclassical assumption of diminishing returns which Hirschman conveniently drops. Within a given set of investment opportunities the pecuniary external diseconomies created by a faster rate of investment (and/or lower average rate of technical change) would

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outweigh the pecuniary external economies. Assuming investors are close to some balanced growth path, with the corresponding desired rate of profit, it is of no importance to their behavior how fast the rate of return drops if they increase investment, only that it drops. Thus either local entrepreneurs must be accused of systematically and continuously underestimating the rate of return or some other unspecified, real factors which yield benefits that are not appropriated at the firm level - economies of scale, unforeseen possibilities for division of labor, within or between firms improved operation of individual projects or institutional change - must be introduced to explain why greater investment, yields, ceteris paribus, a higher than anticipated productivity of capital. Otherwise, local entrepreneurs can only be faulted for high time preference vis à vis the government, not their poor quality ^{1/}.

^{1/} In the same line Hirschman compares the optimal sequence of investment to a jigsaw puzzle and are that some sequences are more desirable because they permit a same level of output to be reached at an earlier date. However, such investment sequences can be said to dominate completely other sequences only if they also require the same or lower levels of investment in the earlier periods, i.e. the present value of the investment stream is lower. Otherwise the earlier achievement of higher output would be achieved only through greater reduction in consumption, in which case dominance depends on the rate of time preference.

The Leading Sector Model as Institutional
Reform: Currie's Approach

While Hirschman focuses on interindustry linkages and almost ignores considerations of an investment's direct productivity, Currie's emphasizes the importance of choosing productive investments and, relatively speaking, down-plays interindustry demands. For him the leading sector must be one whose "growth can be exogenous and occur independently of the current overall rate of growth" ^{1/}.

This phrase applies to the leading sector's independence from demand based on prior expansions of income but also, presumably to competition for scarce inputs and the corresponding creation of pecuniary diseconomies. The essence of Currie's leading sector is its combination of low productivity workers and idle capacity to produce additional real output, and the avoidance of unproductive investment projects. Once the sector is started on its way the incomes it generates create demands that pull the followers along. Two specific sectors which Currie suggests meet this dual test are exports and construction.

Consumer durables represent another potential leading sector, but here Currie remains preoccupied with the problem, discussed by Hymer and Resnick, of achieving appropriate quality, and by the questions raised earlier regarding entrepreneurial behavior in a regime of import substitution.

To what extent do these recommendations meet the criticism of Hirschman's strategy that low rates of investment simply reflect the high time preference of investment? What prevents the rate of return from falling in Currie's development program?

1/ L. Currie "The Leading Sector Model of Growth in Developing Countries" Journal of Economic Studies, Vol. 1 N°1 (May 1974), p.6.

Institutional reform is a fundamental part of Currie's leading sector strategy, a point which is often neglected. In Currie's view a less developed economy is characterized by a high degree of capital and labor immobility, resulting from institutional barriers as well as the nature of underdevelopment itself. These barriers not only prevent the economy from reaching the neoclassical production possibility frontier by setting up an interior, distortion-ridden frontier, they also direct production toward the satisfaction of a particular set of demands along that interior frontier. Through institutional reform the existing, interior, distortion-ridden production frontier is broken and the economy moves outward toward the neoclassical frontier. As Ranis points out, in this respect the strategy is conventional. However, the institutional reform will also increase capital's productivity, stimulating more rapid rates of accumulation at any given rate of time preference. In addition, the shift in demand patterns would prolong the period of high growth rates. Saving-investment rates would be directly stimulated, and indirectly encouraged through the rising incomes and the demand generated by the employment of under-utilized resources. While neoclassical supply restraints would eventually limit growth, until that point institutional changes would raise the growth rate to a more socially desirable 7 to 10 per cent per year, in Currie's opinion.

Currie's institutional reform approach differs from a generalized expansion of aggregate demand with no institutional changes in two ways. First, the institutional reform directs demand toward those sectors of the economy where general equilibrium supply elasticities are high, either because of under-utilization or easy availability of resources from other sectors. In contrast a generalized expansion of aggregate demand would

partially fall upon some sectors with binding supply constraints and simply cause price increases. However, this difference would only be reflected in a difference in relative price movements, and might lead one to believe that the two approaches are equivalent if Keynesian expansions in aggregate demand could be limited to the potential leading sectors.

The second, more fundamental, difference lies in the idea that the institutional reform, by changing both primary and second round demand patterns and by shifting the distortion-ridden, production possibility frontier outward, provides an expansion of desirable goods, to satisfy, directly or indirectly, the additional demands. It is in this sense that Currie recommends a Sayian policy. In contrast a generalized expansion of aggregate demand, when the economy is on the distortion-ridden, production possibility curve, neither faces high general equilibrium supply elasticities in the first round, nor provides goods to satisfy the pattern of second round demands. In this case absolute as well as relative prices must change, to reduce aggregate demands to those that can be satisfied along the stationary, distortion-ridden, interior production frontier. Alternatively, if the rise in aggregate demand is triggered by an inflow of foreign exchange, then rising aggregate demands may be satisfied largely by imports, without affecting the domestic economy or causing much local inflation, as often occurred in commodity booms of the 19th Century.

To put it another way, which emphasizes once again the important role of institutional reform, the leading sector strategy will not be inflationary, i.e., cause a rise in the general price level as opposed to a change in relative prices, provided that institutional reform guarantees that the leading sector's output is financed and purchased wholly through

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the exchange of goods and services. To the extent that the new possibilities of future profit cause a rise in saving for working capital, the switch of low productivity workers to higher productivity occupations, earning higher wages, causes no inflation. And, provided the sale of final production offers the anticipated real rate of return in goods and services, as a result of changes in demand patterns, real output will have been raised without inflation.

Occasionally it is argued that the institutional reform will raise national productivity to such a level that a decrease in aggregate demand or switch from consumption to saving-investment is unnecessary. However, this argument surely depends upon the time horizon and what is meant by a decrease in consumption. In the short run, given the institutional restraints in the economy and the corresponding distortion-ridden production frontier, an increase in investment or new working capital can only come about through a slower rate of growth in consumption. However, as the institutional barriers to mobility are reduced, output grows more rapidly, permitting higher levels of both consumption and saving. Therefore, in the longer-run consumption may fall, rise by less than it would have otherwise, or even rise by more than it might have without the institutional reform.

Finally, it is worth making two other points relating to the macroeconomics of Currie's leading sector strategy. First, if a government spending program, financed through taxation were directed toward potential leading sectors, such as construction and if the tax structure were elastic, then the program would probably have the same effect as a leading sector strategy. The change in taxes actually produced could be considered the required institutional reform since the payment of taxes by the public

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could be thought of as essentially demand for the output of the leading sectors. However, as a practical matter such a tax reform and more importantly the necessary managerial operations, if the program is government run, represent difficult problems for a typical underdeveloped country for both the reasons discussed earlier and the social political structure. Second, a strict quantity theory view would argue that, far from being inflationary, an institutional reform which raised real output without resort to monetary emission would have to reduce inflation and/or cause a balance of payments surplus with a corresponding rise in the money supply, in order to satisfy the Cambridge equation. Of course, the rise in profit rates might tend to reduce desired money holdings and have an offsetting effect on inflation. Notice also that there is no agricultural problem, if the leading sector's output represents real output, since it can either be exported directly for agricultural imports, or exchanged internally for products which, in turn can be exported. This discussion shows how difficult it is to label a policy inflationary or non-inflationary without explicit consideration of the program's output, financing and the demand and supply of money.

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Institutional Reform: Exports
and Housing as Leading Sectors

By now development through the promotion of exports, particularly nontraditional exports, has become an established recommendation of diverse advisors to less developed countries. If a small, through growing share of the world market can be captured, then exports can become a leading sector, not just in the usual sense of closing the foreign exchange gap, but in the sense of improving the utilization of resource and rapidly raising incomes, apart from what occurs in the rest of the economy ^{1/}. However, notwithstanding frasts in Brazil and petroleum price rises, recent work suggests that in most cases export growth is not usually the result of luck, it requires institutional changes which make nontraditional exports profitable, such as reasonable exchange rates, reduction in exchange control, and perhaps a reduction in import barriers to provide imported inputs and an incentive for increased production (exports). Of course non traditional exports can also be over promoted, but in most cases this point has probably not been reached.

In particular, numerous studies of the Colombian case show a substantial elasticity of export supply with respect to the effective, real exchange rate ^{2/}. Following the adoption of Decreto-Ley 444 in early

1/ In addition to Currie's work, see I. Kravis, "Trade as a Handmaiden of Growth: Similarities Between the Nineteenth and Twentieth Centuries". Economic Journal, (December, 1970), The Measurement of Development Effort, U.N., New York, 1970 (Sales N° E71.II.D.4) and the exchange between Adams and Kravis, Economic Journal, March, 1970.

2/ J. Sheahan and S. Clark, La Respuesta a las Exportaciones Colombianas a Variaciones en la Tasa Efectiva de Cambio, FEDESARROLLO, Bogotá, 1970, C. Díaz Alejandro, Exportaciones Menores Colombianas, FEDESARROLLO, Bogotá, 1972, J. Tergeiro and R.A. Elson, "The Export Promotion System and the Growth of Minor Exports in Colombia", IMF Staff Papers, July 1973, and A. Musalem, Las Exportaciones Colombianas, 1959-1969.

1967, under which the Banco de la República undertook the maintenance of an reasonable effective exchange rate for minor exports, dollar earnings from non coffee exports doubled between 1967 and 1970, and doubled again by 1973, when they reached a level nearly as great as coffee, despite a nearly 80 per cent growth in the dollar value of coffee exports. The average growth over this six year period was nearly 25 per cent per year ^{1/}.

The case of housing is much more controversial. Critics such as Ranis have generally considered it to be a Keynesian policy, owing to its need for financing during a long gestation period, its second round effects, and its lack of productivity effects.

These criticisms all neglect the importance of institutional reform in mobilizing latent demand for housing. Limitations on mortgage interest rates and corresponding rates paid to savers have generally resulted in low levels of privately financed housing construction in less developed countries. Breaking these limitations will substantially affect demand patterns, both by raising saving rates, which appear to respond elastically

^{1/} H. Calvo and J.F. Escandón, Las Exportaciones Colombianas de Manufacturas 1963-1971, Bogotá, FEDESARROLLO, and E. Cabarróu and J. Spillane, "La experiencia de Colombia en Materia de Exportaciones de Manufacturas en el período de 1960 a 1969". Revista de Planeación y Desarrollo, Bogotá, Vol. VI, N°1, Enero-Marzo, 1974, show that up to 1969 Colombian minor exports grew quite rapidly by maintaining their share in the world market. This finding could be considered an alternative to the high-export supply elasticity with respect to the effective exchange rate and the corresponding policy conclusion regarding the importance of effective devaluation in stimulating minor exports. However, the two explanations can be reduced to one by observing that only the maintenance of realistic exchange rates permitted constant world market shares.

to interest rate changes ^{1/}, and, paradoxically, by stimulating the purchase of homes, which were formerly limited by constraints imposed by the supply of funds. To the extent that initially saving exceeds or at least keeps pace with construction, as seems to have been the case in Brasil and Colombia, there is no need for government housing subsidies, financed through monetary emission. The problem of financing the gestation period is reduced, and in any case may be small. Economy wide productivity is raised by transferring workers from subsistence agriculture to urban construction, with their consumption financed out of increased household saving. Second round demand patterns may also change in favor of housing purchases. To restate this point, increased productivity or growth in an economy is not merely the production of more physical goods with the same labor, but also the production of more goods which are desirable with the same labor. If some urban households wish to continue producing goods to buy increased financial assets which represent houses in construction, and others wish to pay the

1/ See R. McKinnon, Money and Capital in Economic Development, Washington Brookings, 1973 and J. Hanson, Family Saving in Colombia, 1972. The econometric analysis of the effects of interest rates in saving rates usually indicates a low response. See, for example, J. Williamson, "Personal Saving in Developing Countries", Economic Record, June 1968, pp. 194-210. However, these econometric studies are usually substantially biased since the interest rate variable is either rigid with one or two changes, and thus serves only as a dummy correlated with income, or is determined in the market for demands and supply of funds and thus there is an identification problem which yields a low coefficient. Moreover, the estimates of saving used generally come from the national accounts and contain all of the errors in estimating GNP from production relative to those of estimation through demand components. As shown in J. Hanson, Financial Saving in Colombia, calculation of private saving through the use of changes in private holdings of financial assets yield saving rates which are substantially different from those calculated through the GNP accounts, both in magnitude and direct of movements

debt service and gradually amortize completed houses out of their current income, then the value of production has increased, the more so if the workers producing these houses were underemployed.

An additional benefit from the change in mortgage interest rates may arise as pressures develop for the organized financial system to pay savers higher rates on other assets thereby raising the costs of capital, lowering capital-labor ratios, and improving the allocation of capital in the economy in general. Far from being viewed as a cost of the construction program, any "starvation" of capital to other sectors should be looked upon as a financial reform with its corresponding beneficial aspects for growth.

In general fact in the case of Colombia in 1973-74 the nonconstruction sectors suffered only a slight reduction in normal rises in credit after the institutional reform of mortgage rates and corresponding interest rates on financial liabilities. Moreover, in comparison to the usual shrinkage of real funds which occurred during previous periods of inflation the credit to nonconstruction sectors held up well ^{1/}.

In fact, the experience of Brasil and Colombia with institutional reform of mortgage markets and its spillover into reform of credit markets in general suggests that institutional reform of mortgage markets may be a leading sector in the institutional reform of credit markets, breaking the close link between saving and investment which, as mentioned earlier, characterizes the growth process in developing economies.

^{1/} See J. Hanson, Family Saving in Colombia 1973.

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