TOWARDS A FUNCTIONAL FORM OF CAPITALISM

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ABSTRACT

The performance of a capitalist system is explained using a system dynamics model of economic growth and income distribution which generates numerous patterns of behavior subsuming both capitalist and Marxist economic views. Extended experimentation with this model then serves as a basis to identify critical policy instruments that make best use of the system potential and avoid dysfunctional developments. Issues of income and wealth distribution and entrepreneurial performance are discussed.

INTRODUCTION

The recent opening up of the major socialist economies of the world has brought to the fore problems concerning the psychological deprivation, inefficiencies of resource allocation and production, and the lack of dynamism experienced in the working of the *socialist system.* The accompanying enthusiasm for the *capitalist system* has, however, hidden many of the dysfunctional aspects of this alternative. It should be recognized that both the capitalist and socialist models emerged from time- and geography- specific empirical evidence. Each makes assumptions treating as given the specific economic pattern it is based on. Thus, the institutional roles and the legal norms associated with each system have inherent weaknesses which lead towards the creation of dysfunctional patterns.

This paper attempts to identify a basic organizational framework for a dynamic and sustainable capitalist system that may not move towards the dysfunctional patterns which led to the creation of the socialist system in the first place. A system dynamics model of the decision structure underlying wage determination and disbursement of income proposed earlier in Saeed (1988) is further experimented with for the analysis. Simulation experiments with the model explore entry points into the economic system for evolutionary change in the wage and income distribution patterns through indirect policy instruments. Also explored are the functions of entrepreneurship and innovation and the mechanisms that may increase the energy of these processes toward facilitating economic performance and welfare.

THE SITUATIONAL SOCIALIST AND CAPITALIST MODELS

The socialist and capitalist models differ in their assumptions about ownership and income distribution patterns, the basis for wage determination, the role of technology in the determination of growth and the mechanisms of entrepreneurship and innovation.

Marxist economic theory, which underpins the socialist model, assumes that ownership of capital resources is concentrated in a minority excluding the workers and that the majority of households receive no part of the profits. Thus, wage payments have a strong effect on household income. The Marxist theory views private ownership as a source of exploitation and postulates labor-wage rates determined by the consumption necessary for a worker to support production. The labor-wage rate is, thus, based on the real value of the commodities needed for a worker to subsist, which is more or less fixed, irrespective of the contribution of labor to the production process; technological choices which increase labor productivity may only serve to increase the share of the surplus of product per unit of labor appropriated by the capitalist. Entrepreneurship is viewed as an asocial activity and innovation seen to originate from the need to boost falling returns on capital. Given these assumptions, the socialist system assigns control of the economy to the government.

The neo-classical economic theory, which is the basis for the capitalist model, is silent on the ownership of capital resources, often assuming them to be widely distributed. Thus, the labor-wage rate may bear little relationship to the income of households, also the recipients of profits. It is assumed that private ownership of productive resources is a means for market entry which creates unlimited potential for economic growth. The neo-classical economic theory also postulates that short-run labor-wage rates depend on worker availability while in the long run they are determined by the marginal revenue product of labor. Neo-classical models of economic growth, however, often make the simplifying assumption that an equilibrium continues to prevail in both factor and product markets over the course of growth. Thus, only minor fluctuations may occur in wages, profits and prices in the short run, and these can be ignored. The existence of such an equilibrium is justified on the grounds that wages and prices are dictated by long-term wage contracts and production plans which may not respond easily to short-run changes of the market. As a result of the belief in this theory of wage determination, technological choices which increase labor productivity are expected to have a positive effect on wage rates and household income. Entrepreneurship is viewed as important for new entry into economic activity and innovation is supposed to benefit society through increased productivity. With these assumptions, the capitalist system advocates minimal government intervention in the economy, although there is some debate on this issue.

Both economic systems are often endorsed with the help of selective historical evidence, which has been fully exploited to fuel the traditional debate between the neo-classical and Marxist economic schools. Interesting artifacts of this debate include the normative theories of value suggested by each system, which have little practical significance for development policy. This is unfortunate, since contradictions of evidence should clearly indicate fundamental organizational arrangements in the economic system capable of creating the multiple behavior patterns on which the two systems are based. Once identified, such mechanisms could serve as entry points for the design of evolutionary change in an existing pattern.

A SYSTEM DYNAMICS MODEL OF THE ROLES UNDERLYING A VARIETY OF ECONOMIC PATTERNS

A system dynamics model incorporating the broad decision rules that underlie resource allocation, production, and the income disbursement processes of an economic system was presented in Saeed (1988). In this model, capital, labor, and land (which may also be assumed as a proxy for natural resources) are used as production factors. Potential structure is provided for the functioning of two modes of production, commercial, in which resources are employed on the basis of their profitability and which is managed by the formal sector of the economy; and self-employed production, in which workers not employed in the commercial mode make a living.

It has been assumed in the model that all workers, whether self-employed using their own or rented capital resources or employed as wage-workers by the formal sector, are members of a homogeneous socio-economic group with a common interest, which is to maximize consumption. This group is also the sole supplier of labor in the economy since the small number of working capitalists is ignored. On the other hand, the formal sector is assumed to maximize profit while it is also the sole wage-employer in the economy. The size of each sector is not specified and is determined endogenously by the model, depending on assumptions about the socio-technical environment in which the system functions.

The changes in the quantities of the production factors owned or employed by each sector are governed by the decisions of the producers and the consumers of output and by the suppliers of the production factors acting rationally according to their respective motivations within the roles defined for them by the system. The value of production is shared by households on the basis of the quantity of the production factors they contribute and the factor prices they can bargain for. The income share of the workers, less any investment needed to maintain self-employment, divided by the total workforce, determines average consumption per worker, which represents the opportunity cost of supplying one unit of labor for wage-employment, and this is the basis for negotiating a wage.

It is assumed that private ownership is protected by law but that land and capital assets can be freely bought, sold and rented by their owners. Each buying and selling transaction between the two sectors must be accompanied by a corresponding transfer of the cash value of the assets determined by the going market prices. The financial markets are segmented by sectors and the investment decisions of a sector are not independent of its liquidity position given by the unspent balance of its savings. The saving propensity of all households is assumed not to be uniform. Since capitalist households receive incomes which are much above subsistence, their saving propensity is stable. On the other hand, the saving propensity of the worker households depends on their need to save to support investment for self-employment and on how their absolute level of income compares with their inflexible consumption. The model also permits the appearance of technological differences between the formal and the self-employed sectors, when more than one type of capital (traditional or modern) is made available and the two sectors cannot employ the preferred type with equal ease.

The broad mathematical and behavioral relationships incorporated into the model, technical documentation and a machine readable listing of the model written in DYNAMO code are available from the author on request. Also available is an interactive computer program implemented on any personal computer operated with MS-DOS, which allows extended experimentation with the model through user-friendly menus.[1]

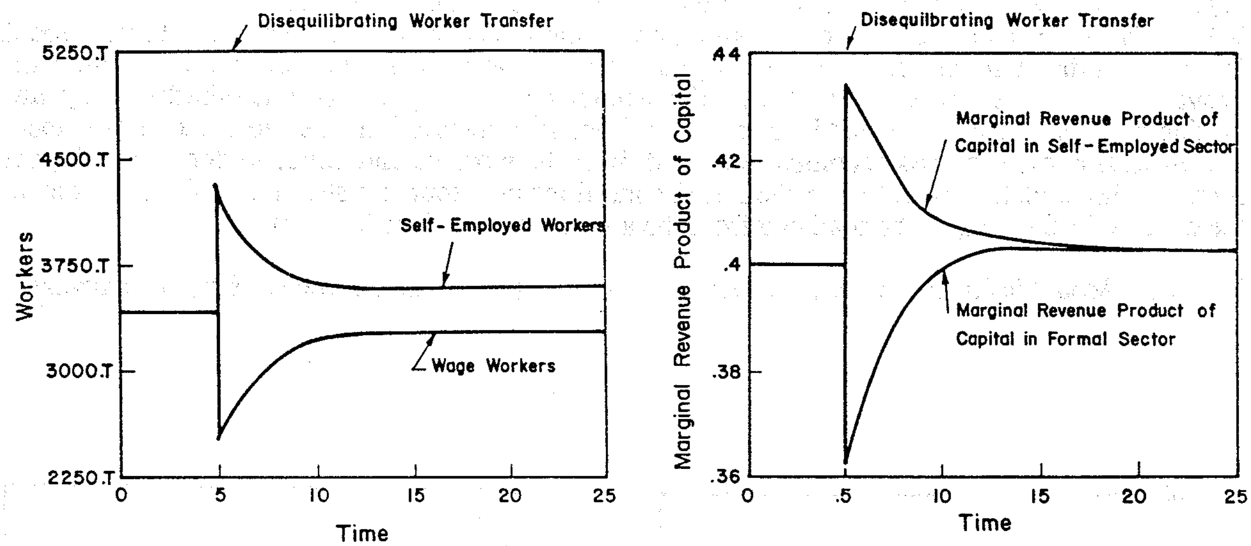
ANALYSIS OF MODEL BEHAVIOR AND UNDERSTANDING THE VARIETY OF ECONOMIC PATTERNS

The model is simulated under different assumptions about wages, rents, financial markets and technology and its behavior analysed in relation to the various existing theoretical and empirical premises. As an arbitrary initial condition, production factors are equally divided between the two sectors and an equilibrium in both product and factor markets is assumed to exist under the conditions of a perfect economic system as described in neo-classical economics. Thus, the marginal revenue products of land and capital are assumed initially to be equal to their respective marginal factor costs determined by an exogenously specified interest rate which represents the general pattern of preference of the community for current as against future consumption [Hershleifer 1976]. The marginal revenue product of workers is equal to wage rate. The market is assumed to be clear initially and there is no surplus of supply or demand.

Replicating the Theoretical Neo-Classical System

This experiment is aimed at understanding internal trends of a system representing neo-classical economic theory. To transform the model to represent this system, it is assumed that the production factors employed by each sector are owned by it and no renting practice exists [Barro 1984]. Wage rates are assumed to be determined by the marginal revenue product of workers and availability of labor instead of the opportunity cost of supplying wage labor. Financial markets are assumed to be perfect and the investment decisions of the two sectors are uncoupled from their respective liquidity positions. It is also assumed that the technology of production is the same in the two sectors and that, in terms of the model, only traditional capital is available to both of them. The model thus modified stays in equilibrium when simulated as postulated in neo-classical economic theory. When this equilibrium is disturbed by arbitrarily transferring workers from the formal to the self-employed sector, the model tends to restore its equilibrium in a manner similar to that described by neo-classical economic theory. This is shown in Figure 1.

Figure 1: Recovery from dis-equilibrium in model incorporating simplifications of neo-classical system

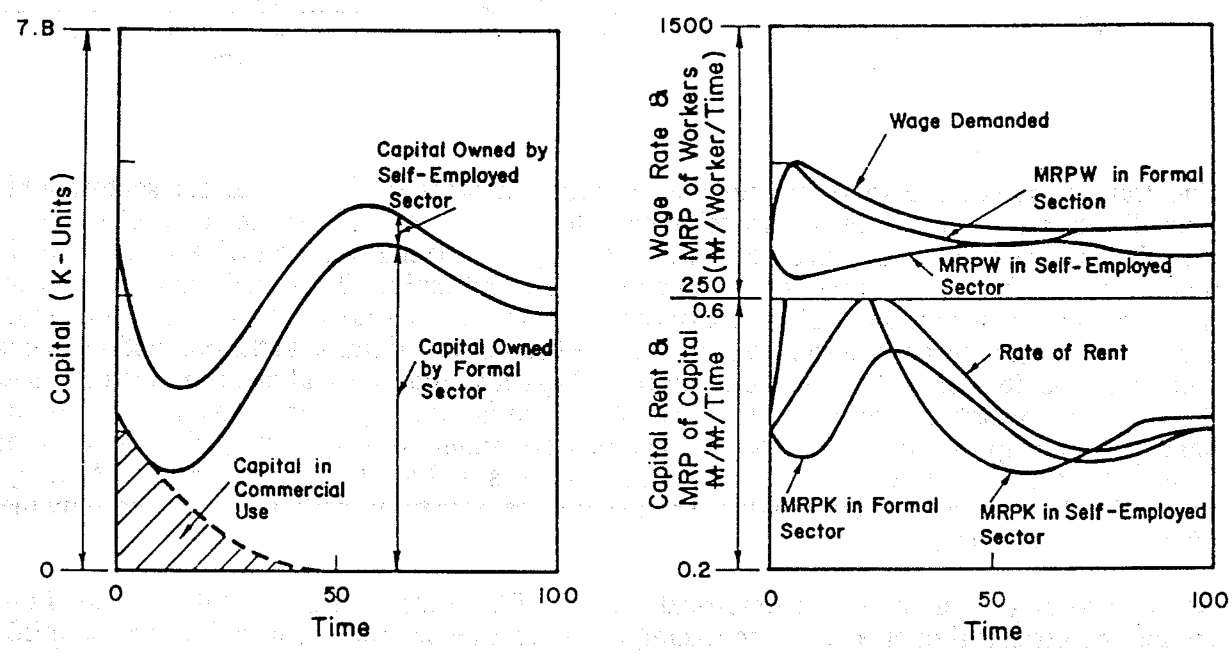


The transfer raises the marginal revenue product of workers in the formal sector, which immediately proceeds to increase its workforce. The transfer also raises the intensity of workers in the self-employed sector as a result of which the marginal revenue products of land and capital in that sector rise. Hence, it proceeds to acquire more land and capital. These activities continue until the marginal revenue products of the factors and their proportions are the same in the two sectors. Since factor payments are determined purely on the basis of contribution to the production process, while the quantities of production factors allocated to each sector depend on economic efficiency, the wages and factor allocations seem to be determined fairly and efficiently as if by an invisible hand. Ownership in such a situation can be either communal or very widely distributed among households since otherwise the wage bargaining process will not lead to fair wages. Renting of production factors among households is irrelevant since transfer to parties who can employ them efficiently is automatic.

Before anything is said about the empirical validity of the simplifying assumptions made in this model, the historical context of these assumptions must be examined carefully. The simplified model is based on Adam Smith's description of an industrial economy observed at the start of the industrial revolution. This economy was run by artisans turned capitalists and there were many such capitalists competing with one another, although none had the financial muscle to outbid the others except through his/her ability to employ resources efficiently [Skinner/Smith 1974]. As far as labor wage rates were concerned, although there were instances of exploitation of workers at a later stage of the industrial revolution, the artisan workers could obtain a wage that was equal to their contribution of labor to the production process, as otherwise they could easily be self-employed since the economy was still quite labor intensive and the tools needed for self-employment may not have cost very much. Also, since ownership of the tools of a trade may have been quite widespread while the contribution of capital resources to the production process was quite small as compared to that of labor, a major part of the income might have accrued to the working households. In such circumstances, the simplifying assumptions of the neo-classical model may appear quite reasonable. The neo-classical model became irrelevant, however, as the system made progress in the presence of a social organizational framework that legally protected ownership of all types and freely allowed the renting of assets, thus making possible an absentee mode of productive resources ownership while technological changes also made the contribution of capital resources to the production process more significant.

Separation of Ownership from Workers and the Creation of a Marxist System
When labor-wages are determined through bargaining mechanisms incorporated into the model instead of fair payment equal to the marginal revenue product of workers, worker capitalism prevails. However, when ownership of resources is legally protected, whether they are productively employed or owned in absentia, and financial transactions are subject to self-finance, the ownership of resources becomes separated from the workers and concentrated in the formal sector in the model, irrespective of the initial conditions of resource distribution. Figure 2 shows the ownership and wage pattern arising from the above modifications in the model.

Figure 2: Model behavior with original structure showing separation of ownership from workers



Such a pattern develops because of an internal goal of the system to employ resources in the most efficient way while the ownership of these resources can only rest with the households with adequate financial ability, which is also not independent of ownership.

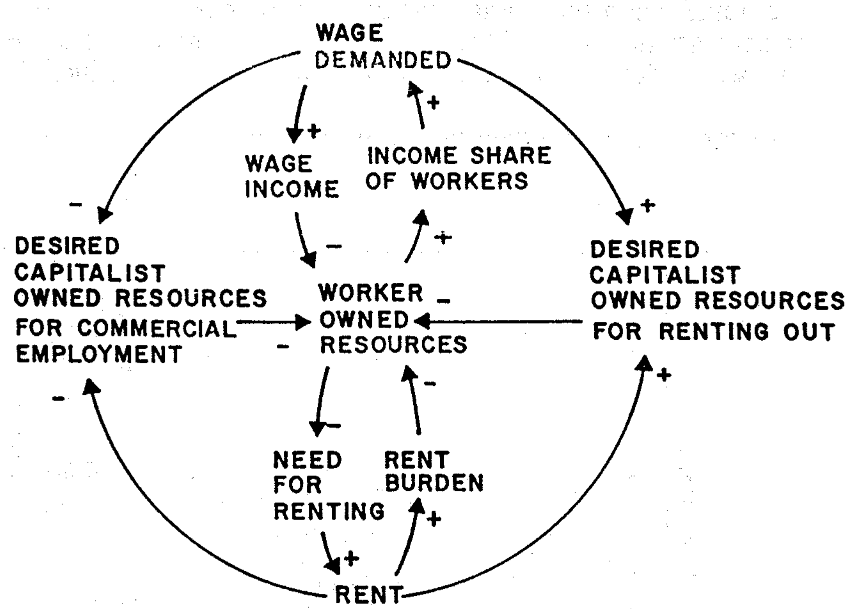
A stable commercially run capital-intensive production sector existing together with a self-employed labor-intensive sector develops in the model if a technological differentiation is created between the commercial and self-employed sectors, albeit, the wage rate remains low and ownership pattern remains unchanged. This is also borne out by experience. Dualist patterns appeared in the developing countries, both in the agricultural and industrial sectors, when modern capital inputs became available in limited quantities. Labor-intensive peasant agriculture and small-scale industry and services carried out by the self-employed came to exist side-by-side with commercially run farms and large-scale industry employing wage labor and modern technologies. However, worker income, both in wage-employment and self-employment, remained low [Alavi 1976, Griffin 1977].

FEEDBACK LOOPS DEGENERATING A CAPITALIST SYSTEM

Figure 3 describes the feedback loops, formed by the causal relations implicit in the model structure, that appear to govern the peculiar behavior shown in Figure 2. When productive resources can potentially be engaged in commercial or self-employed modes by owners and renters, any autonomous increase in the wage rate would not only decrease the desired capitalist owned resources for commercial employment, it would also concomitantly decrease the utility of investing in resources for self-employment. Thus, while the ownership of resources freed from commercial employment is not transferred to the self-employed sector, the surplus labor released by the commercial sector has to be absorbed in self-employment. As a result, worker income is depressed while the demand for renting rises.

Thus, it not only becomes profitable again for the formal sector to hold its investment in land and capital, it also gives this sector a financial edge over the self-employed sector, whose savings continue to decline as its rent burden rises. These actions spiral into an expansion of the ownership of resources by the formal sector even though the commercial mode of production is eliminated due to the high cost of wage labor. This also precipitates a very low wage rate when an equilibrium is reached since a low claim to income of the economy creates low opportunity costs for the self-employed workers for accepting wage-employment.

Figure 3: Feedback loops creating separation of resources from workers



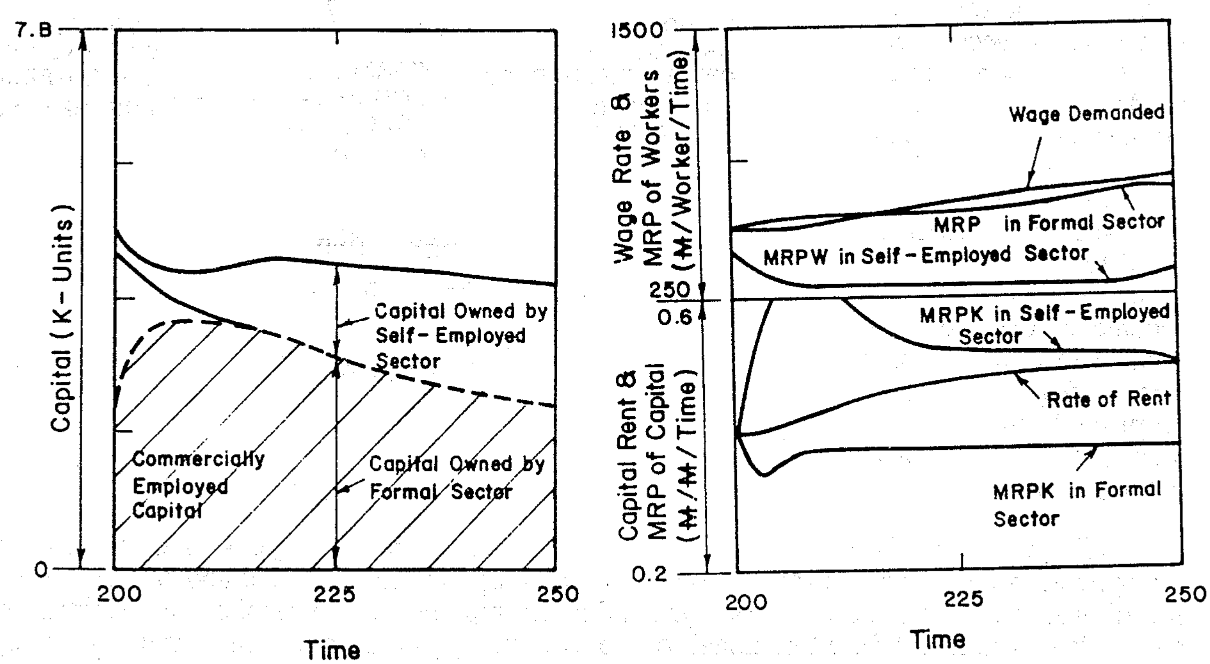
Ironically, the fine distinction between the artisan and absentee types of ownership is not recognized in the political systems based on the competing neoclassical and Marxist economic paradigms. The former protects both types of ownership, the latter prohibits both. Neither creates a feasible environment for a functional form of ownership to capture the entrepreneurial energy of the majority of households.

ECONOMIC RELATIONS IN A FUNCTIONAL FORM OF CAPITALISM

A functional economic system must incorporate the mechanisms to mobilise the forces of self-interest and entrepreneurship inherent in private ownership of the resources. Yet, it must avoid the conflicts inherent in the inequalities of income and resource ownership that led to the creation of the so-called socialist paradigm. According to the preceding analysis, however, the fundamental mechanism which creates the possibility of concentration of resource ownership is the equal protection accorded to the artisan and absentee forms of ownership by the prevailing legal norms. The financial fragmentation of households and the differences in their saving patterns further facilitate the expansion of absentee ownership. Technological differences between the formal and self-employed sectors not only make possible the side-by-side existence of the two modes of production, but also exacerbate the dichotomy between ownership of resources and workership. Apparently, the policy agenda for changing resource ownership and income distribution patterns should strive to limit renting and should additionally prevent the development of financial fragmentation and technological differentiation between the commercial and self-employed production modes if the objective is to minimize the conflicts related to income distribution.

Renting practice can be decreased by imposing a tax on rent income. The results of implementing this policy are shown in Figure 4. In the face of a tax on rent income, resources which cannot be employed efficiently under the commercial system are offered for sale to the self-employed instead of being leased out to them. Purchase of these resources by the self-employed raises the entitlement of the workers to the income of the economy, which increases the opportunity cost of supplying wage-labor to the commercial sector. This raises wage rates, which makes the commercial mode of production even more uneconomical. Such changes spiral in the long run into the transfer of a substantial amount of resources to the self-employed sector. Concomitant efforts to decrease the financial fragmentation of households and the technological differentiation between the two modes of production, along with improving productivity, further accelerate these changes.

Figure 4: Model behavior with imposition of a tax on rent income



HUMAN MOTIVATIONAL AGENDA

The economic system discussed above consists of human actors, hence, its performance cannot be discussed without considering how these actors must be motivated to work hard. The Marxist work ethic required "*from each according to ability, to each according to need,*" calling for these actors to be selfless and dedicated to public interest — human qualities rarely found in practice. On the other hand, the capitalist system must be driven by personal interest and competitiveness — quite common human qualities. These qualities must be channelled to create innovative and entrepreneurial roles for the human actors, so the system potential is fully realised.

Small entrepreneurs and indigenous technological innovation seem to have played a limited role in the economic progress of developing countries, which is dominated by relatively large firms and technology transfer from abroad, although such actors were instrumental in bringing about industrial revolution in the west and are still considered an important source of innovation. An effective strategy for entrepreneurship development for the developing countries must recognize the existing social and cultural norms that determine opportunity, individual initiative, the extent of capital availability and marketing opportunity. It must also attempt to create the organizational ingredients of innovation. The development of infrastructure would also help, provided the fundamental motivational and organizational mechanisms already exist.

In the developing countries, the opportunity is often linked with social class and family linkages, while the motivation for entrepreneurship may stem from a commitment to support the extended family. The investments are financed largely through household savings, and marketing opportunities are closely related to the disposable income of the households, both depending on the distribution of income and wealth [Mckinnon 1973, ESCAP 1989]. The strong hold of the bureaucracy in the developing countries, its members often having family links with the wealthy, has also led to a systematic discrimination against the average-income household from where entrepreneurial activity may originate [White 1981].

There exists a promising institution in most developing countries, however, with great potential as a focal point of entrepreneurial activity. This institution is the small family enterprise in the self-employed sector, which may take the form of a shop-house or an artisan manufacturing firm in the urban sector or a peasant farm in the rural sector. It allows participation from all members of the family, including the youth and the women, while also providing the informal small-group organization considered in many studies conducive to innovation. Its members are highly motivated to work hard and assume the risk of enterprise because of their commitment to support the extended family.

Small family enterprises are somewhat similar to the small manufacturing units that created the industrial revolution in England in the early nineteenth century. It has also been observed that the small family enterprise tends to maximize consumption, hence its income significantly affects demand, which creates new marketing opportunities [Bardhan 1973, Sen 1966]. Unfortunately, this kind of enterprise has been systematically suppressed and discriminated against in favor of the large-scale formal sector. Even its output remains largely unaccounted for in the national accounting systems of most countries [Hicks 1940, Eisener 1989]. Yet, the prosperity of these households will not only provide the much-needed financial resources for entrepreneurial activity, their capacity to spend will also create many marketing opportunities for the potential entrepreneur. Thus, influencing income distribution through the policy framework proposed in the previous section, ranks first on the agenda for designing a policy framework for developing entrepreneurship [Saeed 1991]. Once a significant cross-section of the populace becomes a potential participant in the economic activity, the development of the infrastructure and the facilitation of the management of risk will also appear to be effective instruments.

ROLE OF POLITICAL ORGANIZATION

The above guidelines notwithstanding, there are fundamental impediments to adopting the recommended policy framework. Firstly, an already existing authoritarian government may be overly pre-occupied with the maintenance of its power and uninterested in public welfare. The political instability resulting from this may create much risk, which discourages entrepreneurial ventures. Secondly, the policy instruments for the self-employed to acquire a greater share of income may be in direct conflict with the influential power factions; hence these may never be implemented. Finally, the financial resources of the country may be committed to defense or internal security to an extent that very little is available for investment in the infrastructure and institutional development programs. Thus, a democratic political system that is responsive to public opinion and creates stable and balanced political roles must exist if the capitalist system is to support its human actors in creating sustainable welfare without conflict [Saeed 1986, 1990].

CONCLUSION

Both neo-classical and marxist models of economic growth seem to make restricting assumptions about ownership and mechanisms of wage determination, which are linked with specific time and geography related historical evidence. A behavioral model underlying wage and income distribution is proposed in this paper, in which the opportunity cost of supplying a unit of labor to the formal sector is used as a basis for negotiating a wage. Neither this opportunity cost nor the ownership pattern are taken as given, while the dynamic interaction between the two creates a tendency in the system to generate numerous wage and income distribution patterns, subsuming those postulated in the neo-classical and marxist theories of economics. The realization of a specific wage and income distribution pattern depends on legal and social norms concerning ownership, renting, the financing of investment and the state of technology.

Private ownership seems to have two forms, artisan and absentee. Predominance of artisan ownership creates an egalitarian wage and income distribution pattern, but that form of ownership can grow only if the renting of resources can be discouraged. On the other hand, absentee ownership creates a low wage rate and an unequal income distribution, while the growth of this form of ownership is facilitated through the renting mechanism. Potentially, both these forms of ownership can exist in an economic system. The problem, therefore, is not to favor or condemn private ownership per se as the alternative theories of economics have often advocated, but to understand the reasons behind the development of a particular ownership pattern and identify human motivational factors that would change an existing pattern into a desired one.

The most important reform needed at government level to create a sustainable capitalist system is the discouragement of the absentee ownership of capital assets, which would create a wider distribution of wealth. Widespread artisan ownership resulting from this would increase participation in entrepreneurial activity, which would allow adequate performance from the human actors in the system. Such reforms, however, may not be possible in an authoritarian system of government which is sustained through preservation of power and not through public support. Hence, the creation of a democratic political system may be a pre-condition to the creation of a functional form of capitalism.

NOTE

Send requests for technical details and software to Khalid Saeed, Asian Institute of Technology, G.P.O. Box 2754, Bangkok 10501, Thailand.

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