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BY

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ECONOMIC DEVELOPMENT IN HISTORICAL PERSPECTIVE

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It is the purpose of the present paper to discuss the process of economic growth in long-run historical perspective, in the belief that an appraisal of the evolution of crucial economic institutions and significant growth theoretic ideas may help illuminate the state of our present-day understanding of growth. In order to carry out this purpose, we must, first of all, decide on the relevant time span attached to our notion of recorded history. As we are concerned, in part, with the evolution of economic ideas about growth, the history of economic thought immediately suggests that the time span of our inquiry should stretch back to at least the sixteenth century. For it is in respect to this period that economists have expressed themselves in an organized body of thought (i.e., the mercantilists, the physiocrats, the English classical writers, the Marxists, the Austrians and contemporary writers), either explicitly or implicitly directed to the phenomenon of growth. An examination of these ideas provides one of the major building blocks of this paper.

Growth is admittedly a complicated phenomenon which can be interpreted strictly narrowly in terms of pure resources augmentation or, more broadly, as a complete cultural evolution. We have found it instructive to adopt a viewpoint which lies somewhere in between these extremes; i.e., by concentrating on broadly defined notions of capital and the capital accumulation process over time (Section I). To be sure, the productive significance of capital, *à la* Harrod-Domar, has remained important; but the capital stock is

also an instrument of control and intimately related to the organizational features of an economy. If we take a sweeping view of the growth accomplishments of the Western world over the last five centuries (from 1500 on), we cannot help but be impressed by the drastic changes, not only in the productive significance of capital, but also the mode of social organization in different growth epochs.

This basic notion of a growth epoch, as Professor Kuznets has taught us,¹ can be defined in terms of certain unifying rules of growth or modes of operation of the whole economy over a rather long (at least one hundred years) stretch of time. The epochs we shall be dealing with are, first, the premodern epoch of agrarian feudalism yielding to mercantile agrarianism during the period from approximately 1500 to 1750. This is followed by what Kuznets has identified as the epoch of modern growth and which can be further subdivided into nineteenth century industrial capitalism (1750-1914) and twentieth century technocratic capitalism (1918-present). For each epoch, we shall try (Sections II-III) to depict the special relevant meaning of "capital," of "capital accumulation," of the organizational structure of the economy, and of pertinent growth theoretic ideas. The focal point of our analysis will be on the contrast between the various epochs as well as on the significance of the sequential ordering outlined; namely, in what sense the growth

¹ See S. Kuznets, *Modern Economic Growth* (Yale Univ. Press, 1966).

accomplishment of one epoch paves the way for the next.

The contemporary less developed world is trying, in the course of a few decades, to imitate Western European experience with growth over the last four centuries—both in terms of its productive and its organizational aspects. The resistance that is likely to be encountered in this attempt to telescope historical experience has substantial policy significance for the development of the contemporary underdeveloped world and will be explored in Section IV.

I. *Capital Accumulation*

Capital is generally defined as a stock which represents a produced means of production. Three essential attributes (and only three) can be deduced from this; namely, that the accumulation of capital requires social effort (i.e., it is "produced"), that it is an immutable and durable stock, and that it contributes to production. This definition permits a broad interpretation of what may be included in the capital stock; i.e., inventories, fixed capital (e.g., plant and productive equipment), overhead capital (roads, wharves, water supply, schools, sewage systems, dwellings), and special quality characteristics of human agents above the unskilled level (i.e., the physical and mental attributes of labor, entrepreneurial ability, etc.). As the mode of operation of the economy changes over time, the content of "capital," within the above broad definition, undergoes a corresponding evolution.

This definition of the content of capital is quite independent of the mode of social organization. In the literature, there is, however, something of a tradition by which the term is restricted to profit-seeking private capital in a capitalistic society. This special usage serves to emphasize the fact that capital, besides consti-

tuting an instrument for raising productivity, in the engineering sense, also constitutes an instrument of control in a particular type of society; i.e., capitalism. It serves us well in explaining the growth-promoting forces of industrial capital that prevailed in that particular historical stretch of time; i.e., from 1750 to 1914. For it was in this phase that economic individualism found its fullest expression in the accumulation and management of the most characteristic form of capital (i.e., fixed capital) vital for the growth of the industrial economy. We should not let this blind us, however, to the realization that, given a longer historical time perspective, such usage remains rather special. For in contrast to economic individualism, collectivism may have had a more essential guiding role in the management of economic affairs at other times; i.e., before 1750 or after 1914. In such epochs profit-seeking private capital may have been less important in terms of economic growth than a collective form of capital management and accumulation.

Both the production and the organizational significance of capital derive from its involvement with labor. The production significance of capital is due mainly to the "contribution" which it makes to labor productivity; and the organizational significance of capital centers on the quality of this collaboration. In fact, as the economy moves from one growth epoch to another, its mode of operation is defined mainly in terms of these changing relations between labor and capital.² In each epoch of growth the center of the stage is held by certain special types of capital goods

²This view of capital as inextricably intertwined with the special growth phenomenon of an epoch is, by no means, shared by all who concern themselves with capital theory. The Austrian economists, for example, whose technical contribution to the "nature of capital" was very significant, paid little attention to the specific nature of capital in the context of a particular mode of organization of the system.

and certain characteristic modes of productive as well as organizational relationships which are evolved to facilitate the accumulation process. An understanding of this is essential to an understanding of growth in long-run historical perspective.

II. *From Simple Agrarianism to Mercantile Agrarianism (1500–1750)*

Before 1500 Western Europe was characterized by local self-sufficiency in agricultural production, or simple agrarianism. The 250 year time span from approximately 1500 to 1750 witnessed the gradual transition of this system to a less primitive, trade-related mercantile agrarianism. Mercantile agrarianism in turn paved the way for the epoch of industrial capitalism (1750–1914) which followed. Thus, in terms of our attempt at achieving long-run historical perspective, mercantile agrarianism may be regarded as a long phase of transition leading from simple agrarianism “inevitably” to industrial capitalism.

Simple Agrarianism. The simple agrarian society is characterized by the dominance of settled (non-nomadic) agricultural production to the virtual exclusion of other forms of economic activity and with relatively little trade beyond the local community. A simple agrarian society is essentially locally self-sufficient and should not be associated with the notion of an integrated national or even regional economic system. The political structure associated with such an inward-looking economic way of life was characterized as local separatism stabilized by a feudal dichotomy between hereditary ruling and serf classes. The well-known manorial system of medieval Europe and of the (less well-known) Chou dynasty in ancient China (100 to 200 B.C.) may be viewed as representative.

The nature of the capital stock in simple agrarianism represents the purest form

of “wages fund”; namely, the stock amounts to an inventory of agricultural goods (mainly food) to bridge the gap arising from the non-coincidence of production and consumption periods in agriculture. On the one hand, the seasonality of agricultural production leads to the emergence of the required food supplies during one or two specific (harvest) months of the year. On the other hand, the consumption demand for food is continuous and evenly spread throughout the year. Thus all the food needed between harvests must be stocked up and social organization devised to ensure that such stocks will be apportioned and again replenished in an orderly fashion. This, in essence, is the meaning of capital stock—and the only possible meaning—in the simple agrarian society.

The mode of economic life in simple agrarianism may be depicted with the aid of Figure 1a in the form of one production sector and two household sectors; i.e., the serfs and the nobility. Total output A is used either as consumption (for the serfs C_s and for the lords C_L) or as investment (I) leading to capital accumulation. The stock of capital K is seen to be divided into twelve parts—corresponding to the evenly distributed consumption demand during each of the twelve months of the year—to remind us of the basic wage fund characteristic. While the serfs supply the necessary agricultural labor force (L), the lords supply their services in respect to the management of the capital stock K , as a wages fund.³ The right of the lords to management is maintained and perpetuated partly by ideology (e.g., religious or feudal), partly by brute force, but mainly by the necessity for all to accept some form of social organization to ensure order. In fact, the *raison d'être* of

³The lords have the right to exact services and payments in kind and are in charge of settling disputes, maintaining justice, granting loans, etc.

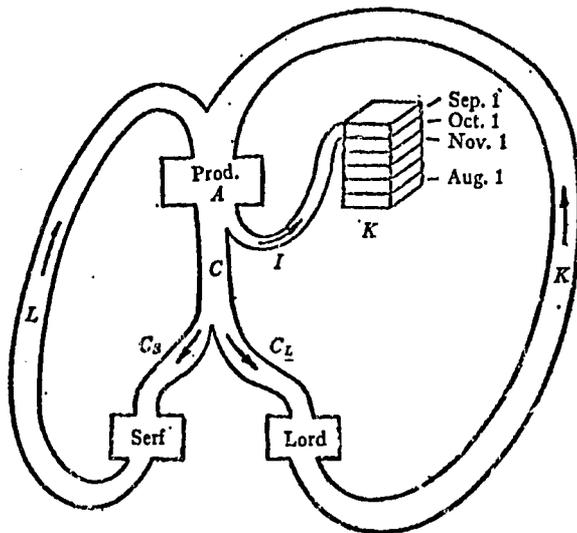


FIGURE 1a

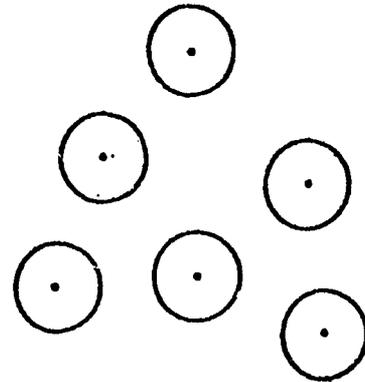


FIGURE 1b

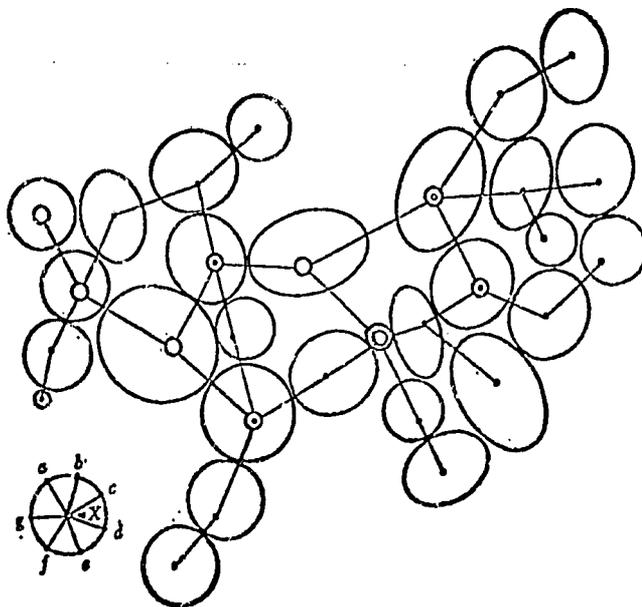


FIGURE 2a

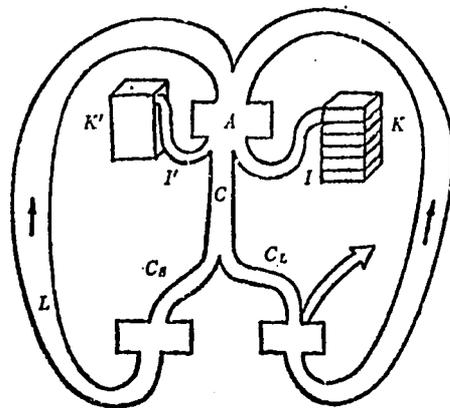


FIGURE 2b

simple agrarianism, which contributes to its long-run stability, often rests on the ground that the cultural life of the lords is taken as the very end purpose of the existence of society. This was the picture presented by Quesnay and the physiocrats.

The nature of the involvement of capi-

tal with labor in simple agrarianism is mainly to feed the workers in anticipation of the next harvest. This explains the central fact that the capital stock (K) is proportional to the population (L) where the proportionality factor Θ in $K = \Theta L$ depends upon and is positively related to the "degree" of divergence between the

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production and consumption periods.⁴ It follows that investment per head (I/L) in such a society must be proportional to the population growth rate (n_L) with the same proportionality factor; i.e.,

$$(1) \quad I/L = \frac{dK}{dt} / L = \theta n_L.$$

For example, in case the population growth rate is constant the investment per head is also constant. Thus with population constituting the major investment demand, growth can be said to be population pushed. Where land supply is not a constraint the tasks associated with "savings" are automatic and performed routinely and almost subconsciously. Any sense of economic progress beyond this simple sideward motion is not only foreign but basically repugnant.⁵

Mercantile Agrarianism. Change and progress in the agrarian society can be closely identified with the increasing impact of mercantile activities; i.e., interregional and international economic arbitrage carried out for the sake of profits. It is the growth in the volume of trade and its geographic spread which constitutes the central growth phenomenon of mercantile agrarianism (approximately 1500–1750). To be sure, the major form of economic production—measured in terms of value added or population involved—continues to be agriculture. However, it is the penetration of this agrarian system by mercantile activities dedicated to interregional trade that gradually

⁴For example, if there are two crops a year instead of one, the needed capital stock is halved. The determination of the magnitude of θ is analogous to that of the modern transaction velocity of money.

⁵When land scarcity is a factor some slow improvement of crop practices or innovation must occur to offset diminishing returns. The authors deal with this situation in their "Agrarianism, Dualism and Economic Development" in *The Theory and Design of Economic Development*, edited by I. Adelman and E. Thorbecke (Johns Hopkins Press, 1966).

transforms the latter—ridding it of the local self-sufficiency attributes and substituting in its place an integrated economic system covering a larger space, ultimately the entire national economy.

What sharply differentiates mercantile agrarianism from simple agrarianism is the newly erected social infrastructure pertinent to this particular type of trade-related space economics. The structure in evidence by the end of the mercantile agrarian epoch can be depicted symbolically by a tree-star structure,⁶ in Figure 2a. One set of ideas conveyed refers to the nodes or vertices (represented by O, o, .) and the edges (represented by links) connecting the nodes. While the nodes stand for communities of human settlement—O for city, o for town and . for village—the edges stand for transportation and communication links connecting these communities. The second set of ideas refers to the stars, represented by the circles in Figure 2a, surrounding the nodes, which may be construed to represent a geographic area of agrarian activity. In these areas economic activities are carried out around the center of gravity at the node or the center of the star. Thus while the trees (i.e., the nodes and the edges) signify the existence of a significant interregional pattern of connectivity, it is the stars that carry the spacial significance with respect to given geographic areas. The means of local transportation can be assumed to be fairly primitive, and hence the maximum dis-

⁶Both these terms are borrowed from linear graph theory and are used in a heuristic and nonrigorous fashion here. A rigorous definition of a tree is a linear graph which is connected and circle free (i.e., free of loops) and signifies that there is one and only one path between any two nodes. Thus rigorously a tree corresponds to a primitive transportation system linking all the cities. A star is a number of nodes (e.g., a, b, c, d, e, f, g in Figure 2a) which are connected by one edge each to a vertex (e.g., X) which is the center of the star. Thus the nodes of the stars correspond to rural families and the center to the village which is the focal point of activity of a number of rural families.

tance between the center of the star and any point inside the star is such that it takes at most a day to complete a round trip by walking. In a densely populated country the inhabitable land space can be considered to be covered by such stars.

In order to contrast this mercantile agrarian system sharply with simple agrarianism, we also present in Figure 1b a graphic description of the latter. In this diagram there are only stars; the absence of a meaningful tree structure is intended to convey the locally self-sufficient nature of the agrarian economy.⁷ Thus, it is the establishment of the trees—i.e., the trading routes—which transforms the simple agrarian economy into a regionally or nationally integrated economy.

Mode of Operation of Mercantile Agrarianism. The basic structural characteristic of mercantile agrarianism is that the economy now moves away from its monolithic emphasis on agricultural production. It is the coexistence of agricultural and nonagricultural ways of life which now becomes its basic structural characteristic. For simplicity, in relation to our tree-star structure, we may think of the cities and the towns as corresponding to the trade sector, as it emerges out of increasingly regularized regional agricultural markets and trade fairs, with the small villages, which constitute the center of the stars, representing local agricultural communities. In conformity with this emerging new trade sector is the emergence of a new capital concept which now includes inventories of food (K), which serve as a wages fund, and inventories of agricultural produce, possibly semiprocessed (K'), which together make up what may be called the "commercial capital stock."

⁷This use of stars to describe a simple agrarian society emphasizes not only its relative backwardness but also its rather advanced state relative to really primitive nomadic societies where even such geographic focal points for permanent community activity do not exist.

The mode of operation of the mercantile agrarian economy at any given time can now be described in Figure 2b, a slight modification of Figure 1a. Total agricultural output A is now seen to be divided into three parts: consumption C , investment in the wages fund I , and investment in commercial capital I' . These two types of investment lead to the augmentation of the wages fund K and the commercial capital stock K' .

The wages fund (K) continues to bridge the gap between the production and the consumption periods in agricultural output, as in simple agrarianism. The appearance now of a need for commercial capital (K') is due to two factors; namely, the non-coincidence of production and consumption periods among producing areas, and the time consumed in transport. Given these basic factors, the demand for this form of capital (K') is proportional to the volume of trade (T) (i.e., $K' = \Theta'T$).⁸ Let us assume that the volume of interregional trade (T) in such an economy is mainly a function of the size of the "trade margin"; i.e., that portion of total output which is not self-consumed. Then $T = Lq$ where L is total population and q is the per capita trade margin. Let us approximate q by $q = p - c$ where p is the average labor productivity and c is the per capita consumption of self-consumed goods. Then $K' = \Theta'L(p - c)$. From this we can see that per capita investment in commercial capital $I'/L = \Theta'(p - c)\eta_L$ where η_L is the population growth rate. If we add the traditional demand for capital as a wages fund to this (see (1)), the total commercial investment per head required becomes

⁸Where Θ' is the factor of proportionality. For example, other things being equal, the demand for commercial capital decreases when the needed transport time decreases or another region with more complementary production pattern enters into the trading orbit. Both of these events would be reflected in a decline of Θ' .

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$$(2) \quad I/L = (\theta + \theta'(p - c))\eta_L$$

Simple as this formula might be it does serve to emphasize two distinct ideas related to the growth promoting forces in mercantile agrarianism. In the first place, growth is population pulled; i.e., investment per head is proportional to the growth rate of the population (n_L) as in the case of simple agrarianism.⁹ But, in the second place, the growth promoting forces are now also determined by—i.e., proportional to—the size of the agricultural trade margin ($p-c$).¹⁰ Thus it would appear that in a mercantile agrarian system economic growth is both population pulled, as before, and agricultural productivity pushed.

Cumulative Growth Under Mercantile Agrarianism. At this point let us advance the hypothesis that there is interaction between I and p ; i.e., that the accumulation of commercial capital in turn contributes to the increase of agricultural productivity. Under this hypothesis, commercial capital accumulation will in turn result in an increase of the trade margin ($p-c$).¹¹ This increase will in turn lead to a faster rate of capital accumulation and thus reinforce the p -raising process. In this way we can depict a process of cumulative growth in the mercantile agrarian system. It should be emphasized that these forces making for continuous increases in agricultural productivity are new to the agrar-

⁹ As long as there continues to be no problem of diminishing returns on the land.

¹⁰ In a predominantly self-sufficient economy $p-c$ is close to zero. As agricultural productivity increases, the trade margin is likely to increase, not only absolutely, but also as a fraction of p , with consumer preferences becoming more diversified with higher income levels. Thus, $(p-c)/p$ is an increasing function of p (or c/p is a decreasing function of p). In the formulation in the next section we shall approximate this phenomenon by the assumption that c is approximately constant as p increases through time.

¹¹ Especially with c constant as we have assumed (if c should rise somewhat, it will surely rise less than p).

ian economy and contrast sharply with the picture of long-run stagnation gripping the simple agrarian system. To provide a slightly more rigorous formulation of this argument, let us assume that the increase of agricultural productivity is proportional to the change in the commercial capital stock per head, with j , the factor of proportionality, defined as the productivity enhancement coefficient:

$$(3) \quad dp/dt = jI/L \text{ implying, by (2) that}$$

$$(4) \quad a) \quad \frac{dp}{dt} = A + Bp$$

$$\text{where } A = j(\theta - \theta'c)\eta_L$$

$$\text{and } B = j\theta'\eta_L$$

$$b) \quad \eta_p = A/p + B$$

$$c) \quad \eta_p = B \quad (\text{for } p \rightarrow \infty)$$

Thus in the long run the rate of increase of agricultural productivity will always take on a positive value $B = j\theta'\eta_L$. Furthermore, the long-run rate of progress is seen to be directly proportional to j , the enhancement coefficient, which describes the extent to which the accumulation of commercial capital serves to stimulate agricultural productivity. We also see that a higher population growth rate continues to be beneficial in stimulating agricultural productivity. This characterization surely is not far from the truth for pre-industrial growth in which population growth and the agricultural productivity-raising effect of markets represent the two primary growth-promoting forces.

The above may be regarded as our central hypothesis on the historical significance of the epoch of mercantile agrarianism; namely, that it was mainly through the expansion of trade that agricultural productivity was raised and the tendency to stagnation reversed. This stimulation was, in fact, so strong that, given the ben-

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efit of historical hindsight, it rendered the classical pessimism, based on the shortage of land and diminishing returns, quite irrelevant and artificial. Empirically, we have, in fact, witnessed an agricultural revolution during the period of mercantile agrarianism (1500–1750) which preceded the industrial revolution. Our line of argument in attempting to interpret this real world phenomenon depends, of course, on the strength of the behavioral assumption related to j ; namely, on how effectively commercial activities can, in fact, stimulate agricultural productivity. It is to this problem that we will now turn.

Trade and Agricultural Productivity. As we pointed out earlier, when mercantile agrarianism is compared with simple agrarianism the most striking difference is the appearance of the tree-star structure linking up local economies as part of an integrated regional and, ultimately, national economic system. The immediate tangible effect of such an integration process is that, for a number of reasons, agricultural productivity is stimulated.

1. *The Smithian Division of Labor.* A forceful and well-known argument relevant here was offered by Adam Smith: first, farm productivity is enhanced by an increased division of labor; second, an increased division of labor is rendered possible through greater exchange and trade; and, finally, increased trade results from the accumulation of commercial capital. Referring to Figure 2a we can readily see the significance of our tree-star structure as a catalyst in facilitating interregional production specialization and the flow of commodities. The construction of roads, turnpikes, and communication links constitute the tree branches through which trade flows, and the provision of social overheads at the center, e.g., warehouses and financial facilities, make the star system possible.

We believe that the Smithian body of

thought (and the old classical system in general) was directed precisely to a description of this mercantile agrarian society.¹² His “capital” was basically a synthesis of a wages fund and commercial capital, with the common purpose of expanding the division of labor through trade. In fact, the classical pessimism stems from the very notion that the sources of productivity increase are traceable mainly to the “division of labor,” making it inevitable that diminishing returns, coupled with the shortage of land, could sooner or later be expected to win out.

2. *Changes in the Method of Organization.* The stability of the simple agrarian system is ensured by the feudalistic rights of one class of economic agents (i.e., the nobility) to control another (i.e., the serfs). In such a system, the privilege to own and manage capital goods—i.e., the agrarian wage fund—is merely a “symptom” of more fundamental hereditary rights. The coming of mercantile agrarianism, however, heralded a new method of organization; namely, a capitalistic approach which at first coexisted side by side with the old but, as it proved its superior economic efficiency, gradually replaced it.

This thesis of the evolution of economic institutions, to which Marx made a major contribution, belongs properly to the domain of the modern theory of organization, dealing with matters of incentives, coordination, authority, and information. With the emergence of mercantile agrarianism the very right to organize and control the economic affairs of the nation comes to rest increasingly in the hands of

¹² While Smith certainly considered fixed industrial capital, this does not loom large in his analytical explanatory apparatus. As Schumpeter put it: “The manufacturing industry that economists beheld and reasoned about was all along the industry of the artisan.” (*History of Economic Analysis*, New York, 1954, p. 386.)

those who own and control the commercial capital stock rather than those of the landed aristocracy. The distinguishing organizational feature of the new system resides in its basic task-oriented approach according to which clearly defined economic tasks—e.g., production, management, bookkeeping—are assigned to various groups of economic agents along functional lines—and rewards bestowed accordingly. These built-in incentive cum coordinating devices of capitalism are highly conducive to economic progress, partly because of the encouragement given to individual initiative and partly because of the reinforcement provided by the social prestige attached to the ownership of capital and the power to control which it conveys.

This new "bourgeois" method of organization was first tried and experimented with in connection with the incipient growth of trade and commercial activities. However, with the emergence of the tree and star constellation, the method spread to agricultural production. The well-known tripartite division of labor, *à la* Smith, in fact depicts this as the dominant model of British rural economic organization, with capitalist farmers renting land from the nobility and hiring free labor. This acceptance of the commercial capitalistic form of organization in agriculture may be viewed as among the most remarkable growth accomplishments of the period.

3. *Learning by Contact.* The star structure of mercantile agrarianism denotes a pattern of rural life revolving increasingly about the nucleus of the community; i.e., the villages or small market towns which comprise the center of the stars. Such village centers offer, beyond the exchange of products, an opportunity for the exchange of ideas through growing human contact and the ever expanding vision of alternative ways of economic and cultural life. It

is through such contacts and ideas that new agricultural practices are devised and new combinations of traditional and non-traditional inputs tested. The tree structure likewise not only serves to facilitate the movement of goods but also the movement of ideas. The significance of the latter in explaining the agricultural revolution is that it is not only essential for that contact among men which induces inventions but also for the spread of the resulting innovations across land space. The significance of this process is underlined by students of both Western European development¹³ and of Tokugawa Japan.¹⁴ Historically, an agricultural revolution is usually achieved more via the transmission of best technology; i.e., narrowing the gap between average and best practice within a country rather than by the continuing improvement of best technology. The logical force of this argument rests on the grounds that inventions by their very nature are likely to occur in isolated pockets of progress,¹⁵ and that a spreading and dissemination process is essential if a revolution of the agricultural economy is to be accomplished. In short, sustained agricultural progress is heavily dependent on the extent to which the agricultural sector is linked up and involved with the trading activities outside of that sector.

4. *Emergence of a National Economy.* A final set of factors strongly contributing to the strength of *j* relates to what may loosely be called incipient nationalism. Increasing class mobility, tied in with the beginnings of an egalitarian spirit and the Protestant Ethic, strengthened the forces of national trade expansion and commercialization emanating at the local level; and the emergence of the first real na-

¹³ W. A. Cole, *British Economic Growth, 1688-1959*, with Phyllis Deane (Cambridge Univ. Press, 1962).

¹⁴ T. C. Smith, *Agrarian Origins of Modern Japan* (Stanford Univ. Press, 1959).

¹⁵ Either as a consequence of purely private or social (government) research effort.

tional consciousness in replacement of local and regional loyalties provided the necessary ideological cement for commerce following the new-found flag. Local trade barriers were progressively lowered, the sanctity of contract and of private property recognized. National transport and communication networks were constructed and a national currency and national financial institutions created. In other words, a viable tree structure was fashioned from a combination of physical overheads and legal-cum-institutional change.

This continuing movement away from self-sufficient and inward-looking simple agrarianism and towards an interdependent outward-looking mercantile agrarianism did not, of course, stop at the boundaries of the newly emerging nation-states. There was trade among the countries of Western Europe; and beyond that the discoveries in the New World and the resulting inflow of species accelerated competition for trade and territory and gave a further substantial fillip to the forces of Western European commercialism.

In summary, it was this increasing spread of commercial activity which marked the gradual transition from simple to mercantile agrarianism. The growing importance of commercial capital occasioned by the requirements of expanded trade and an enhanced division of labor in turn levered agricultural productivity increases and thus capital formation at its source. Moreover, these cumulative ever expanding forces inevitably led the system towards transition to full-fledged industrial capitalism. We shall turn to this subject in the next section.

III. *From Mercantile Agrarianism to Industrial Capitalism*

Western Europe's transition from mercantile agrarianism to industrial capitalism occurred in the course of the eigh-

teenth and nineteenth centuries. This transition marks a most important landmark in human history, for it indicates the end of an agrarian age which stretched all the way back to the beginnings of civilization when the domestication of vegetables and animals first became a predominant mode of production. With the industrial revolution the epoch of modern growth was launched, characterized by rapid structural change and unprecedented sustained increases of labor productivity and per capita income.

This dramatic change, however, was far from sudden. For the development of mercantile agrarianism had prepared the way and planted the seeds for the new epoch which followed. *Z* goods production¹⁶ and textile industries existed long before the industrial revolution took hold. But all we can hope to do here is try to capture the essence of major changes in the mainstream of a society in transition. Let us now turn then to a somewhat more precise description of the nature of this transformation to industrial capitalism and then proceed to a discussion of the intrinsic nature of capital, of the method of organization, and of the nature of the growth promoting forces characteristic of that epoch.

Establishment of Dualism. The most striking change in the economic landscape with the arrival of modern industrial growth is the establishment of a new form of economic dualism, characterized by the coexistence of agricultural and industrial production activities. This dualism differs from the earlier agrarian-trade "dualism" in that there now exists for the first time a large class of peasants freed from feudalistic bondage and constituting an urban labor force. Moreover, these workers now collaborate with industrial fixed capital

¹⁶ Stephen Hymer and Stephen Resnick, "A Model of An Agrarian Economy Including Non-agricultural Activities" (to be published in the *A.E.R.* June, 1969).

--plant and equipment—which takes on a productive significance far exceeding that of “mobilizing labor” which was the trademark of commercial capital. We have a new central mode of production as well as a new mode of economic organization.

The contrast in the economic life of rural agricultural and urban industrial production is, in the first place, a contrast in space economics. While the extent of the feasible division of labor in agriculture is restricted by “nature,” production in the city is increasingly a matter of human endeavor and ingenuity, either embodied in the fixed capital designed to cooperate with the labor force—or in changes in the quality of that labor force achieved through formal or informal learning processes.

This new dualism came as a natural outgrowth of mercantile agrarianism. The push of expanding agricultural productivity permitted a declining (rural) fraction of the total population to supply the growing urban class with its physical sustenance. Thus, there emerged for the first time in any really major sense the phenomenon of an agricultural surplus. It was this rapid expansion of agricultural productivity and the accompanying possibilities for major labor reallocation that lies at the heart of the transition from mercantile agrarianism to industrial capitalism.

Side by side with the push of agricultural productivity increase is the pull emanating from the cities. The very existence of the cities (and the roads leading to them) holds out the promise of a new physical environment and a new way of life to the rural population. Moreover, arrangements were made to channelize the agricultural surplus so that new employment opportunities were provided by the growth of a fixed capital stock which pulled the labor into the cities. Not infrequently these arrangements may be non-

market (or institutional) in nature, including kinship donation, private charity, or public and church relief. However, more and more such arrangements are replaced by the transfer—through the market or the government’s fiscal power—of the agricultural surplus for productive purposes; i.e., as wage goods for the newly employed urban workers. Thus the reallocation of labor, the channelization of the agricultural surplus to the industrial sector and the accumulation of industrial fixed capital stock together constitute the basic phenomena in the operation of early industrial capitalism.

Nature of Capital in Industrial Capitalism. As mercantile agrarianism gave way to industrial capitalism the nature of capital changed in respect to both its productive content and its organizational significance. With respect to content, it shifted gradually from the circulating variety which still dominated the classical system (1780–1830) to fixed, with which Marx was primarily concerned. The fact that Marx made a valiant effort to incorporate both types of capital in his analysis of growth—and the fact that he was practically the first and the last economist of any stature to do so—testifies to the transitional nature of the work of Marx. After him economists began to be preoccupied almost exclusively with fixed capital as a permanent and dependable source of productivity gain, due to changes in the quantity as well as the quality or scientific knowledge embodied.

With respect to the method of organization, Marx also made the point that, now for the first time, capital also becomes a primary instrument of control over a large proletarian class. However, Marx did not correctly anticipate the evolution of the capitalist system over time, including: the growth of unionism and the increasing political power of labor in a democratic setting; the increasing separation of the

ownership and control of capital goods leading to the emergence of a new managerial class; and the trend toward increased government participation in decision making, and the emergence of a new class of public agents.

Alongside the changing class structure is the increasing importance of the allocation of resources to educational (i.e., investment in human capital) ends and the institutionalization of research, both public and private. As a result, the search for applied scientific knowledge has been substituted for capital augmentation as the main growth promotion force in the twentieth century. Material accumulation then retains importance mainly as a vehicle for the accumulation of new knowledge. We can anticipate less and less reward for the brute act of saving and more and more for produced knowledge, innovation and education under what may be called the epoch of technocratic capitalism.

IV. *Relevance to the Less Developed World*

What light, if any, does this account of historical events in Western Europe shed on the problems of growth in the developing world? While as Kuznets has pointed out,¹⁷ there are striking cultural and economic differences between the now developed Western countries and the contemporary developing non-Western world, the answer lies, obviously, in the feasibility of telescoping Western European experience. Several factors may be mentioned in this respect.

Parallel Development. In historical perspective, the Western experience with modern growth is based on the transition from mercantile agrarianism to industrial

(and ultimately technocratic) capitalism. For the contemporary developing countries, modernization follows a different epochal sequence. We must remember, for example, that the period of mercantile agrarianism in Western Europe also coincides with the beginnings of the colonial period in the overseas territories and that, in fact, colonialism can be viewed as the foreign graft on what was essentially European development. Beginning with the end of World War II these very countries then faced the problem of achieving modern growth from the foundation of a colonial heritage under open agrarianism. We need not go into the details of that heritage comprising the familiar pattern of "enclave growth" under colonialism; i.e., (1) a static dualism as between traditional agriculture and the commercialized enclaves; (2) the export orientation of that enclave controlled mainly by entrepreneurs from abroad;¹⁸ (3) the compartmentalization of growth and the generally stagnant character of the rural backyard. It is sufficient to point out that transition into modern growth from such a background added up to a considerable handicap in the light of Western experience.

The most important handicap is that the social overhead capital formation—i.e., the tree-star structure—which had taken place in Western Europe, gradually and unobtrusively over several centuries, had not really come into being in much of the less developed world by the end of colonialism. The construction of the feeder roads, highways, and communication systems (the tree structure) and the rural community centers and urban amenities (the star system), spreading over nearly three centuries (1500–1750)

¹⁷ S. Kuznets, "Developed and Underdeveloped Countries: Some Problems of Comparative Analysis," *Zeitschrift für die gesamte Staatswissenschaft*, 1968, 124(1).

¹⁸ As J. S. Mill (*Principles of Political Economy*, London, 1929, pp. 685–86) put it, these enclaves were viewed as places "where England finds it convenient to carry on the production . . . of a few tropical commodities" and not as "countries with a productive capital of their own."

all of which could and did make such a substantial difference in facilitating the transition of Western Europe, did not take place in the overseas societies which essentially retained their position as agrarian appendages till World War II. This is not to say that substantial overhead capital formation in the overseas colonies did not take place. But it is also true that such investments, largely directed to facilitating the procurement of cheap labor for the enclave, and the outward flow of minerals and raw materials from it had relatively little impact on the bulk of the domestic agrarian economy.¹⁹ In general, colonialism can be said to have intervened and thus prevented the occurrence of a parallel transition to industrial capitalism.

The first practical lesson to be learned then is that the difficulties encountered by contemporary underdeveloped countries are related to their inheritance of a weak rural development base. This weakness is measured partly in terms of the deficiency of physical overhead capital and partly in terms of the weakness of traditional rural organization.

The lesson which we have learned from Western history is, however, not entirely negative. Our tree-star structure emphasis, if accepted, suggests that the focal point of a policy of modernization of agriculture should be much more centered on the general notion of contact or "connectedness" which has internal as well as external dimensions. Externally, the agriculture sector must physically be in touch with the relatively modernized industrial sector. Internally, farmers must learn to have more contact with each other at the local community level. Application of this

¹⁹For a fuller description of the typical colonial mechanism at work, see the authors' "Agriculture in the Open Economy," paper presented to the Universities-National Bureau of Economic Research Conference on the Role of Agriculture in Economic Development, Princeton, N.J. (to be published).

principle implies that, *ceteris paribus*, the modernization of agriculture may be facilitated where the population is homogeneous and fairly concentrated across land space as well as the beneficiaries of centuries of prior agrarian civilization (e.g., Japan, Taiwan, Korea). For a thinly populated large country with a weak agrarian cultural heritage, modernization of agriculture (and hence of the economy as a whole) is a much more difficult process—which can, however, be hastened to the extent that the problem can be solved by more "contact" and the creation of the requisite infrastructure.

The Time Dimension. In attempting to build up the necessary tree-star structure, a contemporary underdeveloped country is faced with the additional handicap of having to telescope centuries of Western European experience into a few decades. Moreover, that Western experience gave us no clue as to whether, or how, the improvement in organizational efficiency and/or the augmentation of rural overhead capital can be accomplished in a short time. On this matter of shortening the time span for rural modernization the developing country is faced with a new task—never before attempted with the possible exception of nineteenth century Japan.

It is indeed doubtful that the modernization of traditional agriculture can be fully telescoped to the extent that such a cultural accomplishment can be gauged in terms of a few five-year plans. The content of the tree-star structure strongly suggests that rapid rural development requires *inter alia* a mode of organization involving a peculiar combination of both individualism (i.e., individual initiative based on market discipline) and collectivism (i.e., collaborative effort at the community and grass-roots level). It is extremely doubtful that the strengthening of these weak links, e.g., the fostering of

“collectivism” through community development and agricultural extension services, is a matter that is responsive to short-run policy stimulation at the central government level.

The impotence of central government bureaucrats in dealing with rural programs is, itself, a matter which is best understood in historical perspective. Given their colonial heritage, the “modern” government machinery in developing countries may be irrelevant because its administrative experience is limited to the urban enclave within the compartmentalized dualistic system of that era. After decolonization, while the civil servants in the “British tradition” are fairly capable of handling urban related household and commercial activities (law, bookkeeping, licensing, banking, warehousing, etc.), they are inexperienced in industrial capital activities and both inexperienced and disinterested in rural administration. Add to this the customary identification of rural households of the central government with colonial tax collection, and the difficulties of generating the basis for a mutually reinforcing agro-industrial growth process will be realized.

Many of the contemporary underdeveloped countries will probably have to look to the history of Japan, both at home and as a colonizer, in search for clues as to the proper role of a central government in rural development. At home the reliance on local community action in raising resources for overheads and services to be used at the local level is instructive. Abroad, the success story of the agricultural revolution in Taiwan (a former Japanese colony) provides a unique experience to others. By general consensus, the farmers’ organizations—first established as “top-down” instruments but later evolving into a unique combination of individual initiative and cooperative community effort—represented the single

most important factor contributing to that success. These farmers’ cooperatives, a cultural heritage of Japanese colonization, have a history of at least forty or fifty years. In telescoping Western experience, an important lesson of history is that agricultural modernization can be a time-consuming process even under the best of circumstances.

V. Conclusion

In long-run historical perspective, development in the second half of the twentieth century will probably be remembered as a phase of transitional growth as the economy moves from the long epoch of colonialism to that of modern growth. The Japanese experience seems to indicate that this transition process itself may be expected to take us at least into the twenty-first century, perhaps even longer, if the developing countries are to make a successful transition to economic maturity. This transition process is shaped by two basic factors. Exogenous to the underdeveloped country is the availability of new technology, as continuously thrown up by progress under technocratic capitalism in the industrial countries of the West. Internally, the essential growth phenomena are learning processes with respect to both technological borrowing choices from abroad and with respect to the gradual augmentation and improvement of the resources base at home.

What we have witnessed over the past twenty years is the very beginnings of this process of attempted transition. In fact, much of what goes under the name of contemporary development economics represents an attempt to gain a better understanding of the rules governing that transition. With so much required for synchronized intersectoral growth, the enhanced understanding of an ideal sequential ordering of events which can be distilled from history could be very helpful.

For example, those miscellaneous policy-tinged topics such as foreign aid, inflation, stabilization, absorptive capacity, which have taken up so much of our attention since World War II can be seen increasingly to be of only transient interest. Other topics relating more directly to the interaction between the two sectors, e.g., intersectoral labor allocation and the reduction of labor inefficiency, the institutionalization of intersectoral financial intermediation, government fiscal and overhead creation capacity, on the other hand, are likely to loom ever larger with time. We have attempted to single out one especially crucial development issue; namely, that of the modernization of agriculture in a multisectoral growth context. Western European history has indicated that this is a long-term issue and must reasonably be solved "first," if successful transition to maturity is to be expected.

Moreover, our realization of the importance of a minimum tree-star structure for mutually reinforcing growth is based on the recognition that intersectoral connectedness is essential for the generation and efficient allocation of an adequate agricultural surplus at each point in time. Once a minimum tree-star structure exists, in addition to the flow of commodities, the flow of saving through relatively "near" or familiar financial intermediaries, and the flow of human resources in search of higher productivity employment, can take place.

The contemporary LDC, of course, faces a very difficult task in its attempt to create the necessary structure overnight. Public sector action seems to be indicated, but not only resources but also the ability of civil servants to make the "right" decisions, in a hurry, is limited. Developing

countries cannot wait for the gradual evolution from feudal to individualistic and ultimately individualist/collectivist mixes in the way resources are organized. Instead, the attempt to quickly restructure the postcolonial economy has led many of them into a rather frantic type of public sector interventionism. Only in very recent years is the bankruptcy of that policy becoming evident and have the lessons of history been taken to heart. While the modernization impulse may well have to come from outside agriculture, without the mobilization of that sector and its full interaction with the rest of the economy via an ever broadening net of human and market participation, development is difficult to sustain. Nor are the foreign resources needed to continue the costly "big push" industrialization policies of the past likely to be forthcoming.

For future generations the contemporary experience of developing countries will prove to be unique in at least one essential respect; namely, that the modernization of traditional agriculture is inseparable from the domestic industrialization process or from the importation of modern technology from abroad and its assimilation. This historical vision points to the need of a new emphasis in research; namely, the necessity of an intersectoral approach—which is illustrated by the "contact" approach to agricultural modernization. What we need to work towards is a more precise anatomy of the transition to economic maturity—possibly differing by type of society²⁰—in terms of a sufficient explanation of an ideal sequential order of events—as well as in the logical necessity of that sequential order.

²⁰ Space constraints do not permit us to say more about the "typological" lessons of history.