The Theory of the Growth of the Capitalist Economy*

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I
The process of capital accumulation under different conditions of technical change, population growth, and capital formation has been the subject of intensive investigation in recent literature. The various models of economic growth differ sharply in terms of the specification of the determinants of investment, wages, and profits and the characteristics of technical change, but nearly all of them exhibit one important common characteristic. The steady-state conditions of these models are almost invariably interpreted in a purely quantitative manner without consideration of the possibility that quantitatively distinct patterns of growth may reflect qualitative changes in the structural relations which underlie the growth process. What this type of analysis fails to account for are the changes in economic institutions which are necessarily connected to and implied by the extensive growth of the economy. The structure of the fundamental units of production (units of capital or firms), the character of the market and competition, the forms of technical change, and the mechanisms of investment and capital movement all change with the growth of the economy. The theory of economic growth needs to go beyond the specification of the movement of economic magnitudes in order to establish the organic connections between economic growth and the development of the economic structure as a whole.

There are, of course, exceptions to the typical preoccupation of modern economics with the problem of quantitative expansion. The neo-Keynesian theory of growth of Joan Robinson is, in many important respects, similar to that presented here. Robinson's theory incorporates

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the idea that a given economy can display differing patterns of accumulation depending on the “animal spirits” of entrepreneurs, the expansion of the labor force, conditions of technical change, and so on. The fundamental principle of the accumulation process as a whole is the interaction of investment and profits (an idea which originates with Kalecki). This will also be a central mechanism in our treatment of the growth process for which the expansion of demand is seen as the other side of the expansion of capital. The differing forms of growth in the Robinson model are not, however, stages of growth. They are alternatives and possess no organic connections and no necessary order and internal relation. In other words, it might be said that Robinson has failed to order her model and as a result presents the analysis of growth more in the form of a typology than a theory of economic development.

On one level the reason for this is the ad hoc manner in which the conditions of competition, the structure of the market, the growth of firms, and the process of technical change are integrated into the overall conception of the accumulation of capital. Technical change is not connected to any systematic pattern or “bias” which would have implications for the growth process. The structure of the market, insofar as it is seen to shift at all over time, shifts in an essentially quantitative manner and does not change its fundamental character. The “gross margin” may change, but, insofar as this expresses a tendency toward concentration of capital, it has a purely quantitative character and does not distinguish stages of accumulation.

Technical change is integrated more coherently into the growth process in Nicholas Kaldor’s theory of accumulation. Kaldor explicitly divides the process of growth into two distinct stages which differ in terms of the specification of the conditions of technical change. In the first, which is analogous in certain respects to that treated below under the heading “Primitive Accumulation,” accumulation takes place without technical change and therefore under the restraint of a fixed minimum of the wage rate. In the second stage, accumulation implies technical change and increase in the capital-labor ratio (expressed through the “technical progress function”). In this case the minimum of the wage ceases to be operative, and the rate of profit along with the real wage emerge as functions of the rate of investment and of the character of technical progress. The rate of profit is directly a function of the rate of investment, and the wage is forced to adjust in order to allow for investment at the desired rate. The level of wages and the gross margin cease to confine the movement of the rate of profit because Kaldor does not explicitly take into account the process of concentration of capital—which process, as I will show, places an additional limitation on the profit margin of the firm. As a

result of this additional restraint, accumulation with technical change will divide into two different periods depending on the conditions of competition and the growth of the firm.

Insofar as the conditions of competition are introduced into the neo-Keynesian theories, they are taken to be given much in the manner in which Kalecki originally took the degree of monopoly to be an expression for the structure of the market, but an expression which did not reveal any determinate law of development.\(^4\) Joseph Steindl, on the other hand, has presented a theory of accumulation which explicitly incorporates the process of absolute concentration and with it the structural distinction between the period of absolute concentration and that of monopoly capital. My discussion of accumulation takes Steindl's theory as its starting point and attempts to place that theory in a general framework which presents the growth of the capitalist economy as a whole and makes explicit the distinct epochs into which it divides, while isolating the principle of development from one to the other.\(^5\) The significance of Marx's notion of primitive accumulation emerges within this framework, and the relation of the former to the subsequent stages of accumulation is indicated. Marx places special emphasis on viewing the theory of economic growth as a theory of economic development—a theory which considers qualitative as well as quantitative changes in economic relations. The theory presented here considers the growth process in the manner suggested by Marx while integrating certain critical insights of modern economic theory into the general theory of capitalist development first put forward by him.

II

In order to investigate the connection between structural change and economic growth, it is first necessary to reconsider the time dimension of economic theory. Taking into account that this theory aims at an overview of the entire process of capitalist development, it is necessary that its period of reference be somewhat distinct from that typical of theories of economic growth. My period of reference differs not only from the short period of the study of dynamic processes but also from the long run of many contemporary models of economic growth. It is distinct in that it conceives of the entire period of capitalist development as a whole and attempts to distinguish within its development the crucial periods or epochs into which it necessarily divides. The theory is, therefore, "historical"—not in the sense that it conceives of disequilibrium situations,\(^6\) but in the


\(^6\) The conception of "historical time" as a time during which the economy may get out of equilibrium is to be found, for example, in Joan Robinson's essay on "Logical and Historical Time," in *Essays in the Theory of Economic Growth*. 49
Economic Development and Cultural Change

sense that it grasps not only the quantitative growth of the system but also its qualitative development over time. The historically distinct periods within the development of the capitalist economy are defined theoretically by the form which the growth process takes—by the tendencies which dominate that process. In particular, the quantitative growth of the economy runs up against impediments which arise out of the historically given structure of the economic relations of the different periods. The stages of economic growth are defined by these impediments and therefore by these structural relations. It is, furthermore, the pressure of the growth process itself which breaks apart these barriers, thereby establishing the expansion of the economy on a new basis.

The very breadth of the analysis in this respect requires a narrowing of the focus of analysis to certain critical problems. This is especially the case in a short outline such as is presented here. It is not to be supposed that the assumptions of the analysis are innocent. On the contrary, they have been intentionally designed to bring out the theory in the sharpest possible manner. The forms of growth described here cannot be directly compared with the actual experience of any given country. This is simply a starting point which may subsequently be elaborated to take into account the manifold aspects of the growth process as a whole.

The analysis of growth will be constrained to operate within the following set of restrictive assumptions. The economy is presumed to be isolated from the possibility of international economic relations. Similarly, abstraction is made from the domestic economic activities of governments. Capital is assumed to be privately owned, and decisions as to its growth are assumed to be made within the individual units of capital. Workers consume all of their wages, while capitalists invest a given proportion of their profits toward the expansion of their capital. The expansion of capital is taken to be self-sustaining in the sense that the goal of expansion is expansion itself. That is, capital is invested primarily for the sake of expansion and not for the purpose of consumption in the future. Formally, \( A = a(R/K) \), where \( A \) is the rate of expansion of the total capital stock, \( a \) the proportion of profits accumulated, \( R \) the total value of profits, and \( K \) the value of the total capital stock. Letting \( Y \) equal the value of output net of depreciation, \( w \) the money-wage rate, and \( L \) total employment, then

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A = a \left( \frac{Y - wL}{K} \right)
\]

\[
= a \left( \frac{Y - w}{K} \right)
\]

\footnote{It is assumed throughout that labor can be taken to be homogeneous and the wage uniform. This does not imply that different kinds of labor do not exist but only that it is possible to reduce these differences to a homogeneous quantity by measuring them along a common dimension. Treatment of the problems involved in this reduction would take us far beyond the limited scope of this essay.}
where $y = Y/L$ and $k = K/L$. Thus,

$$A = aw \left( \frac{e-1}{k} \right)$$

where $e = y/w$.

The process of growth is expressed quantitatively through the money wage, the capital-to-labor ratio ($k$), and the "gross margin" ($e$) where firms are assumed to invest a given proportion of profits.  

III

Capitalist development may be seen to divide into three stages, each of which is defined by the process which dominates it and specifically by the barrier to accumulation which is peculiar to it. The first stage is that of "primitive accumulation." This is the period of accumulation without technical change. It is defined by Marx as that period of accumulation during which "capital subordinates labor on the basis of the technical conditions in which it historically finds it," and is similarly characterized by Kaldor, who also argues that this is the period for which, as a result of the conditions of technology, the Marxian model of accumulation might in fact be appropriate. In this period the expansion of capital is limited above all by its narrow technical basis and therefore by the irreducible minimum of the real wage—which minimum implies an effective maximum to the gross margin and the rate of accumulation. The second period is that of the "absolute concentration" of capital, where this is defined as synonymous with the increasing concentration of larger and larger amounts of capital into the hands of fewer and fewer units of capital in each major industry. For reasons to be considered briefly below, the progress of technology during this period tends to increase the capital-to-labor ratio and with it the minimum feasible size of firms. Restraints on the growth of capital in this period are associated with the necessity for price competition over shrinking markets in the downswing of the business cycle and the resulting contraction of profit margins. The final stage of capitalist development considered here is that of "monopoly capital." In this period absolute concentration is no longer the dominant force, and therefore price competition no longer acts as the mechanism for determining the relationship of money wages to prices (the gross margin). The gross margin has a tendency (and it may be no more than a tendency) to increase, with the result that capital tends to expand more rapidly than its market. Such a tendency exists throughout the development of capitalism, but only in the period of

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8 See Robinson, "The Theory of Value Reconsidered," *Australian Economic Papers* 8 (1969): 13–19. This notion, as well as that of the "degree of monopoly," may also be compared with Marx's concept of the "rate of surplus-value."


Economic Development and Cultural Change

monopoly capital does it express directly the dominant barrier intrinsic to the accumulation process.

Primitive Accumulation
Accumulation of capital without the continual process of technical change represents the expansion of capital on a precapitalist or noncapitalist technical and social foundation. It is, therefore, capitalist accumulation outside the firm basis of capitalist production—in other words, "primitive" or "prior" accumulation. Primitive accumulation points to the origins of capitalism as the latter emerges out of opposing social and economic formations. It is at this point in the analysis of the growth process that it is necessary to deal concretely with the original establishment of the social foundations for capitalist production and for the ongoing process of capital accumulation. It might be said that this is the period during which capital takes control of the production process—when that process comes under the control of a class of independent entrepreneurs. To the extent that the accumulation process is a process of emergence of capitalist relations, it is necessary to take into account the coexistence of distinct forms of economic organization and to relax the assumption that the capitalist economy grows in isolation.

Accumulation takes place with a relatively stagnant technology because the individual firm must first attain a certain minimum size (in terms of value of invested capital) before it can establish itself on a sound technical footing. Primitive accumulation is, therefore, synonymous with the concentration of capital into increasingly larger units. The key barrier to this increase in size is a market limited by the coexistence of precapitalist production. This limitation is also expressed through a constraint on the supply of labor.

With no technical change, the expansion of the capitalist economy is constrained by the rate of growth of the labor force. Since the wage is assumed to be at an effective minimum while technology is assumed to be inflexible, the rate of growth of employment is proportional to the rate of growth of capital (given the length of the working day), which is limited in this way by the supply of labor and its rate of increase. This constraint is, of course, operative throughout the course of capitalist development, but it is only during the period of primitive accumulation that it acts to dominate that process and define its essential barrier. In this period it is not only correct to argue, as the classical economists do, that "accumulation of capital is increase of the proletariat," but it is further correct to


12 This is the manner in which Marx characterizes the classical theory of accumulation (Capital, I:614).
say that accumulation of capital and the creation of a working class are, over the period as a whole, synonymous. The period of primitive accumulation is the period par excellence of the classical theory of accumulation. The "wages fund" idea directly links the growth of capital with the growth of the demand for labor, in that capital is seen not predominantly as value invested in means of production but as value advanced, in the form of the wage, to the employment of labor. This conception of capital reflects not only the close link between accumulation and employment but equally the primitive level of the development of technology that has not yet produced the kind of machinery which requires that larger and larger proportions of the capital of the firm be locked up in means of production.

Limits to the growth of the labor force act to restrain accumulation in two ways. First, they limit directly the growth of consumption and therefore of the market. The demand for commodities in the capitalist sector of the economy finds its first limitation in the increasing number of individuals dependent on capitalist production for their basic necessities. To be sure, this is not the only source of demand, but it does represent a fundamental limitation to the expansion of the market. This limitation is analogous to that which exists in regions containing large sectors of subsistence production and low overall levels of consumption. The coexistence, and even predominance, of a sector of subsistence production—as, for example, in the Lewis model—while it creates the possibility of expansion as regards the potential supply of labor, also stands as an impediment to expansion viewed in terms of the growth of the market or in terms of those institutional restraints on the transfer of labor ("surplus" labor) which are intrinsic to the social structure of the subsistence sector.

If the transfer of labor to the capitalist sector is considered not from the point of view of simply the attraction of labor but also from that of the driving of labor out of the subsistence sector, then the expansion of the supply of labor becomes a function of the expansion of the capitalist sector itself and is, in the period of primitive accumulation, synonymous with that expansion. Existing limitations to the accumulation process are overcome through the invasion of noncapitalist sectors of the economy by capitalist production and the setting loose of the labor force in those sectors for employment in capitalist production. In this sense, the supply of labor is itself a function of the accumulation of capital. The growth of the capitalist sector challenges coexisting, precapitalist petty-commodity forms of production. Insofar as capitalist production is intrinsically more efficient than precapitalist artisan production, the small independent producers are driven out of production and are thereby transformed into

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12 See Dobb.
14 It is for this reason that Marx emphasizes the enclosure movement in England in his discussion of capitalist expansion (*Capital*, vol. 1, pt. 8).
Economic Development and Cultural Change

producers dependent on others for employment. They constitute a source of labor which is at once driven out of independent production by the expansion of capital and reappropriated by capital in the capacity of wage labor. To the degree that such independent producers are able to remain in production despite competition from the emerging capitalist sector, they act as a barrier to the expansion of capital. Labor is locked up in the petty-production sector, and access to labor on the part of capitalist producers is restricted. Similarly, part of the potential demand for the products of the capitalist sector is diverted to those of the noncapitalist sector.

The ability of the capitalist form of production to drive out independent commodity producers and transform independent artisans into wage-laborers is determined by the extent of the cost advantages enjoyed by producers in the capitalist sector. The latter is fundamentally distinguished by the fact that numbers of workers are hired by an individual capitalist who owns the means of production and is able to concentrate large amounts of labor into one unit of production, thereby gaining the benefits of the processes termed by Marx “cooperation” and “division of labor.” The former entails the merging, in spatial terms, of a number of different elements of the production process previously carried on in relative isolation. The latter process, made famous by Adam Smith, involves the division of a given production process into its constituent parts, with an associated increase in efficiency. Neither of these processes necessarily involves any major change in the technique itself, in the nature of the fixed capital invested in machinery. These forms of the modification of technology involve a change in the application of a given technique rather than the revolutionizing of the capital stock itself and are therefore limited in their effects. Nonetheless, cooperation and division of labor are crucial in the process of concentrating capital into the hands of individual firms in sufficient magnitude to finally break out of the narrow confines of this stage of growth. The possibility of a wholly new technical basis of production is opened up by the accumulation of capital into increasingly larger units.\(^{16}\)

The growing command on the part of the individual entrepreneur over capital and the continual increase in the size of his investment are critical to the process of primitive accumulation as a whole. The development of cooperation on the part of larger and larger numbers of workers within a given establishment implies a growing command on the part of the owner of the establishment over capital, not only over raw materials

\(^{16}\) It is unnecessary to invoke shortages of labor as an explanation for the growing importance of technical change in the accumulation process. The process of expansion of capital contains within it the stimulus to technological innovation. For the unit of capital, innovation becomes an additional mechanism for increasing its rate of profit and rate of expansion. The critical question is not the necessity of innovation due to labor shortage but the growth of the preconditions for technical change which are bound up with the concentration of capital.
and facilities for production, but also over a wages fund for the hiring of workers. The growth of division of labor increases the amount of means of production as well as the number of workers concentrated within the individual unit of production. The capital of the individual firm tends to expand. This, in association with the natural growth process of the unit of capital, results in increasing command over finance on the part of entrepreneurs, which opens up the possibility of the introduction of more and more capital-intensive methods of production involving increasingly greater investments in fixed capital. In this sense, the increasing growth of the individual unit of capital during the period as a whole, which is tied to cooperation and division of labor, sets the foundation for the transition to accumulation on the basis of modern technology and continually changing methods of production.

Up to this point, primitive accumulation has been considered in terms of the expansion of the individual unit of production. The growth of the latter has been considered to be synonymous with the growth of capital. But the very limitation on the expansion of the unit of production implied by the competition of noncapitalist producers restricts the scope of operations of capital invested in the sphere of production. As a result, a considerable, and, up to a point, predominant, part of the total capital comes to be invested in trade rather than production. Enormous concentrations of capital which are not possible in production are possible in the form of merchant capital.¹⁷ Capital invested in trade is not restricted either to fixed lines of production or to a geographically limited market. The growth of merchant capital is not limited by the home market but only by a world market which is the product of the activities of the merchants themselves. The growth of merchant capital is also stimulated by the uncertain profitability of investments in production. The effective minimum of the wage does not function to restrict the gains from trade in the international market any more than the limitation of the supply of labor restricts the growth of merchant capital. Capitalist producers find themselves squeezed between the restriction of markets on one side, which is the result of low levels of wages and small concentrations of demand, and the necessity of keeping wages low on the other, which is required for the preservation of profit margins. While the preservation of margins requires low wages, those low wages limit the expansion of demand. By contrast, merchant capital is indifferent to both sides of this problem.

Primitive accumulation is, therefore, distinguished by two radically different processes, both of which have as their eventual outcome the concentration of capital. One is the gradual accumulation of capital within individual units of production, the other the concentration of capital into

¹⁷ See E. Williams, *Capitalism and Slavery* (New York: Capricorn Books, 1966), for a discussion of the role of the “triangular trade” in the growth of capitalism and especially in the process of concentration of capital.
Economic Development and Cultural Change

the hands of merchants. The special importance attributed to the first process is justified by the special role it plays in the destruction of pre-capitalist forms of production and in the dispossession of the independent producer. The growth of the "labor supply" which results from this development is critical to the establishment of capitalist production and to the growing domination of the accumulation of capital within the economic process as a whole.

With the productivity of labor relatively stagnant, the movement of the profit rate is limited by the subsistence level of the real wage. The rate of profit may expand, even with the given real wage, as a result of three related factors. First, it is possible to increase the gross margin and with it both the rate of profit and the rate of accumulation by increasing the amount of labor expended in a given period of time at a given wage—for example, by lengthening the working day. Second, insofar as cooperation and division of labor increase the productivity of labor and reduce unit costs and prices, it becomes possible for the money wage to fall and the gross margin to increase. Finally, cooperation and division of labor may also have the effect of altering the structure of the labor force, eliminating skilled labor by narrowing the scope of the individual facets of the work process. This reduction of skill can be translated into the homogenization of the labor force, the introduction of women and children, and the limitation of the expenses involved in training individual workers. As a result, wage costs per unit of labor tend to decline.

The determination of the relation of money wages to prices poses certain peculiar problems in this period. These problems are associated with the primitive level of development of the forces of competition and the competitive conditions in the market. On one side, it might be argued that a lack of significant barriers to entry, which is a result of the low level of development of technology, would facilitate the operation of the forces of competition and the adjustment of market price to change in costs. On the other side, however, this very primitiveness of market structures involves institutional barriers to the operation of supply and demand. These barriers are the product of the immaturity of capitalist development insofar as they reflect either legal impediments to competition or restrictions on the supply of labor as indicated earlier. Wage movements are therefore subject to historically specific factors and appear to be theoretically problematic.

On the other hand, if abstraction is made from these institutional barriers and attention is restricted to the purely economic factors, an argument such as the following might make sense. From the point of view of the firm, the period of primitive accumulation is marked by the fiercest

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16 This twofold nature of primitive accumulation was first noted by Marx in his discussion of the "two paths" to capitalism (Capital, vol. 3, chap. 20). This discussion is continued in Dobb and, on a somewhat different plane, by Max Weber in The Protestant Ethic and Spirit of Capitalism (New York: Charles Scribner's Sons, 1958).
form of competition, resulting from the lack of protection from competitive pressures, which will later arise as a corollary of increasing minimum capital requirements and the development of habitual behavior on the part of consumers (e.g., the development of brand names). Thus, from the point of view of the firm, the market may appear to be very close to the conditions of "perfect competition." Both the profit margin and the price of output are wholly outside the control of the individual producer and are subject to determination through the interaction of supply and demand in the market. Standing behind supply and demand, and therefore behind the determination of price as regards the long-run process of accumulation as a whole, are the conditions of productivity. The equilibrium level of prices may be expected to move with movements of productivity. Shifts in the money wage level will not, in general, be directly translated into changes of price.

In periods when the rate of accumulation is high, the money wage may increase as a result of pressure on the labor supply. High rates of accumulation during the period of primitive accumulation are the result not of changes in the gross margin or capital-labor ratio but of changes in the proportion of profits invested (a). Such changes reflect historically given conditions of the economy including the development of the market, changes in the supply of labor, the state of agriculture, political conditions, etc. The increase in the money wage will imply an increase in the real wage insofar as the increased demand for consumption goods resulting from the rise in the money wage can be met either without an increase in price or with an increase in price that does not wholly offset the rise in the money wage rate. Since it is not within the power of the firm to raise its price in response to the change in wage costs, unless the increase in demand cannot be met at all (i.e., the supply is fixed) or cannot be met at the original price (decreasing returns set in), the rise in the money wage, whether it increases the real wage or not, will depress the rate of profit. Only where the supply is fixed at any price does the rise in the money wage have no effect on the gross margin. Leaving aside the possibility of a rigidly fixed supply of consumption goods, the increase in the money wage will, through its effect on the gross margin, choke off the expansion of capital. This, by reducing the demand for labor (or its rate of increase), will depress the money wage back to its original, subsistence level.

Where the rate of expansion of capital is low relative to the rate of increase of the labor force, it is reasonable to assume that the conditions of primitive accumulation are also those of accumulation with an adequate, if not "unlimited," supply of labor. In other words, when the rate of accumulation is great, the supply of labor is its imminent barrier and therefore represents the upper limit to the rate of expansion of capital. This upper limit is enforced through the interaction between the wage rate and the rate of investment which assures that the real wage does not rise above the subsistence level for any extended period. On the other hand, as long
Economic Development and Cultural Change

as accumulation takes place within this limit, the conditions approximate to growth with unlimited supplies of labor and the oversupply of labor forces the real wage down to the level of subsistence. This is essentially the view taken by Adam Smith of the determination of the wage.19

In summary, during the period of primitive accumulation the money wage is governed by the subsistence level of the real wage and by the productivity of labor. The former is governed by cultural and historical conditions and the latter by the technology and the processes of cooperation and division of labor. Technology, in general, is relatively stagnant during this period compared with subsequent periods of growth. The money wage and real wage are adjusted through more or less "perfect" competition in the determination of market price. The money wage and the gross margin may alter only to the degree that adjustments take place in the length of the working day, the productivity of labor, and the level of skills required by the work force.

Absolute Concentration

Each stage in the development of capitalist production must be understood as a transitional stage. Primitive accumulation is defined as a process of transition to, or creation of, capitalist production and of accumulation on a thoroughgoing capitalist basis. This is accomplished through the increasing concentration of capital into larger units which form the basis of the important technical innovations that identify the process of industrialization and what Marx calls "Modern Industry." This increasing concentration is itself a product of accumulation in this period and can be said to create the conditions for growth on a new basis. Similarly, the subsequent period of absolute concentration is a period of transition to what will be termed monopoly capital. There is, therefore, no stage of "competitive capitalism" which disappears, as if by magic, in order to give way to the epoch of large-scale production. This is not to say that analyses of competitive economies are irrelevant. On the contrary, there are elements of what is known as competition existing throughout the development of capitalism, and their analysis is important at various points in the discussion. On the other hand, they do not in and of themselves constitute an adequate description of any given period in the growth of the capitalist economy. Rather than refer to a period of "competitive capitalism," it seems preferable to consider a period defined as the genesis of large-scale production. This has the advantage of incorporating a dynamic element into the definition of the economic process of this period. The concept of "absolute concentration" is designed to grasp this process as a whole—as a process of increase in the size of individual capitals and simultaneously of the concentration of production into the hands of a small number of firms.

19 Adam Smith, The Wealth of Nations (New York: Modern Library, Inc., 1937), chap. 8, as well as Lewis.
Critical to the specification of this process on the most general level is the pace and form of technical change. The pace of technical change will be taken, in a general sense, to be a function of the rate of accumulation.\(^{20}\) This is not only because of the connection between accumulation and the formation of fixed capital but also because of the relation between the pace of accumulation and the "dynamism" of the economy. The more rapid is accumulation, the more dynamic the economy as a whole will be. In regard to the form of technical change, the analysis runs up against more difficult problems. It will be assumed for purposes of this analysis that the effect of technical change is to increase the ratio of capital to labor as long as the period is considered as a whole. This assumption is also found in Kaldor's theory of growth as well as in the theories of the classical economists and Marx.\(^{21}\) Not only is there some measure of empirical justification for this assumption,\(^{22}\) but it also appears to be theoretically, if not indisputable, at least not unreasonable. In particular, if technical change during the period of the industrial revolution is associated with the mechanization of production, with mechanical improvement on the application of unassisted labor, then the rise in the ratio of capital to labor is simply another expression for this process. Certainly this is not the entire story of technical progress, but it can be isolated as a crucial, and in certain periods dominant, element in that story.\(^{23}\)

The importance of the rise in the capital-labor ratio derives from the tendency which it implies for the size of firms to increase over time. Since new and advanced technique is associated with large investments of fixed capital, it will also be associated with increases in the minimum size of the firm.\(^{24}\) This may be defined as one element of large-scale economies, whose introduction is crucial to the theory of economic growth. The undeniable evidence for such economies\(^{25}\) is only recently being


\(^{21}\) Kaldor and Mirrless; see also Ricardo on machinery in *Works and Correspondence of David Ricardo*, ed. P. Strulff (Cambridge: Cambridge University Press, 1951), vol. 1, *Principles of Political Economy and Taxation*, chap. 21. This point is considered in chap. 2 of Levine.


Economic Development and Cultural Change

incorporated into economic theory—especially the theory of economic growth.26

It is worth remarking in this connection that the existence of large-scale economies is not exclusively tied to investment of fixed capital or to indivisibilities in the usual sense. While the latter is an important source of large-scale economies and ties those economies directly to increases in the capital-labor ratio, there are processes of technical change which favor larger firms without expanding the share of fixed capital in total investment. Cooperation and division of labor, processes already considered in the discussion of primitive accumulation, continue to operate in the period of absolute concentration and contribute to that process.

Economies of large-scale production are important, first of all, for the treatment of the competitive process. The fundamental theorem of the analysis of technical change is that absolute concentration and competition are two aspects of one process. Where there is price competition there will also be absolute concentration operating as the underlying rationale of the competitive process.

Competition, in this model, works itself out in the following manner.27 Assuming that the process of technical change within an industry is well under way, the industry will consist of a hierarchy of firms determined by differentials of cost. These differentials are functions of size differentials which, in turn, may be associated with differentials in the modernization of equipment. The latter is a crucial element. The smallest firms and the marginal firms are so because they have not installed (or could not install as a result of limited access to capital) the most modern technique which results in lower unit costs but involves greater capital investment. Price competition will take place insofar as the lowest-cost firms choose to translate cost differentials into lower prices. In order to drive out the higher-cost firms, it is necessary for the larger firms to drive the price down to, or even below, the level of costs of those firms. This process of price reduction can be seen, from the other side, as a process by which productivity increases are translated into falling prices. The difference in costs between large and small firms reflects the increase in productivity represented by the larger firms vis-à-vis the less advanced marginal firms. This is not to say that there can be no instance for which the smaller firm embodies the more advanced technique but, rather, that over the course of the development process advances in technique will be associated with increases in size. The hierarchy of firms defined by differentials of costs is


27 This discussion is adapted from Steindl, Maturity and Stagnation in American Capitalism, chap. 5, pt. A; see also P. Sylow-Labini, Oligopoly and Technical Progress (Cambridge, Mass.: Harvard University Press, 1969), pp. 33–57.
an alternative expression for technical change. Price competition implies both an increase in the minimum size of firms and a concentration of capital in the hands of a few large firms along with a tendency for prices to fall more or less in step with changes in productivity.

Increases in the minimum feasible size of capital imply a change in the size distribution of firms in favor of the concentration of capital in the hands of a few large firms insofar as access to finance is limited, and the more limited, the larger the amount of capital required. The financial aspects of the concentration of capital are, of course, of great importance, although they cannot be considered here. Some limitation on the availability of capital is intrinsic to the very idea of capitalist production and goes, in Kalecki’s words, “to the very heart of the capitalist system.” In order to invest in capital, it is first necessary to possess capital, and the more sizable the investment, the greater the amount of capital the entrepreneur must have in his hands (or have access to). This is the corollary of the fact that in order to borrow capital one must first own capital, and the more one wishes to borrow the more one must own in the first place. Differential access to capital on the part of units of capital of different sizes (and the associated structure of interest rates) is not so much an expression of the failure of competition (as would be implied by the idea of “imperfect” capital markets) as it is the expression of the specific character of the competitive process. Lower costs of capital represent economies of large-scale production with a rational foundation in the greater staying power and the intrinsic cost advantages of large-scale producers.

Under what conditions will the differentiation of costs of firms result in price competition? There are two key conditions. The first is the desire of the larger firms to increase their share of the market. That is, the larger firms will engage in price competition insofar as they need to grow at the expense of the smaller, higher-cost firms. They will cut into the market of these firms through price competition. The second condition is that marginal firms exist whose costs are high enough relative to the largest firms that it is possible for them to be eliminated from the market by price competition.

As long as technical change is going on without a decline in the level of prices, or at least without a commensurate decline in the level of prices, and as long as the money wage is not increasing in step with productivity, the gross margin will rise. As long as this rise is not wholly counteracted by an increase in the capital-labor ratio, the rate of accumulation will increase. Resulting high rates of growth are not without limitations. In particular, the supply of labor, the productivity of the capital-goods sector, and the relatively slower rate of growth of demand for consumption goods resulting from the less rapid increase of the real wage, which is the implication of the failure of prices to fall, all create bottlenecks and barriers to

28 Kalecki, p. 94.
Economic Development and Cultural Change

the expansion of capital.29 Such expansion without regard to the narrow limitations on which it is based must eventually exhaust itself. However, as long as the market expands as rapidly as the largest firms themselves, the latter will feel little or no compulsion to grow at the expense of other firms in the industry. Price cutting is doubly undesirable under these circumstances, since the high gross margins which result from the lag in the adjustment of prices to productivity are precisely the source of financing high rates of expansion in the boom. All of this means that the internal growth of the capital of the firm is limited not by the growth of sales but by the amount of profit available for investment in the expansion of capacity.

Once this expansion approaches its imminent barrier, further expansion of firms must involve expansion at the cost of the marginal firms. Price competition sets in as the big firms devour the markets of the smaller. It follows that as long as marginal firms remain in any given industry, periods of rapid growth and rising gross margins will give way to periods of depression. Certain periods in the growth of any industry and of the economy as a whole will be characterized by a growth of the market inadequate to the expansion of the firms within it and, therefore, by the concentration of capital into the hands of the larger firms. As long as there are marginal firms, the processes of competition, technical change, and absolute concentration will take place. The ultimate result of these processes must be the elimination of the condition on which they are based—the marginal, high-cost firms.

This is not to deny the possibility of the continued existence of small, high-cost producers, even into the period of monopoly capital. What is critical is not the continued existence of small firms but the continued existence of firms that are marginal in the specific sense of producing with relatively high cost and also entering directly into competition with the most progressive firms. Only where the quantitative difference in size does not also make for a qualitative difference in function do the smaller firms serve in the marginal capacity as units of production systematically eliminated by competition, whose elimination is the underlying purpose for the competitive process. The elimination of the marginal firm in this sense does not imply the elimination of a size distribution of firms, which within a given industry, associates firms of large with those of small relative capital investment. In this case, the small firms are not predominantly units which compete with the large but units that engage in auxiliary functions, such as absorbing fluctuations in demand, undertaking risky investment in new products, or accepting contracts for production from the large and dominant producers.

While the foregoing discussion does not constitute a comprehensive basis for a theory of distribution, it does have certain implications for the

29 See Robinson, The Accumulation of Capital, pp. 198-212.
movement of wages and the rate of profit. The long-run implication of the rise in the capital-labor ratio, barring a rise in the gross margin or fall in the money wage, would be a fall in the rate of profit. During those periods when the market is expanding rapidly and the gross margin is high and increasing as a result of the disparity between price movements and movements of productivity, the rise in the capital-labor ratio (which results from technical innovation) will be offset in its effect on the rate of profit. When price competition sets in, however, the gross margin tends to contract with the fall in prices. The downward trend of prices (which is characteristic of the period taken as a whole) results from absolute concentration, which is itself a product of the capital-intensive nature of new technique. With prices falling with productivity and the capital-labor ratio rising, there will be, barring a fall in the money wage rate, a decline in the rate of profit.

Before turning directly to the question of the movement of the money wage, it is necessary to clarify the notion of an average rate of profit. Given that the differentiation of profit rates within industries is central to the argument, this average rate of profit may appear to have lost its relevance to the theory of the competitive economy. The reason for this is that thus far competition has been considered only as it occurs within a given industry. As long as barriers to entry do not preclude the formation of new capitals, however, competition in the form of the entry of new firms must also be taken into account. Where markets are expanding rapidly, gross margins, rates of profit, and rates of growth of firms are high. Those firms in the most dynamic markets (dynamic both technically and in terms of market expansion) will also have the highest rates of profit and will, therefore, be the most likely victims of competition from outside, from new firms. It has been assumed up to this point that, during periods of rapid expansion, price remains relatively constant while gross margins increase with technical change. This result is not invalidated by the possibility of entry but only modified to the extent that the high rate of expansion of markets means expansion in the number of firms as well as in the size of the originally existing firms. In this case price competition can occur, to one extent or another, even in the boom. This is the sense, then, that should be attached to the notion of an average or normal rate of profit. Entry into the most dynamic sectors of industry tends to offset the tendency in those sectors toward excessively high profit rates.

During the period of rapid market expansion, competition takes the form of the entry of new firms. During periods of recession, competition takes the form of the expulsion of marginal firms. In the former periods

30 It should be borne in mind that the tendency for the capital-labor ratio to increase has been deduced only for the individual industry and not directly for the economy as a whole. Only under certain conditions will a rise in the capital-labor ratios of the separate industries and firms express itself in an overall rise in the aggregate ratio of capital to labor. This aspect of the problem cannot be considered here.
competition is, in a sense, external to the industry, while in the latter periods it is internal.

The fall in the rate of profit during periods of internal competition is not simply a cyclical phenomenon, since it expresses not only the fall in the gross margin but also the rise in the capital-labor ratio, which is a secular process. Unless the gross margin expresses a secular tendency to rise, the rise in the capital-labor ratio will imply a fall in the average rate of profit in the long run. This fall in the rate of profit is one aspect of the process of technical change. Whether it will express itself as an actual fall in the rate of profit depends on other processes which occur simultaneously with the rise in the capital-labor ratio. Those processes, which are of special importance, are the following.

1. A fall in the money wage or a decline in prices less than in proportion to the increase in productivity will result in an increase in the gross margin which may offset the effect of the rising capital-labor ratio. Since technical change is taking place, it is possible for the gross margin to increase without impinging on the subsistence minimum of the wage, which is not effective in this period. Whether the gross margin will increase is another question. The gross margin (e) is a function of productivity, prices, and the money wage: \( e = py'/w \), where \( y' \) is an index of output per worker in physical terms and \( p \) is an index of prices. Thus, \( y = py' \). Recalling that this period is marked overall by a falling trend of prices more or less in step with the rise in productivity, the brunt of the pressure to increase the gross margin must be felt by the money wage. This result must be qualified to the extent that the fall of prices may not be in step with the increase in productivity. It is possible to exclude this possibility on the grounds that, in order for the marginal firms to be driven from the market, it is necessary that prices fall in step with productivity (recall that the relatively high costs of marginal firms is an expression for this very change in productivity). It follows that during this period the wage bargain takes on a measure of importance not as the mechanism through which workers can increase their real wage directly but as a mechanism through which workers can increase their real wage by holding the line on the level of money wages in the face of a falling level of prices. The real wage may, therefore, display a rising trend which is more or less proportional to the falling trend of labor costs per unit of output. Assuming that money wages are inflexible downward and that it is difficult to increase the gross margin in the face of a falling level of prices, then the possibility of counteracting the decline in the rate of profit in this way runs up against inherent limitations. These limitations are, first, the necessity to reduce prices in proportion to increasing productivity in order to drive out the marginal firms and therefore

\[31\] This equivalence between a _structure_ of costs and a _process_ of changing productivity may seem paradoxical. The paradox is eliminated, however, once it is realized that the structure of costs is also an age structure—a hierarchy of levels of modernization of equipment—and therefore contains within it a temporal dimension.
expand markets at their expense and, second, the intrinsic difficulties of increasing the gross margin through pressure on the money wage in the labor market. As a result, the rise in the gross margin, which is the immediate effect of the increase in the productivity of labor, first results in an increase in the rate of accumulation (eq. [1]). This in turn gives way to a struggle within industries over markets, a downward trend of prices, and a fall in the gross margin itself which, along with the rise in the capital-labor ratio, implies a fall in the rate of profit and accumulation.

It must be admitted that in this framework the money-wage rate remains theoretically indeterminate. To this extent, the level of real wages is also left with a degree of freedom of movement. This is not to be considered a deficiency of analysis to the extent that the money wage is determined by a bargaining process which is governed by a specific conjuncture of political and economic events. What is required is a historical analysis of the peculiar conditions in specific countries as well as the general analysis of the overall process presented here. The theory of growth does, however, serve the purpose of setting the framework for consideration of the bargaining process by indicating the factors which determine the conditions within which the wage bargain is struck. The rate of accumulation and the conditions of competition determine the conditions of demand in the labor market, the course of movement of prices, the general level of production and employment, and the margin of operation of the units of capital within which the money wage can move without threatening their continued existence.

2. The decline in the overall rate of profit may be offset for the individual firm through the differentiation of profit rates. The increased market power of precisely those firms with higher ratios of capital to labor may be employed to offset the decline in the rate of profit insofar as it allows them to appropriate a more than proportional share in the total profits. This is, of course, exactly what takes place in the interim between the introduction of a new technique and the reduction of prices which eventually follows. Through the concentration of production into the hands of a few large firms—which is the other side of the fall in the rate of profit—those firms remaining are enabled to counteract the fall in their rate of profit through their pricing policy and the protection of their gross margin. The result is that the larger profit margins in association with higher prices which are inflexible downward offset the tendency for the rate of profit to fall insofar as that fall is the result of the rise in the capital-labor ratio associated with the introduction of new technique. Ultimately, it is only through the concentration of capital within an industry that the surviving firms will be able to counteract the fall in the rate of profit by introducing an oligopolistic pricing policy and bolstering their rate of profit not only at the expense of the smaller firms and the nonmonopolized sectors of the economy but also, potentially, at the expense of the share of wages in the net product of industry as a whole.
Economic Development and Cultural Change

There are, of course, a series of additional forces which tend to counteract the fall in the rate of profit but which have been eliminated, by assumption, from this discussion. These include the impact of international economic relations, government spending, and forms of technical change which reduce the ratio of capital to labor—"capital-saving" innovation. In considering the actual movement of the rate of profit and of relative shares, we will naturally have to take each of these factors, and a number of others, into account. It is, on the other hand, a striking result of this analysis that the export of capital is not necessary, in principle, in order to resolve the problem of the fall in the rate of profit. What is crucial, on the most general level, is neither the movement of wages nor the internationalization of capital but the concentration of capital. The fall in the rate of profit is most accurately understood as a result of absolute concentration of capital and takes place only to the extent that the rise in the capital-labor ratio results in the elimination of marginal firms through price competition. Since absolute concentration is synonymous, in the long run, with price competition, if concentration has reached the point where further increases in the capital-labor ratio need not result in absolute concentration, then the rate of profit need not fall.

From the point of view of the concentration of capital, it is precisely the vertical integration of the firm on an international scale that is critical rather than the export of capital or the general possibility of production in areas of low money wages. Vertical integration in the direction of raw-material sources assures access to necessary inputs at minimum cost and thereby accentuates the cost differentials and cost advantages of larger firms. The international expansion of capital accelerates the concentration of capital and the transition to the stage of monopoly capital. The possibility of vertical integration is tied to the access to capital for investment on the part of the firm and may be considered an additional economy of large-scale production which favors the concentration of capital into the hands of a small number of large firms.

The abstract possibility of a rise in the gross margin offsetting the effect of the increase in the capital-labor ratio on the rate of profit must be linked with a specific process within the overall course of capital accumulation which drives up the gross margin. In other words, the accumulation of capital must be seen to express itself in a systematic tendency, over a long period, for the gross margin to expand. The mere fact of technical change, while it creates the possibility of increasing the gross margin, does not in itself counteract the downward pressure on the rate of profit. There must be some economic mechanism which translates rising productivity into a rising gross margin rather than a rising real wage. During the period of absolute concentration, no such mechanism seems to operate, since the process of competition adjusts prices to costs and translates technical change into lower prices. Without a systematic tendency for money wages to fall, the gross margin will not rise and the rate of profit will fall. How-
ever, with the completion of the process of absolute concentration, prices are no longer constrained to fall with costs, so that technical progress expresses itself in a general tendency for the gross margin to increase. The rate of profit ceases to express a falling tendency because of the changing conditions of competition. It is in this sense that the economy counteracts the fall of the rate of profit as a result of the completion of the same process which gives rise to that fall—the process of absolute concentration.

The rate at which absolute concentration progresses may be expected to vary between industries, and certain industries may be expected to serve as "leading sectors" with respect to the process in the economy as a whole. One way of dealing with this problem, in the case of absolute concentration, is by dividing that period into two separate phases. The first is that which we have described in this section as the process of absolute concentration within a given industry. This process is predominantly that of the concentration of capital within the individual industry and is mainly dependent on the characteristics of accumulation and technical change within that industry on one side and the phases of the cycle on the other. But once this process has reached a sufficiently high level of development within a number of major industries, it will lead to larger and larger concentrations of capital within the economy as a whole. This, in turn, makes possible the acceleration of the process of absolute concentration throughout the economy. The leading sectors can provide the stimulus for the reorganization of other industries, accelerating the process of concentration within those industries. The central mechanism for this development is the growth of financial institutions and the associated concentration of capital within the financial sector. Financial resources become available in sufficient concentration to allow banks to force certain sectors into a process of absolute concentration. There is, therefore, a second phase of absolute concentration in which the process of concentration is dominated by the activities of financial institutions and in which the natural development processes of the individual industries are accelerated by the intermediation of finance capital. As a result of this intervention, which continues into the period of monopoly capital, larger and larger sections of industry undergo a process of absolute concentration which is more and more rapid and comprehensive.

Monopoly Capital

The most important result of the joint operation of all of these forces is that the stage of absolute concentration gives way to that of monopoly capital, which it has, in effect, itself created. Once absolute concentration within a given industry has reached a point where the highest-cost firms are able to maintain sufficiently large profit margins that to drive them out of competition (and thereby absorb their markets) would require price reductions of a magnitude that may be considered dangerous even from the point of view of the lowest-cost firms, then the process of the
growth of the industry and of the firms within the industry undergoes a radical alteration. Once this process has taken place within a large proportion of the dominant industries of the economy, the growth process of the economy as a whole also undergoes significant modification. This marks the transition from the period of absolute concentration to that of monopoly capital—in other words, the successful completion of the process of absolute concentration. The distinguishing feature of this last period is that concentration is not essential to the process of the growth of the economy (although it may still occur). The process of competition, concentration, and price reduction is no longer descriptive of the essential dynamic of the economy.

While the capital-labor ratio may still tend to rise in particular cases, this tendency is no longer central to the process of growth. Competitive advantages of large firms extend far beyond those associated with fixed capital requirements. Marketing and sales on a national scale, research and product development, and integration of the firm both with respect to productive inputs and retail outlets (vertical integration) and with respect to the production of related products (horizontal integration) all constitute advantages of large-scale production not directly connected to technical economies or to increases in capital-labor ratios. The growth of forms of competition other than price competition becomes necessary as a result of the changing structure of the market. On the other hand, this very shift in forms of competition (advertising, product development, etc.) tends to exclude the entry of new competitors in that large investments of capital are required in the competitive process itself.

Since it is no longer possible to drive out competitors via price competition, cost differentials due to technical change are no longer directly translated into falling prices. The rise in the capital-labor ratio no longer implies a decline in the rate of profit, since a decline in costs resulting from technical change by not leading to a fall in prices will, if there is no rise in the money wage, result in an increase in the gross margin.32

The premise that the predominant aim of the firm is the expansion of its capital leads to two important conclusions. First, the rate of growth of the firm is determined by the limits which it runs up against in the expansion process, and second, those limits are not internal to the firm but only to the economy as a whole and to the activities of the firms taken together. The growth of the firm finds itself limited, paradoxically, by the tendency for the gross margin to increase. With profit margins rising, the profit

32 The possibility of a secular rise in the gross margin was originally noted by Kalecki although in a purely empirical context (Kalecki, p. 34). Steindl in *Maturity and Stagnation in American Capitalism* presents a theory of accumulation based on a tendency for profit margins to expand. A variant of Steindl's theory is presented by P. Baran and P. Sweezy in *Monopoly Capital* (New York: Monthly Review Press, 1965) under the heading of the tendency for the "economic surplus" to rise. These are related in some ways to the Marxian notion of the production of "relative surplus-value" (compare *Capital*, vol. 1, pt. 4).
available to the firm for expansion tends to increase, and with that increase the expansion of the capital of the firm tends to accelerate. This can be easily seen by referring back to equation (1), from which it is clear that, with the proportion of profit invested, the money wage rate, and the capital-labor ratio unchanged, the rate of accumulation increases with the increase in the gross margin. Firms are only limited in their growth by the rate of growth of the market for the industry as a whole. While shifts in the shares of that market allocated among the competing firms may still occur, the high degree of staying power possessed by the dominant firms limits the operation of that mechanism which earlier allowed firms to expand in the face of a contracting market by driving competitors out of business.

The critical role of market expansion expresses itself in different ways depending on the degree to which firms continue to expand their capacity. In the first instance, there is a tendency for accelerated growth due to rising gross margins. In periods during which the rise in the gross margin is translated into investment, the market as a whole will continue to expand as a direct result of those investment activities. In this case, expansion of the market is simply the other side of the accumulation process, and the market grows in step with the increase in the capacity of the firm. Where new investment involves further reduction of costs, this will lead to a further increase in gross margins and in the rate of accumulation. This aspect of the accumulation process is equivalent to that which characterizes the upswing of the cycle in the stage of absolute concentration.

As we have indicated in the previous section, this process runs up against inherent barriers which limit the degree to which expansion of investment and demand as a whole remain in step with expansion of capacity. Such limits exist in various forms and cannot be considered in detail here. Nonetheless, once they come into operation, the growth of the market will cease to keep up with increases in investment and in the capacity of the firm. Accelerating investment means accelerating the growth of capacity, and any lag in the expansion of demand will reduce the utilization of capacity and act as a brake on investment. The result is the familiar downward spiral of investment, production, capacity utilization, and profit. The fall in rates of utilization depresses the rate of profit by inflating the capital-labor ratio. During the period of absolute concentration it was possible for firms to increase their rates of utilization in the face of a falling overall level of demand by driving out of competition a part of the excess capacity. During the period of monopoly capital, on the other hand, this is no longer an immediate possibility. To be sure, a part of the excess capacity still exists in the form of small firms which do have a tendency to fall out of competition when the market lags, thereby shifting demand in favor of the dominant firms with the greatest staying power. Furthermore, adjustments of demand between the larger firms also take place, and advertising as well as product innovation may be considered mechanisms for rearranging the burden of a slowly growing market. On
Economic Development and Cultural Change

the other hand, if basic market shares are taken to be stable and prices are inflexible downward, increased capacity utilization through elimination of competitors is sharply limited in its effects. As Steindl points out, the overall tendency toward stagnation which accompanied the rise in unemployed capacity (and the resulting contraction of investment) has no internal corrective mechanism as long as the original assumptions concerning government spending and international trade are not relaxed.

The rate of profit appears, under these circumstances, to be a function of the utilization of capacity. The level of utilization depends on whatever rate of investment is going on at the level of the economy as a whole—which rate is not limited but is in fact well below the level at which it would be limited by the gross margin of the firm.

As long as no alternatives exist to the reinvestment of profits within that line of production in which they are generated, the expansion of the firm is limited by the expansion of the industry within which it functions, and the tendency toward stagnation will proceed relatively unimpeded. It is possible, however, for firms to find outlets for retained earnings which either do not increase their productive capacity at all, or at least do not involve new capacity, which competes with already existing investments. Investment in new product development and advertising circumvents the problem of utilization of the existing capacity. Similarly, any investment in lines of production not already saturated by the firm may provide outlets for capital. Vertical integration, especially into marketing and sales, may be seen simultaneously as a use of capital which does not exacerbate the problem of excess capacity and as a possible stimulus to sales which would increase utilization of existing capacity. Conglomerate and vertical integration of the firm into raw-material production and with respect to the invasion of the markets of established firms in foreign countries.

It needs to be emphasized, in connection with each of these outlets for capital investment, that the standard according to which such investment is measured remains its ability to stimulate the growth of the firm as a

39 In this case, the size of the firm is limited by the limitation of demand in the market. In general, this model is consistent with limitations on firm size of two sorts—those having to do with aggregate demand and the growth of the economy as a whole and those having to do with the level of the gross margin. Aside from these limitations, there is no presupposition that the firm cannot continue to expand indefinitely. Over the long run the theory of accumulation is inconsistent with any limit on the growth of the firm (therefore with any long-run optimum size of the firm).
whole. There is no investment for the sake of absorbing excess profit but only investment with the aim of the expansion of the firm. Outlets for profit which do not directly expand the capital of the firm (such as advertising) are still evaluated in terms of their effects on capacity utilization and on the growth of the total capital of the firm.

When the idea of stagnation or "maturity" was first introduced, the most likely corrective mechanism was considered to be technical progress. However, as Steindl emphasizes, technical progress affects more the form of investment than its rate and cannot, in general, be expected to counteract the tendency toward stagnation. There are two possible exceptions to this. Since the problem of stagnation appears to the firm to be one of excess capacity or, alternatively, of an inadequate demand, technical change may stimulate investment only insofar as it either eliminates excess capacity or opens up the prospect of new sources of demand. In the first instance, technical progress accelerates the rate of depreciation of fixed capital by turning usable equipment into obsolete capital and by so doing eliminates a certain amount of excess capacity. The operation of this mechanism is, however, severely restricted by the ability of large corporations to continue production with obsolete equipment until it becomes possible to replace such equipment with new techniques introduced at a point when the old machinery is used up and financed out of the depreciation fund of that machinery. The impact on net investment will be negligible or nonexistent. The impact of technical change in the production process on existing capacity is therefore largely eliminated.

The introduction of new consumer goods, on the other hand, circumvents, to a greater or lesser degree (depending on how radical a shift in the production process is required for the production of the new commodities), the problem of the utilization of existing capacity. From the point of view of the firm, the introduction of a new product opens up the possibilities of exploiting previously untouched markets and may stimulate the overall rate of growth of the firm. The impact of this on the rate of accumulation of the economy as a whole is another matter. Only if such innovation on the part of individual firms is sufficiently widespread, or widespread in its effects, can it increase the overall rate of growth of the economy. Otherwise, expectations of innovating firms will either prove illusory (as regards the existence of new markets) or will be fulfilled at the expense of other firms without thereby affecting the conditions of accumulation in the economy as a whole. On the other hand, if the innovation is a sufficiently major one—one which has the potential of altering the entire structure of the capital stock of the economy, involving substantial investments of

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Economic Development and Cultural Change
capital of different kinds and at varying levels of production—then it has
the potential to stimulate the overall level of investment. In this case the
profit expectations of the innovating firms are fulfilled as a result of the
overall impact of the innovations themselves.

It is perhaps worth mentioning that the possibility of extending a
period of relative prosperity through such a mechanism is considerably
greater than the possibility of moving from a state of depression to one of
steady growth. The reason for this is that such an innovation, by its
nature, involves a substantial investment in new equipment. Since, from
the point of view of the firm, an innovation which appeals to an untested
market is inherently risky, the added constraint of the sheer size of the
commitment required to open the market may be expected to eliminate the
possibility of such investment during periods of stagnation. During such
periods, not only are firms naturally pessimistic but, as a result of low
levels of production, they are also less capable of financing any major new
project such as is considered here. All in all, technological progress appears
to be an unlikely avenue of escape from the problem of accumulation in
this third period of capitalist development.

This is not to suggest that the increasing emphasis during the period
of monopoly capital on product innovation is without significance.35 On
the contrary, this tendency has its origin in the changed structure of
competition which typifies this period. It has often been noted that product
innovation is a form of competition, but it is worth pointing out that the
conditions for the operation of this form of competition are not given
simply by the existence of competitive firms. Product innovation, while not
unique to modern capitalism, has a specific importance with respect to the
monopoly stage, which is rooted in the decline of price competition, the
growing financial power of large corporations, and the relative stability of
the number of major competitors in each industry.

The apparent "natural" process by which the rate of growth of
demand for individual products declines over time reflects, in fact, the
specific conditions of competition under monopoly capital. Demand for
new products has an origin which is different in kind from that of estab-
lished products. The latter grow more or less in step with the market (or
possibly at a lower rate due to shifts in demand to new products), while
the demand for new products is not directly tied to the conditions of growth
of the economy per se but more immediately to the process of the shifting
of demand from established products. Where overall economic conditions
are stagnant, old products will display a relatively slow rate of growth of
demand while new products which are not limited by the growth of the

35 The role of the development of new products in the growth of the firm is
considered in E. Penrose, The Theory of the Growth of the Firm (New York: John
Wiley & Sons, 1959), and R. Marris, The Economic Theory of Managerial Capitalism
(New York: Free Press, 1964). Both authors, however, only consider the problem
from the point of view of the individual firm.

72
market will grow at a rate governed by their ability to eat into the markets of established products—a rate which may be slower or more rapid than the growth of the market as a whole. As a result, product innovation and the various forms of competition which it brings in its wake will appear to be of special importance during the period of monopoly capital.

Product innovation feeds directly into the process of product competition, which tends to replace price competition in the mature phase of capitalist development. The generation and marketing of new products provides a basis for competition over extensive segments of the market and expands the scope of the competitive potential of the firm. This kind of horizontal expansion of the firm’s market takes up some of the slack which results from the limitation of increasing the market share of established products. The marketing and sales effort is essential in the process of turning the potential of a new commodity into a real increase in the growth of the firm. On the other side, the introduction of new commodities gives to the marketing and sales effort their specific raw material for stimulating the growth of the firm. Each process feeds upon the other and the two grow together, absorbing greater and greater proportions of the resources of the firm and of the economy as a whole. Research and development, market analysis, advertising campaigns, and expansion of the firm directly into the marketing process for its products at the retail level all contribute to the integrated process of product innovation and product competition.

While the increasing weight given to product innovation as opposed to process innovation in modern capitalism has significant implications as suggested here, it is important to place the process as a whole into the general perspective of the growth of the economy over the long period. The notable shift in the character of changes in technology should not be attributed to the growth of demand or of the “consumer society” in the abstract. To be sure, the continual growth of real wage rates, which is an implication of the process of absolute concentration, plays an important role in the development of product competition. On the other hand, what is critical from the point of view of the firm is the change in the structure of the market and in its competitive condition along with the implications of those changes for the growth process of the economy as a whole. In this discussion we have focussed on those constraints on the functioning of the firm which force it to seek out alternate forms of competition to those characteristic of earlier periods. Product innovation must be seen, in the first instance, as one such alternative, and the development of new products along with the various processes which go with that development needs to be seen in this specific context.

One possible effect of these developments is a change in the structure of the total wages and salaries bill as well as in the dynamics of that structure. For example, if the growth of marketing implies a shift in employment to categories of labor which are overhead in character and not susceptible to cyclical adjustment, then this would encourage a tendency toward stability of the total wages and salaries bill in the course of the cycle.
Economic Development and Cultural Change

IV
The growth of the capitalist economy and the determination of the institutional structure of that economy are not two separate processes. Not only are the conditions within which growth takes place governed by the institutional structure of the economy, but that institutional structure can itself be transformed by the necessities of expansion. As a result, the process of expansion is simultaneously a process of economic development. Yet, in spite of the significant advances made in recent years in the study of economic growth, the existence of different epochs within a single process of development seems to be scarcely capable of treatment in the modern theory of economic growth. With a few notable exceptions, theories of growth have not been designed to take into account the manner in which important structural changes within the economy affect the growth process. Without wanting to bring into question the well-known "stylized facts" of capitalist development, it should be pointed out that not only is the period for which appropriate data are both available and reliable a short one, but it is furthermore unfortunate to restrict the analysis of the accumulation of capital to those models which are capable of accounting, in a purely quantitative sense, for these facts. The theory of economic growth should not be excluded from the treatment of equally, if not more, important facts relating to the changing structure of the capitalist economy in the course of its development.

It has, therefore, seemed desirable to attempt to construct at least the outline of a model which considers qualitative changes as well as the quantitative growth of the economy. The theory presented here is no doubt crude in certain respects, but it does attempt to summarize some of the relevant contributions in such a way as to form a possible basis for a detailed and comprehensive analysis of the growth of the capitalist economy. It can also provide a starting point and foundation for the treatment of some of the important questions intentionally left out of this preliminary sketch. Such questions include the role of uneven growth between industries, sectors, and national economies as well as the connection between capital accumulation and the international movement of capital; the role of financial institutions, particularly with respect to the concentration of capital; and the implications of government economic intervention. Several aspects of these problems have been considered briefly in this outline, but each requires comprehensive integration into the theory of accumulation in order that a clear picture may be drawn of capitalist economic development.