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# Growth, uncertainty and the Third World in the rise and fall of capitalism

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**Abstract**

Capitalism is subject to a growth imperative, because uncertainty about the future makes it impossible to survive remaining in a stationary state. Furthermore, growth beyond what is possible for a closed system is necessary for long-run survival. Profitable, some would say predatory relations with other systems and institutions are necessary. The distinction between capitalist and non-capitalist systems and institutions is private ownership and administration through markets in one case and bureaucratic ownership and administration in the other case. The historical development of capitalism is reviewed, starting with the merchant-guild capitalism of feudal society. Merchant-guild capitalism gave rise to great rewards of conquest, the modernization of European agriculture, urbanization of the peasantry and the Industrial Revolution. The latter's prosperity resulted in "excess supply" and the solution to that problem was found in welfare capitalism, corporate capitalism and the multinational institutions of world control. What this means for the Third World is then examined empirically and theoretically, the latter by considering three models of capitalist development. One is the neoclassical model of exogenous growth, the second is the endogenous growth version of the model and the third is a biological type of model that recognizes how growth in the size of the West relative to the Third World makes it increasingly difficult to satisfy the demand for continued growth on the part of corporate capitalism. As the demands on the environment rise, and as the collapse of civil society in Africa and elsewhere in the Third World takes place, the decline of capitalism begins.


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This paper is concerned with the process of economic development, the dynamic nature of which is recognized in the Marxist theory of dialectic materialism. The process has been summarized very beautifully in the following passage from Engels, as quoted in Dobb:

> Economic science to date . . . ‘‘begins with the critique of the survivals of feudal forms of production and exchange, shows the necessity of their replacement by capitalist forms, and develops the laws of the capitalist mode of production and its corresponding forms of exchange in their positive aspects; that is, the aspects in which they further the general aims of society’’. Equally necessary was the dialectical completion of Political Economy by ‘‘a socialist critique of the capitalist mode of production; that is, with the statement of its laws in their negative aspects, with the demonstration that this mode of production, through its own development, drives towards the point at which it makes itself impossible.’’ (Dobb, 1945, pp. 55–56, citing trans. of Engels, *Anti-Dühring*)

My understanding of this statement is that, at some point the contradictions in a system’s development makes it ‘‘impossible,’’ because the growth of a new system needed for progress under the old one ultimately destroys the old one. That is the question we now wish to explore with respect to the current stage in capitalist development, with the benefit of the knowledge gained since Engels wrote the above passage. There are two driving forces behind the explanation to be presented here. One is recognition of the fact that uncertainty about the future subjects capitalism to a growth imperative. It cannot remain in a stationary state. Moreover, to survive, it must grow at a rate that is beyond the capacity of a closed system. It must profit from economic relations with labor and with other systems, capitalist or non-capitalist, at home and/or abroad. The other driving force is recognition of the fact that capital does not merely augment the productivity of labor in a capitalist society. It becomes wealth. As such, it is both a source of income for capitalists and available for their immediate consumption and other uses that make it an instrument of power. More on this later.

This growth imperative is illustrated by the Industrial Revolution, the remarkable increase in income and wealth that took place in Western Europe, the United States and a few other countries between the 15th and 19th centuries. Technological progress was not the sole source of this great prosperity. It also relied materially on exploitation of the human and natural resources of the Third World and, in great measure, the transformation of agriculture at home. At the start of the Industrial Revolution, the great majority of the people were on the land—a peasant population employed in feudal agriculture. By the end of the 19th century, agriculture in the West had been transformed into capitalist enterprise. In addition to technological progress, enclosure of the commons and other such expropriation measures reduced the fraction of the population on the land from 80 or 90% to less than one-half. The peasants driven off the land provided the cities with an abundant and cheap labor force, so cheap that Adam Smith, Malthus and other classical economists recognized that the wage rate fluctuated around its bare subsistence level. Disease and starvation eliminated a surplus in the population above what industry required, with emigration to the Americas and elsewhere providing some relief.

The progress of the Industrial Revolution culminated in the long-run problem of excess supply of labor and output. The problem was not widely recognized until the work of Kalecki and Keynes appeared during the Great Depression of the 20th century. The solution to the problem of excess supply took two competing and complementary forms. One was welfare capitalism, also called social democracy. The inadequacy of the private arrangements for economic security resulted in a rise in social security through such developments as trade unions, unemployment compensation, pension plans, and socialized medicine. In addition, numerous activities, such as housing, electricity and water, were regulated or provided by the state or other socialistic non-market arrangements. In general, the greater the role of socialistic non-market arrangements, including the state, in economic activity, the smaller was the volatility and inequality of income.

The other solution to the problem of excess supply of labor and output created by the Industrial Revolution may be called corporate capitalism. Its striking feature has been the extraordinary expansion in a wide range of non-production activities within the corporation that became needed to maintain the profits, growth and security obtained through monopoly power. The perpetuation of abnormal growth continued through the privatization and deregulation of health, education, water, electricity, and other non-market activities, through the increasing exploitation of the people and resources of the Third World and through the continued degradation of our natural environment. Corporate capitalism no less than welfare capitalism, involves the suppression of the market, here by large, privately-owned bureaucratic organizations, described so powerfully by Galbraith (1986). This pursuit of growth also increased economic insecurity, since the volatility of growth increases with its average rate, and with the relative importance of the private sector. Hence, a wide range of financial measures are also undertaken to reduce the insecurity of capital and strip labor of security at home as well as abroad.

The wealth of corporations, of their shareholders and of proprietors is in each case the present value of expected future cash flows discounted at rates that increase with their risk. Wealth rises and falls with these expectations and with the uncertainty as to their amounts. Each corporation engages in the activities described previously in order to maximize the arithmetic means of these future cash flows and minimize their variances. These corporations also call on their governments to engage in the economic, diplomatic and military activity that serve this purpose. The public debt is also private wealth as long as it is not destroyed by inflation, so that is further reason for depressing wage rates and material prices. As wealth in the First World rises, while the living conditions of labor and of the peasantry in the Third World decline, the system becomes increasingly impossible.

The most frightening consequences of the further development of corporate capitalism are for the Third World. Peasant agriculture there is being destroyed at an increasing rate by commercial agriculture in luxury foods and by imports of basic foods. The population being moved off the land now is enormous by comparison with what had taken place earlier in the Industrial Revolution. Western affluence does not facilitate the replication of its industrialization in the Third World. The branch plant industrialization that serves the West employs a pitifully small fraction of the labor force, generates woefully little by way of a domestic market and provides a grossly inadequate surplus for further industrialization. Hence, dependency and continued exploitation by multinational corporations result in the large-scale growth of urban slums, underground capitalism and a reduction in life expectancy of the people driven off the land. Third World competition with industry in the West increases inequality in the West and threatens it with replication of the conditions of the Third World.

Uncertainty about the future subjects capitalism to a growth imperative. Growth in wealth beyond what is possible for a closed system is required by uncertainty to avoid decline and collapse. That growth is achieved by predatory relations; that is, by the destruction of other systems, other classes, the natural environment and ultimately the Third World. As capitalism grows relative to the non-capitalist world on which it feeds, that growth and the impoverishment of the Third World make the required growth rate an increasingly formidable challenge. The challenge is increased further by the demands of welfare capitalism, made possible by capitalism's democratic institutions. The challenge is met through the bureaucratic and corrupt institutions of welfare and corporate capitalisms. At some point in this process, the contradictions become impossible, so that transition takes place to a new welfare capitalism or market socialism or the system collapses. What follows carries forward in many respects the work of Baran (1957) and Baran and Sweezy (1966) by recognizing the presence of uncertainty and the desire for security in capitalist development.

## 1. Comparative systems

To elaborate on the previous description of capitalist evolution, it will be helpful to state first what we mean here by capitalism, by socialism and other non-market systems, and by the comparative features of these systems that make them perform differently. In a pure capitalist system, (a) the means of production are privately owned, and (b) the economy is administered through markets. In a pure socialist system, (a) the means of production are collectively owned, and (b) administration of the economy is by means of a bureaucracy.[1] Feudalism would seem to have more in common with socialism in that wealth is controlled socially and administration is not by markets. Pure economic systems are described by their champions as perfect utopian societies (see Bardhan & Roemer, 1993). That is true of mainstream economists in both capitalist and socialist countries as well as theologians in medieval times. However, pure systems, with the possible exception of feudalism, have existed for any length of time only in literature on the subject.

In reality, pure economic systems proved to be closer to a hell on earth than a utopia. The mid-19th century England described, each in their own way, by Dickens in his novels and by Marx on the basis of parliamentary reports, was to come as close as any country to a pure capitalist system. Stalin's Soviet Union and Mao's China were to come as close as we can

[1] These definitions take no account of the means by which power is achieved and maintained under each system. Hence, Nazi Germany had a capitalist system and the Soviet Union had a socialist system. How to further differentiate among economic systems according to the degree to which there is abuse in the exercise of power by a country at home or abroad is beyond the scope of this paper. But it must be noted that a great long-run accomplishment of capitalism has been the growth of civil liberties and democratic governments. They have contributed to the economic benefits of welfare capitalism in the leading capitalist countries.

find to pure socialist systems before being abandoned. Pure economic systems soon fail because they do not provide both the growth and the security that people demand. Pure capitalist systems have at best provided growth without security, and the insecurity is intolerable without wealth, the private source of security that is available only to capitalists. Pure socialist systems have provided security with little or no growth, and sooner or later the system is abandoned or overthrown, in part because of the terrible consequences of the extraordinary measures undertaken to solve the problem of growth.[2]

Our basis for the previous characterization of capitalism as providing at best growth without security has its origins in the thesis advanced by Rosa Luxemburg in 1913 that a closed capitalist system is not feasible. She wrote.

> Marx's diagram of enlarged reproduction cannot explain the actual and historical process of accumulation. And why? Because of the very premises of the diagram. The diagram sets out to describe the accumulative process on the assumption that capitalists and workers are the sole agents of capitalist consumption . . . (Luxemburg, 1968, p. 348)

She went on to describe real life as follows:

> Capitalism arises and develops historically amidst a non-capitalist society. In Western Europe it is found at first in a feudal environment from which it in fact sprang . . . and later, after having swallowed up the feudal system it exists mainly in an environment of peasants and artisans . . . European capitalism is further surrounded by vast territories of non-European civilization ranging over all levels of development . . . This is the setting for the accumulation of capital. (Luxemburg, 1968, p. 368).

Luxemburg's thesis was widely rejected, even by Marxists (see Sweezy, 1942, pp 202–207). Possible explanations are her rejection of Marx's closed system, and her failure to provide a satisfactory theoretical explanation of the evidence.

Gordon and Rosenthal (2003) have proven the truth of the Luxemburg thesis. It can be demonstrated quite briefly under simplifying assumptions that do not violate the thesis. Assume a society of 5000 farmers, each with a plot of land and an endowment of W2000, W being units of output. Assume further that each farmer periodically consumes W1000, plants W1000 and reaps a harvest of W2000, ad infinitum. The society could remain in this state forever, but it requires the implicit and false assumption that the future is certain. Instead, to drive the point home, let us make the extreme assumption that the harvest of each farmer is either zero or W4000, each with a probability of one-half, so that the average harvest of each farmer is the above W2000. Also, the harvest of each farmer is independent of the harvest of other farmers. Under a socialist system, the 5000 farmers pool their harvests so that periodically each farmer receives the average harvest of W2000 plus or minus a trivial

[2] The remarkable growth that took place in Stalin's Soviet Union might seem to contradict the statement that a pure socialist system provides security without growth. People in the Soviet Union enjoyed great economic equality and security, but a low level of income and great political insecurity. Everything was subordinated to growth in order to overcome the real or imagined fear of renewed aggression by the West. In China, the Great Leap Forward and the Cultural Revolution were the costly consequences in human terms of the failed attempts to achieve growth within a bureaucratic socialist system.

amount. She/he consumes and plants one-half ad infinitum, and this society also remains in a stationary state forever.[3] Under a capitalist system, there is no pooling, so that about half the farmers go bankrupt in the first period. The other half enjoy a crop of W4000, and to survive, they may consume only W1000, plant W1000 and save W2000 for the third period, in case the crop in the second period is zero. Gordon and Rosenthal (2003) showed that under these conditions and under far more realistic conditions as well, all the capitalists go bankrupt sooner or later. The critical assumption is that each capitalist follows the no-growth policy of consuming and planting the average crop. Long-run survival is possible but by no means certain only for a few capitalists and for the system as a whole, and only under a policy of accumulating wealth. The policy that must be followed in the above system is to consume less than the average income of W1000 initially, and to acquire land from other farmers or elsewhere, in order to continue accumulating and make the average crop grow. The real world is far more complex than the above example. The mean harvest changes from one period to the next, there is correlation among the farmers' harvests, and much more. A great financial infrastructure and the state are employed to make capital a source of security as well as income. Nonetheless, the above example captures the fundamental nature of the problem.

## 2. Capital and wealth

The social role of capital, a role that is independent of whether the capital is owned privately or collectively, is to increase the productivity of labor. Labor productivity then grows over time to the degree that technological progress takes place, and the capital–labor ratio rises. Of course, employment and productivity should be independent of each other, but they are often inversely correlated, since increased productivity impairs the competitive position of labor.

The role of capital as a source of security and power for capitalists is due to its private role as wealth in a capitalist society. Recognizing this role is complicated by the fact that there are three widely used measures of capital. The financial statements prepared by accountants use historical cost of the assets net of their ''book'' depreciation. In the social accounts prepared by economists, historical cost adjusted to the current price level is used. This brief statement on the use of cost as a basis of measurement passes over many difficult problems in its use to measure capital and productivity. Among them, the treatment of land and other natural resources is a particularly difficult problem. The cost principle argues that only improvements in the land or mine should be included in capital. This and other problems in the measurement of social capital have been discussed at great length in the literature on national income accounts and productivity, and they need not concern us further here. What does concern us is what capitalists do to increase the amount and security of their wealth and increase the poverty and insecurity of others.

Capitalists use market value to measure their wealth. The wealth of a corporation, a proprietor or a portfolio investor is net nominal wealth plus the present value of the expected

[3] The output and income per capita could grow if saving and innovation are imposed on it from above. The experience of Yugoslavia and some other socialist societies has been that wealth is consumed when the allocation between consumption and accumulation is decentralized to the factory employees.

future cash flows from capital assets. Nominal wealth comprises bonds and other loans, and their amount is the present value of their promised future payments discounted at rates that reflect the risk of default. The public debt is particularly interesting. For every lender, there is a borrower, but we own the public debt without owing it, so that net nominal wealth in a closed system is the public debt. The public debt is a source of security as well as wealth for capitalists as long as wage rates are repressed and the expected inflation rate is zero or negative.

A corporation serves its owners by maximizing its market value, that is, its wealth, and this objective is served by policies that maximize the present value of its future cash flows. Present value of a cash flow is its mean discounted at a rate that increases with its variance. Hence, wealth increases with the mean and decreases with the variance of a future cash flow, the latter through covariation between the variance and the discount rate. Strictly speaking, the discount rate increases with the covariation in the asset's return with the return on the market portfolio (see Markowitz, 1959; Sharpe, 1964). Cash flow is output or value added less the labor cost of production. It is also called EBIDT or earnings before interest, depreciation and taxes. Current market value and its growth rate are maximized by reducing employment through technological improvements and other instruments of monopoly power. Cash flow may also be raised by innovations that raise price and revenue by more than the increased labor cost. Cash flow must be increased, and the increase must be great enough to cover the so-called "cost" of the capital employed and thereby make the market value of the addition to capital greater than its cost.

These properties of capitalism make it quite impossible for a *closed* system to both enjoy the rate of growth in capital needed for tolerable prospects of long-run survival and not suffer a long-run decline in employment. The maintenance or growth in employment with the required rise in the capital–labor ratio is only possible with profitable, some would say predatory, relationships with other classes and systems at home and abroad.

Capitalists deal with the risk they face through the development of financial institutions and instruments that make capital a source of security as well as growth. For instance, wealth consists of land, machinery, inventory and human capital, assets that cannot be consumed directly. But corporations hold these physical assets, while individuals hold their securities—bonds and stocks. These financial instruments are readily sold with the proceeds used for consumption when needed. Hence, capital is a source of security as well as income.[4] The

[4] Mainstream economists have studiously avoided recognizing that capitalists are concerned with the security of their wealth. They still maintain that investors simply maximize utility and utility increases with consumption, conceding only that utility may also vary inversely with the variance of consumption. That rationalizes a risk premium in the interest rate, and Lucas (1978) received a Nobel Prize for a macroeconomic model that incorporates the preposterous assumption that the degree of risk depends. The risk premium is in fact to zero, because the variance in aggregate consumption is ridiculously small. Mehra and Prescott (1985) were "puzzled" by the large risk premium we actually observe, because the large actual risk premium and the ridiculously small degree of risk make sense only if investor risk aversion is so large as to be beyond all reason. Over the years Kocherlakota (1996) among other macro economists dutifully nodded their heads at this "puzzle" while other researchers guardedly raised questions about this measure of risk. What Lucas did was assume the egalitarian socialist economy I described earlier. Lucas (2003, p. 8) acknowledged this: "The calculations I have described so far treats households as identical and individual risks as diversifiable." He goes on to justify these calculations as a basis for macroeconomic policy, and he concludes that "The potential gains from improved stabilization policies are on the order of hundredths of a percent of consumption, perhaps two orders of magnitude smaller than the potential benefits of available "supply-side fiscal reforms" (p. 11).

security is far from complete, however, because it depends on the volatility of the wealth's real value as well as its amount.

The primacy of corporate growth in the development of capitalism is demonstrated quite clearly in how the practice of corporate finance has evolved. Portfolio investors hold a diversified portfolio of shares, and they manage their risk-return position through the allocation of wealth between such a portfolio and comparatively risk-free bonds. The corporation's risk that the investor can thereby avoid by diversification does not concern him. Consequently, it is in the interest of each investor to have each corporation in the investor's portfolio follow the financial policy that maximizes the current market value of its shares regardless of the risk of bankruptcy that creates for the corporation. See Markowitz (1959), Sharpe (1964) and the literature on portfolio policy for how the portfolio investor's risk-return position can be made independent of the shares in the portfolio.

By contrast with the portfolio investor, the large controlling shareholder and the corporation's management have their risk-return positions tied to that of their corporation. Until about 25 years ago, small portfolio investors were unable to impose their will on corporations, and their managements followed quite conservative capital structure and investment policies. However, the rise of mutual funds and pension funds has changed all that. It is in the interest of these funds to have each corporation in a fund's diversified portfolio follow the policies that maximize the corporation's current market value, and these funds are now in control. A corporate management that fails to act accordingly is removed, if need be by a hostile takeover. Managements are persuaded to abandon conservative policies by enormous compensation packages if they succeed and exceptionally generous compensation plans if they fail.[5]

The fundamental problem that confounds all efforts to achieve growth and avoid risk is the fact that in aggregate growth is risky so that growth and risk are correlated. To the extent that one individual, corporation or industry manages to increase growth without increasing volatility, the opposite tends to happen elsewhere. Evidence in support of this conclusion has been found in the literature of finance, where return, growth and volatility can be measured with considerable precision.

Gordon (1962, 1994, part 2) found that growth stocks are risky stocks, and that finding was confirmed by the theory of portfolio policy developed by Markowitz (1959) and Sharpe (1964), for which they received a Nobel Prize in economics. They found that a share's risk increases with its beta or covariation with the market portfolio, and Fewings (1979) confirmed that beta and expected return vary with expected rate of growth.

What about workers and their employment income? The latter is highly uncertain in a pure competitive capitalist system, so that without employment or wealth she/he is lost. Workers find economic security through the state, in particular through the degree that productive activity is carried out in state enterprises, through monetary-fiscal policies designed to stabilize aggregate demand and employment and most of all through

[5] The corporate swindles now making the headlines are only the most egregious consequences of the new corporate finance under corporate capitalism. Michael Jensen, the intellectual father of this revolution, has become less strident in his advocacy of stock options and other measures to persuade corporate managements to follow policies that maximize current market value. See Jensen and Meckling (1976).

unemployment insurance, socialized medicine, old age pensions and the other social security measures arranged by the state. The state is the source of worker security to the degree that the state is not captured by the corporation.

## 3. Capitalism in a feudal world

The word *contradiction* is used here to explain economic evolution in a way that some may find quite different from the many ways it appears in Marxist literature. See Bottomore (1983) on contradictions. We therefore had best make clear the particular sense in which the word is used here. A contradiction in the evolution of an economic system arises initially because the system's further evolution requires at some point the introduction and parallel development of a *hostile* economic system. At some later point in their parallel development, the new system begins to subordinate and then destroy or replace the old system. We will review in the course of what follows how this takes place with regard to the role of capitalism in feudal society and the role of social ownership in capitalist societies. We will then examine what this implies for the Third World.

Feudalism arose in Western Europe in the centuries following the fall of the Roman Empire, in order to provide physical security against the raids of marauding tribes. Tribalism was the alternative economic system at the time. The typical feudal manor was a closed system that also provided economic security through its technology of production and institutional arrangements. Life in feudal society was difficult but progress did take place. However, the agricultural surplus that increased with that progress could not be realized very effectively by employing artisans in the feudal manor for the production of the wide range of manufactures, including armaments and ornaments that could be obtained from the craftsmen and merchants of urban centres. The technology and institutions of the feudal manor were not adequate for the degree of specialization and exchange that was possible through the urban centres.

A far more profitable use of the agricultural surplus than manorial manufacture was its sale to the towns; that is, by becoming involved in market transactions and the rise of capitalism. Nowhere is the contradiction in the development of a system more vivid than the role of capitalism in the development of feudalism. The towns made possible the realization of the surplus being produced on the feudal estates, but they did not merely embellish feudal life by providing it with more attractive products for consumption. The size of the feudal armies, the period of time that they could be mobilized for war, and the quality of their armaments all depended on the development of the towns and their activities. Where the towns were suppressed or failed to develop for other reasons, feudal power stagnated and became vulnerable to defeat. The opportunities for profit were enormous. The problem was security. It was sought in many ways, among them the elaborate system of companies and guilds that regulated and promoted each of the trades and commercial activities and that supported the growth of the towns. For a more thorough examination of the subject, see Dobb (1947, chaps. 2 and 3), Braudel (1981), Kindleberger (1996) and Dobb et al. (1954).

The towns, however, financed the rise of national monarchs and eventually nation states, so that the progress of feudal society undermined its foundations in the feudal manor. The contradictions in this process transformed, corrupted and ultimately destroyed feudal society. It culminated in the transition to Industrial Capitalism over the years between the 15th and 19th centuries. That was a unique and remarkable event, since such a transition did not take place under roughly similar circumstances in other places.[6]

## 4. Industrial capitalism

The transition from feudalism to industrial capitalism from the 15th to the 19th centuries is widely recognized to have two important explanations. One is the tremendous series of technological advances that radically transformed the nature of production and transportation. The other explanation is the enormous wealth acquired from trade and imperial exploitation of the colonial world. Less well recognized are the modernization of agriculture and the impoverishment of the peasantry of Europe. From the 10th to the 15th centuries, the productivity of agriculture and of transportation remained low, so that only a small fraction of the population could be supported in non-farm pursuits. There was a shortage of farm labor over these years. By contrast, agricultural productivity rose sharply over the years 1500–1900, thereby making possible a dramatic rise in the urbanization of the population of Western Europe.[7] The opportunities for profitable investment in non-farm production thereby created were enormous.

The second volume of Adam Smith's great work was dominated by his concern for the adequacy of savings to finance investment. That concern was reflected in the distinction he drew between production and non-production labor (1822, Vol. II, Book II, chap. II]. Production workers were employed at a subsistence wage only to the extent needed for production, so that wealth depended upon the funds devoted to their consumption and to the accumulation of capital. Non-production workers were a diversion of the funds available for investment. The doctors, singers, managers, priests, household servants and other non-production workers were useful and desirable, but they consumed the profit on production that could be devoted to capital accumulation. Smith's objective was to maximize a nation's wealth, and he saw that objective as being served by the accumulation of capital. There seemed to be no lack of opportunities to undertake profitable investments. The only constraints on undertaking these investments were non-production employment, the tax burdens imposed by the monarch, and the resistance of the handicraft workers who would suffer from the change. Marx (n.d.) accepted the distinction between production and non-production workers, and that distinction played an important ideological role in his theory of surplus value.

[6] Fifteenth century China was far more advanced technologically and commercially than Europe at the same time, but China stagnated and declined while Europe enjoyed the Industrial Revolution over the next four centuries. One among the possible explanations is that a strong imperial central authority restrained progress in China, while no such authority came to power in Europe, perhaps because of its geography. Capitalism developed in the periphery there (see Kindleberger, 1996). The absence of a strong central authority over all of Europe made the profitability of trade and finance enormous in relation to the risk.

[7] Maddison (2001) estimated that the urbanization ratio (fraction of the population in cities of over 10,000 people) in Western Europe was zero in the year 1000, and it rose to only 6.1% by 1500. It doubled to 12.3% by 1820, then rose by a factor of five to 61.9% by 1890. Of course, urbanization is made possible by progress in agricultural productivity and to a significant degree progress in transportation.

The great increase in profitability over the course of the Industrial Revolution became increasingly frustrated by the realization problem of excess supply of labor and output. The cyclical manifestations of the problem were investigated through the development of monetary theory.[8] The fundamental problem of the average level as well as the stability of aggregate demand was recognized by Kalecki and Keynes during the Great Depression. Keynes went on to speculate that mature capitalist systems could be plagued by the problem of secular stagnation.

The growth in excess supply over the course of the 19th century generated increasingly fierce competition in the steel, railroad, oil, and other great industries of the Industrial Revolution. Monopoly power was seen to be the solution, and price wars, cartels and mergers were among the measures taken to suppress competition. Kalecki (1954, pp. 1–27) provided a powerful and simple explanation why monopoly power was a necessary if not a sufficient condition for survival. Neoclassical theory recognized correctly that a firm's monopoly power over a product is the ratio of price to the marginal cost of its production, and the ratio is equal to one for a firm in a perfectly competitive market. Kalecki pointed out, however, that manufacturing firms found it economical to organize production so as to make the marginal labor and material cost of production independent of output. The degree of monopoly power the firm enjoys can then be measured as the ratio of value added (sales less material cost of production) to the labor cost of production. A firm with a ratio of one has no monopoly power, in that it is unable to command a price for its products above their production cost. With no monopoly power and no profit on production, the firm would not be able to cover its fixed costs of production, which includes the non-production labor recognized by Smith and Marx. The firm would then go bankrupt sooner or later. Gordon (1998) found that the Degree of Monopoly Power fluctuated in a narrow range, around 2.5 for manufacturing firms in the United States during the first half of the 20th century.[9]

## 5. Welfare capitalism

By the middle of the 19th century, the feudal system was pretty well exhausted as a source of economic security and stability in Western Europe and in England in particular. England was then to come as close as it ever would to the rule of the market, unfettered by state regulation.[10] The middle of the 19th century also witnessed the modest beginnings of

[8] The process by which the capitalist system itself generated fluctuations in economic activity through the money supply was explained most clearly by Schumpeter (1974). The bank loans extended to finance increased investment were made possible by increase in the money supply, and the investment generated the increased economic activity and the profits that in aggregate covered the loans. Schumpeter assumed a closed system so that the increased profit from the increased demand does not flow abroad. He also did not consider how much of the increased output and profit came from the colonial world. For the transition from feudal natural fluctuations in output to capitalist monetary fluctuations see Kula (1976).

[9] Marx's rate of surplus value is simply value added minus the cost of production labor divided by the cost of production labor. Over this period, it was about 1.5 = (2.5–1.0)/1.0.

[10] Between the Napoleonic Wars and World War I, there were no wars of any consequence. Polanyi (1957) described the conjunction of events which made this long period of peace possible. He also pointed out that markets are commonly found within non-market systems that provide stability and security. He attributed the two great wars and the intervening depression between 1914 and 1949 to the instability of a market economy with little by way of institutional constraints.

the welfare state—the alternative to feudalism as a means of limiting the poverty and insecurity of capitalism. The welfare state participates in the economy through state provision of some products and services, regulation of private enterprise, social insurance, monetary-fiscal policy to limit fluctuations in employment and income, and the use of the tax system to reduce income inequality. The United States was the last and least among the countries to become a welfare state, due to its frontier, extraordinary opportunities for growth, democratic origin and other circumstances. Nonetheless, by the 1960s, the United States had gone far enough in that direction to give some merit to the complaint of the business that the country had gone socialist.

The United States had adopted a wide range of welfare state measures. Its social insurance system included unemployment compensation, retirement pensions and health insurance. There was little government ownership of industry, but there was regulation of electric power, telecommunications and other public utilities in the public interest. Universal access was one of regulation's objectives. Banking, insurance and other financial services were also regulated. The measures to relieve poverty included transfer payments, minimum wage legislation, free healthcare, and low-income housing. The tax system included estate and inheritance taxes, a corporate income tax of about 50% and a personal income tax on which the marginal rate rose well over 50% with income. Barr (2001) presents an explanation of the welfare state that is compatible with neoclassical theory.

Welfare capitalism proved to be immensely successful in developed capitalist countries between the end of World War II and the mid-seventies. Those years came to be called the ‘‘golden age'' of capitalist development. It was a period of low unemployment, low inflation, decreasing inequality of income and impressive growth in productivity and national output. See Cornwall (1994) and Cornwall and Cornwall (2001) for more on the performance of the First World countries during these years and how they subsequently entered into a period of decline due to right-wing hostility.

## 6. Corporate capitalism

Capitalists, their representatives in corporate managements and the intellectual community did not watch helplessly as capital was being expropriated peacefully by the above solutions to the problem of excess supply, first by cut-throat price competition and then by social democracy. Instead, they carried out, over the course of the 20th century, a radical transformation in the nature of how business enterprises operated. At the start of the century, corporations were still engaged primarily in production. However, mergers, cartels, price wars and the other direct methods for capturing monopoly profits were proving to be increasingly inadequate for the purpose. Rockefeller's success in monopolizing the oil industry and cartels in other industries resulted in legislation that outlawed monopoly power obtained in these ways. Corporations were, therefore, persuaded to adopt a wide range of non-production activities in order to maintain the profits from monopoly power. They were described as follows in Gordon (1998, pp. 327–328):

> [The] modern corporation incurs the costs of a wide range of nonproduction activities for the purpose of maintaining and increasing its monopoly power. Hence, they may

be called monopoly activities. The objective of monopoly power is to increase the margin of price over production cost for the firm's products and to increase the sale of the products at these prices. These activities include research and development for the purpose of improving existing products, discovering new products and reducing production costs. They include selling and advertising to increase sales and the markup of price over production costs. They include labor relations to persuade or intimidate workers to produce more or accept lower wages. They include political contributions, lobbying and corruption of government officials in order to obtain natural resources on favourable terms and other favors of government. They include the employment of lawyers, accountants and financiers to avoid and evade taxes and to influence tax legislation. I could go on. These activities may be harmless apart from their cost and their consequences for the distribution of income. They may be beneficial to the degree that productivity is raised, or they may be malignant in their consequences for society. Regardless, what they all have in common is the pursuit of the profits to be gained from monopoly power. Such corporate behaviour and its consequences are described in greater detail in Korten (1995), Barnet and Cavanagh (1994), Gordon (1996) and Harrison (1993).

The striking evidence of what took place is in Kalecki's Degree of Monopoly Power (DMP). After fluctuating in a narrow range, about 2.5 between 1899 and 1949, due to the restraining influence of the two world wars and the Great Depression, the DMP in the United States manufacturing sector more than doubled, from 2.49 to 5.25, between 1949 and 1994.[11]

This increase in the DMP reflects a sea-change in the structure of the American economy. The distributive shares in output, that is, value added, are (1) compensation of production workers, (2) expenditures in pursuit of monopoly profits (compensation of non-production workers and purchased services), and (3) gross profit on capital or earnings before depreciation, interest, and taxes. Gordon (2005) established the breakdown in value added among these three components over the years 1949–1996 for the manufacturing sector.[12] The compensation of production workers fell from 42% to 25% of value added over these years. The expenditures in pursuit of monopoly power rose from 31% to almost one-half of value added. The gross profit on capital remained about one quarter of value added, but its absolute amount rose enormously. Financial services, distribution, education and other service activities rose enormously as percentages of GNP.

The above data for manufacturing reveal that only a small fraction of the current level of production is absorbed by the cost of its production. A large fraction of the output is devoted to the pursuit of monopoly profits, to increasing the capital stock and to capitalist consumption. Most, if not all, of this excess over the cost of production could be diverted to

[11] These figures exclude from employee income the social security taxes and employee benefits paid by the employer. Estimating how much they raise the compensation of production workers, on the assumption that they should be added to employee income when charged to the employer and not when received, we still have a remarkable rise in the DMP from 2.4 to 4.2.

[12] Value added in other sectors can be decomposed in the same way, to the extent that the source data exists. Service sectors such as the military or education could be decomposed into the expenditures to provide defense and education and the expenditures to improve these services.

leisure, to culture, to the environment and most importantly to the Third World without reducing the level of output. In other words, there is an enormous surplus of output over its production cost that could be better used for other purposes than the employment of that surplus by corporate capitalism.

Instead, the profits and growth from monopoly power are pursued ever more aggressively. This takes place in part by invading areas of activity served by non-market institutions. Private enterprise is replacing the household in food preparation, in the care of children and the elderly, and other household services. Electricity, telecommunication, water, and other public utilities are being privatized and deregulated. Hospitals and other medical services are being commercialized. I could go on. The motto, regardless of the facts, seems to be that anything done by the public sector can be done better by the private sector. California's experience with electricity deregulation illustrates the fact that the opposite is true more often than not.

The modern corporation calls into question the usefulness of one of the fundamental propositions of the neoclassical theory of the firm. The firm is simply a production function that maximizes profits by making the price and production decisions for each product that equate marginal cost and revenue for the product. For an increasing number of products, in particular computer software, pharmaceutical drugs and other high technology products, production cost is a trivial fraction of the sale price, and it plays little or no role in the price-production decision.[13] Some firms, such as Nike, engage in every conceivable activity at home and abroad except production.

The rise of corporate capitalism aggravated the problems connected with the separation of ownership and control. Owners became portfolio investors whose only contact with the corporations they owned was through financial statements and their discussion by corporate managements. Berle and Means (1932) argued that corporate managers thereby came between capitalists and their property and thereby impaired the proper functioning of the system. Managers would use their power to subordinate maximizing the performance and wealth of the corporation to advancing their own wealth. Jensen and Meckling (1976) railed against the abuse of power by corporate managements in the form of memberships in country clubs and other perquisites, combined with the failure to aggressively maximize market value. But they offered little more than anecdotal evidence that compensation was excessive and behavior was lazy. In fact, in the decades following the Great Depression, management compensation was very conservative, certainly by comparison with what followed. Managers supplemented their money incomes with conservative financial policies, since the reward for exceptionally good performance was very modest, while the punishment for failure was comparatively great.

The above post-war developments made corporations undervalued during the stable, prosperous sixties and seventies. Corporate raiders were then able to make fortunes buying control of such corporations, changing their financial policies (more debt and dividends) and operating policies if needed. The corporate raiders then resold their shares at very large premiums. The managers of these riskier corporations were soon persuaded to share in the

[13] The cost of producing a copy of a Microsoft computer program is probably less than a dollar, and its sale price can be a few hundred dollars. For the distribution of Microsoft sales revenue among production cost, return on capital and the expenditures made to generate monopoly profits, see Gordon (1998, pp. 327–328).

gains and not in the losses through stock option plans that provided fortunes if the stock went up and very generous retirement packages if not.

The question we face today is whether or not the above developments make corporate managements too risk-loving, not too conservative, for the sound development of capitalism. Practically all large corporations now have a controlling if not a majority of their shares owned by a modest number of mutual and pension funds. These funds require growth to prosper, and they are able to come together against a management that fails to provide growth. Corporate managers commonly respond positively to these pressures with risky short-term financial and operating policies, exacting in return compensation packages that have large upside payoffs and little downside loss. The diversification of mutual and pension funds protect these funds against the risk of failure by any one corporation, but the end result is a growth hysteria that is not sustainable.

## 7. The Third World

Prior to World War II, the colonial powers expropriated the surplus over the bare cost of producing the minerals, oil, lumber, sugar, cocoa, bananas, handicrafts and other products exported by the Third World. Typically, a very small fraction of that surplus was needed to maintain power over the colonies and to maintain the support of a corrupt and dependent local ruling class. The large military expenditures of the colonial powers were needed, in some measure, to maintain colonial power, but far more to defend their empires against each other. Following the end of World War II, the impoverished colonial powers could no longer bear the military, economic and political cost of maintaining power in the smaller countries of the Third World as well as in India and China.

The expectation, certainly the widespread hope, was that the wide gap between the Third World level of economic development and prosperity and the level enjoyed in the West would be reduced quickly over time. The technology achieved in the West through the Industrial Revolution had already been discovered, so that the only challenge was its transfer to the Third World. That would seem to be comparatively easy to do. The ability of the West and its great corporations to transfer technology to the Third World, when that was desired, came to be amply demonstrated in South Korea and Taiwan. The funds needed to finance the required imports of capital equipment should have been no problem. The low standard of living in the Third World made enormous the gap between the value and cost of its mineral, food, and other raw material exports. The need, if any, for additional financing through foreign loans should have been quite small.

Unfortunately, performance has fallen far short of expectations.[14] South Korea and a few other countries perhaps had the high rate of industrialization needed to narrow the gap

[14] It is beyond the scope of this paper to undertake a comprehensive a review of the literature to justify the conclusions presented here on the performance of corporate capitalism in the Third World over the past 50 years. With little exception, the theoretical basis for the mainstream literature is a competitive system which precludes the existence of exploitation by assumption. The empirical literature presents similar problems. See, for example, the comment on productivity measurement in Gordon (2004). For a stimulating work on the performance of the U.S. economy that reaches similar conclusions to those presented here see Wallerstein (2003).

with the West. For most countries, however, the gap remained as large or widened. The Third World countries have not been able to follow the development policies pursued by capitalism in the First World during their Industrial Revolution. The surplus of the value of raw material exports over their subsistence cost of production has for the most part continued to flow abroad. Domestic manufacturers faced increasing competition from First World producers, as barriers to imports were reduced under pressures from the WTO. When multinational corporations manufacture in the Third World for export, they leave little more than the subsistence cost of production there. Domestic landowners, capitalists, government officials and other members of the ruling class show little economic nationalism. They subvert and violate exchange controls in order to import foreign goods, travel abroad and enjoy the security of moving part of their wealth abroad. The government and banking system are used to borrow heavily abroad under terms that privatize the gains and socialize the risk. On balance, the debt reduces greatly the welfare and financial strength of the country. Far too much of the debt is short-term and denominated in dollars, and frequently its use contributes little to economic development.[15] On top of all that, the U.S. is abandoning all pretence of providing capital to the Third World. It is rapidly becoming the world's largest debtor country. Its current account deficit was about $500 billion in 2003.

At the end of World War II, the World Bank and the International Monetary Fund were established to help countries pursue national monetary and fiscal policies that serve employment and development without fear of subversion by capital flight. But these institutions have been transformed under the leadership of the United States, to make international capital mobility a more powerful instrument for the subordination of national governments to corporate capitalism. The World Trade Organization and the agreements on trade, investment and other areas of commercial policy have served the same purpose. By one financial arrangement or another, the Third World is financing the enormous rise in expenditures on consumption, both private and public (military), by the United States.

The prospects for the future under the continued rule of the Third World by corporate capitalism are far from attractive. Revolutionary movements that are motivated by the objective of achieving independence and progress are attacked relentlessly. In the resource-rich former Belgian Congo, the revolutionary government of Patric Lumumba was overthrown and replaced by the corrupt and reactionary dictatorship of Mobutu. When that government collapsed notwithstanding its continued support by the First World, the country sank into a period of protracted tribal warfare fueled by neighbouring countries. It has cost millions of lives and the prospects for ending this genocide grow dimmer. The story is similar for Angola, Indonesia and many other countries in Africa and Asia. Where revolutionary movements enjoy the leadership and popular support needed to fend off the initial foreign attempts to crush them, as in China, Vietnam and Cuba, war, subversion, and embargo are employed in continuing efforts to defeat national independence and development. In many of the countries of Africa, Asia and Latin America, continued foreign expropriation of the little surplus they have and hostile foreign intervention to

[15] All of these Third World problems are compounded by the insistence of the International Monetary Fund, and the other international institutions controlled by the U.S., that national control of capital movements be eliminated. See Felix (1998a) and Stiglitz (2002).

overthrow popular reform governments has resulted in the breakdown of civil society and the destruction of the population to a degree that verges on genocide.

The most frightening thing about the current state of the Third World is what the future appears to hold in store for it under continued domination of the world by corporate capitalism. The UN Human Settlements Programme (2003) found that the people living in the direst conditions of the world's slums had reached one billion in that year, a figure equal to 32% of the world's urban population. The UN Population Division (2001) of the Department of Economic and Social Affairs estimates that the urban population of the "Less Developed Regions" of the world will increase from 1.96 billion to 3.98 billion people between the years 2000 and 2030. Table 1 presents these and related statistics. The rural population in the Third World is forecast to remain unchanged at about 3 billion. Hence the entire population growth of about 2 billion people will be urban. What will the four billion people in urban areas of the Third World in 2030 do for a living then? Of them, one half will have arrived into urban areas between now and 2030, either by population growth or by migration from the countryside.

The statistics in Table 1 do not reveal the full dimensions of the problem, since they do not reveal the extent to which the rural population was a peasant population in 1950 and the extent to which the much larger rural population in 2030 will become a rural working class in an increasingly capitalistic agriculture. A large fraction of the 1.4 billion people in the countryside in 1950 were peasant families with small land holdings on which the family shared the work and the income. There was the "hidden unemployment" that exists when you have more people on the land than are needed to do the work. Between 1950 and now, and moreso in the future, the practice of agriculture is being modernized, it is becoming more capital intensive, the size of land holdings is increasing and other developments are making agriculture in the Third World more capitalistic. Only those who can be profitably employed as agricultural workers will be allowed to remain on the land. The peasant families, owners or tenants who are driven off the land and do not remain in the countryside as part-time agricultural workers, will suffer more difficult conditions than those who migrate to the cities. See Danesh (1992) and Magdoff (2004).

Table 1
Urban and rural populations of the world classified according to whether the people live in more or less developed regions of the world, in selected years, 1950–2030 (billions of people)

| | Year | | | |
|---|---|---|---|---|
| | 1950 | 1975 | 2000 | 2030 |
| Urban population | | | | |
| More developed regions | 0.45 | 0.73 | 0.90 | 1.00 |
| Less developed regions | 0.30 | 0.81 | 1.96 | 3.98 |
| World | 0.75 | 1.54 | 2.86 | 4.98 |
| Rural population | | | | |
| More developed regions | 0.37 | 0.31 | 0.29 | 0.21 |
| Less developed regions | 1.40 | 2.21 | 2.90 | 3.08 |
| World | 1.77 | 2.52 | 3.19 | 3.29 |

*Note*. The more developed regions comprise Europe, North America, Australia/New Zealand and Japan. The less developed regions include the rest of the world (see p. x of source). Source: Table 2, p. 6 of World Urbanization Prospects: The 2001 Revision, United Nations Population Division, Department of Economic and Social Affairs.

## 8. Market socialism in China

Is China's market socialism a solution to the Third World's problem of economic development? Market socialism is a system in which the market flourishes under the control of a state bureaucracy. Both state and private enterprises participate in the market, and state control is through ownership and regulation. China's remarkable economic performance over the last 25 years has been summarized in Gordon (1992). Market socialism in China began with the most thorough and democratic land reform program ever carried out. The *use* and *not the ownership* of the land was divided equitably among China's 200 million farm families. Each family was then free to produce and market output in excess of quotas for delivery to the state. Notice that the requirement was to deliver grain, cotton or another crop and not cash obtained by selling the crop on the market, and a family could not sell its right to the land. This reform raised the growth rate in farm output from the 2% growth rate in the population to 6%, so that all but a small fraction of China's population now eats well. Light industry was brought to the countryside through township and village enterprises. Non-farm employment in the countryside was raised thereby from 20 million to about 135 million people. More than one in two farm families thereby gained a second source of income. For the remaining farm families, additional income could be earned through the newly won right to work in the cities or township and village enterprises.[16]

The modernization of large-scale urban industry has been more difficult. The level of technology in China in 1984 was about 50 years behind the West, and the transfer of technology that took place in labor-intensive light industry via the township and village enterprises did not take place there. Large-scale urban state enterprises enjoyed a privileged position that made them resistant to change and to participation in joint ventures with western corporations. Large losses were suffered by enterprises in many of these industries during the eighties. Nonetheless, modernization is now proceeding well due to the expanded role of the market under the control of the state.

The control of the economy by the state through both ownership and regulation is pervasive enough to give considerable support to the hypothesis that market socialism and not corporate capitalism is its economic system. Of course, the market brings with it both the virtues and vices of capitalism—greater personal freedom, corruption, inequality and insecurity. Progress in agriculture has increased relative poverty in poorer sections of the countryside, where income must be supplemented with low wages from work in the cities. Workers in state enterprises suffer reduced employment and unemployment as these enterprises are liquidated or modernized, and fortunes are being made by successful capitalists at home and those from Hong Kong and Taiwan.

The rapid economic development that is taking place in China makes the country look more like a 19th century capitalist economy than the popular vision of a utopian socialist society. That leads some observers to argue that China is on the path to becoming a capitalist country, but there is scant evidence that the state bureaucracy is privatizing China's wealth or surrendering it to a new capitalist class, as took place in the former Soviet

[16] For grudging recognition of what China has achieved for the well-being of its people through market socialism, see Nolan (1994) and Weil (1994).

Union. If a transition to capitalism takes place, it remains to be seen whether the transition is to the imperialistic corporate capitalism of the United States or to a form of welfare capitalism. There is a far more formidable problem in using China as a role model for Third World countries. Market socialism was established in China under Deng's leadership after the Communist Party of China gained independence for the country through Mao's great and costly revolution. A reactionary capitalist class and foreign influence were eliminated, and a socialist bureaucracy ruled the country for 30 years. Can Deng's reforms be carried out elsewhere without first suffering Mao's revolution?

## 9. The long-run

The passage from Engels at the start of this paper stated that initially "the laws of the capitalist mode of production and its corresponding forms of exchange ... further the general aims of society." The passage was written about the middle of the 19th century, when the Industrial Revolution had been completed in England, and the transformation of agriculture from feudal to capitalist relations was all but complete. Hence, Marx and Engels believed that the capitalist activity of the merchants and craftsmen of the Italian cities, Spain, Portugal, Holland and England and then the transformation of Western Europe by the Industrial Revolution were positive developments.

Marx, Engels and their followers argued that the subsequent development of capitalism is making it increasingly impossible. How do we determine whether or not the rise of welfare capitalism, its transformation into the corrupt splendour of corporate capitalism, with its creation of underground capitalism in the Third World, is still another adaptation of capitalism to the change in technology it induces? Or is progress taking place to the point where capitalism becomes impossible? This is a difficult if not impossible question to answer. It is like asking at what point in the Roman Empire's history, short of its actual collapse, did it become clear that the splendour following its rapid growth had become impossible and it must soon collapse. What I will do in this section is address, if not answer, the above question by discussing three models of economic development. One model is the neoclassical model of exogenous growth due to Solow (1956) and Swan (1956). The second model is the endogenous version of the neoclassical model. The third model explores the implication of growth in the capitalist first world relative to the peasant Third World for the long-run development of both systems. Notice that our objective is to explain the actual path of capitalist development, not how a capitalist system might develop under ideal conditions of perfectly competitive markets.

The neoclassical theory of growth was a response to the Keynesian theory of secular stagnation and long-run unemployment elaborated by Harrod (1939) and Domar (1946). They argued that in the absence of technological progress, employment and the capital stock had to grow at the same rate in the long run. If the full employment growth rate in the capital stock $g^*$ is greater than $n$, the growth rate in the labor force, then $g$, and with it employment, would fall to $n$. Here, $g = s/v$ with $s = S/Y$, the fraction of output saved and $v = K/Y$, the capital output ratio. Harrod and Domar made the reasonable assumptions that n and v are exogenous, so that the fall in $g$ to $n$ took place through the fall in $s$.

Solow and Swan objected that Harrod and Domar implicitly assumed that the capital labor ratio as well the capital output ratio is exogenous. In fact, with $g^*$ greater than $n$, they have the capital labor ratio rising on the assumption that full employment is maintained. With $K/L$ rising and $s = s^*$ at full employment, $g^* = S^*/K$ falls until it reaches $n$. The question, however, is how capitalists respond to an excess of $g$ over $n$. Do they reduce investment and employment, or are these statistics maintained in the face of a declining profit rate? There are other objections to the theory. It requires the brave assumptions of a perfectly competitive closed system, and the expenditures in pursuit of monopoly power are ignored (see Barro & Sala-i-Martin, 1995). Furthermore, the theory is a macro model without a micro foundation, in that a representative agent is employed to determine the variables entirely on the macro level. It ignores the two essential features of a capitalist system: specialization and exchange via markets and the private ownership of capital. The former generates unexpected fluctuations in profits and the latter makes bankruptcy a problem. Furthermore, there is no support in the data of the last 50 years to be discussed below that convergence among rich and poor countries is taking place.

However, the chief objection to the Solow and Swan model that took place in the literature was the assumption that technological progress is exogenous to the system. Endogenous growth theory arose to explain differences among countries in per capita GNP and in its growth rate. For more on the theory see Grossman and Helpman (1991), Aghion and Howitt (1990), Roemer (1994), Nelson (1997) and Barro and Sala-i-Martin (1995). In the original Solow model, countries might differ only in the capital–labor ratio and there is a long-run tendency towards convergence in this ratio and in output per worker. In fact, growth rates and per capita GNP differ widely among countries over long periods of time, with education, culture, past income, history and infrastructure among the many explanatory variables that were found. That led endogenous growth theorists to consider whether infrastructure expenditures are contributing towards convergence among countries in their GNP growth rates and, if so, how fast it is taking place. Unfortunately the evidence is far from encouraging. Sala-i-Martin (1996) found convergence in the long-run growth rate among the rich OECD countries over the years 1960–1990, but there was divergence among 110 rich and poor countries. In other words, among the rich OECD countries there was inverse correlation between per capita GNP in 1960 and its growth rate over the period 1960–1990. The opposite was true of 110 rich and poor countries, so that the poor got poorer, especially relative to the rich. Furthermore, among the non-OECD countries a material fraction had negative growth rates and a very small fraction had growth rates above 2% (see Sala-i-Martin, 1996, Fig. 3).

Examining roughly the same period covered by Sala-i-Martin, Felix (1998b, Table 2) found that between the first and second half of the period 1959–1994 the rich OECD countries experienced a sharp fall in their growth rates, from 4.3% in 1959–1976 to 2.6% in 1997–1994. Adding the prosperous 1990–1958 years and the declining 1995–2003 years to the Felix data for the OECD countries would likely increase the fall between the two halves of the post-war years. Also, a larger fraction of the Third World countries is likely to show negative growth rates in the second half of the post-war years. The experience of rich and poor countries over the last 50 years provide little if any reason to believe that national infrastructure expenditures are overcoming the drive of corporate capitalism to maximize its growth rate at the expense of wide sections of the rest of society.

What is surprising about the literature on endogenous growth theory is that with little exception, it ignores the goals and activity of corporate capitalism. In the same spirit, we are frequently told by mainstream economists and politicians that growth is needed to lift the Third World out of its terrible poverty. However, corporations and their stockholders are concerned with the growth in their profits and market value, and First World governments are persuaded to pursue their narrow interests assiduously in international relations.

This drive to maximize market value and to achieve abnormal growth in market price has been expressed in enormous investments to reduce labor costs and to develop new products that offer greater profit margins. In the U.S., the manufacturing sector is the sector where these efforts have been least intense, apart from moving production abroad. Nonetheless, the ratio of capital at constant prices to production labor rose from 41.8 in 1968 to 90.8 in 1996. See Gordon (2005, Table 2). That is, instead of investing in technologies that could find productive employment for the enormous populations being driven off the land in the Third World, no effort is being spared to reduce labor costs even further.[17] The peasants driven off the land for the most part are unemployed or produce without capital in the new rapidly growing underground economy.

Corporate capitalism's growth imperative is served by destroying the power of national governments, particularly Third World governments, to control the participation of foreign corporations in their economies. The international mobility of capital is further served by the glorification of central bank independence, the increased size and complexity of private financial institutions and markets, the toleration of off-shore tax and financial havens, and the weakness of national and international regulation of financial transactions. Among the unfortunate consequences has been the ability to hide money nationally and internationally, thereby creating an environment in which many kinds of unattractive activities flourished. They include the drug trade, terrorist groups, underground anti-terrorist groups sponsored by government, corrupt businesses, corrupt officials, and Third World dictators.

Our third model for the development of capitalism draws on our experience with biological or natural systems. There is of course considerable diversity in the evolution of such systems, but the model of capitalist development presented below clearly falls within that class of systems. In short, the rise and fall of a new economic system takes place through the change in its size relative to the economic system or systems it replaces. To elaborate, recall that capitalism is the private ownership of wealth and it relies on markets for specialization and exchange. They make the future uncertain, and that subjects capitalism to a growth imperative, because a no-growth policy guarantees bankruptcy for the capitalist and collapse for the system (Gordon and Rosenthal, 2003). Furthermore, casual empiricism provides good reason to believe that survival requires growth at a higher rate than is possible for a closed system.

Capitalism first appeared as small isolated islands in a feudal–peasant sea. The opportunities for profit and growth were enormous, and it took place notwithstanding the

[17] In industries where blue collar employment is non-existent or has been practically wiped out in the U.S., the revolution in communications is now being used to move all manner of white collar work to the Third World. Unemployment and insecurity in the U.S. grows, while unemployment in the Third World also grows, notwithstanding the transfer of jobs from the West.

comparative smallness and weakness of the islands. Many were destroyed, but new ones appeared and enjoyed great profit through trade and plunder. The large established peasant–feudal countries in Europe found these merchant-guild towns a benefit and a nuisance, but not a burden. In Asia and Africa, trade and plunder remained the main source of imperial income as late as the 19th century, and the feudal–peasant systems of Asia and Africa were not changed materially through the end of that century. The Americas were not so fortunate: the native population was all but completely wiped out and a plantation economy was built on slave labor. Hence, the rest of the world contributed materially to the Industrial Revolution, and latter's transformation of Western Europe was the basis for Marx's favorable judgement on capitalist development until then.

During the 20th century, capitalism became comparatively large in relation to the feudal–peasant and other backward economics of Asia, Africa and Latin America. As capitalism grew relative to the non-capitalist systems and structures with which it shares the earth, the challenges to continued growth and survival become greater, and the powers to overcome the challenges increased correspondingly. Recall that the challenges come from two directions. One is from the Third World, since its bounty and its docility decline as its exploitation increases. The other challenge is from welfare capitalism, which uses democratic institutions, including professional associations and the entitlements obtained from government, to share in the benefits of exploitation and growth. The ability of corporate capitalism to overcome its challenges increases with the technology of communication, travel, transportation and management. The ability to exploit the Third World's resources and to exploit its people by moving production at will among Third World countries increase correspondingly. However, as the burden of imperial exploitation increases, the Third World becomes increasingly inadequate and unwilling to satisfy the demands on its resources and people. That encourages corporate capitalism to turn on the public sector at home. The privatization and deregulation of one public sector or not-for-profit sector after another takes place. Since these sectors produce security while the private sector produces instability and hopefully positive growth, insecurity grows at home with the private sector's quest for growth.

As corporate capitalism grows relative to the feudal–peasant systems in the Third World, and the marginalized fraction of the population at home grows, the tensions among them become more severe and the decline begins. The Third World leads the way in the decline and in the collapse of their economies and their governments. The reasons for this vary, among them the poor development of capitalistic institutions, severe exploitation of the peasantry, gross inequality of urban income and gross corruption in the exploitation of natural resources. The advanced capitalist countries also decline, but with a lag. They are faced with the additional burden of the military expenditures needed to maintain authority abroad and peace at home. The inadequacy of the above solutions makes all sides resort increasingly to violence.

## 10. Conclusion

The two great accomplishments of the capitalist systems in the First World over the last 500 or so years have been (1) the enormous increase in productivity, wealth and consumption, and (2) the establishment of civil liberties, popular elections and the other institutions of democratic societies. They are represented today by the competing and complementary performances of corporate capitalism and welfare capitalism. In the wide range of ways described earlier, corporate capitalism exploits other systems and the environment in order to achieve growth well beyond what is possible through technological progress alone. Moreover, at least until recently, the democratic institutions of capitalist countries in the First World have given the strength to welfare capitalism that has made part of the benefits of growth flow down to the wider population as a whole.

Unfortunately, the Third World has contributed enormously to the prosperity of the First World, while sharing in this prosperity little if at all. On top of that, the Third World is now being used by corporate capitalism to threaten the continued existence of the welfare state in the First World. Subsistence wage rates draw manufacturing and many other activities to the Third World. Compensation rates and employment are thereby depressed in the First World. In addition, every activity of the state in the First World is being attacked and curtailed or privatized and priced out of the range of an increasing fraction of the population. We are told that the role of the state in providing income support and security for the population must be curtailed because it cannot be afforded. Where is the increasing surplus of output over its production cost in the First and the Third World going? The answer includes the increasing cost to corporations of maintaining their monopoly power and the increasing military cost to governments to maintain the exploitation of the Third World. It also includes the increasing cost to all of the insecurity of corporate capitalism.

An increasingly important dimension to this contradiction in capitalist development is the modernization of Third World agriculture combined with the urbanization of its population over the next 30 years. The Third World's urban population will double from two to four billion people over these years. The population movement now taking place is on a scale never before experienced. The prospect is that all but a small fraction will be idle, or drawn into illegal activities (underground capitalism), tribal warfare, or violent expressions of nationalism. They will die of starvation, disease and civil conflict on a massive scale. Certainly in the Third World, the system is becoming impossible.

What is needed is an enormous expansion of welfare capitalism in the First World with most of the benefits to the Third World. It is sickening to see the large fraction of the world's output consumed by the small fraction of the world's population in the First World. This excessive consumption takes two forms. One is the actual consumption of the middle class as well as the rich, and the other is the private and public cost of the monopoly power that maintains this exploitation. Without the transfer of a large fraction of this surplus to the Third World, the destruction of the human and material resources there along with the world's environment threaten the continued existence of life on earth. Whether or not this transfer will take place, and if so how, remains to be seen.

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