PAPERS

The Theory of the Market Economy and the Social Foundations of Innovative Enterprise

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The author argues that the theory of the market economy propounded by western economists is more a hindrance than a help in understanding the difficult economic problems that nations, both rich and poor, now face. The fundamental problem is that western economists who propound the theory of the market economy – including those who recognize that markets often work 'imperfectly' or 'fail' – lack a theory of economic development that can explain the successful growth of the wealthy economies. The author argues further that a theory of economic development must be rooted in a *theory of innovative enterprise*. Lacking such a theory, 'market' economists tend to see developed markets in labour, capital and products as *causes* rather than *consequences* of economic development. The 'market economy' is, of course, a very real phenomenon with great economic and political advantages if it can be achieved and controlled. But, in reality, well-functioning markets are much more the consequences than the causes of economic development. To reap the advantages of a 'market economy', a society must first put in place the organizations and institutions that generate the innovative capabilities that underpin economic development and that make possible the emergence of well-functioning markets in capital, labour and products. With these capabilities and markets in place, a society can then turn to the ongoing tasks of promoting the innovation process and controlling the operation of markets to achieve stable and equitable economic growth. Understanding the social foundations of innovative enterprise is, the author argues, critical to the formulation of policies to achieve this end.

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The Triumph of the 'Market Economy'?

In historical perspective, the major debate in political economy in the 20th century was whether it was the 'market' or the 'plan' that should constitute the institutional foundations for governing a modern economy. By the end of the century that debate had become old-fashioned, as, both politically and economically, capitalism had clearly won out over socialism. The collapse of the Soviet model led nations within the former Soviet bloc to try to transform their modes of economic governance to emulate what they understood to be the institutions of a 'market economy'. In China, beginning with the post-Mao reforms of the late 1970s, a prolonged transition from the 'plan' to the 'market' was set in motion – a transition marked by social disruption and political conflict as well as high rates of economic growth.

The dynamic growth of the 'new economy' in the last half of the 1990s, centred in the US but spreading also to the European Union and Japan, served to reinforce a consensus in both academic and policy circles on the superiority of the 'market' as the mode of economic coordination. Building its industrial base on the Internet-driven revolution in information technology, the visible features of the 'new economy' that differentiated it from the 'old economy' were the heightened mobility of people and money via labour and capital markets as well as rapid changes in product markets (see, for example, Carpenter et al., 2002). The 'new economy', with its knowledge-driven application of technological capabilities, could be portrayed as the ultimate triumph of the 'market economy'.

The 'new economy' could also be portrayed as one in which risk-taking capital had ousted security-seeking labour as the dominant force in allocating society's productive resources. Specifically, the 'market economy' consensus tended to view the emergence of the 'new economy' as the successful culmination of the market-oriented 'shareholder value' movement that had, in the 1980s and 1990s, come to dominate discussions of corporate governance, first in the US but by the late 1990s in Europe as well. Adopting 'maximization of shareholder value' as their corporate goal, by the mid-1990s many long-established US corporations had undergone substantial, and often dramatic, restructuring, purportedly in their attempts to remain competitive in the markets for which they produced. The prime characteristics of this restructuring process were the downsizing of corporate labour forces and the increased distribution of

corporate revenues to shareholders in the forms of dividends and stock repurchases – what can be called a 'downsize-and-distribute' corporate governance regime (Lazonick and O'Sullivan, 2000a). The economic theory that rationalized such restructuring posited that the market for corporate control could compel corporations to relinquish control over human, physical and financial resources so that labour and capital markets could reallocate these resources to their most efficient uses.[1]

In the mid-1990s, such US-style corporate restructuring was not politically acceptable in most other wealthy capitalist economies. During the 1990s, the Japanese corporate economy maintained the institutions of lifetime employment and cross-shareholding on which it had built its extraordinary economic success during the post-Second World War decades. In most Western European nations, the ideology of 'maximizing shareholder value' had little broad appeal as long as the US corporate governance regime was perceived as generating, through its 'downsize-and-distribute' focus, employment insecurity and income inequality. Indeed, until the late 1990s, in nations such as France, Germany, Italy and Sweden that sought to maintain the integrity of their 'social market economies', the issue of corporate governance was hardly discussed and the ideology of shareholder value little known. The Western European exception, of course, was Britain, where the Thatcher revolution of the 1980s had sought to give a new lease on life to both the City of London financial elite and masses of pensioners with their savings invested in the stock market. But British industry had entered the 1980s in a much more weakened condition than US industry; as the shareholder-oriented corporate governance regime took hold in Britain during the 1980s and 1990s, British industrial corporations that downsized their labour forces had much less cash to distribute to shareholders.

In the late 1990s, however, the rise of the Internet-based 'new economy' in the US made the shareholder-value movement more attractive to the nations of Western Europe. No longer was the pursuit of shareholder value tainted with the charge that it was merely a means of laying off workers to benefit financial interests. Now the shareholder-value movement became associated with economic growth that generated innovative products that people used every day at work and at home. The corporate goal of maximizing shareholder value also became associated with a huge growth in new employment opportunities that called for a workforce with

high levels of education and knowledge who could take advantage of mobility via the labour market to 'new economy' companies as an alternative to the life-long employment security that 'old economy' companies had offered. From this perspective, the 'downsize-and-distribute' era of the 1980s and early 1990s could be depicted as a painful but necessary prelude to a 'retain-and-reinvest' corporate governance regime in which industrial enterprises used stock-based compensation (particularly in the form of stock options) to retain highly educated and highly mobile personnel and mobilized financial resources to reinvest in their innovative capabilities.

By the late 1990s, as US stock markets boomed as they never had before, the new ideology of a stock-market driven economy began to erode resistance to the shareholder-value movement in the social market economies of the EU. At the microeconomic level, European corporate executives began to see 'maximizing shareholder value' as a recipe for turning staid old-line corporations into nimble innovators, while also perhaps bringing their personal levels of remuneration closer to the extraordinarily high levels that had become the American norm. At the macroeconomic level, European government officials began to see 'maximizing shareholder value' as a way to generate, on the one side, huge sums of money for state treasuries through the privatization of state-owned companies as well as, at the height of the boom, high-priced 3G mobile licences, and, on the other side, high returns on retirement savings that US stock markets were producing and that the public social security systems of Western Europe could not hope to provide.

Although, in the years of negative growth of 1997–8, some Japanese business executives and politicians flirted with the notion that Japan should open its door to the shareholder-value movement, that nation maintained its resistance to the ideology throughout the 1990s, as it kept intact its systems of lifetime employment and cross-shareholding, the key 'non-market' institutions that the nation had put in place in its extraordinary ascent from poor to rich nation from the 1950s on (Lazonick, 1999; Dore, 2000: Part II). Nevertheless, for the Japanese, the prolonged stagnation of the 1990s, which many came to call the 'lost decade', substantially undermined their own confidence in the Japanese model, while in the western economies, market-oriented economists could now dismiss the employment, financial and governance institutions that had underpinned the Japanese 'miracle' as obsolete relics of an 'old economy'. The time

had come, the western economists argued, for Japan to make the transition to the institutions of a 'new' market economy.

Towards the end of 2000, however, the 'new economy' boom fizzled out, and since then it has collapsed. In the United States, revelations of the chicanery of financial analysts, corporate managers and 'independent' auditors in manipulating reported earnings and stock prices have revealed the ways in which many of those on the inside were able to turn the speculative excesses of the 'new economy' to their almost unimaginable personal gain, while untold numbers of individuals who shifted their savings into corporate stocks during the late 1990s, when the longest stock market boom in US history was at its peak, suffered huge financial losses. Even during the 'new economy' euphoria in the US, the collapse of financial markets in Asia in 1997 and Russia in 1998 had shown the havoc that could be wreaked when masses of money flitted from place to place around the globe in search of higher returns. If, at the beginning of the 21st century, the 'market economy' has indeed triumphed as the best possible institutional basis for resource allocation, we now live in a world characterized by profound financial instability and growing income inequality. It would appear that, with the triumph of the 'market economy', stable and equitable economic growth has become ever more difficult to achieve.

In both the richer and poorer nations, this situation poses a conundrum for social reformers and economic policy-makers for whom the achievement of stable and equitable growth is a major objective. Markets – and particularly financial markets – often appear more as problems than as solutions for reaching this goal. Yet the only respectable theory of the economy to which social reformers and economic policy-makers can look for guidance and validation is what can be called 'the theory of the market economy'[2] – a theory that posits that an economy in which market institutions allocate resources is the best of all possible worlds.

I argue that the theory of the market economy propounded by western (and especially US) economists is more a hindrance than a help in understanding the difficult problems that economies, rich and poor, now face. Specifically, I argue that the way in which economists are trained to think about the role of market institutions in the operation of the successful 'market economies' has very little to do with how these economies actually operate when they are successful, much less when they falter. As a result, even when market economists recognize that there are major problems with

the operation of the 'market economy', they have great difficulty in making a consistent theoretical case for the regulation of highly speculative markets, or even for government programmes for developing the capabilities of the labour force, investing in new technology, or bolstering aggregate demand. The fundamental problem, I argue, is that western economists who propound the theory of the market economy – including those who recognize that markets often work 'imperfectly' or 'fail' – lack a theory of economic development that can explain the successful growth of the wealthy economies. As a result, they are intellectually ill-positioned for explaining why wealthy economies experience crises or why the efforts by poorer national economies to join the ranks of the wealthy go astray.

Lacking a theory of economic development, market economists wrongly tend to see developed markets in labour, capital and products as *causes* rather than *consequences* of economic development. The 'market economy' is a very real phenomenon with great economic and political advantages if it can be achieved and controlled. But, in reality, well-functioning markets are much more the consequences than the causes of economic development. To reap the advantages of a 'market economy', a society must first put in place the organizations and institutions that generate the innovative capabilities that underpin economic development and that make possible the emergence of well-functioning markets in capital, labour and products. With these capabilities and markets in place, a society can then turn to the ongoing tasks of promoting the innovation process and controlling the operation of markets to achieve stable and equitable economic growth. Understanding the social foundations of innovative enterprise is, I argue, critical to the formulation of policies to achieve this end.

The Theory of the Market Economy

An economy is a social system for the allocation of resources to alternative productive uses. Specifically, an economy is a social system that allocates labour and capital inputs to the production of goods and services and that allocates the goods and services that the economy produces to participants in the economy. Through the use of money as a store of value as well as a means of exchange, this allocation process can take place over time as well as at a

point in time. As thus stated, this definition of an economy is uncontroversial.

What are the main political and economic advantages of market exchange as part of a social system for the allocation of resources? The market allocation of *labour* enables individuals to choose how much and what types of work they wish to do and where they wish to do it. The social advantages of a well-functioning labour market provide the most important *political* argument for a market economy. With well-functioning labour markets in place, some (more privileged) people cannot control the allocation of other (less privileged) people's labour; people are free to choose how and where to seek out a living.

The market for the allocation of *capital* means that individuals can potentially choose whether they want to work for themselves or for others since, with access to capital markets, they can purchase means of production. Indeed, whether they work for themselves or for others, the market for capital makes it possible for people to invest, through education and training programmes, in the improvement of their own productive capabilities. The capital market can thus enhance their mobility via the labour market and the value of their own productive contributions to the economy. Moreover, the existence of a capital market holds out the possibility for individuals to secure a positive return on their savings without necessarily tying up those savings in means of production, thus creating an incentive to save out of current income even for those who have no intention of going into business for themselves. The social advantages of well-functioning capital markets provide the most important *economic* argument for a market economy.

The market allocation of *products* not only creates consumer choice, but, more importantly, permits access to the purchase of goods and services that are means of production and to the possibility of selling the goods and services that one produces. The existence of product markets thus allows people to combine their labour with access to capital to choose the types of productive activities in which they want to engage. Well-functioning product markets can provide people with a greater variety of choices as both consumers and producers, and the existence of well-functioning labour and capital markets can enhance these choices. It is possible, however, for well-functioning product markets to exist in a society that has neither well-developed markets for labour or capital, both of

which are more fundamental for the political and economic freedom associated with a market economy.[3]

The argument for the advantages of markets, first put forth in a coherent way by Adam Smith more than two centuries ago, has since that time been elaborated by economists into a *theory of the market economy* – a theory that argues that the more 'perfect' the markets in terms of the allocation of resources, the better the 'performance' of the economy. A 'perfect market' is one in which there are no impediments to the mobility of resources from one use to another; in response to market prices, labour and capital flow freely and instantaneously to the production of alternative goods and services. Superior performance derives from the ability of individuals to make the best possible use of the allocative mechanisms of labour, capital and product markets to maximize their satisfaction, or utility. The more 'perfect' the market, the more it permits individual utility maximization, and hence (assuming away the thorny problem of interpersonal comparisons of utility) the better the performance of the economy as measured by the satisfaction of its participants.

In this theory, which is readily found in any major economics textbook and which is taken for granted by most of today's professional economists, the key social unit is the household. Although the family household is a small organization that allocates resources internally – and some market economists (for example, Becker, 1981) have applied the theory of the market economy to the allocation of resources within the household unit itself – most economists treat the 'household' as if it were a utility-maximizing individual. The use of the term 'household' is in effect a concession to the reality that individuals are not able in the early parts of their lives to be active participants in the market economy and hence are dependent on the allocation decisions of older people who are. The household/individual allocates labour to alternative productive pursuits, income to alternative goods and services, and savings to alternative financial instruments. The important point is that, in the theory of the market economy, it is the utility-maximizing decisions of households/individuals acting as atomistic decision-making units that determine the allocation of resources in the economy as a whole. In doing so, they maximize their individual economic performance (that is, as measured by their utility) in a social system in which, given the pervasiveness of market mechanisms, *no individual exercises any power over anyone else*.

The individual freedom of choice that is the essence of resource allocation in the presence of markets has led market economists to argue that the 'perfect' market economy is an *ideal* mode of allocating resources. But many, if not most, market economists also contend that, because of 'market imperfections' and 'market failures', the perfect market ideal is not always, or even normally, achieved. 'Market imperfections' restrict the free flow of labour and capital to alternative productive activities and household incomes to alternative goods and services, and hence, within the logic of the theory of the market economy, result in less than optimal performance in the economic system as a whole. 'Market failures' occur when a good or a service that society purportedly needs is not made available through market resource allocation. Hence the state must step in to supply the good or service directly, or alternatively to influence private allocative decisions so that the 'market' now finds it worthwhile to undertake its supply. Examples of 'market failures' are chronic unemployment and poverty-level incomes, an absence of credit facilities for lower income people or smaller firms, and a lack of necessary 'public goods' such as primary education and law enforcement that are deemed to be public because household/individual incomes, allocated through the market for education or for safety, are too constrained to generate sufficient demand to support these services.

The identification of 'market imperfections' and 'market failures' provides market economists with operational concepts with which to focus on reality, and also creates endless possibilities for debate among themselves over whether such imperfections or failures exist, and if so, what to do about them. Some market economists of a more 'conservative' bent – for example, Oliver Williamson (1985, 1996) – argue that market imperfections are inherent in 'human nature as we know it', and hence that the organizations and institutions that characterize a market economy are optimal adaptations to these 'imperfect' conditions. Other market economists of a more 'liberal' bent – for example, Joseph Stiglitz[4] – argue that market imperfections can be reduced through public policy interventions that enhance the free flow of economic resources. Liberal market economists tend to believe in market failure, whereas conservative market economists often argue that state interventions that respond to the existence of purported 'market failures' actually subvert the abilities of markets to allocate resources to achieve the same outcomes. For example, liberal market

economists often argue that poverty reflects a 'market failure', while conservative market economists tend to argue that, if there is indeed a 'failure', the blame must be laid at the door of the individual for not working hard enough or having sufficient foresight to earn a higher income. What is more, the conservatives would contend, social welfare programmes that treat the problem at if it were a 'market failure' rather than an 'individual failure' (given the opportunities for earning incomes that the market provides) only exacerbate the problem by creating incentives for poor people to work less hard and with less foresight.

Market economists of different political stripes hold opposite views of the efficacy of state intervention. As a result, among adherents to the theory of the market economy, there is often vigorous policy debate. Yet both types of economists agree that the theory of the 'perfect' market economy is the *ideal benchmark* against which the reality of resource allocation should be compared. If one accepts these basic terms of the debate, one might be led to believe that the basic explanation for the success of the wealthy 'market economies' has been a progressive eradication of market imperfections and market failures that has brought the allocation of resources in these economies closer to the 'perfect market' ideal. The clear policy implication of such a perspective for societies that have not achieved such economic success is that their economic future depends on their ability to rely as quickly and as fully as possible on the introduction of markets for labour, capital and products to allocate resources in their economies. Those national economies that want to join the ranks of the wealthy nations, so the argument goes, should make the transition to the market economy as quickly and as fully as possible, not only within their own political boundaries but also by becoming integrated into the international market economy. And, the policy prescription continues, if these economies continue to experience problems of economic growth, income inequality, or financial instability as they make the transition to the market economy, the sources of their problems reside in the persistence of 'market imperfections' and 'market failures'.

The theory of the market economy sounds convincing, in large part because of the very real political and economic advantages for the individual of living in an economy in which one can freely allocate one's labour, borrow capital and decide what to consume. The theory of the market economy also seems to be above ideology

because there is in fact vigorous debate among market economists with different political perspectives concerning the need for and impacts of state intervention into the resource allocation system. Indeed, over the course of the 20th century, the theory of the market economy attained such a high degree of academic respectability (enhanced immensely by the 30-year-old practice of awarding Nobel prizes in market economics) that, especially with the collapse of the planned economies, there exists a powerful system of belief that cannot countenance that the theory is fundamentally flawed.

Innovation and Development in a 'Market Economy'

The fundamental flaw in the theory of the market economy begins to become apparent when one asks how an economy can generate higher and higher material standards of living over a prolonged period of time, and when one recognizes that the sources of 'innovation' – precisely defined as the generation of higher quality products at lower unit costs, given prevailing factor prices (Lazonick, 2002a) – may be important, and indeed indispensable, to the answer. The flaw becomes even more evident once one asks what role business enterprises play in the innovation process, and why indeed business enterprises can grow to employ people numbering in the thousands, tens of thousands, or even hundreds of thousands and why these enterprises can persist for decades on end. Can the modern business corporation that controls the allocation of vast amounts of labour and capital be understood either as a massive 'market imperfection' that restricts the free flow of resources via the market or, alternatively, as an artifice of state intervention that manifests 'market failure'? Given the importance of the business corporation in a modern economy, might it not make much more sense to have a theory of resource allocation that asks how and under what conditions these business enterprises allocate resources in ways that, by generating higher quality, lower cost products than would otherwise be available, can enhance economic performance? If so, economic theory needs a *theory of innovative enterprise*.

The theory of the market economy fails to provide a theory of innovative enterprise. Indeed, in the theory of the perfect market economy there is no inherent reason why the social unit that we call 'the firm' – an entity whose purpose it is to transform purchased inputs into saleable outputs – should exist; households engaging in

trade on intermediate product (that is, capital goods) markets should be able to perform this function. To create a role for the firm as a distinct unit in the theory of the market economy, one has to assume that there are 'economies of scale' in the production of goods and services that make it impossible, or at least economically undesirable, to rely solely on market exchanges to transform inputs into outputs.[5] Even then, in the theory of the market economy, firms, as units responsible for 'production', play a passive role in supporting the process of exchange. The firm turns inputs into outputs according to the dictates of factor prices and production technologies that are externally imposed on it by market competition for the allocation of resources, and which the firm therefore takes as given constraints in its resource allocation decisions. As a concession to reality, there are 'firms' in the theory of the market economy, but the theory contemplates only *market control*, not *organizational control*, over the allocation of the economy's resources.[6]

This theory of the firm represents the major weakness of the theory of the market economy for understanding the way in which actual 'market economies' operate. The main problem with the theory of the firm in the theory of the market economy is that it precludes an analysis of how a business enterprise might allocate resources to transform market and technological conditions in ways that generate 'innovation' – that is, in ways that produce a good or a service that, given the wages paid to labour and the rate of return to capital, is higher quality and/or lower cost than the good or service that this firm or other firms had previously been capable of putting on the market. Given their belief in the ideal of the 'perfect' market economy, conservative market economists would logically view the modern business enterprise as a massive 'market imperfection' – it exercises organizational control over the allocation of enormous amounts of labour and capital and often dominates product markets – while liberal market economists would logically view it as a massive 'market failure' – large-scale business organizations exist because for some reason the market 'failed' to allocate resources to the particular activities in which the business enterprise is engaged.

It is the introduction of a theory of innovative enterprise into a theory of resource allocation that transforms 'the market' from an explanation to an outcome of economic development, and that, as a result, transforms our understanding of the roles of organizations

and institutions, as well as markets, in determining economic performance. Given the importance to the wealthy economies of business organizations of considerable size – and even one that employs 500 people is generally considered large – the adherence to the theory of the market economy leads market economists to ignore systematically the roles of organizations rather than markets in allocating resources to generate superior economic performance. I should stress once again that markets are important in facilitating the reallocation of resources in the wealthy economies, and the existence of markets for the allocation of labour, capital and products can offer individuals profound political and economic freedom that, once acquired, is to be highly cherished and protected. The problem is that the existence of such socially desirable market opportunities is much more an outcome of the process of economic development than its cause.

A historical and comparative analysis of economic development, not just say one century ago but even over the immediate past, shows that in the wealthy economies it has been organizations rather than markets that have been primarily responsible for the allocation of resources that generates economic development. As a result, the theory of the market economy provides the wrong benchmark for the 'ideal' mode of allocating resources. It is economic development that makes the improvement of markets in labour, capital and products possible, with all the advantages that this improvement brings for political and economic freedom. And it is organizations, not markets, that allocate resources to the production processes that generate economic development. If one wants to learn from the experiences of the wealthy economies, and indeed if a wealthy economy wants to learn critical lessons for the future from its own past, what is needed is a theory of how resource allocation by organizations – in both business and government – generates economic development.

The argument that the theory of the market economy lacks a theory of innovation, and hence economic development, is by no means new in the history of economic thought. It is now over 90 years since Joseph Schumpeter (1934), one of the most erudite and creative economists of the 20th century, made such an argument in *The Theory of Economic Development*, first published in 1911. Schumpeter then spent the next four decades of a highly productive career seeking to understand how, why and when innovation contributed to the economic development of the advanced economies.

In the 1950s, moreover, in an era in which the US had emerged as by far the most dominant economy in the world, two American economists, Moses Abramovitz (1956) and Robert Solow (1957), effectively launched distinguished academic careers by showing, using somewhat different analytical models, that, in the case of the US from the last decades of the 19th century through the first half of the 20th century, the rate of growth of factor inputs (weighted by their market prices) accounted for only about 10 percent of the rate of growth in per capita output. Put differently, a growth model based on the theory of the market economy failed to explain the vast majority of the economic growth that the US had experienced during the period when it became the world's richest economy.

In his original article, Solow called this unexplained residual 'technical change', even though his work, then or subsequently, did not actually demonstrate empirically that 'technical change', as conceptualized in his growth models, was the source of unexplained growth. In contrast, Abramovitz (1962) recognized in an early review of the literature on growth accounting that the index of productivity in this work 'has been dubbed by some a ''measure of ignorance'', and is often referred to simply as the Residual'. Indeed, in a review article that Abramovitz (1993) wrote towards the end of his career, he argued that, over the decades since he and Solow had estimated their first growth models, the empirical work by growth economists had raised more new questions about the causes of growth than they had been able to answer, and hence, relative to what we now know that we ought to know about the growth process, the 'measure of ignorance' had if anything increased.[7]

Since the 1980s, a number of economists have sought to develop models that make 'innovation' endogenous to the process of economic growth (for reviews of the literature, see Grossman and Helpman, 1994; Romer, 1994). While this work has focused attention on the need to explain the role of technological change in economic growth, it has sought to build this explanation within the framework of the theory of the market economy. As Paul Romer (1994: 19) put it in a review of 'new growth theory', to which he made the pioneering contributions: 'The economics profession is undergoing a substantial change in how we think about international trade, development, economic growth and economic geography. In each of these areas we have gone through a progression that starts with models on perfect competition, moves to price-

taking with external increasing returns, and finishes with explicit models of imperfect competition.' Romer recognized that this line of research 'may force economists to reconsider some of the most basic propositions in economics'. But he made it clear that the only theoretical framework available to such economists who wanted to reconsider these propositions was the theory of the market economy. As he continued: 'For example, I am convinced that both markets and free trade are good, but the traditional answer that we give to students to explain why they are good, the one based on perfect competition and Pareto optimality, is becoming untenable. Something more interesting and complicated is going on here.'

It is my contention that if one remains within the 'imperfect competition' paradigm, in which economic performance is inherently compared with the perfect market 'ideal', one will not discover what it is that is going on in the real world of innovation, growth and development that is 'more interesting and complicated' (for elaborations on this theme, see Lazonick, 2002a, 2002b). Rather, I would argue, one needs to start from a theory of innovative enterprise; a theory in which the organizations that are central to a modern economy transform technological, market and competitive conditions to generate higher quality, lower cost products than had previously been available. Over the past few decades a number of scholars, including economists who are intent on going beyond the theory of the market economy in understanding how the economy actually operates and performs, have done a considerable amount of research on the process of innovation. Rather than start with models based on perfect competition, these scholars have started with models of the innovation process. Some of this work has been focused on 'national systems of innovation', while other work has focused on case studies of particular technological transformations in particular industries.[8] This research does not in and of itself constitute a theory of resource allocation, innovative enterprise and economic development. Many contributions, for example, focus on 'technological trajectories' without an adequate account of how innovative enterprises mobilize and develop labour and capital in pursuit of strategic objectives; others treat the 'innovative firm' as if it were equivalent to an entrepreneurial individual; while others fail to show the role that innovative enterprise plays in national innovation systems.[9] But given the centrality of the innovation process to our understanding of the economy, this work, taken

as a whole, has posed theoretical questions and employed empirical methodologies that burst the intellectual boundaries of the theory of the market economy.

While different scholars have emphasized different key characteristics of the innovation process, taken as a whole these studies suggest that the innovation process can be characterized as *collective*, *cumulative* and *uncertain*.[10] The *learning process* that is the essence of innovation cannot be done all alone or all at once (Penrose, 1959). Nor can it be done with any degree of certainty that what needs to be learned will in fact be learned (technological uncertainty) and that, even if it is learned, there will be sufficient demand for the product to generate returns (market uncertainty) or that competitors will not learn to do it better (competitive uncertainty) (Freeman, 1974). The innovation process is collective because the transformation of technological and market conditions to generate higher quality, lower cost products requires the organizational integration of the specialized knowledge, skills and efforts of large numbers of people with different functional capabilities and hierarchical responsibilities. When the innovation process is collective, there is a need for organizational, rather than market, control over resource allocation. The innovation process is cumulative because the possibilities for transforming technological and market conditions in the future depend on the development of those conditions in the past. When innovation is cumulative, some or all of the collectivity that engages in learning must remain intact over time. The innovation process is uncertain because the collective and cumulative processes that can transform technological, market and competitive conditions to generate higher quality, lower cost products are unknown at the time at which commitments of resources to these processes are made. Given uncertainty, an innovative enterprise must be strategic in how it engages in collective and cumulative learning. When innovation is uncertain, investment in organization that is both collective and cumulative can enable an innovative enterprise to transform technological and market conditions that other, less powerful, enterprises might have to accept as binding constraints.[11]

What are the implications of these collective, cumulative and uncertain characteristics for the mode of resource allocation that defines the social foundations of the economy? As Mary O'Sullivan (2000a: Chs 1–2; 2000b) has shown, the theory of the market economy in effect sees resource allocation as *individual, reversible* and *optimal*. That resource allocation is individual means that people

make allocation decisions in isolation from one another; that it is reversible means that the decisions that they made yesterday have no bearing on the decisions that they make today; and that it is optimal means that, as individuals who can (but for 'market imperfections') change their allocation decisions, they make these decisions accepting all of the constraints that the economic system imposes on them. In the theory of the market economy, participants in the economy have no possibility of strategically changing the technological and market conditions that they face.

Yet the strategic transformation of technological and market conditions is what innovation is all about, and indeed, as Schumpeter (1952) recognized, it is the basis on which firms within the same industry compete with one another. If one accepts that the innovation process is collective, cumulative and uncertain, then a theory of the economy that assumes that resource allocation is individual, reversible and optimal will not be an aid to understanding the innovation process. Rather, to allocate resources to a process of transforming inputs into outputs that is collective, cumulative and uncertain, the mode of resource allocation must be *organizational*, *developmental* and *strategic* (O'Sullivan, 2000b). Markets cannot engage in resource allocation that is organizational, developmental and strategic; organizations – be they innovative enterprises or developmental states – can.

The Social Conditions of Innovative Enterprise

There are two main types of organizations that are central in the allocation decisions that result in economic development: the innovative enterprise and the developmental state. Enterprises and states exercise control over the allocation of vast amounts of labour and capital but they differ fundamentally in the ways in which they gain and maintain access to the financial resources that give them control over the allocation of productive resources. Enterprises gain access to what can be called 'foundational finance' on an ongoing basis through the revenues that they generate from the sale of goods and services, whereas states gain access to foundational finance through taxation. Both enterprises and states can exercise leverage on this finance through debt issues, servicing this debt with the flows of foundational finance. It is, however, the different modes of accessing foundational finance that create the fundamental

difference between the governance of resource allocation in an enterprise and a state. In particular, enterprises are under a compulsion to deliver products that buyers want at prices they can afford. These buyers may be households, other businesses, or governments.

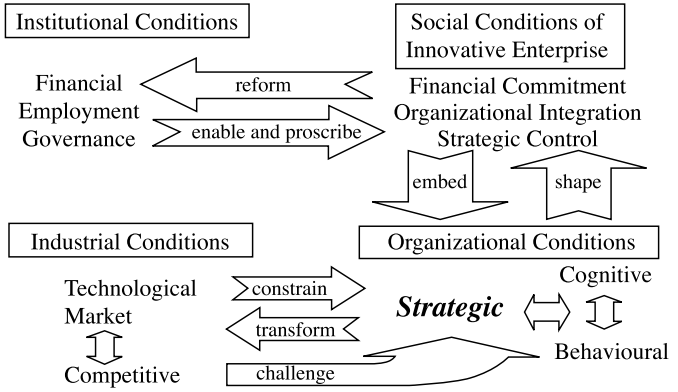
The generation of revenues through the sale of products enables an enterprise to govern 'itself'. Hence the notion that enterprises operate in the 'private' sphere, although the identification of 'itself' – that is, those interests who are deemed to be participants in the enterprise – is a central issue in debates on corporate governance (O'Sullivan, 2000a; Lazonick and O'Sullivan, 2000b). When these revenues are more than sufficient to allocate expected returns to all parties who have financial claims on the enterprise, the surplus can provide a foundation for financing new productive investments; hence the importance of profits for the viability of an enterprise as an ongoing organizational concern. In contrast, the reliance of the state on taxation for foundational finance opens it to societal governance; the state operates in the 'public' sphere. Subject to these very different governance regimes, both the enterprise and the state can choose to allocate resources to organizational learning, with the critical difference that, unlike the enterprise, the state is not normally expected to ensure that the productive resources that are thereby developed are utilized in ways that generate financial returns. The *utilization* as well as the development of productive resources to generate financial returns, or more simply the commercialization process, is the distinctive role of the innovative enterprise, and constitutes the most fundamental reason why the enterprise has a more direct impact than the state on the economic performance of an advanced economy.

Both the innovative enterprise and the developmental state can allocate resources to organizational learning processes. In general, the developmental state will undertake investments in technologies that are deemed to be of strategic (for example, military or medical) importance when the collective, cumulative and uncertain character of the learning process renders the expected scale of the commitment of financial resources so large and the expected duration of time before the generation of financial returns so long (with prospective product markets often non-existent at the outset) that existing enterprises are unwilling to make the investments. Nevertheless, the state typically induces enterprises to participate in these developmental efforts, either through investment subsidies or procurement contracts that, for the activities in which the enterprise invests, make

the scale and duration of the commitment of financial resources acceptable from a business point of view.

Although space constraints do not permit an adequate elaboration of the evolving relations between innovative enterprises and developmental states in the growth of advanced economies, it is worth noting that, contrary to what has become conventional wisdom, during the 20th century the developmental state was of much more direct importance in the growth of the US economy than in the growth of the Japanese economy. The Japanese state was of critical importance in mobilizing bank finance to help fund the innovative efforts of business enterprises (Aoki and Patrick, 1994). But the US government was much more directly involved in the strategic direction of organizational learning processes that spanned state and enterprise organizations in agriculture and health sciences (including biotechnology), aircraft and engines, computers (including semiconductors), and the Internet (see, for example, Tilton, 1971; Constant, 1980; Kenney, 1986; Kash, 1989; Hughes, 1989: Ch. 3; Ferleger and Lazonick, 1993; Heppenheimer, 1995; Riordan and Hoddeson, 1997; Hughes, 1998; Mowery and Rosenberg, 1998; Abbate, 1999; Leslie, 2000; O'Sullivan, 2000a: Ch. 6). Indeed, the Internet revolution that has provided the technological foundations for the 'new economy' would not have occurred in the US but for decades of US government support for the development of computer technology as well as the Internet infrastructure itself.

An analysis of how enterprises, with or without the support of the state, develop the productive resources that are ultimately sold on markets to generate returns requires the identification of 'the social conditions of innovative enterprise'. From a characterization of the innovation process as collective, cumulative and uncertain combined with a comparative-historical analysis of successful economic development in the 20th century, we can identify three social conditions of innovative enterprise: *organizational integration*, *financial commitment* and *strategic control*. The form and content of these social conditions of innovative enterprise depend on the relation between prevailing institutional (financial, employment and governance) conditions and organizational (cognitive, behavioural and strategic) conditions in the economy (see Figure 1). These three social conditions of innovative enterprise all reflect the importance of organizational control rather than market control over the allocation of resources in the economy.



Source: Lazonick (2002a).

FIGURE 1
Industrial, Organizational and Institutional Conditions in the Innovation Process

Organizational integration means that it is the organization rather than the market that creates incentives that affect how people allocate their labour. Financial commitment means that it is the organization rather than the market that controls the allocation of money to alternative uses. Strategic control means that it is the organization rather than the market that determines the types of investments in productive capabilities that the economy makes. Hence, in analysing the process of innovation and economic development, economics needs a theory of the organizational economy rather than a theory of the market economy to understand when, how and whether these social conditions of innovative enterprise are put in place.

Organizational integration is the social condition that creates incentives for participants in the hierarchical and functional division of labour to apply their skills and efforts to engage in interactive learning in pursuit of organizational goals. As a social condition of innovative enterprise, the need for organizational integration derives directly from the collective character of the innovation process. Hence, a theory of innovative enterprise must show how, given the collective character of the transformation of technology and markets in particular industrial activities, institutions and organizations combine to create the necessary incentives for those who are expected to engage in interactive learning.

Across the wealthiest economies for over a century, the main mode of organizational integration has been the internal career path which has offered employees the expectation that, subject to certain performance criteria, they would find opportunities of stable, remunerative and, perhaps, creative employment with their existing employer over a long period of time. On these career paths, such employees typically develop skill, knowledge and experience – that is, productive capabilities – that are relevant to the organizations for which they work. Since innovation depends on organizational learning, the enterprise typically has substantial interests in both making investments in 'human capital' that enhance the productive capabilities of their employees and ensuring that it can utilize these capabilities by securing the long-term attachment of these employees to the organization.

Although such 'organization' men and women possess the right to quit their employment at any time, and by virtue of their accumulated skill, knowledge and experience are often well positioned to make use of the labour market, they generally choose to remain with their current employer because as insiders they tend to receive higher pay, greater employment security and more financial stability than people who are outsiders to the organization. Indeed, outsiders to established business organizations who are compelled to look constantly to the market to allocate their labour may be fortunate to live in a society in which they have the political freedom to do so, but, within that society, will tend to be those with the least employment security and poorest remuneration.

Financial commitment is the social condition that allocates financial resources to sustain the process that develops and utilizes productive resources until the resultant products can generate financial returns. As a social condition of innovative enterprise, the need for financial commitment derives directly from the cumulative character of the innovation process – that is from the need for learning. For an enterprise or economy that has accumulated capabilities, financial claims can take on an existence that, for a time at least, are independent of the need to reproduce or augment those capabilities. In effect, financial returns to groups such as employees, creditors and shareholders may be based on the revenues generated by productive capabilities accumulated in the past without a commitment of financial resources for the regeneration of these returns in the future. But, for innovation to occur within an enterprise or economy, a basic social condition is financial commitment from some

source for a sufficient period of time to generate returns. A theory of innovative enterprise must show how, given the financial requirements of the transformation of technology and markets in particular industrial activities, institutions and organizations combine to provide the requisite financial commitment.

An analysis of the sources of financial commitment in the innovative enterprise requires the distinction between new ventures and going concerns. For most of the 20th century in the wealthy economies, the finance for new ventures came, not from capital markets, but from personal savings, friends, business associates and special financial facilities set up by governments. In the post-Second World War decades in the US, however, a specialized venture capital industry developed to finance new high-technology enterprises (Wilson, 1985). At first, venture capital firms emerged to take advantage of the commercialization opportunities made possible by US government spending on military research and development during and after the Second World War. In the 1960s and 1970s, investments in startups that designed and manufactured semiconductors for numerous civilian and military uses helped transform venture-capital activity into a well-defined industry, particularly in what by the beginning of the 1970s became known as Silicon Valley (see, for example, Lécuyer, 2000; Castilla et al., 2000). The US venture-capital industry expanded rapidly from the end of the 1970s, fuelled by the microcomputer revolution and a steep increase in the financial resources that institutional investors, and particularly pension funds, allocated to venture-capital funds. But, even in the US, the allocation of resources by venture capitalists to new ventures is by no means a market process; in committing funds until such time that through an initial public offering or a private sale to an established company the venture capitalists can reap returns, venture-capital firms that support innovation recognize that eventual success depends critically on the organizational integration of key personnel, including entrepreneurial scientists and engineers, and the strategic decisions of professional managers (Larrue et al., 2002).

A new venture becomes a going concern when, through the sale of its products, it can generate sufficient revenues to form the foundation for ongoing financial commitment. These revenues can be used to enhance the financial commitment that it can make to its personnel in the forms of employment stability and increased remuneration as well as to fund the expansion of its organization

in terms of both human and physical capabilities. Growing revenues that are retained within the organization, therefore, can enhance organizational integration. The dependence of a going concern on revenues as an ongoing source of financial commitment means that it places great importance on maintaining its existing customers (households, businesses, governments) by generating higher quality, lower cost products; indeed, its relations with these customers often provide the company with the crucial knowledge of how it can improve its products to serve their needs (see, for example, Christensen, 1997).

Revenues retained within the business organization can also be used to gain leverage in the access of the enterprise to finance that it can use for expansion. When such debt is secured through market relations, as has been particularly the case in the US, it takes the form of long-term bonds, so that the enterprise does not have to keep going back to the market to fund investments that require financial commitment. With bonded debt, creditors whose only relation to a company is via the market can force an enterprise into bankruptcy, and hence corporations that use bond finance have historically tended to have low debt–equity ratios to ensure that they will not run into financial difficulty. In general, the use of high debt–equity ratios, with its advantages for funding rapid growth but potential disadvantages for exposing the enterprise to debt-service problems, requires organizational relations with the banking system, as for example, in the case of the Japanese main bank system (Aoki and Patrick, 1994).[12] These relations support the enterprise by allocating finance based on a company's long-run prospects for sales revenues rather than short-run cash-flow problems. In addition, as part of regulated national banking systems, such bank finance is usually provided at rates well below those that an enterprise could actually obtain on the market.

For market economists, organizational control over revenues and relational bank finance invite the misallocation of resources. Yet the fact is that these forms of financial commitment fuelled the post-Second World War recoveries of Japan and Germany, enabling them to emerge as the second and third largest economies in the world. The general approach of market economists to the problem of organizational control is to have shareholders as the firm's 'principals' monitor managers as the firm's 'agents' (see, for example, Jensen and Meckling, 1976; Jensen, 1986; Grossman and Hart, 1988; for a critical review, see O'Sullivan, 2002a). The basis for this

position is that, among participants in the enterprise, it is only shareholders who have their capital at risk. It is assumed that all other participants are remunerated in direct proportion to the productive contributions that they make, with labour and capital markets, not organizations, determining this relation between productive contributions and financial returns. In contrast, shareholders alone are assumed to have provided capital to the firm with no guarantee of reaping any returns unless the enterprise generates a 'residual' – what others with a more developmental perspective have called a 'surplus' – in excess of the revenues that are needed to pay other participants in the enterprise their contractually guaranteed returns.

There are two basic problems with the 'agency' perspective. First, given that the returns to enterprise employees come through promotion up and around the business organization over a period that can stretch into decades, it is by no means clear that it is the market rather than the organization that determines the relation between productive contributions and financial returns. Indeed, in the innovative enterprise it may well be the case that the expectation that employees will share in the gains of enterprise through career advancement is a prime motivator of innovative effort, and hence productive contributions. That is, the possibility of sharing in the surplus may serve as an incentive for employees to devote their skills and efforts to organizational goals. The second problem with the agency perspective is that it is by no means clear that shareholders in the modern publicly traded enterprise actually provide the enterprise with the capital that funds investments in innovation. Historical and comparative evidence suggests that for most publicly traded corporations stock issues have been relatively unimportant, and even in many times and places insignificant, as sources of funds for productive investments (Lazonick and O'Sullivan, 1997b, 1997c; O'Sullivan, 2002b). Much of the stock that is traded on the market originated with stock sales by those who held shares in privately held companies once they went public, and such stock sales entailed fund-raising for the benefit of these shareholders rather than for the companies themselves. In these cases, the function of the stock market was not to raise cash for the corporation, but rather to separate stock ownership from managerial control.[13] Moreover, even when it is the company that issues stock on the market, the purpose may not be to raise money for investments in new productive resources. Rather, the funds raised may

be used to restructure balance sheets by paying off debt or building the corporate treasury, a use of stock issues that is particularly attractive to companies during a speculative stock-market boom (O'Sullivan, 2002b).

In fact, corporate finance is just one function of the stock market in the business corporation, and it is not necessarily the most important one. Companies can use their corporate stock as a 'currency' to accumulate innovative capabilities. As a 'combination currency', stock can be used instead of cash to acquire control of the assets of other companies; that is, it can perform a strategic control function. As a 'compensation currency', typically in the form of stock options, stock can be used to recruit, retain and possibly motivate employees; that is, it can perform an organizational integration function.

In certain industries in the 'new economy' boom, both the combination and compensation functions of the stock market became prominent. With the stock market decline, however, the financial deterioration of many companies that used stock as a currency raises questions about the effects of these uses of corporate stock on the innovation process, especially in the presence of volatile capital, labour and product markets (Carpenter et al., 2002).

Strategic control is the social condition that enables people within an enterprise who have access to financial commitment and who influence organizational integration to allocate resources in ways that can transform technologies and markets to generate innovation. As a social condition of innovative enterprise, the need for strategic control derives directly from the uncertain character of the innovation process. Hence, a theory of innovative enterprise must show how, given the uncertain character of the transformation of technology and markets in particular industrial activities, control over financial commitment and organizational integration rests with those people within the enterprise who, as strategic decision-makers, have the incentives and abilities to use that control to attempt innovative transformations of technologies and markets.

Strategic control is 'insider' control – the exercise of control over resource allocation by those within the organization – as distinct from 'outsider' control – the exercise of control over resource allocation by those (such as public shareholders) with whom the enterprise has market relations. The innovation process is always uncertain, and hence, other than leaving the outcome of resource allocation

to pure luck, the only basis for making investments that might result in innovation is to vest control over the allocation of resources and returns with people who are both able and willing to invest in collective, cumulative and uncertain learning processes. They will be able to do so when they have a broad and deep understanding of the industries and organizations in which they are investing. They will be willing to do so when their own individual success is bound up with the success of the organization as a whole. Put differently, investments in innovation that can confront the inherent uncertainty of the innovation process require the organizational integration of strategic decision-makers with the processes of collective and cumulative learning.

Such insiders tend to be career managers, and are rarely people whose main participation in the enterprise is as public shareholders – hence, once again, the importance of the separation of share ownership and managerial control in the history of successful industrial development. As outsiders to the corporate allocation of resources, the vast majority of shareholders would not hold shares in a company, but for the liquidity that the stock market provides. Through the power of collective shareholding (that is, institutional investing), shareholders can place pressure on corporate managers to increase the allocation of *returns* to them, either in the form of higher dividends or, as has increasingly been the case, stock repurchases. But public shareholders, the major institutional investors included, generally have neither the ability nor the incentive to participate in the process of strategic control that allocates corporate resources to innovative investments.

The need to rely upon inside managers to allocate resources creates the possibility – one that it is not difficult to find in practice – that corporate executives will abuse their power, and allocate resources in ways that may advance their own interests but that do not promote the interests of the corporation as a whole. Yet, notwithstanding the often valid claims of agency theorists that such is the case, the theory of the market economy provides no perspective on the institutional arrangements that encourage strategic managers to invest in innovation precisely because the theory of the market economy on which agency theory rests lacks a theory of innovative enterprise. Such a theory, I would argue, requires an understanding of the dynamic interactions among financial commitment, organizational integration and strategic control in the governance of enterprise allocation decisions.

Economic Theory and Economic Development

The social conditions of innovative enterprise make organizational control rather than market control over resource allocation central to the development of the economy. Organizational integration requires the management of labour mobility, financial commitment the management of capital mobility, and strategic control the management of the transformation of the resources, human and physical, that the enterprise has accumulated into high quality, low cost goods and services. The economist should not view these social conditions of innovative enterprise as 'market imperfections' but as the institutional foundations for innovation and development.[14]

The identification of organizational integration, financial commitment and strategic control as the key social conditions of innovative enterprise derives from comparative-historical analyses of the development of the world's wealthiest economies over the past two centuries (Lazonick and O'Sullivan, 1997a, 1997b, 1997c). The particular configurations of institutional and organizational conditions that have created these social conditions have varied markedly across these national economies, even to the present, and, within a given national economy, have undergone significant transformation over time. Moreover, different social conditions of innovative enterprise, including distinct differences in the functional and hierarchical divisions of labour that characterize innovative organizations, vary both across different industrial activities and, for given industrial activities, over time, with different performance outcomes in terms of product quality and cost (Lazonick and O'Sullivan, 1996). The theoretical perspective on the social conditions of innovative enterprise and economic development that I have proposed is not in and of itself an explanation of successful economic performance, but should be seen as a tool for systematic study of the comparative and historical realities of the development of the wealthy economies. Innovation and economic development are processes of change that are highly dependent on the particular institutional, organizational and industrial conditions under which they occur. A theory of economic development that fails to comprehend how, when and to what effect specific institutional and organizational arrangements have yielded superior economic performance will soon lose touch with reality. For a social scientist to comprehend these processes of change requires the integration of theory and history (Lazonick, 1994, 2002b, forthcoming).

As for social reformers and economic policy-makers intent on contributing to the wealth of their particular nations, the main implication of the perspective that I have set out is that they have to combine a relevant theoretical analysis of the development process with a deep understanding of the particular social contexts in which they expect reforms and policies to have their effects. Specifically, they must understand the ways in which particular institutional, organizational and industrial conditions will promote or impede resource allocation that is organizational, developmental and strategic. To do more good than harm, social reformers and economic policy-makers must be both astute observers of the social environments in which they work and insightful analysts of the development processes that they are trying to influence.

Adherence to the logic of the theory of the market economy will not help them in this task. By portraying resource allocation as individual, reversible and optimal, the theory of the market economy reduces such social phenomena as organizational structures, development paths and strategic choices to 'imperfections' or 'failures' of the market mechanism that it would be best to eliminate. The result is that the basic policy recommendations that one derives, quite logically, from the theory of the market economy will, in all probability, erode rather than support the social conditions of innovative enterprise.

The market economist would recommend policies that increase labour mobility. But from the perspective of economic development labour mobility is only beneficial if it enables people to choose more attractive employment opportunities than the ones they already have. The process of economic development is not promoted when people are uprooted from their traditional employments, and pushed into the 'modern' sector. Rather economic development generally depends on enhancing the capabilities of people in their traditional employments, and then forcing the modern sector to compete for these productive capabilities. A well-functioning labour market will be the result rather than the cause of economic development.

The market economist would recommend the creation of financial markets, and particularly stock markets, to encourage the mobility of capital. But, in and of themselves, financial markets simply create opportunities for those with financial assets to engage in portfolio investment which, unless highly regulated, tends to evolve into speculative investment. From the perspective of economic

development, what is needed is financial commitment, not financial liquidity, which means that funds have to end up in the hands of direct investors who are able and willing to exercise strategic control over the particular investments that they undertake. Financial markets can be useful for mobilizing savings but the allocation of financial resources to the process of economic development requires organizations and institutions that are designed to protect the innovative enterprise and the developmental state from the 'individual, reversible, and optimal' decisions of portfolio investors. The emergence of innovative enterprises that can generate financial returns on the financial commitments that have been made expands the portfolio opportunities for those who, as outsiders to the enterprise, seek to reap financial returns on financial markets. Moreover, the success of innovative enterprises places more disposable income in the hands of employees who can accumulate financial assets, join the ranks of portfolio investors and thereby increase the liquidity of financial markets. Well-functioning capital markets are the result rather than the cause of economic development.

The market economist would recommend the creation of markets in goods and services that would expand the consumption choices of households. But what is the source of the incomes that enable households to consume beyond their basic needs? And for any particular good or service, what determines the quality and cost of the products that consumers find available on product markets? The theory of the market economy cannot provide answers to these questions because it lacks a theory of innovative enterprise – a theory of how a business organization can generate higher quality, lower cost products that, depending on the distribution of enterprise revenues, can *simultaneously* result in higher returns to labour, higher returns to capital and lower prices to consumers, even while providing consumers with higher quality products than previously existed and leaving surplus revenues in the enterprises to make further investments in innovative processes and products. There is nothing inevitable about either the success of innovative enterprises or the equitable distribution of the gains from successful innovation. But the evolution of higher standards of living, reflected in both the incomes of the population and the quality and cost of the products that they can consume, cannot be understood without a theory of innovative enterprise. The existence of a wide variety of goods and services, with different quality and cost attributes, among which consumers

can choose to allocate their incomes is the result, not the cause, of economic development.

Innovation and economic development do not just happen. Just as the allocation of resources by the state must be governed, so too must the allocation of resources by the enterprise. In ignoring an analysis of the innovation process and economic development, theories of corporate governance based on the theory of the market economy cannot address the difficult organizational and institutional questions concerning the governance of innovative enterprise. Nor can they learn from the varied experiences of innovative corporate governance that can be found within and across the wealthy economies. Moreover, without a theory of innovation and economic development, debates on the role of the state in the allocation of resources will be limited to the extent to which its activities are predatory (as most conservative market economists would argue) or regulatory (as most liberal market economists would argue). To be sure, the state often plays both these roles. But at times it also plays a developmental role that, as I have suggested, has been critical to the success of all of the wealthy economies, not least to that of the US.

Innovation and economic development are not easy processes. They require hard thinking and hard choices. They are social processes that can generate stable and equitable economic growth if the people who participate in them as workers, managers, investors and consumers understand and accept the organizational, developmental and strategic challenges involved. The ideology of the market economy does not further such widespread understanding and acceptance. In a real economy, the widespread and engrained belief in the theory of the market economy tends to render ungovernable those corporate executives and political elites who wield power over the allocation of resources while it tends to leave vulnerable the vast majority of the population who depend on the strategic decisions of the enterprise and the state to create economic opportunity.

Notes

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1. For summaries of the internal logic of this market-oriented perspective as well as historical and theoretical critiques, see Lazonick (1992), O'Sullivan (2000b) and Lazonick and O'Sullivan (2000b).

2. What I am calling the theory of the market economy is, in academic discourse, called 'neoclassical economic theory', in contrast with 'classical economic theory' of the 19th century in which the analysis of production of goods and services rather than their exchange constituted the theoretical core. By focusing on production, the classical economists could address the problem of how the process of economic development could *overcome scarcity*, whereas in focusing on exchange the neoclassical economists posed the economic problem as the *'optimal' allocation of scarce resources* among alternative ends. Unfortunately a growing majority of US-trained economists of the current generation have never read the classical economists of the 19th century – a course in the history of economic thought is not required to obtain a PhD in most US economics departments – and hence the substantive meaning of 'neo' in neoclassical has become lost. Throughout this article, when I refer to 'the theory of the market economy', I mean neoclassical theory with its focus on the role of market exchange in the allocation of resources, and when I refer to 'market economists', I mean neoclassical economists whose thinking, insofar as it is systematic, is guided by a theory of market exchange as the essence of economic theory. For an elaboration on this theme, see also Lazonick (1991).

3. The slave economy of the southern United States, catering as it did to world tobacco, sugar and cotton markets, is a dramatic example of such an economy.

4. For a survey of his work on imperfect markets, see Bausor (1996). See also Stiglitz (2000) and Chang (2001), which contains nine essays (lectures, speeches and papers) by Stiglitz when he was chief economist of the World Bank. These essays address the problems of development in an iconoclastic way. Yet, from my perspective, the analytical and prescriptive power of what Stiglitz has to say remains limited by his continued adherence to the theory of the market economy.

5. I should note that in his famous paper, 'The Nature of the Firm', Ronald Coase (1937) did not (as is often assumed) explain why firms exist in a market economy, but just how, through the principle of substitution at the margin, existing 'firms' (which in his argument could have just as well have been 'households') would, within the logic of 'imperfect' market exchange, decide to include a greater or lesser range of activities within the firm as an economic unit. See Lazonick (1991: Ch. 5).

6. Such is the case even in the theory of monopoly in the market economy, which as I have shown, contains a fundamental logical flaw in comparing perfectly competitive firms with monopoly firms while assuming that both types of firms maximize profits subject to the same cost structures. See Lazonick (2002a).

7. It perhaps explains something about the economics profession that when in 1987 Solow won the Nobel Prize in Economics for his work on economic growth, his early work on the measurement of 'technical change' was specifically cited as his seminal contribution. It would appear that Abramovitz's reward for recognizing that the unexplained residual was in fact a 'measure of ignorance' was to be ignored by the Nobel Prize committee, despite an illustrious career in which he contributed numerous penetrating insights into the process of economic growth.

8. Relevant journals include *Industrial and Corporate Change*, *Industry and Innovation* and *Research Policy*. The types of work over the past decade that have contributed to our understanding of the innovation process and its implications for the economy can be found in Lundvall (1992), Nelson (1993), Rosenbloom and Christensen (1994), Langlois and Robertson (1995), von Tunzelmann (1995), Malerba and Orsenigo (1996), Nelson (1996), Christensen (1997), Freeman and Soete (1997), Teece et al., (1997), Freyssenet et al. (1998), Mowery and Rosenberg (1998), Pavitt (1998), Mowery and Nelson (1999), Edquist and McKelvey (2000), Harding (2000), Jürgens (2000), Best (2001), Brusoni et al. (2001), Lazonick and Prencipe (2002) and Carpenter et al. (2002). A potentially significant project called 'Understanding Innovation' that is currently in progress, organized by Jan Fagerberg, David Mowery and Richard Nelson, will synthesize what economists understand about the innovation process and its implications for economic theory and empirical research.

9. A full consideration of the strengths and weaknesses of the 'innovation' literature in the elaboration of a theory of innovative enterprise is forthcoming in my contribution (Lazonick, 2002c) to the 'Understanding Innovation' project mentioned in note 8.

10. A summary of the research on innovation can be found in O'Sullivan (2000b), on which the following summary draws.

11. For a formal analysis of the implications of innovation that is collective, cumulative and uncertain for the 'theory of the firm' and the social conditions in which it is embedded, see Lazonick (2002a).

12. The importance of the 'main bank system' to Japan's post-Second World War development should not be overstated. The banks were in effect cogs in the Japanese developmental state that served to channel finance to enterprises with which they had developed relations. But these banks did not provide strategic direction to the development of these enterprises. Nor were they very effective monitors of managerial performance, as evidenced by the volume of bad loans, many of them inherited from the 'bubble economy' of the late 1980s, that have burdened Japanese banks in the 1990s and beyond. See Lazonick (1999).

13. The classic works on the separation of ownership and control in the US from the perspectives of the diffusion of share ownership and the exercise of managerial control respectively are Berle and Means (1932) and Chandler (1977).

14. For approaches to the 'varieties of capitalism' that focus on cross-national differences among the advanced economies in institutions and organizations that can affect economic performance, see Berger and Dore (1996), Chandler et al. (1997), Crouch and Streeck (1997), Dore et al. (1999), Whitley (1999), Hall and Soskice (2001).

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