

between markets and market socialist economies lies not just in these institutions but in the broader array of mechanisms by which market economies handle information problems. While, as we saw in chapters 3 and 4, the market did not solve these information problems perfectly—the market economy was in general not constrained Pareto efficient—markets do a better job than did the market socialist economies. For instance, markets provide incentives for firms to produce high-quality products, through the reputation mechanism. But nowhere are the differences between the two systems so apparent as they are in the special kind of information/knowledge acquisition associated with innovation. Again, I noted the failure of the standard theories describing market and market socialist economies even to address these issues, and indeed I argued the conceptual framework of the Arrow-Debreu model could not be readily adapted to accommodate it. The basic economic issue is that markets in which innovation is important will inherently be imperfectly competitive. It is the force of innovation itself that limits the degree of competition.

Thus those who advocated market socialism on the grounds that market economies were imperfectly competitive did not inquire deeply enough into why this was so. To be sure, at the time that many of these earlier discussions occurred, one of the reasons for imperfect competition in many industries was the presence of significant returns to scale (relative to the market size at that time). But it was innovations that formed the basis of the industrial revolution, and it was innovations—in organizational practices as well as technology—that led to the evolution of large enterprises. Given the Marxian tradition from whose roots market socialism was derived, the failure of socialist theorists to pay adequate attention to technology—and changes in technology—is particularly hard to understand.

In the next chapter I use the theoretical framework I have developed thus far to provide us further insights into what went wrong with the socialist experiment.

11 The Socialist Experiment: What Went Wrong?

Most of this book is about economic theories: about the failures of the neoclassical model, and about how the failures of that model were closely related to the failures of the market socialism model. The neoclassical model had many of the right ingredients: incentives, competition, decentralization, prices. Yet the particular meaning that it gave to these concepts were at best incomplete, at worst misleading. Market economies are characterized by competition, but not the price-taking behavior associated with the perfectly competitive model. Market economies are *partially* decentralized, but there was more to the decentralization of decision making than the passive response to price signals. Indeed the appropriate mix of centralization and decentralization of decision making is one of the key questions facing market economies. Prices are central to the functioning of market economies, but prices do more than just equilibrating supply and demand, conveying information about scarcity values. They have effects on the quality of goods being traded. Beyond that, much of economic activity is regulated by mechanisms other than the price mechanism. Incentives are important, but, again, the Arrow-Debreu model in which everyone is paid either on the basis of observed output or input provides an inaccurate characterization of the role of incentives in modern economies. Finally, we have seen that the Coasian presumption, that all that is required to ensure economic efficiency is making property rights well defined, is simply not correct.

Market socialism took seriously the neoclassical model, and that was its fatal flaw. But the socialist economies never really took seriously the market socialist ideal. We need to ask, What does our interpretation of what makes market economies work have to say about the failure of the socialist experiment?

Many of the results of my earlier analysis would have suggested that socialism, or at least a economic system in which government took a more

active role, would have had a running chance of faring better than the market economy. I showed, for instance, in chapter 3 that the economy was essentially never constrained Pareto efficient. Imperfect information and incomplete markets give rise to externalitylike effects that cannot be easily internalized by firms. Some form of government intervention is required. At the heart of the *economic* failure were a variety of information problems, which, interpreted broadly, include incentive issues. In the following I briefly analyze the most important of these issues.

Excessive Centralization

Perhaps the most important reason for failure was the very reason that Hayek argued that central planning would fail: The central authorities simply did not have the information required to run the entire economy. Yet, probably for political reasons, the government insisted on keeping decision making centralized.

We need to go further and inquire into what kind of information was lacking. Central planning focused on ensuring that the material balance equations were satisfied, that the outputs of intermediate goods were appropriately coordinated with the production of goods using those intermediate goods. This kind of planning required information about the input requirements per unit output—the Leontief matrix. It was not, I suspect, the failure of this planning exercise that was at the heart of the failure of the socialist experiment. To be sure, the information required to carry out these planning exercises was often not accurate, and accordingly there were shortages of some inputs. In the more open economy of the 1980s, however, these mistakes should have been of little moment: Shortages of inputs could easily have been made up by imports, and surpluses (were international trading markets truly competitive) could have been sold abroad. The failures were more *microeconomic* in nature.

Product Quality

Problems of product quality provide an important class of examples. It was hard for the central authorities to specify, in their central planning exercises, the precise nature of every commodity, including the quality of the product. We saw earlier (chapter 6) that the limitless number of possible commodities and the impossibility of precisely specifying most commodities provided part of the explanation for why there was an incomplete set

of markets—one of the reasons that the neoclassical model fails. Exactly the same factors are at work in explaining why socialism fails.

Market economies can be thought of as having a far more finely tuned control mechanism. Each buyer monitors each seller's quality. If the seller's quality falters, the buyer switches sellers, or gets a price concession. The seller knows this, and thus has a strong incentive to provide goods of the appropriate quality. It is *not* that (or just that) socialist economies produce low-quality goods. In some cases it might be appropriate to produce low-quality goods, where the (marginal) costs of increasing quality exceed the (marginal) benefits. The problem is that firms had no incentive to make the appropriate marginal benefit—marginal cost calculations. Rather, since they had a given target to produce, they had an incentive to get by with the lowest acceptable quality. The economic structure was such that there were strong incentives for quality deterioration.

Incentives

Also high on the list of standard explanations for the failure of the socialist economies was their failure to provide incentives. It would perhaps be more accurate to say that they provided incentives—for in almost any society some types of behavior get rewarded and others punished, and thus there is an incentive structure—but the incentives were not those that were directed at increasing economic efficiency.

I view incentive problems as a problem of information. If the centralized authorities had the information with which to ascertain what each individual was doing at each moment of time, and with which to judge what each individual *should* be doing, say, in order to maximize output, then there would be no incentive problem. The individual would be instructed to do that, and he would either be sent off to Siberia if he failed (the stick), or he would be paid his wage if he did (the carrot). Interesting incentive problems would be paid his wage if he did (the carrot). Interesting incentive problems arise because (1) input (effort) is not observable, (2) outputs are either not observable or not a perfect predictor of the level of effort (input), and/or (3) there is imperfect information about what the individual should be doing, so that it is difficult to assess directly whether he has done the "right" thing.

The socialist economists, like their counterparts in Western academia, did not fully recognize the importance of these incentive problems. If there were no information problems, one could directly control behavior. The socialist economies—like market economies—tried to structure production in such a way as to mitigate the control problems. One of the

advantages of assembly lines is that they provide an easy way of monitoring workers' performance: It is easy to detect when a worker falls behind. Collective farms might have been justified in terms of the communist ideology, but the advantages derived from the greater ability to control levels of effort that "industrial farming" provided surely did not elude the Soviet planners. In industries in which close monitoring can be instituted, and where there is little scope for quality variability, the socialist economies attained some success. Nonetheless, in many industries of modern economies, in service sectors like computer programming, these techniques are of little avail.

Equality

An essential aspect of any incentive structure is that pay must vary depending on performance (however measured). With varying pay there is ample scope for inequality. The socialist economy's ideological commitment to equality precluded instituting effective incentive structures.

Political Control Mechanisms

While what may be viewed as conventional economic incentives were thus limited, there were other control mechanisms in place. The party system provided a reward structure and, at the same time, a control mechanism.

In earlier chapters I noted that in many large corporations, direct economic incentives play a limited role. Firms try to get their workers to "identify" with them. So too in the early days of the Revolution workers identified with it, and economic incentives were less important. At the same time, work norms from the prerevolutionary period survived. But as time went on, social fervor waned, and the norms established during the prerevolutionary days became increasing irrelevant. The consequences of the lack of direct economic incentives became more pronounced.

Misdirected Incentives

I said before that the problem was not that there were no incentives within the socialist system—there were—but that many of the incentives were misdirected. This was true both at the individual and the institutional level.

We have already encountered some examples of this. The system provided incentives to produce as low a quality a product as one could get

away with. Because firms could never be sure of adequate or timely deliveries of inputs, and because they faced no interest changes, they had incentives to inventory all excess inputs.

Though bribery was a crime, there were all kinds of incentives for individuals to do favors for each other. A manager of a firm with a shortage of some input, but which had control over its scarce output, had an incentive to provide preferential access to his output to a manager of a firm that could provide him additional inputs.

The political system, while it acted as a partial substitute for economic incentives, at the same time contributed to the problem of misdirected incentives: Promotions were less related to performance in economic measures than to political criteria, and this had the natural consequences for incentives and behavior.

Selection Problems

The socialist economists—like many economists in the West during the period—took what I call an engineering approach to economics. As Paul Samuelson tried to suggest in his *Foundations of Economic Analysis*, economics was nothing more than a constrained maximization problem. We have seen how this was reflected in views concerning decision making: All the manager had to do was to look up in the book of blue prints the page corresponding to the observed factor prices.

Given that decision making was so limited, the quality of decision making was of little relevance. Hence the issue of who should be the decision maker, and more important, how to make the decision about who should be the decision maker, received no prominence. Indeed, in Samuelson's classic textbook, the question about who decides or how decisions are to be made was not even included in the standard list of the basic questions of economics. While decision makers in the socialist economies paid more attention to these questions, they had neither the information nor the incentives to make good decisions.

Information about technology—the nature of the input/output matrix—can, as I have suggested, easily be obtained by centralized authorities. But information about individuals cannot. There is not a single number that describes how well an individual will perform a particular job, which those in the producing units could convey to the central authorities, and on the basis of which they could make an informed decision. There is a complex vector of characteristics that determine whether an individual will be successful in a particular job; the characteristics may in fact depend on the

complex vector of characteristics of the other individuals with whom that individual will be interacting. That is why even in organizations with a reasonably high degree of centralization, personnel decisions are often made in a fairly decentralized way.

Underlying both the failures to provide appropriate incentives and effective selection were two further failures—the failure to have an adequate accounting (price) system and the lack of competition.

Accounting and the Price System

In earlier chapters I repeatedly noted that the market economy has an incomplete set of prices and that prices do not work in the magical way sometimes suggested by neoclassical theory. But while the price system may be imperfect, it performs a number of vital roles. Among these roles is the basis of an accounting system. If we think of the economy as a game, prices and profits provide a basis of telling who is winning at the game. Prices thus provide the basis of an incentive structure and a selection mechanism.

In the socialist economies prices were set in a sufficiently arbitrary manner that the resulting profit numbers were essentially meaningless. Ideology prohibited using interest rates (though partial substitutes, using different terminology, were employed). If this were the only problem, then one would have had a bad accounting system, but one which still could be used to ascertain who was doing well according to the peculiar scoring system.

Of course the more fundamental problem was that the government attempted to control directly firm behavior: It specified inputs and outputs. The system of accountability was a simple one: Did one meet the target? Firms had an incentive not to exceed their target (another example of misdirected incentive schemes),¹ since the target would be increased if firms exceeded their targets.

We have seen other ways in which the accounting system misdirected incentives, such as the incentives to hold excess inventories, since there was no capital charge for holding inventories. Inventories facilitated meeting targets in subsequent periods when firms could not be assured of the supply of required inputs.

It is now widely recognized that accounting systems (including the price system) are an essential part of the market economy's control mechanism. It has increasingly been recognized that inventories themselves are part of the economy's control mechanism as well as indicators of the failure of the

economy's control mechanism. This is seen most clearly in the just-in-time inventory system that was pioneered by Toyota and other Japanese firms. Manufacturers keep only two hours of inventories. Failures of suppliers to respond quickly to orders would impede the firm's ability to maintain its production line. With just-in-time production, any weaknesses in the production system of suppliers or the communication system between the firm and its suppliers are quickly detected and corrected.

The huge inventories within the Soviet system were necessary because of the lack of communication and the prevalence of problems in the production system; they prevented problems in a supplier cascading downstream. But at the same time, they enabled problems to remain hidden, or at least not to be remedied quickly. In the traditional market economy moderate levels of inventories provided a buffer—cushioning the impact of production failures while weakening the signals concerning production problems. At the same time inventories have played an important signaling role. It is changes in inventory levels as much as, or perhaps more than, changes in prices that provide the signals for firms either to increase or to decrease production.

Lack of Competition

The absence of competition—the monopoly of the state not only in political matters but also in economic affairs—had debilitating effects both on the ability of the economy to perform the essential functions of providing appropriate incentives and selection. As I stressed in chapter 7, what is important is not the perfect competition of the neoclassical model, but the *real* competition that I attempted to describe there. Thus I argued there that the information provided by looking at the relative performance of two or more firms engaged in similar economic activities is critical both for the design of incentives and selection. In the early days of the Revolution, information about reasonable work or performance norms was perhaps carried over from prerevolutionary days or from comparisons with performance in other countries. But as time moved on, and the path that the Soviet Union increasingly departed from that of the rest of the world, these experiences became increasingly irrelevant, and the Soviet Union was left without relevant reference points. They knew, for instance, that their agricultural sector lagged far behind that of the more advanced countries. But should that be attributed to the sloth of their workers, the differences in climates, or the lack of investment?

Innovation and Adaptability

Perhaps the most important characteristic of an economy is its ability to adapt to changing circumstances. An economy may do well under one set of circumstances but, when circumstances change, may lack the ability to adapt, and thus fail under the new set of circumstances. Some of the changes in circumstances are endogenous, a result of what happens within the system itself, and some exogenous, a result of the changing world environment.

In analyzing the failure of the socialist economies, we should not forget the remarkable achievements of the Soviet Union. In the face of a hostile world, a worldwide recession, and a devastating World War, and beginning from a weak industrial base, an economy ravaged by World War I, and a political upheaval of enormous proportions, the Soviet Union's growth between 1917 and 1960 has to be given reasonably high marks (particularly if one does not take off for the huge costs imposed on their citizens). Savings were mobilized, and the process of industrialization moved rapidly along. Unlike previous experiences of development, this rapid growth was achieved with a reduction, rather than a large increase in inequality.

Heavy industry was perhaps particularly well suited for the control mechanisms employed by the socialist system. The scope for individual discretion was limited, and accordingly so too was the scope for decision making. Technology (at least from current perspectives) was relatively simple, and the requisite technological knowledge could easily be acquired abroad or developed at home (making using of publicly available information.) With heavy industry there were relatively few establishments (plants).

But the last fifty years has seen a marked change in industrial structure, the growth of the service and high-technology sectors and the decline in heavy industry. Heavy industry itself has become markedly more technology oriented. Specialty steels, for instance, have grown in importance. These sectors are particularly ill-suited to the control mechanisms of socialism.

Thus it is not only that the system failed in its ability to innovate—a failure that can partially be understood in terms of the theories presented in chapter 8, including the lack of incentives, the lack of competition, and the lack of communication between those who might make the innovation and those who might use it. But equally important, the system failed to adapt to the innovations that were occurring elsewhere in the world. It is not clear of course that it could have adapted. In the evolution of the

world's economy, there may have been a short window of time, the period of heavy industry associated with steel, autos, coal, and so on, in which some variant of a socialism may have been able to work.

This may then be the ultimate irony: Marx may have been right in his theory of economic determinism, in his view that technology determined the nature of society, the economic and social systems that would prevail. Where he erred was in his ability to forecast how technology would evolve. But how could he! No one, even a hundred years ago, could have forecasted the twists and turns that modern technology has taken, from computer-driven manufacturing to genetic engineering. It is these changes, in the end, that doomed socialism.