ment intervention in the economy without relieving firm owners and managers of the discipline of competition. Here, indeed, governments succeeded in making credible the commitment that firms (even state-owned ones, as in Taiwan and South Korea) would not be rescued if, for instance, they failed to succeed in international competition.

Fourth—and this is not a concession of capitalism to socialism but an argument for the feasibility of nonprivate ownership—advanced corporate capitalism has proved that complex principal-agent problems in the management of firms can be solved, agency problems that are perhaps no less complex than the kind a firm would face in the fifth-generation proposals of market socialism.

In addition, the theory of capitalism has made concessions to socialist critiques in the realm of economic theory: it is widely accepted that there can exist unemployment at equilibrium in capitalist economies; that market equilibria may be suboptimal because of missing markets, coordination failures, and externalities; and that, in particular, market-determined rates of investment may be suboptimal.

§5

Why the centrally planned economies failed

The failure of the Soviet-type economies was due to the conjunction of three of their characteristics: (1) the allocation of most goods by an administrative apparatus under which producers were not forced to compete with each other, (2) direct control of firms by political units, and (3) noncompetitive, nondemocratic politics. Identifying these features as the cause, however, does not *explain* the failures, for we must uncover the mechanism through which they inhibited economic development. In the previous section, I alluded to principal-agent problems as a serious problem for the Soviet-type economies. A principal-agent problem arises when one actor (a principal) must engage another (the agent) to perform a task. In general, the agent has interests which differ from the principal's, and if the principal cannot easily monitor or supervise the agent, then the agent will not do just what the principal wants done. Such problems arise everywhere in economic life, and economic theory has devoted much effort to analyzing them in the last twenty years.

I believe, however, that the true explanation of the demise of Soviet-type economies is somewhat more complex. Indeed, I now think that I have assigned the wrong weight to these principal-agent problems in some of my own recent work (Roemer, 1992a). In this section I shall first outline an argument that principal-agent problems caused the failure of the Soviet-type economies and then offer some criticisms and modifications of it.

The contour of the argument is that the three characteristics I just listed conspired to prevent the solution of principal-agent problems that, in capitalist democracies, are successfully solved. Communist societies faced principal-agent problems in three important types of relationship: between managers and workers in factories and collective farms, between government planners and firm managers, and between the public and the planners. Managers must try to get workers to carry out their production plans, planners must try to get managers to carry out the planning bureau's plan, and the planners, in a socialist regime, are supposed to be agents doing the best they can for their collective principal, the public.

The initial, utopian view of the Bolsheviks, and later of the Maoists in China, was that economic incentives were unnecessary to solve these principal-agent problems. A socialist society would instead rely upon the transformation of human values: idealists envisioned a society of selfless individuals working for the good of all, the model being what used to be called "socialist man." In Mao's lingo, all should learn to "serve the people" and to reject those actions which maximize personal security or comfort. If this transformation had occurred, the agency problems would have been greatly mitigated. In the event, most people could not motivate themselves, for a lifetime, by serving only the public good: people responded to their immediate situations much as they do in capitalist societies, by

trying to look after their material interests a good proportion of the time.

To be more specific, the *manager-worker agency problem* festered for two reasons: workers had little motivation to work hard if it was virtually impossible to fire them, and there was little incentive to earn more because so few goods were available to buy. Much of the consumption bundle, including housing, was provided directly by the firm and not through the market. Second, the *planner-manager relationship* became one where the planners, or politicians, depended on the firms in their regions for income, and so, rather than carrying out plans proposed by the planning bureau, firm managers entered into bargaining relationships with politicians. An example of the kinds of problem this led to was the "soft budget constraint": political authorities extended loans and tax exemptions to firms that, from the viewpoint of economic efficiency, should not have been granted such extensions. These arrangements were allowed to continue in part because, in a system that did not officially recognize the existence of unemployment, there was no mechanism for retraining and rehiring laid-off workers, and also because fulfilling the plan's production quotas was often evaluated independently of the costs entailed in so doing. The path of least resistance for government and planning bureaucrats often consisted in continuing to finance a firm that should have been allowed to die. The third agency problem, between the planners and the public, was supposed to be solved, in theory, by the vanguard role of the Communist Party: "From the masses to the masses" was Mao's theory of the party as agent of the people. But Mao was wrong: political competition is required to empower the public, and competition was thoroughly squashed by Communist parties throughout the world holding state power.

What are the analogous principal-agent problems in a capitalist economy, and how are they addressed? The manager-worker problem remains essentially the same; it is solved by using both the carrot and the stick. Arguably, the carrot works better. For instance, job ladders within the firm, with wages increasing as one moves up the ladder, are constructed to give workers an incentive to build a career in the firm. This arrangement is explained by a type of "efficiency wage" theory, in which a firm pays a worker more than the worker is willing to accept—or, to be somewhat imprecise, more than the market requires—to bind her to the job. Much of modern industrial relations is concerned with ways of solving the manager-worker agency problem.

Under capitalism, the analogue of the planner-manager agency problem is the *stockholder-manager agency problem.* Managers are supposed to undertake policies that are in the best interest of the stockholders, that is, to maximize profits or the value of the firm. It is often not in the best personal interest of the manager to do so: he may not want to liquidate an unprofitable branch of the firm, because of the stress involved in laying off the employees; or he may be reluctant to distribute profits as dividends to shareholders, preferring to keep them to finance projects internally and thus to avoid the scrutiny that a bank would insist upon before approving a loan; or, he may purchase corporate jets for executive travel and make other lavish expenditures that are not in the stockholders' interest. Different capitalist economies have undertaken quite different strategies to solve this agency problem. It is believed by many finance economists that the stock market and the takeover process force managers to operate firms in the interests of shareholders. If profits decline because of bad management, the stock price of the firm falls and the firm becomes an attractive target for a takeover. The threat of takeover, it is argued, is the main

disciplinary device that induces managers to act in the interests of shareholders.

Japan, however, appears to have a quite different way of creating efficient management. The stock market has been relatively unimportant in Japanese corporate finance. Firms are largely financed by bank loans, and stockholders have little say in corporate decisions.[1] Japanese firms are organized into groups called *keiretsu*, each of which is associated with a main bank that is responsible for organizing loan consortia for the firms in its group. The bank is in large part responsible for monitoring the firm's management. The bank even protects its firms from takeovers. A bank has an interest in running a tight ship so that its *keiretsu* is an attractive one for new firms to join, for if it disciplines unprofitable firms it can more easily arrange loan consortia for its *keiretsu*'s members.

What is the analogue of the public-planner agency problem under capitalism? It must be the *public-stockholder agency problem*, except neither property relations nor culture in the capitalist system require the stockholder to be an agent of the public. At this point, the theory of capitalism invokes Adam Smith: the actions taken by stockholders, that is to say firm owners, to serve their own interests are the same actions that turn out (unintentionally) to serve everyone's best interest—as though the stockholders were directed by an "invisible hand" to promote the public good. But the invisible hand only works well under a stringent set of conditions. In practice, modern capitalist societies have developed other institutions to step in where the invisible hand fails: antitrust law, regulation of various kinds, taxation and public expenditures, and so on.

The argument that principal-agent problems defeated the Communist states, then, seeks to establish that a combination of markets and political democracy solves capitalism's three principal-agent problems better than dictatorship and administrative allocation solve the three problems in Soviet-type economies.

The skepticism I now have about the validity of this argument is that, in the postwar period, from 1950 to 1970, the Soviet-type economies did quite well. Indeed, the Western attacks on these economies were of a markedly different nature from their attacks of the late 1980s. In the earlier period, Western critics of Communism argued that, *despite* its economic success, Communism was bad for human welfare because it deprived the people of political freedom.

During this period, the record on economic growth in the seven Comecon economies was about the same as in the eighteen countries of the Organization for Economic Co-operation and Development (OECD). Growth in output per worker in these countries in the period 1950–1967 averaged 4.1 percent per annum, while it averaged 4.0 percent per annum in the OECD countries.[2] If one compares labor productivity in countries at approximately the same level of development and culture, one gets a somewhat different story. In East and West Germany, labor productivity grew at 3.7 percent and 4.1 percent, respectively; in Hungary, labor productivity grew at 3.8 percent, and in Austria at 4.8 percent. These figures do indicate that growth, when normalized for culture and level of development, may have been somewhat higher—though not dramatically so—in the West.

Moreover, the economic growth in the East was perhaps more costly than in the West, in the sense of being purchased only with higher rates of investment. The average ratio of gross fixed investment to gross national product (GNP) in the period 1950–1966 in the Comecon countries was 24.7 percent, not markedly higher than the average rate of investment in the OECD countries, at 21.1 percent. If, however, one disaggregates the OECD countries and compares the record only of OECD countries at low levels of development (Turkey, Greece, Portugal, Japan, Ireland, Italy, and Austria) with the Comecon countries, one sees a somewhat different picture. The ratio of the investment rate to the GNP/worker growth rate in the Comecon countries was 6.9 percent in this period; in the low-development OECD countries, it was 4.2 percent. It thus appears that growth was more dearly purchased in the Comecom countries than in the capitalist countries at comparable levels of development.

Nevertheless, the economic growth record of the Communist economies was quite respectable during this period. Indeed, the rhetorical tone of Abram Bergson's article, written in 1971, and from which the above data are taken, is that OECD growth was *not inferior* to growth in the Communist economies, which indicates the perceptions of the time. It would be interesting, I think, to calculate the costs for growth of the nonmilitary sector sustained by virtue of the huge investment outlays that we now know were made for military purposes in the Soviet Union, and perhaps the other Comecom countries.

If, indeed, it is true that for about twenty years in the postwar period, and certainly during the 1930s in the Soviet Union, economic growth was respectable in the Communist economies, then we cannot simply invoke principal-agent problems as an explanation of the failure of those economies in the 1980s. At least, the principal-agent argument is not sufficiently fine-grained, for some characteristic of these economies that changed between 1960 and 1985 must be brought into play. I conjecture that what changed was the dependence of the growth in economic welfare on technological change. In the immediate postwar period, economic welfare could grow rapidly without technological innovation, since these economies were in large part devastated by World War II and rebuilding them increased economic welfare a great deal, even without technological innovation (so-called extensive growth). By the 1980s, or perhaps earlier, growth in economic welfare depended much more on the ability of an economy to innovate, to adopt new technologies producing improved commodities. At this, the Soviet-type economies failed dismally, and I think it is misleading to characterize this failure as one due to principal-agent problems, except in the tautological sense that the public was not being well served by its agents, the planners and managers, because the latter were not successful in introducing technological change.

To state the issue somewhat differently, it is false to say that sufficient technological change did not occur because some agent was not carrying out some principal's orders. No one gave such orders. The correct statement is that, without the competition that is provided by markets—both domestic and international—no business enterprise is forced to innovate, and without the motivation of competition, innovation, at least at the rate that market economies engender, does not occur. Perhaps even this view puts too much emphasis on the incentive question. It might just have been extremely difficult to innovate in the Soviet-type economies, because, for instance, information about commodities on the technological frontier was very hard to come by, because the best engineers and scientists were recruited by the defense sector, and because the system belittled the kind of consumer gratification that is catered to by capitalist enterprise. It thus becomes possible to explain why the Soviet economic system served people poorly even if managers and workers worked hard, as one sometimes hears was the case.[3] This view contrasts with the principal-agent explanation, which tends to emphasize the claim that managers and

workers didn't work hard because they had no incentive to do so.

There are other explanations of the failure of Soviet-type economies in the period beginning in the late 1960s. Peter Murrell and Mancur Olson (1991) argue that, when political power is highly concentrated in the hands of a few (as under Stalin), then orders will be implemented more faithfully than when competing groups of political leaders and industrial lobbies emerge. Rent-seeking, as it were, increased in the Brezhnev period.[4] Ivan Major (1992) argues that Soviet-type economies suffered from periods of "exhaustion," of which the last twenty years was the worst. His argument, however, is unconvincing, as he fails to distinguish clearly between the characteristics of exhaustion and its causes. Others note the increasing complexity of the Soviet economy: Blackburn (1991, p. 40) notes that the Second Five Year Plan mentioned only about 300 specific products, whereas the 1960 plan dealt with 15,000 products produced by 200,000 enterprises. Jens Andvig (1992) proposes a model of bureaucratic organization, in which there can be both high-performance and low-performance equilibria. He argues that under Stalin the equilibrium was high-performance and under Brezhnev it was low-performance.

The question for socialists becomes, then, whether an economic mechanism can be designed under which technological innovation will take place but in which a characteristically capitalist distribution of income does not evolve. More specifically, can competition between business enterprises, leading to innovation, be induced without a regime of private property in the means of production? This question is vitally important, for, at this point, we have no observations of innovation as a generic, multisectoral phenomenon in an economy except when it is induced by competition.[5]