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Comment on Sherwin Rosen, "Managerial Compensation, Control, and Investment"

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In his essay Sherwin Rosen provides various new insights into the antagonism between central planning and decentralized decision making. With reference to various origins of economic thought (Hayek, 1960; Lange and Taylor, 1938; Lerner, 1946; Berle and Means, 1933; Schumpeter, 1947; Chandler, 1977) he integrates aspects of statistical decision theory (see De Groot, 1971) with the design of careers for managers (Rosen, 1982, 1986, 1992). He further includes the labor market for executives as well as the market for corporate control.

Rosen presents his ideas in a brilliant way. His thoughtful piece of work is enriched with many associations. The subject is fairly general and all the elements are interrelated. The main message is: "The qualities of 'openness,' redundancy based on differences of informed opinion, and decentralized competition for control seem to be essential for achieving high and growing standards of living for extended periods of time" (p. 155).

Since a masterpiece merits laud rather than disapproval, this comment has a slightly different scope. First, since Rosen's argumentation is interrelated, it will briefly be recalled here in a somewhat more linear form. I extract from his argumentation three main logical chains of thought: (1) the importance of redundant economic systems, (2) the importance of the freedom to configure firms, and (3) the implications of specialized knowledge. Second, this comment leads to a few critical remarks, all of which revolve around the question, Does size matter as concerns the best way to allocate control? I argue that it is cheaper for smaller economic systems to create flexibility of control, to allocate control, and to enhance competition for the best control assignments through business meetings rather than through formal markets. For smaller economic systems it might be more expensive to set up and to use a formal market for control where raiders compete for chances to change the configuration of corporations.

1. The Importance of Redundancy in Information Processing

The transformation of the former Soviet Union and other state economies gave new meaning to the old antagonism between central planning and decentralized decision making. The borderline between the economic systems of the former centrally planned economies and the entrepreneurial market economies seems to have vanished. In fact, all economies are faced with quite similar tasks when allocating resources, rights, and control.

Western and Eastern economic systems alike incorporate both types of coordination: they have areas in which there is economic freedom as well as areas where planning and authority rule. All countries attempt to benefit from markets. Yet there are fundamental limits to decentralized production and decision making. These limits root in scale economies, transaction costs, asymmetric information, and specialized investments. Thus, there are, and will continue to be, many areas and units of centralized decision making, in every economic system.

The prominent example of a unit of "central planning" is the firm. Reasons for the existence of firms have been explored by Coase (1937, 1992), Alchian and Demsetz (1972), Alchian and Woodward (1988), Williamson (1979, 1985, 1988), and others. Sherwin Rosen even extends the list of rationales for the existence of firms and the existence of large projects that are controlled in an authoritarian fashion. He states: "The benefits of centralized . . . processing tend to be larger in situations when substantial risk taking is desirable, and when the goals of projects are well defined and single-minded. Then it can be efficient to centralize control and concentrate resources, especially if the rewards to quick success are enormous" (p. 144).

Centralized control over resources is associated with serial information processing: subordinates prepare a choice, the head of the hierarchy makes his or her selection and passes it on to others in the hierarchy. In contrast, economic systems with decentralized control process information in heterogeneous varieties of parallel, independently working units: many competing firms develop new products, all for the same purpose and all at the same time. The out-come is a broad set of similar versions of cars, TV sets, and other commodities.

Command economies have a small number of decision-making units, each of which is very important. Thus, these economies can reduce the redundancy in economic processes: there is only one opinion, one product brand, one technology. Information theory tells us that, in principle, systems with low redundancy could transform limited resources into astonishing results. Some people admire the large number of Olympic medals won by sportsmen of the former Soviet Union-and I refer to this example because of the sophisticated, centralized

scheme that the Soviet Union had to identify talents and to select them for promotion. On the other hand, low redundancy also implies that the system is more exposed to the adverse effects of any incorrect decision.

Leaders who know this tend to maintain the status quo. Possibilities for change are limited because trials and experimentation are excluded in view of the poor opportunities of the one-opinion system to identify and to correct failures. The conservative attitude of leaders could dominate in particular if there is no external pressure from outside competition or if the leader receives no appropriate reward for innovation (Tirole, 1986).

A decentralized economic organization, on the other hand, processes information in many different, widely independent, parallel units. Thus there is much more redundancy, and the system as a whole is better protected if errors are made by one, or by only a few, of the parallel units. This not only provides safety, it also allows units to experiment, to engage in trials, and to undertake innovative activities with uncertain outcomes.

Trials occur, for example, when a consumer chooses a brand from a variety of brands or when a fashion house tests how to market new designs. Trials, like sampling in statistics, are essential for generating information. Note, however, that trial and error is not the only way to generate new knowledge. Foresight weakens the importance of trials.

In a completely static world the generation of new information is only of secondary importance, since everything will be publicly known after some time. Systems in dynamic environments must learn continually, and one way to learn is by trial and error. A system with independent, parallel economic activities, though generally more redundant (i.e., more costly), will hence be superior in this world: many innovative ideas are waiting to be realized, research on consumers' tastes needs be conducted, and alternative production processes have to be tested. "Competition is vital for overall systems discipline when the world is changing, as it always does" (Rosen, p. 145).

A particular and natural cause of changes in the world is the life cycle of managerial careers (Rosen, 1992). Older leaders, whose experience and talent is widely known have only a limited number of years to demonstrate responsibility in the very top positions. Hence the economic system must have a scheme that permanently selects younger managers and gives them the opportunity to demonstrate investment management abilities.

The abilities of younger managers, however, are not publicly known (Waldman, 1984; Rosen, 1992). The economic system must reveal aptitude. Again, trial and error is one means of identifying talents. Create small projects where they can demonstrate their abilities. Screen them to find out which ones are successful, promote the winners, and assign them larger sets of resources to control next time.

This is the typical process for finding the best managers, a process that is, above all, designed to reveal true talent in a sequence of trials and errors. It is of secondary importance to note here that the stages in this process also allow managers to learn and to improve control competence.

Once more, trial and error needs some redundancy in the economic system. Off-hand, such a system seems to be less efficient. But in the end the assignment of persons to top control positions will be better in a system with redundant and parallel processing of information than in a system with less redundant and serial information processing.

2. Three Organizational Problems

Firms are units that permit centralized control over resources. Firms usually own a manifold of resources and have liabilities with respect to various parties. All the contracting (like buying resources or selling rights) is done by a single, central decision-making authority: the chairperson. The firm is a nexus of contracts (Aoki et al., 1990).

There are three basic organizational issues related to firms. These issues are (1) coordination within the firm, (2) the assignment of top-level personnel to chairman positions, and (3) the bundling and reconfiguration of resources in firms.

(1) First there is the traditional issue of internal coordination: What is the best way to organize cooperation within the firm? The members of an organization have bounded rationality and are self-interested. They enjoy discretion for two reasons: (a) there are monitoring costs and (b) contingent contracts are impractical. Nevertheless, much progress has been made in recent years in analyzing various contractual arrangements like incentive schemes. For that reason it seems suitable to proceed on the assumption that all the members of an organization, chairperson included, work under appropriate schemes of supervision and are rewarded for their acting in the best interest of stakeholders.

Thus, the classical principal-agent problem — Bearle and Means (1933) coined the phrase "separation of ownership and control" — is supposed to be solved as well. The firm "buys" capital on financial markets in the very same way as it buys other inputs on factor markets. Both shareholders and bondholders receive market prices for their capital. Shareholders, in particular, receive the prevailing rate of interest plus a premium for risk, whereby the risk premium is also a price generated by supply and demand on financial markets.

(2) The second question also sounds familiar: How are available top managers allotted to chairperson positions? A straightforward solution to this alloca-

tion problem is achieved if there is a well-working labor market for business executives. There are two obstacles, however.

(a) First, every well-working market requires liquidity in the form of frequent transactions. If a top manager moves from one corporation to another, there can be transaction costs and losses of specialized human capital that limit the desire to change jobs as well as the willingness of firms to accept their managers' leaving. On the other hand, turnover of personnel in top positions enhances the function of the labor market. Thus, turnover reduces the social costs of allocating managers to positions. If most managers, once they had reached a certain position, were to remain there forever, the labor market would have little to offer and would fulfill the allocation function only in an inferior manner.

(b) Second, a market, in order to function well, should make all relevant information public. Not only prices but also qualities should be observable, costlessly. Yet there are obvious obstacles in the labor market — the great impact of individual circumstances, for example — such that asymmetric information on the qualification of business executives can endure. (Rosen emphasizes that the qualifications of managers cannot be easily assessed during the early stages of their careers.)

Anyway, assume that there is a labor market, that turnover is frequent, and that the drawbacks of asymmetric information are reduced by signaling, reputation, and other means to counterbalancing asymmetric information (Spremann, 1990). Then, the labor market leads, for exogenously given supply and demand, to an efficient assignment of available managers to available positions. The compensation executives receive, for example, adjusts accordingly.

(3) Nevertheless, the overall result could be improved even more. Note that the number and type of positions for chairpersons was considered to be given beforehand. The number and respective sizes of firms is exogenous. For the time-being the supply of talented managers is also given exogenously. In such an environment it can happen that supply and demand match poorly. For example, there might be a few managers with excellent qualifications, but there might also be many small firms. Likewise it could happen that there are many managers of average talent but, on the other side of the labor market, only a few huge corporations.

To enhance the outcome of the labor market, personnel and positions must change to a better fit. (a) The number and qualifications of managers are altered through training and education. (b) The number and requirements of positions are altered by regrouping resources: mergers create fewer, but more demanding, positions for chairpersons. Spin-offs create more firms and thus more control positions. Since education is a long process, it might take years to adjust the supply of managers. It seems that changing the configuration of exist-

ing firms to match given talents and positions could be done much faster. This requires the ease with which "resources can move freely between competing units" of which Rosen speaks (p. 145).

Hence the third question is: What scheme or which agent in the economy modifies the configuration of existing firms such that the given talents perfectly match positions?

The existence and configuration of firms cannot be modified with ease in all economic systems. One of Rosen's messages is that there are still substantial differences between today's various economic systems, and that the prime criterion for distinguishing them is the ease and freedom with which the allocation of whole firms or other business units to control authorities can be changed.

If there is this freedom, the respective decisions should be made in a market setting, however. Though not made so explicit in Rosen's text, his argument is again that there is a lack of sufficient information before a takeover, a merger, or before founding a new firm. Note that this is not a question of pure risk, which might be allocated through capital markets and other insurance schemes. Here the outcome depends crucially on the persons who manage the transition. In such circumstances, information on both the qualifications of executives and the probable outcome of a merger or a split-off has high a value, and it might be expensive to produce these pieces of information. Again, one way-though presumably not the only way-is by trial and error.

Hence, good economic systems permit manifold information processing units to compete to change the configuration of firms. Moreover, the system should encourage similar trials and correct any errors up to the extent where, for the system as a whole, the benefit of the trials still exceeds the cost of the unavoidable errors.

In other words, a market should not only assign personnel to positions, but also configure firms, the latter being what the market for control should do.

Rosen rightfully argues how important it is for the economy to allocate corporate control through a market. He also points out the limits of the market for control. To discover these limits he looks at the performance of huge projects in the West (Manhattan) and in the East (Lysenko). In addition, Rosen analyzes the process of setting up new firms. He states: "It is practically inevitable and somewhat ironic that surviving firms are built up through the 'central planning' of their founders" (p. 145).

3. The Specialization Feedback

Two aspects may be seen in all organizational designs: First, they attempt to harmonize interests. They pay for cooperation, for example. Second, all designs

try to coordinate by improving the communication between subunits which have private information that is essential for the scope of the whole organization.

There are many reasons why all parties in an organization do not have the same self-interests and why do not all parties possess the same information. One of these many reasons is endogenous: Most economic systems wish to derive benefits from specialization and hence encourage the division of labor. As the degree of specialization increases in the economy, people develop their own interests and concentrate more on specific information.

Thus, to a certain degree, conflicts are system-made rather than naturally given. This general observation also applies to the separation of ownership and control, seen as a form of specialization. "Conflicts would not arise if there were no economic basis for specialization and division of labor. . ." (p. 147).

Besides, greater specialization deepens the informational asymmetries between people. Each profession has its own jargon, and even when the wish to communicate exists, actually attempting to do so might be arduous. With higher degrees of specialization, it also becomes more complicated to compare the qualifications of professionals in the various professions. Here the issue is not so much what a mathematician thinks about the qualifications of an economist, but — although very much related to this type of assessment — the functioning of the labor market for business executives: Not only do firms specialize in products and technologies, most managers have to specialize as well, especially those who are in the early stages of their careers. As the division of labor and the extent of specialized knowledge increase, it becomes more difficult for the labor market to assess the performance of managers in their present positions.

The task of organizational design becomes more demanding, the greater self-interests are and the more specific individual information is. Hayek (1960) pointed out that markets can best cope with the phenomenon of distributed information, since the price mechanism requires agents to communicate only very few pieces of individual information. Similarly, Rosen states that "efficient allocations usually cannot be achieved by highly centralized agencies because knowledge and information are too specialized" (p. 146).

There is a noteworthy feedback: Once established, a market invites individuals to specialize, and the increasing specialization further increases the differences in information and widens self-interests among agents. The increased differences in information, in turn, make the market the proper allocation scheme. The market feeds itself. Automatically, market systems evolve in the direction of more markets, and more competition. Do they also evolve in the direction of more and more redundancy? Who determines when an "optimal level" of

redundancy is attained? From the economics of institutional competition we know that the organization that survives is not the best in every instance.

4. Size Matters

If we had to summarize Rosen's essay in a single sentence, we would perhaps try it this way: Economic systems that have markets for control are, though a little bit redundant and therefore costly, superior to economic systems where control is allocated in a nonmarket fashion. Though I have no principal objection to this message, I would like to point out that it might be costly to set up and to use an American-style "market for control." Smaller countries might come up with different ways of boosting flexibility and enhancing competition. So my main comment is that the size of the economy matters.

Obviously, the market in the USA for corporate control might be deemed well developed. There is a culture of takeovers, mergers, and split-offs. Changing the configuration of corporations is common in America. In contrast, the economies of continental Europe and Japan have only rudimental predecessors of markets for control. Granted, there are acquisitions in these countries, but virtually no hostile takeovers. The cross-holding of equity is a widespread phenomenon in Germany, for example.

It is true that the production processes of European and Japanese corporations are frequently reengineered, and that the internal organization of these firms is often improved. Yet the size and shape of a whole European or Japanese corporation is not so much the object of market forces as in America. Nevertheless, the overall economic performance of Europe and Japan cannot be classified as inferior. (Rosen weakens his own statements when he speaks of "substitutes in achieving acceptable results," but, soon thereafter, maintains his argumentation by drawing a historical parallel: "Germany . . . has much more closely held control, much less mobility of control, but more financial monitoring by the private banks than do England or the U.S. But the U.S. looked much more like Germany today prior to the 1920s" [p. 155-156].)

Without doubt the allocation of control should be efficient in every economy. Looking at European experience, however, we have to ask whether the efficient allocation of corporate control requires a market that mirrors the American prototype. Perhaps the European way of allocating corporate control also deserves the term "efficient." Remember that the main task of a market for control is to make the shape and sizes of firms flexible. Changing the configurations of corporations seems desirable under two conditions or assumptions: (a) The first assumption is that the number and qualifications of managers cannot be altered in the short run. (b) The second assumption remains rather im-

PLICIT: there must be a one-to-one assignment of top managers to firms. Cross-holdings in Germany, for example, create a situation in which a number of managers are jointly responsible for several companies. As a result, this group of directors and bank representatives can be flexible, as a whole, in assigning members of the group to specific tasks in any of the firms held. Thus the idea of "parallel processing" is realized within a group of managers who are interrelated through cross-holdings of equity and debt. Competition occurs in the political form of an exchange of arguments in meetings. Control is allocated in meetings. It is, though, not allocated through a formal market for control where raiders compete with plans to change the configuration of firms.

There is also a cost to setting up a formal market. A market for control should be regulated, at least to a certain degree. Manipulation, for example, should be excluded. Transactions — think of a leveraged buyout — are sometimes so large that the notion that many parallel units have the possibility to correct errors seems to be inappropriate. For these reasons it might be socially unacceptable to have a completely unregulated market for control. A regulated market, on the other hand, is only second best. It might also be expensive to decide upon the form of regulation. This is particularly true for small economies.

Besides, there is a cost to using an existing market. Even if the utilization of the informational function provided by the market is considered to be costless, there will usually be costs to carrying out contracted transactions. A well-developed market for control might be considered to costlessly provide information and to make even contracting very cheap. Nevertheless, a factual regrouping of resources is usually associated with considerable costs.

These realities of markets for control give room to think about other schemes to improve the matching of control talents and control tasks in an economy. In many European corporations, it seems as if control is exercised not exclusively by one chairperson but, behind the scenes, by several other authorities as well.

Obviously, the role of a chairperson is somewhat different. Instead of there being an American-style one-to-one assignment of chairpersons to specific firms which is brought about by the labor market and market for control, flexibility and competition are achieved in Europe through the interaction of top-level managers interrelated through cross-holdings. We should, therefore, not only study formal markets for control, we should also study at which places and at which levels of economic organizations informal arrangements could be a cheaper type of organization that enhances flexibility and openness.

Bibliography

Alchian, A.A., and H. Demsetz (1972). "Production, Information Costs, and Economic Organization." *American Economic Review*, Vol. 62, pp. 777-795.

Alchian, A.A., and S. Woodward (1988). "The Firm Is Dead; Long Live the Firm." *Journal of Economic Literature*, Vol. 26, pp. 65-79.

Aoki, M., B. Gustafsson, and O. Williamson (1990). *The Firm as a Nexus of Treaties*. London.

Berle, A.A., and G.C. Means (1933). *The Modern Corporation and Private Property*. New York.

Chandler, A.D., Jr. (1977). *The Visible Hand: The Managerial Revolution in American Business*. Cambridge, Mass.

Coase, R.H. (1937). "The Nature of the Firm." *Economica*, N.S., Vol. 4, pp. 386-405.

— (1992). "The Institutional Structure of Production." *American Economic Review*, Vol. 82, pp. 713-719.

De Groot, M.H. (1971). *Optimal Statistical Decisions*. New York.

Fama, E.F. (1980). "Agency Problems and the Theory of the Firm." *Journal of Political Economy*, Vol. 88, pp. 288-307.

Hayek, F.A (1960). *The Constitution of Liberty*. Chicago.

Lange, O., and F.M. Taylor (1938). *On the Economic Theory of Socialism*. Minneapolis.

Lerner, A.P. (1946). *The Economics of Control*. New York.

Rosen, S. (1982). "Authority, Control and the Distribution of Earnings." *Bell Journal of Economics*, Vol. 13, pp. 311-327.

(1986). "Prizes and Incentives in Elimination Tournaments." *American Economic Review*, Vol. 76, pp. 701-715.

(1992). "Contracts and the Market for Executives." In: L. Werin and H. Wijkander (eds.), *Contract Economics*. Oxford, pp. 181-211.

Schumpeter, J.A. (1947). *Competition, Socialism and Democracy*. New York.

Spremann, K. (1990). "Asymmetrische Information." *Zeitschrift für Betriebswirtschaft*, Vol. 60, pp. 561-585.

Waldman, M. (1984). "Job Assignments, Signalling, and Efficiency." *Rand Journal of Economics*, Vol. 15, pp. 255-267.

Williamson, O.E. (1979). "Transaction-Cost Economics: The Governance of Contractual Relations." *Journal of Law and Economics*, Vol. 22, pp. 233-261.

— (1985). *The Economic Institutions of Capitalism*. New York.

— (1988). "Corporate Finance and Corporate Governance." *Journal of Finance*, Vol. 43, pp. 567-591.

Williamson, O.E., and S.G. Winter (1991). *The Nature of the Firm: Origins, Evolution, and Development*. New York.

Tirole, J. (1986). "Hierarchies and Bureaucracy: On the Role of Collusion in Organizations." *Journal of Law, Economics, and Organization*, Vol. 2, pp. 181-214.