
3a. The Competition Between Private and Collective Ownership

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The transformation from socialism and communism to capitalist-style economies that has been underway in East Europe, Russia, and China during the last quarter century has brought private ownership of resources to a previously unattained level of importance in the world. The institutional arrangements that have emerged to guide resource allocation have generally favored private ownership through the long sweep of history, but not always. The task of this essay is to set forth considerations that have influenced the pattern of institutional development and, in so doing, to progress to a more general theory of property rights than that which was set in place by “Toward a Theory of Property Rights”.¹ I begin by examining briefly the origin of the present paper.

Intellectual origin of this essay

Classical and neoclassical economic theories neglect the private ownership system. It did this simply by assuming its existence, proceeding quickly from this presumption to the task of unraveling the mystery of the price system. This neglect remained even after the neoclassical period had passed. Evidence of this is illustrated by the surprise and doubt expressed by economists upon their reading a statement written by Coase in his 1959 article “The Federal Communications Commission.” At a point well into his article Coase addresses a concern of defenders of FCC regulation of the use of the radio frequency spectrum: in the absence of FCC regulation there would arise technical interference between users of radio signals. Coase writes (p. 14):

A private-enterprise system cannot function properly unless property rights are created in resources, and, when this is done, someone wishing to use a resource has to pay the owner to obtain it. Chaos disappears; and so does the government except that a legal system to define property rights and to arbitrate disputes is, of course, necessary.

Economists expressed doubts about this statement’s validity. Technical interference is in the nature of an externality, so Coase’s claim implied rejection of the externality doctrine that was then accepted by virtually all economists. The doubts were born of the failure to analyze the significance of private ownership arrangements for resource allocation. Coase was called upon to defend his claim. This he did in his classic 1960 article “The Problem of Social Cost,” in which he extended the reach of his claim in regard to the frequency spectrum to that of the externality problem in general. Subject to reservations that arise if transaction cost is positive, he shows that negotiations between private parties (that is, their use of the price system) has the consequence of eliminating differences between private and social cost.² This result, now well known, surprised economists. Coase, as did neoclassical economists, presumed the existence of private ownership in his social cost paper. Nonetheless, he did bring ownership out of the shadows by discussing the consequences of alternating the person, as between those involved in externality-type interactions, who is held liable for damages.

¹ Harold Demsetz, Toward A Theory of Property Rights, 57(2) Am. Econ. Rev. 347 (1967).

² Coase should not have made an exception for transaction cost. On this, see my “Private Ownership and the Externality Problem” in Property Rights: Cooperation, Conflict, and Law edited by Anderson, T. L. and McChesney, F. S. (Princeton University Press. 2003) 282-299.

Seven years later, my article “Toward a Theory of Property Rights” took a different approach from Coase’s. Whereas Coase’s work examines the consequences that follow from an existing private ownership system, I sought to explain why such a system would come into existence. The literary “hook” in the article was an anthropological puzzle concerning property rights to land among Native American tribes. As the 17th century came to an end and the 18th began, the status of land along the Eastern border that was later to separate Canada and the United States underwent a transformation from tribal-based collective ownership to family-based private ownership. Why had this change taken place? And why did it not take place on Native American lands in the Great Plains and American Southwest?

The resolution I offered was based on two aspects of the situation. The development of the European fur trade and the difference between land-using habits of forest and grazing animals. I describe the transformation to private rights in the Northeast as resulting from the upward pressures on fur value and on scale of hunting that resulted from growth in the Europe-based fur trade in North America; this increased the loss being suffered as a result of the over-hunting that accompanies reliance on communal ownership of land (i.e., on the commons). Private rights in land provided a practical way to ameliorate this problem in the Northeast because land rights confer effective control of an area’s animal stock if this stock contains mainly forest animals, since forest animals stay close to “home.” On the Great Plains and in the Southwest, where animals ranged over large tracks of land, private right to land did not develop because land ownership could not convey effective control of animal stocks, at least not until barbed wire became available at low prices.³

In retrospect, it now seems to me that the theory of property rights implicit in this explanation places too much weight on externalities (where, in the case discussed, the externality is the neglected impact of present hunting on the cost of hunting tomorrow). The “Toward...” that begins the article’s title, therefore, should be taken seriously. Externality here refers to an effect on the production transformation opportunities facing others, such effect being a result of actions taken by someone who does not bear the value consequences of this effect. Hunting today causes a change in the production opportunities facing hunters tomorrow. As circumstances make the externality more costly to bear, private rights adjust to reduce the seriousness of the externality. This is an important pattern of property right development. Nonetheless, private ownership arrangements would exist even if there were no externality problems of the type being discussed. Externality, in the sense used here, differs from other sources of harm (or benefit) that may affect a person. Taxation and theft change the (financial) reward from effort taken by a prospective taxpayer or victim of theft, but this does not change the technical rate at which inputs can be converted to outputs. The social desirability of maintaining productive efforts leads to limitations on tax levies and to prohibitions against theft, and, hence, to the development and protection of private ownership rights. Here is a source of private rights that is different from externalities, and the theory of property rights, or of ownership, must be broadened to encompass such other sources of property right development.

Even though the resolution of externality-linked problems cannot supply a complete explanation of the way property rights are formulated, it does offer a plausible explanation in cases such as that described for the Native American hunting problem. Beyond cases that fit into this framework very tightly there are others that fit it loosely. These include many of the contractual

³ The social-political institutions that accomplished this change are neglected in “Toward a Theory,” and I still do not know what to say about this. However, there did exist tribal customs and organization through which a transformation of rights could have occurred. The timing of its occurrence in the northeast and not in the southwest, however, is what is at issue in the article.

and marketing puzzles, explanations of which have been produced recently by economists. Difficulties in stipulating and enforcing agreements so as to encourage and facilitate productivity-increasing cooperation between different owners are involved here. Externality-type problems and wealth transfer problems are both involved in these explanations. Most of this work is thought of as belonging to the economics of firms or of contracting, and it does fit these categories, but it is also part of an overarching theory of property rights or ownership. The solutions offered, which usually relate to ownership structures of firms or to conditions of contractual agreements, are nothing if they are not formulations of property rights.

The work on these intellectual fronts seeks to understand phenomena that were largely ignored in neoclassical economics. Neoclassical economists ignored not only puzzles relating to the structure of property rights but also those relating to contractual arrangements. Contracting problems, for example, do not arise in the traditional analysis of supply and demand equilibrium. For the most part, the discussion of market clearing prices sets aside difficulties that arise if information is incomplete and the future is uncertain. Managerial agency problems cannot arise if there is but one person who owns and manages a firm, yet the theory of the firm that emerges from neoclassical economics implicitly assumes that ownership and management are unified in one person, *implicitly* because the theory does not at all discuss problems that might arise from a difference in the interests of owners and managers. Control of the firm is always executed perfectly.

The rapid progress that has been made in recent decades on these problems constitutes a dramatic change in perspective, putting a bright light on important problems long obscured by the quest for an understanding of the role of prices. The core paradigm fueling these new developments has two components, (1) a tendency for individuals to pursue their own interest in ways that conflict with the goals of the team effort and (2) an adjustment of ownership structures and contracts so as to reduce the degree to which team goals are compromised by this tendency. Neoclassical theory generally neglected team efforts and difficulties that arise in attempts to partition team output in accordance with marginal products of cooperating team members. How these difficulties can be ameliorated is a question that has served as a good guide for economists who have worked on this new part of economics. It is easy to see how partitioning and apportioning problems impinge on ownership and contract arrangements. The team-effort paradigm applies to a wide variety of interesting and important problems, and more are on the horizon. Nonetheless, it is not a complete guide to a theory of private ownership arrangements.

Economic systems and the changing nature of economizing problems

In substitution for the Native American land puzzle discussed in “Toward a Theory...,” the “hook” in the present essay is the general success, and sometimes failure, of private ownership in competition with collective ownership. An explanation of this time pattern is not fitted too easily into the externality framework, although externalities are not irrelevant. And, so, it is necessary to appeal to, and offer here, a broader theory of property rights.⁴

There are many ways in which the economic system of a society can deal with the problem of resource allocation. “Toward a Theory...” focused on communal ownership as compared to private ownership. Here, in the present essay, the emphasis is on collectively exercised control of

⁴ The progress of capitalism, as compared to collectivism, has its “ups and downs;” externalities, if used as the only or main explanation of the emergence of property rights, would need to exhibit a correlated pattern of increased and decreased importance in economic systems. This seems implausible to me, so another explanation, supplementary to externalities, is needed. This broader explanation is offered in the present article.

resources as compared to privately exercised control. Communal ownership, or the commons, was treated in “Toward a Theory...” as a form of ownership that allowed each member of a community to access the resource in question, much as each person has a right to walk the sidewalks of city. Save for permitting open access, the control of a communal resource by a community was ignored.⁵ In the present essay, the exercise of effective control on a collective basis is considered an alternative to control exercised privately. The distinction between the two is not as clean as one would like, since collective control is sometimes devised through decisions made privately by owners of resources, the modern corporation being the most important instance of this. Also, the legal system on which private ownership rests can be thought of as controlled collectively. Such ambiguities aside, the contrasting methods are those that we most frequently characterize as capitalism and socialism. These can be presumed to function against the background of some type of representative political organization. For brevity’s sake, call these alternatives private and collective ownership, or, simply, capitalism and socialism.

In most parts of the world private ownership has generally grown in importance relative to collective ownership. This trend reaches one of its high points at the middle of the 19th century and, due largely to recent developments in East Europe and Asia, reaches another high point during the last quarter century. My explanation for this success is based on the nature of economic problems being faced across broad sectors of the world and on how these have been changing through time. The explanation has three parts. One relates to the number and closeness of persons involved in a resource allocation problem, a dimension of the problem that I call *compactness*. The second relates to the *productivity* of persons involved in the resolution of resource allocation problems. The third relates to the *organizational complexity* of resource allocation problems. The meanings of these terms will be made clearer below. I will argue that collective control was compatible with solving a large fraction of resource allocation problems early in world history, but that this fraction became much smaller during a period of time that includes the last two to three centuries. I also will argue that *specialization*, through its effects on compactness, productivity, and complexity has been the most important force behind this change.

Compactness. There is no better way to elucidate the meaning of compactness than to consider the apparently different views of Man offered by Adam Smith in his two most prominent works, *The Theory of Moral Sentiments* (1759) and *An Inquiry into the Nature and Causes of The Wealth of Nations* (1776). In *Moral Sentiments*, Smith discusses the sympathetic feelings people have toward each other. The existence of sympathetic feelings is attributed to a universally felt desire for self-respect and for respect from others. The consequence is action that benefits those who are in distress. In *Wealth of Nations*, Smith discusses people whose main concern is the pursuit of narrowly focused self-interest, especially as represented by wealth maximization. And, as is well known, the general consequence of this in Smith’s analysis, if conditions are competitive, is to benefit the general population.

It is thought that Smith contradicted himself by putting forth two very different views of Man. He did not. In both volumes he relies on narrow self-interest to explain the way people behave. What is different is the way in which self-interest is served. It is served in *Moral Sentiments* by improving the opinion one has of one’s self. Improvement comes from image-creating actions of which others, and one’s self, approve. The psychic and practical value to one’s self of this image, and not the benefit its creation confers on others, is Smith’s view of the force behind sympathetic feelings. The image is of an upstanding person of character who not only cares for others and is willing to help them, but also of a person to be trusted. Smith writes (p. 137):

⁵. “Toward a Theory...” mentions regulation by the community as an alternative arrangement, but sets it aside as an alternative that is not to be discussed.

“When we are always so much more deeply affected by whatever concerns ourselves, than by whatever concerns other men; what is it which prompts the generous, upon all occasions, and the mean upon many, to sacrifice their own interests to the greater interests of others? ...

It is not the soft power of humanity, it is not that feeble spark of benevolence which Nature has lighted up in the human heart, that is thus capable of counteracting the strongest impulses of self-love... It is not the love of our neighbor, it is not the love of mankind... It is a stronger love, a more powerful affection, which generally takes place upon such occasions; the love of what is honourable and noble, of the grandeur, and dignity, and superiority of our own characters.”⁶

In *Wealth of Nations*, self interest is served by acquiring wealth in its various forms, but Smith argues that great wealth adds but little to one’s ability to survive and be happy. It is acquired mainly for the station in society that it gives to its possessor, for the envy and regard that it creates in others. Both *Moral Sentiments* and *Wealth of Nations* are populated by persons in pursuit of improved self-image, in one case through the expression of sympathetic feelings and in the other case through the acquisition of wealth.⁷

It may well be that Smith is wrong about underlying motivations. True altruism, as opposed to interest in one’s image, may be more important to sympathetic feelings than Smith supposes, as may be pleasure derived directly from wealth rather than indirectly from the social position that wealth creates. The argument of the present essay does not depend on the validity of Smith’s views in this regard. What is important here, and what brings us to compactness, is Smith’s view that the sympathetic feelings attributed to persons in *Moral Sentiments* become less effective the more distant is the relationship or the association between the people who are interacting. Smith writes in *Moral Sentiments* (p. 219):

“Every man...is first and principally recommended to his own care; ...After himself, the members of his own family ... are naturally the objects of his warmest affections. They are naturally and usually the persons upon whose happiness or misery his conduct must have the greatest influence. He is more habituated to sympathize with them: he knows better how every thing is likely to affect them, and his sympathy with them is more precise and determinate than it can be with the greater part of other people. It approaches nearer, in short, to what he feels for himself.”

Feelings between persons shift from warm to cool as the “distance,” whether measured biologically or socially, between them increases. “The children of cousins, being still less connected, are of still less importance to one another; and the affection gradually diminishes as

⁶ As my colleague Professor Jack Hirshleifer points out, it is not clear just why “honourable” and “noble” are so important in the image men seek. Why not “guile” and “cruel”?

⁷ A great insight of Smith’s was to realize that enhancement of image and social position, though hardly sterling qualities in themselves, do serve social purpose. He writes in *Moral Sentiments* of people being deceived by vanity (pages 465-466):

“...The rich...consume little more than the poor, and in spite of their natural selfishness and rapacity, ..., [T]hough the sole end which they propose from the labours of all the thousands whom they employ, be the gratification of their own vain and insatiable desires, they divide with the poor the produce of all their improvements. They are led by an invisible hand to make nearly the same distribution of the necessaries of life, which would have been made had the earth been divided into equal portions among all its inhabitants; and thus, without intending it, without knowing it, advance the interest of the society, and afford means to the multiplication of the species.”

the relation grows more and more remote.” (p. 220) ... “Among well-disposed people the necessity or conveniency of mutual accommodation very frequently produces a friendship not unlike that which takes place among those who are born to live in the same family.” (p. 223). Dealings between persons in different societies are described as without sympathetic feelings and, if hostility between nations threatens, as antagonistic. More generally, he writes (p. 138-139):

“When the happiness or misery of others, indeed, in no respect depends upon our conduct, when our interests are altogether separated and detached from theirs, so that there is neither connexion nor competition between them, we do not always think it so necessary to restrain, either our natural and, perhaps, improper anxiety about our own affairs, or our natural and, perhaps, equally improper indifference about those of other men.”

What I mean by the compactness of the economizing problem is the degree to which the problem is largely confined to a group whose members, per force of circumstances, are “close.” Close, here, is determined by the degree to which they are knowledgeable about and, in one way or another, connected to each other; the connection is often biological, but it may be geographic or social. In a compact setting, cultural customs are influential, people involved in interactions are identifiable, the effects of the interaction are known, and future, or past, reciprocation by them is observable. Collective action guided by cultural mores is not only practical in that people are knowledgeable about each other’s preferences, resources, and likely responses, but, quite possibly, also in that cooperative team effort has enjoyment and satisfaction aspects. A small isolated village within the boundaries of which residents remain for most of their lives is a setting in which collective decision-making becomes practical. The community, in a team effort, can build a bridge over a local creek, and the effort can be enjoyable precisely because it is undertaken collectively. An economizing problem that is localized to a particular family is compact. Generally, the preferred method of resolving it will involve mutual assistance guided by sympathetic feelings, not explicit cash payments linked to third-party enforced contractual agreements.

Smith is focused on compact settings in *Moral Sentiments*, but not in *Wealth of Nations*. The market oriented, frenetic commercial world whose operations Smith explains in the *Wealth of Nations* is one in which the generally typical interaction is between persons who know little or nothing about each other; the perfect extreme example is today’s stock trading, often accomplished by computer between persons who have never met and who “know” each other only in the sense of the names that mark respective trading responsibilities. The world of the *Wealth of Nations* is best characterized by dealings that approximate this, in which entitlements are exchanged between persons who are and remain strangers to each other. It contrasts strongly with interrelations between persons during the cultural-economic epoch that had preceded Smith’s time; in that earlier time, most interactions were between persons who were part of the same family or who lived in the same small feudal village. That older world, when it was ascendant, placed a large fraction of economic interactions within relatively small, closely related groups. Isolation and propensity to self-sufficiency characterized the setting for a large share of economizing problems. Compactness was not the exception. It was the rule. And, indeed, this is the situation that prevailed throughout most of Mankind’s history.

In the economy that began to emerge after feudalism faded, and that still was coming “on stream” during Smith’s day, production was increasingly destined “for the market,” not for one’s family, fellow villagers, or for the feudal estate. The persons discussed in *Wealth of Nations* are not in their individual natures (necessarily) different from those discussed in *Moral Sentiments*. The essential difference is in the situation in which economizing takes place. It is different not only in the reduced fraction of economizing actions taking place within compact settings, but also, as we

shall see, in the productivity and complexity of economizing actions. The significance of this transformation is that the economy, for most of its economizing actions, becomes insulated from and insensitive to sympathetic feelings. It becomes increasingly responsive to market signals whose sources are in more narrowly focused self-interests. This transformation is fact to most historians and students of social change. That is how it is taken to this point in the present essay, simply as fact.

The implication of this fact for the essential core of workable economic systems, although not widely recognized, is important. Economic systems organized to rely on sympathetic feelings cannot succeed in coping with day-to-day resource allocation tasks. This is not to say that these types of economic systems cannot exist, that they cannot persist, or that they cannot alter the distribution of wealth. It is to say that they cannot resolve resource usage problems as *efficiently* as can systems that rely to greater extent on prices that reflect facts known to and actions taken by dispersed private owners. It is delusion to think that socialist organization dealing with modern economies will make allocation decisions on the basis of kinship emotions, although in times of national emergency such emotions do exhibit strength for relatively short periods.

Productivity. Resource allocation problems that exhibit compactness have become less important in modern economies, but modern economies in return have become much more productive. The threatened loss in productivity that would come from a kinship-based economic system is so great that a preference for an economic system based on kinship emotions stands on the infirm grounds of romance or ideology. The higher productivity of the modern economy has resulted mainly from two sources, technical change and specialization. Technical change, in principle, can be neutral in its effect on the importance of compactness, but, in practice, it has reduced the relevance of compactness. More important to this essay, for reasons to be discussed below, is specialization. There is no ambiguity in specialization's effect on the relevance of compactness; it undermines compactness by favoring production of goods for use by others who, mainly, are outside the boundaries of kinship. Both technical change and specialization have increased productivity while, simultaneously, they have diminished the relevance of compactness.

The importance of higher productivity to economic organization has largely gone unrecognized. Society gains more from work effort and risk-bearing if these yield large, rather than small, increments to output. Members of a primitive society who are not themselves engaged in foraging activity have little to gain from the foraging activities of others if this yields output sufficient to support only the foragers. Potentially, they have much to gain if "excess" amounts of food can be brought in by foragers. High productivity thus creates a *societal* interest in arrangements that encourage effort and facilitate some sharing of the gains from this effort. Modern farming, for example, yields returns greatly in excess of the amounts needed to sustain the persons doing the farming. As a result, modern farming creates a demand for social organization that encourages farming and that provides for "social sharing" of the yields obtained from this investment. The two primary social organizations being considered here, capitalism and socialism, differ in regard to both aspects of economic organization. Capitalism uses private ownership of resources (that is, it uses the rule of law and the rules of law that provide the foundation for private ownership) to determine what is to be done; socialism, at least of the old variety, uses state ownership (that is, it uses governance through collective organized bureaucracy). Capitalism is based on sharing achieved through the voluntary exchange of goods owned by individuals; socialism, in greater measure, is based on group or state-determined sharing that is not based on voluntary exchange. Here, these need not be compared on their merits. The relevant point is that societal demand for some such organization is greater in a high productivity setting than in a low productivity setting.

This is counter-intuitive. Organizational change seems a more compelling need in low productivity countries. This is true if the change is meant to improve technology, but this is not the appropriate thought experiment. The pertinent comparison for this essay is between two periods of time, an earlier one characterized by low productivity opportunities and a later one characterized by high productivity opportunities. The difference in opportunities is to be viewed as resulting simply from the passage of time, not from a difference in policy. Productive opportunities are low in primitive times because only small amounts of knowledge have been accumulated. Organizational reform of the sort described above becomes more compelling through time because stocks of knowledge have grown through time and, in doing so, have brought forth technological opportunities that yield a larger payoff from reform.

The wealth that results from successful organizational reform in a high productivity period of time has its own consequence for economic organization. High per-capita wealth inevitably stokes desires for greater varieties of goods, but greater varieties of goods complicate the economizing problem. It is one thing to decide on the quantity of resources to put into the manufacture of clothing if every one is required to wear the same clothes and if only children and adult sizes are allowed. It is another to supply the large variety of clothing and sizes that will be demanded by a population that, by historic standards, is wealthy. Resolution of the economizing problem is made more complex by the wealth-caused demand for variety. An economic system that suffices when products and investments are few in number may become seriously inadequate as productivity improvements cause wealth to rise. The sources of knowledge about which goods are wanted in what quantities become more numerous and more dispersed. As Mises⁸ and Hayek⁹ have ably argued, collective control of resources is disadvantaged by this complexity because central planning depends on acquisition and use of this knowledge but has no good method for enabling central planners to acquire it.¹⁰

Organizational Complexity. The complexity to be emphasized here is somewhat different from that which is brought into being by a richer variety of goods. Production is the issue here. Because specialization of economic activities is productive, control of resources to produce goods cannot be so easily centralized. Separate specializations will tend to be controlled by different persons. This creates a need for coordination in the sense of bringing forth control decisions that are consistent with each other but that emanate from different persons. Specialization creates much more organizational complexity than exists in a world in which isolated, self-sufficient small communities predominate. Coordination problems in such communities can be resolved through direct communication between interested parties and through direct knowledge of the usual needs of others. The modern economy, in contrast, demands a system that copes well on a continuing moment-to-moment basis with its specialization-produced organizational complexity.

The price system is prodigious in its ability to do this, but a properly functioning price system for an economy containing a great many different specialties must have the support of a social-legal system that imparts confidence in the execution of agreements. Prices are of little use if there is great risk that other specialists, with whom agreements are to be made, will fail to deliver the

⁸ Ludvig von Mises, *Socialism*. London:Jonathan Cape Ltd. (1936).

⁹ F. A. von Hayek, *The Use of Knowledge in Society*, 35(4) *Amer. Econ. Rev.* 519 (1945).

¹⁰ Mises and Hayek note that the price system is much better at using knowledge and improving calculation than is central planning, but they emphasize the price system too much. It is not the price system per se that improves knowledge utilization. If it were, a socialist society could implement a price system, and some economists have urged just that (A. Lerner, *The Economics of Control*, New York: Macmillan (1947)). A socialist price system would yield prices that differ from those that would arise if ownership were private. The problem is not knowledge acquisition per se, but *motives* to marshal and use particular kinds of information.

agreed inputs or purchase the agreed outputs. Since compactness no longer characterizes these interactions, sympathetic feelings cannot be depended on to assure performance. Reliance must come in different fashion. Rights of parties to agreements must be made clear and must be respected. The legal institutions that define private ownership and guide exchange arrangements must become operative if the complexity that is inherent in specialization is to be productive, and this requires an effective legal system. Smith recognized and emphasized the productivity gains inherent in specialization, but he did not discuss the role that specialization might play in making private ownership more productive. How could he? He presumed the existence of private ownership.

The trend favoring the development of private ownership has three main sources. These are the reduced relevance of compact settings, the time based improvements in productivity, and the increased complexity of resource allocation problems. These developments have created a compelling need for reliance on a social-legal system that facilitates dealings between independently acting persons who, for the most part, are strangers to each other, and who act in a milieu in which complexity of the economizing problem has “out run” the calculating abilities and motivational propensities that are inherent in a collective control system. The private property system has become more important because its institutional arrangements cope with the changed nature of economizing problems more effectively than does the collective control system. Specialization has played an important if largely unrecognized role in all these respects. It has enlarged markets beyond the limits of compact settings, making it worthwhile for strangers to deal with each other. It has increased productivity, raising the social payoff from a system that can cope with self-interested dealings between strangers. And it has made the economizing problem organizationally more complex. Increased reliance on private ownership has been the result. The single most important force behind our growing use of private ownership has been the productivity gains that result from specialization. Externality-type problems remain an important consideration, but many of these problems are important because of specialization of ownership. Soot from a (*specialized*) steel factory descends on a (*specialized*) laundry.... If these two activities could be combined into a single ownership entity without loss of productivity, there would be no externality problem.

There can be no doubt that world reliance on specialization has steadily increased. Less than 10 percent of world population now supplies the world with 100 percent of the major food items necessary to sustain this population. Before the industrial revolution, more than 90 percent of the world’s population was engaged in food production and, obviously, most of what farmers produced they consumed themselves. The change in reliance on specialized production is not unique to food. Virtually all goods supplied to the world today are produced by a small percentage of population.

Changing times

In the beginning. A salient fact of which we are informed by paleontological studies is that there were few people in existence when Man first began using stone tools. Some estimates put world population on the order of 10,000 persons at that time.¹¹ This small population was not integrated within a single group of related persons. It was partitioned into independently operating still smaller groups, each group being populated by one or just a few families. The low ratio of numbers of people to amount of land space did not favor frequent interaction between these groups. Interpersonal dealings were almost entirely within each such group, rather than between persons in different groups, and probably dealt mainly with the allocation of labor-time across a

¹¹ Rogers, A. R. Genetic Evidence for a Pleistocene Population Explosion. *Evolution*. 608 (August 1995).

few tasks including, importantly, foraging and hunting. Foraging and hunting were the sources of sustenance for all persons. On the infrequent occasions when groups met there could not have been much opportunity for exchange, since each group's activities would not have been much different from those of other groups. The setting for economizing decisions and actions hardly could have been more compact. Collective control not only was feasible, it also was likely to be superior to what could be achieved through a division of meager group assets into privately held sub-portions, the possible exception being the way in which control was exercised over stone age weapons.

Primitive Man, however, was an exceptional hunter, able to secure sufficient food to allow for growth in numbers of persons. World population did grow considerably, dispersing from Africa through lower Asia to China about one million years ago, into Central and Western Europe about five hundred thousand years ago, and into most remaining parts of the globe by ten thousand years ago.¹² The Malthusian outcome of this would have brought population to a level that pressed on available food supplies, with the consequence of bringing population growth to a halt. If this did occur, it did so for only a period of time that was not long by evolution's standards. Technical changes occurred that allowed Man to supply food in such quantities that population growth could continue. Improved hunting weapons account for some of this productivity improvement, but it was primitive farming that brought the most improvement. Ancient farming appeared about eight to ten thousand years ago, shortly after the last ice age. Until this happened, achievable living standards depended on hunting and foraging. Farming changed this, first at only a few points in the world, in Eastern Asia, the Nile delta, and, most importantly for the West, in the fertile crescent. It then spread East and West across the European continent.¹³

The transformation to farming increased the practicality of private ownership. Hunting and foraging, at least in most instances, required movement across land, since a particular parcel of land could not offer *continuing* abundance of supplies of prey and berries. Land already hunted and picked had to be abandoned in favor of land that had not been worked over recently. No parcel of land probably was worth much defensive effort if intruders should appear. Moreover, killed meat and picked fruits do not keep or travel well, so not much in the way of inventories of foodstuffs existed. These aspects of hunting and foraging made it impractical to give much effort to the establishment and maintenance of property rights either in land or in meager food supplies. Farming changed this. Land committed to farming lent itself much more easily to privatization. The amount of land required to sustain a family through farming was small enough in size and fixed enough in location to allow its policing by the family or families that worked it. Grain crops could be stored in amounts that exceeded "today's" needs, and excess supplies could be transported across considerable distances without deteriorating. All this altered benefit-cost calculation in ways that improved the practicality for individual families, usually as part of larger groupings of families, to control the very resources that had become of dominant importance to staying alive. There still remained considerable compactness in the economizing problem, so collective control by small groups of families remained viable, but the door had been opened to privatization at the level of the family. The storability and transportability of grain, later to be combined with higher farm productivity, also opened pathways to specialization of production. In promise, and later in fact, a few persons specializing in farming could feed many persons. The

¹² Jared Diamond, *Guns, Germs, and Steel*. New York: W.W. Norton (1997)

¹³ An excellent discussion of evidence bearing on this is given by Diamond. *ibid.*

extent to which privatization actually took place is not easily measured, but progress should have followed from the gradual replacement of hunting and forging by farming.

The reach of rule of law. Private ownership rose to visible prominence in the West in the ancient Greek states and later in the Roman Empire, although fragmentary records of earlier times also indicate that elements of private ownership had appeared earlier than this. Private ownership for citizens extended to land, slaves, and tradable items in both the Greek states and the Roman Empire. The Greek state of Athens engaged in extensive trading of wine and other agricultural goods, and recent studies of shipwrecks indicate that shipments of these goods went to very distant points on the Mediterranean. Distant trading compels dealings between strangers. This was even more true for the Roman Empire, whose size invited long distance trading, often between persons with differing cultural backgrounds. With Roman prosperity came population growth. Some Roman cities achieved populations large enough to assure that even within geographically local boundaries strangers would be dealing with strangers. The Empire facilitated trading activity by protecting private ownership of goods as well as of land and, innovatively, by legitimatising contractual agreements. The Roman economy achieved a complexity and level of specialization unmatched in earlier times in the West. The multicultural nature of the Empire and its long distance trading altered exchange in ways that frequently involved dealings between strangers, further reducing the importance of situations that could be characterized by compactness. Privately owned and inheritable wealth, including land, the support of contractual agreements, and the reduction in risks obtained through a higher level of law and order mark changes in social arrangements that encouraged greater reliance on far flung trading activities.

These developments came to a halt in the West when the Roman Empire faltered and failed, largely due to corruptness at its higher levels of governing. The weakening of Roman authority diminished the force of Roman law through which Rome had successfully ruled its Mediterranean empire. Distant commercial dealings became more risky and, as a result, the settings for transactions became more localized and compact. The Dark Ages descended on the West, and with them came a return to compactness and a retreat from complexity and specialization. Private ownership gave way to collective ownership. Land and other resources, in larger measure than before, became property of local abbeys, feudal villages, and peasant farms.

These small social units strove for and secured a large measure of self-sufficiency. Mutual obligation and collective control of resources substituted for private ownership in all three of these growingly important institutional arrangements. This was obviously so for church and feudal institutions, both of which were run as cooperatives that involved fixed relationships and obligations. Less obviously, it was also true for the peasant economy that became entrenched somewhat later across rural areas of Europe. On peasant farms, the collective social unit was the family. The farm and its land were not to be sold but, by custom, were to be kept in trust for the family. This virtually eliminated the market for rural land in Europe. The control rights of the figurative head of household were very limited. It was the *family* that collectively controlled, and the family was beholden not just to living members but to past and future generations also. The typical peasant farm engaged in very little trading with outsiders. The attempt was to be as self-sufficient as was possible, reducing the degree of dependency on outsiders.¹⁴

Abbeys, feudal estates, and peasant farms, being isolated and agricultural, found the emphasis on self-sufficiency not impractical. Urban dwellers, necessarily depending on outsiders for food,

¹⁴A fascinating discussion of the peasant farm economy and its comparative weakness in England as compared to Europe is given in A. Macfarlane, *The Origins of English Individualism*, Oxford: Basil Blackwell,(1978).

could not similarly adopt a policy of self-sufficiency. It was mainly the large cities, beginning with the important city states in Northern Italy and the Lowlands, that remained connected to the outside world and maintained a high level of private ownership of resources. In time, trade began to move longer distances as cities and towns grew in importance. The march from status to contract and from collective to private ownership resumed. Rule of law became stronger, especially in England when King John, facing the power that had been acquired by barons, signed the Magna Carta in 1215, confirming that not even the King was above the law. Feudal institutions weakened. Nation-states strengthened. Distant trade increased. The migration from rural areas into the cities quickened. The competition for workers in the trades and crafts that came from the cities, combined with a tax-caused increase in the financial needs of feudal lords, wrought concessions that liberalized the status of workers and that made feudal institutions less committed to service in kind. The migration grew in importance as the pre-conditions for the industrial revolution began to emerge.

Industrialization. The industrial revolution, coming first to England then to Europe and the United States, dramatically reduced compactness of economic dealings, increased productivity and complexity, and made economies a compound of specialized activities. Private ownership rose to new levels of significance as the preconditions for the industrial revolution and the revolution itself set in. The reversal suffered during the Dark ages had been overcome and left behind. The essence of the revolution was the development of techniques, especially with respect to power sources, that brought persons to factories to work, undermining the putting out system that had until then been important. Two aspects of this are important to the present essay. First, there resulted a quickened pace of growth in per capita wealth. Second, the factory system, in its utilization of central power, mainly steam, became the instrument for bringing specialized production out of the crafts and into mainstream economic activity. Indeed, the factory system was nothing if it was not specialized production of goods destined for use by persons who were not involved in the production process. This stood glaringly in contrast to goods produced by feudal estates and peasant farms, and by quantitative impact it greatly overshadowed craft-based specialization. The switch to an economy built on a foundation of specialization is important in making the economizing problem less compact, but it also increased productivity and made for greater complexity of resource allocation problems.

The secondary effect of specialization. The force of free trade began to weaken during the last half of the 19th century. Economic regulation and wealth redistribution slowed the march toward privatization in the West, a slowing that remained largely in effect until privatization began to sweep East Europe and Asia during the latter part of the 20th century. Regulation directly limits the influence of private owners on resource allocation; wealth redistribution indirectly does the same. These compromising developments remained fairly unimportant until a time between World War I and the beginning of the Great Depression. These events, together with the Communist takeover of Russia, marked the beginning of a period during which the shift to privatization halted and even retreated. We have seen that the instability that followed the fall of the Roman Empire led to withdrawal characterized by fewer dealings with distant strangers and more reliance on the mutual support of fellow villagers. The instability following on the Great Depression of the 1930s led to similar, but not identical, reactions. Tariffs were raised worldwide, the gold standard that linked trading across the world was abandoned, and, in the United States, the Roosevelt Administration urged industries to adopt self-help collective approaches to their problems.

The fraction of national product in the United States that flows through the government attained a level of about ten percent or slightly less at the beginning of the 20th century, then, after 1930, began to increase. Today, for all levels of government, the percentage stands at between 35 and

40 percent. Economic regulation rose to peak levels about 30 years ago but has since then diminished in importance. Wealth redistribution increased steadily throughout most of the 70-year period that followed the Great Depression. Today, entitlement and other wealth redistribution programs account for the bulk of resources that pass through the government's control in the United States. This general pattern holds for most other Western economies, a few of which now pass as much as 60 percent of national product through governments to service wealth redistribution programs. Although wealth redistribution weakens private ownership incentives, it does not generally involve the state in the production of goods. In this sense, redistribution is not the equivalent of collective control of productive assets. Still, for the last 70 years, these two developments, regulation and redistribution, have attenuated further growth in private ownership. That the world still is experiencing growth in private ownership is attributable mainly to the transformation of the economies of socialist and communist countries to economies that are much more capitalist in organization. The progress of privatization in the West, save for reductions in the extent of economic regulation, has come to a halt at a stage in which a considerable share of resources passes through government in connection with wealth redistribution.

Our propensity to redistribute wealth has many sources. Some redistribution and regulation may be necessary to encourage the less fortunate to be tolerant of capitalism. Lott and Kenny¹⁵ offer as explanation, with evidence, that women's suffrage has played a role. But note should be taken of the possibility that specialization has itself, in its secondary effect, limited the robustness of capitalism. Specialization creates dependencies on markets that do not exist so strongly in a world populated by small, self-sufficient social groups. Poor times for some can result not from their poor performance but from adverse market developments, and these results from the actions of many forces that lie beyond the control of any one specialized group. This offers both rationalization and justification for protectionist measures. Moreover, specialization creates identifiable groups between which wealth can be shifted, and it strengthens incentives for members of these groups to press for redistribution in their favor. A program to support owners of farmland makes sense only if there are persons who do not own farmland, who are identifiable as such, and who can be brought to bear the cost of such a program. Specialization thus empowers pressure groups. These seek and sometimes get wealth from persons who either belong to no specialized group or who belong to a politically weaker specialized group.

A paradox of sorts is suggested here. Specialization promotes the development of a complex, interdependent economy that must rely in considerable degree on private ownership of resources. So far, this seems to have been its dominant consequence. Yet, because it makes a social support system more appealing and, simultaneously, makes wealth redistribution and protectionism easier, specialization also limits the scope and extent to which the consequences of private ownership are socially tolerated. Specialization has added fuel to the age-old struggle between wealth acquired by production and wealth acquired by taking. The likely outcome is not so easily discerned. The role of specialization is especially interesting in this regard. Does continuing growth in specialization lead to continuing growth in redistribution of wealth, or, after a certain degree of specialization is reached, does redistribution begin to wane? There is plausibility to the notion that continued growth in specialization will cause redistribution to wane. Multiply the number of specialized activities and each activity wields less political force. Ultimately, the highly specialized economy looks much like a completely decentralized economy, at which time the secondary effect of specialization will no longer be present. In that setting, specialization will have become a much stronger force favoring increased privatization.

¹⁵ Lott, J. R. and Kenny, L.W. Did Woman Suffrage Change the Size and Scope of Government? 107(6) *J. of Pol. Econ.* (1999) 1163.

Even short of achieving this decentralized state of affairs there remains some ambiguity about the secondary effect of specialization. A new specialized industry can use its political influence to strike down barriers to competition that inhibit its ability to grow. These barriers will have been erected at an earlier time to protect other specialized industries. Essentially, this is how England came to eliminate its corn laws.¹⁶ These laws had been put in place to protect England's farmers from imports. The industrial revolution, as it matured, created specialized manufacturing industries that viewed the corn laws as obstacles to lowering the cost of living for workers and to reducing Continental barriers to English manufactured goods. Eliminating the corn laws would bring down the cost of food to English workers and, with some plausibility, would supply England with a lever by which to reduce foreign barriers to English manufactures.

Concluding comment: the role of risk.

The competition between private and collective ownership has followed a pattern through time that is roughly consistent with the plausible effects of specialization on the dimensions that characterize the setting in which economizing takes place -- compactness, productivity, and complexity. Another dimension of economizing has played a role in this essay -- risk. In the above discussion the role of risk is to make persons more hesitant to accept the dependency that comes with specialization. The aftermaths of the fall of Rome and of the Great Depression exemplify this hesitancy. This suggests that the theory of property rights could be made more complete by adding degree of risk to compactness, productivity, and complexity as a relevant dimension of the setting in which resource allocation takes place. I have resisted this because I am uncertain about the general theoretical link between risk and choice of economic system. That risk makes persons less willing to depend on others is plausible, and that is the theoretical linkage used in this essay, but the situations, the fall of Rome and the Great Depression, involve risk of a particular type. It is risk that is system-wide and of magnitude sufficient to affect customary behavior and to put institutions in jeopardy. Other sorts of risk might make specialization more, rather than less, attractive. Specialization, after all, does create wealth, and wealth buffers the adverse effects of risk. Risk in this essay should not be thought of generically but as of a special sort. This type of risk might serve in consistent fashion in a broader theory of property rights.

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¹⁶ For more about this, see Harold Demsetz, *Efficiency, Competition, and Policy* (Oxford: Basil Blackwell)1989, 298-306.