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SOME ECONOMICS OF PROPERTY RIGHTS

by Armen A. Alchian (*)

1. *Scarcity, Competition and Property.*

In every society, conflicts of interest among the members of that society must be resolved. The process by which that resolution (not elimination!) occurs is known as *competition*. Since, by definition, there is no way to eliminate competition, the relevant question is what kind of competition shall be used in the resolution of the conflicts of interest. In more dramatic words designed to arouse emotional interest, «What forms of discrimination among the members of that society shall be employed in deciding to what extent each person is able to achieve various levels of his goals»? Discrimination, competition, and scarcity are three inseparable concepts.

2. *Constraints.*

That list of concepts can be expanded—scarcity, competition, discrimination, constraints, property. In other words, constraints exist that prevent our individually achieving a level of want-fulfilment beyond which none of us wants more. In still other words, these constraints, even though imposed by nature, include also the constraints imposed by other people who because they achieve certain levels of want fulfilment leave other people with lower levels. (I do not mean that *all* activities that enable one person to have a greater level of goal fulfilment will also necessarily mean less for someone else; we know that some forms of exchange permit joint increases. But we also know that cooperative action is possible, and also that competitive action is also present). If we concentrate attention on constraints and classes of permissible action we find ourselves studying the *property* aspect of behavior.

Economists are, I think, too prone to examine exchange as a cooperative act whereby the buyer and seller each act in an effort to reach a more desired position. Yet I find it more interesting (now that I understand the cooperative aspect of exchange) to examine the competitive, or property aspect of exchange. The act of exchange is a means whereby the buyer is able to compete against other claimants for the goods being obtained from the seller. The kinds of offers, forms of competition and behavior that the members of society can employ in an endeavour to get more of the goods that would otherwise go to other people, is brought more into the focus of attention. More directly, the forms and kinds of property rights sanctioned in a society define or

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identify the kinds of competition, discrimination or behavior characteristic of that society.

Yet if we look at the «fields» of economics, say as presented by the American Economic Association's classification of areas of interest or specialization, we find no mention of the word «property». Either we can infer that the profession is so obviously aware of the pervasiveness of the effects of various forms of property rights that property rights can not sensibly be regarded as merely a subfield; or else we can infer that economists have forgotten about the possibility of subjective rigorous systematic coherent analysis of the various forms of property rights. My conviction is that the latter inference is the more valid one. As evidence I cite that the only systematic analysis of choice among «goods» postulates utility maximization subject to a budget or *wealth* constraint, wherein the constraint is almost invariably a *private* property type of wealth constraint.

3. *Property Rights.*

If, in what follows, I talk as if the property rights were enforced by formal state police power, let me here emphasize that such an interpretation, regardless of what I may later say, is gross error. It seems to be a fact that individuals will not stand by idly while some other person's property is stolen. It seems to be a fact that *private* property rights are rights not merely because the state formally makes them so but because individuals want such rights to be enforced, at least for a vast, overwhelming majority of people. And yet if I recognize the number of socialist states, I must admit to some confusion (I appeal for edification).

The rights of individuals to the use of resources (i.e., property rights) in any society are to be construed as supported by the force of etiquette, social custom, ostracism, and formal legally enacted laws supported by the states' power of violence or punishment. Many of the constraints on the use of what we call private property involves the force of etiquette and social ostracism. The level of noise, the kind of clothes we wear, our intrusion on other people's privacy are restricted not merely by laws backed by the police force, but by social acceptance, reciprocity and voluntary social ostracism for violators of accepted codes of conduct. The use of arabic numbers rather than roman, the use of certain types of clothing, or styles of speech and address, of printing from left to right and top to bottom, rather than the reverse, or keeping our garden up with Jones', all are subject to the force of social opprobrium. No laws require such behavior. Yet each of us (or nearly every one of us) will punish in one way or another those who violate these rules. Surely it is not the important rules that are left to the formal state power of enactment and compulsion. Obviously there is heated dispute as to which forms of behavior should be «enforced» by social voluntary ostracism and which by formal state police action.

By a system of property rights I mean a method of assigning to particular individuals the « authority » to select, for specific goods, any use from a non-prohibited class of uses. As suggested in the preceding remarks the concepts of « authority » and of « non-prohibited » relies on some concept of enforcement or inducement to respect the assignment and scope of prohibited choice. A property right for me means some protection against other people's choosing against my will one of the uses of resources, said to be « mine ».

Often the idea or scope or *private* property rights is expressed as an assignment of exclusive authority to some individual to choose any use of the goods deemed to be his private property. In other words the « owners », who are assigned the right to make the choice, have an unrestricted right to the choice of use of specified goods. Notice, that we did not add— « so long as the rights of other people are similarly respected ». That clause is redundant in strict logic. Private property owners can use their goods in any way they choose. If some of these chosen uses involve the use or destruction of other people's private property, it follows that the private property system is being violated, for this use has denied to other people the control of use over the goods classed as private property. To say I have private property rights is to say that no one else has the right to make the choice of use of that good (contained in the class of private property). This means that if I select a use for the goods said to be my private property, the selection must not affect the physical attributes of your goods. If I own some iron, I can make window frames or fence post out of it, but if I shove a piece of iron through « your » glass window I shall be denying you the right of choice of the physical attributes of your private property. However, if I convert the iron to a special kind of good that other people are willing to buy instead of buying what you are selling, you may find that the reduced exchange value of your goods imposes a greater loss of exchange power (wealth) than if I had simply broken your window.

Although private property rights protect private property from physical changes chosen by other people, no immunity is implied for the exchange value of one's property. Nor does it imply that my use of my goods, which may not in any way affect your goods, can not be a use that you find objectionable on moral or emotional grounds. If I use my resources to make lewd pictures for my own use or for exchange with other people, you may find your « utility » much affected. You may be more upset, annoyed, distressed, or hurt by my action than if I had broken your window or stolen some of your wealth.

Private property, as I understand it, does *not* imply that a person may use his property in any way he sees fit so long as no one else is « hurt ». Instead, it seems to mean the right to use goods (or to transfer that right) in any way the owner wishes so long as the physical attributes or uses of all other people's private property is unaffected. And that leaves plenty of room for disturbance and alienation of affections of other people. If I open a restaurant near yours and win away business by my superior service, you are as hurt as if I

had burned part of your building. If I open a restaurant and pour smells and smoke over your neighboring land then I have changed the physical attributes of your property; I have violated your private property rights—incidentally a form of violation very common in most societies.

But if the right for me to open a business were denied, this could, if it also were part of a system in which your rights to enter into various businesses were similarly restricted, be considered by you to be an undesirable restriction and one that did you more harm than would be encountered by you in a less restrictive environment.

In sum, it is only the choice over physical attributes that are constrained to owners, not the value-in-exchange effects nor the psychological, emotional effects that you may suffer in the knowledge that I am behaving in what you consider improper ways (short of changing the physical attributes of your property).

4. *Partitioning of Property Rights.*

Whether or not the preceding suggested definition is useful, we examine another issue. What are the effects of various partitionings of use rights? By this I refer to the fact that at the same time several people may each possess some portion of the rights to use the land. «A» may possess the right to grow wheat on it. «B» may possess the right to walk across it. «C» may possess the right to dump ashes and smoke on it. «D» may possess the right to fly an airplane over it. «E» may have the right to subject it to vibrations consequent to the use of some neighboring equipment. And each of these rights may be transferable. In sum, private property rights to various partitioned uses of the land are «owned» by different persons (1).

A lease or rental agreement partitions the rights so that the renter gets the right to make decisions about particular uses of the item by the «owner». Normally the rights of the renter to decide where the furniture will be placed or when it will be sat on, etc., are not thought of as ownership rights, because they are so frequently allocated to the renter, and because the ultimate value consequence rests on the «owner». However, our main point here is that the rights can be partitioned, divided and reallocated on a temporary—or even on a permanent basis, so that the «ownership» rights are partitioned among two or more persons. This kind of division is not necessarily a cross-sectional division with each owner now having equal parts of all the ownership rights. Instead it is a selective partitioning with all of some of the subrights staying with the «owner» and all of some other rights

(1) A different form of inter-personal sharing of rights is that in which all rights are possessed in common and jointly by the group, but the decision as to any use must be reached by the group. Rights to each different kind of use are not separated and possessed by different people. Instead the rights are commonly owned; and the problem is in devising or specifying some choice process which will «declare» the decision of the «group» of joint owners.

being transferred temporarily at least to the « renter ». Even though this is called a rental or leasing agreement, it does contain transfers of some of the rights that are included in ownership. The fact that these partitionings of owner are temporary makes it easy to decide who is the « owner » in the conventional sense.

The partitioning of various types of rights to use, has been explored by Ronald Coase (2). He notes that what are commonly called nuisances and torts apply to just such situations in which rights are partitioned and the exercise of one owner's rights involves distress or nuisance for the owners of other rights. For example if a railroad spreads sparks and ignites fires in wheat field near the tracks, the wheat grower can pay the railroad to not spread sparks (if the law gives the railroad the right to spread such sparks). On the other hand if the right to decide about such land use is reserved to the farmer, the railroad could pay him for the right to drop sparks on the land (and save costs of spark screens, etc.). If there were no costs of *negotiating* such exchanges of rights and policing them, the initial partitioning of rights would not affect the way resources are used. (Of course, wealth would be redistributed in accord with the initial assignment of the partitioned rights).

But when we recognize that transaction costs do exist, it seems clear that the partitioned rights will be reaggregated into more convenient clusters of rights. If so, there should be an evolutionary force toward survival of larger clusters of certain types of rights in the sanctioned concept of property rights. But I am at a loss to formulate this more precisely, meaningfully and fruitfully. Except for rare studies like those of Glanvil Williams on the development of the laws of trespass and the two-volume work of Maitland and Pollack on the development of law (and property rights) in the 12th through 14th Centuries, I suspect our main alternative is to initiate studies of our own (3). For example, a study of the property rights in Ireland during the past three hundred years and of water law in the United States may (and I believe, will) enable us to discover more rigorous formulation of the laws of development of property law.

5. *Sharing Property Rights.*

At this point there is a temptation to start classifying various partitioning of property rights, e.g., private, public, bailments, easements, leases, licences, franchises, inheritances, etc. This temptation is easy to avoid, because the task is so difficult. Another temptation is to list the various ways in which property rights of owners—ownership rights, as they are called hereafter—whatever they may be, can be shared among people as joint owners or as a partnership. Or cor-

(2) « The Problem of Social Costs », *Journal of Law and Economics*, 1960, pp. 1-5.

(3) FREDERICK POLLOCK and FREDERIC MAITLAND, *The History of English Law before the Time of Edward I*, 2nd ed. (Cambridge, 1952); GLANVILLE WILLIAMS, *Liability for Animals*, (Cambridge University Press, Cambridge, 1939).

porations can be created as a means of sharing property rights of owners among voluntary sharers. Or public property may amount to every-one having a share—although, as we shall see, I think this is not the crucial difference between public and private ownership.

The ability of individuals to enter into mutually agreeable sharing of the rights they possess is evident from the tremendous variety of such arrangements, e.g., corporations, partnerships, non-profit corporations, licenses, bailments, non-voting common stock, trusts, agencies, employee-employer relationships, and marriages.

Should we be surprised that the government refuses to enforce some voluntary proposed sharing of legitimate property rights among owners? Presumably the «undesirable» effects justify the refusal to sanction some of the ownership sharing. For example, at one time, the state refused to enforce corporate ownership—even though all the members of the corporation entered voluntarily. Will it enforce every voluntary sharing and partitioning of ownership rights among individuals?

The variety of joint sharing of property and ownership rights is a testimony to man's ingenuity. But if one asked what the difference was between any two of them, say public and private ownership, he would find the answer not so easy. In one sense it is adequate to say that the public is the owner as contrasted to a private group. But that is not very helpful if one is interested in discovering what difference it makes for behavior and use of resources. Compare a privately owned golf course with a publicly owned course (or auditorium, bus service, water service, garbage collection, airport, school or even spaghetti factory). There are differences in the way they are operated; at least anyone who has ever compared them will think so. Why do these differences occur? Are the objectives different? Is it because the kind of people who operate one are different from those who operate the other? Is it because of the form of ownership?

I believe (on the basis of something more than casual observation) that behavior under each institution is different, not because the objectives sought by organizations under each form are different, but instead because, even with the same explicit organization goals, the costs-rewards system impinging on the employees and the «owners» of the organization are different. And I suspect that these differences are implied by economic theory, if the trouble is taken to apply the theory. Further, preliminary speculation suggests, for example, that the difference between a privately owned corporation with 1,000 owners and a state-owned entity in a democracy with 1,000 citizens is quite significant, because the 1,000 individuals are furthering their own individuals interests in each entity under two different systems of property rights i.e., the rewards-costs schedules differ.

6. *Private and Public Ownership.*

How do private and public ownership rights differ? To sharpen the issue, consider a small town theater owned by 1,000 corporate sha-

reholders (each with one share) and an auditorium owned by the 1,000 residents as public property. This eliminates the difference of sharing and differences in the number of joint « owners ». Every activity conducted at one could, in principle, just as well be held at the other building. Assume also, the city auditorium is operated to make money, not to subsidize some group, and so is the private theater.

The public auditorium and the private theater both serve the public. It is not the case that the former is designed to provide a public service and the latter not. The privately owned theater will survive only if it can provide services that the public wants at the price asked. It is a source of public service, even though its purpose from the owners' point of view is to make money. But what about the publicly owned auditorium? Is its end that of public service or to make money for the public owners? Suppose its end is public service. This does not *require* that its means of action be any different than if its ends were profits to the owners—public or private. Furthermore assume in both cases the managers and employees were induced to take their jobs only because the salary enhances their own wealth or well-being. They take the jobs—not because they want to provide a public service or wealth for the owners; but instead because they want a better living for themselves. We can assume that those resident citizens who « own » the auditorium and voted for it did so because each felt it would make their own situation preferable—not because they wanted to benefit someone else as a charity device.

But there are differences, and we conjecture the proposition that the differences between public and private ownership arises from the *inability of a public owner to sell his share of public ownership* (and the ability to acquire a share without a purchase of the right). But let us be clear about this. We are not yet asserting that there are no other differences, nor that this difference has not been noticed before. Instead we are emphasizing the *unique* importance of this difference in the ownership rights.

We are not begging the issue by assuming away one general difference—the profit incentive or criterion. Both public and private property can seek profits. The desire to avoid or suppress the effects of the profit-making incentive is, however, often the reason society resorts to public ownership. However the objectives sought by public ownership cannot merely be announced to the managers or operators with expectation that exhortation will be either sufficient or necessary to achieve the objective. Since our general postulate is that people, as individuals, seek to increase their utility and that wealth is a source of utility, we cannot expect people to change their goals or desires. Instead, we rely upon changes in the rewards-costs structure to redirect their activities as they seek to increase their utility or level of satisfaction of their desires (4). And we shall try to show that many differences, that do

(4) Friends of Adam Smith will recognize this as the major postulate of his *Wealth of Nations*, a postulate which seems to have served economists well when not forgotten.

exist between behavior in public and privately owned institutions, reflect this ownership difference—viz., the presence or the absence of the right to sell a share of ownership to someone else.

The difference can be put somewhat less euphemistically. Public ownership *must* be borne by all members of the public, and no member can divest himself of that ownership. Ownership of public property is not voluntary; it is compulsory as long as one is a member of the public. To call something « compulsory » usually is a good start towards condemning it.

A person must move from one town to another to change his ownership in public property. In one sense it is not compulsory because it is not compulsory that one lives in a particular community. But so long as one does live in any community with public property he is a public owner and cannot divest himself of public ownership; but he can sell and shift private property ownership rights without also having to leave the community.

It is tempting to emphasize the possibility, under public ownership, of someone joining the community and thereby acquiring a share of public ownership, without payment to any of the existing owners. This dilution of a person's share of ownership is resumably absent in private ownership. In fact, a community could close off immigration; but public ownership would continue even if this dilution effect were an important problem. Furthermore, many corporations issue new shares without pre-emptive rights to former owners. Presumably this is done only when the receiver of the new shares pays the corporation something of at least equivalent value. And it is a safe assumption that the management deems the *quid pro quo* to have been worthwhile so far as present purposes are concerned. Still, it is sufficient that even if dilution of public ownership were eliminated by restriction of entry, the inability to sell one's share of public ownership remains a potent factor in the costs-reward system impinging on all members of the public and on the employees and administrators of the publicly owned institution.

7. *Some Implications of Transferability.*

To see what difference is made by the right to transfer ownership shares, suppose public ownership could be sold. It would be possible for me to sell to someone else my share in the publicly owned water, or bus or garbage, or parks, or school system. To separate out the fact that public ventures are usually run without the intent of making a profit, let us suppose that the water or bus system had been instructed to be as profitable as it could. Now that its ownership has become saleable, with capitalized profits or losses accruing to the owners, will incentives be any different?

The answer is suggested by two implications of the specialization of « ownership » which is similar to the familiar specialization of other kinds of skills or activities. The two derivative implications are: (1) concentration of rewards and costs *more* directly on each person responsible

for them, and (2) comparative advantage effects of specialized applications of (a) knowledge in control and (b) of risk bearing.

7.1 *Degree of Dependency.* — The greater concentration of rewards and costs means simply that each person's wealth is more dependent upon his own activities. This is brought about as follows: the more he concentrates his wealth holding in particular resources, the more will his wealth respond to his own activities in those areas. Consider the following example: Suppose there are 100 people in a community, with 10 separate enterprises. Suppose that each person, by devoting one-tenth of his time to some one enterprise as an owner, could produce a saving or gain of \$ 1,000. Since the individual is a 1/100 part owner he will acquire \$ 10. Suppose, further, that he does this for each of the ten different enterprises, in each of which he owns 1/100 part. His total wealth gain will be \$ 100, with the rest of the product, \$ 9,900, going to the other 99 people. If the other 99 people act in the same way, he will get from their activities an increase of wealth of \$ 990,000/100 = \$ 9,900, which gives him a total of \$ 10,000. This is exactly equal to his product most of which was spread over the other owners.

However, if everyone each owns 1/10 part of *one* enterprise only (which means that ownership has been reshuffled from pro rata equal shares in all enterprises to a concentration in one enterprise by each person, although with the same total number of enterprises), the individual will now be assumed to devote his whole time during one year to the one enterprise, so he again produces \$ 10,000. (We assume that his productivity is proportional to the number of hours of work, and that it is the same for everyone. Other assumptions will change the arithmetic, but will not destroy the main principle being elaborated). Of this he gets \$ 1,000. The remainder, \$ 9,000 goes to the owners of the other 9/10 share. Like them, he too receives portions of the other owners' products, and if all are assumed to be exactly alike, then he gets from the other 9 joint owners of his enterprise \$ 9,000 for a total of \$ 10,000—precisely the same as in the preceding example. The difference is that now \$ 1,000 of this is dependent upon his own activities whereas formerly only \$ 100 was. Or more pertinently, the amount dependent upon the activities of other people is reduced from \$ 9,900 to \$ 9,000.

If we go to the extreme where the 10 enterprises are divided into 100, with each person as the sole owner of one enterprise, then all \$ 10,000 of his year's wealth increase will depend upon his own activities. The first of these three examples corresponds to public ownership, the second to corporate joint private ownership, and the third to sole proprietorship.

If public ownership rights were made saleable, they would in effect become private ownership rights and there would be a movement toward concentration of ownership of the type in the second example, at least. Why? In the second case, the wealth a person can get is more dependent upon his own activities than in the first case. Many people may prefer

to let the situation stay as in Example 1, hoping to collect a major portion of their wealth gain from other people's activities. If this were the case, the total wealth gain would decrease since everyone would have less incentive to work. But it suffices that there be at least one person who prefers to make himself less dependent upon other people's activities than in Example 1 and who prefers at least some more wealth to some more leisure. He will then be prepared to buy up some ownership rights and pay a higher price for them than they are worth to some other people. That he values them more highly is precisely another way of saying that he values independence more than they do, or that he prefers more wealth to less wealth—even if it requires some work by him.

7.2 Comparative Advantage in Ownership: Control. — The preceding example did not involve interpersonal differences of abilities, knowledge, or attitude toward risk. But if people differ in any of these respects, as they in fact do, it can be shown that specialization in various tasks — including that of owning a business — will increase wealth. This demonstration is simply the logical theorem of gains from comparative advantage, which we shall not explain here.

Usually the illustrations of comparative advantage are based on «labor» productivities with no reference to «ownership» productivities. But people differ in their talents as owners. Owners bear the risk of value changes, make the decisions of how much to produce, how much to invest, and how it shall be produced and who shall be employed as laborers and managers. Ownership ability includes attitude toward risk bearing, knowledge of different people's productive abilities, foresight and, of course, «judgment». These talents differ among people according to the particular industry, type of product, or productive resource one is considering. The differences in skills of people as owners make pertinent the principle of comparative advantage through specialization in ownership. If ownership rights are transferable, then specialization of ownership will yield gains. People will concentrate their ownership in those areas in which they believe they have a comparative advantage, if they want to increase their wealth. Just as specialization in typing, music, or various types of labor is more productive so is specialization in ownership. Some people specialize in electronics industry knowledge, some in airlines, some in dairies, some in retailing, etc. Private property owners can specialize in knowledge about electronics, devoting much of their effort and study to learning which electronic devices show promise, which are now most efficient in various uses, which should be produced in larger numbers, where investment should take place, what kinds of research and development to finance, etc. But public ownership practically eliminates possibilities of specialization among owners—though not of employees in the publicly owned venture.

A person who is very knowledgeable about woodworking and cabinet or furniture building would have an advantage as an owner of a fur-

niture company. He would, by being a stockholder, not necessarily make the company any better, but instead he would choose the better company — as judged by his knowledge — as one in which to own shares. The relative rise in the price of such companies enables the existing owners to issue new shares, borrow money more readily, and retain control. In this way the differences in knowledge enables people to specialize in the application of that knowledge to the management and operation of the company—albeit sometimes by indirect lines.

7.3 *Comparative Advantage in Ownership: Risk Bearing.* — A second aspect of ownership specialization is risk bearing. People's attitudes toward risk differ. If various ventures or resources represent different prospects of values, then exchange of ownership will enable a reallocation of risks among people, leading to greater utility in the same sense that exchange of goods does. This risk bearing difference reflects not only attitudes toward risk but beliefs about the prospects of future values of the assets whose ownership can be transferred. Differences in « knowledge » can be used not only in an effort to be more productive but also as a means for distinguishing different risk situations. For example, I may be the top administrator of the Carnation Milk Company, but I may choose to hold stocks in some electronic company because I prefer the risk pattern provided by that stock rather than that provided by ownership in Carnation. In this way a person can separate the productivity of knowledge and effort in what he owns from the risk bearing. He can, if he wants, combine them by holding stock in a company in which he is active. This possibility of separating the *control* (effective administration or operation of the company—an activity which rewards comparative superiority in ability and knowledge) from *risk bearing* is, of course, regarded as an advantage by those who act as employed managers or administrators, and by those who choose to act as corporate stock owners without also bothering to exercise their vote or worry about control. Yet, it is often criticized as undesirable.

Not all of the owners have to think of themselves as owners who are going to exercise their voting rights so effectively as to exert an influence on management. Most of the owners may go along simply because they believe the prospects for profits and losses are sufficiently promising relative to other assets they could own. If losses eventuate, their only alternative is to sell out. To whom? To other buyers who, because of the reduced profit prospects, will offer only a lower price. These « non-active » owners perform a very important function in that they provide the willingness to bear some of the value consequences, at least. So long as scarce resources *exist*, value changes will occur. The question left is then which particular members are to bear the reduced value. Someone has to bear them. Those changes cannot be eliminated.

Often it is said that joint ownership in the modern corporation has separated ownership and control. What this means is that risk bearing and management are more separate. This is correct in that

each owner does not have the kind of control he would as the sole owner. But it is a long logical leap to decrying this. It can be a good thing. Specialization in risk bearing and in management or decision-making about particular uses of resources is now possible. Complete separation does not exist for every joint owner, for to the extent that some share owners are inactive or indifferent to alternative choices or management problems, other stockholders (joint owners) will be more influential. In effect, the « passive » owners are betting on the decisions of « active » owners. « Betting » in the sense that they are prepared to pay other people for any losses produced by these « activists » and in turn collect the profits, if any. In the absence of any right to buy and sell shared ownership rights voluntarily everyone would have to bet on the activists as a group (the case of public property). The right to sell concentrates this betting on those who are prepared to pay the most (or demand the least) for the right to do so. And it concentrates the control or management with those who believe they are relatively most able at that task—and these beliefs can be tested with the less able being eliminated more surely in private ownership than in public because (1) the evidence of poor management and the opportunity to capture wealth gains by eliminating it is revealed to outsiders by the lower selling price of the ownership rights, (2) the specialization of ownership functions is facilitated, and (3) the possibility of concentrating one's wealth in certain areas permits greater correlation of personal interest and effort in line with wealth holdings.

We conjecture from the preceding discussion the theorem: *Under public ownership the costs of any decision or choice are less fully thrust upon the selector than under private property.* In other words, the cost-benefit incentives system is changed toward lower costs. The converse of this implication is that the gains to any owner resulting from any cost saving action are less fully effective. These do not mean that the true costs are reduced. The looser correlation between the costs borne by any chooser and the costs of the particular choices he makes is what is implied. Similarly, the capturable gains to the owners of their actions are reduced.

They are *less* fully borne than they would be if the same action were taken in a private property institution, with a similar number of owners (5). From this theorem one would expect that public agencies would, in order to offset or counterbalance this reduced cost bearing, impose special extra costs or constraints on public employees or agents. Public agents who are authorized to spend public funds should be more severely constrained with extra restrictions precisely the costs of their actions are less effectively thrust upon them. And of course these extra constraints do exist. Because of these extra constraints — or because of the « costs » of them — the public arrangement becomes a higher cost (in the sense of « less efficient ») than private property agencies.

(5) In other words, this difference between public and private ownership does not flow from differences in numbers of owners.

For example, civil service, nepotism restrictions, tenure, single salary structures for public school teachers, sealed bids, and «lineitem» budget controls, to name a few, are some of the costly devices used.

But it is not easy — indeed impossible — in many instances to impose «corrective» costs as offsets. How would one impose full costs upon a city manager who decided to have a garbage collection system (that turned out to be a big money loser) that the city would tolerate? By not reelecting him. But this cost is less than that borne by the private owner who decides (erroneously) to start a garbage collection system. He loses his job *and* the sunk costs. Similarly, how do we make a voter bear the costs of bad judgment in his votes? Are the prospects of costs that may be imposed on a voter equivalent to the cost-prospects that will be laid on a private owner (with share rights) voting in a private corporation? Not according to the theorem derived from our analysis.

I should, I suppose, avow at random intervals that all this is not a condemnation of public ownership any more than certain «deficiencies» of marriage, the human eye, the upright position of the human being, or smoking are to be regarded as condemnations of marriage, eyes, walking on two feet, or smoking. The «lesser» evils in some institutions — and they exist in all — are borne for the greater good in some of them. We are not arguing that private property even in its purest form is perfect in the cost-bearing sense. No standard of perfection is available. All of our statements have been comparative in degrees of cost bearing.

The converse of this «apologia» is that one should not speak of the imperfections of the market place, either. Nor should one assume in those instances where the market place is inferior in certain respects to, say, public ownership or government control, that we ought to switch from the private property market to the government. The presence of one kind of relative deficiency does not justify a switch to another agency—which has other kinds of deficiencies.

8. *We Summarize:*

As we suggested earlier, public and private ownership are used for different purposes, and in some cases *because* of these different behavioral implications. If public ownership in some government activity were converted to private property, the method of achieving the government objectives would be changed. If city and national parks, or golf courses owned by cities were converted to private property, they would no longer be operated as subsidies for certain groups. If the fire and police department rights were converted to private property rights, vast changes would occur in their operation. And the same goes for the postal system, the garbage collection system, the bus lines, streets, the federal mortgage insurance companies, and the Army, the Navy and the Air Force. When «we» do not want (whatever that means) these changes to occur, these activities are conducted via public ownership instead of

privately. And if the effects of greater dependence of benefits and costs on one's own actions are not wanted, resort is made to government activity. Which is not to say that government activity is therefore for that reason good or bad. The extent to which « society » reduces risks that must be individually borne and instead has them borne by society at large — thus reducing the correlation between choice of action and consequences for people as individuals — the greater is the extent of public property. How much this depends upon a *choice* to socialize certain risks, and how much reflects the voting and decision-making *process* are questions I can not answer (*).

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