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CHUNG-HUA INSTITUTION FOR ECONOMIC RESEARCH

OWNERSHIP, CONTROL, AND PRIVATIZATION OF PUBLIC ENTERPRISES

LI-PING ALFRED CHENG

OCCASIONAL PAPER SERIES No.9602
August 1996

Occasional papers are intended to provide economic information and stimulate further research. The opinions expressed within are solely those of the authors and not those of the Chung-Hua Institution for Economic Research.

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Ownership, Control, and Privatization of Public Enterprises

by

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Associate Research Fellows

August 1996

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Li-Ping Alfred Cheng*

Ownership, Control, and Privatization of Public Enterprises**

Abstract

Keywords: Property rights; Transaction costs; Privatization; Principal-agency problems.

Incentives to privatize enterprises owned or operated by the government have become popular. This paper uses a property rights framework to analyze the transaction cost problems inherent in public enterprises. The associated ownership structure is characterized as a multi-layer principal-agency relationship. The model explains why privatization may help to find a more efficient boundary for the separation of ownership and control through the reduction of relevant transaction costs. The analysis suggests the conditions by which privatization can be successful and improve the overall efficiency of an economy.

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I. Introduction

The emergence of state-owned or public enterprises can be explained by a general distrust in market mechanisms. Nevertheless, incentives to privatize enterprises owned or operated by governments have become popular in many countries starting in the 1980s and lasting into the 1990s. This trend is due to broad concerns about public enterprises being less efficient than private firms and, hence, causing severe government deficits.

Privatization, in its narrowest meaning, refers to the transfer of assets from the public to the private sector. In a broad sense, privatization also includes reduction of government control, deregulation, and liberalization. No matter how broad a regulatory reform is conducted, the central issue of transforming public enterprises into private operations lies at the heart of property rights transference. In conventional theory, the costs and benefits of decision-making are less fully borne by the decision maker under public ownership than under private ownership. While this recognition is important, it is not very useful for analyzing the rationale for privatization.

The development of modern agency theory, which applies cost-benefit analysis to the organizing of the public production of goods and services, casts some light on incentives to privatization. By considering the property rights structure of public enterprises under the multiple-principals-agency relationship, this paper attempts to construct a theoretical framework for analyzing the problems with public enterprises. The purpose of the article is two-fold: to explain why privatization helps to improve the performance of public enterprises under a competitive environment, and to provide a theoretical basis for privatizing public enterprises. Furthermore, the analysis suggests the conditions under which privatization can be successful and improve overall efficiency.

This paper focuses on three aspects of public enterprise problems. They are

1. The multiple agency problems inherent in public enterprises;
2. The problems of privatization involving transference of ownership; and

3. The problems of selecting efficient forms for privatizing public enterprises.

So, we will not only be discussing the reasons for privatization and the lessons learned from past efforts in this area, but also examining transaction-oriented issues, since the implementation of privatization necessarily involves transfers (purchases and sales) of some property rights.

The first step is to explore the intrinsic transaction cost problem in the organization of a public enterprise. Given the ownership structure, the enforcing or monitoring system unavoidably becomes mixed up with the operating or management system of these enterprises. Upon the interaction of the contracting parties, some property rights necessarily fall into the public domain. This may cause a serious transaction cost problem and hence reduce the efficiency of operation.

The second step is to analyze the agency problems which often arise between the public enterprise and its regulator. Different methods of transferring the ownership of public enterprises to the private sector may include deregulation, transfer of control, liberalization, and immediate transference. The final step is then to articulate efficient forms of privatization, those which are compatible with the best interest of the general public.

II. Facts and Debates

The general conception is that the inefficiency of public enterprises is caused by lack of competitive rivals. The competition, or more precisely, markets, are crucial to their performance. Competition in markets creates pressures[1] on managers and forces them to perform efficiently. So, the government is

[1] These pressures come from the actual business circumstances, not from pragmatic or ideological forces, as claimed by Savas (1987).

obliged to pursue and enforce competition policy upon and after implementing privatization programs.[2]

This general conception is of course correct. Notwithstanding, we see some nationalized enterprises that operate efficiently with or without facing rivals, as summarized by Boardman and Vining (1989). Their observation, however, does not provide a rationale for comparing the performance of public enterprises and private enterprises. The argument that public ownership may be used to discipline private anti-competitive behavior seriously neglects the underlying transaction cost problems leading toward privatization. Barberis and May (1993) argue for public ownership because they claim there is no effective market mechanism to safeguard the consumer. Hence, public enterprises make the state act as a surrogate for the missing market mechanism through public control and regulation. However, this strategy is not without costs.

Another argument along the same line is that the inefficiency of public enterprises represents the cost that an economy must endure to combat market failure. But, in cases where both fail, which should one trust more? The government, or the market? Further, if the public enterprises are protected by the government through subsidies, without exposure to market risks, who will bear the risk and still guarantee the provision of the missing goods or services?

In the U.K. and elsewhere, public enterprises are characterized by high costs, high prices, low productivity and inefficient use of resources.[3] The situation has provided a growing awareness of policy failures. The costs of fostering infant industries, of financing government expenditures, of maintaining an equal distribution of income and wealth, and of guaranteeing higher employment levels, etc., are higher than expected. Many OECD

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[2]This point is emphasized by Button and Weyman-Jones (1994) and Vickers and Yarrow (1991).

[3]Some detailed accounts are given in Miller (1995). For example, the total returns on capital invested in nationalized industries were far below those of the private sector, and close to zero in the early 1970s. And, the most significant cost increase in these public enterprises is the employment cost.

countries are suffering from high regulatory costs, poor performance in regulated sectors, increasing government debts, and slower improvements in labor productivity than in wage payments. This has resulted in great pressure for the governments in these countries to privatize public enterprises (OECD, 1992).

In order to efficiently implement privatization programs, the government is responsible for solving the following problems: 1) who will be against privatization? 2) who will try to gain from selling stocks or shares to the buyers? And 3) who will eventually gain from privatization?

Since privatization redistributes property rights from the public to private owners, the wealth effects on all citizens cannot be overlooked by policy makers. The affected people can be divided into several groups according to the varying degrees to which they will be influenced by privatization. The first and most affected will be the managerial staff and workers in the public enterprises. Second to those will be the group who intends to purchase stocks or shares held by the government. The third group is those who do not intend to purchase any part of the enterprise but may compete with the privatized enterprise in the same industry, and those who may cooperate with it due to an existing vertical relationship. And the fourth group is the general public-at-large. In the U.K., privatization and nationalization programs share several objectives.[4] The most interesting and special one is that of promoting a more equal distribution of wealth. Although this paper is not concerned with equalizing wealth distribution, the basic idea of privatization programs is that they are indeed designed as a positive-sum and all-win game. But, the rules of this game are critical to the success of any privatization effort. And an effective set of rules needs firm theoretical underpinnings.

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[4]These were pointed out by Miller (1995). The common objectives are the promotion of a more equal distribution of wealth, higher quality goods and services with lower prices, better performance and organizational efficiency.

III. The Theoretical Framework

Davis and North (1971) deliberately explored and explained why institutional changes should be the major impetus for promoting economic growth. They pointed out that when an institution is incapable of fully exploiting beneficial opportunities, it is time for a change. Based on theory and the American historical experience with privatization, it seems that more efficient production can be accomplished through rearranging property rights and reducing transaction costs. Despite the difficulty of determining a clear-cut boundary between public and private enterprises,[5] programs of ownership reform were initiated among many developed as well as developing economies around the world in the 1980s. Privatizing public production is certainly a matter of changing the institution of property rights for economic growth. Records of growth rates in advanced mixed economies reveal this desire to privatize.

An implication of Coase's (1960) ideas on property rights assignment is that, if the transaction cost is zero, any analysis trying to distinguish different types of property rights or hierarchical control systems would be meaningless. Hence, given zero transaction costs, any type of competitive structure would be able to achieve efficiency. However, in reality, any property rights system necessarily involves positive transaction costs. Thus, it is essential to investigate the transaction cost problem, given a specific system of property rights. Issues that this paper concerns itself with include:

1. comparative ownership structures;
2. differences in the efficiency of alternative institutional arrangements;
3. deregulation to remove barriers to ownership transfer and to solve control problems; and

[5] Actually and theoretically, it is difficult to determine a clear-cut boundary between the firm and the market, when viewed through contractual arrangements and the associated transaction costs. This will be explained in the next section with Diagram 1.

4. relevant optimal managerial schemes.

A generalized model of governing propery rights is shown in Diagram 1, which synthesizes the theories of the firm à la Coase (1937), Alchian and Demsetz (1972), and Jensen and Meckling (1976) and the important idea of institutional change from North (1990). First of all, the model presents an economy-wide nexus of contractual arrangements between markets (on the right-hand side) and organizations (on the left-hand side). The whole structure is governed by laws and regulations (at the top), which, through legislation, delineate rules of assigning and regulating property rights and their transfers. At the bottom part of the diagram, transactions costs are classified into three basic types corresponding to the respective transaction alternatives. Accordingly, marketing costs are the costs of transferring property rights in the market; contracting costs are the costs of transferring property rights by various contractual arrangements; and institutional costs are the costs of transferring property rights back and forth between public and private organizations, where agency costs are the dominant costs of managing property rights. Although this paper emphasizes the costs associated with organizations, the contracting and marketing costs are crucial to the degree of competition facing public enterprises.

Coase (1937) argues that the purpose of the emergence of the firm or organization is to supersede the price mechanism and thus reduce the high costs of using the market. Alchian and Demsetz (1972) articulate the difference between a capitalist firm and a socialist firm. Jensen and Meckling (1976) explain the firm as a nexus of contracts, and analyze agency costs in relation to the residual rights of the owner of the firm. North (1990), in addition, emphasizes the role of institutional change with respect to alternative forms of organizations and organizational performance. Extending Coase (1937) and Jensen and Meckling (1976), Cheung (1983) explores the contractual nature of the firm. The implication is that the boundary between firm and market is actually a spectrum of various contractual arrangements, as shown in the center part of Diagram 1.

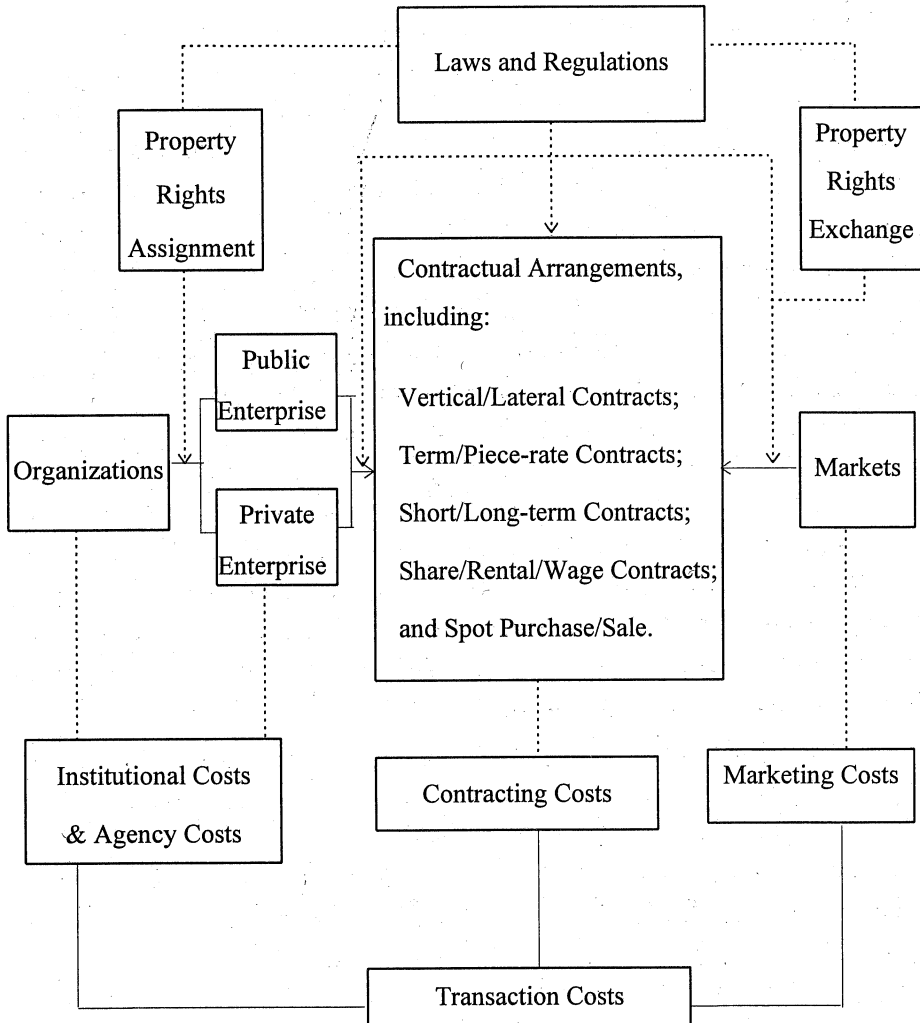

Diagram 1. Transaction Costs of Transferring Property Rights

The spectrum of contractual arrangements implied by the diagram can be understood in terms of a market, a contract, or an organization, respectively. An organization can be seen as a concise internal market, or as one particular nexus of contracts with special arrangements. At the other end of the spectrum, the market can be seen as the most decentralized type of organization, or as a contractual relationship without any binding terms of trade. A contract lies inbetween the market and the organization, with loose or tight contractual obligations. Thus, the spectrum running from markets to organizations is useful in apprehending why the corresponding transaction costs are classified as mentioned above. Although the nature of public and private enterprises makes no difference in terms of organization vis-a-vis the market, the property rights structures of these two forms are not same. Even among private enterprises, there can exist significant complications in rights structure, depending on the degree of regulation by the government.

When the government commits itself to privatizing enterprises, the laws that delineate the property rights which organize public versus private production must be changed prior to the implementation of privatization. Making new or revising old laws incurs cost, and so does enforcing them. Even assuming that the cost to enforce laws and regulations is negligible, if the cost of changing laws is too high, there will be no change in laws. When the cost of change in the institution of property rights becomes prohibitive, it may only be partially changed. Where the cost is low enough and the desired goal of change is achieved, a new ownership structure is then established. This makes the performance of the involved enterprises under different institutional arrangements comparable. But in reality, the enforcement cost is not nil. For comparison, both costs of changing and enforcing property rights need to be taken into consideration. As mentioned in the introductory section, privatization most fundamentally means to reform the public sector's rights of production. The rights are truncated into different ownership patterns by their attributes. This invites analysis of agency problems. The next section provides a detailed discussion.

IV. Analysis of Agency and Regulatory Problems

To understand the potential contributions privatization can make to economic progress, it is necessary to clarify the innate attributes of the property rights structure inherent in a public-enterprise system. Theories developed by Demsetz (1988), Barzel (1989) and North (1990) are useful in this endeavor. Since ownership rights, whether of individuals or of organizations, can be divided as pointed out by Alchian (1965), ownership patterns can be explained in terms of divided ownership structure. The publicness of a public enterprise is a matter of relativity. Similarly, rights which are incompletely separated or separable may become common property and attract resources spent on their capture. Assets of public enterprises are owned by the general public (the people), though they are, in their legal status, owned by the state.

Rights to assets are neither constant nor absolute; they are determined by owners' direct efforts to protect them, by other people's attempts to capture them, and by the level of government protection of property rights. Barzel (1989), hence, defines transaction costs as the costs associated with the transfer, capture, and protection of such rights.

Diagram 2 compares the structure of public versus private ownership and control. Laws and institutions (on the top of the diagram) serve as the bases for structuring ownership rights of organizations into public or private enterprises, subject to the degree of nationalization or privatization. Ownership rights are classified (or truncated) into three types, namely, rights to transfer, rights to monitor, and rights to manage or use. These rights are assigned to the relevant principals and agents in organizations. Under a public ownership structure, the government and lawmakers are assigned the transfer rights, the regulatory commissions are assigned the monitoring rights, and the public-servant managers are assigned the management/use rights to the resources. In contrast, under a private ownership structure, shareholders as residual claimants are entitled to the rights to transfer. They also nominate

the board of directors as delegators to hold the rights to monitor the managerial agents who have rights to manage and use the resources.

In the diagram, the parties assigned to public enterprises are enclosed in a dotted line to indicate that in this area, rights are vague, overlapping, and grey. Additionally, this box shows that common property rights attract resources spent on capturing them due to the interactions among rights holders. Inside of this area, rent dissipation in the sense of Cheung (1970) damages efficiency, industrially and as a whole. Cheng (1993) argues that government-protected firms may function as rent concentration points to collect excess revenue. The excess revenue, being in the public domain, is then subject to politicians' discretionary use and dissipation.

In the upper left corner in Diagram 2 is a decision-making loop for changing the ownership structure of institutions.[6] The interesting point is that the government and law-makers who, representing the people to designate transfer rights, hold the power to change laws and institutions. That the allocation of resources might be subject to political intervention is clear and to some extent observable. The lawmakers' pursuit of deals to exchange benefits with others is often closely related to the behavior of regulatory agents and the public-servant managers, though not necessarily observable. In sum, there is no clear line drawn between politicians and public firms. The connection of the loop to the area enclosed in the dotted line indicates a tradeoff between political power and wealth transfer. It increases the difficulty of and is certainly a barrier to privatizing public enterprises.

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[6]The loop is seen here as an abstraction or abbreviation of an institution-making network. In a democratic system, the network involves all the people. But, to simplify the analysis, it is abridged here to include only government leaders and the elected representatives. The simplification is necessary to make the analytical framework also fit those systems which are not yet democratized.

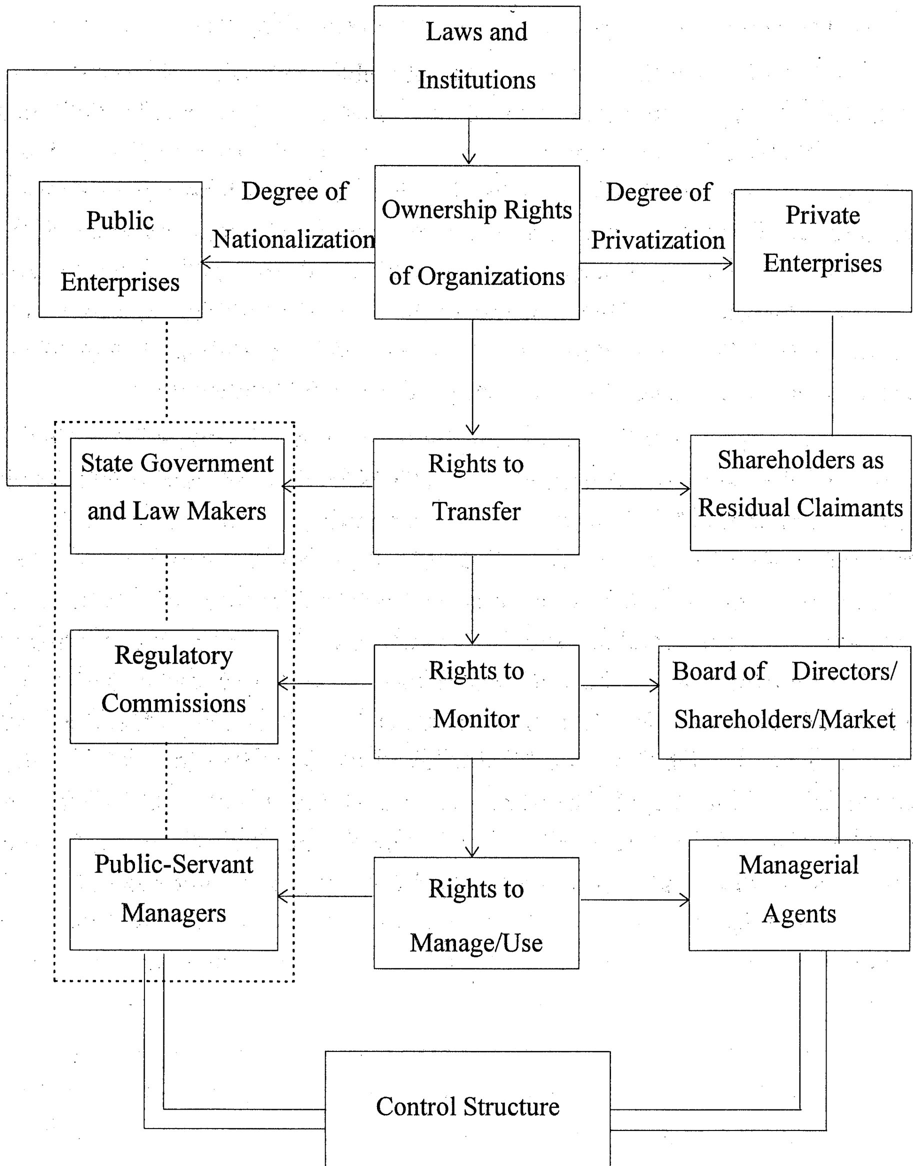

Diagram 2. Structure of Public/Private Ownership and Control

Contrasting the area surrounded by the dotted line with the analogous one of private ownership on the right-hand side of Diagram 2, we can see that the rights to transfer and monitor are somehow integrated in this case by having the same rights-holders. Meanwhile, the monitoring mechanism is enhanced in this case, as the market is also a monitor. Market monitoring implies competition or a competitive process facing the firm's managers. The principal-agency relationship is understood as a uni-layer structure. If we compare it with the multiple-layer structure in public enterprises, the uni-layer structure in the private sector greatly simplifies the multiple principal-agency problem that bedevils the multi-layer structure.[7] The potential improvement in reducing transaction costs through privatization is clear.

In privatization, the transfer of rights includes reassigning the right to transfer shares, the right to monitor the performance of the firm and agents, and the right to use or manage firms' resources from the public sector to private sector. The reassignment of these rights can be divided according to the truncation of rights. Thus, the meaning of privatization includes any partial transfer of truncated rights, i.e., any form of incomplete transference. The incompleteness may be caused by the relationships between politicians/lawmakers, laws/institutions, and among or within public enterprises themselves. The implementation of privatization, whether it will be complete or not, whether it will be successful or not, needs to resolve the transference problems characterized by the corresponding transaction costs.

According to the above analytical framework, it is important to clarify two underlying problems of the public enterprise system. The first is the industrial structure problem, while the second is the internal organization problem.

The former arises as a government uses industrial policy to regulate prices, enterprise entry and exit, output or services, and the competitive conditions of industries. It is governmental control over industries in the

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[7]The reader can find an interesting contrast here with Laffont and Tirole (1991), who treat regulations and shareholders as multiprincipals. However, their analysis mixes the public owners up with regulators. It is understandable that the nature of the two are quite different, as grounded in property rights.

process of industrial development. Maintaining a public enterprise system not only affects the performance of the enterprises directly concerned, but also deteriorates the economy's overall efficiency.

The internal organization problem, on the other hand, concerns the fundamental structure that organizes public enterprises and the regulatory measures used to administer them. Apparently, these two features influence each other.

Nevertheless, a unified theme in dealing with these problems seems to be efficiently arranging the common property rights. Then, the analysis can be conducted in three dimensions regarding ownership, incentive, and principal-agency problems. These problems are closely related.

1. Common ownership as a transaction cost problem:

The structure of ownership in any public enterprise is, to a large extent, not clearly delineated. In particular, the decision-making of public enterprises cannot escape the intervention or interference of regulatory control, politicians, and even legislators.

In the organization, the attenuation of rights is possible for all members who jointly participate into a production team. Common ownership, in the broad sense of a contractual relationship, represents a public domain problem. The rent-dissipation problem (Cheung, 1970) or benefit-capturing problem (Barzel, 1989) characterize common ownership as a transaction cost problem.

In addition, restrictive policies generally reduce freedom of private action, and hence, are at best superfluous and often result in lower outputs.

2. The incentive problem of common ownership:

The payment of rewards in public enterprises is usually not in accordance with productive effort by staff members. This, in turn, discourages those who are diligent and encourages those who are capturing benefits from the firm or shirking. The objectives of different parties, given any contractual form, do not necessarily conform with each other. Thus, individual agents in public organizations who are pursuing their own interests are likely to be involved with corruption or bribery, collusive bids, or

shirking. This certainly increases the cost of administering and regulating public enterprises, and hence deteriorates efficiency.

3. The principal-agency problem of common ownership:

At least two levels of interstitial agency costs are involved in a public enterprise, as shown by Diagram 2. The first is between the people (represented by the legislators) and the regulators; and, the second is between the regulators and the managers of the public enterprises.

Because the politicians designing policies are multi-dimensional, congressional or legislative interests are not well defined in the sense of Spiller (1990). This implies that regulators are in general pursuing their own interests. Then, the regulators who regulate public enterprises are not fully controlled or monitored by legislators. On the other hand, the regulators may shirk, given that politicians' interests and the interests of interest groups are imperfectly aligned.

The second layer of the agency problem results from the relationship between the regulatory authority and the authorized chief agent in charge of managing the public enterprise. The agent may shirk or utilize the assets of the public firm at his own discretion, although they are of course not his own wealth. As a result, slack management exists. Recently, in a model of privatization, Boycko, Shleifer and Vishny (1996) show that the critical agency problem that causes the inefficiency of public firms is mainly that of politicians rather than managers.

One can compare this type of multiple-principals-agency problem with the type of principal-agency existing in private firms. In addition to the above problems, two types of institutional problems should not be overlooked.

4. There exists a tradeoff between political power and wealth transfer:

Politicians try to capture power to influence the transfer of wealth. They seeks to extend their power and range of control, which is against the principle of a market economy. By using politicians, interest groups behave in a similar way.

5. There is difficulty in changing any institutional setting:

This point has been discussed in the third section of this paper, and is closely related to the previous point. Difficulty means cost. The costs of institutional change include the cost of bargaining among parties, interest groups, majority/minority involved, and their representatives; the costs of devising a new set or revising the original set of laws; and the costs of enforcement.

To summarize the above five points, information internal to public enterprises can be disseminated into the private sector and the market through privatization. Successful implementation of privatization makes this internal information more transparent and less costly. Thus, the efficiency gains yield economic progress.

V. Efficient Forms and Enforcement for Privatization of Public Enterprises

Based on the above arguments, the major issue of privatizing public enterprises is how to appropriately truncate and transfer the transactional rights, monitoring rights, and the right to operate. Viewed from the property rights approach, the benefits of private operation can be characterized by three points. First, having an owner with transactional rights and monitoring rights provides the firm with a better check-and-balance system than having an owner with managerial rights. Second, privatized public enterprises may be able to shake off the burden of having to achieve a multitude of policy goals. Third, privatized public enterprises must face (potential) competition to avoid being taken over, without relying on subsidies from the government. The new entrepreneurs of the privatized enterprises have to acquire their rewards by self-policing due to their being monitored both by shareholders directly and by markets indirectly. Hence, the overall performance of the privatized enterprises depends on their ability to accommodate themselves to abide by the market discipline.

Before privatization, the three kinds of rights are controlled by the government and lawmakers. Their role in privatization, in choosing the method and procedures to privatize, and in establishing the environment for privatized enterprises, is crucial to the resulting improvement of overall efficiency. This is true of entire privatization programs and of each of the various forms of privatization. The choice of forms may include outright sales, auction, partial sales, discounted price, conditional sales (e.g. maintaining a goldshare), contracting out, disintegration for sale, franchise, vouchers, and so forth. It is also possible for some mixed strategies to be used. This is again closely related to the costs of privatizing the associated rights or ownership.

Successful and credible privatization requires that certain conditions be fulfilled:

1. The government must commit to reducing intervention after privatization. This suggests that the government ought to play a rigorous role in implementing competition policy.

2. The styles of direct transfer, including portions of partial sales and the transferring prices, should be carefully designed prior to implementing privatization.

3. Boycko, Shleifer and Vishny (1996) suggest that different forms of privatization imply different levels of efficiency, but a tough monetary policy can make privatization more effective.

4. A condition which is critical to the success of privatization is revitalization or development of the capital market which facilitates sales of public ownership shares.[8]

5. Since privatization is an institutional change in ownership structure, it is necessary to minimize the transaction costs of changing and exchanging

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[8]This argument is suggested and summarized by Lieberman (1993) with observations from some countries in Latin America, Asia and Eastern Europe. Walker (1987) also claims that the successful privatization in the U.K. and Canada was accomplished by technically utilizing the mature capital markets in those countries.

property rights. A final necessary condition to be fulfilled is to equate the marginal cost of transferring ownership to its marginal benefit (Cheng, 1996).

VI. Conclusion and Suggestions

The paper uses modern theories of the firm and agency theory to decompose the transaction costs associated with public enterprises. In essence, by considering the existing property rights structure, we can perceive the potential gains from reducing the costs of control as guaranteed by privatization.

Any form of ownership, contractual arrangements, or structural information is inevitably incomplete. Privatization programs are designed as a positive-sum and all-win game in which the entire economy will achieve economic efficiency. By logical extension, the analytical framework developed in this paper can be used to select an appropriate strategy for implementing privatization and to choose efficient forms on a case by case basis, when all the relevant costs are taken into consideration. This is left to future studies.

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