

POLICY RESEARCH WORKING PAPER

4391

Alternatives to Infrastructure Privatization Revisited:

Public Enterprise Reform from the 1960s to the 1980s

José A. Gómez-Ibáñez

The World Bank
Sustainable Development Network
November 2007



Abstract

Frustration with the performance of State-owned enterprises (SOEs) has led to two rounds of reform: the first round, from the 1960s through the 1980s, attempted to improve SOE performance while maintaining public ownership while the second, beginning in the late 1980s, viewed privatization as the answer. Interest in the earlier round of reform has increased recently as controversy has slowed or halted privatization in many countries, especially for SOEs providing infrastructure services that are basic to everyday life and are thought to have elements of monopoly. This paper reexamines the earlier

round of reforms, focusing particularly on efforts to increase the firms' capacity with infusions of human and physical capital, to strengthen managerial incentives through performance contracts and corporatization and to alter the mix of political and economic forces that impinge on the firm by strengthening the involvement of taxpayers, customers or private investors. The review suggests that these earlier approaches generated only modest success but that some of them, selectively applied, may be helpful in improving the performance of infrastructure firms that remain in public hands.

This paper—product of the Sustainable Development Network—is part of a larger effort to renew our knowledge of how to improve the performance of infrastructure service providers, when full privatization is out of the realm of possibilities. The work program of SDN builds upon this framework, applying it at a sectoral and regional level and extending it to Public-Private Partnerships (PPPs). It aims at identifying the specific conditions under which each type of infrastructure reform can be expected to work, so better guidance can be provided to operational teams and clients. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The author may be contacted at jose_gomez-ibanez@harvard.edu.

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

ALTERNATIVES TO INFRASTRUCTURE PRIVATIZATION REVISITED:

PUBLIC ENTERPRISE REFORM FROM THE 1960s TO THE 1980s

José A. Gómez-Ibáñez
Derek C. Bok Professor of Urban Planning and Public Policy
Harvard University

Acknowledgments: This study was begun while the author was on sabbatical at the World Bank. The author would like to thank Kathy Sierra for giving him the opportunity to visit the Bank, many current and former Bank staff for the assistance during the research and Bob Behn, Makhtar Diop, Antonio Estache, Nilgun Gokgur, Eric Groom, John T. Hodges, Ellis Juan, Henry Lee, Laslo Lovei, John Nellis, Paul Reddel, David Robinett, Jamal Saghir, Jordan Schwarz, Jyoti Shukla, Meike van Ginneken, Maria Vagliasindi and Michel Wormser for comments on an earlier draft. The views expressed are the responsibility of the author and not necessarily shared by the Bank or those thanked.

Comments to jose_gomez-ibanez@harvard.edu are welcome

TABLE OF CONTENTS

	<u>Page</u>
(1) Approaches to Reform	1
The rise and reform of SOEs	
The goals of reform	
Three approaches to reform	
Prospects for reform	
(2) Building Internal Capacity	8
The expansion of training and technical assistance	
Problems	
Prospects	
(3) Clarifying Responsibilities	14
Accountability and autonomy	
The evolution of the schemes	
Performance contracts	
Evaluations of contracting; Contractual completeness, complexity and duration; Information asymmetry and soft targets; Political commitment and government capacity	
Corporatization	
Special supervisory or regulatory units	
Prospects	
(4) Changing the Political Economy of the Firm	33
Allies of reform	
Information alone	
Direct competition	
Mixed-capital enterprises	
Customer-governed enterprises	
Prospects	
(5) Conclusions	49
References	51

(1) APPROACHES TO REFORM

The Rise and Reform of SOEs

The number and importance of state-owned enterprises, or SOEs, increased rapidly in most developing and many industrialized countries in the two or three decades after World War II. The motives for turning to public ownership varied. Socialism had a strong appeal in many countries at the time, in part because capitalism seemed to have failed in the worldwide depression of the 1930s while fascism had been discredited by the war. Concern about private monopoly was also strong, particularly for utility and infrastructure services and in small countries. In developing countries local private capital markets seemed too weak and local entrepreneurs too inexperienced to make the large and risky investments in industry and infrastructure thought needed for development. And there was an understandable reluctance to trust such sensitive investments to foreigners, especially in nations which had only recently won their independence from colonial rule. Public enterprises offered an attractive option that promised to combine business-like efficiency with social responsibility.

Concern about SOE performance developed fairly quickly, provoking two rounds of reform. The first round, which started in the 1960s and reached its peak in the 1970s and 1980s, attempted to improve the firms' performance while maintaining public ownership. Disappointment with these efforts helped provoke a second round of reform, beginning in the 1980s and peaking in the 1990s, that sought to improve performance by selling or leasing the firms to private investors. This second round was more successful than the first. Many companies were privatized, typically to the benefit of both taxpayers (in reduced financial support for the enterprise) and customers (in lower prices or improved quality of service). In a number of well-publicized cases, however, the benefits from privatization seemed small or very unequally distributed, often with investors or taxpayers gaining excessively at the expense of customers or workers (Estache, 2006). The resulting controversies slowed or halted privatization in many countries, leaving a considerable number of firms still in government hands.

The slowdown in privatization has renewed interest in the experience with the first round of SOE reforms to see if there are promising measures, short of privatization,

to improve the performance of the remaining SOEs. The primary focus here is on firms offering infrastructure or utility services in developing countries since they share two characteristics that make them among the hardest to privatize. First, the services they provide, such as water or electricity, are so essential to everyday modern life that the tariffs charged and the quality of service provided are politically sensitive issues. Second, many infrastructure services are thought to have the characteristics of natural monopoly, which usually compels governments to regulate the tariffs that private providers charge in order to protect customers from monopoly abuse. It has sometimes proven difficult to design systems of tariff regulation that both customers and investors regard as fair, particularly in countries where citizens and investors have little confidence in the integrity of their government or the legal system. Some of the remaining infrastructure and utility SOEs will be privatized eventually, despite the obstacles. But many are likely to remain in public hands for a long time, and it is worth considering how their performance might be improved.

The Goals of Reform

The prospects for any reform depend in part on its goals. The usual objective of SOE reform is to encourage the firms to behave in a more “business-like” manner, emphasizing commercial goals rather than what are often called non-commercial, social or political goals (McFetridge, 1985; World Bank 1994). Commercial goals include providing quality services that consumers value and producing those services efficiently so that costs can be recovered at reasonably affordable prices. A common non-commercial goal for infrastructure SOEs is to promote universal access by, if necessary, charging tariffs well below costs and extending service into unprofitable territories. Other non-commercial goals include reducing unemployment by hiring more workers than are needed or by locating plants in lagging regions, supporting suppliers by paying more than the market rate for labor or other inputs, and stabilizing the macro-economy by restraining price increases during recessions or periods of inflation.

Many reformers argue that an SOE can pursue both commercial and non-commercial goals efficiently if it clearly distinguishes the two types of activities and separates, to the extent practical, their costs. A common suggestion is that the

government specify the non-commercial activities, often called “public service obligations,” that it wants the enterprise to engage in and provide budgetary support sufficient to cover the losses incurred. The SOE would then be free to engage in commercial activities as long as it could fund those activities from customer tariffs. Privatization proponents argue that this separation should be taken two steps further by hiving off the SOE’s commercial activities as a separate private firm and then encouraging the SOE to contract for the remaining non-commercial services with private vendors.

But the separation of commercial and non-commercial activities does not resolve the conflict between commercial and non-commercial goals. The subsidies to support public service obligations must ultimately be financed through some kind of tax on commercial activities. Separation only makes the tax more obvious by converting it from a hidden cross subsidy within the SOE to an explicit transfer from the treasury to the SOE. And efforts to reduce the financial burden of non-commercial activities by outsourcing to private vendors can be a mixed blessing if the economies come at the expense of other common social objectives of SOEs, such as creating jobs by overstaffing.

The impetus for reform is typically the fear that the public enterprises have neglected commercial goals to the point that they are jeopardizing society’s ability to advance important non-commercial goals. The public enterprises may charge such low tariffs or be so overstaffed, for example, that they no longer have the resources to offer reliable service or to extend service to new neighborhoods. Or the deficits of the enterprises may impose a burden on the treasury so great that they crowd out social spending or cause inflation. In this context, commercial objectives usually trump non-commercial objectives, at least initially, although non-commercial concerns usually reappear after a time.

Three Approaches to Reform

Three approaches to reform are considered here, each reflecting a different diagnosis of the root causes of poor SOE performance. The diagnoses are not mutually exclusive, however, and the different approaches are often pursued in combination.

The first strategy, which dominated the efforts to improve SOE performance from the 1950s through the 1970s, assumes that the firms lack the physical and human capacity to perform well. The solution is to build the internal capacity of the firm through injections of physical capital, in the form of modern plant and equipment, and human capital, in the form of technical assistance and training. The focus in this review is on the experience with human capital, and particularly with training and assistance for middle and upper level management.

The second approach, which came into vogue during the 1970s and 1980s, emphasizes managerial incentives rather than capacity. The assumption is that SOEs perform poorly because the managers are not held accountable for a clear set of goals and not given autonomy they need to achieve them. The problem of managerial incentives is less serious in the private than the public sector because private sector managers are responsible to one master, the shareholders, and the shareholders in turn care primarily about profits, which provide a fairly clear yardstick for judging management performance. The public sector manager, by contrast, is responsible, formally or informally, to the head of the executive branch of government, to the legislature that establishes his agency's powers and approves its budget, and to the various interest groups that seek to influence the agency's performance. Moreover, each of these constituencies is typically interested in a variety of objectives that are often hard to measure and conflicting, so that even a well-intentioned and informed manager may not know what to do.¹ The solution implied is for the government officials and the managers to agree on the key targets that the firm is to achieve and for the officials to commit, in return, not to intervene in the day-to-day management of the firm. The agreement is often set out in a formal document called a performance contract. The firm's autonomy and accountability is usually reinforced by establishing it as a separate legal entity—either a corporation or a statutory authority—and sometimes by creating a special supervisory agency to serve as a buffer between the firm and conflicting political forces.

¹ Robert Behn (2003, p. 599) and others have pointed out that this difference between the private and public sectors is a bit exaggerated. The traditional “bottom line” measure of performance used by the private sector is often criticized for being backward looking and for ignoring long-term value-creating activities, such as investment in customer relations or innovation

The third approach, which has been tried sporadically over the years, argues that the problem is less that the managers lack clear instructions than that there is little support for commercial goals among the important constituencies of the firm. The assumption is that the behavior of the firm reflects the balance of political and economic interests bearing on it so that if public enterprises fail to pursue commercial objectives it is because there are few powerful interests pressing them to do so. In developing countries, public enterprises often constitute unusually large aggregations of resources that make them tempting targets for interest groups, and a performance contract or a buffering agency does little to change that equation. Privatization induces commercial behavior, in this view, because it creates a new interest group—the private shareholders—who have a strong interest in such behavior and the potential to fire managers and vote against politicians who try to thwart them. What is needed, then, is a way to reorganize the SOE that mobilizes and empowers interest groups who have a stake in commercial behavior while still maintaining public ownership or control. The most obvious allies are taxpayers, customers and private investors. For example, customers might be given more influence by providing better information on firm performance or by reorganizing the firm as a cooperative or other consumer-governed organization. Similarly, investors might be given influence by selling them some of the SOE's debt or a minority interest in its equity.

Although the focus is on public enterprise reforms other than privatization, the distinction is sometimes a bit arbitrary. In this study private investment in a firm is not considered privatization as long as the public sector retains majority control of the enterprise. However the contracting out of services is considered privatization, and not discussed here, even though a publicly owned enterprise may be supervising the contractor. Contracting out is a promising approach, but including it would greatly enlarge the scope of this study.

Unfortunately, there is less research on the alternatives to privatization than on privatization. Privatization is typically a more clearly defined act, and thus lends its self more readily to quantitative empirical analysis. Moreover, many of the studies of public enterprise reform involve firms in industrialized countries or in competitive markets when our concern here is with firms in developing countries that are often natural

monopolies. Research from developed countries and competitive industries is presented here, especially when there is no better, but the results must be applied with caution. The experiences with the individual reform strategies are summarized in the three sections of the report that follow, but some broad conclusions about the prospects are summarized below.

The Prospects for Reform

The controversies surrounding privatization lead many to assume that alternative approaches will be easier or more readily accepted. But the truth is that the challenges facing the alternatives are similar to, and in some respects harder than, those facing privatization. One reason is that they share a common goal of promoting more commercial behavior. In cases where privatization has been controversial because commercial goals conflict with strongly held social goals, the alternative reforms risk igniting the same controversies. And it may be politically less acceptable for a government firm to take socially painful actions—such as raising tariffs or laying off surplus workers—than it is for a private firm.

Another similarity is that both privatization and its alternatives are constrained by the quality of local institutions and the state of the local economy. Some types of reform are more dependent on sophisticated markets and institutions than others, so that the possibilities for reform vary from one country to the next. But both privatization and its alternatives depend on institutions and markets to some degree. And SOE reforms alone are unlikely to overcome intense poverty, poor budgeting, weak courts, limited capital markets and other deep-rooted and basic problems with a country's economy or institutions.

These problems are compounded by the fact that privatization has already skimmed the cream of the public enterprises that were candidates for reform. Most of the SOEs that were potentially profitable, that operate in competitive markets or are easily regulated have long since been privatized. The public firms that remain are often infrastructure or utility monopolies operating in environments where it has been difficult to devise a fair and politically acceptable scheme for tariff regulation. The characteristics

of monopoly and social sensitivity that made these firms difficult to privatize are likely to impede alternative reforms as well.

Finally, if more commercial behavior is the main or an important goal, then the alternative approaches are relatively indirect instruments compared to privatization. The economics literature is full of theoretical and empirical studies debating whether private firms are more economically efficient than public firms (Shirley and Walsh, 2000). But it is clear that private owners have a strong incentive to pursue commercial behavior because they can retain any extra profit they can squeeze out of the enterprise. And private owners have share prices, stock options and other means to monitor and motivate the performance of their managers that are not available to government owners. Private managers also must worry that their poor performance can stimulate a corporate takeover or bankruptcy, risks that are more remote for an SOE. The alternatives to privatization often amount to cumbersome efforts to establish similar information and incentives, but without the aid of profit motives and markets.

Despite these warnings, alternative reform strategies have important potential, particularly if they are applied selectively and with reasonable expectations. The impression that SOE reform failed in the past stems in part from the fact that some reform strategies—such as capacity building and performance contracts—were applied relatively widely and indiscriminately. We don't know enough to specify exactly when and where each approach might work because the available research and evidence is simply too limited. But we have some important hints about the circumstances favoring different kinds of reform

The basic step is to classify the firms by the degree of conflict between commercial and non-commercial goals and the level of development of the market and administrative institutions of the country. Where the level of conflict is low, one may be able to rely on strategies that increase the firm's internal capacity or clarify the responsibilities of managers and ministers instead of strategies that attempt the more difficult task of altering the political environment of the firm. And where the development of institutions is advanced, one may be able to use measures that rely more heavily on institutional capabilities, such as explicit performance contracts and mixed-capital enterprises.

(2) BUILDING INTERNAL CAPACITY

The Expansion of Training and Technical Assistance

When management training and assistance to developing countries began in the 1950s it was addressed to the public sector as a whole, with little attention to the special needs of SOEs. Countries in Africa and Asia were beginning to win independence and wanted to indigenize their public administrations, and the big increase in SOEs was still a decade away. There was great faith that the transfer of knowledge and skills would stimulate development and that the primary obstacles to development were administrative rather than economic (Stone, 1965, p. 53 as cited by Siffin, 1976). Indeed the importance that development specialists placed on administration in the 1950s and 1960s is an interesting forerunner to the preoccupation of development experts with institutions and governance today.

As part of this effort, the USAID, the United Nations and the Ford Foundation supported the establishment institutes or schools of public administration in dozens of countries, spending collectively \$280 million on the effort between 1951 and 1962, the equivalent of several billions in today's dollars. During this same period the French government helped its former colonies in Africa and Southeast Asia to establish local versions of France's elite civil service university, the L'Ecole Nationale d'Administration (ENA). By the last half of the 1960s USAID and the Ford Foundation had become discouraged and cut back their activity. The United Nations and France continued to support the effort, however, and by 1980 there were at least 236 institutes and schools of public administration in 91 countries. In addition, OECD countries provided substantial numbers of overseas training fellowships in public administration: 14,000 in 1978 alone (Paul, 1983, pp. 18-21).

Specialized programs aimed at the needs of SOE managers began to appear in the 1960s. Among the best known were those developed by three business schools founded that decade with the help and advice of prestigious US business schools: the Indian Institute of Management in Ahmedabad, the Central American Institute of Business Administration in Nicaragua (now in Costa Rica), and the Asian Institute of Management in Manila. All three schools had been established to cater to private sector managers but

soon offered a modified curriculum for managers of public enterprises (Stifel *et al.*, 1977, pp. 95-96; Chowdhry, 1977; Paul, 1983, p. 46). In 1974 the International Center for Public Enterprises in Developing Countries was established at the University of Ljubljana, Yugoslavia (now Slovenia). That center, supported by the United Nations, became the first international institution devoted to SOE management training and research. At its peak it counted over forty countries as contributing members, published monographs and a journal, *Public Enterprise*, and trained hundreds of managers a year at Ljubljana or on site in member countries. In 1977, Harvard University's Institute for International Development began to offer executive programs in comparative SOE management that were also influential.

During this period, the World Bank supported some training for public sector managers through both the technical assistance component of project loans and its Economic Development Institute (EDI). Spending on project-related training was substantial, rising from \$38 million in 1976 to \$187 million in 1981 (Paul, 1983, p. 1), although much of this was presumably for technical rather than management training. Unfortunately project-related training was often based on narrow and short-term requirements rather than on an assessment of the overall training needs of the enterprise and the quality of the programs varied greatly depending upon the priorities of the project task managers, both problems that remain today (World Bank, 1982 and 2005). The training courses that EDI offered itself were on development economics and project appraisal, topics which were chosen with economic policymakers in mind but which, though relevant to SOE managers, were too narrow to meet their needs. EDI's Industry, Finance and Energy Division sponsored some off-site training, but its main training-like activity was to organize workshops to bring together government officials and managers to discuss the problems of SOE performance. A common objective from the late 1970s through much of the 1980s was to encourage officials to divest commercial activities, such as hotels, in which there was no obvious reason for the government to be involved.

Problems

Training programs are notoriously hard to evaluate, so it is no surprise that there is little hard evidence about the impact of the new institutes of public administration or

the specialized programs in SOE management. It is easy to test whether participants have learned the skills taught and to ask whether those skills seem relevant to their jobs. But it is much harder to determine whether the training changed the decisions the participants make or the performance of their enterprises. Nevertheless, most observers thought the programs suffered from several serious problems.

The most fundamental problem was uncertainty about what to teach. Many of the new institutes were modeled after US schools of public administration, which were then in the midst of an important debate about the roles of civil servants in a democracy. The prevailing view before World War II, when many of the US schools were founded, was that elected politicians determined policy and civil servants implemented their decisions; hence the new field was christened public administration. But scholarship in the 1940s and 1950s revealed what practitioners always knew: that civil servants exercised substantial discretion if only because politicians didn't have the time and expertise to develop detailed policy directives, or didn't want the political risks of doing so. Moreover, many senior civil servants were themselves political entrepreneurs in that they often worked discretely with interest groups and politicians to insure that their agencies had the political mandate to undertake activities the civil servants felt worthwhile. This shifting understanding of the role of government officials would lead US schools in the 1960s and 1970s to use the terms public management and public policy as well public administration in describing their field (Hood, 2005; Lynn, 2005).

Only parts of the curricula from US schools of public administration were thought transferable to developing countries (Stifel *et al.*, 1977; Siffin, 1976). The most transferable were the more technical tools of administration such as budgeting, accounting, information and personnel systems. Also transferable to some extent were the methods used by managers to analyze their agency's environment, which drew heavily from economics, politics and sociology. Less transferable were American perspectives on how organizations should be structured, which had been dominated until that time by a somewhat mechanistic perspective, preoccupied by such questions as the optimal number of subordinates that should report to one manager. And hardest to transfer were culture-bound norms about individual and group responsibilities in decision-making or about the relationships between civil servants and politicians,

especially for countries that were new to democracy or had one-party or authoritarian rule.

The typical solution was to focus on the more technical subjects, but this ran the risk that the tools learned seemed irrelevant and that important issues were not being taught. What point was there in making the financial accounts all neat and tidy, one observer worried, if doing so had little effect on irresponsible financial policies (Siffin 1976)? The most important problems facing senior managers seldom revolved around administrative tools but rather around managing the relationship between their organization and its political environment and determining, in that context, the most socially worthwhile services that the organization could provide.

The issue of what to teach was even more troubling in the programs specially designed for SOE managers. One frustrated SOE training expert complained that public enterprise managers suffered from being “bipolar...where they find themselves akin to public administrators in their accountability and goals on the one hand yet expected to function freely as a business manager” (Bhaya, 1983, p. 17). Some of the training courses seemed to emphasize one pole and give only lip service to the other: adding a class on marketing to a standard curriculum for civil servants, for example, or a class on the theoretical justifications for public enterprises to a standard curriculum for private business managers.² Moreover, while institutes like the International Center for Public Enterprises struggled mightily to find teachable solutions to the problems faced by SOE managers—unclear and conflicting goals, frequent interventions by politicians, an overly bureaucratic culture, etc.—few seemed forthcoming. Instead, there was a certain amount of faddishness, with national governments often promoting their homegrown remedies for SOE malaise. For a while the Yugoslav government promoted its idea of workers’ self-management, later the French advanced their scheme of contract plans, the Italians pushed for holding companies as a buffer between SOEs and politicians while the Japanese, in the years when their auto and electronics industries were conquering the world, tried to convince SOE specialists that quality circles and just-in-time management were the solution.

² For example see the course outlines at Khan *et al.* (1982, pp. 72, 135 and 161).

Another problem, besides the content, was that few public agencies and SOEs had well-thought-out training policies (Paul, 1983). SOEs typically did not assess their training needs or develop programs to systematically deliver appropriate training at key points in the course of their employees' careers. Particularly with overseas training, participants were often selected as a reward for loyalty or favors rather than because they were being groomed to fill key posts in the enterprise. Training seldom featured in promotion or pay decisions and senior managers often had little training, which further undermined trainee incentives.

Finally, the new public administration institutions often proved to be weak. Many institutions failed to recruit a staff of sufficient quality and quantity to gain the attention and respect of the government. As a result, the institutions often focused exclusively on training, without the research and consultancy activities that were critical to inform teaching in this new and evolving field. The business schools which provided public management and enterprise training seemed to fare better, possibly because their base in private management training helped them build a critical mass of faculty and maintain some autonomy from government (Chowdhry, 1977; Stifel *et al.*, 1977, pp. 95-100). It may have also helped that there was a stronger consensus about the topics private managers should learn, and that these schools were often regional in character and thus not dependent on intake from one country. But a broad base of countries did not save the International Center for Public Enterprises in Ljubljana, which remained dependent on financial support from the UN and disappeared in the mid 1990s soon after that support ended.

Prospects

Although the record of the 1950s through the 1980s is fairly discouraging, the basic premise—that training is needed—seems sound. If the best-run private businesses find it useful to send their managers to training programs, then it is hard to imagine that public enterprises would not benefit from doing so as well. Our understanding of what should be taught also has improved in certain respects; in particular, there is a greater willingness to talk candidly and constructively about the relationship between management and politics, although this remains much more true for democratic than

authoritarian regimes. We are still far away, however, from understanding how the performance of different types of government enterprises is affected by the firm's design and the political, social, institutional and economic environments in which it operates. Thus any manager expecting to learn the optimal design of a public enterprise for a particular industry and country is bound to be a bit disappointed.

Arguably the key to making sure future training is worthwhile is that it is offered only after a systematic assessment of the firm's needs and as part of a coherent and integrated personnel development program. Also important is the use of training institutions that have the intellectual breadth to address the most sensitive aspects of SOE life as well as to teach tools. Even meeting these conditions, however, training alone is unlikely to turn around a weak enterprise or solve the problem of political pressure for non-commercial goals.

(3) CLARIFYING RESPONSIBILITIES

Managerial Accountability and Autonomy

A popular strategy for improving SOE performance during the 1980s was to clarify the responsibilities of the SOE and its government owners. The idea was that it is difficult to hold SOE managers accountable for performance because the firm is typically assigned multiple and conflicting goals. And the lack of accountability gave politicians and government officials an obligation or excuse to intervene in the firm's day-to-day affairs. Officials and managers should agree on the key goals that the managers are to account for and the officials should then give the managers autonomy to pursue those goals. Accountability and autonomy are consistent with one another since managers cannot be held accountable unless they also enjoy some autonomy.

The understanding between the officials and the managers took a variety of forms, specified at different levels of detail. In some cases it is captured in the SOE's authorizing statute or articles of incorporation which might, for example, detail the types of services the firm is to offer, the sources of funds it can raise and the returns it is expected to earn on its investments. In other cases the understanding was written into regulations that applied to all government-owned corporations. But the most popular form during the 1980s was an explicit contract negotiated between the firm's managers and its supervising agency.

Countries used different names for these contracts including contract plans, memoranda of understanding, statements of corporate intent and performance agreements. The generic term is performance contracts, however, since their essential feature is that they specify the measures by which the firm's performance will be judged. Most contracts also included commitments by the government to provide budgetary support for any unprofitable services the government required and to allow timely price increases. In some cases the contracts also established specific incentives for managers or workers, such as bonuses linked to the firm's performance. Even without explicit incentives there was always the implicit threat that the board or the management would be sacked if it did not meet the targets.

The performance contract was frequently accompanied by various institutional reforms, often loosely referred to as corporatization, that were designed to strengthen the autonomy and accountability of the enterprise. Sometimes the firm was incorporated under the same laws as a private company, with the main difference being that the government was the only or controlling shareholder. Alternatively the enterprise might be established as a separate statutory authority or government company, with a legal identity distinct from its supervising ministry and its own board of directors. The distinct legal identity typically forced the government to separate the financial accounts of the enterprise from those of the ministry, an essential first step in accountability. And incorporation usually required that the firm release public annual accounts certified by an external auditor. The government corporation or statutory authority was typically exempt from civil service rules and other government procurement or personnel policies.

Sometimes a specialized supervisory agency was established to buffer the SOE from political forces. The power to appoint the board of directors and exercise other shareholder rights was often moved from the technical ministry in charge of the sector to a body more sympathetic to commercial objectives, such as a separate public enterprise unit or holding company reporting to the ministry of finance. The separation of the government's ownership and policy-making functions was intended to reduce conflicts of interest so that, for example, the enterprise could better resist pressures from the technical ministry to offer unprofitable services without budgetary compensation. A special supervisory agency also allowed the government to better utilize scarce managerial talent, especially if the agency supervised several enterprises rather than one. The staff was often composed of elite professionals paid higher salaries than normal civil servants so that they were better able to deal with the powerful heads of SOEs, and their number was kept small to discourage unnecessary meddling.

The Evolution of the Schemes

Interest in performance contracts and related methods of clarifying responsibilities waxed and waned during the last half century. Performance contracting originated in France in the late 1960s, and spread to countries in Francophone Africa in 1980, Pakistan and Korea in 1983, China in 1986, India in 1988 and, by the end of the

decade, to the Anglophone countries of Africa, Bangladesh and several Latin American countries as well (Nellis, 1989; Trivedi, 1990). Most countries applied the scheme to traditional infrastructure companies, such as railways and electricity, but some countries, including Korea, Pakistan and China, applied it to government-owned manufacturing firms as well (Mako and Zhang, 2004). The World Bank and other donors encouraged the spread of performance contracting by often making it a prerequisite for SOE aid, particularly in Africa and Latin America. Interest in performance contracting died out in developing countries during the 1990s as attention turned to privatization as a remedy.

Developed countries experienced a similar but less exaggerated spike in interest in performance contracting. Spain adopted a form of performance contracting soon after France, for example, while Britain promulgated standards for SOE performance in a series of white papers during the 1960s and 1970s (Harrison, 1988). The best known and most enthusiastic convert among the industrialized countries was New Zealand, which corporatized more than a dozen government departments beginning in 1986, privatized some in the 1990s, and developed a very systematic and carefully thought out version of performance contracting for those that remained in public hands. Although government-wide programs of performance contracting have become rare, public administration scholars and practiconers in developed countries continue to advocate and experiment with schemes of performance measurement to motivate managers (Behn 2001).

Two new variants of the earlier proposals to clarify SOE responsibilities emerged in developing countries at the turn of the century after the controversies over privatization had revived interest in SOE reform. One variant is to subject government-owned utilities to the kind of tariff regulation normally used to prevent monopoly abuse by private utilities. The idea is that the regulatory agency will play the role of an elite supervisory agency, arbitrating between the ministry that owns the enterprises and the managers and customers. This approach was pioneered by Chile, which corporatized its publicly owned water companies and regulated them as if they were private monopolies beginning in 1989 as the first steps toward their eventual privatization.³ Controversy delayed privatization for another decade but the companies' performance improved significantly

³ The Chilean system of utility regulation is unusual in that the procedures the regulatory agency must use are set out in law at a level of detail similar to a performance contract (Gomez-Ibanez, 2003, pp. 354-355).

in the interim (Shirley *et al.*, 2002). Chile's experience helped inspire the regulation of government-owned utilities in as much as a quarter of Latin America⁴ as well as Australia, Northern Ireland, Scotland and South Africa.

The second recent variant is to develop codes of corporate governance for SOEs modeled after the codes promulgated for private corporations. South Africa, India, Indonesia, China and Bangladesh all adopted codes between 2001 and 2005 and the Organization of Economic Cooperation and Development (OECD) issued a model code in 2005 (Robinett, 2006, p. 7). The OECD code is intended primarily for SOEs involved in commercial activities and thus a major concern is insuring a "level playing field" in markets where SOEs and private enterprises compete. Toward that end the code recommends separating the government ownership function from sector regulation, allowing SOEs to be placed into bankruptcy and insuring that credit from state-owned banks is provided on commercial terms. But the code also calls for the state to act as an "informed and active owner" by establishing clear objectives for state ownership, pursuing these objectives in a transparent and accountable manner, allowing the management operational autonomy to achieve their defined objectives and respecting the role and independence of the SOE board (OECD, 2005). The OECD falls short of calling for an explicit performance contract, but the intent seems very similar.

Performance Contracts

Evaluations of Contracting. The most studied scheme for clarifying responsibilities is performance contracting. Early evaluations focused on whether the SOEs met their targets and whether the government officials and enterprise managers found the process useful. These studies were often short on quantitative evidence but rich with case histories that generated important insights about the problems encountered (Nellis, 1989; Shirley and Nellis, 1991). As more data became available, researchers began to address the question of whether SOE performance had improved over what it would have been otherwise. Comparing a cross section of firms with and without

⁴ Vivien Foster (2005, p. 7) estimated that 41 percent of water customers in Latin America were served by firms that were regulated but that only 15 percent were served by firms that were privately controlled, which suggests that 26 percent were served by regulated public firms. Regulation of public enterprises may be more common in water than in other utilities because in many countries water is provided by small municipal companies which are often thought to need national or regional oversight.

contracts was typically impractical because of the difficulty of matching firms with contracts with otherwise similar firms in the same country. Most researchers chose instead to compare performance trends of firms before and after the negotiation of contracts, usually with some simple qualitative assessment of the other factors that might have influenced the trends.

The results of these studies varied considerably. At one extreme was New Zealand, where performance (measured by profits, return on equity, and revenue per employee) improved in nine out of ten SOE's several years after they had been corporatized and subjected to a form of performance contracting (Duncan and Bollard, 1992). In Korea the average ratio of costs to revenues in a sample of ten SOEs declined by 5.4 percentage points compared to what would have been expected during the first three years of contracting (Song, 1988).⁵ More cautious and probably more typical were two studies of Pakistan that reported that profits had increased on average after three years. But both Pakistani studies found that only a bare majority of the firms experienced improvements while the others had deteriorated (Shaikh, 1986; Shirley, 1989a).

These lines of research culminated in the mid 1990s in two studies by Mary Shirley and Colin Xu of the World Bank that were highly critical of performance contracts. The first study, featured in an influential 1995 World Bank report titled *Bureaucrats in Business*, examined total factor productivity trends in 12 utilities from 6 developing countries for 5 years before and 5 years after contracting. Only 3 of the 12 utilities experienced a turnaround in performance, while 6 utilities showed no apparent improvement and 3 saw a significant decline in performance (World Bank, 1995; Shirley and Xu, 1997). In their second study, Shirley and Xu examined labor productivity in a sample of 628 Chinese manufacturing enterprises from 1980 to 1989. The large number of firms made it possible for them to analyze the effectiveness of different features of performance contracts, a topic we return to later. But the conclusion that received the most attention was that the average contract did not increase productivity and may have actually reduced it (Shirley, 1996; Shirley and Xu, 1998).

The evaluations of the 1980s and 1990s are often interpreted as showing that the experiment with performance contracts was a failure. But a closer reading suggests that

⁵ For earlier more qualitative accounts of Korea see Jones (1985), Park (1986) and Ramamurti (1986)

the experience exposed several problems with contracts, some of which were more tractable than others.

Contractual Completeness, Complexity and Duration. One problem apparent from the outset was the difficulty of writing a “complete” performance contract. A contract is complete if it anticipates all the important eventualities that might occur during the contract’s life and provides sensible contingencies to deal with them. It is difficult to write a complete contract, especially if markets or technologies are changing rapidly or the contract duration is long. For example, incompleteness proved to be a problem with the first two performance contracts signed by France: with the national electricity company, EDF, in 1970 and the national railway, SNCF, in 1971. Both contracts were intended to last for five years but were rendered obsolete when oil prices skyrocketed after the Arab-Israeli war of 1973. The oil crisis caused an unexpected drop in demand and increase in costs for both SOEs, but was particularly disruptive for EDF. The government ordered EDF to accelerate its investment in nuclear plants to reduce France’s dependence on oil, and to abandon a program of promoting the use of electricity for home heating that EDF had been counting on to increase capacity utilization and operating profits. The effect was to increase the company’s investment needs while reducing its internal financial resources, a problem made worse over the next few years when the government refused to allow EDF to raise prices as permitted in its contract for fear of further stimulating inflation and discouraging growth. France did not sign its next round of contracts until 1978, and some of these fell prey to the oil crisis after the start of the Iraq-Iran war in 1979 (Anastassopoulus, 1981; Carsaladi, 1986; Green, 1982; Nellis, 1989; Sarma, 1986).

There are several solutions to the problem of contractual completeness, but some of those working on the issue at the time recognized that none was perfect and that best approach would depend on the type of firm and its environment (Mallon 1983). The most obvious solution, adopted initially in France and in many of the African countries, is to try to write a contract that anticipates every important possibility and provides workable contingencies for them. The dangers are that the contract becomes so complex that it has unintended side effects and so detailed and rigid that it stifles entrepreneurial behavior. Moreover, the negotiation and monitoring of such highly detailed and

sophisticated contracts requires the kinds of legal and technical skills that tend to be in short supply in many developing countries. In Africa during the 1980s, for example, many contracts took years to negotiate and some were never signed because the desire to draft a detailed and complete contract made reaching agreement nearly impossible (Nellis, 1989).

A second approach is to keep the duration of the contracts fairly short, often only a year. The shorter the contract, the easier it is to predict the important changes that might happen in the contract's life. And the shorter the contract, the less time that the two parties suffer if something unexpected occurs. This approach was adopted by Korea and Pakistan at the urging of Leroy Jones, one of the influential advocates of performance contracts in the 1980s. Jones argued that short one-year contracts were also appropriate because SOE managers seldom controlled major investments and other long-term decisions. The key risk of short contracts is that they may divert management attention from long-term challenges and choices or, worse, encourage management to deliberately sacrifice long-term health for short-term gain. Jones recognized this problem and supplemented his main quantitative performance criteria (a measure of profitability) with several qualitative measures of long-term health such as the adequacy of preventive maintenance, progress on investment, a well-thought-out corporate plan, sufficient research and development and adequate training (Jones, 1981). A few years into the Korean and Pakistan experience, observers reported that the managers thought the supplementary measures too subjective (Ramamurti, 1986) and that, despite the measures, there were signs that managers were neglecting fundamental policy change (Park, 1986) and sacrificing long-term health (Shirley, 1989b).

Two other approaches, typically used in tandem, are to anticipate frequent renegotiation and to focus on the broad goals and principles rather than minutely specified performance. France gradually moved toward this flexible and barebones contracting approach during the 1980s, responding both to the difficulties it had experienced in forecasting future conditions and to the election of a socialist government in 1988 that was less mistrustful of public enterprises (Nellis, 1989, pp. 18-26). The typical duration of a contract was reduced from 5 years to 3 years with a provision for annual review if assumptions concerning the future proved inaccurate. The plans were to

be shorter and less detailed, partly in the hopes that using fewer key targets would reduce the risk of obsolescence and make any renegotiation easier. The key idea was that the process of a periodic formal exchange of views between management and the government was more important than the specific targets set.

It is telling, however, that the French government found it easier to negotiate such flexible and barebones plans with enterprises that it thought already well run. With firms that were in more difficult financial condition it apparently resorted to more specific and detailed targets of the type originally foreseen when it started experimenting with performance contracting in the 1960s. Flexible and barebones contracting may be more acceptable or useful where there is a certain amount of confidence in the firm and a relatively stable environment. John Nellis argues (1989, p. 56) that developing countries may face too many potential problems to risk a barebones approach.

Information Asymmetry and Soft Targets. A second concern raised by performance contracts is that SOE managers are usually much better informed about the possibilities for improving their enterprise's performance than the government officials they are negotiating with. The fear is that managers will take advantage of their superior information to negotiate performance targets that are soft (easy to reach) or otherwise better suited to the objectives of managers than those of officials. In economists' jargon, the problem arises because of information asymmetry between principals and their agents. The principals, in this case the firm's government supervisors, are interested in improving the performance of the enterprise while their agents, the managers, may be interested in not exerting themselves. The problem for the principals is that they can never know whether their agents are doing as much as they could to improve firm performance. The classic solutions to the problem involve the use of competition, stock options and similar devices to align the incentives of the agent with those of the principal and to motivate the agent to reveal information.

The early designers of performance contracts were well aware of the information asymmetry problem. Leroy Jones (1981) advocated giving managers and workers bonuses that varied with the amount that the firm exceeded or fell short of its performance target. Jones called these "disclosure bonuses" on the grounds that they would induce the managers to reveal the enterprise's potential over time. Richard Mallon

(1983) was skeptical that managers would perform their best knowing that doing so would only ratchet up the target for future periods. Mallon also argued that the experience with similar incentive schemes in US military procurement contracts had been disappointing because “efficient firms faced with the prospect of sharing profits over estimate costs while inefficient firms permitted to share losses underestimate costs” (Mallon, 1983, paraphrasing McCall, 1970, p. 844). Mallon placed more faith in competition as a tool for forcing managers to reveal information and proposed that any SOE activities that could be hived off into competitive markets should be. In practice, only a handful of developing countries adopted Jones’ suggestion of awarding bonuses to managers based on performance, the best documented examples being Korea and Pakistan. There was some introduction of competition but only in industries that were not natural monopolies.

Both qualitative and quantitative evidence suggest information asymmetry is a serious problem and that bonuses, competition and other devices may alleviate it somewhat. Anecdotes about soft targets abound in the literature on performance contracts. And in interviews managers often reported that bonuses gave them an added incentive to improve performance as well as a tool with which to motivate staff, although less so where the contracts were so short that ratcheting up quickly discouraged effort. Shirley and Xu’s first study of 12 utility SOEs failed to find any significant relationship between firm performance and contract features designed to reduce the managers’ information advantage, but that was probably because the sample size was small.⁶ In their second study of 628 Chinese manufacturing firms, however, Shirley and Xu found that productivity was higher if the firm’s performance was judged primarily by profits rather than by more complex measures that the managers might more easily manipulate. They also found that productivity increased if a significant portion of wages depended on firm performance, if the managers were selected through a process of competitive bidding and if the firm operated in a more competitive industry.⁷

⁶ Shirley and Xu (1997) hypothesized that government officials could counter the managers’ advantage by insisting on contracts with a few key financial measures, not changing the measures often and rewarding managers who performed well with bonuses or non-financial awards. They found no apparent correlation between firm performance and these features.

⁷ Although these features significantly improved performance, the gain was not enough to make contracting advantageous. This result occurred because Shirley and Xu (1998) estimated that a basic contract, without

Political Commitment and Government Capacity. The most difficult problem raised by the contracting experience was the frequency with which governments reneged on commitments made in performance contracts. Not all governments reneged: there were no complaints about Korea or New Zealand, for example. Korea gradually lost interest in performance contracting over time, turning increasingly to privatization but without reneging on specific contracts in the process. New Zealand remained a supporter of performance contracting, extending the idea to regular government departments as well as government-owned corporations (Schick, 1996). But Korea and New Zealand were exceptions as reneging was common in both industrialized and developing countries.

In France, for example, the government often prevented the SOEs from exercising pricing or other commercial freedoms promised in their contracts even when there was no unexpected event, like an oil crisis, to make the contract obsolete. The French contracts established compensation for specific public service obligations imposed on the firms, such as the requirement that EDF buy French coal or that SNCF operate unprofitable regional passenger trains. Beyond such specific subventions, however, the idea was that the firms would be allowed sufficient flexibility in pricing, service and staffing decisions to become financially self supporting. When the time came to raise prices, shutdown unprofitable routes or coal mines, reduce staff or take similar politically sensitive steps, however, the government often asked the enterprise to show restraint. The result was that financial targets and government support often had to be adjusted.

In developing countries the problem seemed more severe, perhaps because of a greater gap between resources and aspirations. John Nellis (1989) recounts the experience of Senegal where, as in other poor countries, the government often failed to pay the bills for utility services supplied to government offices by SOEs, let alone honor its promises to provide compensation for public service obligations. As a consequence, the performance contracts negotiated in Senegal during the 1980s typically included commitments from the government to stay current on bills and subsidies and to meet a schedule for the payment of arrears. The financial promises in the initial round of

any of these favorable features, caused a statistically significant decrease in productivity, a curious finding that they never explained.

contracts proved to be unrealistic in part because these early contracts were negotiated between the SOEs and their technical ministries, without the involvement of central budgeting and finance agencies that might have been more concerned about the claims being made on state resources. But shifting the responsibility for contract negotiation and enforcement to special units within the Office of the President and the Ministry of Finance also proved ineffective. Officials were pressed to sign unrealistic contracts in the hope that more resources would eventually appear, or that postponing hard choices would allow the government more flexibility to decide who needed assistance the most when the budget crisis arrived.

In economics jargon, the problem was not so much that the principals could not control their agents but that the principals themselves had conflicting and unrealistic goals. On the one hand, they wanted efficient and well-run SOEs that provided good service without imposing an excessive drain on the treasury. On the other hand, they also wanted lower tariffs, more extensive services and higher levels of staffing than could be supported by commercial operation or, in the case of Senegal, available government resources. In retrospect, it was naive to think that a mere piece of paper—a contract—would be enough to change the underlying political forces that supported such conflicting goals or to stop government officials from intervening when important goals seemed at risk. As one observer put it at the time:

Regulations in some countries that oblige government officials to give instructions to SOE managers in writing have not prevented them from getting on the phone, and politicians are not likely to give up lightly one of their main stratagems for reconciling conflict and building coalitions, namely, keeping their objectives and commitments purposefully vague. (Mallon, 1983)

Interestingly, French officials and managers still were largely supportive of performance contracting in the 1980s, despite the fact that the enterprises were not always given the flexibility promised. They found the process of negotiating and renegotiating contracts useful to clarify the relations between the company and the government, to press the government to adopt more consistent policies and to make the company's performance more transparent (Carsaladi, 1986). The Senegalese, on the

other hand, were more frustrated and skeptical that contracting was worth the time and effort (Nellis, 1989). Neither France nor Senegal ever resolved the problem of conflicting objectives, but France had the resources to compensate the enterprise, at least in part, when the government interfered. In Senegal, by contrast, the solution was often to simply slash the promised aid without adjusting the enterprise's responsibilities. It is not surprising that the Senegalese managers became cynical about the advantages of negotiating a plan, or felt little responsibility for complying with their part of the bargain.

Corporatization

There are few studies from developing countries of the effects of corporatization even though it appears to have been a reasonably popular reform.⁸ One reason is the difficulty of getting good financial data on government departments to compare with the data from their corporatized successors. Another reason is that corporatization was often accompanied by some form of performance contract, which makes it difficult to disentangle their effects. The few reports on the subject cite several examples where corporatization is thought to have improved performance but also include warnings that the reform can take many years to implement and that the transformation is often "incomplete" in as much as the firm is still unable to lay off excess employees or charge realistic prices (World Bank, 1994, pp. 40-41; Estache, 1994).

These cautions are confirmed by the experience of industrialized countries, where corporatization has been more closely studied. The Britain's experience is particularly interesting because its nationalized industries enjoyed many of the corporate governance provisions recently recommended by the OECD for SOEs. The nationalization statutes of 1945 to 1951 gave the boards of directors of British SOEs substantial independence from ministerial interference, a concession apparently made to help win private sector support for the state takeover of the industries.⁹ Ministers could appoint the board members and set their salaries, but could dismiss them only for certain restricted reasons.

⁸ One of the few quantitative studies of corporatization alone (without a performance contract) examines 18 vegetable oil firms in Pakistan whose performance improved after they were moved from provincial government control to a national corporation. Whether the improvement was due to the shift from provincial to national control or from a government department to a corporate form is unclear (Shaikh, 1988).

⁹ The architect of nationalization, Herbert Morrison, imagined an "arm's length" relationship, explaining that "no self respecting board would tolerate political interference" (Redwood and Hatch, 1982, p. 24).

Board members were obliged to consider ministerial advice on how to interpret the public interest, although that provision was rarely used because the advice had to be in writing and defended in detail. The Treasury had to approve any borrowing by the nationalized firms, but the firms could invest from their own cash flow. Finally, the nationalization statutes also required the firms to breakeven but only on average, “taking one year with another”, a loophole that had been inserted to make it possible to deliberately incur deficits to stimulate the economy in the event of a recession. These exceptions aside, the board was pretty much free to set policy as it saw fit. Indeed legally the ministry was not even a shareholder—the board owned the corporation in trust.

The government issued three white papers in an effort to gain more control over the enterprises and encourage their efficiency. The first, in 1961, tightened the requirement to breakeven by specifying that it be over a five-year period and include an allowance for depreciation. The second, in 1967, sought to further improve efficiency by requiring that prices be set at long-run marginal costs, that new investments be evaluated by discounting their cash flows at 8 percent, and that social obligations of the enterprise be explicitly priced out so that the firm could be required to breakeven on its other services. The final white paper, in 1978, corrected some practical problems with the earlier pricing and rate-of-return mandates¹⁰ and required the firm to produce a corporate plan including performance measures. The technical ministry and the Treasury would consider the plan in setting financial targets for the coming year, including the “external financing limit”, the British government’s term for Treasury financial support. The firms made efforts to comply with the white paper mandates even though the mandates apparently had no legal standing, but their efforts were seldom enough to elicit the efficiency improvements desired.

Most British scholars believe that the boards enjoyed substantial autonomy under this system, despite their frequent complaints of political interference.¹¹ Even enterprises like British Rail, that were highly dependent on external financing from the Treasury,

¹⁰ The 1978 white paper allowed firms to abandon marginal cost pricing when it conflicted with breaking even and required firms to earn a return of 5 percent on their overall investment program instead of an 8 percent return from the unreliable forecasts of cash flows for individual projects.

¹¹ Christopher Foster (1992, pp. 70-101) gives an eloquent description of how the boards manage to exercise substantial autonomy while Ray Rees (1976, pp. 12-23) stresses a “tripartite” sharing of power between the board, the technical ministry and the Treasury. For a detailed account of the relationship between boards, ministers and Treasury in the case of British Rail see Gourvish (2002).

were difficult to control. Ministers could reduce budget support for British Rail and other public enterprises if they were sufficiently resolute and skillful. But the task of cutting support was “essentially a game of poker, with the departments not always holding the stronger hand” (Harrison, 1988, p. 31). For example, British Rail boards often fended off proposed financing cuts by warning, in public if need be, that the cuts would lead to dangerous reductions in the level of investment and safety or to drastic pruning of the route network and services. Ministers ignored board warnings at their peril, not just because the members were supposed to be experts in their fields but also because it gave the board an excuse for future poor performance. And if, half way through the fiscal year, it became clear that the firm needed more external support than agreed upon, the minister and the Treasury faced the unattractive choice of either paying up or forcing immediate cuts in service or investment so drastic that they lent credence to board warnings about the firm’s long-term health. Uncooperative board members could be replaced when their terms expired, but even that was not so easy since the low pay made it difficult to recruit qualified candidates. Moreover, ministers tended to change much more rapidly than boards, and most new ministers arrived with little knowledge of the firm. Most boards were also smart enough to yield to some ministerial requests, as the price of their independence on more important matters. And the ambiguities of the situation gave both sides an alibi for poor performance: the boards could blame political interference, while the ministers blamed the boards’ failure to follow their guidance (Foster, 1992, pp. 79-86).

The boards seldom used their independence to emphasize commercial objectives, although there were important exceptions. In the case of British Rail, for example, during the early 1960s a board led by Chairman Richard Beeching managed to prune unprofitable routes and experiment with new commercial freight services while during the early 1980s the board under Chairman Robert Reid reorganized the railroad around lines of business to make managers more accountable for profits (Pryke, 1981; Gourvish, 2002). More often the boards seemed less sensitive to the firm’s commercial performance than to concerns and constituencies within the firm. British boards were thought to be particularly beholden to labor given labor’s ability to disrupt services, and to the engineering culture and standards that often dominated the firm. Thus the

emphasis was often on maintaining good labor relations and on providing enough capacity to meet projected demand, almost irregardless of the cost (Foster, 1992). At British Rail, for example, successive boards were reluctant to raise the issue of eliminating unnecessary firemen or brakemen from train crews or to abandon long-planned programs of electrification that outsiders thought no longer worthwhile.

There is little reason to believe that corporatization will be better at promoting a commercial orientation in developing countries than in Britain. The boards probably would not enjoy as much autonomy as in Britain, and even if they did there is little reason to believe they would use their discretion to advance commercial objectives. Over the forty-year history of Britain's nationalized industries the boards didn't seem much more interested than the ministers in promoting corporate efficiency.

There is, however, one advantage of corporatization that may be more important in developing countries than it was in Britain: improved information about enterprise performance. Britain's public corporations were created by nationalizing private corporations, and the quality of information may have actually declined in the process because the nationalization statutes did not hold the public corporations to the same strict accounting and reporting standards that apply to private corporations. In developing countries, by contrast, government-owned corporations are usually created by hiving off the commercial activities from regular government departments. This separation of legal identities, and presumably of accounts, should make it easier to monitor the enterprise's performance than it was when the enterprise was buried inside the department. But if additional information is a key advantage, then developing countries should avoid Britain's mistake of failing to establish clear reporting and accounting standards for the new public enterprises. The easiest course of action may be to incorporate the public firms under the same laws that govern private corporations, since those laws typically apply fairly strict reporting standards.¹²

Special Supervisory or Regulatory Units

¹² Alternatively, the government might require the public enterprises to supply the same kinds of information that government regulators usually require of private utilities; see Coelli *et. al.* (2003).

Special supervisory units for SOEs have been the subject of somewhat more study, particularly holding companies and other special public enterprise units popular from the 1960s through the 1980s. Some of these units were not designed to insulate the enterprises from pressure to pursue non-commercial objectives, despite rhetoric to the contrary. In India and Egypt, for example, SOE holding companies were organized by industry—such as steel, coal, banking or textiles—and reported to the relevant technical ministry (Kumar, 1993; and Muir and Saba, 1995, pp. 38-40). The typical mandate of a holding company was to promote the “integrated” development of its industry, which it often interpreted as helping weaker firms survive by restraining competition or arranging cross-subsidies. The holding companies probably made it easier for the technical ministries to control their industries because the ministries no longer had to deal individually with the half-dozen or more nationalized firms in each industry.¹³

More relevant for our purposes are supervisory units or holding companies established to block the technical ministries, usually the main culprits in meddling. Such units usually reported to the ministry of finance or the office of the president or prime minister instead of the technical ministry. Observers thought that these units were most effective when they had a small but well qualified staff, enjoyed access to the highest levels of government and had a clear mandate and responsibilities (Shirley and Nellis, 1991, pp. 29-39). But ministries of finance were not immune to pressures about non-commercial goals, even if they were more sensitive to the need to limit budgetary support to SOEs. And eventually many of these special supervisory units became the conduit of non-commercial considerations. Indeed, the holding company is a variation of the standard corporate form, so it would be surprising if it could succeed in providing autonomy in situations where corporatization could not (Ghai, 1990, p. 24).

Of special interest for infrastructure are the more recent proposals to subject government-owned utilities to the same kind of tariff and quality-of-service regulation used to prevent monopoly abuse by private utilities. As would be the case with private monopolies, the regulatory agency typically enjoys some degree of independence from

¹³ It is telling that the holding company is usually seen as a way to increase shareholder control over enterprises in the private sector but as a means of reducing shareholder interference in the public sector. For comparisons of the advantages and disadvantages of holding companies in the public and private sectors see Ghai (1990) and Kumar (1993).

the technical ministry and a mandate to insure that tariffs are just sufficient to recover the costs of an efficient firm. The idea is that the regulator will use its position and technical expertise to discourage the ministry from imposing unreasonable public service obligations without compensation while encouraging the public enterprise to be efficient.

The experience with monopoly regulation of public enterprises is too recent and limited to draw firm conclusions about its efficacy. Proponents cite Chile and, more recently, Scotland as examples of success. Scotland kept its water industry in public hands when England and Wales privatized water in 1989, but ten years later it decided to apply the same form of price regulation used to control the private water companies in England and Wales to the public companies in Scotland. Unlike Chile, Scotland views regulation as a long-term measure rather than a transition to privatization.¹⁴ Agencies of the Scottish government establish the standards for drinking water quality and waste water treatment and an independent regulatory body, the Water Industry Commission for Scotland, sets the prices that it estimates should be sufficient for an efficient firm to recover its costs. Prices are established for four-year periods using the price-cap system developed by Britain to provide efficiency incentives for regulated firms (Gomez-Ibanez, 2003, pp. 217-223). If the company fails to recover its costs at regulated prices, then the Scottish Executive, which owns the company, must make up the difference. The compensation of the water company's managers is linked to the firm's performance. The Scottish water company was able to meet its efficiency targets and live within regulated prices in its first four-year control period.¹⁵

The experience with regulation is not wholly positive. In Scotland, for example, some critics complain that the Water Industry Commission imposes an expensive layer of bureaucracy onto a small company that was already closely supervised by government. And in Latin America, where regulation of public water companies has become more common, Vivien Foster (2005, p. 20) reports that it has been harder for regulators to promote efficiency improvements because public companies are not motivated by profit

¹⁴ The government intended to introduce competition in bulk water and wastewater services and in retailing (customer billing and service) but the basic functions of delivering water to and collecting wastewater from households and businesses would remain a monopoly in public hands.

¹⁵ When the scheme started there were three companies; these were consolidated into one company, Scottish Water, in 2002. From 1999 to 2005 there was a single water commissioner but since 2005 the commission has had five members. See Byatt (2006 and 2007), Sutherland (2006) and Water Industry Commission for Scotland (2005).

and thus do not respond to the efficiency incentives in price caps, the most widely used form of tariff regulation. This problem could be remedied, as it was in Scotland, by tying management compensation to efficiency targets, but that step was controversial in Scotland and might be even more so in a developing country. More generally, maintaining the independence and technical capability of regulatory agencies has proven to be difficult in many developing countries, and these problems will presumably be no easier if the firms being regulated are public rather than private.

Prospects

The logic of clarifying responsibilities is hard to deny: it is difficult to imagine how the performance of an SOE can be improved without a more explicit understanding between the government and the firm. It is striking, for example, that a recent study of eleven of the best-performing government-owned water utilities revealed that all eleven had some kind of performance contract and ten were either incorporated or a separate statutory authority.¹⁶ Nevertheless, both experience and logic suggest two important limitations to the strategy.

First, clarifying responsibilities is unlikely to succeed where there is serious conflict over the goals that the public enterprise should pursue. Performance contracts, corporatization and special supervisory agencies may help expose and clarify the nature of the disagreements, but exposure alone is unlikely to lead to consensus. Performance contracts that are “paper thin”—glossing over serious and unresolved disputes about resources and priorities—are unlikely to be enforced or honored.

Second, even with a reasonable consensus on goals, performance contracts and related measures presume administrative capacities and traditions not always found in the governments of developing countries. Nellis notes that that the transactions skills needed to negotiate and monitor workable contracts are often in short supply in government. Allen Schick (1998) goes further to argue that the contractual approach at the heart of these strategies is at odds with the culture of informality in the public sectors of many developing countries. Governments in developing countries typically have extensive

¹⁶ These eleven water utilities were chosen by reputation rather than by any more systematic sampling process; see Baietti *et al.* (2006).

formal control systems—such as auditing and civil service agencies—and on paper everything is done according to rule. But in practice the rules are often so unrealistic or excessively rigid that civil servants must circumvent them to be effective. In this context, even a well-drafted contract might not be honored.

These limitations suggest that a strategy of clarifying responsibilities is less likely to be successful in countries that are very poor. Conflict over commercial and non-commercial goals is likely to be more intense and difficult to manage, if only because poverty makes infrastructure tariffs that much more sensitive and SOE jobs more highly prized. And poor countries are more likely to have limited administrative capacities and traditions that make it difficult to negotiate and enforce contracts or establish an independent regulator or supervisory agency.

It is probably sensible to think of a strategy of clarifying responsibilities as proceeding in stages, with simple measures first and more complicated and elaborate schemes only as experience, capacity and consensus permit. In this regard corporatization is probably the best first step in that its application is not too demanding and, by separating the accounts of the enterprise from those of the ministry, it begins to generate the types of information that are necessary for managerial accountability. Establishing an independent regulator or supervisory agency or negotiating an explicit performance contract might wait until conflicts over goals had lessened and administrative experience increased.

(4) CHANGING THE POLITICAL ECONOMY OF THE FIRM

Allies of Reform

A third approach to SOE reform is to change the balance of political interests that bear on the enterprise to favor those interested in commercial behavior. Opportunities for reform arise when events temporarily alter the political economy of the firm. A budget crisis may strengthen the hand of fiscal conservatives for a time, for example, or an economic boom may lessen pressures to pursue social goals temporarily. The idea is to exploit these occasions to permanently change the firm's environment in a manner that sustains reform. Privatization permanently alters the political dynamic by creating a new party, the private investor, with an interest in commercial behavior and tools to protect those interests. Similar schemes, short of privatization, might be used to mobilize or strengthen allies of reform.

Three obvious groups might support reform: taxpayers, customers and investors; but each has its limitations. Taxpayers are interested in reducing the drain on the government treasury, but their influence is limited by lack of information and problems of collective action. Taxpayers are typically less well informed about the possibilities for improving SOE performance than government officials or SOE managers. They also have little incentive to spend the time and resources needed to influence an SOE's performance since the potential gain to any individual taxpayer is small. Moreover, all taxpayers will gain if any subset of them is successful in improving SOE performance, which creates a further incentive not to act in the hopes of free riding on the efforts of others. Customers have mixed interests in that they want the SOE to produce quality services efficiently but they also stand to benefit from government subsidies to the firm. Customers have reasonable information and incentives to act if the SOE competes with other firms for their patronage; if not, they face information asymmetry and collective action problems similar to those that plague taxpayers. Finally, private investors in an SOE have an interest in its commercial behavior, although they also have an interest in receiving subsidies or being protected from competition. Investors in firms that compete with an SOE have an interest in the SOE not receiving subsidies or other advantages.

Information Only

Many schemes seek to change the balance of political interests by providing taxpayers and consumers with better information about the possibilities to improve SOE performance. Schemes to clarify SOE responsibilities have the potential to act this way, although that is not usually their main intent. Proponents of such schemes typically assume, implicitly or explicitly, that reasonable people can agree on the goals of the enterprise, the only problem is to make that consensus explicit. To the extent that clarifying responsibilities alters politics, however, it does so by alerting and arming taxpayers and customers with better information. Performance contracts, for example, offer taxpayers and customers a yardstick against which to measure the behavior of managers and politicians. Similarly, corporatization clarifies the accounting while special supervisory agencies promise opinions on firm performance that are expert and less compromised by non-commercial concerns.

Other schemes focus more directly on the possibility of empowering taxpayers and consumers by providing better information on the performance they should expect. Often this information is obtained through some kind of benchmarking exercise. For example, the Ministry of Power in India recently decided to publish statistics comparing the performance of 29 state electricity companies. Other possibilities involve publicizing the services that SOEs have promised to provide. For example, international aid agencies usually insist that large signs be placed next to public works projects describing, briefly, the works promised, the date on which they are to be completed, the funding supplied and the responsible agency. The sign tells the community what to expect and who to complain to if those expectations are not met. Yet another approach is to ask the public to rate the quality of the service the enterprise supplies and to publicize the results. In 1993, for example, a citizens group in Bangalore began to issue periodic “report cards” on municipal utilities and services. The report cards are based on careful household surveys of service use, general satisfaction, frequency of problems, how many visits it took to resolve them, the frequency of bribes and the amounts paid. This scheme has inspired similar efforts in other cities in India and elsewhere.

Efforts to use better information to mobilize taxpayers and customers are seldom evaluated systematically. One careful quantitative study showed that corruption in

Uganda's educational system was reduced when school staff and parents were informed of the amount of central grant that their school was supposed to receive (Svensson, 2005, pp. 35-36). A more qualitative evaluation of the Bangalore report cards credited them with stimulating improvements, although the gains were uneven (improving in some agencies, declining in others) and slower than hoped for (Paul, 2002).

One limitation of these schemes is their need for accurate, credible and understandable the information. High quality information has the potential to shift the burden of proof about the possibility of improving performance from the taxpayers and customers to the firm. But gaining such information is often difficult. Benchmarking, for example, requires the ability to identify reasonably comparable enterprises or to adjust the data for important differences in the firms or their environments. Similarly, household surveys must be based on careful sampling if they are to be representative and consistent over time. Moreover, the performance measures must not only represent the firm's performance fairly but be simple and intuitive enough for the public to understand. The effort to benchmark the Indian electricity companies is unlikely to have much impact, for example, because the measures developed are so complex that they appear arbitrary and unintelligible.

The second and arguably more serious problem is that providing information alone does little to overcome the obstacles to collective action faced by taxpayers and customers. Information reduces the cost of influence, but it does not solve the problem of free-riding. The problems of collective action may be manageable if a community is small enough and the service is important enough that informal social pressures are sufficient to offset the incentives to free ride. But in larger communities effective collective action is likely to depend on the presence of strong institutions of civil society—churches, residents' associations, professional associations, unions and other civic and non-governmental organizations—that are already well organized and whose membership cares about the services involved. Even in Bangalore, where one might think conditions were relatively favorable, the limited capacity and interest of local civil society made it difficult to orchestrate a groundswell of public opinion and to translate that groundswell into effective and sustained pressure on public agencies.

Direct Competition

Another strategy to change the political landscape is to allow private companies or other SOEs to compete directly with the public enterprise for customers. Competition works in part by generating information, since customers and taxpayers can compare the performance of the incumbent SOE with that of its competitors. But direct competition also reduces the problem of collective action since improvement does not require coordinated political pressure on the public agency but results, instead, from the incentives that individual customers have to shift to the better firm. Finally, competition creates a new constituency for reform: the owners and employees of the competing private firms.

Direct competition is a fairly common strategy for SOEs in industries where demand is expanding and there are few characteristics of natural monopoly. One common example is urban bus services, which are provided by both government-owned and private firms in many developing countries. Usually private minibuses appear when the demand for bus services is growing, the public bus company is losing money and the government can't afford the added subsidies that would be required to expand the public company's services. Sometimes the government allows the public company to collapse after a few years, but often it simply stops increasing subsidies to the public company so that public and private operators coexist, although with the private services expanding to meet demand. Other common examples are mobile telephones and ports, where governments sometimes grant private companies mobile licenses or concessions to build new port terminals without closing or privatizing the incumbent state-owned telephone company or terminal operator.

Evidence suggests that competition improves the performance of SOEs, but that competition alone can not replicate the effects of privatization. In the two most important of the few empirical studies that compare competition and privatization, Anthony Boardman and Aidan Vining analyzed various profitability and productivity measures for the 500 largest non-US industrial firms in the world (Boardman and Vining, 1989) and the 500 largest non-financial firms in Canada (Vining and Boardman, 1992). In both studies Boardman and Vining found that higher levels of competition in an industry were associated with improved productivity and reduced profits. But they also found that

private firms outperformed SOEs at any given level of competition. A study of thousands of Indonesian manufacturing firms reached similar conclusions (Bartel and Harrison, 2005).

The biggest gains may come not from improving the performance of the incumbent SOE but from insuring that future market growth is met by more efficient private operators. In urban bus services, for example, the SOE seldom achieves the economies of the private operator, at least as long as the state is still willing to provide it with some level of subsidies. Preserving the SOE allows the government to avoid layoffs or other controversies associated with closure or privatization. But opening the market to private operators puts an effective cap on SOE subsidies especially if the private operators can recover their costs while charging the same fare as the public company. Meanwhile the private operators and their employees are motivated to oppose any substantial expansion of the SOE's market share.

One potential complication is insuring that the playing field between the SOE and the private firms is relatively level so that the customers' choice of firms improves the welfare of society as a whole as well as that of the customers. In the case of urban buses, for example, critics often complain that the private minibuses are driven recklessly and generate more traffic accidents and congestion per passenger than the full-size buses typically operated by the SOE. Similarly, with mobile telephones questions often arise as to whether the charges for accessing a competitor's lines to terminate a call unduly favor either the incumbent SOE or the challengers. In principle, such problems should be correctable.

A more important limitation is that direct competition is hard to apply to industries with characteristics of natural monopoly. Sometimes activities that are potentially competitive can be separated from those that are not, as in the separation of mobile and fixed-line services in telephony. But in industries where there are no potentially competitive activities or where separation poses practical problems, direct competition is not an option.

Mixed-Capital Enterprises

Another possibility for changing the political economy of an SOE is to finance part of its capital from private investors. The government retains a controlling share of the equity, but sells a portion of its equity or debt to private investors. This strategy generates information, particularly if the firm has to be evaluated by a rating agency in order to sell debt, if it has to meet stock exchange reporting requirements in order to sell shares and if the shares are publicly traded. But it offers the added advantage of creating a group of private investors with a stake in the profitability of the company. The hope is that this group will make it harder for the government to pursue social goals by the traditional route of accepting a lower return on SOE investments (McFetridge, 1985, p. 208). From this perspective mixed-capital enterprises are a deliberate compromise between commercial and social objectives. Private investors provide profit and efficiency incentives while public ownership allows the government to monitor its social or strategic concerns with an insider's perspective (Boardman, Eckel and Vining, 1985, pp. 235-236).

Many SOEs in industrialized countries and larger SOEs in the more prosperous developing countries sell debt to private investors that is secured only by the assets of the enterprise, without any formal backing or guarantees from the government.. For example, many of the statutory authorities that operate airports, seaports, toll expressways and water and sewage systems in the United States sell bonds backed by only the authorities' revenues.¹⁷

SOEs with private shareholders are less common, although they increased significantly in developing countries in the 1960s. Some of the early mixed enterprises were the product of government bailouts of failing private companies, intended to prevent employment losses or plant closures. The government sometimes received an equity stake in return, in the hope that it could recoup some of its assistance in the event of a turnaround. But most mixed enterprises created in the 1960s were the product of import substitution, the dominant economic development strategy at the time. Developing countries sought to grow by substituting domestic manufacturing for imports. The

¹⁷ In the U.S. case the bonds are not sold to enlist private investors to monitor the authorities. The motive instead is to take advantage of the income-tax advantages that government debt offers private investors while keeping the debt off the already heavily burdened balance sheets of state or municipal governments (Leigland, 1994).

governments wanted modern technology, and often sought foreign partners to get it. But even with the best technology a domestic plant seldom had the scale or experience to compete internationally, and thus could survive only behind the protection of import quotas, tariffs or other trade barriers. The solution was often a joint venture between a multinational firm and the government with the government receiving a minority share of the equity. The government's stake was intended in part to motivate it to maintain the import protection the firm needed. Many governments expropriated or bought out the private equity in these joint ventures during the 1970s and 1980s.

A new generation of mixed enterprise companies appeared in the 1990s, most as a byproduct of privatization. Many firms were privatized by selling shares but with the government retaining control, at least initially. A study of 630 share issue privatizations in 59 developing and industrialized countries between 1977 and 1997 found that only 11.5 percent of the initial offers were for all the shares (Jones *et al.*, 1999, pp. 230-232). The average initial offer was for 43.9 percent of the shares, and these were frequently sold to domestic and small investors as a sign that the government would not interfere. In many cases the government eventually sold its share holdings, but in some countries, such as Singapore, it did not.¹⁸

The effects of selling SOE debt to private investors have been much less studied than the effects of selling equity, but there are good reasons to believe that selling debt is less effective in encouraging commercial behavior. Investors in debt have a weaker incentive to monitor the firm's performance since any interest and principal payments due on debt must be paid before dividends are paid to shareholders. As a result, debt holders are interested primarily in insuring that the SOE is profitable enough to pay its debts, and have little concern about the returns to equity. Moreover, debt holders may have stronger reasons to believe that the government is implicitly guaranteeing their investment. If shareholders don't receive dividends the share price drops, which is embarrassing enough. But if debt holders are not paid then the firm can be thrown into bankruptcy with the creditors taking over, which is even more embarrassing. The fact

¹⁸ Singapore's motive was not so much to improve efficiency, since its SOEs were thought to be fairly efficient already, but rather to further develop the domestic stock market. Singapore retained a controlling share of the largest and most important SOEs, however, presumably to insure an inside look and the opportunity, in an emergency, to intervene (Gómez-Ibáñez, 2005c).

that SOEs that are very unprofitable or subject to chronic government interference can sell debt is a sign of that private investors believe that the government will step in, if necessary, to prevent default.

This is not to argue that selling debt has no beneficial effect on firm behavior. The information generated may be an important aid to customers and taxpayers, particularly because the sale of debt often requires that the firm submit to external auditing. Another route of influence is that bondholders may insist on covenants that constrain the firm's behavior in important ways. The most famous example is the covenants on the revenue bonds issued by the Port of New York Authority in the 1930s and 1940s that prohibited the use of the authority's bridge and tunnel toll revenues for any use besides maintaining the bridges and tunnels and related roadways. This requirement was allegedly engineered by Robert Moses, the head of the Port Authority and famous "master builder" of New York, to insure that politicians couldn't raid his enterprise's revenues for causes he didn't approve of, such as subsidizing mass transit (Caro, 1972). The effectiveness of this strategy diminished when it became apparent that private investors were willing to buy Port Authority bonds without such covenants. But it is common for bond covenants to require that the firm maintain certain coverage ratios or reserves.

The empirical evidence on whether selling equity improves efficiency is mixed but generally encouraging. Boardman and Vining's two studies described earlier give different results: mixed equity enterprises perform no better (and by some measures worse) than other SOEs using the sample of the 500 largest non-US industrial firms in the world (Boardman and Vining, 1989) but they perform better than other SOEs (although not as well as private companies) using the sample of the 500 largest non-financial firms in Canada (Vining and Boardman, 1992). A study of some 400 Indian non-financial companies of which 42 were partially privatized finds that the initial listing of an SOE on the stock exchange is associated with an increase in profits and productivity and that the effects increase with the percentage of shares sold (Gupta, 2005). And a comparison of 26 mixed enterprises in Singapore with a matched set of 26 private Singaporean

companies in the same industries found no significant differences in efficiency and profitability (Feng *et al.*, 2004).¹⁹

Although the empirical studies are generally favorable, the performance of mixed enterprises probably varies substantially and in ways we only partially understand. The characteristics of the shareholders probably matter considerably. The studies described above count as a mixed enterprise any company which has both public and private shareholders, but performance may depend on the percentage that is privately owned and how widely distributed share ownership is. The agency exercising the government's ownership responsibilities is presumably also important. An inexperienced technical ministry may interfere too much, for example, or conceivably be taken advantage of by the private co-investors. By the same token, a special government holding company may be particularly advantageous if it is more sensitive to the importance of respecting minority shareholder rights. Singapore manages most of its mixed enterprises through a special holding company, for example, while in Canada Vining and Boardman (1992, p. 227) found that the mixed enterprises supervised by a holding company performed better than those that were not.

The level of competition in the industry probably matters as well since competition should reinforce the pressures from private investors to pursue efficiency and profits. Competition also makes it possible to avoid the problem of regulating the firm's tariffs, which adds another layer of complexity to the relationship between the government and the mixed enterprise. Unfortunately none of the studies of mixed enterprise focus on infrastructure or other industries that have elements of monopoly.²⁰

Finally, the laws concerning corporate governance, the quality of securities regulation and the integrity of the legal system presumably matter as well. The concern is whether minority and small shareholders have the information and the opportunity they need to influence important decisions of the firm. The favorable studies described above all involve countries—Canada, India, Singapore—with well-run stock markets and well-regarded legal systems.

¹⁹ Ramirez and Tan (2003) find that mixed enterprises trade at a market premium of 20 percent, which they attribute to the investors' belief—correct or not—that the Singapore government would not allow a mixed enterprise to fail.

²⁰ Broadman and Vining deliberately exclude utilities, for example, while the sample of 26 Singaporean SOEs used by Feng and his colleagues includes only one utility (Singtel).

Customer-Governed Enterprises

Schemes that give customers a greater role in the governance of the enterprise offer another possibility for encouraging more commercial behavior. The customers' normal route of influence is through their purchasing decisions, a route that works best when the firm must compete with others for the customers' patronage. Thus customer-governed enterprises are of particular interest in very thin markets or in industries, such as utilities or infrastructure, thought to have characteristics of natural monopoly.

The best-known form of customer-governed enterprise is the cooperative. The legal criteria vary by country, but typically a cooperative has open and voluntary membership, each member contributes share capital (although often only a token amount), the members control the enterprise democratically (with one member, one vote) and any profits distributed are allocated on the basis of the member's business with the cooperative. Cooperatives can be organized by producers, workers or consumers. Worker cooperatives, established to insure decent wages and working conditions, are probably the least common form. Producer cooperatives are more popular, especially in the agricultural sector where farmers often band together to market their crops or to bargain for lower prices from input suppliers. Consumer cooperatives, which are our primary concern, are found in a wide variety of industries ranging from credit unions to housing, childcare and utilities.

Most consumer cooperatives are small, and utility and infrastructure cooperatives are no exception. The United States has roughly 900 electricity and 270 telephone cooperatives, for example, but the typical cooperative is a small rural system that serves 10,000 or 20,000 households. One of the largest utility cooperatives in the world is the water and sewage company in Santa Cruz (Bolivia) which serves 752,000 people with 120,483 connections (Ruiz-Mier and van Ginneken, 2006).

Large consumer cooperatives are found in the finance and insurance industries, but they have been declining in importance in recent years. Finance and insurance cooperatives are often called mutual associations because their activities involve pooling community (or mutual) resources to provide members loans for homebuilding or protection in old age. Depositors and policyholders are considered members of their

mutual savings bank or insurance company and have the right to vote in annual meetings. Their deposits and the surrender value of their insurance policies constitute their shares in the company's capital. The mutuals' share of the savings and insurance markets has declined rapidly in Britain and the United States during the last 15 years. Defenders blame the decline on the difficulties that mutuals face in growing and diversifying quickly enough to remain competitive, especially since members are their only source of equity capital (Her Majesty's Treasury, 2004). But critics argue that the large premiums that shareholder banks and insurance companies typically pay members to acquire their mutual companies are a sign that the mutuals are not terribly well managed.

In the last few years Britain has experimented with converting two major utilities into a relatively obscure form of non profit called a company limited by guarantee. This form of company has no equity capital and is financed entirely by debt. It is governed by members who are selected by a process, specified in the articles of incorporation, which typically requires some representation of customers. In 2002, Welsh civic leaders and utility managers persuaded the British water industry regulator to allow the Welsh water and sewage company to be sold to a specially created company limited by guarantee called Glas Cymru. The sale was to prevent the firm, which had been privatized in 1989 and was not terribly profitable, from falling into the hands of foreign buyers. Glas Cymru's 50 members are Welsh civic and business leaders, all presumably also customers, who elect an eight-member Board of Directors (Gomez-Ibanez, 2005a). The model was used again after Railtrack, a company that had been privatized in 1996 and that owned and maintained all of Britain's rail infrastructure, went bankrupt in 2001. In 2002 Railtrack was sold to Network Rail, a company limited by guarantee that is governed by 100 members including representatives of railroad users, labor and government (Glaister, 2006).²¹

The World Bank has experimented with and promoted customer-governed enterprises in a variety of forms. Many of these efforts have involved rural cooperatives in agriculture, but there have been other interesting types as well. One example is a "road fund" designed to improve the quality of construction and maintenance in road projects.

²¹Network Rail is less interesting than Glas Cymru because critics of Network Rail argue that it was not created to promote customer or community control but rather to maintain effective government control of the enterprise while keeping its debt off the government's books.

This scheme involves the direct payment of motor vehicle fuel taxes or other levies to a fund managed by a board representing road users. Road funds and road boards have been established in a number of countries, particularly in Africa (Gwilliam and Kumar, 2002).

Advocates of consumer cooperatives and similar schemes claim that they offer advantages over both private investor-owned firms and SOEs. Compared to investor-owned firms, cooperatives and non-profits eliminate potential conflicts between shareholders and customers by eliminating shareholders. Financing costs are often said to be reduced as well since cooperatives and non-profits replace private equity (which requires high rates of return) with member contributions and debt (which require lower rates of return). Compared to SOEs, cooperatives promise to reduce principal-agent problems by shortening the link between customers and managers. If the customers of an SOE want to influence management (through a route other than their purchasing decisions) they must first use their powers as voters and campaign contributors to influence elected politicians, who then must try to change the behavior of the bureaucrats who oversee the SOE and ultimately the SOE managers. Cooperatives allow customer-members to influence the managers directly, eliminating the politicians and bureaucrats as intermediaries.

Skeptics argue that the influence of cooperative members over management is likely to be limited even if their route of control is more direct than in a SOE. Cooperative members still face obstacles to collective action: the benefit to an individual member from improving firm performance is still typically small relative to the effort required to gather information and mobilize other members. And since every member stands to benefit from reform, members still have an incentive to try to free ride on the efforts of others. Many cooperative members view themselves more as customers than owners of the firm, which further discourages their participation in governance. And low member participation increases the danger that the co-op will be captured by highly motivated special interests—such as major industrial customers, labor or management—that might not have the general customer's interests at heart.

And while governance problems seem only slightly better in a cooperative than a SOE, they are much more difficult in a cooperative than in a firm with conventional shareholders. Shareholders may be more motivated to exercise influence than

cooperative members because they can easily sell their shares if the stock price rises. Moreover, cooperative members typically don't receive a distribution of profits when they leave; mutual members can withdraw their deposits or cash in their life insurance policies but the amount they receive do not depend on the current condition of the firm.²² Equally important, shareholding reduces the problem of free riding because an investor can buy up a large block of shares; cooperatives offer no similar method of concentrating the benefits of influencing management.

Skeptics also argue that any nominal savings in the cost of capital for cooperatives or non-profits do not represent a real savings but a shifting of risks normally born by shareholders to the firm's customer/members and/or taxpayers. Glas Cymru and Network Rail are both financed entirely with debt, for example, and their debt receives a lower rate of return than the weighted average return on the debt and equity of the conventionally financed firms they replaced. But the lack of equity limits the firms' options if they get into financial trouble. If their predecessor firms got into trouble, they could raise prices or cut the returns to equity before they would be forced to ask the government for a bailout or go bankrupt. But the new firms, lacking equity, can only raise prices before they resort to a bailout or bankruptcy. The new firms pay a higher interest rate on their debt than the old firms did, reflecting the added risk debt holders face without equity investors to help cushion shocks. But the customers and the taxpayers also assume added risks for which they may not be adequately compensated.²³

Very few studies empirically compare the performance of cooperatives with other types of enterprises, and most of these focus on comparisons with private firms rather than with SOEs.²⁴ On the optimistic side, Vining and Boardman's (1992, p. 226) study of the 500 largest non-financial Canadian firms found that the 16 cooperatives in the sample performed as well as their private counterparts and significantly better than the SOEs. All 16 were producer cooperatives in the agricultural or general retailing areas.

²² There are often penalties and limitations on cashing out insurance policies, particularly for whole life contracts.

²³ The customers are compensated in that the expected prices for the firm's services are lower, although more volatile. The question then is whether the customer is prepared to assume the risk of price volatility or would prefer to have the stockholder assume it in return for a higher expected price. For a fuller discussion see Gomez-Ibanez (2005a, pp. 7-9).

²⁴ There are a few theoretical comparisons of cooperative organizations and government departments of which the best by far is by Elinor Ostrom, Larry Schroeder and Susan Wynne (1993).

On the pessimistic side, the scarcity of very large consumer cooperatives and the declining importance of mutuals in the savings and insurance business suggest that the problems of collective action are serious for cooperatives with many members.

More useful is the large body of case studies of cooperative enterprises that focus on the factors that contribute to success. These studies suggest that the characteristics of the members, the specific services to be provided and the rules of governance for the enterprise are all important. There is a strong consensus that cooperative enterprises are more successful if the membership is small, homogenous, stable, concentrated in location and bound by other social ties and institutions. These characteristics make it easier to agree on policy, to detect free riding among members and to discourage shirking through informal social pressures. Such characteristics are thought to be more common in rural than urban communities, which helps explain why so many cooperatives are rural.

The characteristics of the service matter as well. Perhaps most important is that there is a felt need for the service among potential members and that the service has reasonable prospects for commercial success. Cooperatives which are founded at the instigation of government rather than the community or which provide money-losing services do not survive for long (Hussi *et al.*, 1993). Also important is whether the benefits each member receives from collective action are large, similar and can be easily monitored. Elinor Ostrom and her colleagues argue, for example, that cooperatives to maintain rural irrigation systems are easier to sustain than cooperatives to maintain rural roads (Ostrom *et al.*, 1993, pp. 106-107). One reason is that it is harder to monitor and measure members' use of a road than their use of an irrigation system, and thus put pressure on members to contribute their fair share. The deterioration of the road surface is also very gradual, so that the benefits from maintenance are less immediate and obvious. The silting of canals is gradual as well, but farmers at the tail end of the system feel the effects fairly quickly. Moreover, a poor condition road typically does not threaten a farmer's livelihood in the same way as a lack of water. Particularly favorable, Ostrom argues, are irrigation systems where each farmer cultivates both head-end and tail-end plots so that the gain from collective action is obvious, similar and large for all.

Finally, the rules by which customers participate in the governance of the enterprise matter as well. For example, the water cooperative serving Santa Cruz divides

the city into nine districts and customers vote for a three-person board to represent their district. The 27 members of the district boards then choose 9 among them to serve as the administrative board for the entire company (Ruiz-Mier and van Ginneken, 2006). Electing board members by district may lead to an excessive concern with district-level issues, but it is probably critical to maintain member interest and participation in such a large cooperative. Similarly, a government-commissioned inquiry in Britain recently concluded that the rules of governance for mutual life insurance companies had to be improved in the wake of a scandal when one company unexpectedly and sharply reduced the value of its members' policies. The inquiry recommended that mutuals conform to codes of governance similar to those for listed companies, a change which would require more and better information disclosure to members, open and fair voting rules in the annual general meetings and more information and assistance for non-executive directors (Her Majesty's Treasury, 1994).

Prospects

Changing the political economy of the public enterprise is an appealing approach since the root cause of poor SOE performance often seems to be the lack of political support for commercial behavior. Many of the options for change seem to have potential if selectively applied, although few have been studied enough to be confident of their effects.

Direct competition is arguably the best understood and most effective possibility because it solves the problem of collective action by customers and creates a new ally for reform. Direct competition applies only to activities that don't have elements of natural monopoly, however, which limits its use in infrastructure and utilities.

Mixed-capital enterprises are also promising but may have a reasonable chance of success only in fairly sophisticated environments. Selling debt or equity typically forces the firm to maintain better accounts and provide more information, but whether the private investors will effectively monitor and influence the SOEs behavior probably depends significantly on the circumstances. Selling debt is probably less effective in motivating investors than selling equity, and selling equity should work best in countries with reasonable protections for minority investors.

Cooperatives and other customer-governed enterprises may not perform as well as conventional private firms but they can be more efficient than SOEs if the problems of customer participation in the firm's governance can be overcome. These problems are thought more tractable the smaller and more homogenous the membership and the larger and more obvious the benefits from cooperative action. The large British water and railroad companies limited by guarantee are too recent an innovation to know whether they will prove a success. But the experience of the Santa Cruz water company and the mutual savings and insurance companies suggests that even large customer-governed enterprises can function reasonably well if the rules for membership participation are carefully thought out. We need to learn more about how to design those rules.

Finally, strategies that generate better information for customers and taxpayers are attractive in that they promise reform without a radical change in governance. Such strategies have not been carefully studied, however, and we simply don't understand well the circumstances under which better information alone will be sufficient to change SOE behavior. The quality of the information is likely to be important, and in this regard special supervisory agencies, such as tariff regulators, hold some appeal. Perhaps equally important is to identify situations where the obstacles to collective action are low, for example because of the presence of preexisting mobilized customer or taxpayer groups.

(5) CONCLUSIONS

It should be no surprise that the efforts to reform SOEs in the 1960s, 1970s and 1980s were disappointing. Had SOE reform been reasonably successful, privatization would not have been embraced with such enthusiasm by the World Bank and other aid agencies in the 1990s. And in the places where privatization eventually foundered it was due at least in part to many of the same conflicts over commercial and non-commercial goals and weak institutions that had plagued the earlier round of SOE reforms.

Given the record, moreover, it is difficult to recommend specific SOE reform strategies with great confidence. Many of the options have not been carefully studied, and what we know is not always promising. Even at their theoretical best, few of the alternatives promise the same gains in commercial focus or performance as privatization. Moreover, some of the alternatives seem applicable only in fairly specialized situations. Even then, the reforms are often difficult to implement and even harder to sustain.

Nevertheless, any effort at prescription should begin by dividing firms according to the degree of conflict between their commercial and non-commercial objectives and the level of development of their country's market, administrative and political institutions. Infrastructure enterprises often suffer from serious conflicts between commercial and social goals if only because access to infrastructure services is considered so important to modern life. But in some firms this conflict may be less severe if, for example, tariffs have never been allowed to fall too far below costs, over-staffing has never been too excessive or the potential technical efficiency gains are large enough to compensate customers or laid-off staff.

Where the level of conflict over goals is low, the possibilities for SOE reform are much improved. Low conflict allows one to rely on strategies that increase the firm's human or physical capacity and clarify the responsibilities of ministers and managers instead of strategies that attempt the more difficult task of changing the underlying political economy of the firm. And the more sophisticated the local administrative institutions, the more elaborate the effort to clarify responsibilities might be. At a minimum one might corporatize the public enterprise to clarify the financial performance of the firm. And where the public administration has the transaction skills and a tradition

of following rules, one might establish an independent regulatory agency to set tariffs or tie management compensation to a formal performance contract.

Where the level of conflict is high, the emphasis must shift to strategies that alter the political economy of the firm. Unfortunately, some of these strategies apply only in special circumstances. Direct competition only works only if there is no natural monopoly, for example, while mixed-capital enterprises depend on adequate legal protections for minority shareholders. Others of these strategies seem less effective or well understood. Information alone seems unlikely to have much effect where the level of conflict is high, for example, while large cooperatives are less studied and even small cooperatives work well only where the characteristics of the customers and services are conducive to effective collective governance.

In firms where the conflict over goals is high but which are not good candidates for one of the strategies to change the firm's political environment, the possibilities are more limited but not entirely hopeless. At a minimum one might corporatize and provide some management training. Corporatization is unlikely to insulate the enterprise from politics and encourage it to behave commercially, but improved accounting may be a first step to stimulate and inform a debate about the firm's performance and goals. Similarly, management training alone would not turn around the enterprise, but it might help modestly particularly if the training dealt more candidly and constructively with the political environment of the firm and was part of a well-thought-out personnel development program.

References

Anastassopoulos, Jean Pierre C. (1981). "The French Experience: Conflicts with Government." In *State-owned Enterprises in the Western Economies*, pp99-116, edited by Raymond Vernon and Yair Aharoni. New York: St. Martins Press.

Baietti, Aldo, William Kingdom and Meike van Ginneken (2006) "Characteristics of Well-Performing Public Water Utilities." World Bank, Water Supply and Sanitation Working Note no. 9.

Bartel, Ann P. and Ann E. Harrison (2005). "Ownership versus Environment: Disentangling the Sources of Public Sector Inefficiency". *Review of Economics and Statistics* 87(1): 135-147.

Behn, Robert D. (2001). *Rethinking Democratic Accountability*. Washington, DC: The Brookings Institution.

Behn, Robert D. (2003). "Why Measure Performance? Different Purposes Require Different Measures." *Public Administration Review* 63(5): 586-606.

Bhaya, Hiten (1983). *Methods and Techniques of Training Public Enterprise Managers*. Ljubljana: International Center for Public Enterprises in Developing Countries.

Boardman, Anthony E. and Aidan R. Vining (1989). "Ownership and Performance in Competitive Environments: A Comparison of the Performance of Private, Mixed, and State-owned Enterprises" *Journal of Law and Economics*, 32 (1): 1-34.

Boardman, Anthony E., Catherine Eckel and Aidan R. Vining (1985). "The Advantages and Disadvantages of Mixed Enterprises." In *Research in International Business and International Relations*, edited by Anant R. Neghandi, vol, 1, pp. 221-246. Greenwich, CT: JAI Press.

Boardman, Anthony E. and Aidan R. Vining (1990). "The Behavior of Mixed Enterprises" *Journal of Research in Law and Economics*.

Borins, Sanford F. and Barry E.C. Boothman (1985). "Crown Corporations and Economic Efficiency." In *Canadian Industrial Policy in Action* edited by Donald G. McFetridge, pp. 75-129. Toronto: University of Toronto Press.

Byatt, Ian (2006). "Changing the Taps: Regulating Water in Scotland." Fourth Comiston Lecture, Edinburgh, Scotland.

Byatt, Ian (2007). "Do the Taps Need Changing? Or the Washers Renewed? Getting a Better Deal for Water Customers." European Policy Forum, London.

Cadic, Jean-Yves (1986). "The Program Contract: An Attempt to Rationalize the Management of Public Enterprises. Originally published in French in *Doctrine*. Translation published in *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance*, edited by Prajapati Trivedi, pp. 147-191. New Delhi: International Management Publishers, 1990.

Caro, Robert A. (1972). *The Power Broker: Robert Moses and the Fall of New York*. New York: Knopf.

Carsaladi, Yves (1986). "State-plan and Managerial Autonomy of Public Enterprises: The French Experience." Paper presented at the Indo-French seminar on The Role and Management of the Public Sector. Reprinted in *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance*, edited by Prajapati Trivedi, pp. 225-239. New Delhi: International Management Publishers, 1990.

Chowdhry, Kamla (1977). "Strategies for Institutionalizing Public Management Education." In *Education and Training for Public Sector Management in Developing Countries* edited by Laurence D. Stifel, James S. Coleman and Joseph E. Black. New York: Rockefeller Foundation.

Coelli, Tim Antonio Estache, Sergio Perlman and Lourdes Trujillio (2003). *A Primer on Efficiency Measurement for Utilities and Transport Regulators*. (World Bank: World Bank Institute.

Duncan, Ian and Alan Bollard (1992). *Corporatization and Privatization: Lessons from New Zealand*. Auckland: Oxford University Press.

Estache, Antonio (1994). "Making Public Infrastructure Entities Commercial". *Finance and Development* 31 (September): 22-25.

Estache, Antonio (2006). "PPI Partnerships and PPI Divorces in LDCs," *Review of Industrial Organization*, 29 (1): 3-26

Estache, Antonio and David Martimort (1999). "Politics, Transaction Costs, and the Design of Regulatory Institutions." World Bank, Policy Research Working Paper no. 2073.

Feng, Fang, Qian Sun and Wilson H.S. Tong (2004). "Do Government-linked Companies Underperform?" *Journal of Banking and Finance* 28(10): 2461-2492.

Foster, Christopher D. (1992). *Privatization, Public Ownership and the Regulation of Natural Monopoly*. Oxford: Blackwell.

Foster, Vivien (2005). "Ten Years of Water Service Reform in Latin America: Toward an Anglo French Model." World Bank, Water and Sanitation Sector Board Discussion Paper no. 3.

Ghai, Yash P. (1990). "The Management of Public Enterprises through Holding Corporations." *Public Enterprise* 10 (1); 18-25.

Glaister, Stephen (2006). "Britain: Competition Undermined by Politics." Pp. 49-80 in *Competition to the Railway Industry: An International Comparative Analysis*, edited by José A Gómez-Ibáñez and Gines de Rus. London: Edward Elgar.

Gómez-Ibáñez, José A. (2003). *Regulating Infrastructure: Monopoly, Contracts and Discretion*. Cambridge: Harvard University Press.

Gómez-Ibáñez, José A. (2005a). "British Water (B): Glas Cymru and the Debate over Non-Profits." Kennedy School of Government, Harvard University, Case Program, case no 1810.

Gómez-Ibáñez, José A. (2005b). "EDM (Energie du Mali)." Kennedy School of Government, Harvard University, Case Program, case no 1811.

Gómez-Ibáñez, José A. (2005c). "Singapore's Public Enterprises." Kennedy School of Government, Harvard University, Case Program, case no 1817.

Gourvish, Terry (2002). *British Rail 1974-97: From Integration to Privatization*. Oxford: Oxford University Press.

Green, Diana (1982). "Government and Industry in France: A Contractual Approach." *Public Money*. Reprinted in *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance*, edited by Prajapati Trivedi, pp. 136-146. New Delhi: International Management Publishers.

Gupta, Nandini (2005). "Partial Privatization and Firm Performance". *Journal of Finance* 60 (2): 987-1015.

Gwilliam, Kenneth M. and Ajay Kumar (2002). "Road Funds Revisited: A Preliminary Appraisal of the Effectiveness of "Second Generation" Road Funds." World Bank, Transportation, Water and Urban Development Discussion Paper no. 47.

Harrison, Anthony (1988). "The Framework of Control." In *Reshaping the Nationalized Industries*, edited by Christine Whitehead, pp. 22-41. New Brunswick: Transaction Books.

Hood, Christopher (2005). "Public Management: The Word, the Movement, the Science." Pp.7-26 in Ewan Ferlie *et al.* (eds) *Oxford Handbook of Public Management*. Oxford: Oxford University Press.

Her Majesty's Treasury (2004). *Myners Review of the Governance of Life Mutuals: Final Report*. London: Her Majesty's Treasury

Hussi, Pekka, Josette Murphy, Ole Lindberg and Lyle Brenneman (1993). "The Development of Cooperatives and Other Rural Organizations." World Bank Technical Paper no. 199, Africa Technical Department Series.

Irwin, Timothy and Chiaki Yamamoto (2004). "Some Options for Improving the Governance of State-Owned Electric Utilities". Energy and Mining Sector Board Discussion Paper no. 11. Washington, DC: World Bank.

Jones, Leroy P. (1981). "Towards a Performance Evaluation Methodology for Public Enterprises, with Special Reference to Pakistan." Paper presented at the International Symposium on Economic Performance of Public Enterprise, Islamabad. Reprinted in *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance*, edited by Prajapati Trivedi, pp. 393-424. New Delhi: International Management Publishers, 1990.

Jones, Leroy P. (1985). "Improving Korea's Public Enterprise Evaluation Effort." Paper prepared for the Korean Development Institute. Reprinted in *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance*, edited by Prajapati Trivedi, pp. 603-623. New Delhi: International Management Publishers, 1990.

Jones, Leroy P. (1991). "Performance Evaluation for State-owned Enterprises." In *Privatization and Control of State-owned Enterprises*, edited by Ravi Ramamurti and Raymond Vernon, pp. 179-205. Washington, DC: World Bank.

Jones, Steven L., William L. Megginson, Robert C. Nash and Jeffrey M. Netter (1999). "Share Issue Privatization as Financial Means to Political Ends". *Journal of Financial Economics* 53: 217-253.

Lynn, Laurence E. Jr. (2005). "Public Management: A Concise History of the Field." Pp. 27-50 in Ewan Ferlie *et al.* (eds) *Oxford Handbook of Public Management*. Oxford: Oxford University Press.

Kahn, Ishrad H., Shahiruddin Alki and Stane Mozina, editors (1982). *Management Training and Development in Public Enterprises*. Ljubljana: International Center for Public Enterprises in Developing Countries.

Kikeri, Sunita, John Nellis and Mary Shirley (1992). *Privatization: The Lessons of Experience*. Washington, DC: World Bank.

Konings, Jozef, Patrick Van Cayseele and Fredrick Warzynski (2005). "The Effects of Privatization and Competitive Pressure on Firms' Price-Cost Margins: Micro Evidence from Emerging Economies". *Review of Economics and Statistics* 87(1): 124-134.

Kumar, Anjali (1993). *State Holding Companies and Public Enterprises in Transition*. New York: St. Martin's Press.

Leigland, James (1994). "Public Authorities and the Determinants of Their Use by State and Local Governments." *Journal of Public Administration Research and Theory* 4: 521-544.

Mako, William Peter and Chunlin Zhang (2004). "Management of China's State-Owned Enterprises Portfolio: Lessons from International Experience." Paper presented at the OECD-Shanghai Stock Exchange Conference, February.

Mallon, Richard D. (1983). "Performance Contracts with State-owned Enterprises." Development Discussion Paper no. 143, Harvard Institute for International Development. Reprinted in *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance*, edited by Prajapati Trivedi, pp. 52-71. New Dehli: International Management Publishers, 1990.

McFetridge, Donald G. (1985). "Commercial and Political Efficiency: A Comparison of Government, Mixed and Private Enterprises." In *Canadian Industrial Policy in Action* edited by Donald G. McFetridge, pp. 195-230. Toronto: University of Toronto Press.

Muir, Russell and Joseph P. Saba (1995). "Improving State Enterprise Performance: The Role of Internal and External Incentives." World Bank, Technical Paper no. 306.

Nellis, John R. (1989). "Contract Plans and Public Enterprise Performance" World Bank Discussion Paper no. 48. Published in 1991 as "Contract Plans: A Review of International Experience" in *Privatization and Control of State-owned Enterprises*, edited by Ravi Ramamurti and Raymond Vernon, pp. 279-323. Washington, DC: World Bank.

New Zealand Institute for the Study of Competition and Regulation (2000). "The Economic Performance of Five State-Owned Enterprises." Report to the New Zealand Treasury.

Organization for Economic Cooperation and Development (2005). *OECD Guidelines on Corporate Governance of State-owned Enterprises*. Paris: OECD.

Ostrum, Elinor, Larry Schroeder and Susan Wynne (1993). *Institutional Incentives and Sustainable Development: Infrastructure Policies in Perspective*. Boulder: Westview Press.

Park, Yong C. (1986). "A System for Evaluating the Performance of Government Invested Enterprises in the Republic of Korea." World Bank Discussion Paper.

Paul, Samuel (1983). "Training for Public Administration and Management in Developing Countries: A Review." World Bank Staff Working Paper no. 584.

Paul, Samuel (2002). *Holding the State to Account: Citizen Monitoring in Action*. Bangalore: Books for Change.

Pyrke, Richard (1981). *The Nationalized Industries: Policies and Performances since 1968*. Oxford: Martin Robertson.

Ramamurti, Ravi (1986). "Observations on the South Korean System for Performance Evaluation of Public Enterprises." Report submitted to the Government of Bagladesh and the United Nations. Reprinted in *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance*, edited by Prajapati Trivedi, pp. 564-580. New Delhi: International Management Publishers, 1990.

Ramirez, Carlos D. and Ling Hui Tan (2003). "Singapore, Inc. versus the Private Sector: Are Government-linked Companies Different?" IMF Working Paper WP/03/156. Washington, DC: International Monetary Fund.

Raw, Silvia (1988). "The Making of a State-owned Conglomerate: A Brazilian Case Study." *Public Enterprise* 8 (2): 123-145.

Redwood, John and John Hatch (1982). *Controlling Public Enterprises*. Oxford: Basil Blackwell.

Rees, Ray (1976). *Public Enterprise Economics*. London: Weider and Nicolson.

Robinett, David (2006). "Corporate Governance of State-owned Enterprises: Issues and Challenges in Emerging Markets." International Monetary Fund, draft working paper.

Ruiz-Mier, Fernando and Meike van Ginneken (2006). "Consumer Cooperatives: An Alternative Institutional Model for Delivery of Urban Supply and Water Services?" World Bank, Water Supply and Sanitation Working Note no. 5.

Sarma, J. Sreedhar (1982). "The Enterprise Contract System in Public Enterprise Management: The French Experience." Government and Industry in France: A Contractual Approach." *Institute of Public Enterprise Journal*. Reprinted in *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance*, edited by Prajapati Trivedi, pp. 206-215. New Delhi: International Management Publishers.

Schik, Allen (1996). *The Spirit of Reform: Managing the New Zealand Civil Service in a Time of Change*. Report for the New Zealand State Service Department and Treasury.

Shick, Allen (1998). "Why Most Developing Countries Should Not Try New Zealand Reforms." *World Bank Research Observer* 13 (1): 123-131.

Shahrokh, Roya June (1990). "The Contract Plan in Africa: A Census." In *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance*, edited by Prajapati Trivedi, pp. 269-309. New Delhi: International Management Publishers.

Shaikh, Abdul Hafeez (1986). "Performance Evaluation of Public Enterprises: Lessons from the Pakistani Experiences." Paper presented at the Association of Indian Economic Studies meeting, New Orleans. Reprinted in *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance*, edited by Prajapati Trivedi, pp. 455-480. New Delhi: International Management Publishers.

Shaikh, Abdul Hafeez (1988). "Public Enterprise Performance under Alternative Control Structures: An Industry Case Study from Pakistan." *Public Enterprise* 8 (3): 237-248.

Shaikh, Abdul Hafeez and Maziar Minovi (1995). "Management Contracts: A Review of International Experience." World Bank, Cofinancing and Financial Advisory Service Discussion Paper no. 108.

Shirley, Mary M. (1989a). "Evaluating the Performance of Public Enterprises in Pakistan." World Bank; Policy, Planning and Research Working Paper no. 160.

Shirley, Mary M. (1989b). "Improving Public Enterprise Performance: Lessons from South Korea." World Bank; Policy, Planning and Research Working Paper no. 312.

Shirley, Mary M. (1996). "Enterprise Contracts: A Route to Reform?" *Finance and Development* 33(3): 6-9.

Shirley, Mary M. and John R. Nellis (1991). *Public Enterprise Reform: The Lessons of Experience*. Washington, DC: World Bank.

Shirley, Mary M. and Lixin Colin Xu (1997). "Information, Incentives and Commitment: An Empirical Analysis of Contracts between Government and State Enterprises". World Bank, Development Research Group, Policy Research Working Paper no. 1769.

Shirley, Mary M. and Lixin Colin Xu (1998). "The Empirical Effects of Performance Contracts: Evidence from China". World Bank, Development Research Group, Policy Research Working Paper no. 1919.

Shirley, Mary M., Lixin Colin Xu and Maria Zuluaga (2002). "Reforming Urban Water Supply: The Case of Chile." In *The Economics and Politics of Urban Water System Reform*, edited by Mary M. Shirley, pp. 189-231. Amsterdam: Pergamon for the World Bank

Shirley, Mary M. and Patrick Walsh (2000). "Public versus Private: The Current State of the Debate." World Bank, Policy Research Working Paper no. 2420.

Siffin, William J. (1976). "Two Decades of Public Administration in Developing Countries." *Public Administration Review* 36:

Song, Dae-Hee (1988). "New Public Enterprise Policy and Efficiency Improvement." Korea Development Institute Working Paper no. 8811. Reprinted in *Memorandum of*

Understanding: An Approach to Improving Public Enterprise Performance, edited by Prajapati Trivedi, pp. 587-602. New Delhi: International Management Publishers, 1990.

Stifel, Laurence D., James S. Coleman and Joseph E. Black editors (1977). *Education and Training for Public Sector Management in Developing Countries*. New York: Rockefeller Foundation.

Stone, Donald C. (1965). "Government Machinery Necessary for Development." In *Public Administration in Developing Countries*, edited by M. Kriesberg. Washington, DC: Brookings Institution.

Sutherland, Alan D. A. (2006). "Efficiency Incentives for Public Monopolies: The Case of Scottish Water." Beesley Lecture. Water Industry Commission for Scotland.

Svensson, Jakob (2005). "Eight Questions about Corruption." *Journal of Economic Perspectives* 19 (3): 19-42.

Tomlinson, Jim (1994). *Government and the Enterprise since 1900*. New York: Oxford University Press.

Trevedi, Prajapati (1990). "The Theory and Practice of the Contracting Approach: Lessons for LDCs." In *Memorandum of Understanding: An Approach to Improving Public Enterprise Performance*, edited by Prajapati Trivedi, pp. 1-30. New Delhi: International Management Publishers.

Vining, Aidan R. and Anthony E. Boardman (1992). "Ownership versus Competition: Efficiency in Public Enterprise", *Public Choice*, 73 (2): 205-239.

Water Industry Commission for Scotland (2005). *The Strategic Review of Charges 2006-2010: The Final Determination*. Stirling: The Commission.

World Bank (1982). "Review of Training in Bank-financed Activities." Operations Evaluation Department report.

World Bank (1994). *World Development Report 1994: Infrastructure for Development*. New York: Oxford University Press for the World Bank.

World Bank (1995). *Bureaucrats in Business: The Economics and Politics of Government Ownership*. New York: Oxford University Press for the World Bank.

World Bank (2005). "Capacity Building in Africa: An OED Evaluation of World Bank Support." Operations Evaluation Department report.