

The Theory and Practice of Privatisation

By

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1. Introduction

The OECD has described 1998 as a record-breaking year for privatisation.¹ It marks the continuance of a remarkable trend. The extraordinary growth in privatisation is apparent from the OECD statistics presented in Table 1: yet if the comparison were backdated 10 years the growth would be even more dramatic. These statistics indicate that it is a phenomenon that is not restricted to countries with particular characteristics: rather, that it has been common across most countries of the OECD. Despite the common outcome, privatisation issues differ across countries that are at different stages of economic development or have different institutional arrangements.

New Zealand had a vigorous privatisation programme in the late 1980s and early 1990s. It retains large state-owned corporations that are suitable for privatisation, but as Table 1 indicates, its privatisation activity has been muted for much of the 1990s. This decline reflects political perceptions of the privatisation act as well as the resolution of property right issues, some of which arise from considerations of industry structure that is suitable for light-handed regulation, and some from the potential settlement of Maori claims on the crown. The purpose of this paper is to examine the theory and practice of privatisation, particularly as it pertains to New Zealand and Taiwan.

The term “privatisation” is interpreted widely. It can be as broad as a general change in the balance of private and public responsibility (Smith and Lipsky 1993, 188). It is often used to broadly describe a shift from government to private provision or management. For this paper, privatisation means the sale of real or financial assets by government to the private sector. Restricting attention to the sale of all or part of existing government corporations, narrows the definition further.

Privatisation is an important cornerstone of a broader process of economy-wide liberalisation. As such it is endogenous with the changing aspirations of individuals and political processes. It has implications for the economic efficiency of organisations, the functioning of markets, regulatory apparatus and the political process. Without insisting that technological change is exogenous, it is interesting to

¹ OECD *Financial Markets Report*, 1998.

Table 1: Amounts Raised from Privatisation, Various Countries, 1990-97

	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996p</i>	<i>1997e</i>
<i>Australia</i>	19	1267	1893	2057	2046	7966	9580	7100
<i>Austria</i>	32	48	49	142	700	1035	1251	1600
<i>Belgium</i>	--	--	--	956	549	2681	1221	900
<i>Canada</i>	1504	808	1249	755	490	3803	1762	2000
<i>Czech Republic</i>	--	--	--	--	1077	1205	994	700
<i>Denmark</i>	644	--	--	116	2815	12	382	100
<i>Finland</i>	--	--	--	229	1166	363	911	100
<i>France</i>	--	--	--	12160	5479	4136	5099	5300
<i>Germany</i>	--	325	--	435	240	--	13273	2600
<i>Greece</i>	--	--	--	--	--	--	529	1500
<i>Hungary</i>	28	470	720	1842	1017	3813	880	1000
<i>Iceland</i>	--	--	21	10	2	6	--	--
<i>Ireland</i>	--	515	70	274	--	157	293	--
<i>Italy</i>	--	--	--	1943	6493	7434	6265	6600
<i>Japan</i>	--	--	--	10060	5762	--	6379	8700
<i>Korea (South)</i>	--	--	--	817	2435	480	1849	1700
<i>Luxembourg</i>	--	--	--	--	--	--	--	--
<i>Mexico</i>	3124	10754	6866	2503	766	170	72	1900
<i>Netherlands</i>	699	179	17	780	3766	3993	1239	600
<i>New Zealand</i>	3895	17	967	630	29	264	1839	--
<i>Norway</i>	--	--	--	287	118	510	660	200
<i>Poland</i>	62	338	240	734	642	1516	495	3500
<i>Portugal</i>	1092	1002	2217	422	1123	2343	3824	3500
<i>Spain</i>	228	--	1491	2561	1390	2215	1877	11500
<i>Sweden</i>	--	--	378	252	2313	852	785	1100
<i>Switzerland</i>	--	--	--	--	--	--	--	--
<i>Turkey</i>	486	224	423	546	412	515	292	4100
<i>United Kingdom</i>	12906	21825	604	8523	1341	6691	6695	3300
<i>United States</i>	--	--	--	--	--	--	--	--
<i>OECD total</i>	24729	37770	17204	49032	42171	52162	68449	69600
<i>Global total</i>	29808	48183	37049	73008	60282	77220	87929	99600

speculate about the extent to which the drive for corporatisation of government enterprises and privatisation has stemmed from rapid technological advance vis á vis improved understanding of political economy and of the functioning of organisations and markets. Whatever the source of change,² the extent to which privatisation *per se* affects economic efficiency is one of the key microeconomic public policy issues of this decade.

In this paper the arguments for privatisation are reviewed in some depth. For competitive markets the view of Ballardur (1997, 54) that “The state has no legitimate grounds for assuming control over business in the competitive sectors of the economy. Everyone recognises this nowadays”, is accepted. For concentrated markets a separation theorem of Willig (1993) that means that in the presence of secure property rights a regulated private firm will perform in a superior manner to a public sector firm is also accepted. This theorem is discussed in some detail because it has explanatory power for empirical studies of privatisation in the presence of regulation, and implications for the form of regulation. The process and design of privatisation are discussed before briefly reviewing empirical assessments of privatisation. The paper starts with a section about state owned enterprises (SOEs), because these are the government entities that most closely resemble privatised firms.

2. State-Owned Enterprise

The governance of any enterprise is an important determinant of its performance. It determines the extent of centralised and de-centralised control and co-ordination and the concomitant balance of incentives and monitored rules and behaviour that are chosen for an organisation. De-centralised co-ordination of the activities of employees may be achieved by allowing them to act independently, even contract out, and to produce in response to incentives under minimal monitoring. Alternatively, a centralised approach to control and co-ordination provides explicit instructions and rules to agents and involves intensive monitoring to ensure compliance. The balance between incentives and monitoring will vary in response to the nature of the

² See Evans and Quigley (1998) for an analysis of the intersection between technological change and market governance.

organisation, the decisions and functions being undertaken,³ the importance of asymmetric information, and other informational issues in the particular market being considered.

The nature of services is an important determinant of optimal governance. Services that are hard to quantify and assess often require a different balance between incentive and monitoring contracts, and thus different concomitant governance structures, than those of measurable goods and services (Brock and Evans (1996), and Holmstrom and Milgrom (1991)). In addition, the number of objectives will influence the optimal governance structure. More than one objective may arise when objectives are defined over indicators of performance that are used in the presence of measurement difficulties. For New Zealand, it can be argued that measurability of output and numbers of objectives was a major determinant of the division between Government trading and non-trading activities. Health and education do not have measurable outcomes and they are characterised by asymmetric information. In New Zealand these activities remain largely funded by government.

However, for industries that produce quantifiable outputs (including the infrastructure network industries), measurability carries no special implications for the specification of their governance arrangements. In consequence, the private sector model of voluntary governance can serve as a benchmark for the application of the principles of governance to them, even if they are owned by government.

The position of government departments world wide is probably accurately portrayed by New Zealand's pre-1984 situation when government trading enterprises covered a huge range of activities – from printing services and agricultural produce, to postal services, banking and telecommunications. Their objectives were unclear; social objectives were not carefully delineated from business objectives and some, such as the Post Office that delivered mail, telecommunications and banking services, acted as provider and regulator. Departments were constrained in their operation by public service terms and conditions of employment, management and monitoring systems. Also, government very heavily influenced prices and choices of inputs and outputs.

³ Complementary activities and strategic planning, for example, are typically best carried out with a degree of centralized control in order to achieve gains in co-ordination, Milgrom and Roberts (1992, 106-113).

Departments were thus vulnerable to direct political pressure, and political constraints and actions were not applied in a transparent way.

In New Zealand the intention to improve performance in the provision of public sector goods and services was signalled in late 1984 when it was announced that there would be a "user pays" policy. There followed a series of government initiatives (see Jennings and Cameron (1987, pp. 124-127) for a detailed chronology). The government announced a set of reform principles for trading operations, which are encapsulated in the SOE Act of 1986. Existing SOEs are subject to the Companies Act 1993. SOEs formed under the SOE Act were intended to perform as closely as possible to private sector companies, and thus they make a very informative starting point for consideration of the effect of ownership on performance.

Under the 1986 Act each SOE is to function as a limited liability business. Management is to have standard commercial objectives, subject to the caveat that a Statement of Corporate Intent has to be accepted by the government each year. It sets corporate policy for the ensuing two years and other matters to do with facilitating monitoring. The Act provides for a Board of Directors accountable to the minister of finance, and another minister who would hold the shares. Employees of an SOE, as with all public sector employees, have no special terms and conditions of employment. By 1987 there were 14 SOEs, by 1992 27 had been formed and in 1998 there are 15 remaining. The formation of the SOEs required bundling their activities into a business entity and exchanging implicit contractual relationships with government for explicit contractual arrangements. Thus, they are organisationally in a position that is suitable for privatisation.

Because SOEs are subject to the same competition laws facing private enterprises and have no contracts giving preferential access to government procurement or finance, an SOE is on a similar footing to privately owned firms. However, they differ in a number of respects. These include

- An SOEs limited liability status is not entirely credible and it is unlikely that the Government will let a major SOE fail. This reduces incentives for efficient

prudent management. It also reduces monitoring of debtholders and possibly the cost of capital to these firms.

- SOEs do not have traded shares and thus are not monitored by the range of equity holders and analysts that scrutinise private sector company performance and there are not immediate tangible signals of performance as are rendered through equity prices. This also limits the range of incentive contracts that are available to reward managers - equity options, for example.
- The SOE's ongoing relationship to government, albeit much weaker than that of a government department, affects focus on business performance.⁴ First, the possibility of the introduction of non-business objectives is ever present and this reduces concentration on profit maximisation by SOEs: in the jargon of economics, it is simply very hard to make the business objective function of SOEs time consistent.⁵⁶ Secondly, Government can, and does in fact, influence investment, diversification and other decisions through the statement of corporate intent and its ownership. This influence detracts from the pursuit of business objectives subject to the provisions of competition statutes.⁷ Thirdly, the appointments process for board members of SOEs can result in directors that may take more cognisance of political issues than would those appointed in the private sector.

These are all impediments to company efficiency for which there are preferable treatments in the private sector: they thus provide arguments for privatisating SOEs. However, many SOEs that are privatised are of such size that they dominate their market and are likely to be regulated. For these the relevant comparison is between an SOE subject to behavioural directives and a regulated private company. This comparison entails the consideration of regulation and property rights.

⁴ Different political and economic efficiency outcomes of corporatisation and privatisation which arise in a game between politicians, The Treasury and the firm manager, involving the property rights to the cash flow of an enterprise, are pointed to by Shleifer and Vishny (1994).

⁵ For example, in 1997 the electricity transmission SOE Transpowers' objective function was changed to "economic efficiency".

⁶ To illustrate one form of this, McFetridge (1997,16) draws on Laffont and Tirole's (1993, 642-649) noncontractibility of manager's unobserved investments to argue that the state cannot commit (because of political objectives other than enterprise profits) to not appropriate a manager's unobservable investments that enhance their own and company profits: thus predicating low incentives for the acquisition of certain skills.

⁷ Brumby, Hyndman and Shepherd (1998) argue that restrictions on SOE investment and diversification limiting the size and scope of the company and that leave more activity to the private sector may be optimal when an organisation, for political reasons, is not for sale. An effect of this is likely to be inefficient production resulting from the selection of managers that would find such circumscription satisfactory.

3. The Economic Efficiency of Privatised State Enterprises

The discussion to date has taken market structure and business objectives as common to both state-owned and privatised firms and argued that there are a variety of reasons why the privatised firm should perform best. In the case where the firm is privatised into a (very) contestable market the firm will be constrained in its objectives by an absence of market power. In this circumstance, the efficiency of the firm and economic efficiency will coincide, to a close approximation: both the profit and economic efficiency performance of the privatised firm can be expected to be superior to the SOE.⁸ However, in countries such as New Zealand and Taiwan many of the firms that are owned by the state are in industries that historically have had natural monopoly characteristics and statutory restrictions on entry. This has resulted in SOEs that hold a dominant position in the market at the time of privatisation. Many of these firms have had network characteristics, where for all, or part, of the network it would be inefficient – or the size of the market would not support – parallel networks. For these firms the optimal regulatory and ownership structures are not so obvious because the relevant comparison becomes one of an SOE that has business objectives subject to government strictures on market conduct, with a privatised firm that has these strictures imposed by means of regulation.

3.1 Regulation

The appropriate regulatory structure for firms with dominant market positions is currently a matter of great controversy. A better understanding of the outcomes of past regulation and of political economy together with rapid technological advance have led to a re-examination of the feasibility and desirability of the standard network-industry regulatory paradigms. Technological change that has greatly reduced the cost of entry in network industries, and low-cost interconnection between different technologies, predisposes efficient regulatory schemes that permit and even encourage entry. These schemes must limit the objectives of regulation itself.

⁸ Indeed, if the market structure is the polar case of perfect competition an inefficient state-owned firm will not be viable without government subsidies.

For much of this century, regulation has been used to direct industries to meet social and political objectives. For example, in very many countries, New Zealand and Taiwan included, local telephone service rates to households have been cross subsidised by long distance and business rates. But if entry is to occur then regulatory regimes are constrained in the specific political/social objectives that they can fund. In telecommunications, entry by long distance carriers has meant that price rebalancing has had to take place as the source of funds for subsidising local service has diminished. If entry is to be facilitated for its beneficial effects on pricing and the introduction of new products, then the feasibility of providing in-kind subsidies for particular goods and services funded from within the industries will be severely circumscribed. Also, the provision of the goods and services via these subsidies can be viewed as transfers “in-kind”, and it is known that in general circumstances it is in society’s interest to supply these through the vehicles of tax and social welfare, rather than by the manipulation of markets (Calcott (1997)). Thus regulation should eschew transfers and focus on promoting efficient market conduct for dominant firms.

There are two distinguishable approaches for the control of the market conduct of dominant private firms. One consists of the traditional industry-specific regulation that is exemplified by rate-of-return regulation and has been the method of choice in the USA since 1912. The second is light-handed regulation wherein there is no industry-specific regulator and firms are simply subject to the enforcement of competition law. Both forms of regulation are subject to the threat of changes to the regulatory environment stemming from Government action, both are subject to judicial review and self-regulatory enforcement, and both can accommodate social goals while these are feasible.⁹ They are set apart by the fact that industry-specific regulation has

- An industry-specific regulatory body that sets regulatory parameters based on the performance of the industry, and
- Some statutory restrictions on entry.

⁹ Telecom New Zealand Limited is subject to New Zealand’s light-handed regulation, but it is constrained by the Government’s holding of one share that requires the company to provide local residential service that 1. Has a free local calling option, 2. Does not differentiate between urban and rural households and 3. Has an access fee that does not go up faster than the rate of inflation.

Of course, light-handed regulation requires competition law that does indeed systematically prohibit exploitation of a dominant position and certain market behaviours. In the case of New Zealand and Australia, competition statutes embody the view that competition is the appropriate discipline on market behaviour, and that this provides a basis for benchmarking acceptable behaviour.

3.2 Public versus Private, but Regulated, Firm

To focus on the comparison of the efficiency of state-owned firms that are subject to government directives with the efficiency of regulated privatised firms, the issues of capital market disciplines are not considered, although, as indicated above, they will be important in the final analysis. This comparison should recognise that in both firms the managers have information that the government and the regulator do not possess. This asymmetry of information greatly limits the range of effective actions that either the government can impose on its own enterprises or that the regulator can impose on the private firm.

The comparison is insightfully analysed by Willig (1993) who, using the work of Baron (1989), poses a social planner that designs a scheme for a regulator (of the private firm), and rules for a public official that oversees the SOE. He presumes that the asymmetric information problem is present in both cases to exactly the same extent. As the asymmetric information problem grows, the deviation between the two ownership and regulatory arrangements also grows; but the social planner can achieve more in the public interest under the regulated private firm than it can under the SOE scheme. The reason for this result is that the objective function of profit maximisation of the manager of the privatised firm, is more sharply defined as compared to that of the manager of the public enterprise, whose objectives will, in addition to profit maximisation, necessarily include placing some weight on political and social objectives derived from that manager's position in the public service. The potential additional objectives of the SOE manager renders the design of operational rules that achieve economic efficiency on the part of the SOE more difficult, and consequently the privatised but regulated firm is more efficient. There are two sorts of evidence that establish the import of this result.

Firstly, can the managers of SOEs focus on business objectives with the same intensity as managers of private firms? The evidence strongly suggests that the answer is no.

- Willig (1993) reports a Brazilian case where the government proposed to be competitively neutral towards private and public firms in the same industry, but could not resist providing the state firms with financial support,
- Hemming and Mansoor (1988) and Noll (1989) report on the nexus between politicians and regulators that suggest that SOEs and regulated firms will both experience politicised directives,
- Robinson (1992) reports that in the electricity industry it proved “impossible to have the arms-length relationship between nationalised corporations and government” despite the genuine, clearly enunciated intentions of the UK government, and
- for New Zealand railways that were under government ownership until privatisation in 1993, Orr (1981) reports that, during its first 100 years, there were 4 attempts to establish organisational forms that separated political and commercial decision making: all failed.

The closer political-management links of SOEs will be enough to establish Willig’s proposition even if there is some political input to regulation of a private company (Noll, 1989).

The second leg of this proposition requires that the manager of the private firm be committed to the business (profit maximisation) objective. This provides an essential ingredient for the superior economic efficiency of the private regulated firm. It requires unalienable property rights. If the institution of property rights is not firmly in place, even the managers of private firms may not commit to the profit-maximising objective. In economies where market institutions include Government commitments to property rights, privatisation insulates enterprises from political and interest group self-serving influences (Willig (1993)). This enables private companies, even if regulated, to perform more economically efficiently than SOEs in a world where the company managers know more about their businesses than does the regulator.

If the institution of private property rights is not credible then whether or not a public or private regulated firm is the more economically efficient will not be predictable.¹⁰ This credibility may vary to some degree across sectors. For example, for infrastructure sectors where the Government cannot, or will not, commit to private property rights that insulate private firms from arbitrary Government actions¹¹ that result from exigencies of a general sort, privatisation may not yield gains in efficiency: inefficient performance will persist under both ownership structures. The outputs of these sectors affect most consumers and offer the opportunity to be wide-ranging political instruments and thus suffer from arbitrary – from the point of view of economic efficiency – actions.¹²

Generally, in New Zealand and Taiwan the institutions of private property rights are well established and enforced. As a consequence, there will be efficiency gains from privatisation even if the private firm is regulated.¹³

The nature of regulation may be influential in enforcement of property rights. Evans and Quigley (1998) have argued that both the nature and the process of technological change imply that industry governance structures best incorporate devolved control and co-ordination as reflected in light-handed regulation. To take the simplest contributing factor, technological control is rendering changes in economies of scope that transcend historically quite different industries, making industry-specific regulation inadequate. It has been argued that the regulatory regime should not inhibit entry¹⁴, thus its feasible goal will not include transfers but will be that of economic efficiency. This factor suggests that light-handed regulation that relies on anti-trust actions under well-specified competition statutes is likely to be the appropriate form

¹⁰ Recall that the capital market disciplines of privatised firms are not be considered here; although it should be noted that the intensity of monitoring must be less, and the cost of capital higher, where there is uncertainty about property rights.

¹¹ In these industries it may in some cases be difficult to distinguish politically motivated actions from those that have the objective of improving economic efficiency.

¹² This may explain why the New Zealand central Government has not privatised its electricity SOEs and local governments have persisted with trust forms of ownership. It may be that central government cannot commit to the property right regimes that would yield benefits from private ownership even if these entities were regulated.

¹³ Although property rights have been respected by the New Zealand government in the recent past, most recently the proposed act to split the electricity lines and energy business without first conducting a serious analysis of the issues raises the prospect of arbitrary actions that do not fully respect property rights.

¹⁴ While, this will vary across industries somewhat as they are in different stages of the technological upheaval, networks are generally open to bypass of various forms and technological change has lowered the costs of interconnection even across technologies. For telecommunications there is open entry in almost all sectors of the industry; arguably even the local loop.

of regulation. In it, competition issues are considered in specific cases, no matter which industries they span.

It is relevant to note that in the USA the Hope Natural Gas Case¹⁵ established that industry-specific (rate-of-return) regulation must not confiscate private property. In fact, the preservation of private property rights is an important factor in dealing with “stranded costs” under industry-specific regulation. Because, under these regulatory arrangements entry has not been open, and because specific investments reflect past regulatory control, the by-pass and entry of other firms is now being constrained to protect the utilisation of infrastructure, and the concomitant profits, of the regulated firm: that is, to prevent stranded assets (see Brennan (1996)). While this is brief statement of a complex issue, it does suggest that when regulation is invasive, protection of property rights can inhibit change that is desirable on economic efficiency grounds. Thus, under Willig’s separation theorem, secure private property rights render unambiguous superiority to the regulated private firm over an SOE: but invasive regulation together with these rights may reduce efficiency. This is an argument for light-handed regulation.

This form of regulation relies on Willig’s separation theorem, or insulation from political opportunism, for effectiveness. Government respect for property rights raises the cost of any arbitrary action government takes, and this improves the focus on profit maximisation and thus the efficacy of privatisation. Government adherence to the light-handed regulatory scheme means that property rights are being enforced and thus it buttresses focus of private firm managers on their business goals with concomitant improvements in efficiency.

4. Privatisation: design issues

Selling public enterprises entails the exchange of the property rights of two fundamental components. One is the collection of assets and the second is the right to manage the enterprise. Government could privatise management and not assets by franchising the management function, and it could, sell the assets and retain the

¹⁵ Hope Natural Gas Case of FPC v Hope Natural Gas Co, (Supreme Court of the US, 1944, 320US391, b45.Ct,281,88 l.Ed.333).

management by selling stock that carried no voting rights. Three examples of non-cash components of bids are debt, voting shares (common stock) and non-voting shares (preferred stock). Other sorts of non-cash bids include leasing contracts and management buyouts (a form of franchising). In fact, there are a myriad of different ways in which (partial) privatisation can be structured.

The natural starting point for determining the appropriate structure is Maskin (1992) who has shown that selling by auction with exclusively cash bids results in efficient outcomes, both in terms of the revenue that is raised as well as in obtaining the right matching of managers.¹⁶ This result hinges on the general property of auctions, that auctions yield an efficient outcome where the seller does not know the best use or management for the asset. In the case of state-owned firms the final bids will reflect each bidder's strategy for the use of the asset and their assessment of the management team that the bidder proposes to assemble for the privatised firm. Thus, the winning bid is the value maximising bid that combines both these factors. Where a firm is privatised into a market that approaches contestability, this outcome will also be economically efficient.

Various authors have argued that there are wealth constraints in low-income economies such as those that formerly were centrally planned. Also, they have pointed out that the managerial labour market has been undeveloped in many of these economies. In an economy-wide constrained wealth situation, ability to pay – as opposed to willingness to pay - may determine the auction outcome and result in less economic efficiency from the operation of the privatised firm, as well as lower revenue to government than would be the case otherwise. While this issue is relatively important for low-income economies, it is by no means peculiar to them. Even in large developed economies the absorptive capacity of financial markets for IPOs has limitations.

Bolton and Roland (1992, 277) argue that where wealth is constrained the value-revelation function of auctions should be retained, but that better managerial matching and a higher government revenue stream will be produced by bids that include both

¹⁶ Unless stated otherwise, it is assumed that companies will be sold by a tender process that is equivalent to a sealed bid auction.

cash and non-cash offers. Permitting bids to include a balance of cash and debt, for example, relaxes the wealth constraint and thus facilitates bidding on a willingness to pay basis. If ability, rather than willingness, to pay determines the auction outcome, the efficiency of the privatised firm can be expected to be lower, and, concomitantly, the government must expect an adverse effect on the (present value) of its income. Indeed, because an improvement in enterprise efficiency is necessary (Harrison and Grimes (1989) and Hogan (1990)) for privatisation to improve the present value of the government's fiscal balance, a sale process that does not achieve gains in efficiency may worsen this balance.

The retention of the auction process and sale of the entire asset, albeit for cash and non-cash instruments, is an important difference between Bolton and Roland's (1992) proposal over that of gradual privatisation where the Government retains some equity holdings that may decline over time (see for example Blanchard et al (1991) and Bos (1993)). The gradual process does not facilitate the acquisition of efficient management and it retains some of the disadvantages discussed previously of Government ownership.

There are significant implementation issues where bids have cash and non-cash components (Bolton and Roland (1992)). These include the design of the non-cash component to retain sharp incentives for investment efficiency on the part of the firm and also in the evaluation of bids with multiple characteristics. The evaluation requires assessment of trade-offs between cash and non-cash components, and it requires additional subjective judgement over the case of pure cash bids.¹⁷

Cornelli and Li (1997) argue that in certain circumstances there can be opportunism by private sector purchasers of state assets that has implications for the way in which privatisation should be designed. They consider that there is scope for opportunism by foreign owners that would reduce economic efficiency and yield private gains that are not appropriable by domestic shareholders,¹⁸ although they do suggest that this is

¹⁷ However, note that multiple-characteristic auctions (tenders) are routinely evaluated in Government procurement contracts, and they are used where the wealth constraint is unlikely to be a consideration (see McMillan (1991) for a discussion of the multiple-characteristic auction of television rights for the 1988 Seoul Olympics).

¹⁸ In fact, the examples they cite do not have obvious inefficiency implications: eg the case of a foreign firms entering and shutting down a local factory, or disposing of a local brand name.

most likely to be a problem where markets are underdeveloped, rather than in an economy which is not wealth constrained and which has well-functioning market institutions. They postulate that in this situation the government faces a trade-off between revenue raised and economic efficiency, that is modelled by a weighting scheme. They conclude that, where the economic efficiency of privatisation is negatively related to the extent of private interest, the number of shares issued to the winner should be an increasing function of the level of the winning bid. Given the weights of the government's objective function, this procedure aligns more closely the winning bidder's plans with the preferences of the government.

The arguments of Bolton and Roland (1992) and Cornelli and Li (1997) retain the tender process for the privatisation of SOEs but define the auction over different elements to accommodate wealth constraints within an economy and opportunism on the part of (foreign) private owners. The argument of Cornelli and Li (1997) does not carry over to economies which are not wealth constrained and which have well-functioning capital markets and effective competitive and regulatory regimes. Wealth constraints can be eliminated by opening, indeed encouraging, bids from all potential owners, including foreign sources. Under these circumstances the result of Maskin obtains, and cash bids will serve both the efficiency and revenue raising objectives.

4.1 Allocation of Equity

A shareholding that is, at least at privatisation, diffuse across the population can be achieved by IPOs. However, there is normally a loss in government revenue as compared to other approaches, because IPOs are typically underpriced. Baron (1982) explains this by investment bankers having more information than the issuing companies, and Ritter (1985) and Rock (1986) explain it with a second asymmetric information problem where there is a division between informed and uninformed agents. Informed investors only subscribe to underpriced floats, and underpriced IPOs are issued to compensate them for their losses on overpriced floats.

The Coase (1960) theorem that the allocation of property rights does not affect efficiency of the outcomes may not apply where there is asymmetric information and/or moral hazard. This seems to be the case for equity. Elements of the finance literature, starting with Jensen and Meckling (1976) and developed by Stulz (1988) and others, argue that the extent to which the owning of equity is diffuse affects a listed company's value. The more shares held by an insider, the sharper are the incentives of the large shareholder to monitor and influence the company. The holders of fewer shares benefit from the more intensive monitoring. However, as the proportion of equity held by the insider rises, the probability of a hostile takeover, and hence managerial discipline, diminishes. In consequence, it is argued that the value of the company first increases then declines as the percentage of equity held by one insider increases. The turning point is less, perhaps much less, than 50%, at which point the company would be immune from takeover.

McConnell and Servaes (1990) provide evidence of this effect estimated from firms on the NYSE and the AMEX stock exchanges. They conclude that the effect does exist where shares are held by members of the Board or by institutional investors, but not when shares are held passively in large blocks.

The importance of this literature for privatisation is that there may be benefits in not privatising by means of IPOs, but rather by tendering the company as a whole or in large part. The benefit would include the extra revenue to government as well as the ability to incorporate in the tender new management and expertise. Stoughton and Zechner (1998) explain how moral hazard on the part of small-investor monitoring provides an incentive for the investment manager to favour large investors, either in price or by rationing when differentiated prices are not permitted, to the benefit of the seller. The optimal approach is not settled, although there is a consensus that large investors and their monitoring and/or control brings benefits in efficiency and in revenue to the seller. Because of the public good nature of monitoring, Mellow (1998) advocates the unusual step of first selling a portion of the equity under an IPO and subsequently selling the remainder as concentrated shareholdings. They argue that large shareholdings would be difficult to obtain in the secondary market following a full IPO because of free-riding on monitoring. The initial IPO sale means that the concentrated shareholder has to bid more vigorously than if it was guaranteed a

controlling block. The seller benefits from the concentrated buyer and from incentivising it to bid for its interest contingent upon the presence of other shareholders.

New Zealand has typically chosen to tender all equity to a single buyer subject to the requirement of a subsequent public offering. For example, in the cases of both Telecom New Zealand Ltd. and New Zealand Rail Ltd. the purchasers were dominated by foreign companies and they were required to sell down their holdings to less than 50% within a specified period of purchase.

4.2 *Foreign Ownership*

A key argument for admitting (potential) foreign ownership is the increased number of bidders and the concomitant relaxation of the domestic wealth constraint. In addition, it facilitates the transfer of international industry-specific expertise to the domestic firm and this will increase revenue raised as well as resultant economic efficiency: the sale price will reflect the relative technological expertise of the bidders as well as their management and strategic plans for the company. Potential ownership by foreign companies also broadens the managerial labour market.

Taiwan has foreign ownership restrictions: in telecommunications, foreign holders of stock are limited to a maximum of 20% of equity in the Type I class of telecommunications providers (Shin-Horng Chen (1997)). Foreign ownership has been permitted for New Zealand privatisations, but it has remained politically controversial and it is therefore worthy of further comment.

Providing the sale process markets the SOE widely and property rights in the country are secure, Maskin's (1992) result suggests that the purchase price will reflect fully discounted expected cash flows. These will include anticipated gains in efficiency. The subsequent flow of dividends to foreign markets represents the servicing, at equity rates, of the initial provision of foreign funds to purchase the company.¹⁹ The government has received a purchase price that includes anticipated efficiency gains,

¹⁹ This discussion makes the simplifying assumption that the company is purchased by foreign investors that purchase the company with foreign exchange and, with no retained earnings, take dividends out of the country.

and if these are larger than those anticipated as an SOE the present value of government revenue will be higher than if it had not sold that SOE (Harrison and Grimes (1989) and Hogan (1990)).²⁰ In this scenario there are gains in efficiency as well as in government revenue. The key to a desirable outcome from the sale of an SOE is to not limit the source of potential bidders. Given the advanced state of market institutions in Taiwan and New Zealand, this will require (potential) foreign ownership.

It should also be noted that where firms' shares are listed in foreign share markets there will be some increased monitoring of that firm's activities. In addition, the different listing requirements of different markets may extend information disclosure requirements and the reporting that the firm must provide. Also, where there is not frictionless arbitrage between international financial markets, foreign share market listings provide a "thicker" market for shares and this may lower the cost of capital. Listing shares of the privatised entity on foreign stock exchanges is likely to improve economic performance.

In New Zealand, public opinion surveys suggest that there is a significant proportion of voters that oppose the privatisation of government assets. This is manifest under the current government's coalition agreement that lists a set of "strategic" assets that it will not sell. These, include for example, state electricity generators. Neither the meaning of "strategic" nor the reasons for the public opinion are clear. The "strategic" assets are typically in infrastructure industries that affect directly a large number of consumers, and it may signify that the government would not be committed to private property rights in them. If so, then - according to Willig's separation theorem - retention as SOEs will simply be to continue with inefficiencies, many of which would persist under privatisation. Public opinion may reflect the use of the sale proceeds as much as a view about privatisation. New Zealand has used the sale proceeds to retire debt. If there are efficiency gains so that the sale generates extra revenue, there may be a perception that this will not be reflected in benefits, but rather

²⁰ This statement presumes that the company tax revenue to government is neutral as between domestic and foreign ownership, or that if there is any advantage in this respect to foreign owners it is competed away through the bidding process. It also presumes that the discount rate for government and private enterprise is the same: this is justified in the appendix.

in taxes, and thus that some groups may not benefit directly from the sale.²¹ It, and the existence of “strategic” assets, may also reflect New Zealand’s past dependence on the political process, including that of political interest groups, for the management of these assets, and these groups are adjusting only slowly to market determined allocations. Finally, the broad-based ownership that is represented by IPOs is likely to be more politically appealing, but it does carry the costs of a diffuse share ownership that have been discussed.

Prospects for privatisation in New Zealand are uncertain: it is noteworthy that some infrastructure privatisations are being carried out – currently central government’s controlling share in Auckland airport is being sold.

4.3 *Sale Process*

The sale process is where the auction, broadly defined, is actually implemented. Given the robustness of the efficiency of open (English) auctions, the sale process for an SOE is generally best conducted by a process that elicits information for the seller.²² This can be achieved by processes such as book building (Benveniste, and Wilhelm (1997)).

Single-round processes are generally used to sell SOEs, but multiple-round auctions are more effective, where, as in the US spectrum auctions (McAfee and McMillan (1996)), and New Zealand forestry sales, a number of lots are for sale and maximum value requires the co-ordination of the acquisition of different lots.

The sales process in New Zealand has typically been a two-step process under a sequence in which;

- the potential sale is promoted using publicly available information,

²¹ The privatisation design could incorporate arrangements that distributed some share of equity to a (subset of) the populace – perhaps by targeted vouchers – at some cost to government revenue.

²² Maskin (1992) points out, the English (open) auction approach wherein bidders learn of others bids, is formally more robust against particular deviations from the typical assumptions of formal auctions. The highest (sealed) bid approach may be desirable when there are very few bidders (see McAfee and McMillan (1987), and perhaps when commercial components are of a proprietary nature. Nevertheless, even with asymmetric bidders open bidding will generally be efficient even if it does not yield the greatest revenue (McMillan pers. com.). Bidders themselves sometimes argue for open bidding.

- a private information document is provided to parties that have signed a confidentiality agreement,
- (step 1) parties submit indicative bids,
- a short list of parties is then chosen and these can conduct due diligence on the SOE,
- (step 2) parties from the short list may submit final binding bids based on a draft sale and purchase agreement previously agreed with each party during due diligence, and
- the successful bidder would generally be the highest bidder, assuming that other bid features are the same. In practice decisions have been determined on the basis of other features that might include the proposed financing of a joint venture bid.

This process mimics to a considerable degree the book-building process advocated by Benveniste and Wilhelm (1997).

The rules for the sale process should be clear at the outset, and they should be rigidly adhered to. Rules that are not credible can arise if the government, in previous sales, has departed from its sales process rules. Rules that are not credible introduce the very real possibility of strategic games that may not result in revelation of true willingness-to-pay in any one sale.

5. Privatisation: the empirical record

This paper has focussed on the transfer of an SOE to the private sector. Estimating whether or not this is efficient is a task that has been vigorously examined and analysed. To fully evaluate the entire body of literature and evidence available on the success of privatisation would be an immense task. In this section of the paper, the summaries of surveys of privatisation studies are used to examine points made in the previous discussion.

The task of reviewing the entire literature on the efficiency of privatisation is made more daunting by the fact that very few studies are, for various reasons, conducted on

standard basis. Some of these reasons are obvious from the following list of key ingredients of any analysis of the economic efficiency of privatisation.

- The welfare analysis should be conducted as though it was an *ex post* cost-benefit analysis of the privatisation act.²³ This captures static welfare changes, and it can provide input to the assessment of dynamic welfare change. Often assessments of privatisation examine a subset only of the elements of cost-benefits: eg. x-efficiency or rate of return.
- Specification of a credible counterfactual against which the extra benefits and costs of privatisation can be assessed is difficult. Because, in market economies, privatisation usually occurs in very concentrated sectors that are often regulated, and because the regulatory and competition environments differ across countries, the counterfactual necessarily involves judgement that entails an estimate of how well an SOE would have performed. “Before versus after” privatisation studies ignore that path of change that the SOE would have undergone in any event.
- Finally, case studies of privatisation are very demanding of data and resources.

To these standard issues should be added the actual measurement of performance in different, perhaps multiple, market structures. The outcomes from the privatised firm and the counterfactual will depend upon the firms’ interactions with their suppliers and customers in ways that affect performance. Modern industrial organisation tells us this can be complex and very difficult to quantify (eg. unobserved complementary quality changes) and it will in some instances be very difficult to measure the outcome against a robust counterfactual. It also suggests that studies that evaluate a subset of the components of welfare may be misleading. For example, measured comparisons of x-efficiency may attribute relatively less efficiency to those firms that provide product variety that consumers value. The vigorous pursuit of (potential) customer demands in all relevant dimensions is one rationale for privatisation (Beesley and Littlechild (1992)).

²³ The welfare gains will be the sum of changes in profits, consumer surplus, and rents to input suppliers. The contribution to the (present value) of the government’s fiscal position is a separate but useful contribution to a full evaluation. In fact, it also has direct efficiency connotations. If the privatised firm’s efficiency improves beyond that of its SOE status, then the government’s budget constraint will be relaxed. This will have efficiency consequences if taxes are lowered, or welfare enhancing expenditure is incurred as a consequence: these can be approximated by applying a multiplier to changes in government net revenue that results from privatisation. Other multipliers can also be applied to capture welfare implications of the incidence of costs and benefits (see Galal, Jones, Tandon and Vogelsang (1994, ch.2)).

There is uncertainty about the interpretation of the actual performance path as well as the counterfactual. Setting aside de-regulation, other factors such as the state of an economy's business cycle, will affect the performance of the privatised entity and the counterfactual in ways that are difficult to assess. Thus, even with carefully conducted studies, a variety of them will be required to definitively determine the assessment of privatisation.

5.1 International Evidence

Table 1 in the introduction of this paper, gave credence to the fact that privatisation is an increasingly attractive option for governments. It is not possible to conclude on this basis alone that privatisation is the optimal course of action. The bulk of privatisations are relatively recent and evaluation of these is difficult. As is noted by McFetridge (1997), controlled experiments are not available, so cannot be used for such an analysis. Quite often at the time that privatisation has occurred, there have been other factors, in particular deregulation, that confound measurement of the outcomes. In this case, there is difficulty in determining whether it is the change in competition, or the nature of ownership, that ultimately affects productive efficiency.

In the analysis of empirical evidence it is clear that the process of corporatisation and deregulation improves the efficiency of firms and the economy.²⁴ However the contribution of a move to privately owned corporations is less clear. There are comparative complications such as the regulatory environment, and the contestability of the market that confound this comparison, but in broad terms international evidence is consistent with the idea that there are efficiency gains from moving to private ownership. McFetridge (1997) presents a thorough overview of the available empirical studies and comes to three conclusions. The most relevant one for this discussion is that privatisation is part of a broader process of market liberalisation, and although the marginal effect of privatisation is difficult to determine, the weight of the evidence is to the effect that this process is efficiency enhancing.

²⁴ McFetridge (1997, p62).

McFetridge does acknowledge the importance of the regulatory environment and suggests that regulation may in fact weaken the incentives for private ownership. This is consonant with the discussion of Willig's separation theorem and Nolls' (1989) evidence that regulators and politicians have strong links. Vining and Boardman (1992) support this view by saying that the reason some studies have failed to find an improvement in efficiency due to private ownership is because of the environment in which these enterprises find themselves. Many of the studies; a) encompass those industries that have geographic monopolies and therefore cannot tell us about the effect of ownership in competitive environments, and b) examine, sometimes officially sanctioned, duopolies where again the environment does not include competitive entry.

Domberger and Piggott (1994) give another view and question whether competition plays a greater role than ownership in promoting productive efficiency. Although finding that evidence provides weak support for privatisation, they explored surveys that failed to find superior private enterprise performance and concluded that these public firms faced a competitive market environment. Hence, they concluded that efficiency gains from privatisation essentially arise out of the interaction of product and capital market pressures and the deregulation of a highly protected market may improve public-sector performance without ownership transfer.

Vining and Boardman (1992) assert that ownership does matter. They reject the suggestion that it is competition alone that results in efficiency, and put forward evidence from Canada that confirms the importance of ownership. A table is produced in their paper that sets out the empirical results of 90 studies on relative efficiency of public and private corporations - with overwhelming support for the private corporation being more efficient. The overall conclusion being that ownership is of utmost importance for technical and allocative efficiency.

This paper's summary of the evidence supports the view of Vining and Boardman and other recent studies that compare the performance of individual firms before and after privatisation - where it is evident that privatisation is preferred. One of these is a study by Megginson et al (1994) where 61 privatised companies in 18 countries showed that in at least two thirds of divestitures, privatisation led to increases in profitability,

sales, operating efficiency and capital investment. Another is a very thorough study by Galal et al (1994), supported by the World Bank. It investigated the welfare effects of privatisations of 12 companies in four countries, and found that net welfare increased in 11 of the 12 cases. They assessed the benefits as follows:

- *Workers:* in 10 of the 12 cases, workers as a group gained (eg from higher wages), with no corresponding losses. Some individual workers were made worse off where there were lay-offs, although the losses were generally partially offset by redundancy pay. Also, Galal et al noted that divestiture can be managed so as to make workers no worse off;²⁵
- *Consumers:* Consumers as a group lost in 5 of the 12 cases, but these losses were only substantial in 3 cases, and all occurred in Mexico. Consumers gained in 4 cases, which has been attributed to increased investment and the resulting expansion of services;
- *Government and buyers:* In all cases, profits rose in partially privatised companies for vendor governments and the buyers, however distribution was less uniform. The fiscal impact was positive in 9 of the 12 cases, with the negative impacts occurring in the 3 Mexican government divestments; and
- *Competitors:* As most of the enterprises studied were near or complete monopolies, there was little opportunity for competitors to lose or gain. The case studies did not specify the extent of new entrants to the market after privatisation.
- *Foreigners vs nationals:* Overall, nationals gained more than foreigners. There were 3 cases where foreigners lost, and only 1 where nationals did.

Galal et al examined the primary sources of welfare gains and losses from divestiture , and the most important points to note, in our opinion, are the following:

- *Productivity* increased in 9 of the 12 cases, and did not fall in any. In 4 of these 9 cases, the increase was due to better management of the same workforce. In 3 of the cases, the productivity increases were mainly due to workforce reductions.

²⁵ Megginson, Nash and van Randenborgh (1994) found that employment generally increased after privatisation, whereas Haskel and Szymanski (1993) found that commercialisation caused a decrease in employment. While changes in employment and other factors listed here are of relevant interest, they are but a component of welfare.

- There were *Output price* changes in 7 of the cases, and these changes tended to be welfare enhancing due to a move toward more efficient pricing.
- It is interesting to note this study showed a large part of the gains following privatisation were external to the enterprise, and that approximately three quarters of the welfare improvements came from revised output prices and an increase in hiring and investment flexibility. Also, as expected, the nature of the welfare effects differed among the cases – due to initial conditions, policy, and characteristics of the sale transaction.

There are also other theories and ideas that support the move towards total private ownership. As already suggested in an earlier part of the paper - evidence from Willig(1993), Hemming and Mansoor (1988), Noll (1989) and Robinson (1992) shows that managers of state owned enterprises cannot focus on business objectives with the same intensity as managers of private firms. In fact, Table 2 of Boardman and Vining (1992) is, based on exceedingly crude inference, supportive of this proposition. The electricity sector is one of the most heavily regulated sectors and of all the industries reported in that table, electricity has the highest proportion of studies for which “no difference or ambiguous results” are obtained.

In the 1996 World Development Report, it is concluded that ownership matters - but that the need to privatise is not urgent in all settings - ie. slower privatisation is viable in countries where the government or workers themselves have some control, and therefore the risk of corrupt managers is minimal.

After an analysis of the evidence available on the effect of privatisation, it is possible to make a general conclusion. As mentioned earlier, McFetridge (1997) points to the process of market liberalisation as improving the efficiency of an economy. Privatisation is part of this process, and because of other changes in economies at the time of privatisation, it is difficult to separate the effects of a change to private ownership. By looking at the different surveys that have attempted to measure the efficiency gains of privatisation – namely ‘before-and-after’, and contemporaneous comparisons - McFetridge concludes that by their method alone, their results can differ. However, they are suggestive that the introduction of private ownership

accompanied by a less rigorous and ‘light-handed’ regulatory regime will result in an increase in productivity, and hence an improvement in efficiency.

5.2 New Zealand Evidence

As stated earlier in the paper, privatisation in New Zealand started in 1987. Government departments and entities were corporatised into SOEs with the intention that the government ownership of the enterprises be the same as what occurs with ownership in the private sector. Subsequently there was further liberalisation with changes in ownership to the private sector. See Table 3 for details of these purchases. The reasons for transferring ownership from the public to the private sector have been to remove risk from the Crown balance sheet, reinvigorate business, and benefit from the reduction in national debt²⁶. And as suggested by the 1996 World Development Report, privatisation of the SOEs was required, to “lock in” the gains of enterprise reform. Here the evidence supports the position of “ownership does matter” - the World Bank suggests that it was easy for the New Zealand government to enforce commercial objectives on its enterprises during “tough times”, however, when things became easier or a political need arose, managerial autonomy became less important. Subsequently the need for private ownership is created, so that the correct incentives are in place for commercial objectives to be attained, and efficiency to be increased.

There is a lack of extensive empirical evidence available on the impact of private ownership on New Zealand enterprises, but what is accessible suggests that a move to private ownership has had a positive effect on the efficiency component of them. Based on indicators, Duncan and Bollard (1992) conclude the effect of corporatisation has been improved productive and allocative efficiency. In addition, by 1992 proceeds from asset sales had retired one fifth of New Zealand’s overseas debt (Duncan and Bollard (1992)). Trying to determine the individual effects of corporatisation, deregulation and privatisation on enterprises has proven difficult in the analysis of NZ SOEs.²⁷

²⁶ Duncan, *Public Enterprises* in “A Study of Economic Reform” eds Silverstone et al.

²⁷ Duncan and Bollard (1992) p63, comment on the impossibility of separating the impact on performance of institutional change from the impact of the external environment.

Table 3: Amounts Raised from Privatisation in New Zealand²⁸

<i>Business</i>	<i>Sale Price</i>	<i>PURCHASER</i>	
		<i>Ownership (private- 'P'; local govt. - 'LG')</i>	<i>Foreign(F) Or Domestic(D)/</i>
<i>New Zealand Steel</i>	327.224	P	D
<i>Petrocorp</i>	801.059	P	D
<i>Health Computing Service</i>	4.250	P	D
<i>DFC</i>	111.280	P	D/F
<i>Post Office Bank</i>	678.478	P	F
<i>Shipping Corporation</i>	31.734	P	D
<i>Air New Zealand</i>	660.000	P	D/F
<i>Landcorp Financial</i>			
<i>Instruments</i>	77.000	?	D?
<i>Rural Banking and Finance Corp.</i>	687.500	P	D
<i>Government Printing Office</i>	38.581	P	D
<i>National Film Unit</i>	2.500	P	D
<i>Communicate NZ</i>	0.064	P	D
<i>State Insurance Office</i>	735.000	P	F
<i>Tourist Hotel Corporation</i>	71.850	P	D
<i>New Zealand Liquid Fuel Investment Ltd/Maui/Synfuels</i>	257.054	P	D/F
<i>Telecom</i>	4250.000	P	F/D
<i>Forestry Cutting Rights</i>	1027.055	P	D/F
<i>NZ Timberlands Ltd</i>	366.000	P	F
<i>Export Guarantee Office Ltd</i>	17783.5	P	F
<i>Government Supply Brokerage Corp(NZ) Ltd</i>	3.200	P	D?
<i>Housing Corporation Mortgages</i>	2175.928	P	D/F
<i>Taranaki Petroleum Mining Licences</i>	121.136	P	D/F
<i>BNZ</i>	849.946	P	F
<i>New Zealand Rail</i>	328.191	P	D/F
<i>Wrightsons Rights Fletcher Challenge Limited Ordinary Division and Forest Division shares</i>	3.449	P	D/F
<i>GCS Limited</i>	418.059	P	D/F
<i>Waikato Regional Airport Limited</i>	46.991	P	F
<i>Oamaru Airport</i>	2.125	LG	
<i>Te Kuiti Airport</i>	.040	LG	
<i>Timaru Airport</i>	.000001	LG	
<i>Maori Development Corporation</i>	.000001	LG	
<i>The Radio Company Limited</i>	20.930	P	D
<i>Forestry Corporation of New Zealand Ltd</i>	89.000	P	D
<i>Works and Development Services Corporation</i>	1600.000	P	D/F
	108.000	P	D
<i>Total</i>	<i>15913.905</i>		

²⁸ Information sourced from Treasury NZ information on sale of government assets: 1985-1997.

Boles de Boer and Evans (1996) carried out an extensive investigation of the corporatisation and subsequent privatisation of Telecom New Zealand, and found that from 1987 - 1993 total factor productivity increased by 9.5% per year resulting in real average cost reductions of 5.6% per annum. They also calculated overall welfare gains that accrued to consumers over this period and estimated them to be most substantial, although the company also performed well for its shareholders. Boles de Boer and Evans also recognised that it was hard to separate the effects of deregulation from privatisation, but assert that the productivity gains since privatisation had been at least that of the SOE period.

Deregulation itself improves the performance of firms, as illustrated by the situation in Taiwan. Since the opening up of the telecommunications market, operators have been forced to become more efficient and more competitive. There has been significant investment of private capital.²⁹

6. Conclusion

There is no reason to expect a state-owned firm to perform more efficiently than a private company, all else held constant. Nevertheless, the success of privatisation, either in theory or in practice, is dependent on the regulatory regime and security of property rights. Where these rights are not secure, regulated private firms may perform similarly to state-owned firms. While empirical findings offer tentative support for this conclusion, this issue requires deeper empirical and theoretical investigation.

When this conclusion is combined with the fact that privatisation is usually part of economy-wide economic liberalisation, it is not surprising that empirical work has difficulty in separating out the welfare effects of privatisation per se. There is general agreement, again in theory and practice, that deregulation and concomitant increases in competition predispose efficiency gains, irrespective of the form of ownership. Open entry is one of the key distinguishing features of light-handed regulation. In

²⁹ Chen, 1997, p105.

common with all market-power regulation, secure property rights are required for economically efficient performance, but invasive regulation under these rights can also have efficiency costs. This suggests that economic performance will be enhanced by privatisation and light-handed regulation, in the presence of secure property rights.

Appendix: The Cost of Capital

The cost of capital to any enterprise is critically important because it determines the value of the firm – in the calculation of value as the net present value of the entity's expected cash flow into the future. In addition, it is a management tool that aids investment decision-making. Investments should be carried out only if their discounted cash flows at the entity's cost of capital are positive.

There is a literature in economics that argues that the public discount rate differs from that of the private sector and this has led to controversy about whether or not the cost of capital for entities in the private and public sectors are the same. The issue is critically important. If it is lower for government held firms, as argued by Quiggin (1995), then entities will be of higher value in the public sector than under private ownership, and government entities should carry out investments that are in addition to those of the private sector entity. In fact, the SOE cost of capital is the same as the private sector's pre-tax cost of capital (Hathaway (1997)). In consequence, the cost of capital is not an issue in evaluating the case for privatisation. Nevertheless, the matter has been the subject of public policy debate and hence it is worthwhile sketching the basis for the conclusion.

The cost of capital for any company is a weighted sum of the cost of equity and the cost of debt, termed the WACC.³⁰ Hathaway (1997, 156) lists and discusses key points that need to be recognised in determining the relative cost of capital for private and government entities. The list includes the following points.

1. Because the value of equity in SOEs is only market priced when they are privatised, the risk and market price of government equity holdings cannot be observed,
2. The market return for risk should be included in the SOE cost of capital. This applies to both the equity and debt components.

³⁰ The weights are the proportions of the enterprise value that is represented in debt and equity respectively.

3. The cost of capital should be adjusted for different taxation obligations of government and private sector entities.
4. The market price of government debt should not be applied directly to the calculation of an SOE cost of capital because it reflects the ability of the government to guarantee its obligations, including the servicing of debt, by means of its power to tax.
5. The low government cost of debt is the consequence of the guaranteed service cost of debt, whereas SOE valuation and investment appraisal should reflect the cost of applying the funds.

Each of these points is commented upon in what follows. Considered jointly, they make the case that the cost of capital is dependent upon the project under consideration in the usual way, and no distinction need be drawn between government and public ownership in its calculation.

Unobserved Valuation of Government Equity: For companies listed on stock exchanges the cost of equity is indicated by the price of its shares. Ruling out the situation where partial privatisation has taken place, government equity in SOEs, no matter the balance of debt and equity, is not priced. Thus, government equity is typically priced as the present value of its expected cash flow (ie. its DCF). This is common practice in any event where a project or a company does not have its cost of equity priced. In the case of companies this may occur, if the company is being changed significantly, or there are not similar companies traded in the market place. SOEs will often exist where there are no comparable firms (eg. an electricity transmission system), thus this route to estimation of the value of equity will not be available, and DCF must be used.

The Risk of SOE Equity: Risk free rates should not be used to evaluate SOEs or their investments (see Bailey and Jensen (1972)). No owner, including the government, can diversify away the all the risk of an investment. Systematic risk is specific to the investment and not the owner and it will remain no matter what aggregation of individuals own the asset. Because the expected rate of return of the asset will be the risk free rate plus the adjustment for systematic risk that is common across owners,

there is no reason to differentiate between government and private investor ownership in calculating the expected rate that enters the WACC.

Hathaway (1997,158) makes the point that for private sector assets, investors choose to accept the risk attached to their investments. In the case of SOEs, taxpayers are forced to carry the risk attached to SOE ownership. For welfare calculations therefore, SOE investments should cover the risk that these investors would require if they were to voluntarily invest in the asset: but this is the expected return described above. Again there is no reason to differentiate between government and non-government ownership in the calculation of the WACC.

The Tax Wedge: The appropriate tax adjustments for private sector and SOE costs of capital depend upon the precise tax treatment of entities under each form of ownership. The tax treatment of SOEs does not enter the adjustment directly, because the tax payments are made to the owner of the SOE entity. Thus, assessing the tax treatment can presume that SOEs pay no direct, ie company, tax.

The pre-tax cash flows of an investment or an entity are unaffected by the tax status of the owner. These will be the same in the public and private sectors.

The appropriate tax treatment has been resolved by Baumol et. al. (1983). The social opportunity cost of capital is the rate at which society is prepared to substitute consumption today for consumption in the future. At this discount rate the value of forgone current consumption goods equals the present value of future consumption goods. Because the private sector pays tax it treats tax as a cost of any investment. Thus, if SOE investment replaces private sector investment the opportunity cost will be the cost of the good and the forgone tax. If government investment is replaceable by private investment then the appropriate SOE discount rate is the private sector's pre-tax opportunity cost of capital.

Evaluating government investments on a pre-tax basis and private sector investments on a post-tax basis does not insert a wedge between valuations in the two sectors. On a pre-tax basis, the government enjoys the same pre-tax cash flow at the same cost of capital as the private sector. Discounting post tax cash flows at the post-tax interest

rate is consistent with discounting the concomitant pre-tax cash streams at the pre-tax discount rate. SOE valuations can also be conducted on a post-tax basis. Hathaway (1997,160) notes that specific adjustments have to be made to the SOE cost of capital depending upon the specific characteristics of the tax system, and provides the example of tax imputation credits.

Government Cost of Debt: The government's borrowing rate is low because the government guarantees repayment by means of its ability to tax. The efficiency cost of any extra taxation is not reflected in the borrowing rate. The borrowing rate would be higher even if all taxpayers held shares in an entity, but did not have the power to tax. The cost of government debt is not the SOE opportunity cost of debt.

Origin and Application of Capital: For government there is typically a wedge between the tax-guaranteed cost of funds borrowed and the required rate of return for investment. If this guarantee did not exist the cost of funds would reflect the risk of the investment being undertaken. There is nothing special about SOEs in this regard, any argument for subsidising their cost of debt by the tax-guarantee can also be applied to private sector firms. Investment and valuation decisions must reflect the risk of the enterprise in both sectors if efficient decisions are to be made; hence the cost of debt should not be influenced by ownership of the entity.

In sum, there is no argument for treating the cost of capital of an entity differently as between government and private sector ownership. Any rationale for privatisation should be restricted to prospective efficiency gains.

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