

# The Political Economy of State Owned Enterprises

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## Abstract

*The paper sets up a simple model with three sectors to formalize the argument that the state owned enterprise sector functions as a distributive mechanism. The formalization rests on the median voter theorem and the two stylized facts concerning the enterprises under consideration, namely that they carry "surplus labor" and pay wages higher than the marginal productivity of labor they employ.*

## 1. Introduction

Recent years have witnessed a widespread surge of attempts in less developed countries to dismantle one of their most entrenched institutions--the state owned enterprises (SOE's). Some of these attempts (for instance in Argentina) have been quite successful, others (for instance in Turkey) much less so. This paper tries to formalize, in the simplest analytical terms possible, a popular, but as yet informal, argument as to why some countries find it very difficult to privatize their SOE's. Simply put, the argument is that the maintenance, as opposed to the genesis, of the SOE sector has become a major instrument of income redistribution especially for countries undergoing a taxing structural adjustment. In the words of an acute observer writing about Turkey, "...the privatization drive...has lost its attractiveness to the extent that it would impede the state from using the SOE's to ease the pain of other components of the structural adjustment process."<sup>1</sup>

The SOE's owe their genesis to the adoption of strategies of import-substituting industrialization. In some cases these policies have been implemented quite early. For instance, in Turkey the SOE sector dates back to the late 1920's, in Mexico to the 1930's, in India to the late 1940's. In most cases the common rationale for establishing SOE's was that the private sector in existence was weak, unable to compete with foreign goods or prone to the formation of alliances with foreign capital to the detriment of national interests. It soon became clear to economists and policy makers alike that the performance of the SOE sector left something to be desired: SOE's experienced chronic losses which resulted in either rising domestic budget deficits or inflation. The response was attempts at rationalizing and streamlining the SOE sector. This soon proved impossible.

In order to explain why such attempts were doomed to fail from the start, I will, in what follows, take as well-established two main factors that contribute to the losses commonly registered in the SOE's: high wages to SOE employees and "surplus labor". By these terms I mean (1) that the SOE sector pays wages that are higher than the marginal productivity of the labor it employs, and (2) that firms in the SOE sector employ more workers than their operations would justify on strictly rational economic grounds.

It is, therefore, not surprising that the SOE's suffer from chronic losses given the wages they pay and the surplus labor with which they operate. And, they do so because they are instruments of income redistribution. The question that remains to be answered then is: Under what conditions are they an acceptable means of income redistribution? In what follows I will set up a formal model that yields an answer to that question, namely, that as long as the median wealth is less than the average wealth the median voter will prefer to establish an SOE sector to redistribute income. I will also explore why some countries may succeed in privatizing or liquidating their SOE's.

## 2. Model

In this section I formulate the simplest possible model that conveys the proposition that the SOE's may be used as a redistributive mechanism. To do so consider an economy populated by  $L$  households all endowed with a single unit of labor and varying amounts of capital. The economy may potentially produce three goods

in three different sectors. For analytical simplicity, one could either imagine the economy under consideration to be closed--in which case I will assume that the goods are perfect substitutes in consumption with their relative price fixed at unity--or that it is a small open economy--in which case the parametrically given relative prices are again normalized to unity with an appropriate choice of units. I now turn to a detailed discussion of the production side of the model.

## 2.1 Production

The first of the three sectors will be called the "formal sector". This sector functions as the "modern", industrialized sector in the model. It uses capital and labor to produce a consumption good under a constant-returns-to-scale technology in a perfectly competitive market. The output of this good is given by

$$(1) Q_p = F(K, L_p)$$

where the production function  $F(\cdot, \cdot)$  possesses the usual neo-classical properties and  $K$  and  $L_p$  denote the capital (physical and/or human) and labor employed in the sector under consideration.<sup>2</sup>

The second sector is labeled the "informal sector". Agents employed in this perfectly competitive sector have access to a Ricardian technology with a constant input-output coefficient  $1/\alpha$  and produce a consumption good using labor alone. The labeling of this sector is motivated by the observation that in developing countries (as well as some "developed" countries, such as Spain or Southern Italy) agents who are not employed in either the "modern" private sector or by the SOE's find employment (or are considered officially unemployed) in an informal sector, of which street peddling and Mariachi bands are the most picturesque examples.

Finally, the public sector may also employ labor,  $L_g$ , in SOE's to produce the same consumption good (or a perfectly substitutable good) with the same Ricardian technology that the informal sector uses. The SOE's may pay a wage,  $w_g$ , higher than the marginal productivity of labor employed. If this is the case, the losses,  $(w_g - \alpha)l_g$  (where lowercase letters denote per-capita variables) of the SOE's, are financed by the revenues of a proportional income tax,  $t$ , imposed on the factors employed by the formal sector.<sup>3</sup> The government budget constraint is, thus, given by

$$(2) (w_g - \alpha)l_g = tq_p$$

where the right hand-side of (2) denotes the outlays of the government and the left hand-side its tax revenue. Now, competition from workers in the informal sector ensures that the after-tax wage rate across these sectors is equalized. Thus, given the proportional tax rate, profit maximization by firms in the formal sector implies that the rate of return on capital,  $r$ , and the level of employment in this sector depend negatively on the tax rate:

$$(3) l_p = l(t), l'(t) < 0,$$

$$(4) r = r(t), r'(t) < 0.$$

Intuitively, a higher tax rate lowers the employment level by reducing the after-tax marginal productivity of labor in the formal sector. Decreased employment, in turn, diminishes the marginal productivity of capital.

## 2.2 Consumption

Turning to the consumption decisions of the households note that they supply labor and capital in

competitive markets. Each household is assumed to supply inelastically the unit of labor with which it is endowed. However, households differ with respect to their capital endowments  $k_i \geq 0$  ( $i=1, \dots, L$ ).

Given the static nature of the model and the fact that there is, effectively, one composite good to be consumed, the consumption decisions of households are quite simple--each household, facing the parametric tax rate and factor prices uses its wage and rental income (received in exchange for the services of labor and capital supplied) to consume this composite good.

### 2.3 Political Economy

The environment within which we work is now endowed with sufficient structure to answer the principal question we are interested in: Under what conditions will this economy choose to operate a state owned enterprise described above?

To answer this question, however, we need to prescribe a rule that governs the political decision process. The simplest and most frequently used rule in the literature is the majority rule provided that decisions are made in a democracy, the agenda consists of a single item, and voters' preferences are single peaked. If this is the case, it is the preferences of the median voter we need to consult to see if s/he would choose to operate the SOE under question. Even in the absence of democracy, the median voter's preference yields, at the very least, some measure of the strength of support for the SOE's that the rulers will need to pay attention to.

Now, the problem facing a household  $i$  is the maximization of expected utility

$$(5) U = l_g u [ (1 - t) rk_i + w_g ] + (1 - l_g) u [ (1 - t) rk_i + \alpha ]$$

where  $l_g$  the ratio of employment in the SOE to total employment, also denotes, from the household's point of view, the probability of being employed by the SOE and, thus, receiving the wage  $w_g$ ; the household will otherwise be employed in the private (formal or informal sector) and receive the wage  $\alpha$  subject to (2) and

$$(6) w_g - \alpha \geq 0$$

The first-order conditions of the problem are

$$(7) [ \lambda (\beta - t) / \beta (1 - t) ] (k / k_i) = [ l_g u' (c_g) + (1 - l_g) u' (c_p) ]$$

$$(8) u (c_g) - u (c_p) = (\lambda - \mu) (w_g - \alpha)$$

$$(9) u' (c_g) = \lambda - \mu$$

Given these conditions it is straightforward to establish the following proposition.

*Proposition:* Agent  $i$  prefers no taxation ( $t=0$ ) if and only if his capital endowment  $k_i$  strictly exceeds the average capital endowment  $k$ .<sup>4</sup>

The proposition establishes the result that the median voter prefers to impose a distortionary proportional income tax and set up a SOE sector if his wealth (as measured by his capital endowment) is less than the average wealth. Intuitively speaking, this result belongs to a class of results obtained in the political economy literature that redistributive instruments will be preferred by a median voter whose wealth (or income) lies below that of the average agent. It differs from the existing literature in the form of the redistributive

instrument (which is generally a lump-sum transfer payment).<sup>5</sup>

The next natural question to ask is, given the result obtained, how to explain the successful privatization experiments such as Argentina's. To answer the question one can take two different tracks, one internal to the model at hand, the other external to it. The internal track would lead one to observe that the successes may be accounted for by either the absence of democratic procedures in decision making, or, if they are democratic, by the fact that it is rarely the case that the electorate faces a single decision to make. In the latter case, since the hypothesis of the median voter theorem is violated one would not expect its conclusions to be realized in practice. The external track would suggest that some elements that are not taken into account in the present model drive the process of privatization. For example, Waterbury argues that this process is driven by fiscal crises of varying intensity coupled with inflation, reduced international creditworthiness, and impediments to export promotion. Since, to keep the model as analytically simple as possible, I have abstracted from such considerations, the model will not help us explore these factors.

### **3. Conclusion**

The paper formalizes a popular, but informal, argument to explain the persistence of the SOE sector in many less developed countries (as well as transitional countries like Russia). In its broadest outlines the argument is that the SOE sector is used as a redistributive device and cannot be easily given up especially given the pains of other reforms that form a package of structural adjustment. It is shown that as long as the wealth of the median voter is less than that of the average agent, the former prefers to establish or maintain an SOE sector that pays higher wages than the private sector and carries surplus labor. The deficits of this sector are financed by a proportional income tax.

### **Endnotes**

<sup>1</sup> See Ramanadham(1988)

<sup>2</sup> Since the formal sector is the only sector that employs capital (as will be seen below)  $K$  also denotes the total capital stock of the economy.

<sup>3</sup> The informal sector is in practice very difficult to tax, thus any revenue that governments actually raise by taxing this sector is small enough to be safely ignored in the present model.

<sup>4</sup> The proof of this proposition is available from the author upon request.

<sup>5</sup> See, for example, Persson and Tabellini (1992) and Alesina and Rodrik (1992).

### **References**

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