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Engaging the debate on privatization in South Africa: Theories, fables, facts, others

Melvin D. Ayogu

University of Cape Town

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Melvin D. Ayogu School of Economics University of Cape Town, South Africa

mayogu@commerce.uct.ac.za

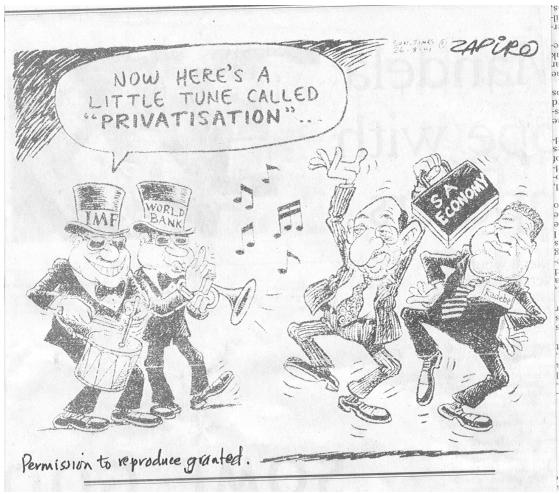
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CONTENTS 1

Contents

1	Introduction	2
2	Amicus Curia: another voice	5
3	Counsel for the opposition addresses the jury	6
4	Jury deliberations	8
	4.1 Reform of network utilities: the issues	10
	4.1.1 Approbriable rents and redistributive struggles	10
	4.1.2 Special problems of network utilities	11
	4.1.3 In a network liberalization bubble?	15
	4.2 Briefcasing the strong, the weak, and the wobbly	17
5	An empirical contribution: the analytical framework	18
6	Empirical analysis	19
7	References	22



Courtesy of Sunday Times, 26 August 2001

1 Introduction

The Government of South Africa apparently is clear about its goals for the reform of public enterprises. In his 2001 Budget Speech (RSA, 2001a, p.1), the Minister of Public Enterprises explains "restructuring" as the generic term taken to represent the set of strategies employed by the state to ensure that public enterprises in South Africa are "efficient, effective, and powerful engines of socio-economic development.... Restructuring aims to maximize the contribution that these state assets can make to development through the integration of public, private and social capital and expertise." In its vision for restructuring, the Government declares:

Development cannot be measured only by financial criteria, and restructuring is not a means of improving government finances and enterprise efficiency at the expense of the poor. Rather, the success of restructuring will be measured by its contribution to improving the standard of living of the majority of the population. The goal of restructuring should therefore be sustainable economic and social benefits (RSA, 2000).

The post-apartheid government of South Africa inherited over 300 state-owned enterprises [SOEs], with four of the firms accounting for 86 percent of aggregate turnover, 94 percent of total income, 77 percent of all employment, and 91 percent of the total assets of these enterprises. These "key enterprises, as they are collectively described in the Government's Policy Framework Paper, are in telecommunications (Telkom), energy (Eskom), transportation (Transnet), and defense (Denel). None of these firms are slated for outright privatization in the near future. The debate is joined around the wisdom of the Government's model of reform, its so called "matrix of options."

1 INTRODUCTION 3

In recent times, judging from the diversity of views in the multimedia, there seems to be much confusion about the nature and pace of the reforms, about who will bear the burden of the perceived costs and as well about the distribution of the expected benefits. Despite the diversity of opinions, the government is clear about what it wants to do. In fact, Government recently issues a press statement (Sunday Times, 26 August 2001, p.27) challenging what it perceives as misinformation by the Congress of South African Trade Unions [Cosatu]. The statement begins by noting that Cosatu has called for a strike against what it calls 'privatization,' a move that is obviously unnecessary since "restructuring is not necessarily 'privatization." The press statement highlights that restructuring is a key platform of the Redistribution and Development Program [RDP]. And that far from being ideological, it is a practical program built up case-by-case to contribute to the following:

- bring down the cost of electricity, telephones and other services
- reduce costs of production and thus improve job creation
- bring more productive investment into the economy
- open up the economy to those who were shut out by apartheid.

Given the ongoing debate and the diversity of opinions on the issue, we wish here to animate the debate by presenting some available evidence that can be brought to bear on the substantive content of the policy debate—the distribution of the costs and benefits of the reforms. We will draw evidence

¹See for instance, Sunday Times, 26 August 2001, p.15, p.20, p.24, p.27; Mail and Guardian, 24 August 2001; The Star, 27 August 2001, and www.iafrica.com

1 INTRODUCTION 4

from Eskom, Telkom and Transnet (its railroad component). These three enterprises share an important characteristic that is central to the reform debate: They are network utilities. Network industries are characterized by investments that are large, lumpy, and sunk. The components that make up the system must work together in order to deliver their services to the end user. Generally they include gas, water, electricity, rail, and fixed line telephony. As can be deduced from the examples, these network utilities provide goods that are now generally part of infrastructure services in an economy.

Infrastructure investments provide services that are part of the consumption bundle of residents and serve as inputs into production. Infrastructure may be usefully classified as public capital goods (even though some components are club goods). Public capital goods include highways and roads, mass-transit and airport facilities, education buildings, electricity, gas and water supply systems, waste treatment facilities, correctional institutions, police, fire service and the judiciary. Core infrastructures are highways, water, electricity, and telecommunications. These components are expected to contribute most directly to private-sector output.²

²The Government of South Africa appears equally aware of the Public-Capital hypothesis: "SOEs will play a critical role in our endeavour to enhance our manufacturing competitiveness. They dominate the energy, transport and telecommunications sectors, sectors that are responsible for a significant percentage of input costs to potential high growth industries.... By ensuring that our input sectors are efficient and offer high quality services, we can lower the costs and improve the services that they offer..." (RSA, 2001a, p.1).

Individuals, living in squatter and slum settlements that lack basic infrastructure, can be classified as (socially) poor cohorts regardless of movements in their indicators of income and food consumption. So, as a basic-consumption good, infrastructure has become a central issue in poverty. This role is additional to its other attributes such as affecting the productivity of labor, access to employment, and ability to earn competitive wages.³. We find that understanding the role of infrastructure in the economy can lead to a better appreciation of the privatization debate which has now crystallized along a battle line that finds government on one side and organized labor on the other (even though labor is by no means the only cautionary voice).

2 Amicus Curia: another voice

This section summarizes a view of the debate as presented in the Sunday Times editorial of August 26, 2001 (p.20). The decision by Cosatu to protest government's privatization plans is based on its belief that privatization will make some people worse off. It will lead to poor service delivery. It will lead to loss of jobs, and to increases in the price of basic services. While labor argues that the provision and extension of basic services to poor communities cannot be entrusted to the market, the government argues that it is reforming the enterprises to deliver services more effectively, and to be able to raise the necessary capital to finance needed infrastructure investment.

The paper notes that in the post-Cold War era, it has become fashion-

³For empirical estimates of infrastructure contribution to private-sector productivity, see World Bank, 1994, Gramlich, 1994, and Ayogu, 2000

able to side with proponents of free markets, and to dismiss arguments for active state interventions as "relics of a bygone era." Those who subscribe to this view would readily dismiss Cosatu as being out of touch with the present, preferring instead to remain in the socialist past. However, such a view would be a grave mistake because Cosatu's concerns are deserving of serious consideration; a point which the editorial claims to have argued before. Contrary to the way in which Cosatu has been portrayed by the government as "blindly opposed to privatization," it sees Cosatu's approach as pragmatic in conveying repeatedly, its opposition to the privatization of assets that help the state deliver social services. And in suggesting that in other areas, the decision to dispose of assets should be "nuanced."

3 Counsel for the opposition addresses the jury

"Cosatu supports the restructuring of state-owned enterprises and local government to improve their capacity to deliver basic services..... But privatisation will **NOT** help achieve these ends" (Cosatu, 2001a, p.3). Therefore, it demands that privatization of basic services and national infrastructure be halted at once, and furthermore, that any restructuring of the state "must improve services for our communities and especially for the poor" (ibidem). Basic services are listed as "water, sewerage, rubbish disposal, electricity, welfare, and basic housing, health, transport, education, telecommunications and cultural services (such as stadiums, parks and libraries)." The Union's basic argument on privatization is that "it is inherently difficult,

if not impossible, to compel private interests to serve the poor or intervene strategically to restructure the economy" (Cosatu, 2001b, p.1). It demands that government re-examine the desirability of relying on market forces to govern the delivery of basic services.

Cosatu defines privatization in terms of the extension of the control and wealth of the private sector at the expense of the state, and views as euphemisms such terms as "restructuring" or "public-private partnerships" that are used by the government to characterize its own perception of the reforms. Here are some of the specific issues that the Union finds troubling (Cosatu, 2001b):

- Governments failure to back up its faith in the market with a proposal for consistent, strong regulatory structures or with a systematic analysis of the costs and benefits of proposals for privatization
- The Department of Public Enterprises [DPE] has never published an analysis of its own proposals for the biggest parastatals. An analysis that addresses the benefits to society as well as the costs in the form of the immediate impact on pricing or employment, and the social impact from non delivery of certain essential services, or the impact of unemployment on specific communities
- The DPE argues that privatization is the best way to achieve efficiency, and that government regulation, shareholder compacts or subsidies will ensure adequate services for the poor. Yet government has never evaluated whether or not it possessed the requisite administrative capabilities to deliver on the regulatory component

The Department of Trade and Industry argues that technological advances has eroded the natural monopoly characteristics in electricity and local telephony, and hence these utilities should be privatized and regulated

Cosatu summarizes its objections by noting that "state control is necessary to ensure adequate, quality provision of services to the poor, and to initiate strategic investments to restructure the economy" (Cosatu, 2001, p.9). Furthermore, the federation argues that almost all government policies on privatization admit the need for regulation even though the government lacks capacity and commitment to effective regulation.

4 Jury deliberations

The informational, as opposed to the participatory, role of the economistjury here is to give better information to the principals in the political negotiation concerning exactly what the economic issues are (we assume the parties know where their interests lie), and where concessions can be sought or given, and where the size of the pie can be expanded by changing the constraints. The question then becomes, to what extent should we relegate the political process in our calculations of the consequences of altering any policies or rules? Should we present the economic results as it would appear if implemented in an apolitical environment, or should we condition them on the political process as we understand it?

Dixit (1998) argues that economic and political aspects of the reform process are not additively separable in their effects, and so one aspect cannot be inserted after the other to get a complete and accurate picture.

Either the economist must include politics in the analysis from the outset, or the political analyst must redo the economics. If neither party is qualified to assess the pertinent aspects of the other's domain of specialization, the two should collaborate from the outset. A purely economic calculation followed by a purely political one does not appear to be a useful compromise (ibidem, p.50).

Furthermore, he cautions that the purely informational or benchmark nature of the economists' technical calculations must be admitted and recognized as they should not pretend to be forecasts of the actual effects the policies would have in the actual form in which they are likely to emerge from the political process.

Before we jump into the discussion of the issues in reforming network utilities, two cautionary notes are made in order to temper the ever present optimism over outcomes, as well as the tendency to over-focus on technological and demand factors in evaluating the nature of the reforms. One is from Schumpeter (1954, p.981) who caution that, "as we leave the case of pure monopoly, factors assert themselves that are absent in this case [the monopoly case] and vanish again as we approach pure competition," so that "the unbroken line from monopoly to competition is a treacherous guide." The other is to emphasize that specialists in business history have long been aware that organizational innovations have had profound efficiency (productivity) consequences, and that technology is important but not decisive in shaping the organization of industry (Williamson, 1994, p.183). It sometimes appears that in discussing reforms, the influence of organizational factors are not adequately taken into consideration.

4.1 Reform of network utilities: the issues

4.1.1 Approbriable rents and redistributive struggles

Regardless of the organizational form, the nature of network utilities is such that it invariably contains a segment in which investments are large, lumpy, and sunk. Furthermore, selective de novo entry into such a segment on a compressed time-scale is in general not realistic, particularly when there is an active incumbent. It does not help matters that such a segment is typically a natural monopoly. The forcing mechanism here is that costs are often subadditive within the relevant range—meaning that for the market being served, it costs less to have one provider.

The degree of asset specificity and the level of uncertainty in the economic environment raise additional issues, which combine with the durability of the asset and the cost-advantage, to generate enduring economic rents. Consider that for potential entrants, ex ante they are in a multilateral relationship, but post-entry they are stranded. Once entry occurs, the bargaining advantage shifts from investor to consumers. So, ex post guarantees—credible commitments—are necessary to ensure ex ante optimal amount of idiosyncratic investment. Also, once services are on stream, there is a lock in effect in that the networks of water, electricity, and telecoms are directly linked to the customer who thereby becomes a captive market. Therefore, there is as well a requirement for an ex post guarantee of an efficient volume of trade by prohibiting monopoly pricing. Given that the services piped over the networks are basic consumption goods, they will inevitably invite consumer activism. As aptly described in Newbery (2000, p.1), these "consumers are

numerous, are politically important, and have no choice of network....they cannot exit and so will use their voice." The public policy problem, therefore, is to institutionalize the mechanism that balances the interests of investors and the political powers of consumers. Provided that it can finance the required sunk capital, state ownership is one such device capable of delivering on the ex post guarantee. This is a prediction of the Williamsonian theory of the hazards of idiosyncratic exchange in a long-term relationship. Regulation is another means, particularly when the network is in private hands. Even when it is owned by the government, it is still regulated, often through a line ministry. Either way, it is obvious that network utilities operate under terms set by the state.

4.1.2 Special problems of network utilities

The conventional "visible hands" approach to the natural monopoly (market failure) problem is for regulatory institutions to be created, and charged with the task of designing price-setting rules and for ensuring that the monopolist meets the demand for services. However, as has been argued elsewhere (Newberry, 2000 for instance), designing price-setting rules is only a part of the policy agenda for these industries. Network utilities pose special problems of ownership and regulation whose solution is constrained by the institutional endowment of the country. The manner in which they may be regulated, in which they may be structured, and even their ownership can respond to changing circumstances. In particular, utility policy may respond to changes in the balance of political power, in the relative power of the interest groups, in technology, in market conditions (including risk).

in investment needs, and to changing national objectives. And ownership whether in public or private hands may not always be of essence, but about control—whether the state should exercise control directly through ownership or indirectly through regulation.

Whether in private or in public hands, societies have to evolve effective regulatory institutions to deal with the special problems of network utilities, the most fundamental of which is meeting demand and financing of investment. One way of achieving this requirement is either through the grant of a franchise monopoly, or access to the tax powers of the government

Next to capacity and investment comes the problem of ensuring technical efficiency, and the deployment of optimal technology. Here, competition is said to be more effective than regulation in encouraging innovation. However, promoting competition is in apparent conflict with the granting of a protected franchise. Here, the issues may not be so much privatization (ownership) as it is of liberalization and /or the restructuring of markets.

Recognizing the balance between technical, organizational, and competitive dimensions, an "x-ray" can reveal fusion points at which "vertical disintegration" may yield segments over which multiplicity of services is feasible (within the relevant demand). In such a case, it is expected that long-run efficiency—based on innovation and its adoption—can be encouraged. Ultimately, attaining long-run efficiency requires being able to finance optimal plans. This inherent tension (over distributional issues of fair pricing and amortization) is at the core of the special problems of network utilities. It boils down to distributional issues because for the reasons already discussed, determining what is zero economic profit (or conversely rent) is not in this

case signaled through entry dynamics into the industry. Presumably, the concern is not simply over the opportunity cost of capital but to recognize also that in a technologically dynamic industry, it may be necessary to make allowances for risks of technological obsolescence and to finance R&D expenditure.

To summarize, it would appear that choosing the appropriate restructuring strategy—one that limits the need for necessarily inefficient regulation—seems to be crucial. But building credible regulatory institutions are problematic (see Moe, 1990; Laffont and Tirole, 1993; Tirole 1994; Persson and Tabillini, 1994; Besley and Coate, 1995). The collection of evidence presented in Newberry (2000) suggests that there may be little difference in efficiency between state-owned network utilities and vertically integrated private networks subject to cost-of-service regulation. In fact, he finds that "one of the lessons of history is the remarkable underlying similarity in the mature form of these institutions under both public and private ownership" (p.6). Apparently, much depends on the performance of the regulator, a matter that cannot be taken for granted in many countries.

So far, the presumption in the literature (Batten, 1996; Humplick, 1996; Culy, Read, and Wright, 1996) is that it makes a difference to performance if competition is introduced into services supplied over network, either through vertical separation and/or liberalizing access to network. In short, that competition matters more than ownership for efficiency. Further evidence on the importance of multiplicity over ownership is Primeaux (1977, 78) who compared performance by public monopoly electric utilities with a matched set of public duopolies, most of which competed with a private utility.

The literature argues that vertical disintegration has the advantage of confining regulation to the network, provided there is adequate competition in services. In comparison, liberalization on the other hand, makes more demand on regulatory capacity, a scarce resource that continues to attract a great deal of concern from all except government. Also, it is argued that competition is difficult to sustain in state-owned utilities and so there may be a complimentarity between privatization and competition. In this context, privatization seems to be a necessary but not a sufficient step to achieving the benefits of competition. In his insightful analysis of "privatization as insulation," Willig (1994) writes that it is widely accepted that government enterprises are managed to achieve a variety of objectives that relate to the complexities of politics, while private enterprises are largely managed to earn profits. Moreover, that cost efficiency and market responsiveness are important to that pursuit. And that survival instincts compel firms in more competitive markets to be relatively more efficient.

But this response does not answer two fundamental questions. First, why do the authorities not make public enterprises equally efficient by offering managers the same financial incentives as their private sector counterparts? Second, since all private enterprises are subject to a variety of regulation, how is it that the authorities are able to devise efficient regulations for the private sector while those that apply to public enterprises are so poorly constructed? To quote Bos (1993): "A priori, it is not clear why the state, failing to run the firms as well as owner, should now suddenly have become an efficient regulator" (ibidem, p.157)

Willig argues that the empirical answer to the first question seems to be that such public sector reform just doesn't work, and cites Robinson (1992) who makes this point by drawing on the electricity supply in Great Britain: "Despite good intentions it proved impossible to have 'arm's length' relationships between the nationalized corporations and government. Instead, governments of both major parties found irresistible the temptation to interfere with the decisions of state owned enterprises so that, in practice, the corporations had little control over pricing and investment decisions" (ibidem, p.158). Willig also cites another instance from Brazil who, in the interest of eliminating operational inefficiency, adopted a system whereby state-owned enterprises had to compete with private corporations under the same conditions. The government, however, proved incapable of abiding by its own rules and instead provided the enterprises with financial support.

To the second question of asymmetrically effective regulation, he answers that "political reality is inevitably injected into regulation, More directly, regulators are often political actors themselves or serve at the pleasure of those in political office" (ibidem, p.158).

4.1.3 In a network liberalization bubble?

Button (1996) examined ownership, investment and pricing of infrastructure services and found both market-failure and government-failure in pricing, thus reinforcing the question of whether regulatory institutions can be designed and sustained to deliver the promised benefits of access, interconnection, and intelligent price-setting. Are we in a liberalization bubble, or is this an adjustment towards an equilibrium network-industry configuration? Equilibrium (long-run sustainable) organizational structure would internalize both technical and organizational economies.

Even where competition does not duplicate facilities, it may fail to secure

the benefits of coordination, interconnection, and system standardization. And transaction costs could be significant in some markets. In short, what are the conditions needed to sustain private ownership, and when might they be lacking, with public ownership as the default, and what is needed to successfully privatize publicly held utilities? Are the socioeconomic and political conditions ready for privatization of network utilities? What if the government is not ready to enforce the rights of property owners because it upsets the balance between the claims of workers, consumers, and other voters? If public utilities are to be successfully privately financed, then regulation must credibly resolve the tension between consumers and investors. If consumers are unhappy, they cannot "exit" or choose an alternative supplier (even under conditions of vertical disintegration) but must use their "voice" through the political process to secure their demands. If investors are fearful for the security of their future returns, they will not finance the needed investment.

For networks whose facilities are coming due for refurbishment in the near future, what are the implications for future investments in the face of the anticipated industry structure? Faced with sudden uncertainty over future regulatory regime, suspending investment is a rational response (if it were under private equity). Under what circumstances is the threat of under investment sufficient to persuade the regulatory agencies to protect investors' as well as consumers' interests? Given a country's historical circumstances, is additional constitutional protection to private property needed and under what circumstances is private ownership viable? Using formal law to introduce swift changes that do not reflect the political and socioeconomic situation of a given country, will not alter behavior (Goldstein, 2001). So,

embedding commitments in constitution when the political equilibrium is not supportive of that invites social crisis.

If regulatory institutions are not sufficiently strong to provide adequate credibility, then private ownership may be infeasible or too costly. The costs may take the form of a high rate of return required to reward investors for the high perceived regulatory risk, which may show up as a high discount to fair asset value when the utilities are privatized, as well as the costs of monitoring and renegotiating the regulatory agreement or license. Even if there were no other social concerns or vested interests to negotiate, privatization of network utilities appears profitable only when the benefits of increased efficiency outweigh the extra costs of regulation. Is this the case?

4.2 Briefcasing the strong, the weak, and the wobbly

In this section, we briefly review the sector specific cases of electricity, telecommunication, and railroads. Specifically, we provide a brief background of each utility, the present Government's plans for each sector, the objections and concerns being raised, and then review available studies bearing on the issues of concern.

THIS WORK IS IN PROGRESS

5 An empirical contribution: the analytical framework

One of the most telling impacts of Washington Orthodoxy on the reform debate is to frame the presumption of privatization as the popular option, and to shift the burden of proof on to those who would argue otherwise. Nonetheless, viable options exist. Humplick (1996) examines the option of introducing multiplicity in the production of infrastructure services through promoting competition in the market and for the market, as well as through devolving responsibilities to regional, state or local authorities. Her empirical findings suggest that "multiplicity is important, if not more important than private ownership, and that reducing the degree of vertical integration is likely to improve performance just as much as transfers of ownership. Also important is the nature of the institutional environment in which these services are introduced" (Batten, 1996, p.10).

To contribute partially towards the resolution of the ownership dimension of the debate, as distinct from market structure debates, we investigate empirically whether the conduct of these firms is consistent with that of a profit-maximizing firm? On this we follow Panzar and Rosse (1986) who develop testable implications of firm behavior using simple theoretical constructs. The model allows one to empirically distinguish between monopoly, monopolistically competitive, and perfectly competitive theories of price formation. It should be noted that here, we are as well implicitly testing "intelligent pricing" by network regulators, or by extension, the practical manifestation of the long-run outcome of the game between the regulator and the regulatee.

The test is based on properties of reduced form econometric equations, with data requirements (revenues and factor prices) that are relatively modest. Their model is appealing because measuring the response of the equilibrium values of revenues to changes in the prices of the productive factors rely on the most unambiguous and readily available firm specific data. Using this technique, one is basically determining empirically the nature of the market equilibrium rather than relying on our ability to "observe" market structure and make the usual inferences toward conduct and performance.

6 Empirical analysis

Specification and testing

The following derivation due to Panzar and Rosse (1986) is based on the assumption that the analyst has a sample of long-run equilibrium observations on firm revenues R and vectors of exogenous demand, technological, and factor-price variables, z, t, w. The resulting hypothesis are testable restrictions on the parameters of the reduced form equation R(w, z, t). Under the assumption of profit-maximizing (i.e., efficient) monopoly behavior, equilibrium requires

(1)
$$R_y(y,z) - C_y(y,w,t) = 0$$

$$(2) \quad R_{yy} - C_{yy} \le 0,$$

where R(y) and C(y, w) are the firm's revenue and cost functions.⁴ Equation (1) defines equilibrium output y^* as an implicit function of the exogenous variables $y^* = y^*(w, z, t)$, where y is the firm's output, and w, z, t are as previously defined. Totally differentiating (1) with respect to w_j , using Shephard's lemma, yields

(3)
$$\frac{\partial y^*}{\partial w_i} = \frac{\partial x_j^d}{\partial y} (R_{yy} - C_{yy})^{-1},$$

where $x_j^d(y, w, t)$ is the Samuelsonian constant output-input demand function. $\frac{\partial y^*}{\partial w_j}$ may be negative if j is a normal or superior input and positive otherwise. Multiplying (3) by w_j and summing over all inputs yields a more definitive result:

(4)
$$\sum_{j=1}^{x_n} w_j \frac{\partial y^*}{\partial w_j} = \sum_{j=1}^{x_n} w_j \frac{\partial x_j^d}{\partial y} (R_{yy} - C_{yy})^{-1} \equiv C_y (R_{yy} - C_{yy})^{-1} < 0.$$

Since $R^*(w, z, t) \equiv R(y^*, z)$, we have, using Chain rule, $\frac{\partial R^*}{\partial w_j} = R_y \frac{\partial y^*}{\partial w_j}$. Substituting this into (4), dividing by R^* and using (1) yields:

(5)
$$\varepsilon \equiv \frac{1}{R^*} \sum_{j=1}^{\infty} w_j \frac{\partial R^*}{\partial w_j} = \frac{(C_y)^2}{R^*(R_{yy} - C_{yy})} < 0,$$

where ε denotes elasticity.

Implicit in equation (5) is a test hypothesis from the monopoly behavioral model above. It says that in monopoly equilibrium, the sum of the elasticities of reduced form revenues with respect to factor prices are negative. To test this proposition, we specify the following empirical model:

(6)
$$y_t = \alpha + \sum_{j=1}^{m} \beta_j x_{jt} + e_t,$$

⁴They assume a regular interior maximum so that the inequalities in equation (2) are strict.

where y_t is the value of the dependent variable (revenue) in period t, and x_{jt} is the value of the jth non stochastic explanatory variable (a factor price). The random error term is assumed to have a mean of zero, and a constant variance. β_j s are the unknown partial elasticities to be estimated. All variables are in log-linear form. The null hypothesis asserts that the sum of the (partial) elasticities is zero, and can be tested with the Wald test of exclusionary restrictions. Under the null hypothesis, the test statistic is asymptotically distributed $\chi^2(\rho)$, where ρ is the number of parameters estimated.

Data and empirical estimates

Data is annual observations from Eskom for the period 1985 to 2000. The variables are gross revenue, operating expenses, net interest and financing costs, and depreciation. The effect of changes in accounting practice effective 1987 has been adjusted for previous years.

ESTIMATES TO FOLLOW.

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