



Savings and Privatization

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ABSTRACT SAVING AND PRIVATIZATION

Saving is critical for economic growth. Yet there is general agreement that savings follows growth. The question addressed in this paper is whether and how much additional savings can be generated from privatization and other reforms of the public enterprise sector.

The paper argues that public enterprise reform can enhance national savings because it leads to improved productivity and greater inflow of foreign capital. It estimates the potential savings from reforming one-third of the public enterprise sector in Egypt and makes some recommendations to speed up the reform process of the sector.

ملخص

الإدخار والخصخصة

يعتبر مستوى الإدخار القومي أحد العوامل الحاكمة لدفع النمو الاقتصادي، هذا بالرغم من وجود إتفاق عام على أن الادخار يتبع النمو الاقتصادي. وتحاول هذه الورقة تحديد حجم الادخار الإضافي الذي يمكن أن يتولد عن عملية الخصخصة وإصلاح قطاع الأعمال العام. وتذهب هذه الورقة إلى ان إصلاح قطاع العمال العام سيحسن من مستوى الادخار القومي، وذلك عن طريق تحسين القدرة الإنتاجية وإلى إستقدام مزيد من رؤوس الأموال الأجنبية. وتقدر هذه الورقة حجم الادخار المتوقع من إصلاح ثلث قطاع الأعمال العام في مصر، وتنتهي بمجموعة من الاقتراحات للإسراع بعملية إصلاح هذا القطاع الحيوي.

I. Introduction

At the most basic level, the transfer of ownership from the government to the private sector should leave savings unaffected. After all, privatization is merely a transfer of the same assets from one actor to another, involving no sacrifice of consumption today for consumption tomorrow. This view, however, is too simplistic. Privatization could increase savings, in part because the transfer of ownership to the private sector is associated with higher productivity (for evidence, see, for example, Galal et al., 1994; World Bank, 1995). Higher productivity, in turn, generates more resources, which can either be consumed or saved. In addition, privatization could attract savings from abroad, which may not be possible without privatization. This typically happens when specialized multinational firms buy such enterprises as telecommunications. Beyond these first-round effects, privatization could stimulate savings indirectly. For example, if the sale proceeds are used to retire public debt, this could lead to a reduction in the size of government through lower taxation, with favorable effects on public savings (Sachs, 1996).¹ Another example relates the favorable effect of privatization on the competitiveness of other industries if it lowers the cost of producing intermediate goods and services (e.g., power, telecommunications services). Finally, privatization could contribute to savings indirectly by boosting capital market development, which has been shown to contribute positively to growth (Levine and Renelt, 1992).

The view argued here is that there is a positive link between privatization and savings. This view differs from, but does not negate, the view that the causal relationship runs from growth to savings, advocated, for example, by Angus Deaton (Deaton, 1995). If the view advocated here holds, it has important implications for countries that are keen to grow fast but cannot wait for savings to accumulate from economic growth. To such countries, privatization, along with other reforms (e.g., of pension funds), can help jump-start the growth process, thereby creating a virtuous circle of savings, investment and growth. An important question in this context is: What is the magnitude of the potential addition to savings from privatization? Another is: What does it take to attain the gains? These two fundamental questions are addressed in this paper, using Egyptian public enterprise (PE) sector data. The paper follows a modified version of the applied welfare methodology adopted by Galal et al. (1994) to evaluate the welfare effects of privatization. The

methodology is based on comparing the savings from the PE sector under continued public ownership and its savings under the counterfactual scenario of privatization and commercialization.[∧] Because the potential gains in savings depend on the initial conditions of the PE sector (including its level of efficiency and size), the paper also measures the performance of the PE sector in Egypt over time, and explores the roots of the problem.

The rest of the paper is organized as follows. Section 2 documents the level and trend of the PE savings-investment (S-I) gap, as well as productivity and returns to capital over the period 1986/87-1993/94; this is followed by a discussion of the root causes of the problem. Section 3 estimates the potential savings from PE reforms. Section 4 concludes.

II. The PE Savings-Investment Gap and its Roots

Starting with the historical performance of the PE sector, the main questions addressed in this section are: How much savings did PEs in Egypt generate in comparison with their capital expenditures? If they did not save enough to meet their needs for expansion, how did they fill the gap? And, what are the root causes of the gap?

Lack of availability of consolidated accounts for the entire PE sector in Egypt limited the analysis below to 356 enterprises.[∨] These enterprises operate in almost all branches of the industrial sector, but the few missing PEs, known as the “economic authorities” in Egypt, are relatively important ones, and include such large entities as the Suez Canal, telecommunications, power and the railway. The bias in the sample favors PEs, given that previous analysis has shown that the “economic authorities” tend to perform less well than other PEs on average (World Bank, 1987).

The PE S-I Gap

The PEs’ S-I gap is defined as the difference between the PEs’ current surplus, before transfers to or from the government, and their net fixed capital formation. Current surplus is defined as operating revenues minus operating expenditures (including depreciation), plus net non-operating income before taxes and dividends. For the sample analyzed, the net S-I gap

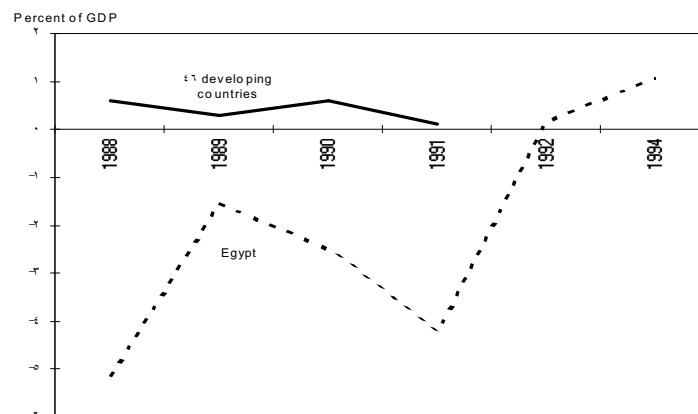
[∧] From a welfare perspective, it has been argued that \$1 in the hands of government is worth less than \$1 in the hands of the private sector, because raising \$1 by government through taxation is distortionary. For further discussions of this point, see Jones, Tandon and Vogelsang (1990).

[∨] *Privatization* refers to the transfer of ownership and/or control to the private sector. *Commercialization* refers to a package of reforms: increased competition, hard budget constraints, regulation of monopolies, financial market reforms, and incentives to managers to perform efficiently.

[∧] The number of PEs in the sample declined from 364 in 1991/92 to 356 in 1992/93, which CAPMAS attributes to liquidation and privatization.

for the PE sector in Egypt averaged 2% of GDP over the period 1987/88-1993/94.⁴ This gap is notably higher than the average of 0.4% for 46 developing countries (Figure 1), but the Egyptian PEs did better over time. S-I gap that was 5.2% percent of GDP in 1987/88 turned into surplus 1991/92. In other words, starting in 1991/92, the PEs in Egypt became self-sufficient, generating the resources they needed for operation and expansion.

Figure 1. Net Savings-Investment Gap 1987–93 (% of GDP)



Source: Developing countries: *Bureaucrats in Business*, 1995; Egypt: Computed from: CAPMAS data, *Financial and Economic Statistics of Public Companies*.

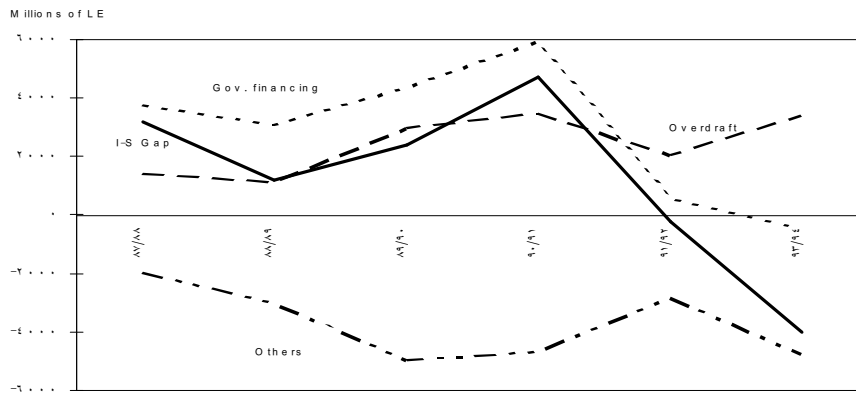
Of course, whatever gap Egypt's PEs accumulated in the past had to come from elsewhere in the economy: the government budget, domestic savings, foreign borrowing, or a mix of all three. As can be seen from Figure 2, the government clearly carried the bulk of the burden, although the budget's contribution fell dramatically in recent years. The banks were the second major contributor to PEs, and this contribution increased in recent years to partially offset the reduction in budgetary transfers dictated by tighter fiscal policies. The shift of financing from the government budget to the banking sector is problematic, given that banks are also publicly owned, which means that commercial criteria may not have been followed in allocating these funds.

While a smaller PE S-I gap is desirable because it frees resources for the more productive private sector, the way this gap is reduced matters. Unfortunately, the improvement in the S-I gap of the PE sector in Egypt came primarily from a reduction in capital expenditures, rather than from an increase in savings (see Figure 3). Capital expenditures were cut sharply twice (in 1988/89 and 1991/92), and never recovered since. At the same time, savings as a

⁴ Gross S-I is provided in table A3 in the appendix, and presented here in net terms to maintain comparability with the data for developing countries.

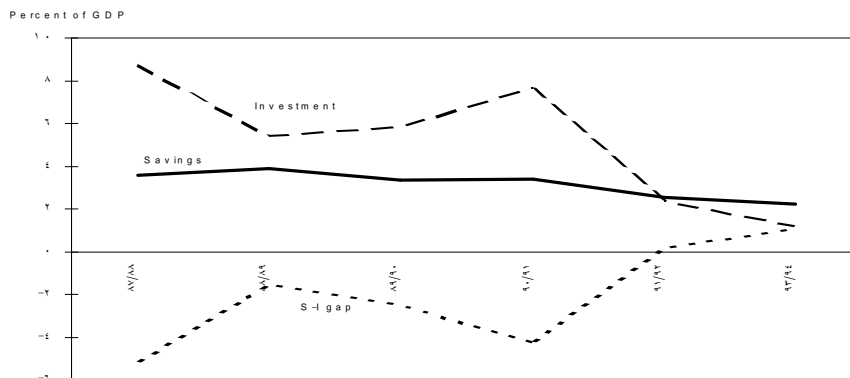
percentage of GDP have deteriorated between the beginning and end of the period. The reduction in investment, especially in infrastructure activities, could adversely affect the growth of private sector investment, and thus economic growth (Easterly and Rebelo, 1993).

Figure 2. Net Savings-Investment Gap of Egypt's PE sector and its Sources of Finance, 1987/88–93/94



Source: Calculated from CAPMAS data; *Financial and Economic Statistics of Public Companies*, various.

Figure 3. Net Savings-Investment Gap of PEs in Egypt, 1987/88–93/94

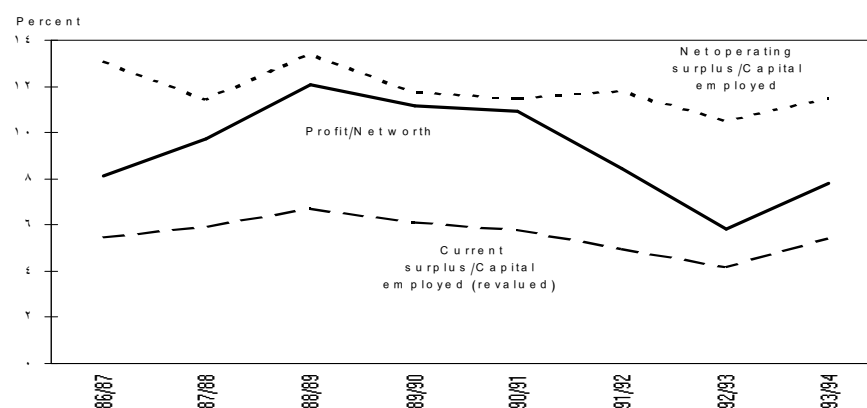


Source: Calculated from CAPMAS data; *Financial and Economic Statistics of Public Companies*, various issues.

The reasons for the deterioration in savings are low rates of return on capital and low productivity. Egyptian PEs were not net losers on average, but they made only modest rates of return on capital (Figure 4).^o Between 1986/87 and 1993/94, their operating surplus relative to capital employed was 11.9%, which is relatively low, given that the surplus represents returns to both owners and lenders. Profits net of taxes and subsidies to net worth average below the deposit rate over the last few years. Finally, the rates of return on revalued capital only averaged close to 5.5 % during the period.

Productivity is difficult to measure for the entire PE sector, in part because no meaningful composite price indices exist for outputs and inputs. However, a comparison between real per unit variable cost and operating surplus to sales of the PE sector in Egypt and a sample of eight countries (Figures 5a and 5b) indicates that Egypt's PE sector is an average performer. Moreover, the performance of the sector lags significantly behind such successful reformers as Korea, Chile and Mexico.

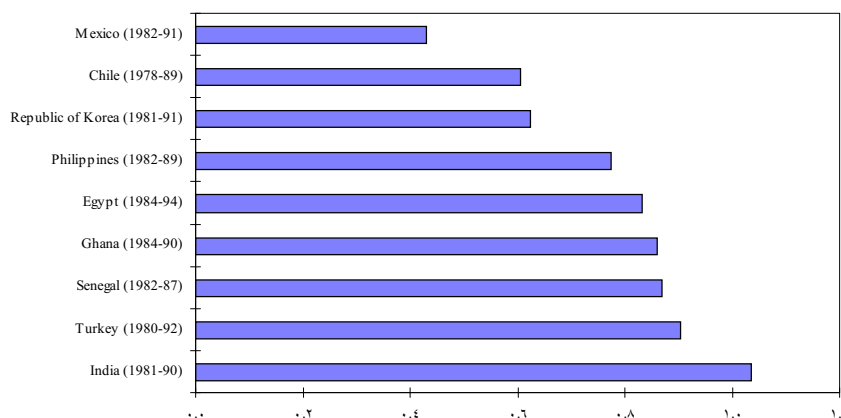
Figure 4. Financial Performance of Public Enterprises in Egypt, 1986/87-93/94



Source:: Calculated from CAPMAS data; *Financial and Economic Statistics of Public Companies*, various.

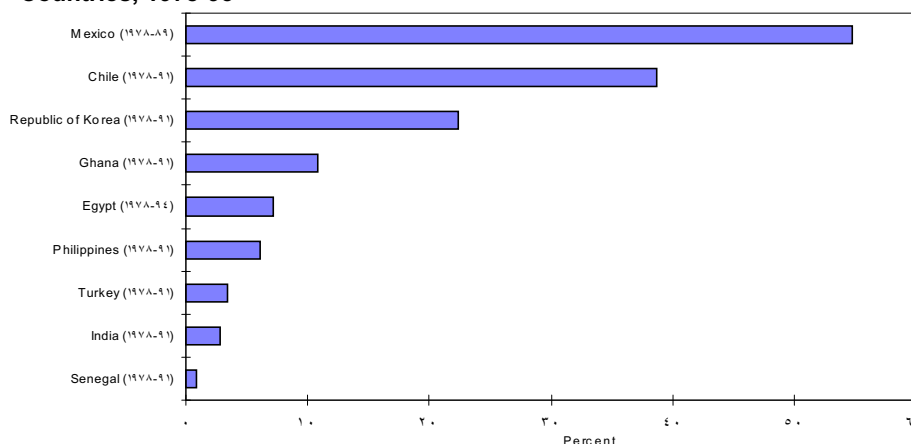
^o Returns to capital are measured using three indicators: (1) the ratio of net operating surplus to capital employed, which measures the returns to all contributors (the government as equity holder, recipient of taxes, and creditors), (2) the ratio of profit after taxes and before other transfers to or from government to net worth, which reflects the returns to the government, as if it were a private owner, and (3) the ratio of net current surplus to revalued capital employed, which measures the returns to capital if it were purchased at market prices today. (See statistical appendix for more details.)

Figure 5a. Real Variable Cost per Unit (Annual Average), Selected Countries, 1978-94



Source: All countries except Egypt and India: *Bureaucrats in Business*, World Bank 1995; Egypt: calculated from CAPMAS data, *Financial and Economic Statistics of Public Sector Companies*, different issues; India: Clemencia Torres, *How and How Much can PEs in India Contribute to National Savings*, 1996.

Figure 5b. Net Operating Surplus as a Percentage of Sales Revenues, Selected Countries, 1978-93



Source: All countries except Egypt and India: *Bureaucrats in Business*, 1995; Egypt: Calculated from CAPMAS data, *Financial and Economic Statistics of Public Sector Companies*; India: Clemencia Torres, *How and How Much can PEs in India Contribute to National Savings*, 1996.

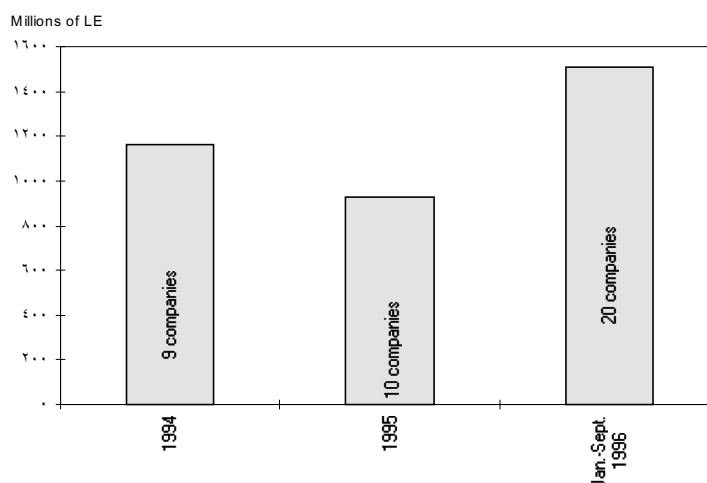
Roots of the Gap

The roots of the modest performance of PEs in general are relatively well known. Governments often engage in activities unsuited for public ownership. Moreover, they do not provide PE managers with the policy and institutional environment necessary to ensure that they have sufficient incentives to behave efficiently. In Egypt, the government clearly extended its domain in the past to activities less suited for public ownership. The size of the PE sector in Egypt is about 30 percent of GDP, compared with the world average for

developing countries of 11 percent (World Bank, 1995). The PEs in Egypt operate not only in utilities and heavy industries, where market failure may justify government intervention, but also in food processing activities, retail distribution, ready-made garments, etc. These activities require decentralized decision making in response to changes in tastes and market conditions, which the private sector is more able to handle. Moreover, despite progress on improving the policy and institutional environment facing PE managers (elaborated below), some deficiencies remain.

To be sure, the government has attempted to address the two causes of the problem of PEs in Egypt. With respect to privatization, a process was initiated a few years ago, and has picked up more steam in 1996. Not only have the proceeds from sales increased in the first nine months of 1996, but the nature of privatization has changed in favor of the sale of majority stake, in some cases to anchor investors. So far, the government has sold 39 companies, of which the private sector acquired a majority of the shares in 18 (4 acquired by anchor investors and the remaining 14 sold on the stock market). In addition, the government has sold a majority of the shares in 11 companies to employees, along with the partial sale of 21 enterprises on the stock market. The total proceeds from sales to date are just below \$ 1 billion.¹

Figure 6. Proceeds from Privatization of Law 203 Companies in Egypt, 1994-Sept. 1996



Source: Public Enterprise Office.

¹ Unutilized assets sold add another 3 billion pounds to the sales proceeds.

As for commercialization, the government has also made substantial progress. It eliminated price controls on tradable goods, and revised the prices of nontradable goods to approximate market values. Budget transfers to PEs have been reduced, and the banking sector is being encouraged to lend to PEs on commercial grounds. Competition has been enhanced by opening up the economy and allowing the private sector to participate in many sectors previously reserved for PEs. Finally, 17 holding companies were formed with a view to giving managers more autonomy in decision making.

Notwithstanding the progress on privatization and commercialization, success in reducing the relative size of the sector to restore a healthy balance between the public and private sectors in the economy remains to be seen. On the commercialization front, some PEs still receive subsidies. The hard budget constraint was imposed by cutting investment, with limited progress on measures to improve savings. Banks have not been prudent in lending to PEs. The holding companies are proving to be less than keen on privatization, as it diminishes their power. In short, despite the improvement in the PE S-I gap in recent years, the sharp cut in investment and the relatively low rates of return on capital suggest that there is some room for squeezing more savings from reforming the PE sector.

III. Potential Gains in Savings from Reforms: A Simulation

The question addressed in this section is: Assuming that the government undertakes the necessary reforms to improve the performance of the PE sector, how much additional savings will such reforms bring about?

In answering this question, the emphasis is centered on the addition to savings as a result of privatization, rather than on the budgetary impact of privatization. This means that what matters is whether or not privatization and commercialization generate additional resources which could be consumed or saved by the public or the private sector.^y As argued at the outset, these additional savings could come from behavioral changes at the firm level, such as improved productivity and increased investment. The next section elaborates the methodology followed to estimate the addition to savings.

^y Where the budgetary impact of privatization is the main concern, it is important that all flows to and from and to the treasury are taken into account. In particular, two flows of funds have to be compared: (1) the flow of funds from the private sector to the government (in the form of sale price and taxes from privatized firms, minus the cost of privatizing), and (2) the flow of funds the government gives up by privatizing (including the taxes and dividends from PEs minus the subsidies and other transfers made to PEs).

Methodology

The potential gains in savings from privatization and commercialization of the PE sector in Egypt are obtained by subtracting the NPV of profits before taxes under continued public ownership (or the factual scenario) from the NPV of profits before taxes under privatization and commercialization (or the counterfactual scenario). Profits before taxes are net of depreciation and exclude other transfers to or from the government. To this end, three scenarios are first constructed:

- *The No Reform Scenario*, in which the current performance of the sector is projected into the future by extrapolating the sector's revenues, costs and investment according to their historical trends. The projections are made for all items in the income statement and balance sheet. Profits before taxes are then discounted at 10 percent to obtain the NPV under the No Reform scenario.
- *The Privatization Scenario*, in which the performance of the sector is also projected into the future, but under the assumption that productivity will improve annually by 1.5 percent and investment will increase annually by 20 percent relative to fixed operating assets. (The rationale for these assumptions is discussed below.) The same procedure with respect to discounting is then applied as in the No Reform scenario. The result is another NPV of the sector, representing one extreme counterfactual scenario (100 percent privatization).
- *The Commercialization Scenario*, in which the performance of the sector is projected into the future, assuming that commercialization will lead to an improvement in productivity of 1 percent per annum, accompanied by no change in investment behavior. (The rationale for these assumptions is also elaborated below.) The result is an NPV of the sector, representing another extreme counterfactual scenario (100 percent commercialization).

From these three NPVs, the addition to savings is estimated by making the realistic assumption that the government will sell only half the sector and commercialize the operation of the rest. In all instances, the NPVs are calculated by discounting the stream of benefits and costs over the firm's useful lifetime. The benefits can be seen as the sum of the returns to the buyers and sellers. The costs are the resources used to generate the benefits, including the cost

of labor, capital and intermediate inputs. Because the assumptions are key to the results, their rationale is elaborated next.[^]

Rationale of Key Assumptions

In view of available evidence on the impact of privatization and commercialization on performance, the productivity and investment differentials assumed under the counter-factual scenarios err on the conservative side. For example, the assumption that privatization will improve productivity by 1.5 percent per annum is in fact relatively modest, compared with the experience in several cases. In Chile, the privatization of the electricity company CHILGENER and of the telephone company CTC led to an improvement in total factor productivity of 1.5 and 3.5 percent per annum, respectively (Galal, et al., 1994). In China, the growth of productivity in the non-state sector in the 1980s was 1.5 to 2.5 times the productivity of the state sector—the latter was 2-3 percent per annum (Jefferson, Rawski and Zheng, 1991). In Mexico, the privatization of Aeromexico led to a 92-percent improvement in labor productivity between 1981 and 1991 (Galal et al., 1994). In most cases, the improvement in productivity came from better management of existing resources, higher capacity utilization, development of new products, and penetration of new markets.

As for investment, the evidence also shows that privatized companies tended to relax the resource constraint faced by PEs, leading to a significant expansion in the post-divestiture period. The magnitude of the increase in investment varied from case to case, depending on the initial conditions of excess demand, the severity of the fiscal constraint imposed on PEs prior to privatization, and the commitments governments demanded from privatized firms to expand. To cite but a few examples, the privatization of CTC in Chile led to a doubling of capacity in just five years, compared with an annual growth rate of 4 percent per year in the pre-divestiture period. The same thing happened in Argentina, where the new owners of the divested telecommunications companies made a commitment to invest about US\$ 7 billion. A similar observation was seen in Malaysia, where the Malaysian airline increased its real operating assets by four times the rate of increase in the period prior to divestiture.

What about commercialization? In particular, why is it assumed that commercialization will improve productivity by only 1 percent (compared with 1.5 percent for privatization), while leaving investment behavior unchanged? That commercialization improves

[^] No attempt is made to take into account any of the second-round effects of privatization and commercialization referred to in the introduction. But these can only reinforce the positive results presented below.

productivity to a lesser degree than privatization is evident from the observed improvement in productivity of the best commercialized PEs, most notably in Chile, the UK and South Korea (Galal, 1994; World Bank, 1995).⁹ (See Box 1 for a detailed description of PE reforms and results in Chile). Commercialization is assumed to leave investment behavior unchanged because PEs continue to face the same resource constraints they faced before reform. In particular, they remain subject to the fiscal constraint imposed by governments, as well as the credit ceiling imposed on the public sector in general. While commercialized PEs become relatively more profitable and efficient, governments are likely to demand more dividends from them, as seen in Chile and the UK. This will leave them with little retained earnings to expand beyond the historical trend.

Results

Based on the above assumptions, privatization and commercialization of the sample of PEs analyzed are expected to bring about additional savings to Egypt with a magnitude of 2.4 percent of GDP (Table 1). For reasons explained above, the gains from privatization (2.1 percent of GDP) are much more substantial than from commercialization (0.4 percent of GDP). More significantly perhaps, given that the PE sample analyzed only represents about a third of the PE sector in Egypt, the addition to savings could be much more. Indeed, short of diminishing returns to the gains in savings, these gains could be as high as 7 percent of GDP, which is close to what Egypt needs to increase its savings/investment ratio to GDP to match the fast-growing economies.

Table 1. Estimated Increases in Savings from Reforming PEs: Total

	NVP of profits before taxes	Total increase in savings	Annual increase in savings
	(Millions of 1995 LE)		(% of 1995 GDP)
Base case: No reform	89879		
50% privatization	132095	42216	2.1%
50 % commercialization	97816	7937	0.4%
50% privatization and 50 % commercialization	140032	50153	2.4%

Source: Calculated from data from CAPMAS, *Financial and Economic Statistics of Public Companies*.

⁹ To be sure, commercialization did not achieve these results in other cases, for example, in India and Turkey. Where it did succeed, governments followed a comprehensive reform strategy: making the most out of divestiture, competition, financial sector reform, and managerial incentives.

Box 1. Chile's Public Enterprise reform

The commercialization process in Chile began when CORFO (the holding company) instructed its enterprises to pursue "goals and procedures similar to those of a private company". Managers were notified that their company would be expected to finance their operating costs and debt service. They were instructed to get rid of any unnecessary assets and stocks, improve their billing procedures, search for new sources of financing, and reduce personnel. Public utilities were ordered to apply to public sector entities the same rules of service suspension for unpaid bills as were applied to the private sector. Transfers to PEs became the exception rather than the rule. Other favorable treatments of PEs, such as tax and import duty exceptions, were also eliminated. In addition, since CORFO enterprises had always been joint stock corporations, they were subject to the same regulations and information disclosure rules that applied to private corporations in the same category.

Self financing would not have been possible, however, if pricing policies had not been changed. Thus, the government increased the prices of PEs, which had eroded in the period 1970-73. It then freed the prices of tradables and established the basis for setting tariffs for nontradables (regulatory framework for electricity and telecommunications in 1982, and water and sewage in 1989).

In parallel, PEs increasingly faced intense competition. As quantitative restrictions on imports were eliminated and import tariffs reduced, firms producing tradable goods had to compete internationally. In the monopoly sectors, the government eliminated entry barriers, and divided a number of large PEs into independent companies; for instance the electricity holding company CHILECTRA was divided into two electricity distribution and one generation company in 1981.

As a result of these reforms, the operating performance of most PEs improved. Revenues as well as taxes and transfers to the government increased substantially in relation to GDP after 1973, while expenditures fell. The PE savings-investment gap practically vanished.

The gains in savings from privatization and commercialization will be made both by the government and the private sector. Table 2 shows the distribution of these gains between the two of them, without taking into account the price to be paid by the private sector to the government for the purchase of 50 percent of PEs in the sample. As long as this price is higher than the loss of dividends and taxes the government incurs by giving up the PEs, the budgetary impact will be positive. Conversely, if the price to be paid by the private sector is less than LE 17 billion, privatization will impact negatively on the treasury in the long run. Either way, the ultimate effect on savings is positive (2.4 percent of GDP).

Table 2. Estimated Increases in Savings from Reforming PEs, by Government and Private Sector

	Total Increase in Savings (Millions of 1995 LE)			Annual Increase in Savings (Percentage of 1995 GDP)		
	Government	Private sector	Total	Government	Private sector	Total
50% privatization	-17751	59967	42216	-0.9%	2.9%	2.1%
50% commercialization	7937	0	7937	0.4%	0.0%	0.4%
50% privatization & 50% commercialization	-9814	59967	50153	-0.5	2.9%	2.4%

Source: Calculated from data from CAPMAS, *Financial and Economic Statistics of Public Companies*, different issues.

Finally, Table 3 shows the gains in savings from privatization and commercialization by origin. The gains are split almost evenly between investment and productivity. More interestingly, however, the gains to the country are greater when both behavioral differences are present because of synergies, or the interaction between productivity and investment. When both are present, a larger stock of resources is used more efficiently, and there is a compounded effect on performance and thus on savings.

Table 3. Estimated Increases in Savings from Reforming PEs: Origin of the Change

	Total increase in savings (Millions of 1995 LE)				Annual increase in savings (Percentage of 1995 GDP)			
	Productivity improvement	Additional investment	Synergie s	Total	Productivity improvement	Additional investment	Synergie s	Total
50% privatization	11966	23300	6950	42216	0.6%	1.1%	0.3%	2.1%
50% commercialization	7937	0	0	7937	0.4%	0.0%	0.0%	0.4%
50% privatization & 50% commercialization	19903	23300	6950	50153	1.0%	1.1%	0.3%	2.4%

Source: Calculated from data from CAPMAS, *Financial and Economic Statistics of Public Companies*, different issues.

Sensitivity analysis

Given that the results depend on the assumptions made, it is useful to separate the effect of each assumption from the effect of the other, and to explore the sensitivity of the results to these assumptions. The separation of the impact of each assumption has already been done, and can be used by the reader to accept or reject any of the assumptions and still obtain useful

results. The remaining issue is to explore the sensitivity of the results to the key assumptions. This is done here, and presented in Table 4. The table shows the results under two extreme scenarios: full privatization of the sample of PEs analyzed, and full commercialization. For each of these scenarios, the results are shown for various discount rates (8, 10 and 12 percent), various productivity differentials (1.0, 1.5 and 2.0 percent for privatization, and 0.5, 1.0 and 1.5 for commercialization), and various investment possibilities (15, 20 and 25 percent of net fixed assets).

Two broad conclusions can be drawn from Table 4. First, reforms of the sample of PEs investigated here can produce gains in savings of 1.2 percent of GDP at a minimum, but the gains can be as high as 4.3 percent of GDP. Second, the results are least sensitive to variations in the discount rate. They are moderately sensitive to variations in productivity, and most sensitive to variations in investment. This not only suggests that the gains from investment in the course of privatization are significant, but also that care must be taken to ensure that investment will be forthcoming. Care must be given to ensure that the design of privatization transactions commits the new owners to an investment program, where appropriate, to maximize the gains to society.

Table 4. Sensitivity Analysis^a
(Annual Increase in Savings as Percent of GDP)

Investment			Productivity			Discount Rate			
25	20	15	2	1.5	1	12	10	8	
7.7	4.1	1.7	4.7	4.1	3.5	3.9	4.1	4.4	100% privatization
0.8	0.8	0.8	1.2	0.8	0.4	0.75	0.77	0.80	100% commercialization
4.3	2.4	1.2	3.0	2.4	1.9	2.3	2.4	2.6	50% privatization and 50% commercialization

Note: Increases in savings include the interaction of changes in productivity and changes in investment.

Annual growth rates of productivity under privatization. The corresponding rates under commercialization are 0.5%, 1%, and 1.5%, respectively.

Percent of net fixed assets.

Source: Calculated from data from CAPMAS, *Financial and Economic Statistics of Public Companies*, different issues.

IV. Concluding Remarks

Although the assumptions adopted in the paper are conservative, the results are impressive. Egypt could generate 2.4 percent of GDP in additional savings from reforming one third of its PE sector, by selling 50 percent of this sample and commercializing the operation of the other

50 percent. If the reforms are extended to the rest of the PE sector, the gains in savings could be much greater. Accordingly, PE reform is critical for future economic growth in Egypt—especially that national saving is only 18 percent of GDP, compared with a minimum of 25 percent in the fast-growing economies.

How may these gains be attained? The government has already begun a process of privatizing and commercializing the operation of PEs. Both types of reform should be speeded up and deepened. On the privatization front, the process is gaining momentum, and is being conducted in a relatively transparent fashion. Further, the sale of shares on the stock market is now being supported by direct sale of the majority of shares to anchor investors, to ensure a change of behavior within the enterprises once sold. However, for privatization to contribute to savings in a significant way, the pace of transferring ownership to the private sector has to be much faster. Only when a large fraction of the enterprises is sold will the effect of privatization on savings be felt. To speed up the process, it may be necessary to find institutional mechanisms—other than relying primarily on the holding companies—to carry out the sale of enterprises, especially that the holding companies have a stake in slowing down the process. Second, it should be recognized that the simple act of selling firms to the private sector is no guarantee for privatization to produce the gains expected from it. More attention should be given to the environment into which the firms are being privatized. This issue will become more important as larger and monopolistic PEs are put up for sale. With large enterprises, it will be necessary to split them into smaller units, in part to increase competition, and in part to make their sale more feasible. In the case of firms operating as natural monopolies, it would be necessary to set up an appropriate regulatory framework, not only to protect the consumers, but also to assure the private sector a fair rate of return on investment. In all cases, the gains from privatization will be maximized where the new owners are committed to invest to meet excess demand, where it exists.

As for commercialization, it is clear that past reform attempts in Egypt have not been as successful as those in such countries as Chile and South Korea. Perhaps the reason for the limited success in Egypt is that reforms have been piecemeal. At one point, it was thought that the reorganization of the sector under holding companies would do the trick. At another, the emphasis shifted to reducing distortions and increasing competition. Recently, the focus has been on privatization. To ensure success, it is essential that Egypt make the most of all reform components simultaneously: privatization, competition, hard budget constraints,

financial sector reforms, and manager incentives. Like a chain with several links, reforms only work when all the pieces are connected.

To conclude, it is often thought that countries like Egypt are unable to compete in a more globalized world because they are saddled by large and inefficient PE sectors. The irony is that the same countries can be said to have an opportunity to turn their situation around by privatizing and commercializing the operation of their PEs. The fact that the gains from reforms, especially in terms of savings, can be substantial suggests that some countries have a real opportunity to break the vicious circle, and begin a process of catching up with the fast-growing economies. Egypt is one of those countries.

Statistical Appendix

I. Sample and Sources of Data

The data used cover the public enterprises operating under Law 203 (1991) and Law 97 (1983), for the period 1986/87 to 93/94. The sample analyzed consists of 356 enterprises, but does not include financial institutions nor economic authorities. It represents about 1/3 of the value-added of the entire PE sector in Egypt. The sources of the PE data are: Financial and Economic Statistics of Public Companies (various issues), CAPMAS; and the national parameters (GDP, inflation, CPI, WPI) are taken from International Financial Statistics, IMF (various issues).

II. Definitions

- *Net Operating surplus to capital employed.* Net operating surplus is defined as operating revenues (excluding subsidies) minus operating expenses (wages, intermediate inputs, depreciation and other costs of operation). Capital employed is the sum of net fixed assets and inventories. This indicator measures the return to owners and creditors.
- *Profits after taxes to net worth.* Profits after taxes are defined as net operating surplus plus nonoperating revenue minus nonoperating expenses. Net worth is measured by the sum of equity, reserves and provisions other than for depreciation. This indicator measures government's returns on its investment as if it were a private owner.
- *Current surplus (profits before taxes) to revalued capital employed.* Revalued capital employed is calculated using the perpetual inventory technique. According to this technique,

$$\text{Revalued capital in year } (t) = \text{net fixed assets } (t-1) * (1 + \text{inflation rate } (t)) * \\ (1 - \text{depreciation rate}) + \text{investment } (t)$$

The value of net fixed assets in 1979 was used as a starting point in the revaluation process.

- *Real variable unit costs.* Real variable costs are estimated as the ratio of total real variable costs (the cost of labor and intermediate inputs) to real output. Wages are deflated by the CPI and the remaining variables by the WPI.
- *Savings-investment gap.* Savings are defined as the difference between operating and nonoperating revenues (excluding all transfers to and from the government, such as subsidies) and all operating and nonoperating expenses (excluding depreciation and dividends). The savings-investment gap is the difference between savings and capital expenditures (the sum of fixed investment and change in inventories).

III. Tables

Table A1. Consolidated Balance Sheet of Public Enterprises, 1986/87-1993/94 (LE millions)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94
1. Liabilities								
a. Net Worth								
Equity	7227	7465	8483	8895	11274	11967	11646*	13060
Reserves	4355	5124	5991	7766	8368	9477	10179	11182
Deficit carried forward	-1636	-1791	-1950	-2148	-2912	-4259	-6632	-8781
Other provisions	2923	3481	4118	4751	5479	6142	6670	7587
b. Debt								
Long-term loans	8472	10944	12077	14302	18059	18431	16932	16470
Overdraft	5527	6928	8054	11036	14500	16535	19298	22682
Creditors & credit accounts	14454	17955	20671	23300	27224	31118	34129	38248
2. Assets								
a. Fixed assets								
Net fixed assets	10907	13988	15156	17238	21243	24058	22107*	22392
Work in progress	5314	5403	6676	7934	8820	7660	7516	8597
b. Financial assets								
Financial investment	1152	1253	1503	1649	1797	1890	1939	2040
Long-term loans	308	505	465	523	570	584	563	659
c. Current assets								
Inventories	9330	11539	13269	15538	19156	20798	21865	22553
Accounts receivable	10607	12773	14972	18294	23063	26352	29950	34750
Cash	3703	4645	5404	6726	7345	8068	8283	9458
3. Total net assets=total net liabilities	41321	50106	57445	67901	81994	89411	92222	100449

* CAPMAS attributed the drop in equity and fixed assets between 1991/92 and 92/93 to:

- a decline in GFA and paid-up capital of a number of public companies;
- liquidation of some companies;
- and privatization.

Source: CAPMAS, *Financial and Economic Statistics for Public Companies*, various issues.

Table A2. Consolidated Income Statement of Public Companies, 1986/87-93/94 (LE millions)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94
1. Operating revenues								
Operating revenues	25341	31589	37210	43921	55099	62188	62656	65174
Changes in inventories	116	34	113	314	55	104	430	-22
Subsidies	278	496	327	363	283	272	141	231
2. Operating expenditure								
Wages	3268	3838	4406	4969	5614	5979	6275	6694
Intermediates	18092	23107	27142	33244	42499	47959	49364	50419
Depreciation	1407	1704	1901	2078	2299	2931	2737	2807
Rent	46	54	68	98	99	121	91	76
3. Operating surplus (1-2)	2921	3418	4134	4209	4927	5574	4761	5387
4. Non-operating revenues								
Return on financial securities	37	51	66	97	149	154	176	256
Net capital gains	23	28	19	7	65	139	257	240
Others (net of imputed interest)	1033	1309	1457	1874	2650	2672	3232	3947
5. Non-operating expenditure								
Interest payments	1007	1342	1651	2049	2608	3865	4565	5115
Income taxes	449	624	748	828	1049	1192	1315	1451
Others (net of imputed interest)	1101	778	705	556	1107	886	750	552
6. Net non-operating income (4-5)	-1464	-1356	-1563	-1455	-1899	-2978	-2965	-2676
7. Profit after taxes (3+6)	1457	2062	2572	2754	3028	2596	1796	2711
8. Total revenues=total expenditure	26828	33508	39192	46576	58302	65530	66893	69826

Source: CAPMAS, *Financial and Economic Statistics for Public Companies*, various issues.

Table A3. Savings-Investment Gap and its Sources of Financing, 1987/88-93/94 (LE millions)

	1987/88	1988/89	1989/90	1990/91	1991/92	1993/94 ^a
1. Gross savings	3893	4894	5297	6092	6448	6739
2. Gross Investment	6698	5698	7255	10456	5543	3987
3. Savings-investment gap (1-2)	-2804	-804	-1958	-4364	905	2751
4. Financing of the gap:						
a. Government financing ^b	3755	3075	4380	5939	568	-497
b. Bank overdraft	1401	1127	2982	3464	2034	3384
c. Depreciation	1319	1526	1647	1947	2245	1933
d. Others ^c	-2352	-3397	-5404	-5039	-3508	-5638

a. Excluding 1992/93 because the reported drop in fixed assets in that year distorted the calculations of investment.

b. Net financial flow from government.

c. A residual item that includes changes in financial assets, cash, accounts receivable..

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