An evaluation of some aspects of the Greek privatization process

Demosthenes Georgopoulos
Ministry of Finance and Economics

Theodore Papadogonas
Department of Business Administration
Technological Educational Institute of Chalkis

Abstract
The purpose of this paper is to offer a partial evaluation of the impact of privatizations (complete or partial privatizations through public offering) in Greece, on the privatized firms' level. We examined most of the major public firms which, in the process of the last 15 years, have been -completely or partially- privatized. The time span (1990-2004) is long enough to permit some -although preliminary- results. This evaluation should be considered as urgent, for two reasons. First, because the privatization process is continuing in Greece with important steps forward to be implemented, and, second, because there has been almost complete absence of academic (or other) studies in Greece to evaluate the privatizations' performance. The paper examines the impact of privatizations on the firm level, i.e. in the privatized firms' returns on assets, sales growth, investment and leverage. The results are rather mixed. There is no clear evidence of a structural break in the above measures before and after privatizations. Econometric findings cannot generally distinguish between the two periods. This analysis leads to important policy conclusions concerning the efficiency of the Greek privatization process.

Key words: Privatizations, efficiency, competition

1. Introduction

Privatizations, which began as a rather secondary[1] and unimportant policy proposal of the first Thatcher government, in purpose to undercut labor unions strength, has now 'become orthodox economic policy throughout much of the world'[2]. In recent years privatization policy has been transformed, under the guidance of several major governments (US, UK et. cetera.) and the assistance of some of the central world economic institutions (IMF, World Bank and so on), from a rather optional and peripheral to a compulsory and important part of government policies all over the world and especially in the third and the former second world countries. The outcome of such a great push was a major transformation. Public sectors diminished and in particular public enterprises disappeared almost completely in many countries. In some of the remaining, the board of directors was instructed to run strategies towards profit maximization, which was very similar to the standard strategies of private enterprises and, generally speaking, was totally different from the strategies followed during the 50's to 70's periods.

2. Literature review

Such a global scale and world transforming event have not escaped the focus of theory. Beginning in the 70's, one can find hundreds of papers published in academic journals, in newspapers and tens of books. The purpose of this paper is not to survey them, but rather to present some critical comments on the evolution of the literature on privatizations, as well as to offer a partial evaluation of the impact of privatizations in Greece. Table 1 below gives an overview of the more important theories of privatization and the relevant policy measures.

Table 1

3. The Case of Greece

In Greece the privatization process and debate in theory and practice was dully deployed with a 10 years delay. Consequently, we had a first and almost abrupt wave in the 1990-3 period of the new – liberal government of New Democracy, which has been followed by the

[1] Bishop, M, and Kay, J., (1988).
[2] D' Souza et al., (2001).

more hesitant moves of the third way PASOK government between 1994-2004 and the new New Democracy government from 2004.

In general, the privatization process is closer to the ambivalent mood of the major West European countries, after the first wave of 1990-3, which tried but did not succeed in transforming Greece towards the Aglo-Saxon model. Although the time span (1990-2005) of the actual process of Greek privatizations is long enough to permit –at least- preliminary evaluations, there was almost complete absence of work (academic or other) in the field. This paper is a first and partial step in that direction. It examines the impact of privatizations on the firm's level, i.e. in the privatized firms' returns on assets, sales growth, investment and leverage. We examined ten public firms which have been partially or totally privatized during the reference period. They include most of the major privatized Greek firms and the totality of which we managed to obtain data and results. Thus, our work does not suffer from sample selection bias - in fact, we present not a sample but the whole population of the firms with available data.

4. Theoretical Assumptions

We will begin by presenting briefly the standard theory and findings of academic research on this topic.

a) Profits (return on assets). We expect post-privatization profit improvements because this policy reversal motivates managers to maximize value. Consequently, with firms operating in an open competitive environment of globalized capital markets, theory suggests that increasing profits is the best way to maximize value if the capital markets work at least adequately, if not perfectly.[3]

b) Growth (sales growth). Theory suggests that post-privatization increased profitability due to the alteration of management incentives and streamlined efficiency due to a more competitive environment after privatizations, if that is really happening, will each one and in combination produce significant growth in firm sales or output [4].

[3] Vickers and Yarrow (1991) emphasize that stock prices must be informationally efficient to provide an accurate retrospective of managerial performance

[4] There is a substantive empirical literature which (but not unanimously) support theories suggestions. See the paper of D' Souza, Megginson and Nash mentioned in footnote 2 for an extensive coverage. See also Megginson and Netter, (2001). For the growing but still in minority empirical literature against privatizations benefits, see Massimo Fiorio: A state without

c) Investments. This is not an absolutely clear topic. Generally speaking, we expect an increase in post-privatization investments, in order at least to catch up with real or potential competitors in an open and aggressive competitive environment, if this is the outcome of the privatization process. But this result is, among others, subject to pre-privatization process. If, for example, under public ownership firms had been significantly restructured (in order perhaps to be sold at a better price), then the post–privatization investments will be lower in the short run.

d) Leverage: Theory suggests that levels of leverage decrease due to increased profitability which in turn is the outcome of improved efficiency. Leverage improvements also can be the outcome of 'few primary share offerings'[5]. Most of the empirical cases tend to confirm these suggestions.

5. Statistical Analysis

Let us now examine case to case the ten totally or partially privatized firms and their performance as shown in the evolution of the aforementioned four indices (Table 2).

i)HELLENIC VEHICLES INDUSTRY. Founded privately in 1972 as STAYER HELLAS, was renamed ELVO and nationalized in 1987. Finally, it was privatized in 1999 with the sale of 43% of the shares and the transfer of management to MITILINAIOS Group. In table 2 we present the statistics of the four indices from 1996 to 2003. The results are rather mixed. Two out of these four indices are in agreement with standard theory and evidence (profits and leverage) and the other two (sales growth and investments) not. From the 10 cases of privatization under consideration this one seems to face a rather competitive environment, but the outcome does not seem to be very appealing.

ii)HELLENIC DUTY FREE SHOPS. Nationalized and essentially founded in 1979, it entered the Greek stock exchange in 1998 and then was partially transferred to the Greek Public Agricultural Bank (ATE) in 1999 and later on, in 2003, to two private firms GERMANOS and FOLLIE FOLLIE, which is currently the sole owner. From the three indices available (profits, sales growth and investments) no one agrees with

ownership: The welfare impact of British privatizations 1979-1997. University of Milan, Department of Economics, Working paper 2002-24 or electronically in: http://ideas.repec.org/p/mil/wpdepa/2002-24.html.

[5] Op. cit. D' Souza et. al. p. 14.

standard theory and evidence. A formal monopoly from establishment to the year of privatization, it does not seem to have lost its almost monopoly power after, although with no legal protection. The rather unimpressive results after privatization are perhaps the outcome of the abolishment of the duty free status for the travelers inside the European Union.

iii)OLYMPIC CATERING. Founded in 1970 and entered in the stock exchange in two faces in 1999 and 2000, it was privatized in 2000. The findings of the three indices (profits, sales growth and investments) disagree with the standard theory and evidence. The company was forced after privatization to compete in a rather open environment, albeit with almost negative results (Similar with case i).

iv)PUBLIC GAS. Founded in 1988 as a 100% subsidiary of the Public Greek Petroleum Company (ELPE). Today 35% of the company's shares belong to ELPE (which is now in a rather mixed situation concerning the ownership issue and entered in Athens stock exchange in 1999) and 65% to the Greek government. It is not easy to regard the case as a clear privatization one but there are elements, as the entrance of the mother company ELPE to the Athens stock exchange and its association with the private oil company PETROLA, which support that thesis. Only one of the indices (profits) tends to agree with theory and practice. But even this, as one can see from the full data (available from the authors upon request), had began to increase before the privatization, which is not particularly strange. In many cases the years just before privatizations have produced important improvements[6] usually connected with the attainment of privatizations. The other three indices do not produce results similar to the expected. Public gas had retained an absolute monopoly in the market before and after its partial privatization.

v)GREEK TELECOMMUNICATIONS COMPANY (OTE). Founded in 1949 this public company entered the Athens stock exchange in 1996 and began its partial privatization with sequential sales of it shares (1996: 8%, 1997: 12%, 1998: 10%, 1999: 14%, 2001: exchangable bonds 9%, 2002: 8%). Today there are thoughts for a complete privatization with the transfer of the management to the private sector. Two of the indices (profits and sales growth) are in clear antithesis with the expected findings and only investment seems to follow a clear increasing pattern. OTE is facing an increasing competition in the non mobile

[6] For this rather unexpected finding see among others Bishop and Kay, op. cit., and Fiorio, M., op. cit.

telephone sector, where it has lost its legal monopoly power, but up to now it retains an almost monopoly status in many telephone services (as among private individual customers). As with cases i and iii the enhancement of competition does not seem to be in favor of the performance of the firm.

vi)HELLENIC PETROLEUM (ELPE). A public Greek company, which entered the Athens stock exchange in 1998 offering 23% of its shares to the public. In 2003 there was the association with PETROLA (which we referred to in the iv case above). Considering 1998 as the moment of its partial privatization with the introduction by its management of private elements, as for example an increased interest in profits (essential element of the entrance in the stock exchange) we can see that not even one of the four indices follows the standard suggestions. Overall nothing seems to have changed since 1998. ELPE was competing in an oligopolistic or even duopolistic environment before and after its partial privatization. It can be argued that, after the association with PETROLA, the actual environment had become even more monopolistic than before.

vii)HELLENIC SUGAR (EBZ). Founded in 1962 and now controlled by the State Agricultural Bank of Greece (whish has underwent a partial privatization entering the stock exchange), entered the Athens stock exchange in 1993. The profits index is worsening after 1993; sales growth and investment do not have a clear direction. Only leverage tends to confirm the usual suggestions perhaps as the outcome of the stock exchange entrance. The firm retains a quasi monopoly in the Greek sugar market, with actual competition coming only from sugar’s substitute products.

viii)COSMOTE. A mobile telephone company, essentially a subsidiary of OTE but with large autonomy. Initially public (founded in 1996) it was partially privatized entering Athens stock exchange in 2000. Two of the indices (sales growth and investments) are in contrast with the standards, while the other two do not seem to have any clear direction. The firm is working from its start to now in a very oligopolistic and almost unchanged environment.

ix)FOOTBALL PROGNOSTICS ORGANIZATION (ΟΠΑΠ).Founded in a company form in 2001 and at the same time partially privatized, it entered the Athens stock exchange. The profits index seems not to change after 2001, while sales growth and investments are worsening. The leverage index is the only one in accordance with the usual expectations. The firm is functioning in a legally monopolistic environment, before and after its partial privatization.

x)HERACLES GENERAL CEMENT COMPANY (ΑΓΕΤ). The last company under consideration was founded in 1919. It was nationalized in 1982 and privatized following a direct sale in 1992. The profits and leverage indices are in accordance with the expected findings, while sales growth and investments do not exhibit a clear direction after privatization. The firm is working in a tight oligopolistic market, unchanged from the privatization event.

Table 2

Let us extract some primary and rather intuitive results from the 10 cases above. In the i, iii and v cases the advent of privatization was accompanied with increased competition in the product market. The outcome is not as anticipated. From the 11 constructed indices only two (18%) are in accordance with the standards, two others (18%) have not clear direction and the remaining seven (64%) reject the anticipated orthodox theory which suggests that 'in addition to changing ownership, privatization may also expose the firm to the product market competition. Having to compete with other firms for customers and market share may provide the pressure required to stimulate greater efficiency and profitability'[7]. In the remaining seven cases we have not major alterations in the firms' environment after privatizations. From the 27 indices only 7 (26%) agree with standard theory. The remaining 20 either have not clear direction (12 of them or 44%) or directly disagree (8 indices or 30%). Counting absolute numbers of indices which is, admittedly, just an intuitive and not a rigorous scientific method, we can say: a) with enhanced competition in the product market or not the findings tend to strongly contradict the standard theory and evidence. b) Even more paradoxically, when the competition is strong and/or increased after privatizations the outcomes are worse. We will try to give some interpretations later. But now let as turn to a more rigorous scientific method.

6. Econometric Analysis

[7] Op. cit. D' Souza et. al.

In purpose to examine the impact of privatizations on the four indices (profits, sales growth, investments and leverage) we constructed a privatization dummy variable which takes the price of one for the years before privatizations and the price of zero after. Then we constructed and run four panel data equations (see table 3 for the equations and the results). The outcome is surprising if we expected to confirm theoretical suggestions, but is just the anticipated one if we consider the outcome of our previous rather intuitive method. As we can see from table 3, in the first three equations the privatizations dummy: a) has not the right sign indicating that during the post - privatization years the indices of profits, sales growth and investments have moved in the wrong direction, revealing a deterioration of efficiency in the firm level and b) the above results are not statistically robust, because the values of the t-statistics are insignificantly low. Overall, we can say that we *can not detect a structural break before and after privatizations* (t-statistics are insignificant), and if there is any, it is in the wrong direction. The only equation that seems to confirm theory and the standard empirical result is the fourth one: leverage. Hear we find the anticipated negative sign with a strong t-statistic. But overall we remain with the strong impression than in the Greek case things do not work as usual or as theory expects to work.

Table 3

7. Conclusions

Privatizations in Greece have now a history of 15 years. But, this process can by no means be considered as finished. Extremely important enterprises as the Public Electricity Company (ΔΕΗ) are remaining 100% public. Moreover, we had the chance to mention above that the majority of the privatization cases under consideration are partial and there is no clear evidence about the final outcome: a 100% private enterprise or (less probably) a 100% public? To our opinion, the problem is that we have not yet any evaluation of the whole process.

Let us now try to present our first and obviously preliminary results. For the three indices (profits, sales growth and investments) we saw that the Greek paradigm is in clear contrast with the anticipated finding. Why? A first answer may be that actual competition in the product market is highly imperfect. In Greece, and for the sectors under consideration, but also for the majority of other sectors, the prevailing market structure is oligopolistic and in many cases duopolistic or even monopolistic. Privatizations do not seem to alter this structure. Even more important is that in Greece we do not have a history of good regulatory bodies. The usual situation is the absence, or extreme weakness, or, even worse, the corruption of these bodies. The probable outcome of such a situation is the peculiarities of our findings: privatizations not legitimized from their outcomes but from the prevailing ideology of our days. A second answer is the extreme inefficiency of the capital market. Theory suggests that informational efficiency is critical. But the Greek stock exchange (and unfortunately not only this) is usually between the state of a collapse or of a bubble. And this was with certainty the situation in the privatization years around the turn of the millennium. No discipline can be expected from there. There is no automatic road to salvation and the dogmatic mood of our days towards privatizations does not help.

The whole privatization process must be under extreme public scrutiny with no acceptance of simplistic solutions. This is the only way to improve the privatization outcomes, if we insist to walk in that road.

References

Bishop, M, and J. Kay, (1988), *Does privatization work*?, London Business School.

Coase R., (1960), 'The problem of social cost', *Journal of Law and Economics*, 386-405.

D' Souza, J., Megginson, W., and R. Nash, (2001), 'Determinants of Performance Improvements in Privatized Firms: the Role of Restructuring and Corporate Governance', presented at the 2001 American Finance Association annual meeting.

Fiorio, M., (2002): 'A state without ownership: The welfare impact of British privatizations 1979-1997', University of Milan, Department of Economics, Working paper 2002-24 or electronically in: http://ideas.repec.org/p/mil/wpdepa/2002-24.html.

Megginson, W., and J. Netter, (2001), 'From state to market: A survey of empirical Studies on privatizations', *Journal of Economic Literature*,39 (2), 321-89.

Vickers, J., and G. Yarrow, (1991), 'Economic Perspectives on Privatization', *Journal of Economic Perspectives*, 5, 111-32.

APPENDIX A. Tables

Table 1. Theories of Privatization

	Theoretical appraisals	Actual movements
Late 70's Early 80's	Intense argumentations for and against privatizations (with the positive side slightly prevailing). The center of the argument lies towards the issue of effectiveness.	Small moves to privatize public enterprises mainly in the Anglo-Saxon world and Chile.
Mid 80's to Late 90's	In theory two major schools are formed: a) The school of Academic Orthodoxy; Privatizations must occur when and where there is a competitive environment. Otherwise, the firm must stay public or be privatized and regulated. b) The Property Rights school[8], New Austrian school et cetera. Privatizations must prevail everywhere. Problems of an imperfectly competitive environment must not blur the whole picture. In the medium run (if not in the short run) the market mechanism will manage to heal the imperfections. There was also a major flux of papers not discussing privatizations per se, but in conjunction with other issues (for example the impact of privatizations on public debt, public infrastructure)	Gigantic steps towards privatizations especially in the former second and third world. Privatizations usually undertaken without considerations of the market imperfections and with an eye on the reduction of public debt, sometimes optionally sometimes compulsory. Hesitant and cautious moves in the remaining public sectors of the first world.
Last 5-7 years	Although privatizations have disappeared as a major field of academic research, there is a growing uneasiness about their impact on economic efficiency, the topic that was almost exhaustedly debated in the first period of our scheme and subsequently declined on importance. Also, there is a growing literature concerning the impact of privatizations on such themes as absolute or comparative poverty, increasing inequalities, social cohesion, declining public investments in infrastructure and so on. In direct contrast with the growing uneasiness, standard academic -and policy- practices tend to ignore its own findings, which propose a cautious privatization process if and only if there is adequate competition in capital and product markets (we may say that what happened is an implicit prevalence of the property rights school). Furthermore, we have not a satisfying theory concerning policy proposals when an imperfectly competitive environment exists or the regulating mechanisms are absent, incomplete and corrupt. Should we insist on privatizations or what else? Since the vast majority of public enterprises operate in imperfectly competitive environments with corrupt or even not existing regulating mechanisms, this absence is extremely frightening.	Privatizations continue their mars albeit in a retarded rhythm. Here and there (as in Russia, Venezuela, Bolivia), there is a growing reversal of the trend. Elsewhere, such as in the U.K. railway sector, and almost globally in the water supply sector, there is an widening debate on the costs and benefits of privatizations.

Table 2: The performance of privatized firms

[8] Originated in Coase, (1960).

Company Name		**Averages**			
		ROA	**Sales Growth**	**Investment**	**Leverage**
Hellenic Vehicles Industry	Before privatization	0,08	0,22	0,11	0,36
Hellenic Vehicles Industry	After privatization	0,15	-0,17	-0,17	0,18
Duty Free Shops	Before privatization	0,99	0,06	8,76	
Duty Free Shops	After privatization	0,51	-0,25	-0,28	
Olympic Catering	Before privatization	0,81	0,02	0,29	
Olympic Catering	After privatization	0,51	-0,20	0,53	
Public Gas Co.	Before privatization	0,00	13,53	0,25	0,21
Public Gas Co.	After privatization	0,03	0,27	-0,15	0,20
Greek Telecommunications Company (OTE)	Before privatization	0,16	0,17	0,03	0,09
Greek Telecommunications Company (OTE)	After privatization	0,13	0,03	0,08	0,10
Hellenic Petroleum	Before privatization	0,03	-0,02	0,28	0,26
Hellenic Petroleum	After privatization	0,14	0,15	0,04	0,12
Hellenic Sugar	Before privatization	0,35	0,05	-0,50	0,74
Hellenic Sugar	After privatization	0,41	-0,04	0,42	0,24
Cosmote	Before privatization	0,24		0,74	0,22
Cosmote	After privatization	0,49	-0,21	-0,21	0,17
Football Prognostics Organization (OPAP)	Before privatization	0,58			0,32
Football Prognostics Organization (OPAP)	After privatization	0,60	-0,25	-0,31	0,08
Heracles General Cement Co. (AGET)	Before privatization	0,20	0,00	-0,39	0,21
Heracles General Cement Co. (AGET)	After privatization	0,19	-0,03	-0,05	0,20

Table 3: Regression results

$Y_1 = 0.204 + 0.013P$ (1.54) (0.12)	$R^2 = 0.121$	Chi-square(1) = 0.65 (p = 0.42)
$Y_2 = -0.277 - 1.632P$ (0.71) (1.44)	$R^2 = 0.299$	Chi-square(1) = 2.10 (p = 0.15)
$Y_3 = -0.478 - 0.353P$ (1.22) (0.79)	$R^2 = 0.177$	Chi-square(1) = 0.62 (p = 0.43)
$Y_4 = 0.283^{***} - 0.120^{**}P$ (3.74) (2.11)	$R^2 = 0.667$	Chi-square(1) = 4.44 (p = 0.04)
Y_1 = Return on Assets (ROA)		
Y_2 = Deflated sales growth		
Y_3 = Investment		
Y_4 = Leverage		
P = Privatization dummy		
** Significant at the 5% level (two-tailed test).		
*** Significant at the 1% level (two-tailed test).		
t ratios are in parentheses.		

APPENDIX B. Biographical notes

Demosthenes Georgopoulos (e-mail: dgeorgopoulos@mnec.gr) is currently being employed at the Ministry of Economics in the Division of Private Investment where he holds the position of an expert scientist in the field of economics. His academic research interests rely in the areas of *Public Administration, Political Sociology, Industrial Organization* and *Research and Development*.

Theodore Papadogonas (e-mail: tpap@teihal.gr) is associate professor at the Technological Educational Institute of Chalkis. His major research interests include *Research and Development, Technological Innovation, Industrial Organization, Market Structure and the Economics of SMEs.* He has published over 20 articles in refereed journals and international conferences.