IJISET - International Journal of Innovative Science, Engineering & Technology, Vol. 2 Issue 4, April 2015.
www.ijiset.com
ISSN 2348 – 7968

Measuring the Performance of Privatized Tunisian Enterprises

Sghaira Horchani [1] and Wahiba Nasfi Fkili [2]

[1] Research Unit: Perspectives, Strategic and Sustainable Development
University of Tunis, Tunisia.

[2] Research Unit "Enterprise Economy Environment"
University of Gabes, Tunisia.

Abstract

This paper is interested in the study of privatization in Tunisia, we aim to clarify the link between privatization and corporate performance through an empirical study of fifteen tunisian enterprises listed in stock exchanges. Our empirical study allows to measure static efficiency by assessing the impact of the privatization on performance variables calculated in mean and in median for periods of three years before and three years after the privatization.
Based on the Wilcoxon test we note that the increase in performance is not significant during the study period and also during the three years following the commitment in the privatization process. While the Business Productivity shows a significant improvement, but it is only during the period -3.0.
Although this test led to perceive more clearly the effects of privatization, this method of studying static efficiency does not capture the dynamic effects of this process.

Keywords: Privatization, performance, static efficiency, enterprise, Tunisia.

1. Introduction

Until the early 80s the state undertook activities unrelated to its public authority, tasks and everything was justified by the public interest, economic and social order. Thus, after having monopolized a large part of the economy, public companies have found themselves in all countries facing to serious problems.

Thus, in an environment of competition and the search for greater organizational flexibility, public ownership represented for many governments, an obstacle to obtaining a higher level of productive and dynamic efficiency. Privatization of some enterprises is proving to be a preferable solution to remedy the flaws and imperfections of the market. The aim was to improve the performance of public enterprises and to remedy the market failures.

In fact, the privatization program since 1986, its purpose being to improve the situation of public enterprises and to release the State from competitive sectors. This program is part of an overall development strategy, making the market economy and opening to the outside the main spring of a higher and more sustainable growth.

This paper is interested in the link between privatization and enterprise performance. In other words, we seek to establish a link between privatization and efficiency of privatized Tunisian companies. We rely on data for 15 Tunisian companies listed on stock exchanges and privatized over a period of seven years, three years before the privatization, the year of privatization and three years after. We seek to measure the static efficiency by assessing the impact of privatization on the performance variables calculated mean and median for periods of three years before and three after privatization. This allows us to calculate the static efficiency of privatization for these fifteen Tunisian companies.

2. Literature review on the impact of privatization on firm performance

Many empirical studies have been conducted to test the hypothesis of the influence of ownership structures and decision on performance. Most studies conclude that the superior performance is for firms managed by their owners, while others prove that privatization is not systematically generating performance. The studies that seek to highlight a relationship between the efficiency of firms and the form of their property been grouped in two categories. The first concerns the work done early in the process of privatization and where it is to make a comparison of the performance of public and private enterprises. The second is more recent studies and focuses on a comparison of business performance before and after privatization.

Recent experience in many countries provides remarkably interesting data to compare more accurately the performance of the public sector and the private sector. In addition, many sectoral studies also conclude that greater efficiency of private enterprises in the supply of certain goods and services, housing, transportation, ... However, in other areas it can get opposite results, such as in education, health, ...

Cubbin, Domberger and Meadowroft (1987) conducted a study with a sample of 317 local businesses in England and Wales over a period of two years 1984 and 1985. They demonstrated that, for most regarded firms, private entrepreneurs are more efficient than public contractors. They claim that the passage of the shape of public property to private form is creator of performance.

Similarly, Boardman and Vining (1989) undertook a few years later similar research by comparing the performance of nearly 500 private companies, public and mixed, at the international level in industrialized countries except the United States. The research findings provide that state enterprises are less effective, less profitable and less productive than other forms of businesses. Privatization would be a necessity because it discipline firms and leads to better management, to the extent that the financial markets submit private companies to more rigorous management.

Bishop and Kay (1989) conducted a comparative study consists in comparing the performance of several privatized companies in Great Britain in the field of delivery, airline, gas, telecommunications, oil and automotive with that of public enterprises working in the field of coal, railways, steel and station, during the same period. They conclude that both companies have posted a performance increase as they have both committed restructuring which proved beneficial. So, they assume that the performance of all firms studied is not caused by their ownership, but rather by other factors such as the level of competition and the financial state of the company in question.

The study of Estrin, Gelb and Singh (1995) is conducted 43 public companies Polish and Czech covering the period from 1990 to 1992. The study examines the evolution of employment, profit rates and those for export. The authors found that most of its public companies emit significant positive results and it is on the basis of multiple restructurings including different areas. The results of this study confirm those obtained by Pinto, Belka and Krajewski (1993), namely that public companies have begun effective restructuring to adapt to changes in their business environment that is becoming increasingly complex and turbulent.

For Byocko, Schleifer and Vishny (1996), the private sector, unlike the public company seeks only profit maximization. Against, in the public sector, profitability is only one of several and multiple possible objectives , defined by a political process. Empirically, many studies have revealed a significant difference in performance between public enterprise and private enterprise, while others, in contrast, found no noticeable difference.

This type of research leads to ambiguous results. In fact, some studies show that private companies are more efficient than public enterprises and others indicate that public companies are as or even more efficient than private companies. It must be added that the comparison is invalid as soon as it is between small private businesses in competitive markets and large businesses in non-competitive economic sectors.

Note also that the public company should not be evaluated by the same criteria that private enterprise since the evaluation of the latter is based on the sole objective of the owners, namely the profit, while, the stallion of the public company covers all the objectives of economic policy, such as growth, price stability and full employment.

In order to avoid the criticism of previous studies on privatization, some studies have been conducted to examine the effect of a transfer of a public company to the private sector on its performance. Thus, studies attempting to assess the impact of privatization on the economic performance of newly privatized enterprises usually follow the case study method, and rarely use econometric studies because of the small number of companies to watch.

Kay and Thompson (1986) examined the impact of privatization on firm performance and conclude that it may be potentially beneficial in a context where state companies are inefficient and monopoly in specific industrial sectors. Privatization would be in the opinion of these authors, the most effective way to promote competition.

While Parker and Martin (1991) and Parker (1993) examined the performance of a British group of companies before and after privatization. The authors have achieved results which partially prove the hypothesis that privatization is generating improved performance. These authors point out that the increase in performance after this process depends not only on the transition from public ownership to private ownership, but it depends first on related policy implementation to increase the level of competition market and define the regulatory framework that governs it.

Adam, Cavendish and Mistry (1992) observe the behavior of firms in eight developing countries. The companies selected in this sample are similar in operation and structure. The results of their study show that the performance tends to increase after privatization, thus the shape of the property has an influence on the performance of companies.

The study of Galal, Leroy, Tandon and Vogelsang (1994) analyzes the performance of 12 companies after their privatization in four different countries; Britain, Chile, Malaysia and Mexico. This study examines whether the change of ownership improves performance and, if so, how the costs and benefits of applied adjustments affect some business partners. The results are positive and show a real increase in efficiency in 11 companies with no deterioration in the conditions of workers and even an improvement of the conditions of employees in three cases out of the 12 cases studied.

Megginson and al (1994) analyze the performance of 61 companies, newly privatized, in 20 different countries, they first edit their profitability, measured by the ratio profit / sales, they show that this ratio increases averaged 2.5% after privatization, and that for almost 70% of companies, the increase is positive. They show that employment is also increasing in 64% of cases after privatization, and the ratios Investment / sales, increases in average more than 5% in their sample. Finally, the financial structure of firms in the sample tends to improve after privatization and the ratio debt / capital decreased in average by 2.7% and in 72% of cases.

The study of Newberry and Pollitt (1997) is interested in the privatization of a major electricity companies in Britain named Central Electric Generating Board. They noticed a significant improvement in business performance after privatization, but they observe that only the situation of shareholders had improved by accumulating considerable financial benefits.

However, Dewenter and Malatesta (1997) compared the effects induced by the privatization at the micro level in 109 companies located in Canada, France, Hungary, Japan, Malaysia, Poland, Thailand and the United Kingdom. The authors demonstrate that the effects of privatization are not beneficial in terms of profitability and business productivity, except that the privatization of enterprises in developed countries seem to generate better results than in developing countries.

However, studies conducted by Shirley (1998) for 12 companies in six developing countries during the same period come to conflicting conclusions. The author has shown that only in a few cases, the privatized firms have managed to improve their performance in terms of productivity and profitability. These researches, directly related to privatized companies have some limitations such as a certain ambiguity of the results, existence of bias due to the use of the same type of performance criteria. Faced with criticism of these researches, certain specialists have attempted to improve the explanation of the causal links that connect the privatization programs and privatized firms. This new line of research think to explain the variety, contradictions and ambiguity of these results.

In this respect, Frydman, Gray, Hessel and Rapaczynski (1999) examined 218 private and public companies in Hungary, Poland and the Czech Republic over the period 1990-1993. The study was based on four performance indicators: turnover, employment, labor productivity and unit cost of production. The authors showed that in the framework of the three countries, privatization has improved the performance of firms by indicating more effect on improving the revenue rather than reducing production costs.

Boardman, Laurin and Vining (2000) examined the performance of nine Canadian companies privatized for the period 1988-1995. The authors compared the performance of these companies five years before the privatization and three after. They conclude that the return on sales, return on investment of companies have almost doubled following their sale to private and companies have also recorded a performance improvement.

According to studies of Megginson, WL and Netter JM (2001), although privatization modalities are different, private ownership of firms leads to a higher level of performance than public companies. Similarly, the authors reported that if privatization is to the benefit of foreign investment, the increase of performance after privatization will be remarkable.

3. A static study of the effectiveness of Tunisian companies

3.1 Sample Presentation and description of the tests

The purpose of this study was to discern the effects of privatization on Tunisian companies. To do this, we opted for a longitudinal study comparing the performance of privatized firms before and after privatization. Procedure adopted by Megginson, Nash and Randenborg (1994), Villalonga (2000) and by D'Souza, Megginson and Nash (2000).

The sample for our study was composed of 15 publicly traded companies, the list of these companies is figured in the Annex. For each of these companies, all data are over a period of seven years: three years before the privatization, the year of privatization and three years later. Data are collected in the prospectuses of privatized enterprises from the Financial Market Council, and annual reports of the stock market in Tunisia. The empirical study measuring static efficiency by assessing the impact of privatization on the performance variables calculated mean and median for periods of three years before and after privatization.

So, we calculate the static efficiency of the privatization of 15 Tunisian companies. To determine the impact of privatization on the performance we use the median difference tests such as Wilcoxon test. The indicators that we have taken to account for the performance are indicators of profitability, productivity, investment policy, employment, dividend policy and governance indicators. The performance indicators used in this analysis are: Net Income / Total Assets, Current income / Equity, Net Income / Equity, Net income / Sales and other indicators related to the productivity and investment.

The Wilcoxon test is a non-parametric test of median difference, which gives us an idea on the median before and the median after privatization. It is essential to note that this test, which is a rank test, is used in our study to test the significance of the changes in performance indicators observed after privatization.

The test results are shown in the table below, for each variable chosen was calculated medians and averages from the data series of the three years before the privatization (column2), then, three years after this process (column 3). In the fourth column shows the results of the non-parametric Wilcoxon test applied to these two series. The sign test result allows us to test the significance of companies operating as expected (column 5 and 6).

Table 1: Test of static efficiency

Indicators	*Median Before*	*Median After*	*Median difference test*	*Percentage of firms that operating as expected*	*Significance test*
Profitability					
Return on Assets (ROA) = Net Income / Total Assets	3.97%	3.86%	0.6221	40%	0.19
Current income / Equity	14.19%	10.59%	0.599	33.33%	0.165
Return on Equity (ROE) = Net Income / Total Equity	12.36%	8.54%	0.307	40%	0.19
Return on Sales (ROS) = Net Income / Sales	6.19%	7.26%	0.8357	46.6%	0.24
Productivity					
Sales Efficiency (SALEFF) = Sales / Total Employment	45175.54	54149.77	1.4102	100%	3.92***
Net Income Efficiency (NIEFF) = Net Income /Total Employment	2930.23	2761.36	0.3733	73.33%	1.74*
Assets Per Employee =Total Assets / Employees.	50468.6	82937.66	1.659*	93.33%	3.44***
Investment Policy					
Capital Expenditures on Fixed Assets = Capital Expenditure /Total Assets	11.24%	6.95%	0.2986	53.33%	0.59
Employment					
Total Employment (EMPL) = Total number of employees	408	339.66	0.2073	33.33%	0.165
Dividend Policy					
DIVSAL = Dividend / Sales	30.00%	60.00%	0.394	60%	0.86
Dividend/ Net income	0.52%	0.56%	0.3318	66.66%	1.51
Governance					
Number of directors	8	9	1.28205	69.23%	1.62
Percentage of external directors	20%	70%	2.8974***	92.30%	3.39***

***** : Test reject the null hypothesis of no difference in median at the 10% level.

****** : Test reject the null hypothesis of no difference in median at the 5% level.

******* : Test reject the null hypothesis of no difference in median at the 1% level.

3.2 Interpretation of results

Based on the above table and specifically on the first two columns, it appears to have a growth of performance as measured by productivity ratios. Also, no significant differences appear, regarding profitability indicators , which leads us to conclude that privatization does not have a significant effect on performance measured by Current income / Equity, Net Income / Total Equity (ROE) and Net Income / Total Assets (ROA).

IJISET - International Journal of Innovative Science, Engineering & Technology, Vol. 2 Issue 4, April 2015.
www.ijiset.com
ISSN 2348 – 7968

In the same way, and from this table we can see that the evolution of performance measured by Net Income / Sales is not significant; therefore we accept the hypothesis of absence of median difference. The same interpretation for the other indicators used except in the productivity ratios measured by Total Assets / Employees, who appears significant at 10%, which leads us to reject the hypothesis of no difference to a median of 10% level. From these results we conclude that privatization has led to an increase in productivity. For the governance of these companies we find that there's a significant difference at 1% level, which allows us to conclude that the percentage of external directors in these companies has increased with privatization.

Regard to column 5 and 6, which deals with the sign test and allows to know the significance of the percentage of firms evolving as planned, we note that profitability indicators remain insignificant. Indeed, we see from the results depicted in the above table that only 40% of all companies have realized an increase in return on assets and in return on equity. Similarly, we find that the percentage of firms that have achieved increased profitability ratios, investment policy, dividend policy and employment, is not significant.

Productivity ratios have some significance. Indeed, the ratios Sales / Total Employment and Total Assets / Employees appear significant at only 1% level. We note that 100% of companies have realized an increase in the ratio Sales / Total Employment, and the median after privatization has increasing trend from 45175.54 to 54149.77. Similarly, the ratio of Net income / Total Employment appears significant at the 10% level.

This analysis has two limits; First, the comparison is performed on the average of the three years before and after privatization for each indicator which in consequence smooth the effect of privatization. . Second, the tests do not reveal whether the change in the indicator occurred before or after privatization and therefore we cannot conclude that the variation in performance is the result of preparation for privatization or private management. Therefore, the application of the Wilcoxon test to years -3, 0, +3 will allow us to better identify the temporal effects. To conclude that the increase in performance is due to privatization, it is necessary that the indicator be significant over the period, ranging from 0 to +3. The results of this test are presented in the following table.

Table 2: Test of the effect of privatization on the various indicators.

Indicators	Median -3	Median 0	Median +3	Test -3, 0	Test -3, 3	Test 0, 3
Profitability						
Return on Assets (ROA) = Net Income / Total Assets	5.10%	4.22%	4.05%	0.4769	0.497	0.0414
Current income / Equity	15.49%	9.30%	10.01%	0.9954	0.0414	0.8295
Return on Equity (ROE) = Net Income / Total Equity	11.82%	8%	7.96%	0.7466	1.1613	0.2488
Return on Sales (ROS) = Net Income / Sales	6,81%	4,90%	5,33%	0,248	0,248	0,1659
Productivity						
Sales / Equity	1.3232	1.0902	1.0033	0.0002	0.2073	0.20719
Sales Efficiency (SALEFF) = Sales / Total Employment	39838,74	47405,63	56797,91	0,871	1,2028	0,4977
Net Income Efficiency (NIEFF) = Net Income /Total Employment	2723.63	3236.210	3027.890	0.2903	0.4562	0.2488
Assets Per Employee =Total Assets / Employees.	48833.51	66854.51	92234.72	1.4932	1.7835*	0.6636
Investment Policy						
Capital Expenditures on Fixed Assets = Capital Expenditure /Total Assets	12.91%	17.36%	4.59%	0.5392	1.2028	1.3272
Employment						
Total Employment (EMPL) = Total number of employees	410	330	341	0.3525	0.1244	0.2903
Dividend Policy						
DIVSAL = Dividend / Sales	0.30%	0.40%	1%	0.6429	0.9747	0.2934

Dividend/ Net income	17.41%	29.04%	43.68%	0.4147	1.119	0.7788
Governance						
Number of directors	8	9	9	0.666	1.3589	0.7692
Percentage of external directors	25%	63%	75%	2.128**	2.2051**	0.1025

** : Test reject the null hypothesis of no difference in median at the 5% level.

This table shows the average and median corresponding to the extreme years that are the year -3, year 0 and year +3 and the Wilcoxon test applied in the year -3 to 0, the year - 3 to +3 and the year 0 to year +3. This study allows us to know whether the significance variation of the performance occurred before or after privatization.

Based on the results of the Wilcoxon tests, we note that the increase in performance measured by the ratio Current income / Equity and Net income / Sales (ROS) is not significant in both periods ranging from year -3 to 3 and from year 0 to 3.

Regarding productivity measured by Total Assets / Employees, although it apparently shows a significant increase in the period between -3 and +3, it was not significant between the year of privatization and three years after; it varies significantly before privatization. This leads us to conclude that the increase in performance was made before the process.This increase in performance before the privatization can be explained by the fact that companies that are intended to privatization normally undertake restructuring to be most interesting for the sale and these effects of restructuring may occur before privatization. Concerning the governance of these companies, we note that the significant variation has been observed before privatization, which justifies the operations of corporate restructuring carried out by the State prior to their privatization. Our results corroborate those of Dewenter and Malatesta (2001) who made the same tests on an international sample, these authors also found that improving the performance of privatized firms is prior to privatization.

4. Conclusion:

The first test for the effect of privatization on various performance indicators observed finds a positive and significant effect of privatization on productivity and on percentage of outside directors in the privatized enterprises. In total, only the performance measured by Total Assets / Employees attribute to the privatization significant variation, which is insufficient to conclude overall a significant positive effect of privatization on performance.

Thus, we cannot say with absolute that privatization is a performance improvement factor, it can be, conversely, a source of lost productivity and symptoms of crisis may occur following the irrational use of this technique. In addition, we cannot consider that the achievement of better results and a good enterprise performance is the only logical outcome of privatization.

Thus, privatization should not be absolute and arbitrary use and other activities such as the health sector, transportation, education, are by preference, supported by the state. Privatization no longer appears as a simple transfer of ownership, but rather as a new form of state regulation of the economy or a redistribution of economic activities between the state and private actors.

Although the tests conducted in this paper lead to clearly perceive the effects of privatization, this method of studying static efficiency does not capture the dynamic effects of privatization, that is to say, the speed with which this adjustment is made, and also does not provide individual results for each company.

References

[1] Adam, c., Cavendish, W., & Mistry, P. (1992). Adjusting Privatisation : Case Studies from Developing Countries. James Currey. London.

[2] Bishop, M.,& Kay, J. (1989). Privatization in the United Kingdom: Lessons from Experience. World Development, 17(5), 643-657

[3] Boardman,A., & Vining,A. (1989). Ownership and performance in competitive environnements: a comparison of performance of private, mixte and state-owned-entreprises. Journal of Law and Economics, 32(1), 1-33.

[4] Boardman,A., Laurin,C., & Vining,A. (2000). Privatization in Canada: Operating, Financial, and Stock Price Performance with International Comparisons. Working paper, University of British Columbia.

[5] Boycko, M., Shleifer, A., & Vishny, R. (1996). A Theory of Privatization. The Economic Journal, 106 (435), 309-320.

[6] Cubbin, J., Domberger, S., & Meadowcroft, S. (1987). Competitive Tendering and Refuse Collection: Identifying the Source of Efficiency Gains. Fiscal Studies, 8(3), 49-58.

[7] D'Souza, J., Megginson,W., & Nash, R. (2000). Determinants of Performance Improvements in Privatized Firms: The Role of Restructuring and Corporate Governance. Working Paper, University of Oklahoma.

[8] Dewenter,K., & Malatesta, P. (1997). Public Offerings of State-owned and Privately-owned Enterprises: An International Comparison. The Journal of Finance, 52(4), 1659-1679.

[9] Dewenter,K., & Malatesta, P. (2001). Firm Ownership and Performance. American Economic Review, 91(1), 320-334.

[10] Estrin, S., Gelb, A., & Singh, I. (1995). Shocks and Adjustment by Firms in Transition: A Comparative Study. Journal of Comparative Econonomics , 21(2), 131-153.

[11] Frydman, G., Hessel, M., & Rapaczynki, A. (1999). When Does Privatization Work? The Impact of Private Ownership on Corporate Performance in the Transition Economies. Quarterly Journal of Economics, 114(4), 1153–1191.

[12] Galal, A., Leory, J ., Tandon, P., & Vogelsang, I. (1994). Welfare Consequences of Selling Public Enterprises: An Empirical Analysis: A Summary. New York: Oxford University Press. Retrieved from http://dx.doi.org/10.1596/0-8213-2976-6

[13] Kay, J., & Thompson, D. (1986). Privatization: A Policy in Search of a Rationale. The Economic Journal, 96(1), 18-32.

[14] Megginson, W., Nash, R., & Randenborgh, M. (1994). The Financial and Operating Performance of Newly Privatized Firms: An International Empirical analysis. Journal of Finance, 49(2), 403-452.

[15] Megginson, W., & Netter, J. (2001). From State to Market: A Survey of Empirical Studies on Privatization. Journal of Economic Literature, 39(2), 321-389.

[16] Newberry, D., & Pollitt, M. (1997). The Restructuring and Privatisation of Britain's CEGB: Was it Worth it? . Journal of Industrial Economics, 45(3), 269–303.

[17] Parker, D., & Martin, S. (1991). The Impact of UK Privatization on Labour and Total Factor Productivity. Scottish Journal of Political Economy, 42(2), 201-220.

[18] Parker, D. (1993) . Privatisation Ten Years on : A critical Analysis of its Rational and Result's. in N.M Healey (ed.) Britain's Economic Miracle Myth or Reality. London, Routledge.

[19] Pinto, B., Belka, M., & Krajewski, S. (1993). Transforming State Enterprises in Poland. Brookings Papers on Economic Activity, 1(1), 213-270.

[20] Shirley, M. (1999). Bureaucrats in Business: The Role of Privatization in State Owned Enterprise Reform. World Development, 27(1), 115-136.

[21] Villalonga, B. (2000). Privatization and Efficiency: Differentiating Ownership Effects from Political, Organizational and Dynamic Effects. Journal of Economic Behaviour and Organization, 42(1), 43-74.

Appendix: List of Sample privatized public enterprises.

Enterprises	Privatization date	% Of the state before privatization	% Of the state after privatization
AMS	December 1994	51,20%	38,90%
TUNISAIR	July 1995	79,86%	64,86%
SIMPAR	January 1997	26,53%	10,24%
STAR	August 1997	60,89%	21,00%
SOTETEL	June 1998	33,93%	15,70%
SOTUMAG	April 1999	72,50%	37,50%
SIAME	August 1999	23,10%	0,00%
SOTRAPIL	December 2000	59,03%	34,03%
SIPHAT	March 2001	100,00%	67,80%
STIP	November 2001	15,00%	4,00%
TLAIT	April 1993	35,32%	12,00%
MAGASIN GENERAL	November 1999	24,00%	12,00%
SOTUVER	March 1996	100,00%	0,00%