

THE FINANCIAL AND OPERATING PERFORMANCE OF PRIVATIZED COMPANIES IN TURKEY

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ABSTRACT

This paper examines the post privatization performance of privatized companies using a sample of privatization cases in Turkey completed within 1990-2000. Research findings indicate that, when the performance criteria for private enterprises are considered, privatization in competitive industries results in significant increases in return on investment. This increase comes from increasing financial leverage, whereas return on assets variable does not contribute significantly to increase in return on investment. The cash flow margin increases postprivatization, however, asset productivity declines, which is due to the huge asset expansion in privatized companies. The expansion in assets doesn't represent increased capital investment, and primarily financed by financial leverage. Privatization benefits stem from increased production efficiency and eliminating redundant labor force.

KEYWORDS: *Privatization, Emerging markets, Ownership Structure.*

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I. INTRODUCTION

The economic history has witnessed waves of nationalization and privatizations, both being defended on similar social and efficiency grounds. Theoretical models can hardly distinguish between efficiency superiority of different ownership arrangements. It is generally accepted that it is competition and effectiveness of regulation, not ownership that makes difference from an efficiency point of view (Vickers and Yarrow, 1988; Adaman, 1993).

“Austrian” perspective of the efficiency-enhancing nature of private property claims the superiority of the private ownership over public ownership. There are two separate mechanisms under private ownership preventing deviations from efficiency rules. These are shareholder’s control over the managers and the discipline of capital markets in the forms of takeovers and bankruptcy cost. Shareholders have control over the management through the voting power. Inappropriate behavior by management may cause the termination of their relation with the company. However, under conditions of highly dispersed shareholding according to portfolio theory as demonstrated by Fama (1977), no shareholders would have much incentive to monitor the management’s performance. In addition, costs associated with obtaining information about the performance of management team do not leave an incentive for shareholders to control the management’s performance. In any case, stockholders cast their votes on the management of the companies through their buy or sell decisions in the exchanges. Jensen and Meckling (1976) claimed that the agency problem may be solved through the discipline implemented by the capital markets. The threat of takeover emerges when management team pursues policies that maximize their own wealth instead. This threat deters management to pursue their interests instead of shareholders’ (Vickers and Yarrow, 1988). However, the informational asymmetry between potential takeover bidders and management constitute a drawback in the functioning of the takeover mechanism. Management may also, pursue a set of strategic actions to avoid being taken over. The difficulties in raising additional capital and the possibility of bankruptcy threaten the management that if they did not improve efficiency, they would face the reality of running out of capital. This discipline also has severe limitations. If management thinks that their decisions do not have an effect on bankruptcy, they will follow their interest-maximizing strategy.

The so-claimed “public-ownership inefficiency“ is attributed to the lack of capital market incentives to monitor manager’s performance, the lack of bankruptcy threat and complexity of the “agency” relationship (Demsetz, 1988). Regarding the complexity of agency problem under public ownership, the general opinion is that public ownership leads to sub-optimal decisions.

Comprising these theories, it is set forth that privatization itself does not lead to the increase or decrease in the economic efficiency. Competition and the effectiveness of the regulation are determining factors that affect the efficiency gains from privatization. Vickers and Yarrow (1988:pp 44) writes: “Where product markets are competitive, it is more likely that the benefits of private-monitoring systems (e.g. improved internal efficiency) will exceed any accompanying detriments (e.g. worsened allocative efficiency)... In the absence of vigorous product market competition, however, the balance of advantage is less clear cut and much depend upon the effectiveness of regulatory policy.”

Empirical literature provides partial support to the theory that private sector is more efficient than public sector. Financial literature provides evidence that privatization results in significant increases in profitability, output, operating efficiency, and dividend payments (Megginson, Nash and Van Randenborgh, 1994). However, the methodology of these researches can be criticized, since these studies focus almost exclusively upon the ownership variable and fail to take proper account of the effects on performance of differences in market structure, regulation, and other relevant economic factors.

In the other hand, the previous empirical studies on privatization overwhelmingly, focus on the developed countries, overlooking developing countries. However, the form and context of privatization are quite different in developing countries and it is necessary to make a distinction. Weak market structure, weak competition structure in markets, frequent failures of markets, weak regulation structure, political interventions, unequal income distribution, high levels of unemployment, regional imbalances, and relations with richer countries imply that the effects of privatization policies might be different in developing world.

State economic enterprises in Turkey have dominated industrial and service sectors since nineteen thirties. State economic enterprises were given the role of providing underpriced semi-processed inputs to the private sector. In addition, most state economic enterprises have

to shoulder the burden of coping with the uncertainty prevalent in newly opened markets. State enterprises also assumed to give importance to technology-intensive investments. The serious regional imbalances in Turkey require the shifting of the capital to the regions with low-income by public enterprises. Strategic units of the economy, such as telecommunications and industries related with national security are dominated by public enterprises, as well (Önder, 1993).

The weaknesses of private ownership to deal with the above-mentioned broad set of economic priorities have led to the dominations of the public enterprises in the economy so far. Turkey followed an inward oriented development strategy which relied on protection and import substitution policies until 1980. After 1980 Turkey has been trying to integrate its economy to world economy. However, the globalization process throughout the world implicitly require privatization all over the developing world. The World Bank, IMF and OECD have been very instrumental in this sense, since they set as a precondition for obtaining a loan aid (Whitfield, 1992).

Turkey prepared privatization policies in 1985 and has started to implement it since the beginning of 1986. Public shares in 219 enterprises have been covered in the privatization program. Public shares in 19 enterprises are excluded from the privatization program and public shares in 40 enterprises have not been privatized until the end of 2000. Remaining enterprises are privatized so far.

The failure of empirical researches to consider changes in the economic conditions and market structure and special characteristics of the emerging markets encouraged us to investigate the post privatization performance of privatized companies in Turkey. Our primary database consists of 162 privatized enterprises in Turkey privatized between 1986 and 2000. However, since the privatized company is required to have at least, three years pre- and post privatization financial statements data, the sample size drastically reduced to 20 privatization cases. Overwhelming majority of companies in our sample scope is operating in the competitive industries.

The hypotheses tested are that privatization (1) increases a firm's profitability, (2) increases its operating efficiency, (3) increases its capital spending, (4) increases its output, (5) decreases employment, (6) decreases leverage.

Experimental design has been chosen to test these predictions. The performance of privatized firms is likely to be influenced by changes in market structure, regulation, and other relevant economic factors. Our tests, therefore, control for these factors by comparing sample privatized firms' performance with their corresponding industries'.

Research results indicate that privatization results in significant increases in return on investment variables of the privatized companies. The increase in return on investment variable doesn't stem from changes in industrial patterns and rather can be attributed to the privatization. Preprivatization return on investment variable value was significantly below than industrial level, privatization helps them to reach to the industrial standards.

The main source of the significant increase in return on investment variable is the financial leverage, whereas another return on equity component which is return on assets doesn't significantly contribute to the increase in return on equity. Financial leverage significantly increases by 23% postprivatization. The postprivatization level of financial leverage is 5% higher than industry level. The further analysis showed that increasing financial leverage is used to finance huge postprivatization asset expansion.

The analysis of why return on assets hasn't increased significantly after privatization shows that there are offsetting effects of two components of return on assets which makes increase in return on assets not statistically significant. While first component return on sales, which may be defined alternatively as cash flow margin shows statistically significant increase, second component, asset turnover, which may be defined alternatively as asset productivity variable, declines significantly in postprivatization period. The significant increase in return on sales variable and the significant decrease in asset turnover variable is not due to the industrial or economywide changes. These changes are directly attributed to the privatization. The increase in return on sales may also be the result of increasing the product prices to market levels which were kept below the market levels for social and economic reasons.

The decline in asset turnover variable is somewhat surprising, since privatized companies are assumed to increase their asset productivity. The analysis of sales (quantity) changes shows that privatized companies have increased their sales significantly. It means that in order to observe declining asset productivity, total assets should expand in much higher ratios than

sales. The analysis of capital investment variable indicates that asset expansion is not due to the capital investment, which is necessary for the long-term viability of enterprises.

Further analysis of the gains from privatization shows that production and sales efficiency increases after privatization. These increases are due to the declining employment. Employment in privatized companies has been cut by 42% after privatization.

The remainder of the paper is organized as follows. Section II describes sample and data used in the study. Section III describes the research methodology. Section IV analyzes postprivatization performance of privatized firms. Section V gives a brief conclusion.

II. SAMPLE AND DATA

Privatization practices have started to implement in Turkey since the beginning of 1986. Privatization program covered public shares in 219 enterprises. Public shares in 19 enterprises are excluded from the privatization program and public shares in 40 enterprises have not been privatized until the end of 2000. Remaining 160 enterprises are privatized so far.

Our primary database consists of 162 privatized enterprises in Turkey privatized between 1986 and 2000. This primary database converted to the final sample space using the below-mentioned criteria:

1. Privatized companies should operate in manufacturing industry.
2. The privatized company is required to have three years preprivatization and three years postprivatization financial statements data available in the files of State Privatization Office of Turkey.

Due to unavailability of financial statements data for most of the privatized companies in the files of State Privatization Office of Turkey, our sample size drastically reduced to 20 privatization cases. All of the available data of privatized enterprises are collected from the files of State Privatization Office of Turkey. The financial statements data for industrial comparison purposes are collected from the Istanbul Stock Exchange Dataset.

III. RESEARCH METHODOLOGY

3.1. Testable Predictions

Since our primary objective is to test whether there are any performance improvements after the privatization, we examine the cash flow, profitability, operating efficiency, output, and capital investment variables. Specifically, we test the hypotheses that privatization (1) increase the privatized firm's cash flow, (2) increase the privatized firm's cash flow margin, (3) increase privatized firm's asset productivity, (4) increase privatized firm's operational efficiency, (5) increase privatized firm's capital spending, (6) decrease privatized firm's employment cost. Table 1 presents our testable predictions and the empirical proxies we employ.

3.2. Variables

We use Du Pont system of analysis to see whether privatization has caused performance improvements in privatized companies. The focus point of our study is *return on equity* and *return on assets*.

Return on equity is the cash flow variable and measures improvements in operating performance in the basis of invested equity. ROE is measured by using EBIT divided by the total equity. We define *EBIT*, measured over the year, as sales, minus cost of goods sold and selling and administrative expenses, depreciation expenses. This measure excludes the effect of interest expense and taxes.

By definition,

$$ROE = EBIT/Equity$$

$$ROA = EBIT/Assets$$

By making following transformations, we may express ROE in terms of ROA and financial leverage (FL).

$$ROE = (EBIT/Assets) * (Assets/Equity)$$

$$ROE = ROA / (Equity/Assets) = ROA / ((Assets - Debts) / Assets)$$

$$ROE = ROA / (1 - FL) \quad (1)$$

Table 1
Summary of Testable Predictions

This table details the economic characteristics we examine for changes resulting from privatization. We also present and define the empirical proxies we employ in our analyses. The index symbols *post* and *pre* in the predicted relationship column stand for postprivatization and preprivatization, respectively.

Variable	Proxies	Predicted Relationships
Cash Flow	Return on Equity (ROE) = $EBIT / Total\ Equity$ Return on Assets (ROA) = $EBIT / Total\ Assets$	$ROE_{post} > ROE_{pre}$ $ROA_{post} > ROA_{pre}$
Cash Flow Components	Return on Sales (ROS) = $EBIT / Sales$ Asset Turnover (AT) = $Sales / Total\ Assets$	$ROS_{post} > ROS_{pre}$ $AT_{post} > AT_{pre}$
Financial Leverage	Financial Leverage (FL) = $Total\ Debts / Total\ Assets$	$FL_{post} > FL_{pre}$
Capital investment	Capital Expenditure to Sales (CESA) = $Capital\ Expenditure / Sales$ Capital Expenditure to Total Assets (CETA) = $Capital\ Expenditure / Total\ Assets$	$CESA_{post} > CESA_{pre}$ $CETA_{post} > CETA_{pre}$
Efficiency	Sales Efficiency (SALEF) = $Sales\ (Quantity) / Employer$ Production Efficiency (PREF) = $Production(Quantity) / Employer$	$SALEF_{post} > SALEF_{pre}$ $PREF_{post} > PREF_{pre}$
Output and Sales	Total Output (OUTP) = $Total\ Output\ (Quantity)$ Total Sales (SALE) = $Total\ Sales\ (Quantity)$	$SALEF_{post} > SALEF_{pre}$ $PREF_{post} > PREF_{pre}$
Capacity Utilization	Capacity Utilization (CU) = $Production / Capacity$	$CU_{post} < CU_{pre}$
Employment	Number of Employers (EMP)	$PEE_{post} < PEE_{pre}$

Therefore, ROE can be expressed in two components; ROA and FL. Therefore any increase in ROE may come from two sources: An increase in ROA or an increase in FL.

If there are improvements in ROA in the postprivatization period, it can arise from two sources. These include improvements in cash flow margins and greater asset productivity. Cash flow margin (ROS), which is EBIT on sales, measures the pretax operating cash flows generated per sales dollar. Asset turnover (AT) measures the sales dollars generated from each dollar of investment in assets (market value of the assets). The variables are defined so that their product equals to the ROA.

$$\begin{aligned} ROA &= EBIT/ Assets = (EBIT/Sales)*(Sales/Assets) \\ ROA &= ROS*FL \end{aligned} \quad (2)$$

Operating efficiency variables primarily deal with the increased usage of labor to produce more output. Sales and Production on total employment provide a measure to test the improvements in operating efficiency.

Cash flows can be increased by focusing on short-term performance improvements at the expense of the long-liability of the firm. To assess whether the merged firms focus on short-term performance improvements at the expense of long-term investments, we examine their capital investments. Two empirical proxies are employed to measure capital investments; capital expenditures to sales and capital expenditures to total assets.

Privatizations benefits may also stem from the lowered labor costs. Because we are unable to obtain sufficient data on wages directly, we examine number of employers to analyze changes in labor costs in years surrounding the privatization.

The efficiency implications of the privatization extend to the increased usage of the capacity, which is measured by the capacity utilization ratio.

3.3 Research Methodology

We use two different approaches to test the effects of privatization on the performance of the firms.

First approach exploits the raw variable data for privatized companies over pre- and postprivatization windows. We first compute empirical proxies for every company for a six - year period: three years before through three years after privatization. We then calculate the median of each variable for each firm over pre- and postprivatization windows (preprivatization= years -3 to -1; postprivatization = years +1 to +3). Year 0, the year of the privatization, is excluded from the analysis since the variable values for this year are not comparable.

We use *Wilcoxon Signed-Rank Test* as our principal method of testing for significant changes in the variable values. We base our conclusions on the standardized test statistic Z , which for samples of at least 10 follows approximately a standard normal distribution.

Second approach exploits industry-adjusted variable values. If we focus exclusively upon the ownership variable and fail to take proper account of the effects on performance of differences in market structure, regulation, and other relevant economic factors, it would be misleading to state that performance improvements or deteriorations are due to the privatization. Economic factors have much effect on the postprivatization performance of the privatized firms and some of the difference between the preprivatization and postprivatization performance could be due to economywide and industry factors, prior to a continuation of firm-specific performance before the privatization. Hence, we use industry-adjusted performance of the privatized firms over pre- and postprivatization windows as our primary benchmark to evaluate postprivatization performance.

Industry-adjusted performance is calculated by subtracting the industry median from the sample firm value for each year and firm. We use the financial data of companies operating in Istanbul Stock Exchange in calculating industry-adjusted values. Here again, *Wilcoxon Signed-Rank Test* and is used for testing the significant changes in variable values.

IV. Empirical Results

In this section we present and discuss our empirical results for the sample of privatized firms. We present and discuss our empirical results (in Table 2) for the complete sample of 15 privatizations using *raw variable data*. We also discuss our results for the privatization sample using *industry-adjusted variable data* (Table 3).

Table 2**Postprivatization Performance Analysis: Summary of Results Using Company Raw Data**

This table presents empirical results for our full sample of privatizations. For each empirical proxy we give the number of usable observation, the mean and median values, standard deviation of the proxy for the three-year periods prior and subsequent to privatization, the mean and median change in the proxy's value for postprivatization versus preprivatization period, and a test of significance of the change in median values. The final column detail the percentage of firms whose proxy values change as predicted.

<i>Variables</i>	<i>N</i>	<i>Pre privatization Mean (Median)</i>	<i>Pre privatization Standard Deviation</i>	<i>Post privatization Mean (Median)</i>	<i>Post privatization Standard Deviation</i>	<i>Mean Change (Median)</i>	<i>Z-Statistics Difference in Medians</i>	<i>Percentage of Firms that Shows Post privatization Increase</i>
<i>Cash Flows</i>								
Return on Equity (ROE)	20	0.20 (0.12)	0.38	0.42 (0.45)	0.54	0.22 (0.33)	1.98***	0.80
Return on Assets (ROA)	20	0.14 (0.07)	0.19	0.17 (0.16)	0.15	0.03 (0.09)	1.08	0.70
<i>Cash Flow Components</i>								
Return on Sales (ROS)	20	0.07 (0.08)	0.19	4.33 (0.28)	9.40	4.26 (0.20)	2.76***	0.85
Asset Turnover (AT)	20	1.21 (1.08)	0.64	0.53 (0.50)	0.37	-0.68 (-0.58)	-3.81***	0.05
<i>Financial Leverage</i>								
Total Debt/Total Assets (FL)	20	0.37 (0.32)	0.24	0.57 (0.57)	0.22	0.20 (0.25)	2.46***	0.85
<i>Capital Investment</i>								
Capital Expenditure to Sales (CESA)	15	0.03 (0.02)	0.03	0.17 (0.02)	0.08	0.14 (0.00)	1.14	0.53
Capital Expenditure to Total Assets (CETA)	15	0.06 (0.04)	0.08	0.07 (0.01)	0.12	0.01 (-0.03)	-0.63	0.27

Table 2
Postprivatization Performance Analysis: Summary of Results Using Company Raw Data
Continued

<i>Variables</i>	<i>N</i>	<i>Pre privatization Mean (Median)</i>	<i>Pre privatization Standard Deviation</i>	<i>Post privatization Mean (Median)</i>	<i>Post privatization Standard Deviation</i>	<i>Mean Change (Median)</i>	<i>Z-Statistics for Difference in Medians</i>	<i>Percentage of Firms that Changed as Predicted</i>
<i>Operating Efficiency</i>								
Sales Efficiency (SALEFF)	19	999 (989)	763	1,865 (1,831)	1,670	671 (842)	3.34***	0.84
Production Efficiency (PRODEFF)	20	970 (974)	757	1,717 (1,743)	1,464	747 (769)	3.32***	0.85
<i>Output and Sales</i>								
Total Output (OUTP)	20	274,970 (279,117)	185,265	312,548 (329,009)	226,772	37,578 (49,892)	1.65*	0.60
Total Sales (SALE)	19	311,817 (308,903)	189,363	359,786 (407,727)	250,060	47,969 (98,824)	1.89*	0.63
<i>Capacity Utilization</i>								
Capital Utilization (CU)	20	0.72 (0.72)	0.15	0.72 (0.80)	0.30	0.00 (0.08)	0.93	0.55
<i>Employment</i>								
Employer (EMP)	20	370 (308)	335	398 (179)	935	28 (-129)	-3.01***	0.90

*, **, *** indicates significance at 10, 5, and 1% significance levels respectively using two-tailed test.

Table 3**Postprivatization Performance Analysis: Summary of Results Using Company Industry-Adjusted Data**

This table presents empirical results for our full sample of privatizations. For each empirical proxy we give the number of usable observation, the mean and median values, standard deviation of the proxy for the three-year periods prior and subsequent to privatization, the mean and median change in the proxy's value for postprivatization versus preprivatization period, and a test of significance of the change in median values. The final two columns detail the percentage of firms whose proxy values change as predicted.

<i>Variables</i>	<i>N</i>	<i>Pre privatization Mean (Median)</i>	<i>Pre privatization Standard Deviation</i>	<i>Post privatization Mean (Median)</i>	<i>Post privatization Standard Deviation</i>	<i>Mean Change (Median)</i>	<i>Z-Statistics for Difference in Medians</i>	<i>Percentage of Firms Changed As Predicted</i>
<i>Cash Flows</i>								
Return on Equity (ROE)	20	-0.29 (-0.32)	0.40	-0.02 (-0.06)	0.51	0.27 (0.26)	2.20**	0.80
Return on Assets (ROA)	20	-0.15 (-0.19)	0.19	-0.11 (-0.13)	0.14	0.04 (0.06)	1.19	0.70
<i>Cash Flow Components</i>								
Return on Sales (ROS)	20	-0.22 (-0.21)	0.19	4.03 (-0.03)	9.40	4.25 (0.18)	2.80***	0.85
Asset Turnover (AT)	20	0.21 (0.07)	0.63	-0.37 (-0.41)	0.35	-0.58 (-0.48)	3.44***	0.15
<i>Financial Leverage</i>								
Total Debt/Total (FL)	Assets 20	-0.02 (-0.07)	0.22	0.20 (0.20)	0.22	0.22 (0.27)	2.88***	0.85

*, **, *** indicates significance at 10, 5, and 1% significance levels respectively using one-tailed test

4.1. ROE Changes

Research findings indicate that privatized companies' ROE shows median 33% increase after privatization. 80% of all firms experience increasing ROE. The difference between pre- and postprivatization ROE values are statistically significant at 1 percent level. Examining standard deviations, it is seen that postprivatization ROE shows much more dispersion compared with preprivatization period.

The examination of industry-adjusted ROE, in order to see whether ROE increases can be attributed to the industrial patterns, shows that preprivatization ROE is on median 32% lower than private companies who belongs to the same industry. However, after the privatization privatized companies' average and median ROE reach to the industry average and median. The postprivatization change in industry-adjusted ROE values is significant at 1 percent level.

The median improvement in postprivatization raw ROE is 33%, whereas the median improvement in postprivatization industry-adjusted ROE of companies is 26%. This shows that 26% of postprivatization improvements are attributed to the privatization and 7% of postprivatization improvements are attributed to the industry's trend.

4.2. ROA Changes

ROA is one out of two components of ROE. The analysis of privatized companies shows that median preprivatization ROA changes from 7% to postprivatization value of 16% showing 9% improvement. The change in median values is not significant, though 70% of privatized firms experience increasing ROA.

Industry-adjusted analysis shows that privatized companies industry-adjusted ROA value experience postprivatization 6% increase. However, the change in the industry-adjusted ROA values after privatization is not significant at conventional levels again.

4.3. Financial Leverage Changes

The second component of ROE is the financial leverage (FL). Increases in FL cause higher ROE. Preprivatization median FL of companies is 32%. This ratio has increased by 25 % after the privatization. The change in FL is significant at 1% significance level. 85% of privatized companies experience increasing FL after the privatization.

Apparently, increased usage of the financial leverage does not mean exploitation of redundant debt capacity, since FL of privatized companies is on median 20% higher than their counterparts in the same industries postprivatization. The Wilcoxon test statistics for the changes in the industry-adjusted variable values is significant at 1 % level, showing that privatized firms do not follow industrial trend.

4.4. Changes in ROA Components

As we have mentioned in the research methodology section, changes in ROA may stem from two sources: changes in return on sales (ROS) or increasing asset turnover (AT). Though, there aren't significant changes in raw and industry-adjusted ROA variable values, the analysis of ROA components show that ROA components shows significant and interestingly, inverse changes.

The analysis of ROS value shows that median ROS value in the preprivatization period is only 8%. This value has increased 20% on median after the privatization, reaching to the 28%. The Wilcoxon test statistics for the changes in the variable values is significant at 1 percent significance level and 85 percent of all firms experience improvements in ROS values.

The analysis of industry-adjusted values shows that privatization was able to raise ROS of formerly public-owned companies to the industry levels. Preprivatization industry adjusted ROS increased from negative 21 % to the negative -3% after privatization. The Wilcoxon test statistics is significant at 1 percent significance level and 85 percent of all firms experience improvements in industry-adjusted ROS values. Total 20% increases in postprivatization ROS improvement is attributed 18% to the privatization and 2% to the average industry variable value increases.

The surprising finding which is contrary to our research findings is the significant decline in the asset turnover (AT). Preprivatization median AT value of companies was 1.08, but it has decreased to 0.50 after privatization. The decrease in AT is 58% and statistically significant at 1% level. Interestingly, 95% of the privatized companies have experienced deteriorating AT. The analysis of industry-adjusted AT values to see whether economywide and industrial patterns have any effect on AT shows that privatized firms owned higher AT ratio than their industries prior to the privatization. However, this ratio has significantly decreased after the privatization and fell 41% below than industry median. Therefore, decreases in AT cannot be attributed to the changes in the industries. The unexpected decline in the AT shows that privatized companies experience huge asset expansion.

4.5. Operational Efficiency, Output and Employment Changes

Financial literature predicts that internal efficiency increases as a result of the privatization. Our research findings confirm to this prediction: sales and production efficiency increases after the privatization. Sales efficiency is measured as the units sold divided by the total number of employers, whereas production efficiency is the units produced over the total number of employers

Each employer has produced 974 units of product in median prior to the privatization. This number increases to 1743 units of product postprivatization. The difference is substantial and significant at 1% significance level. 85% of all privatized companies have experienced increasing production efficiency. Similar patterns exist in sales efficiency. Increase in sales efficiency is significant at 1% level and 84% of all privatized companies has experienced increasing sales efficiency after privatization.

The analysis of the components of sale and production efficiency shows that total quantity of output and sales have increased significantly postprivatization. The Wilcoxon test statistics is significant at 10% level.

Apparently, the main leading component of increasing efficiency is decreasing employment in privatized firms. Total number of employers has decreased from median 308 person to

median 179 person. All of the privatized firms have experienced declining employment in their companies. Wilcoxon test statistics is significant at 1 percent level.

The increase in the production and sales efficiency through declining employment is consistent with the writings of Ertuna (1993). Ertuna writes: "...Political interference is rightfully blamed for more than 20% redundancies (in public-owned industries)". Of course, privatized companies first get rid of this redundancies and this has been reflected in increased sales and production efficiencies.

4.6. Capital Investment

Capital investment intensity is measured by capital expenditure divided by sales (CESA) and capital expenditures divided by total assets (CETA). On median our sample firms decrease their capital investment relative to total assets and sales. It means that the asset increases were not due to the capital investments. However, both measures are not statistically significant according to the Wilcoxon tests. These results suggest that privatizing firms are not sacrificing their long-term perspective for the short- and medium-term profitability.

V. CONCLUSION AND DISCUSSIONS

Our empirical analysis of postprivatization performance of privatized firms provides support to the "higher internal efficiency of privately owned firms" hypothesis when the performance criteria for private enterprises are considered¹. Privatization of companies is associated with postprivatization increasing returns. Shareholder's gain significantly higher returns after privatization, however, their returns just reach to the industrial levels. Surprisingly, due to the offsetting movements in its components; return on sales and asset turnover, return on assets does not contribute significantly to this increase. It is rather financial leverage, which is used to finance huge asset expansion of privatized firms that causes sharp increases in cash flows to shareholders. Cash flow margin increase significantly postprivatization, representing declining costs and increasing revenues. However, asset productivity significantly declines due to the huge postprivatization asset expansion. This asset expansion doesn't represent

¹ Since the efficiency gains mostly result from elimination of redundant labor and increasing returns on sales, this may not mean increased efficiency in terms of "value added" generation.

increased capital investment since capital investment ratios do not change significantly. Privatization results in increased operating efficiency and it come from decreased employment and increased production and sales.

Summarizing postprivatization performance of privatized companies, it can be suggested that privatization results in efficiency increases. This efficiency increase may be due to the fact that privatized companies included in the sample operate in competitive industries. Therefore, the researchers should be cautious to generalize it to the all privatization cases in Turkey and should take the competitive structure of the industry into attention.

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