DOES PRIVATIZATION IMPROVE THE PERFORMANCE OF FIRMS? THE CASE OF TURKEY

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ABSTRACT

*This paper examines the post privatization performance of privatized companies using a sample of **23** privatization cases in Turkey completed within **1990-2000**. Research findings indicate that mergers are resulting in the synergy gains, which is measured by operating cash flows relative to the industries. The cash flow increases do not come from gaining monopoly position and cutting capital investments and labor cost. The cash flow improvements come from the more productive usage of assets in generating sales. The subsample studies show that cash flow improvements are particularly strong in high overlap, equity-financed, value and larger merger subsamples.*

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 certainly claims the superiority of the private ownership over public ownership (Hayek, 1935). 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. Shareholder's have control over the management through the voting power. Inappropriate behavior by management may cause the termination of their relation with 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. 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 (Pryke, 1981; 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; D'Souza and Megginson, 1999). 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, regional imbalances, and relations with richer countries imply that the effects of privatization policies might be different in developing world.

State economic enterprises in the Turkey have dominated industrial and service sectors since nineteen thirties. State economic enterprises are 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 tries to integrate its economy to world economy. However, the globalization process throughout the world implicitly require privatization allover 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.

Another important issue in Turkish Economy remains Small and Medium-Sized Enterprises (SME's). SME's constitute overwhelming majority of companies in the economy of Turkey, Public-owned SME's plays an important in the economy. The efficiency implications of the privatization of public SME's in Turkey would be different than that of large-sized public enterprises. One of the main reasons is the difference between competitive structures of markets where these companies are operating. Since economic efficiency are theorized to decline as a result of the privatization of public enterprises in monopoly markets, it is logical to expect that first companies that would be included into privatization scope are SME's operating in competitive markets. This reasoning is valid for the case of Turkey. But what is the internal efficiency implications of the privatization of SME's in Turkey?

The failure of empirical researches to consider changes in the economic conditions and market structure and special characteristics of the developing markets and SME's encouraged us to investigate the post privatization performance of privatized SME's 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 23 privatization cases.

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 favor synergy theory of the mergers. It is found that merged firms show significant improvements in operating cash flows relative to their industries after the merger, resulting from increases in asset productivity relative to their industries. Postmerger cash flow improvements do not come at the expense of the long-term performance and do not reflect wealth transfer from other stakeholders to shareholders. This result suggests that postmerger cash flow improvements can be attributed to the synergy resulting from merger.

The subsample analyses show that high overlap, equity-financed mergers experience significantly higher cash flows whereas low overlap and mixed-financed mergers fails to perform better after merger. In the other hand, it is found that bidders with high price-to-book ratios are motivated by hubris. Their mergers fail to create additional value, whereas bidders with low price-to-book ratios are more prudent in their merger decisions. The combined size of bidder and targets are found to be effective on the postmerger performance of the mergers. Significant improvements in cash flows are observed in bigger mergers, whereas smaller mergers do not experience significant cash flow improvements after merger.

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 postmerger performance of merged firms. Section V discusses previous empirical research and compares the research findings. Section VI 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 38 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.
3. To ensure that the privatized company pertains to SME category, the postprivatizon median employer number of privatized companies should be less than 250.

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 15 privatization cases. All of the available data of privatized enterprises are collected from the files of State Privatization Office of Turkey.

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.

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

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 EBİT 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).

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

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

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

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.

$$ROA = EBIT/ Assets = (EBIT/Sales)*(Sales/Assets)$$

$$ROA = ROS*FL \quad (2)$$

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 postmerger windows (premerger= years –3 to –1; postmerger = 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 merger. Hence, we use industry-adjusted performance of the privatized firms over pre- and postprivatization windows as our primary benchmark to evaluate postmerger 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.

Variables	*N*	*Pre privatization Mean (Median)*	*Pre privatization Standard Deviation*	*Post privatization Mean (Median)*	*Post privatization Standard Deviation*	*Mean Change (Median)*	*Z-Statistics Difference in Medians*	*Percentage of Firms that Shows Post privatization Increase*
Cash Flows								
Return on Equity (ROE)	15	0.28 (0.26)	0.33	0.50 (0.45)	0.56	0.20 (0.19)	1.93* *	0.87
Return on Assets (ROA)	15	0.16 (0.01)	0.18	0.19 (0.19)	0.15	0.03 (0.18)	0.97	0.67
Cash Flow Components								
Return on Sales (ROS)	15	0.01 (0.01)	0.17	5.71 (0.32)	10.57	10.56 (0.31)	2.73* *	0.87
Asset Turnover (AT)	15	1.31 (1.40)	0.64	0.52 (0.56)	0.39	-0.79 (-0.84)	- 3.41**	0.00
Financial Leverage								
Total Debt/Total Assets (FL)	15	0.37 (0.30)	0.23	0.52 (0.53)	0.19	0.15 (0.23)	2.05*	0.80
Capital Investment								
Capital Expenditure to Sales (CESA)	15	0.003 (0.002)	0.003	0.14 (0.001)	0.26	0.137 (-0.001)	0.38	0.47
Capital Expenditure to Total Assets (CETA)	15	0.006 (0.002)	0.009	0.005 (0.001)	0.12	-0.001 (-0.002)	-1.50	0.13

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

Variables	*N*	*Pre privatization Mean (Median)*	*Pre privatization Standard Deviation*	*Post privatization Mean (Median)*	*Post privatization Standard Deviation*	*Mean Change (Median)*	*Z-Statistics for Difference in Medians*	*Percentage of Firms that Changed as Predicted*
Operating Efficiency								
Sales Efficiency (SALEFF)	15	1,157 (1,013)	768	2.214 (2.005)	1.690	1.057 (992)	3.11**	0.80
Production Efficiency (PRODEFF)	15	1,179 (1,031)	739	2.129 (1.981)	1.432	949 (950)	3.07**	0.87
Output and Sales								
Total Output (OUTP)	15	298,908 (292,600)	173.556	321421 (353.018)	202.529	22.513 (60.418)	0.80	0.47
Total Sales (SALE)	15	322,201 (333,015)	192.185	359.737 (407.727)	245.884	37.536 (74.712)	1.41	0.60
Capacity Utilization								
Capital Utilization (CU)	15	0.75 (0.76)	0.15	0.70 (0.74)	0.33	-0.05 (-0.02)	0.28	0.53
Employment								
Employer (EMP)	15	271 (296)	78	146 (163)	55	-125 (133)	- 3.41**	1.00

*, **, *** 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.

Variables	*N*	*Pre privatization Mean (Median)*	*Pre privatization Standard Deviation*	*Post privatization Mean (Median)*	*Post privatization Standard Deviation*	*Mean Change (Median)*	*Z-Statistics for Difference in Medians*	*Percentage of Firms Changed As Predicted*
Cash Flows								
Return on Equity (ROE)	15	-0.21 (-0.16)	0.34	0.01 (0.00)	0.53	0.21 (0.16)	2.10**	0.80
Return on Assets (ROA)	15	-0.14 (-0.17)	0.18	-0.01 (-0.12)	0.13	0.13 (0.05)	1.19	0.67
Cash Flow Components								
Return on Sales (ROS)	15	-0.21 (-0.20)	0.17	5.41 (-0.00)	10.57	5.62 (0.20)	2.73***	0.87
Asset Turnover (AT)	15	0.31 (0.40)	0.62	-0.39 (-0.40)	0.36	-070 (-0.80)	- 3.35***	0.07
Financial Leverage								
Total Debt/Total Assets (FL)	15	0.00 (0.11)	0.22	0.15 (0.16)	0.19	0.16 (0.06)	2.16***	0.80

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

4.1. ROE Changes

Research finding indicate that privatized SME's ROE shows median 19% increase after privatization. 87% of all firms experience increasing ROE. The difference between pre- and postprivatization ROE values are statistically significant at 5 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 privatized SME's ROE is on average 21 percent lower than companies who belongs to the same industry. However, after the privatization privatized SME's average and median ROE reach to the industry average and median. The postprivatization change in industry-adjusted ROE values is significant at 5 percent level.

The median improvement in postprivatization raw ROE of SME's is 19%, whereas the median improvement in postprivatization industry-adjusted ROE of SME's is 16%. This shows that 16% of postprivatization improvements are attributed to the privatization and 3% 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 SME's shows that median preprivatization ROA changes from 1% to postprivatization value of 19% showing 18% improvement. The change in median value is not significant, though 67% of privatized firms experience increasing ROA.

Industry-adjusted analysis shows that privatized SME's industry-adjusted ROA value experience postprivatization 5% increase. However, privatized SME's

ROA was still 12% under median industry level. The change in the industry-adjusted ROA values after privatization is not significant at conventional levels again.

The comparison of raw and industry-adjusted variable values show that 13% increase out of the median 18% increase in ROA can be attributed to the privatization, whereas remaining 5 % are attributed to the economywide and industrial changes.

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 SME's is 30%. This ratio has increased by 23 % after the privatization. The change in FL is significant at 5% significance level. 80% of privatized SME's 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 SME's is on median 5 percent higher than their counterparts in the same industries postprivatization. The Wilcoxon test statistics for the changes in the of industry-adjusted variable values is significant at 1 % level, showing that privatized firms do not follow industrial trend.

The comparison of raw and industry-adjusted variable values show that 17% increase out of the median 23% increase in ROA can be attributed to the privatization, whereas remaining 6% are attributed to the economywide and industrial changes.

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 1% which means that SME's preprivatization revenues could only meet its production and operating costs. Since these companies should also pay interest and tax expenses, surely, they will report loss at the end of the period. This value has increased 31% on median after the privatization, reaching to the 32%. The Wilcoxon test statistics for the changes in the variable values is significant at 5 percent significance level and 87 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 SME's to the industry levels. Preprivatization industry adjusted ROS increased from negative 20 % to the 0% after privatization. The Wilcoxon test statistics is significant at 1 percent significance level and 87 percent of all firms experience improvements in industry-adjusted ROS values. Total 31% increases in postprivatization ROS improvement is attributed 20 % to the privatization and 11 % 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 SME's was 1.4, but it has decreased to 0.56 after privatization. The decrease in AT is 84% and statistically significant at 5% level. Interestingly, all (100%) of the privatized SME's 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 40% below than industry median. Therefore, decreases in AT cannot be attributed to the changes in the industries.

The unexpected decline in the AT requires broader discussion. This discussion is provided hereinafter.

4.5. Unexpected Increase in Postprivatization Asset Turnover: An Expansion in Assets?

The decline in AT is the serious case that requires further examination of the problem. What are the reasons of the declining turnover ratio after privatization?

We defined AT as following

AT=Net Sales/Total Assets

This formula implies that declining AT may stem from declining sales or increasing total assets. Sales quantity has increased by 22% after privatization (See Table 2). It means that if sales price remains constant, total sales is increased by 22%. Let us assume that preprivatization sales value is 100 TL, then postprivatization sales value becomes 122 TL due to the increases in sales quantity.

From the Table 2, it is given that AT_{pre} is equal to 140%, whereas AT_{post} is equal to the 56%. It means that in the given 100 TL sales volume, total assets over preprivatization window were equal to the 71 TL. Given that sales volume increases to 122 TL and AT_{post} is equal to the 56%, it becomes that total assets have increased to 218 TL showing 118 % increase. Given that sales price do not change after private, we may conclude that total assets has expanded nearly 118% after privatization.

Another interesting question is that how the privatized companies financed the expansion in total assets. As we remember financial leverage has increased from 30% to 53%. It means that when assets were 71 TL over preprivatization window, total debts of SME's was 21 TL (30%). Since total assets increase to 218 TL after privatization, then new total debts number becomes 116TL (FL_{post}=53%). It means that 95 TL out of the 147 TL or put it in percentages % 65 of asset increase was financed by the financial leverage. The remaining part is financed by internal funding.

4.6. 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 merger. 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 1031 units of product in median prior to the privatization. This number increases to 1981 units of product postprivatization. The difference is substantial and significant at 5% significance level. 87% of all privatized SME's has experienced increasing production efficiency. Similar patterns exist in sales efficiency. Increases in sales efficiency is significant at 5% level and 80% of all all privatized SME's 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 not increased significantly postprivatization. The Wilcoxon test statistics is not significant. Apparently, main leading component of increasing efficiency is decreasing employment in privatized firms. Total number of employers has decreased from median 296 person to median 163 person. All of the privatized firms have experienced declining employment in their companies. Wilcoxon test statistics is significant at 1 percent level.

Alike to the insignificant changes in capacity utilization, there weren't statistical significant changes in the capacity utilization ratio.

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.

4.7. 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 postmerger performance of surviving firms provides support to natural selection hypothesis. Our findings indicate that surviving firms show significant improvements in operating cash flows relative to their industries after the merger, resulting from increases in asset productivity relative to their industries. The improvements are particularly strong in high overlap, equity-financed, value and larger merger subsamples. Cash flow margins apparently stay unchanged. This suggests that postmerger performance improvements are not due to the market power gains. Postmerger performance improvements feed from improved operating efficiency. Merging firms are investing in their long-term

perspective as well instead of focusing only on their short-term cash flows. The postmerger cash glow improvements do not reflect wealth transfer from employers to shareholders, since mergers do not lead to employment cost cuts. These findings suggest that mergers create additional value or to put it differently merger result in the creation of fitter species (firms).

Consistent with research predictions, high overlap mergers are found to experience strong and statistically significant cash flow improvements whereas low overlap mergers fails to improve their cash flows significantly. This result suggests that bidders are more inclined to utilize merger-related synergies in intra-industry mergers.

Equity-financed mergers experience significant improvement in postmerger industry-adjusted cash flows whereas mixed-financed mergers show poor performance. This phenomenon may be explained by suggesting that paying with a mixture of securities hurts firm's future performance and prevents them to be successful after merger.

According to research findings, bidders with high price-to-book ratios do not experience statistically significant cash flow improvements; whereas bidders with low price to book ratios are more prudent in their merger decisions. The poor performance of the growth bidders may be due to hubris and the failure of the market for corporate control to monitor their actions properly.

The combined size of bidder and targets are found to be effective on the postmerger performance of the mergers. Cash flows improve significantly in big-sized mergers, whereas small-sized mergers do not experience significant cash flow improvements after merger. The success of the big-sized mergers is apparently due to the close control of them by the market and other decision-makers (such as shareholders and board of directors) who have to approve the acquisition.

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