

## Post-Privatization Performance of Jordanian Firms in Terms of Ownership Structure and Sector

*Lubna Natheer Oqdeh, Mohammad Abu Nassar\**

### ABSTRACT

The main objective of the study is to examine whether post-privatization performance changes differ according to the new ownership structure that formed after privatization. Also, the study aims at determining whether firm's performance changes during post-privatization period differ according to the sector. The empirical analysis of the study is based on a all privatized Jordanian listed companies in both industrial and service sectors during the period 1995-2006.

Results of the study show that there is significant increase in operating efficiency after privatization; also, there is significant decrease in liquidity after privatization. The result of Mann Whitney test shows that there is a significant difference in post-privatization performance changes attributed to the new ownership structure. The study also shows that operating efficiency tend to be increased significantly after privatization for both service and industrial firms. Capital expenditures on the other hand, decreased significantly after privatization for industrial firms, and increased insignificantly for service firms by 6.7%. Moreover, employment level decreased for both sectors at different levels, industrial firms document statistically significant decrease in employment, while service firms document insignificant decrease in employment.

**Keywords:** Privatization, Financial Performance, Operating Performance, State-Owned Enterprise.

### 1. INTRODUCTION

Privatization refers to the incidence or process of transferring ownership of a public enterprise to a private sector, Executive Privatization Commission (2000). The policy of privatization has been spread around the world during the past two decades. One of the main arguments for the policy of privatization is the expected improvement in efficiency and profit of the firms involved.

The property rights theory asserts that fully private firms perform better than mixed-ownership firms do, because of the conflict between private and public shareholders in the latter, which inhibits the monitoring of management, e.g., Boardman and Vinning (1989). In addition, Boycko et al. (1996) argued that the higher the fraction of state-owned enterprises sold, the lower the possibility that politicians will directly interfere, meaning that any benefits from partial privatization will be

minimal. Many researchers also stated that firm performance improves when ownership and managerial interests are merged through concentration of ownership; e.g., Walking and Long (1984), Agrwal and Mandelker (1987), Muscarella and Vetsuypens (1990), Castianas and Helfat (1991), Oswald and Jahera (1991) and Baker and Weiner (1992).

When major shareholdings acquired, the control cannot be disputed. Anderson et al. (1997) claimed that a significant concentration of ownership might lower, or even completely eliminate agency costs and offer better control of firms, which tends to occur in privatizations without large numbers of shareholders such as anchor-investors and ESAs. Moreover, full and concentrated ownership implies lower resistance to restructuring. (Jelic et al, 2003).

From the preceding discussion of prior studies, the following proposition was examined:

Full and concentrated ownership results in better performance compared with partial and dispersed ownership. (Omran, 2004).

Additionally, on the issue of privatization method Omran (2004) argues that the choice of privatization

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\* Faculty of Business, The University of Jordan. Received on 27/5/2012 and Accepted for Publication on 5/8/2013.

method basically depends on market conditions, public opinion, and government objectives. However, in fact the general preference when implementing the policy of economic liberalization or making it the first step toward complete privatization of an state-owned-enterprises (SOEs) is to sell shares in the capital market instead of making direct sales to individuals. However, when the stock market is not active (i.e., the absorption capacity of the market is limited), the government will usually select direct sales as an alternative. Also, this method is favored when the potential buyers of the firm are known, thus making negotiations easier since the government is familiar with their ability to add value to the firm, such as penetrating new markets, bringing new technology, or adding more capital investment. Moreover, Field (1995) argued that the first step in privatization program is to cut off subsidies to SOEs, followed by removing them from direct ministerial control. McKinney (1996), distinguished three approaches undertaken under government's strategy for divestment of SOEs: the first was to sell shares through the domestic stock market as minority and majority initial public offerings (IPOs), the second was to sell strategic stakes of shares to anchor-investors (strategic) through the public auction, and the third was to sell firms to employee shareholder associations (ESAs).

Few empirical studies look at the impact of different post-privatization ownership structures on firm's performance after privatization. In this context, Barberies et al. (1996) examined performance changes in 452 Russian privatized firms and concluded that changes in ownership and management styles are likely to lead to a value-maximizing restructuring. For 706 Czech Republic privatized firms, Claessens et al. (1997) found that concentrated ownership structure, ownership by local investors, and ownership by bank-sponsored investment privatization funds increase profitability Tobin's  $q$ . Earle (1998), in a study of Russian industrial enterprises, found that private ownership relative to state ownership has a positive impact on labor productivity. He also found that most improvements in labor productivity is due to the positive effects of managerial and employee ownership. Gupta (2001), in a study on partial privatization in India, indicated that the fraction of equity that is private in a given year has a positive and statistically significant impact on profitability and productivity. In a recent study, Kocenda and Svejnar (2002) indicated that, in the post-privatization period, private ownership, relative to state ownership, tends to be associated with superior

performance in terms of certain profitability and efficiency indicators.

In light of the above, it seems that few previous studies have focused on ownership structure. The current study will examine the impact of different types of ownership structure on firm performance in the post-privatization period. Since ownership appears to be very important factor in determining post-privatization performance, types of privatized firms are distinguished according to their new ownership structure. Owners of fully privatized firms, who pay greater attention to profit goals through increased output and efficiency followed by increased profitability. (Boubakri and Cosset, 1998).

### Research Problem

This research concerns with identifying any performance improvements of newly privatized state-owned firms in Jordan. To do so, this study evaluates the financial and operating data that presented in the financial statements of these firms, to investigate whether and by how much privatization does improve the performance.

This study concentrate on the financial and operating performance, which is represented by unique set of ratios categorized into different areas. The study covers the following perspectives of performance: profitability, operating efficiency, capital expenditures, employment, leverage, dividends, and liquidity. As mentioned above, this is the first research in the existing literature, to the acknowledge of the researcher, that investigates liquidity position of the firm when studying the effects of privatization on firms performance. In addition, this research distinguishes between different types of ownership structure resulting from using various methods of sale, to determine whether performance improvement differs across firms according to their new ownership structure. Moreover this research tries to identify if companies performance differs according to their sector. This research basically tries to answer the following questions:

1. Does the operating and financial performance of newly privatized firms improved after privatization?
2. Does the ownership structure that formed after privatization affected companies' performance?
3. Does the performance of newly privatized firms differed according to the sector?

### Objectives of the Study

Government employs different methods to privatize

state-owned enterprises, which yield to produce different ownership structures during post privatization period. The main types of privatization followed in Jordan are:

- a. Selling firms to strategic investors.
- b. Selling firms to the public, through the stock market.
- c. Long-term leases contracts.
- d. Long-term management contracts.
- e. Initial public offerings.

The main objectives of this study are:

1. To examine whether post-privatization performance changes differ according to the new ownership structure that formed after privatization.
2. Determine whether firm's performance changes during post-privatization period differ according to the sector. More precisely, determine whether industrial firms react differently than service firms' reaction in terms of the outcomes when applying privatization programs.

### **Importance of the Study**

Developing countries start to understand the concept and the benefits of privatization programs, and the necessity to adopt such programs to improve the productivity and efficiency of their distressed and no distressed state-owned firms. Most researchers studied the developing countries experience in privatization, and found consistent results with the developed countries experience, which is mainly significant improvement in performance.

As Jordan moved toward this trend since the mid of nineties, and the continuous adoption of this program to privatize many state-owned firms, it is important now in this phase to follow up these firms and to evaluate their performances to identify any significant improvement in their financial as well as operating performance.

Despite the fact that sufficient time has elapsed for implementing privatization process in Jordan, poor effort is spent in studying the consequences of such a program. Most of the studies related to this field was directed to a specific firm as a case study, and did not consider the entire economy. Moreover, these studies were directed into quality and price related issues rather than financial and operating position of these firms, which mainly derived from their accounting data presented in their financial statements. Based on the above; the importance of this study arises within the following areas:

**First:** This study contributes mostly to the issue of

whether privatization programs have actually improved the economic and the financial performance of privatized firms in Jordan, based on the comparisons of pre and post privatization financial and accounting data of privatized firms during the period (1995-2006).

**Second:** There is now extensive literature and evidence on whether privatization improves firm performance; however, most of these studies ignore to distinguish between types of firm ownership as an important factor related to the changes in firm's performance after privatization.

Put it altogether, this study contributes to the existing literature in the following ways:

1. This study provides deep understanding of privatization process; definition, reasons, objectives, and the methods used for implementation at both global and local levels.
2. This study provides the first empirical evidence of performance improvement for privatized firms in Jordan. The empirical findings of privatization consequences had been documented in most countries involved in this program, but not yet in Jordan. This research tries to be the first step in discussing this topic, and encouraging researchers to study this phenomenon from different perspectives.
3. The empirical results of this study provide reliable base for comparison between the goals and the real outcomes of privatization programs in Jordan, as well as provide good opportunity for further investigation in the future to compare the Jordanian experience with other countries experiences especially in the Arab region.
4. In addition, this study investigate new variable that has not been discussed or analyzed before, this variable is related to liquidity dimension of the firm, in order to assess any improvement in this particular area resulting from privatization.
6. This study provides useful recommendations and suggestions to political decision makers when implementing privatization programs in the future, by choosing the most beneficial way of privatization that yield highest performance improvement.
7. This research considers the entire economy as the population of the study, in order to examine the effect of privatization on firms' performance, rather than focusing on one firm as a case study. This study tries to generalize its empirical findings to the overall privatization program in Jordan.

### Literature Review

Several articles discussed the theory of privatization and tried to answer the question of why governments have embraced privatization programs, including those written by Boardman and Vining (1989), Vickers and Yarrow (1991), Laffont and Tirole (1993), Lopez-de-Salinas (1997), Nellis (2000), and Shirley and Walsh (2000). These authors examined the efficiency implications of government ownership and the movement from government ownership to privatization. The effect of privatization on productive efficiency is the focus of most of the empirical literature.

Attention given to the financial dimensions of the privatized firm's performance -profitability- instead of, or in addition to, the operating or productive efficiency dimension, which is the main characteristic of the empirical studies regarding privatization.

Examining how privatization affects firm performance by comparing pre-versus-post divestment data for companies privatized through public share offering, was first introduced by Megginson. et. Al., (1994), and most of the studies subsequent to this study used the same methodology, which is commonly referred to the MNR methodology. This approach based on the comparison of three-year average post-privatization financial and operating performance ratios, to the three-year pre-privatization values of firms in different countries and industries. They tested for the significance of median changes in ratio values for pre-versus-post privatization periods. They found economically and statistically significant post-privatization increases in output (real sale), operating efficiency, profitability, capital investment spending and dividend payment, as well as significant decrease in leverage. No evidence of employment declines after privatization, but significant changes in firm directors. Therefore, privatization does improve firm performance

Many researchers investigated the benefits of privatization on multi-national as well as multi-industry basis, and here is a brief discussion of their findings:

- D'Souza and Megginson (1999): examined offering terms, method of sale and ownership structure resulting from privatizing 78 companies, from 10 developing and 15 developed countries over the period of 1990-1994. They used the same methodology of MNR and employed binomial tests for percentage of firms changing as predicted. The results suggested that both restructuring and changes in corporate governance are

important determinants of post-privatization performance.

- Boubakri *et al.* (2005): investigated the role of ownership structure and investor's protection in corporate governance using a sample of 170 firms from 26 developing countries during the period 1980-1997, and found that foreign and local institutional investors absorb much of the decrease in state ownership, while the average stake held by individuals is less important.

- Boubakri and Cosset (2002): examined pre-versus-post privatization performance of 16 African firms privatized during the period 1989-1996, the results showed an increase in capital spending but insignificant changes in profitability, efficiency, output and leverage.

- Ralijohn (2003): compared pre-versus-post privatization financial and accounting data of 71 companies from 17 developing countries during the period 1990-1999. The study showed significant increase in profitability, operating efficiency, output, and dividends. Capital expenditures increased significantly, employment declined significantly, and leverage decreased significantly following privatization.

- Megginson and Sutter (2006): surveyed the empirical studies that examined privatization effects in developing countries, and found that privatization yields improvements in the operating and financial performance of privatized firms. Also, they found that post-privatization performance improvement using data from multiple non-transition economies tend to find stronger efficiency gains for firms in regulated industries, in firms that restructure operations after privatization, and in countries providing greater amounts of shareholder protection.

### National Perspective Studies

Although the multi-national, multi-industry studies using the MNR methodology have proven most influential, many studies employed the same methodology to examine the privatization impact over performance improvement in single-country or single-industry, to estimate the magnitudes of privatization-related performance changes. A brief discussion of the empirical findings is the following:

- Sun and Tong (2002): compared pre-versus-post privatization financial and operating performance of a sample of 24 Malaysian firms, privatized via public share offering by the end of 1997, using the MNR tests, and then panel data regression to examine sources of performance changes. They found that privatized

companies increased their absolute level of profit three-fold, more than double real sales, and also significantly increased dividends and reduced leverage.

- Feng *et al.* (2002): tested whether privatization improves financial and operating performance of 31 Singaporean companies during 1975-1998, using the MNR methodology, and then panel data regression. They found that no significant change after privatization in any variable except output (significant increase); also concluded that there was little performance improvement after ownership change because Singaporean SOEs were unusually well managed before privatization.

- Omran (2001): studied performance changes for 69 Egyptian companies privatized during the period 1994-1998. Of these 33 were majority sale (more than 50%), 18 were partial sale, 12 were sold to employee shareholding association (ESAs) and six were sold to anchor investors. The study showed consistent findings with the empirical literature, also found that performance changes pervasive across subgroups, but some evidence that full privatization works better than partial, and that sales to ESAs work better than others.

- Omran (2002): similar to Omran (2001), also compared the performance of privatized companies to a matched set of 54 firms that remained state owned, and found that SOEs performance also has improved significantly after privatization, and that privatized firms did not perform any better than SOEs.

- Oqdeh and Abu Nassar (2011): evaluate the financial and operating performance of 43 privatized Jordanian firms, which were privatized during the period 1995-2006. They examined whether privatization improve firms' performance, and whether that improvement differs according to various sub samples. The results of this study indicate that there is no significant increase in profitability after privatization at both full sample, as well as, sub samples level. However, the results showed that there is a significant increase in operating efficiency, capital expenditures and dividends achieved by all privatized firms following privatization. In addition, the study showed that firms' performance improvements were more preferable for the group of firms where government ownership exceeds 50% of the total firm before privatization, and for the group of firms with full privatization.

- Kouser *et al.*, (2012) examined the financial and operating performance of privatized Pakistan firms during the period 1999 to 2005. The study sample

consists 33 companies from eight sector. The results of the study indicate significant increase in financial, automobile, cement, energy, fertilizer, engineering sectors' post privatization performance but ghee and chemicals sectors did not perform well in almost all proxies' variables.

- Haile (2013) compared the pre- and post privatization financial and operating performance of a sample companies in Ethiopia. Ten financial performance indicators are calculated as average of three years before and three years after privatization. Contrary to the prediction of the researcher; the study documented decline in profitability, net income efficiency, capital investment, liquidity following privatization.

Other studies including those done by Macqueira and Zurita (1996), Verbrugge *et al.* (1999), Okten and Arin (2002), Clarke *et al.* (2005), Boubakri *et al.* (2005), Boehmer *et al.* (2005), Haber (2005), Beck *et al.* (2005). All of these researchers have studied privatization impact on the performance improvements in different countries with some variations in the findings related to the unique characteristics of each country's economy. However, the over all findings indicated positive performance improvements after privatization.

### **Hypothesis of the study**

The study investigated the following two hypotheses, which are formulated in a null style:

#### **First Hypothesis:**

**H01:** There is no significant difference in post-privatization performance changes, attributed to the new ownership structure after privatization.

#### **Second Hypothesis:**

**H02:** There is no significant difference in post-privatization performance changes according to the firm's sector.

### **Methodology of the Study**

#### **Population and Sample**

The population of this study is composed of all privatized firms in both industrial and service sectors during the period 1995-2006. Banking and insurance sectors are excluded due to their unique characteristics, economic nature and their different financial reporting, that could yield inconsistent results if they have been included within the data set.

In order to eliminate the effect of any other economic factors and events that could disturb the financial data of

the related firms, and thus create misleading results of the study, the following criteria were undertaken as a base for selecting the final sample, these criteria are:

1. Firm should have been privatized during the period of the study (1995-2006).
2. Financial and operating data used in calculating performance measures must be available.
3. Extraordinary economic events such as mergers, liquidations and any other transaction other than privatization should not have been implemented on the firm during the study period, in order to be able to isolate the direct effect of privatization on that firm.
4. Firm sector in this study is limited to industry and service; therefore banks and insurance firms are excluded.

Considering these criteria, total final numbers of firms that constitute the final sample of the study is calculated as follows:

Total number of firms	65
Companies privatized beyond study period	(2)
Unavailable financial and operating data	(6)
Banks and insurance firm	(7)
Other economic events during study period:	
Mergers	(2)
liquidations	(5)
<b>Total final number of firms:</b>	<b>43</b>

Of these 43 firms, 26 firms are industrial firms, and 17 firms are service firms. Furthermore, eight firms were privatized through many stages. Governments usually privatize most important and influential firms through stages in order to be able to track performance changes, and to assess privatization ability to accomplish the desired objectives over short period. These firms are unique in nature and influence the national economy such as energy, communication networks and transportation. In Jordan, eight public enterprises were sold gradually to the private sector, which means that for these firms privatization transaction took place more than once. Since the objective of the study is to analyze the effect of privatization on firm's performance, and to avoid losing observations, the number of privatization transactions executed is considered as the sample size of the study, rather than number of firms involved in the program. This study includes all these stages as separate observations. Therefore, the sample size is adjusted from 43 firms to 54 observations of privatization transactions. The sample is then divided into two sub samples in order to test different related dimension and perspective that could affect privatization outcomes. Tables (1) and (2) below present sample composition of total number of firms and total number of observations, respectively:

**Table (1). Final Sample Composition (Total Number of Firms)**

Year	Population		
	Industry	Service	Total
1995	1	1	2
1996	0	1	1
1997	14	3	17
1998	0	0	0
1999	5	2	7
2000	2	4	6
2001	0	1	1
2002	2	1	3
2003	0	2	2
2004	0	2	2
2005	1	0	1
2006	1	0	1
Total	26	17	43

**Table (2). Final Sample Composition (Total Number of Observations)**

Stages of privatization	One stage	Two stages	Three stages	Four stages	Total
Number of firms	35	6	1	1	43
Number of observations	35	12	3	4	54

### Data collection

The data used for this study was obtained by analyzing Jordanian companies that had been privatized during the period 1995-2006, and had at least one year of both pre-and post-privatization useable financial data. Many researchers on this field support this methodology.

Data included in the study were obtained from different sources. Financial statements of the firms were obtained directly from Companies Control Department, which is a division of the Ministry of Industry and Trade. Other non-financial information obtained from Amman Stock Exchange site ([www.ase.com.jo](http://www.ase.com.jo)). Executive Privatization Commission provided the needed information regarding privatization program in Jordan and related information. Further detailed information of all privatized companies were collected directly from Jordan Investment Corporation (JIC).

### Operational Definitions of Variables

The main objective of this study is to determine whether, following privatization, the firms enhance their operating and financial performance. The methodology employed in this study is the same common methodology of Megginson, Nash, and van Randenborgh (MNR) that first studied the field of privatization, and then adopted by most subsequent researchers, in order to allow a constructive comparison between the results of these studies that constitute the empirical literature of the field of privatization. This methodology compares the pre-and-post-privatization performance measures using the empirical proxies of performance that will be discussed broadly in the following section. At first, the empirical proxies for each company over a 7-year period are computed, which means three years before through three years after privatization, the year of privatization (year0) was excluded from our calculations because it represents both phases of public and private ownership. Then means of each variable are computed for each firm for the pre-privatization (years -3 to -1) and post-privatization (years +1 to +3) periods, which means that for each individual firm, the mean performance is calculated prior and after privatization. However, it is important to note that companies are included in our sample as long as we had observations from at least one year for both before and after privatization periods (year -1 through year +1). Previous studies supported the consideration of the 5-year window of privatized firms, and found consistent results with the 7-year window. One of these studies was Omran

(2001) who studied performance changes of the Egyptian privatized firms that had at least 2 years useable data before and after privatization.

Moreover, Ralijohn (2003), studied performance changes following privatization for companies that had at least 2-years and 1-year useable data for both before and after privatization, this study showed that the empirical results of the 3-year window are consistent with those of the 5-year window.

Although this study considers firms with a minimum one year before and after privatization, 85% of the privatized firms in the sample had 3 years pre- and post-privatization data, 11% of the firms had 2 years, and only 4% of the sample had 1-year useable data for both before and after privatization periods.

After calculating means and medians for all firms, the nonparametric Wilcoxon signed-rank test is used to test for significant changes in medians. More precisely this procedure tests whether the median difference in variable values between the pre-and post- privatization samples is zero. Then our calculations are based on the standardized test statistic Z.

Additionally, the nonparametric Mann-Whitney Test is used in order to compare performance changes associated with sub-samples, and to determine if there is a significant difference between the medians of performance measures of each pair of groups. For that sake, the empirical proxies of performance measures are adjusted to ensure such comparison. For each variable and each firm the Relative Performance Changes (RPC) are calculated as following:

$$RPC_i = (P_{i,t} - P_{i,t-1}) / P_{i,t-1}$$

Where

$RPC_i$ : the relative performance change.

$P_{i,t}$ : mean performance for post privatization periods.

$P_{i,t-1}$ : mean performance for pre privatization periods.

$i$ : number of observation.

$t$ : post-privatization period.

$t-1$ : pre-privatization period.

### The Empirical Proxies of Performance

As mentioned earlier, most governments adopt privatization programs with the concrete objectives of enhancing the operating and financial performance of their state-owned enterprises. The improvements that all governments expect to achieve through privatization concentrate mostly in the productivity as well as

efficiency areas of performance.

The financial and operating performance of privatized firms has been studied at many levels: case studies of individual firms, studies of individual countries, and international studies, encompassing both emerging and developed markets. (Omran, 2004).

At the case level, Eckel, et al. (1997) analyzed the effects of privatization on the performance of British Airways and found changes in several factors, such as ownership structure and objectives, these factors improve the economic efficiency. In addition, Ramamurti (1997) also found a significant improvement in labor productivity of Argentine National Freight following privatization even that improvement was accompanied by significant employment decrease.

At the individual countries level, Martin and Parker (1995) found mixed results in performance in terms of profitability and efficiency for 11 privatized firms in the UK. On the other hand, Laporta and Lopez-de-Silanes (1997) reported significant improvements in output and sales efficiency, and a significant decrease in the level of employment of Mexican privatization. In contrast, Harper (2001) showed different findings for the 178 Czech privatized firms, he concluded that profitability and efficiency decreased immediately after privatization.

Extensive efforts have been spent to address the impact of privatization on a broader international level for both emerging and developed countries. Gelal, et al. (1992) recorded net welfare gains in 11 out of 12 privatized firms located in developing and developed economies. In larger scale and for more comprehensive studies, Magginson, et al. (1994), Boubakri and Cosset (1998), and D'Souza and Magginson (1999) found significant improvements in the performance of newly privatized firms. In light of these studies, it is obvious that privatization programs aim to improve the financial performance of the firms. For the sake of identifying any significant performance improvements of newly privatized firms, a wide range of financial measures are used to test whether firms perform better after privatization, and whether the sub samples of government ownership percentage, sale percentage, ownership structure and the firms' sector have a significant effect on performance changes during post-privatization period. The following variables are used as empirical proxies that represent firm's performance:

### **1. Profitability**

As firms move from public to private ownership, their

profitability should increase. Privatization typically transfers both control rights and cash flow rights to the managers who then show a great interest in profits and efficiency than did the politicians (Boycko et al. 1996). Profitability is measured by the following ratios:

- a. Return on Sale (ROS) = Net Income / Sales.
- b. Return on Asset (ROA) = Net Income / Total Assets.
- c. Return on Equity (ROE) = Net Income / Equity.

### **2. Operating efficiency**

Following privatization, operating efficiency is expected to increase because firms should employ their human, financial, and technological resources more efficiently because of greater stress on profit goals and a reduction of government subsidies, (Kikeri et al. 1992), and (Boycko et al. 1996). Operating efficiency is measured by the following ratios:

- a. Sales Efficiency (SALEFF) = Sales / Number of Employees.
- b. Net Income Efficiency (NIEFF) = Net Income / Number of Employees.
- c. Asset turnover (AT) = Sales / Assets.

### **3. Capital expenditures**

Governments expect that greater emphasis on efficiency will lead newly privatized firms to increase their capital investment spending. Once privatized, firms should increase their capital expenditures because they have more incentives to invest in growth opportunities, (MNR, 1994). Capital expenditures are represented by the following ratios:

- a. Capital Expenditures to Sales (CESA) = Capital Expenditures / Sales.
- b. Capital Expenditures to Total Assets (CETA) = Capital Expenditures / Total Assets.

### **4. Employment**

Prior to privatization, most SOEs tend to be overstaffed. Consequently, in order to increase efficiency, extensive layoffs would be expected following government divesture. (Total number of employees (EMPL) was used to measure the employment level.)

### **5. Leverage**

The switch from public to private ownership should lead to a decrease in leverage because the government's removal of guarantees will increase the firms cost of borrowing and because firms will have increased access to public equity markets, (MNR, 1994). We measured leverage by the following ratios:

- a. Debt to Asset (LEV) = Total Debt / Total Assets.
- b. Long-term Debt to Equity (LEV2) = Long-Term Debt



/ Equity.

- c. The inverse of times interest earned = Interest/ Net Income.

The inverse of times interest earned ratio is used because many firms do not pay interest, if interest is zero the outcome of this ratio would yield infinity. Since many firms in our sample do not pay interest, and in order to avoid losing observations, this ratio considers interest as a percentage of net income (Interest/ Net Income), (Omran, 2004).

#### 6. Payout (dividend policy)

Following privatization, dividend payments should increase because unlike governments, private investors generally demand dividends, and dividends payments are a classic response to the ownership structure to which most privatization programs lead (MNR, 1994). Payout variable is measured by the following ratios:

- a. Dividends to Sales (DIVSAL) = Cash Dividends/ Sales.
- b. Dividend Payout (PAYOUT) = Cash Dividends / Net Income.

#### 7. Liquidity

Most state-owned enterprises suffer from extensive lack of liquidity over long time of period, since governmental agencies could not run all public enterprises in an economic basis and generating sufficient cash flows, this would affect firms' ability in satisfying both short and long-term liabilities. Most of these illiquid firms were ended up by either liquidation or merging with other stable firms. Following privatization, with private managers' intensive of profitability and efficiency, liquidity expected to be increased in order to stabilize firm's financial position.

This study is the first to introduce this variable and, to the acknowledge of the researcher, was not included in the basic methodology of neither MNR nor any subsequent studies done in the field of privatization. Liquidity is measured by the following ratios:

- a. Cash Flow from Operations ratio (CFO) = Cash Flow from Operations/Current liabilities.
- b. Cash Flow from Operations to Total debt (CFO to debt) = Cash Flow from Operations / Total Debt.
- c. Current ratio (CR) = Current Assets / Current liabilities.

#### Sub-Samples Division

The overall population of the study is divided into two related sub samples according to the Ownership structure

and the sector.

The related sub-samples are; concentrated ownership structure and dispersed ownership structure. Concentrated ownership structure means that the firm is sold to one direct buyer or investor. When selling a firm to a major owner the control cannot be disputed. Many researchers state that firm performance improves when ownership and managerial interest are merged through concentration of ownership. In addition, concentration of ownership might lower or even eliminate agency costs and offer better control of the firm, (Anderson, et. al. 1997). The second sub-samples are: industrial firms and service firms.

In order to test sub samples' hypothesis (hypotheses 1&2), the following statistical procedures are used. First: the Wilcoxon Signed Rank test is employed for each group in each sub sample separately, to determine whether performance measures improved significantly after privatization for each group of firms individually, the objective is to identify whether each group of firms exhibit significant performance changes after privatization. By comparing both groups' results we can determine the most preferable group in each sub sample that is associated with the highest performance outcomes, for that sake. Second: the Mann-Whitney test is employed to test for the difference in medians between each individual group and other groups combined. More precisely, it is used to test whether the relative performance change (RPC) in any given group of firms is different from the other group considered jointly in the same sub sample. In order to employ the Mann Whitney test, the relative performance changes were calculated to all proxies based on the equation discussed earlier, this methodology used to test all subsequent hypotheses.

#### Study Results

This section presents and discusses the empirical findings of performance changes represented by the variables described in the previous section. **First:** descriptive analysis is used to calculate the values of means, medians, maximum, and minimum for the full sample of 54 privatization transactions. **Second:** the nonparametric Wilcoxon signed-rank test is used in order to test the first hypothesis considering the full sample of 54 privatization transactions. **Third:** performance changes results are also presented for the sub-sample of ownership structures. Then the Mann-Whitney test is used to determine whether each group of firms

experiences significant changes in the values of the variables examined, compared to the other groups, this test is employed for the rest of the second hypothesis.

The nonparametric techniques are used to test the significant changes in means, rather than using the parametric t-test. Barber and Lyon (1996) reported that the non-parametric Wilcoxon-test statistics are uniformly more powerful than parametric t-statistics.

**Descriptive Statistics**

In order to have deeper insight into our sample, descriptive statistics are employed to calculate

frequencies, minimum, maximum, Standard Deviation and means, for both full sample and sub samples.

**Frequencies**

Table (3) presents the frequencies of the sample in each year during the study period (1995-2006). Table (3) illustrates that the highest number of privatization transactions were executed in the year 1997 with 17 privatization transactions, followed by the year 1999 with 8 projects completed, and then year 2000 with 6 privatization transactions.

**Table (3). Frequencies of number of privatization transactions in Each Year**

	Frequency	Percent	Cumulative Percent
1995	2	3.7	3.7
1996	1	1.9	5.6
1997	17	31.5	37.0
1998	1	1.9	38.9
1999	8	14.8	53.7
2000	6	11.1	64.8
Valid 2001	3	5.6	70.4
2002	5	9.3	79.6
2003	4	7.4	87.0
2004	2	3.7	90.7
2005	3	5.6	96.3
2006	2	3.7	100.0
Total	54	100.0	

Table (4) presents the total number of firms within each ownership structure after privatization; the results indicate that 81.5% of the firms were sold to different group of owners, which form a dispersed ownership

structure. And only 18.5% were sold to a direct homogenous owner, which form a concentrated ownership structure.

**Table (4). Frequencies of the Sample According to Ownership Structure**

	Frequency	Percent	Cumulative Percent
Valid Concentrated	10	18.5	18.5
Dispersed	44	81.5	100.0
Total	54	100.0	

As indicated in Table (5) below, 59.3% of the privatized firms were industrial and 40.7% are service firms.

**Table (5). Frequencies of the Sample According to the Sector**  
Sector of the Firm

	Frequency	Percent	Valid Percent	Cumulative Percent
INDUSTRY	32	59.3	59.3	59.3
Valid SERVICE	22	40.7	40.7	100.0
Total	54	100.0	100.0	

**Description of Variables**

Table (6), presents the descriptive analysis for both sub samples before and after privatization. The table presents descriptive statistics for different sub samples. The division of our sample is related to the new ownership structures that formed after privatization, the sub samples are: concentrated ownership structure and dispersed ownership structure.

As the table shows, profitability ratios ROS, ROA, and ROE increased for both sub-samples after privatization, with higher increase for the concentrated ownership structure group. The mean values of the ROA ratio for the concentrated ownership structure pre- and post-privatization are (0.004) and (0.12) respectively,

with a percentage increase in mean of 2866%, while for the dispersed ownership structure these values are (0.043) and (0.047) for both pre- and post- privatization periods respectively, with a percentage increase in mean value of only 10%.

On the other hand, the operating efficiency ratio SALEFF has enhanced after privatization for both groups, with higher increase associated with the concentrated ownership group, with a percentage increase in mean of 102%, while the percentage increase for the dispersed ownership group is equal 68%. However, NIEFF and AT ratios are increased after privatization for the group of concentrated ownership structure, and decreased for the dispersed ownership structure group.

**Table (6). Descriptive Statistics of Performance Measures according to Ownership Structures**

	Ownership Structures After Privatization									
	Dispersed Ownership					Concentrated Ownership				
	Before Privatization		After Privatization		% Change In Means	Before Privatization		After Privatization		% Change In Means
	Mean (Median)	Min (Max)	Mean (Median)	Min (Max)		Mean (Median)	Min (Max)	Mean (Median)	Min (Max)	
ROS	-1.130 (.0692)	-5.174 (.708)	.0449 (.0536)	-.909 (.431)	140%	-.539 (.0647)	-4.006 (.353)	.2174 (.145)	-.430 (.779)	140%
ROA	.0430 (.0408)	-.196 (.179)	.0473 (.0279)	-.176 (.394)	10%	.0041 (.0426)	-.316 (.241)	.1216 (.1195)	-.042 (.247)	2866%
ROE	-.4761 (.0867)	-23.919 (.265)	-.0139 (.0641)	-3.36 (.498)	97%	-.2525 (.0945)	-3.343 (.318)	.332 (.2253)	-.058 (1.104)	231%
SALEFF	50321.65 (29660.27)	1653.21 (242414.84)	84492.81 (33713.042)	839.42 (869637.19)	68%	41697.536 (37106.086)	3699.950 (120573.984)	84268.503 (65747.25)	9821.29 (324535.17)	102%
NIEFF	6080.837 (2061.163)	-22638.21 (166974.27)	4930.668 (1910.951)	-13749.58 (42000.8)	-19%	788.743 (3216.082)	-24116.957 (12645.831)	36185.75 (10190.46)	-4225.37 (262128.23)	4488%
AT	.7116 (.5332)	.013 (3.532)	.6897 (.5556)	.085 (3.32)	-3%	.4327 (.391)	.088 (.885)	.607 (.533)	.099 (1.115)	40%
CESA	3.743 (.0542)	.000 (128.573)	.0966 (.0365)	.000 (.997)	-97%	.17898 (.05647)	.000 (.921)	.2706 (.0697)	.009 (1.334)	51%
CETA	.0538 (.0379)	.000 (.273)	.0466 (.01399)	.000 (.599)	-13%	.0553 (.0473)	.000 (.169)	.0649 (.0379)	.004 (.159)	17%
EMPL	794.277 (226.333)	11.000 (4881.33)	703.875 (212.00)	14.50 (3393.67)	-11%	2021.45 (1208.83)	28.667 (5325.500)	2115.80 (1177.50)	11.67 (7703.50)	5%
LEV1	.3675 (.3246)	.026 (.911)	.370 (.329)	.015 (1.48)	1%	.6247 (.4468)	.238 (2.406)	.4454 (.361)	.211 (1.160)	-29%

	Ownership Structures After Privatization									
	Dispersed Ownership					Concentrated Ownership				
	Before Privatization		After Privatization		% Change In Means	Before Privatization		After Privatization		% Change In Means
	Mean (Median)	Min (Max)	Mean (Median)	Min (Max)		Mean (Median)	Min (Max)	Mean (Median)	Min (Max)	
<b>LEV2</b>	.2806 (.1124)	.000 (4.810)	.174 (.081)	.000 (1.175)	-38%	.3265 (.2693)	.000 (1.108)	.2505 (.181)	.000 (1.264)	-23%
<b>INTRST</b>	.6726 (.0977)	-4.553 (12.312)	.274 (.0379)	-2.717 (3.567)	-59%	.0745 (.000)	-.323 (.651)	.1262 (.075)	-.059 (.542)	69%
<b>DIVSAL</b>	.0503 (.0337)	.000 (.241)	.0646 (.0266)	.000 (.255)	28%	.0585 (.000)	.000 (.318)	.0546 (.0428)	.000 (.134)	-7%
<b>PAYOUT</b>	.3710 (.3707)	.000 (1.139)	.3897 (.3641)	-.636 (1.217)	5%	.1984 (.000)	.000 (.711)	.4398 (.320)	.000 (1.139)	122%
<b>CFO</b>	.4787 (.2818)	-1.053 (6.314)	.441 (.4691)	-15.986 (8.906)	-8%	.6066 (.2911)	-.170 (2.215)	.7095 (.7528)	-.049 (1.37)	17%
<b>CFOD</b>	.3894 (.2102)	-.907 (6.314)	.3123 (.1738)	-15.986 (8.906)	-20%	.2776 (.238)	-.157 (.806)	.407 (.4223)	-.020 (.829)	47%
<b>CR</b>	3.1377 (2.0448)	.499 (37.185)	5.1143 (2.0668)	.245 (50.47)	63%	1.8953 (1.61297)	.031 (3.889)	2.269 (1.837)	.697 (5.298)	20%

- Number of transactions with dispersed ownership structure is 44, and the number of transactions with concentrated ownership structure is 10.

In addition, Capital Expenditures ratios CESA and CETA are following the same pattern of increase for the concentrated ownership structure group after privatization, with a percentage increase in mean of 51% and 17% respectively. And a decrease in means values for the dispersed ownership structure group, with a percentage decrease of 97% and 13% respectively.

For employment level EMPL, the results showed a decrease in the level of employment after privatization for the dispersed ownership structure group by 11% and an increase in the level of employment for the concentrated ownership structure by 5%.

The leverage ratio LEV1, on the other hand, decreased after privatization within the group of concentrated structure, with a percentage decrease in mean of 29%, and increased within the sub sample of dispersed ownership structure, with a percentage increase in mean of 1%. Moreover, LEV2 decreased for both sub samples, and INTRST decreased for the dispersed structure of ownership and increased for the concentrated structure of ownership.

In addition, dividend ratios are increased for both groups after privatization except for the DIVSAL ratio within the concentrated group, which is decreased from (0.058) to (0.054) with a percentage decrease of 7%. However, the PAYOUT ratio is increased by 122%

within the concentrated structure group, and by only 5% within the dispersed structure group. All liquidity ratios, on the other hand, have enhanced after privatization for the concentrated structure group, and decreased for the dispersed structure group, except the CR, which is increased after privatization.

## Hypotheses Testing Results

### First Hypothesis

**H01:** There is no significant difference in post-privatization performance changes, attributed to the new ownership structure after privatization.

**HA1:** There is a significant difference in post-privatization performance changes, attributed to the new ownership structure after privatization.

To test this hypothesis the Wilcoxon Signed Rank test is used to determine any significant changes in performance measures associated with each ownership structure that formed after privatization. Then the Mann Whitney test is used to identify any significant differences in post privatization performance changes according to different ownership structures. Table (7) presents the empirical results of the Wilcoxon Signed Ranks test for the hypothesis.

The results in table (7) indicate that there is significant increase in operating efficiency for both

groups at 1 percent sig level; also, there is significant decrease in liquidity for the group of firms with dispersed ownership structure at 5 percent level. However, all other performance measures; profitability, capital expenditures, leverage, and dividends have changed insignificantly for both groups after privatization. Although these performance measures indicate improvement after privatization, the change in performance is still insignificant at 5 percent level.

By considering the total results of the Wilcoxon Signed Ranks test, we notice that all performance measures have changed after privatization in different ways for both groups, however, that change is significant

only for operating efficiency and liquidity.

In addition, firms with concentrated ownership structure perform better after privatization than firms with dispersed ownership structure do. With higher increase in profitability, operating efficiency, an increase in capital expenditures, and an increase in liquidity, we concludes that the concentrated ownership structure is more preferable -in terms of the outcomes- than the dispersed ownership structure.

In order to determine whether post privatization performance changes differ according to the new ownership structure significantly, the Mann Whitney test is used, and the related empirical results reported in table (8).

**Table (7). Wilcoxon Signed Rank Test for the Sub Sample of Ownership Structures**

Ownership Structures	N	Mean Before	Mean After	Mean Change	Z	Asymp. Sig. (2-tailed)
<b>A. Dispersed Ownership Structure</b>						
Profitability (ROS)	44	-.1130	.0449	0.1579	-.490(a)	.624
Operating Efficiency (SALEFF)	44	50321.649	84492.810	34171.161	-3.151(a)	.002
Capital Expenditures (CESA)	44	3.7431	.0966	-3.6465	-1.867(b)	.062
Employment (EMPL)	44	794.2765	703.8750	-90.4015	-1.669(b)	.095
Leverage (LEV1)	44	.3675	.3700	0.0025	-.992(b)	.321
Dividends (DIVSAL)	44	.0503	.0646	0.0143	-1.720(a)	.085
Liquidity (CFO)	44	.4787	.4412	-0.0375	-1.996(a)	.046
<b>B. Concentrated Ownership Structure</b>						
Profitability (ROS)	10	-.5392	.2174	0.7566	-1.172(a)	.241
Operating Efficiency (SALEFF)	10	41697.536	84268.503	42570.968	-2.701(a)	.007
Capital Expenditures (CESA)	10	.1790	.2706	0.0916	-.255(a)	.799
Employment (EMPL)	10	2021.4500	2115.8000	94.35	-1.070(b)	.285
Leverage (LEV1)	10	.6247	.4454	-0.1793	-1.070(b)	.285
Dividends (DIVSAL)	10	.0585	.0546	-0.0039	-1.183(a)	.237
Liquidity (CFO)	10	.6066	.7094	0.1028	-.764(a)	.445

Table (8). Mann-Whitney Test for the RPC Based on Ownership Structures

Relative Performance Changes	Mean Rank (Dispersed)	Mean Rank (Concentrated)	Median Differences	Z	Asymp. Sig. (2-tailed)
ROS	27.98	25.40	0.09	-.468	.640
ROA	28.39	23.60	0.18	-.868	.385
ROE	27.64	26.90	0.14	-.134	.894
SALEFF	25.68	35.50	-0.48	-1.781	.075
NIEFF	27.66	26.80	0.28	-.156	.876
AT	24.98	38.60	-0.26	-2.472	.013
CESA	25.26	34.50	-0.50	-1.705	.088
CETA	24.79	36.50	-0.55	-2.160	.031
EMPL	27.52	27.40	0.01	-.022	.982
LEV1	27.66	26.80	0.09	-.156	.876
LEV2	18.57	20.86	-0.15	-.506	.613
INTRST	24.63	20.94	0.13	-.694	.488
DIVSAL	16.50	16.50	-0.10	.000	1.000
PAYOUT	16.04	19.75	-0.34	-.742	.458
CFO	27.73	26.50	-0.31	-.223	.824
CFOD	27.93	25.60	-0.25	-.423	.672
CR	27.00	29.70	-0.19	-.490	.624

Grouping Variable: ownership structure after privatization

As shown in the table above, the difference in median relative performance changes for both groups does not equal zero. Which means that the median relative performance changes for the concentrated ownership structure does not equal the median relative performance changes of the dispersed ownership structure. However, the difference in medians is significant for operating efficiency (AT), and for capital expenditures (CETA) at 5 percent level. This conclusion contradict with the null hypothesis (H02) that assumes no significant difference in post-privatization performance changes according to different ownership structures after privatization, for this reason the null hypothesis is rejected and the alternative hypothesis (HA2) is accepted; there is a significant difference in post-privatization performance changes attributed to the new ownership structure.

### Second Hypothesis

H05: There is no significant difference in post-privatization performance changes according to the firm's sector.

HA5: There is a significant difference in post-privatization performance changes according to the firm's sector.

The main objective of this hypothesis is to identify any changes in performance measures according to the

sector; i.e. if industrial firms perform better than service firms after privatization. To do so, the Wilcoxon Signed Rank test is used to test for any significant changes in performance for each group of firms. Table (9) presents separately the empirical results for each group of firms. As it appears from the table, profitability increased by 21.9% for industrial firms and by 34% for service firms, but the increase of both sectors did not reach the required level of significance. However, service firms results indicate higher profitability improvements than industrial firms. Furthermore, operating efficiency tend to be increased significantly after privatization for both service and industrial firms at 1 and 5 percent level respectively. Capital expenditures on the other hand, decreased significantly after privatization for industrial firms at 5 percent level, and increased insignificantly for service firms by 6.7%. Moreover, employment level decreased for both sectors at different levels, industrial firms document statistically significant decrease in employment at 5 percent level, while service firms document insignificant decrease in employment. The empirical results in the table show insignificant decrease in leverage achieved by both sectors after privatization, leverage decreased by 32.5% for industrial firms, and by 29% for service firms, which means that industrial firms perform better than service firms regarding leverage,

even though both sectors improvement did not pass the significant level. in addition, as shown from the table, dividends increased significantly by 17.8% for industrial firms at 5 percent level. While service firms' dividends increased insignificantly by only .08% after privatization. Finally, liquidity exhibits statistical and significant increase at 1 percent level by industrial firms with an increase of 9% after privatization, while service firms document insignificant decrease in liquidity after privatization. The overall results of the Wilcoxon Signed Rank test indicate that industrial firms perform better than service firms in terms of leverage, dividends and liquidity. On the other hand, it is evidenced that service firms exhibit higher profitability and capital expenditures increase than industrial firms. According to these findings, we conclude that there is significant difference in the financial and operating performance measures of the privatized firms for both industrial and service firms at different levels. Furthermore, in order to examine whether that change in performance measures differs across sectors, the Mann Whitney test employed to

identify whether post-privatization performance changes differs according to the firm's sector. The empirical results of the test reported in table (10). The accept or reject criteria of the null hypothesis is based on the median differences of relative performance changes for both groups, if the median relative performance changes of industrial firms equals the median relative performance changes of service firms, which means that the median difference equals zero, then the null hypothesis is accepted. Clearly, from table (10) all median differences do not equal zero, which means that the median of (RPC) for industrial firms does not equal the median of (RPC) for service firms. Moreover, the difference in post-privatization performance changes is considered significant for operating efficiency (SALEFF), leverage (LEV2), and dividends (PAYOUT) at 10 percent for all. This indicates that there is significant difference in post-privatization performance changes specially in operating efficiency, leverage, and dividends according to the firm's sector, which means that the null hypothesis is rejected and the alternative hypothesis is accepted.

**Table (9). Wilcoxon Signed Rank Test for Sub Samples of the Sector**

Sector of the Firm	N	Mean Before	Mean After	Mean Change	Z	Asymp. Sig. (2-tailed)
<b>A. Industry</b>						
Profitability (ROS)	32	-.2188	.0001	.2189	-.262(a)	.793
Operating Efficiency (SALEFF)	32	52318.257	67479.455	15161.198	-2.150(a)	.032
Capital Expenditures (CESA)	32	5.0757	.0444	-5.0313	-1.982(b)	.047
Employment (EMPL)	32	974.1823	888.8125	-85.3698	-2.225(b)	.026
Leverage (LEV1)	32	.4109	.3784	-.0325	-1.272(b)	.204
Dividends (DIVSAL)	32	.0320	.0498	.0178	-2.484(a)	.013
Liquidity (CFO)	32	.3703	.4610	.0907	-2.562(a)	.010
<b>B. Service</b>						
Profitability (ROS)	22	-.1529	.1885	.3414	-1.153(a)	.249
Operating Efficiency (SALEFF)	22	43497.440	109137.55	65640.111	-3.652(a)	.000
Capital Expenditures (CESA)	22	.1847	.2516	.0669	-.146(a)	.884
Employment (EMPL)	22	1090.4015	1076.6591	-13.7424	-.406(b)	.685
Leverage (LEV1)	22	.4213	.3921	-.0292	-.698(b)	.485
Dividends (DIVSAL)	22	.0807	.0815	.0008	-.592(a)	.554
Liquidity (CFO)	22	.6945	.5344	-0.1601	-.373(a)	.709

Table (10). Mann-Whiney Test for Sample Based on Sector

Relative Performance Changes	Mean Rank (Industry)	Mean Rank (Service)	Median Differences	Z	Asymp. Sig. (2-tailed)
ROS	25.75	30.05	-0.14	-.986	.324
ROA	27.41	27.64	-0.03	-.053	.958
ROE	27.13	28.05	-0.09	-.211	.833
SALEFF	24.38	32.05	-0.23	-1.760	.078
NIEFF	24.78	31.45	-0.66	-1.532	.126
AT	26.97	28.27	-0.05	-.299	.765
CESA	25.25	29.67	-0.28	-1.018	.309
CETA	24.50	30.81	-0.22	-1.455	.146
EMPL	26.47	29.00	-0.03	-.581	.561
LEV1	26.97	28.27	-0.10	-.299	.765
LEV2	16.58	23.46	-0.44	-1.851	.064
INTRST	25.25	21.79	0.17	-.831	.406
DIVSAL	17.47	15.40	0.06	-.624	.532
PAYOUT	19.29	13.33	0.32	-1.797	.072
CFO	26.97	28.27	-0.35	-.299	.765
CFOD	27.09	28.09	-0.12	-.229	.819
CR	28.06	26.68	0.14	-.317	.751

## Conclusions and Recommendations

### Conclusions

This study examines the financial and operating performance of privatized firms in Jordan between 1995-2006, with a total sample of 43 firms and 54 privatization transactions. The objective is to determine whether privatization improves firm's performance. For that sake, a wide range of performance proxies is calculated before and after privatization.

In order to identify any significant changes in these proxies that represent performance improvement, and whether that performance changes differ according to different sub samples, **first:** descriptive statistics are calculated, and the results indicate that firm's performances improved after privatization for both full sample as well as sub samples. In order to test whether those changes in performance are considered significant, the Wilcoxon Signed Rank test is employed. The results indicate that for the full sample there was a significant increase in operating efficiency, capital expenditures, and dividends at 1, 5, and 5 percent sig level respectively. Also, significant decrease in employment and liquidity at 5 and 1 percent level respectively is recorded, except for the liquidity ratio (CR) that exhibits significant increase at 5 percent level. However, the results indicate that profitability increased insignificantly after privatization, while leverage decreased insignificantly.

Then the Wilcoxon Signed Rank test and the Mann Whitney test were employed for sub samples.

For the ownership structure sub-sample, the results indicate that both groups showed significant improvement in performance. However, for the firms with concentration in ownership the results are more preferable, with higher increase in profitability, capital expenditures and liquidity, and higher decrease in leverage, although that improvement is insignificant in some cases. The difference in post-privatization performance changes between the concentrated and the dispersed ownership structure firms are considered significant for operating efficiency and capital expenditures at 5 percent level. The other performance measures exhibit changes but insignificantly.

Taking into account all these results, the evidence suggests that both full sample as well as all sub-samples show significant improvement following privatization. Additionally, the level of performance differs significantly according to ownership structure, which indicates that firms with concentrated and homogeneous ownership show superior performance changes when compared to firms with dispersed ownership structures.

### Recommendations

Based on the findings of this study; we suggests the following recommendations:



1. The Jordanian government should continue the privatization process, for the increased benefits of such program on the firms' financial and operating performance.
2. The Jordanian government should examine the possible negative effect of privatization of the

- citizenships and the level of prices.
3. Further investigations and studies should be implemented in the field of privatization, as this study is considered the first evidence in Jordan regarding privatization.

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## أداء الشركات الأردنية بعد التخصيص في ضوء هيكل الملكية ونوع القطاع

لبنى نذير عبد المجيد عقده ومحمد أبو نصار\*

### ملخص

تهدف هذه الدراسة بشكل أساسي الى تحديد ما إذا كان هناك إختلاف في الأداء المالي والتشغيلي للشركات بعد التخصيص، تبعاً لهيكل الملكية ونوع القطاع الذي تنتمي إليه الشركة. تقوم هذه الدراسة على تقييم الأداء المالي والتشغيلي للشركات الأردنية التي تم خصصتها خلال الفترة (1995-2006) ويبلغ عددها 43 شركة في قطاعي الصناعة والخدمات. أظهرت نتائج التحليل الإحصائي لهذه الدراسة أن هناك زيادة مهمة إحصائياً في الكفاءة التشغيلية للشركات، وإنخفاضاً مهماً إحصائياً في السيولة للشركات بعد التخصيص. كما أظهرت نتائج التحليل باستخدام إختبار Mann Whitney، أن هناك إختلافاً مهماً إحصائياً في أداء الشركات باختلاف هيكل الملكية بعد التخصيص، حيث كان مستوى التحسن أفضل لمجموعة الشركات التي تم بيعها إلى مستثمر واحد ومتجانس، مما يعني أن التحسن في الأداء يعتبر أفضل عندما يكون هناك تركيز في هيكل الملكية بيد فئة واحدة بعد التخصيص. أما بالنسبة لأداء الشركات الصناعية والخدمية فقد أظهرت النتائج تحسناً ملحوظاً ومهماً إحصائياً في كلا القطاعين، من حيث الكفاءة التشغيلية. أما بالنسبة للنفقات الرأسمالية فقد حققت إنخفاضاً مهماً إحصائياً لقطاع الصناعة، بينما زادت بنسبة غير مهمة إحصائياً لقطاع الخدمات بنسبة (6.7%). بالإضافة إلى ذلك إنخفض عدد الموظفين في كلا القطاعين بنسب مختلفة، حيث أن قطاع الصناعة أظهر إنخفاضاً مهماً إحصائياً، أما قطاع الخدمات فقد أظهر إنخفاضاً غير مهم إحصائياً في عدد الموظفين.

الكلمات الدالة: التخصيص، الأداء المالي، الأداء التشغيلي، الشركات المملوكة من قبل القطاع العام.

\* كلية الأعمال، الجامعة الأردنية. تاريخ استلام البحث 2012/5/27، وتاريخ قبوله 2013/8/5.