THE IMPACT OF PRIVATIZATION ON FINANCIAL PERFORMANCE OF NON-FINANCIAL SECTORS IN PAKISTAN

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CERTIFICATE

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Sara Israr

Dedication

This thesis is dedicated to my parents

For their endless love, support, and encouragement

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ABSTRACT:

Privatization for both developing and developed economies has been a vital component for programs of structural reform. Privatization is a progression that every government from 1988 in Pakistan has been undertaking with the core aim to lessen the fiscal burden along with the encouragement of competitiveness, enhancement of employment rate, and improvement of products and services quality. Privatization influences the financial performance and for successful privatization, the privatized unit's financial performance must improve. In this context, we analyze privatization impact on the financial performance of six non – financial sectors privatized units and evaluate which sector's privatized units have become more financially efficient after privatization in terms of profitability, liquidity, leverage, management efficiency, and output in Pakistan. Secondary data has been used and matched pair methodology has been employed along graphs to acquire the results. In the study, sectorial analysis results obtained are mixed.

In terms of financial efficiency cement, automobile, fertilizer, and chemical sectors favored the privatization of SOE in sector contrary to the energy and engineering sectors. However, despite the mixed results, the overall sectors analysis illustrated improvement in performance. Our analysis also sheds light on the adoption of approach instead of privatization followed by China of enticing along with private, foreign investors through less costly incentives to set up a new industry that would progressively concentrate the extent of public sector enterprises in the sectors where financial performance deteriorates after privatization.

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LIST OF ABBREVIATIONS

SNGPL	Sui Northern Gas Pipeline
CR	Current Ratio
DT	Debt to Equity Ratio
HPFL	Hazara Phosphate Fertilizers Limited
L	Liquidity
LCF	Lyallpur Chemical & Fertilizers
LV	Leverage
ME	Management Efficiency
MSCL	Metropolitan Steel Mills Limited
NCB	Nationalized Commercial Banks
NPVC	Nowshera PVC Co. Limited
P	Profitability
PAFL	Pak American Fertilizers
PIA	Pakistan International Airlines
PPVC	Pak PVC Limited
PSFL	Pak Saudi Fertilizers Limited
RA	Return on Assets
RE	Return on Equity
RS	Real Sales
SOE	State-owned enterprise

ABL	Allied Bank
HBL	Habib Bank Limited
BEL	Bankers Equity Limited
BAFL	Bank Alfalah
WAPDA	Water and Power Development Authority

CHAPTER 1

INTRODUCTION

1.1: Relevance and Background:

Privatization has been among one of the defining policies of the world's economy which concept date back from Ancient Greek. In the eighties privatization gained momentum and ample prominence in many developed, developing, industrial and transitional economies Primarily privatization term is described as the transmission of management and funds from governmental institutions and the public to the private sector" (Gilroy & Moore, 2010). Callaghy & Wilson (1988) defines privatization as the transfer from the government as an owner to a private sector receiver of company assets. Hanke (1987) argues that privatization is the transfer of service functions and assets of SOE from the public to private hands. Calvin Kent (1989) from an economic perspective explains, privatization as the shift of functions for which the government previously held a monopoly to the private sector.

Privatization is explained as the assets or SOE sale by the government to the private economic agents which is widely pursued in the world to overcome the challenges and problem of the poor performance of enterprise which are publicly owned (Araral, 2009). The Nyongo (2000), described privatization as a broad term utilized to define a set of policy initiatives aimed to transfer the management or ownership away from the state or government to the private sector. Lynch (2000) refers to the trading of an organization's shares into private ownership as privatization. Heydari (2001), denotes privatization to all initiatives intended to upsurge the private entities' role for

utilizing the resources of the society to manufacture products and provide services by lessening and limiting the roles of government or officials.

According to World Bank (1999), privatization is "a transaction or transactions employing one or more of the ways consequently causing the sale of the capital of a public enterprise to private parties either, or of a significant part of its assets or the shift of operational hold of a public enterprise to private parties of or a substantial portion of its assets".

Among the revolutionary advancement for both developing and developed countries in the economic policies is the shifting of shareholding of enterprises owned by the government to private shareholders (Chambers, 2008). However, from country to country its rationale, application and success levels vary.

Privatization policy was first considered as economic policy in 1957, by the Federal Republic of Germany when the government sold out the bulk of Volkswagen stakes to the private financiers. (Filipovic, 2005). Following this, a massive second step of privatization occurred in France in the 1980s when under Chirac's and Margaret Thatcher's denationalization, large banks and Britain Telecom were privatized respectively (Yergin & Stanislaw, 1998). It also extended to other continents like Japan and Mexico where companies of communication were privatized which were owned by the government (Megginson, et al, 1994).

Privatization lessens the financial liabilities of the government, proffers a new mode to make revenues, and breaks at the same time the monopoly of SOE by selling their shares to diverse parties and confining union power (Arbomeit, 1986). Privatization looks as though the changes of control over assets of the public with new ideological sense (Boutchkova et al., 2000). The

improvement of performance or internal efficiency along the financial efficiency of the state-owned enterprise is listed as one among the alleged goals of privatization (Ernst, 1994).

In the economic development of a country, mostly the level of the efficiency of an economy is also considered among critical factors. In general, it is a widely held view that by privatizing an organization or industrial entity it turns into a more efficient organization or industrial entity and its performance gets improved. According to Pham and Mohmen (2005), “the motives that are persuasive for government to undertake this economic reform (privatization) is the failure of several SOE that had ensued from the inefficiency of their centrally planned system”.

The idea of privatization arisen, when several studies empirically showed that SOEs are relatively ineffective and for public treasury a drain. However, the economy operating under private sectors are known to be efficient due to the competitive soul (Bdour et al., 2007).

Numerous developing countries have started implementing privatization as an initiative to stimulate economic growth and bring efficiency to SOE. According to World Bank (1999) in developing countries estimated privatization had proceeded around US$250 billion during the period 1990 to 1999. For the enterprise sector to attain efficiency the privatization policy is considered vital as it leads to allocation and utilization of resources efficiently, fosters competition, lessens the fiscal burden, and breaks the monopolies. (Dinavo, J., 1995)

In the late eighties, the progression of privatizing SOE started to take place in Pakistan. The mission proclamation of privatization was stated in Pakistan as "Privatization is envisaged to encourage competitiveness, making sure a larger capital investment, promote competition and modernization, consequential in the mounting of employment rate and improvement of products and services quality to the consumers and lessening in the fiscal burden" (Hakro and Akram, 2009).

The policies of privatization, similarly to the other countries of the world were intended for resource allocation efficiency rise via rising competition, facilitating fiscal aids to cash-strapped governments, encouraging further private investment and making improvement in the access of the private sector, in general, to finance (World Bank, 2001).

Financial Performance assesses the firm's overall financial health (Becker, 2002). Broadly it denotes to the degree to which financial objectives have been achieved, the output and operations of companies in monetary terms. (Bertoneche and Knight, 2000) .Privatization influence the financial performance that leads to a competitive advantage in terms of financial efficiency, profitability, and liquidity (Ochieng & Ahmed, 2014).

Financial performance can be influenced by the contradictory roles of the SOE. Therefore, privatization is viewed as another probable measure to alter the financial performance of firms however there are few exceptions. Theoretically, it is expected that the performance of privately-owned firms is relatively superior as compared to SOE (Megginson et al. 1998).

It is anticipated that the transfer of firms' ownership, from the public to private upsurges their profitability. Denationalization firstly, motivates managers to concentrate on their profit goal as, under private ownership, management is at first hand accountable to shareholders (Yarrow, 1986). Secondly, privatization to extent handovers both control rights and cash flow rights from politicians to managers, which increases the profitability of privatized SOE and reorient the government’s role to provision of social and economic setup, efficiency gains in the form of reduction of the superfluous spending on labor that politicians do for electoral reasons (Boycko et al., 1996). Likewise, post-privatization privatized units utilize their resources (human,

technological and financial) further efficiently because of more emphasis on profit goals due to reduction in subsidies by the government (Boycko et al., 1996; Kikeri et al., 1992).

As the consequences of privatization liquidity are expected to rise. The state as the owner of a public firm is accountable for the company's debts to creditors, who so has a guarantee on the back of debt because of which, a firm owned publicly has current liabilities more than that firm owned by the private sector. The more the current liabilities are, low is the liquidity ratio as a rise in current liabilities reduces the liquidity of firms. Privatization ends the government assurances behind the liabilities consequently compelling the newly privatized firm to reduce its current liabilities hence upswing the liquidity of the firm. The majority of the studies on the evaluation of pre-post privatization financial performance revealed that privatization enhances the enterprise's performance specifically increase in liquidity ratio significantly (Kikeri et al., 2005).

It is anticipated that the ownership transfer from government to private causes a decline in debt share in the capital structure along with liabilities because of the termination of government assurances to debt and liabilities (Megginson et al., 1994) which will affect the leverage of the firm. Furthermore, if costs of the bankruptcy are weighty, once the guarantees of government are detached the afresh privatized firm should lessen its debt (Boubakri and Cosset, 2002). The expected decline in debt and all liabilities due to privatization will cause the decline in debt to equity ratio and hence leverage of firms (Ochieng & Ahmed, 2014).

According to Cuervo and Villalonga (2000) firms that are owned privately their managers are regiment by a variety of external control mechanisms, for instance, the market for managers, and likewise by internal control mechanisms, such as rewards incentives, and compensation which led efficient utilization and management of firms assets and inventories.

Furthermore, It is anticipated that the output increase as the real sales rises post-privatization as afresh privatized companies have finer incentives, additional versatile financing opportunities, improved competition, and a larger range for entrepreneurial initiatives that will upsurge their sales In contrast to it, Boycko, Shleifer and Vishny (1993) stated that effective privatization reduces the output of the firm newly privatized, as no longer managers are enticed by the government (through subsidies) to uphold inefficient high levels of output.

Privatization is a progression that governments of Pakistan have been undertaking for well over the last two decades yet, the effects of privatization on different non-financial sectors of Pakistan have not been well documented in terms of financial performance to date. Acquiring the privatized non-financial firm's financial performance level, privatization future policies can be considered by knowing what has been attained by privatizing firms previously and which sector has been well-off by privatization and why.

The aim of this study initially is to evaluate the effect of privatization on the financial performance of privatized SOE in Pakistan sectorial-wise divide in the different economic groups by State bank of Pakistan and Privatization Commission of Pakistan by comparing pre-post privatization financial performance of companies privatized. Furthermore, the study also evaluates the recent five years' financial performance of the companies sector-wise to infer the long-term outcome of privatization on the financial performance of privatized SOE. Therefore, the study aims to check whether there is any type of gains experienced sector-wise in the post-privatization of privatized SOE particularly including cement, chemicals, automobile, fertilizers, engineering, and energy sector in Pakistan, in terms of financial performance. Furthermore, this study is intended to

demonstrate which among non-financial privatized sectors is recently more financially efficient after they had been privatized in Pakistan.

1.2. Hypothesis:

Privatization significantly impacts the financial performance of the firms positively in terms of profitability, liquidity, management efficiency, and output and negatively in terms of leverage.

1.3. Research objectives:

- To evaluate the financial performance of privatized firms in cement, chemicals, automobile, fertilizers, engineering, and energy sectors of Pakistan sector-wise before and after privatization.
- To discern after privatization up to present which among non-financial sector's privatized units are financially efficient in Pakistan.

1.4. Significance of the study:

The dissertation will evaluate each of privatized non-financial sector performance in Pakistan in terms of financial performance which will be advantageous in many ways. The government as an initiator of the privatization projects will be the major beneficiary. In Pakistan, this role is mandated by the Privatization Commission. The Privatization Commission would be able to decide whether such projects are favorable to the economy or damaging. From the recommendations given, it would be able to review the process of privatization and find out the areas to work on. Stakeholders of the companies listed for privatization such as lenders, suppliers, and customers will also understand the consequences of the privatization process on the profit and financial

stability of enterprises. They will be able to lobby for a better and more transparent deal. They will hence know whether their interests will be protected even after the sale of the enterprise.

Financial analysts may also utilize the research findings to do an assessment of the securities of the studied firms. This could allow them to provide a basis for evaluating the securities of companies that would experience a similar occurrence. Furthermore, financial analysts would be in a better position to recommend an investment action in Pakistan enterprises i.e. to buy, sell, or hold particular security of a company scheduled for privatization.

The public will be able to understand the effect of any forthcoming privatization and hence be capable to input on that. Along with that, it will be helpful for investors those who had made or are willing to make an investment in firms that are lineup for privatizing or still publicly owned.

1.5. Organization of study:

The study will encompass five chapters. Chapter 1 elucidate the introduction and brief history of privatization in Pakistan Chapter 2 presents the literature review. Chapter 3 demonstrate materials and method. Chapter 4 will show the empirical results of the study Chapter 5 will manifest summary, result discussions along with the conclusion and recommendation.

CHAPTER 2

LITERATURE REVIEW:

2.1 Introduction:

The philosophy of privatization stems from the role of the state in economic life. The extensive literature on privatization related to numerous research fields such as public policy, management, marketing, and macroeconomics exists for developed countries and several for developing countries. The following section will highlight the contribution of various authors to the literature on privatization influence on firms' financial performance from the different regions of the world and through different aspects. At the beginning of the chapter, we will focus on the literature on privatization and financial efficiency. In the third section, we will describe some relevant studies done on each of the variables of our study in the context of privatization, and in the final section, we will draw a literature conclusion and will elaborate the research gap of the study.

2.2. Privatization and financial efficiency

Privatization is the transmission of ownership businesses or assets from a state administration to a privately owned entity. Poole & Fixler (1987) defines it as the transferal of assets and service obligation from the public to the private sector. It alters the global financial market size and efficiency, changed the corporate finance practices in economies that have gone through huge privatizations, and effectuated the earnings received by individual investors who acquired stock in a company that is privatized (Boutchkova and Megginson, 2000). The rise in revenue of the government, improvement in the performance of the state-owned enterprise, and capital ownership

are the motivation for privatizing firms which has immensely encouraged researchers to work on privatization (Kouser, 2012).

Various articles reviewed the privatization theory, its effect and tried to figure out the reason behind the endorsement of privatization programs by the government (Aharoni,1986; Gathon and Pestiau,1996; Tittenbrun,1996; Domberger and Piggott,1986; Megginson and Netter,2001).

Privatization is believed by the utmost of the economic actors as an inevitable step of the reforms needed for improvement of the financial performance of SOE. In fact, an entity's financial performance leads to the scrutiny of either an entity should get privatized or not (Ariff et al., 2009). Privatizing leads to an improvement in the financial performance of an organization **(**Makalou, 1999; Craig, 1999; Odondi, 2008).

In some countries privatization programs are successful as they have increased economic growth rate and they have large markets (Galal et al., 1994) while in some developing countries with relatively low-income privatization and economic growth are negatively correlated (Cook and Uchida, 2003), the government divestiture are not likely to attain goals as perceived due to lack of the main ingredients such as competent managers, capital and entrepreneurs, (Vernon- Wortzel and Wortzel, 1989)

Most studies stated that, if privatization is carried well it, gives rise to competition and attains greater efficiency, along with improvement in financial performance, produces a far improved quality of goods and services than those enterprises owned by the state (Matsumura & Okamura, 2015; Stenbacka & Tombak,1995; Beesley & Littlechild, 2013). While privatizing the state-owned enterprises, this process utilizes both kinds of material and non-material measures, also resultant far-reaching economies, political, and social repercussions. mainly, the instantaneous

effect of privatizing state-owned enterprises on financial position as well as the financial performance of privatized institutions.

According to Vogelsang et al. (1992), privatization enhances the firm financially and assists it in streamlining the financial procedures which help in designing the good financial policies and its implementation that aids to improve the firm's financial performance. In general, it is been of the opinion that privatizing leads to improvement in the financial performance of an organization **(**Makalou, 1999;Odondi, 2008; Bailey (1986). Diverse researches had been conducted to analyze the essential extent of privatization including patterns and trends in policies and implications. Majority of studies have documented positive and consistent outcomes of privatization on the financial performance of SOE, with several differences related to the variant in characteristics of the economy among different countries (Bishop and Kay,1989; Boardman and Vining,1989; Perevalov et al, 2001) while contrasting results are also been depicted in various studies (Kay and Thompson, 1986; Waweru. et al, 2013; Mehdi, 1998; Ernst et al, 1999). Numerous studies are conducted to analyze the influence on the financial performance of privatized firms from different aspects through different variables and approaches.

2.3. Profitability

Profitability is the quality of having gain or benefit or profit (Becker, 2002).In numerous studies, profitability mainly is used as a measure of evaluation of the financial performance of private and public enterprises (D'souza et al.,2001). SOEs are often unprofitable, then those which are privatized (Megginson & Netter, 2001). This is because state-owned enterprises do have other aims such as rising employment and fasten the development of the backward regions than just

maximizing profit (Boycko, Shleifer, and Vishny,1993). However, (Yarrow, 1986) stated that in the privatized enterprise, the manager's emphasis on profit goals as, underneath private ownership, management is directly accountable to shareholders. The stress of profit goal of privatizing firms let them employ their human, technological and financial resources further efficiently and reduces the dependence on government subsidies (Boycko et al., 1996; Kikeri et al., 1992). Profitability gets enhanced as the firm's ownership is transferred from the government to the private sector (Pham & Carlin,2009; Pham Duc Cuong,2017; Frydman et al., 1999; Anderson et al.,1997; Smith et al.,1997; Wang, 2011; Cabanda and Ariff, 2002).

Comparing the performance of the public firm's pre and post-privatization period at industrial and national levels inferred denationalizing state-owned enterprises upturns their profitability of the enterprise (D'Souza and Megginson,1999; Megginson et.al.,1994). The cross-sectional studies while comparing private and public firms demonstrated that the profitability of the firms usually increases when they are privatized (Astami et al., 2010; Harper, 2002). The privatization of state-owned enterprises leads to a rise in increments of profitability of the firm but causes a decline in employment of that firm (Boubakri, 2014; Sakr's,2014). Perevalov et al. (2000) noted privatization raises medium, large, and extra-large industrial enterprises' profits. The profit margin of the aviation industry gets improved when privatized (Ochieng & Ahmed,2014). The banks which are privatized generate more profit than those owned by the state (Verbrugge et al, 1999; Beck et al., 2003; Moin, 2013). A recent study of Faustino et al. (2019) on privatization impact on the Brazilian electricity sector revealed that privatization improves profitability. Conversely, privatizing state-owned enterprises does not necessarily raise the profitability (Ahmed & Alam, 2018; Hakro & Akram, 2009; Hussain, 2014) even the quality of products get improved due to the

rise in competition resulting due to privatization. Ernst et al. (1999) study rather conclude that the privatizing of state-owned enterprises reduces the profitability of the enterprise. The reduction in profitability, after privatization, is described by high production cost and severe unhealthy competition that resulted from trade liberalization and openness (Getachew, 2003). The profitability of firms that are privatized upsurges but this probably may be due to other factors rather than a shift in ownership of firms from the government to the private sector (Boubakri & Cosset, 1998).

2.4. Liquidity

Liquidity is the capability of a business or firm to meet its financial debt obligations they encounter in the short term, without disturbing the normal operations of the business. Numerous studies have used liquidity as a variable to measure financial performance (Mbuga and Okech, 2015; Yilma, 2012). Firms need liquidity in expectation to meet their forthcoming financing wants either because it is low-priced to get financing at the instant or because there involves a risk of none availability of financing if the firm delays it till funding arises. (Ndisya, 2017).

State-owned enterprises have low liquidity because of the necessity to cover their investment cost utilizing the funds that have been gathered thereby constraining net worth (Ndisya, 2017). In developing countries, the utmost of the outcomes on the evaluation of financial performance pre and post-privatization revealed that privatization leads to significant improvement in liquidity ratio along with the betterment of the enterprise performance (Kikeri & Nellis, 2004; Pinheiro, 1996). Analyzing three types of privatization Mbuga and Okech (2015) explored liquidity rises of sampled firms post-privatization which had been privatized by pre-emptive rights. Yilma (2012)

examining the short-term influence of privatization on financial performance depicted an improvement in the liquidity of the firm. A Return based event study, also showed privatizing state-owned enterprises raises the liquidity of enterprises (Dockner.et al, 2005).

Conversely, Paralleling at the national level the pre and post-privatization performance of firms Oqdeh and Nassar (2011) illustrated liquidy of firms do not upturns when ownership is relocated to the private sector of state-owned enterprises. Taking into account particular non-financial sectors (Ahmed & Alam, 2018) study demonstrated the change in ownership of the firm does not improve the liquidity.

Specifically, the studies on cement industries by Bdour et al. (2007) and Ochieng & Ahmed (2014) on Kenya aviation industry demonstrated that the liquidity of state-owned enterprises enhances as they are publicly traded. The liquidity ratio of some banks improves which are publicly traded that were previously owned by the state (Kouser, 2012). However, comparing the privatized banks with public banks Dorra & Sonia (2011) and Kausar et al. (2014) indicate the liquidity of state-owned banks is high than those privatized although privatize firms are more efficient than public ones. A similar result was witnessed while comparing before and after the privatization performance of banks by (Omran, 2009).

2.5. Leverage

Leverage shows the firm's capacity to meet its debt obligations. The leverage ratio measures the financial position of the company in the long term and the degree to which the company counts on debt to finance assets. (Becker, 2002). The ownership transferal from the public to private can be anticipated to cause the reduction in the share of debt that means the decline in leverage

(Megginson *et al*., 1994). Furthermore, if the bankruptcy costs are substantial, once government guarantees are detached the newly privatized company should lessen its debt (Boubakri and Cosset, 2002).

Comparative analysis of the partially privatized state-owned enterprises and completely privatized State-Owned Enterprise by Astami et al. (2010) illustrates financial leverage is less in state-owned enterprises that are completely privatized. Comparing the financial performance of privatized firms with publicly owned firms. Omran (2004) demonstrated that privatized firms do have a low leverage ratio than those owned by the government.

Dawley, & Haidar (2008) documented a significant decline in the debt intensities of privatized firms while figuring out the influence of privatization on the value creation of state-owned enterprises. Whereas providing some new understanding into the influence of privatization on state-owned enterprises' performance, Omran (2004) documented a significant waning in leverage and employment in state-owned enterprises that were privatized.

Using a large sample size D'Souza et al. (2005) depicted that the debt level of privatized firms declines follow privatization indicating leverage to get reduced of firms that are owned by the private sector. Critically analyzing the theory of capital structure Bradley et al. (1984) stated firms leverage ratio reduces following privatization. State-owned enterprises are likely to reduce their leverage levels after they are privatized because of the greater cost of borrowing and the higher access to the public equity markets (Boubakri & Cosset, 1998; D'souza et al.,1999).

Utilizing multiyear large-sample and cross-sectional comparisons revealed that government-owned firms use more leverage than those privatized demonstrating leverage to be low in privatized frim as compared to firms owned by the government Dewenter and Malatesta (2001)

Mathur & Banchuenvijit (2007) noted the decline in the leverage ratio of firms privatized during evaluating the influence of privatization policy in emerging markets on firms that were newly privatized.

However, the study on state-owned enterprise privatization and competitive environment concluded that leverage is unaffected when state-owned enterprises ownership is transfer to the private sector (Hussain, 2014). Investigating Malaysia Listed Companies Razak et al. (2011) noted that changes in ownership do influence the leverage of the company. Similarly, assessing the performance of the privatized firm of Jordan Oqdeh and Nassar (2011) found that debt levels in the firms privatized does not demonstrate any significant decline signifying that leverage is not influenced by privatization. These studies doubt the overall theory that privatization shrinks the leverage ratio of the firm that reduces the debt level.

2.6. Management efficiency

Management efficiency is a metric that measures the capability of the company to utilize its assets and manage in the current period its liabilities or either in the short-term effectively. These ratios evaluate how efficiently a company usages its assets to make revenues and its capability to manage those assets.

Reviewing the impact of the economic reforms in Egypt on its financial sector Gebba, & Ahmed, (2013) assessed the impact of privatization on the Egyptian financial sector and demonstrated that shift in the ownership from public to the private sector improves its management efficiency. Similarly, analyzing particularly the manufacturing sector Munir (2013) depicted that transfer of

ownership to the private sector from the public has improved the managerial performance of the sector.

Furthermore, evaluating the fiscal impact of privatization Levac, & Wooldridge (1997) stated that ownership shift from pubic to the private sector of state-owned enterprises enhances the company's management efficiency and improves resource allocation along with improvement in accountability, monitoring, and incentives systems in the state-owned enterprise's sector after privatization.

2.7. Output

It is expected that the output of firm upsurge post-privatization as real sales increase for the reason that afresh privatized enterprises now have improved incentives, further pliable financing chances, bigger competition, and larger scope for entrepreneurial initiatives. Comparative analysis of government-linked companies' performance with non-government linked companies' performance, Razak, et al. (2011) noted that output increases of the companies which are not linked to the state than those companies that are associated with the government.

Utilizing two methodologies, the equality test and regression analysis (Ndisya, 2017) find out that the real sales (output) of electricity and reinsurance companies in Kenya increased after privatizing them.

Similarly, the comparative analysis of Egyptian Joint Venture Banks (JVBs) that were full or partially privatized with that state-owned banks along with the pre- post-assessment of the performance of full and partially privatized banks Afifi, et al studies concluded output of banks

increases when they are privatized. Conversely, Omran (2007) demonstrated privatizing banks does not show any effect on the output of the banks under his study.

Frydman et al. (1999) on the other hand reported privatization adds around eighteen percentage points to the annual output of companies and firms and twelve percentage when traded to a domestic financial firm and when sold to a foreign buyer respectively.

Particularly, inspecting telecommunication companies Petrazzini and Clark (1996) noted that privatization is linked with noteworthy enhancements in the real sales of telecommunication companies, but has no persistent impact on service quality. According to Oyieke (2002), drive away from public ownership to private ownership improves the efficiency and output of firms.

On the other hand, Boycko et al. (1993) maintained that effective privatization causes a decrease in the output of the firm since no longer the government (through subsidies) can entice managers to continue inefficient high levels of output.

2.8. Conclusion:

The aforementioned review on privatization has portrayed mixed results, albeit majority outcomes and numerous books, journal, and articles and have been inscribed about the relationship between the financial performance of SOEs in many countries and privatization (Gupta, 2005; Frydman et al. 1999; Smith et al., 1999) yet the cumulative evidence, as discussed by Villalonga (2000), remains inconclusive.

Numerous dissertation exhibits the mixed consequences of performance in cross country studies or correlated analysis of few firms or reserved partitions e.g. (Bengali, 1998; Galal, et.al., 1994; Shaikh, 1985; Chishty, 1985; Naqvi and Kemal, 1998). These studies are comprehensive terms of

concluding working and monetary execution and restricted in their degree to decide the extensive confirmation about the privatization process in Pakistan sectorial wise of non-financial firms in terms of financial performance. The contradictory results of researches in this area highlight the significance of empirical study required to find out the privatization effect on different non-financial economic sectors in terms of financial performance in Pakistan and the recent state of affairs of those privatized units of sectors financial performance in light of privatization.

CHAPTER 3

METHODOLOGY

3.1. Introduction

The section begins with the theoretical framework and conceptual framework which gives an overview of the theories that support privatization which improves the performance of the firm ultimately making them financially efficient along with it illustrates how the financial performance of an organization is affected by privatization in terms of profitability, liquidity, leverage, management efficiency, and output. It further discusses the construction of variables along with the financial analysis method that variables relied upon to for their construction to solve the questions of this study. Finally, section will highlight the data sources and companies covered in the studies and specifications of the econometric model and method of analysis.

3.2. Theoretical Framework

There are numerous theories that favor the idea of privatization. The relevant theories to our research area are as follows.

3.2.1. Property Rights Theory

Alchian (1965), Demsetz (1988) give a rationalization for the privatization of SOE through property rights theories. They stated that in private firms 'for profit the residual claimants are the shareholders. In-state ownership, the rights of property are not well-defined. While in SOE the residual claimant of profits is state, there is no financial concern of minister in the returns from his decisions. The minister from the returns of state-owned companies is not likely to be benefited

personally. Until there is no gain or cost to be bear personally in supervising or designing an effective system of governance, public representatives will not buckle down at supervising managers nor design an efficient governance systems. SOE managers are insulated from the menace of bankruptcy and takeover of common firms that are owned privately (Rowley and Yarrow, 1981). Davies (1981) discusses that the changes between firms privately owned and publicly owned is that proprietorship in the latter is non-transferable. The theory of property rights states that privatization improves incentives tangled to the firm or company financial performance by switching disinterested ministers with shareholders that out of their self-interest design an effective system.

3.2.2. Public Choice Theory

In the public choice theory, more emphasis is on the performance. The public choice theory uses a bureaucratic approach envisages that SOE is financially low performers as state representatives execute those aims on these enterprises that might benefit them to upsurge their vote bank but might conflict with efficiency and profits of enterprises (Buchanan, 1972).

For the common public, the cost of monitoring this behavior counterbalances the benefits. Therefore transferal of ownership from state to private investors is anticipated to prompt a change in the objectives of the company and in the bargaining power of various actions in the political market thus increasing the efficiency along with profit (Boycko, Shleifer and Vishny, 1994)

3.2.3. The Organizational Theories

These theories stress the role of organizational features in determining the financial performance of companies. Advocates of the organizational theories said the performance of the publicly-owned firm and publicly traded firms vary as they are effectuated by changes in management, goals, labor,

communication, and systems of reporting, the structure of the organization, and the nature and locality of business which are being affected by privatizing firm.

3.2.4. Agency Theory

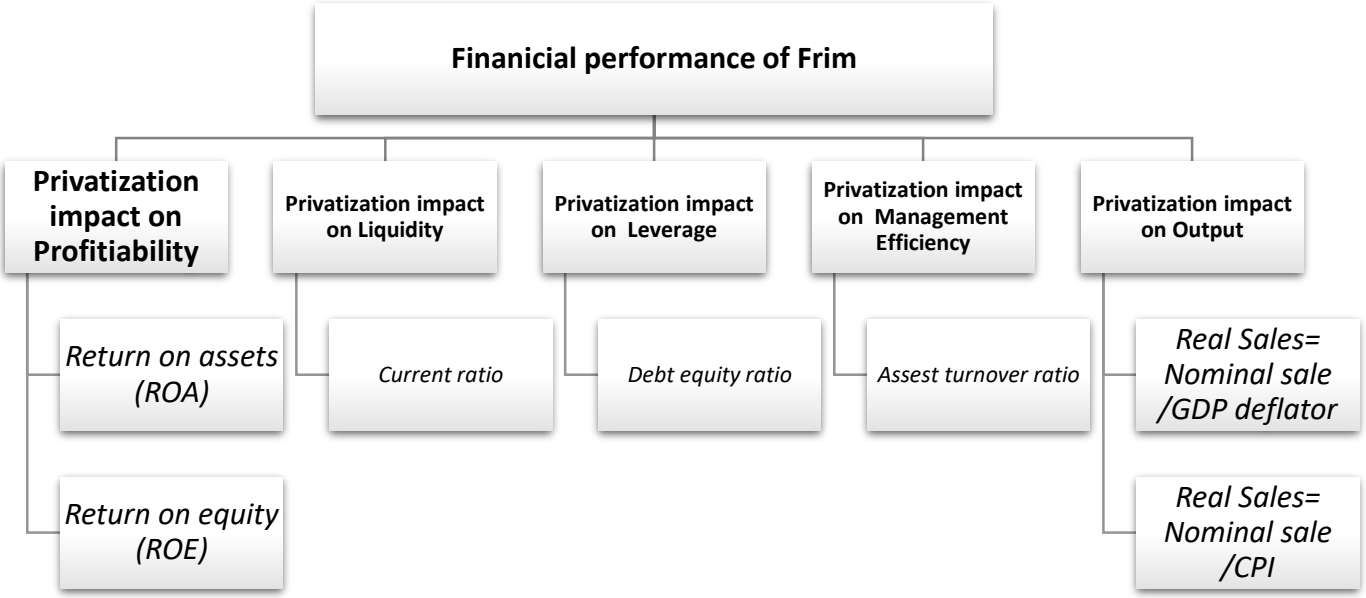
Agency theory emphasizes on the various agency problems and way out of them that exist under private ownership. Agency theorists support the superior performance of the enterprise that is private. It is stated that managers strive for maximize their own gain rather than owners of the firm or the firm itself (Jensen and Meckling, 1976). But in firms that are owned privately their managers are well-organized by a variety of external control mechanisms, for instance, the market for managers, and likewise by internal control mechanisms, as compensation and rewards incentives which led them to focus on their goals hence making firm financially efficient along with the better quality of goods and services (Cuervo and Villalonga, 2000).

In general privatization theorists, Roland (2008) and Filipovic (2005) argue that the transfer of public-owned enterprise ownership to private will rise market share as enterprises owned privately have improved incentives to produce goods and services of any kind, quantity, and quality to satisfy consumers along with profit. In all the aforementioned theories of privatization, there is a consensus that ownership matters and does affect the internal efficiency of companies (cost-minimizing behavior) (Martin & Parker, 1997; Bishop & Thompson, 1994) ultimately the financial efficiency of the firm.

The privatization influence on an organization's profitability liquidity, management efficiency, and output are likely to be positive while that of leverage to be negative according to theories that favor privatization. The following diagram summarizes the relationship of variables, which are utilized as the measures of financial performance. These variables demonstrate an overall image of the

performance of the entities (i.e. pre-post privation to date privatization), which is comprised of five groups i.e. profitability, liquidity, leverage, management efficiency, and output.

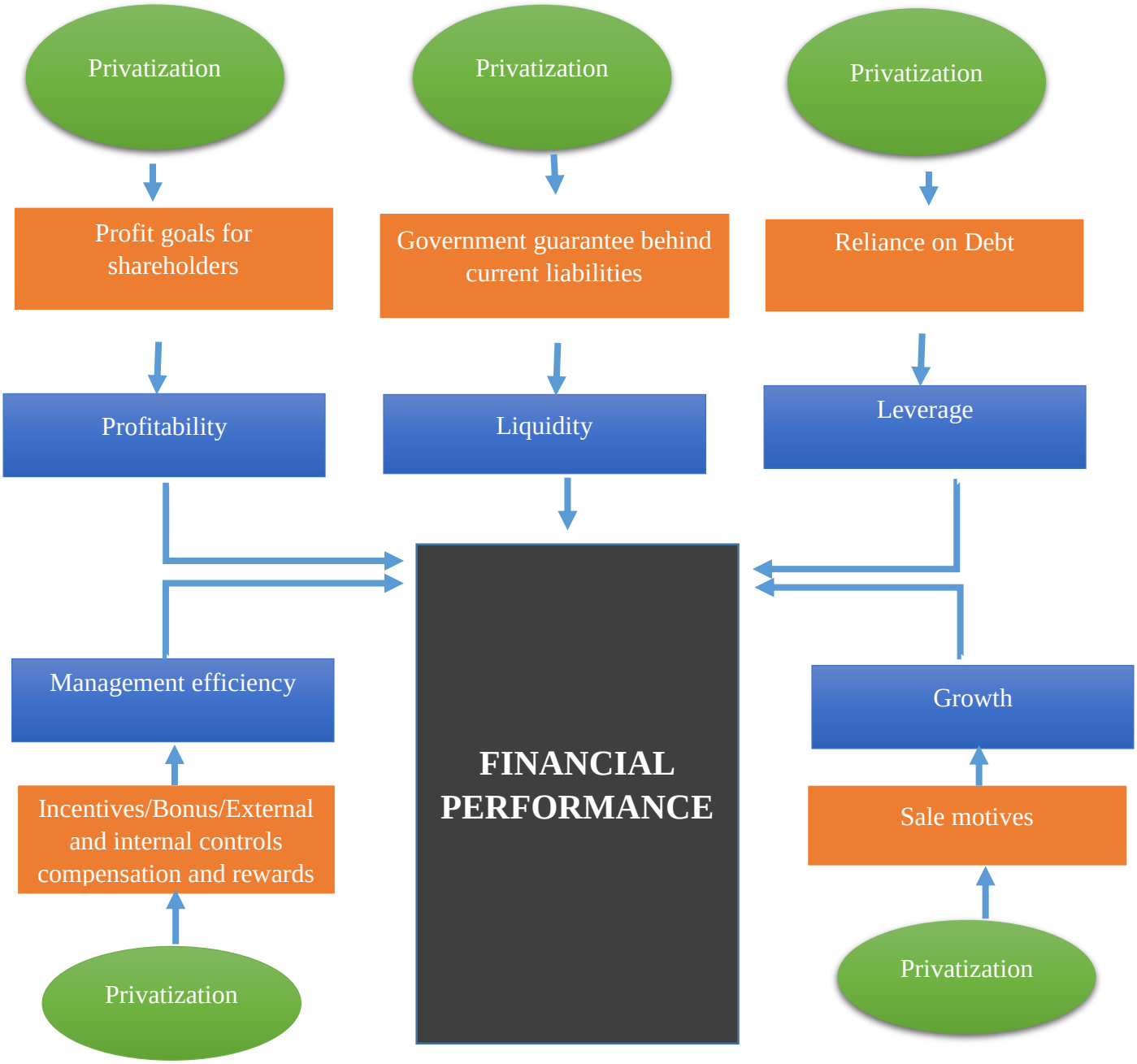
***Figure 1*:** Conceptual Framework



Seven proxies are used in this study to witness different financial features of the entities. These financial ratios and proxies are mentioned in the above diagram.

The diagram below represents the channel through which privatization links with the financial performance of the firm.

Figure 2: Flowchart of Conceptual Framework



3.3 Analysis for Construction of variables

The variables profitability, liquidity, leverage, management efficiency, and output used in the dissertation to assess the impact of the financial performance of the entities are obtained through the Financial Ratio Analysis method.

3.3.1. Financial Ratio Analysis

The financial facts of firms play a noteworthy important role in making certain that the objectives and goals of the company or firms are well-suited with their resources. Financial information typically functions as the core gadget of planned analysis, thus, through the usage of financial data published; examination of the behavior and capability of competing firms inside the industry can be made letting to assessments and judgment related to a firm's comparative competitive position. It is the financial information that assists the company to understand its plan and that of its rivals, so the future endurance of the organization (Mintzberg & Waters, 1989). The financial analysis thus forms a vital aspect of business evaluations and common business details. The finance function, hence, performs two key roles in making sure of a corporate establishment survival. First is, observing and assessing the execution of its business strategy and comprising a reporting role. Second, it works as a foundation for planning the future of the organizational objectives, which can assist to envisage the forthcoming of an establishment. Financial analysis of a firm or company is generally carried out through financial ratios analysis that goes hand in hand with the mission of the organization (Filipovic, 2005)

According to Filipovic (2005), for gauging the profitability, liquidity, leverage, management efficiency and output of the organization ratio analysis is a good tool. Additionally, a financial model gives proper analysis for former performance which helps a company recognize its future directions. Abraham (2006) stated to facilitate comparison within an organization and among the sector, the financial ratio analysis formalizes and quantifies financial data. Ratio analysis gives an efficient way for assessment and appraisal of financial performance, through which a decision-maker can detect important financial relationships. Thus the model is essential in evaluating the influence of privatization on non-financial sectors in terms of financial performance and acts as a decision-making instrument for publicly owned enterprises that are scheduled for privatization in the future. According to Tuk et al. (1995), the analytical capabilities of ratio analysis has importance in evaluating a firm's financial state, instituting measures for future strategies and tasks to achieve its mission, assessing its performance over time, and determining how in the future the organization should proceed.

3.4. Construction of variables:

Since the variables of our analysis are constructed through ratios in this sub-section, we provided the description of indicators used for the construction of our variables.

3.4.1: Profitability (P):

Profitability is the quality of having gain or benefit or profit. The indicators of RA and RE are utilized to compute profitability.

$$\boldsymbol{Profitability} = (\boldsymbol{RA}, \boldsymbol{RE})$$

Whereas,

RA=ROA= Return on assets

RE=ROE=Return on equity

- *Return on assets (RA)*

  Inderst & Muller (2003) used a RA to measure the profitability of firms in their study. RA is a ratio that depicts how cost-effective a company is relative to its total assets. RA gives an impression as to how efficient and proficient the company is at utilizing its assets to make profits. RA is measured as.

$$RA = ROA = \frac{Net\ profit\ before\ taxes}{Average\ of\ (Non - Current\ Assets + Current\ Assets)}$$

  The greater the ROA, the better, as the company earns more money on less investment.

- *Return on equity (RE):*

  Pandya and Rao (1998) took a RE as an indicator of profitability. It evaluates an organization's or companies' efficiency at making profits from every unit of shareholders' equity. It demonstrates how efficient a company utilizes its equity to make rise earnings. A higher RE is favored.

$$RE = ROE = \frac{Net\ profit\ before\ taxes}{Average\ of\ Shareholder's\ equity}$$

3.4.2: Liquidity (L)

Liquidity is the capability of a company or firm to meet its short-term, financial debt obligations without disrupting the normal operations of the business. The current ratio (CR) is used to gauge liquidity (Bdour et al., 2007; Munir, 2013).

$$\boldsymbol{Liquidity} = (\boldsymbol{Current\ ratio}\ (\boldsymbol{CR}))$$

- *Current ratio*

The CR is calculated as.

$$CR = Current\ ratio = \frac{Current\ Assets}{Current\ Liabilities}$$

The higher CR indicates that the company or firm is in a good situation therefore lower current ratio shows the worsening situation**.**

3.4.3: Leverage (LV)

Leverage ratio measures the firm's long term financial position and the degree to which the firm counts on debt to finance assets. Debt to equity is used to gauges leverage. (Bdour et al., 2007; Mwangi, 2013).

$$\boldsymbol{Leverage} = (\ \boldsymbol{Debt\ to\ equity\ ratio}\ (\boldsymbol{DE})\ )$$

- *Debt equity ratio (DE)*

  This is a metric that calculates a company's financial leverage. It is measured as

$$DE = Debt\ equity\ ratio\ = \frac{Current\ Liabilities\ +\ Non - Current\ Liabilities}{Shareholder's\ equity}$$

It shows what part of equity and debt the company is consuming to finance its assets.

3.4.4: Management efficiency (ME):

Management efficiency measures the capability of a company to utilize in the current period or in the short-term its assets and manage its liabilities effectively. The asset turnover ratio is used to assess efficiency.

$$\boldsymbol{Management}\ \textbf{efficiency} = (\boldsymbol{Assets\ turnover\ ratio})$$

- *Assets turnover ratio*

  Assets turnover ratio metrics evaluate the overall efficiency of a firm in generating sales via its assets It is the measure of total sale proceeds to the total assets of the business. It is calculated as

$$AT = Assets\ turnover\ ratio = \frac{Sales}{(Non - Current\ Assets\ +\ Current\ Assets)}$$

3.4.5: Output (OP):

The output is computed by average inflation-adjusted sales and GDP deflated sales. The RS (real sales) after excluding the influence of inflation as well as GDP Deflator is used as proxies in order to measure output. (Megginson et.al., 1994; Boubakri, & Cosset, 1998; Wei et.al, 2003; and D'Souza et.al, 2001)

$$\boldsymbol{OP = Output} = \left(\frac{Nominal\ Sales}{GDP\ Deflator}, \frac{Nominal\ Sales}{CPI}\right)$$

3.5. Data Collection, Sample size, and Sources:

This study used secondary data that is extracted from the financial statement of firms. Data concerning the firms is retrieved from the official website of respective companies, the State Bank Pakistan and Security & Exchange Commission of Pakistan handbooks. The firms are divided into different sector /economics groups by the State Bank of Pakistan. These sampled twenty-four

companies covered in the study are either completely privatized or, a minimum of 20% privatized state-owned enterprises. The data of each company from the different sectors for all variables are collected for three years before that company's privatization year, three years after the privatization year, and of the recent five years (2014 to 2019) for sector analysis. Following are the description of data of each sector companies covered to analyze the sector's financial performance in light of privatization in detail.

3.5.1. Cement:

Around fifteen companies are privatized to date under the Privatization Commission of Pakistan in the cement sector (mentioned in Table 1) which were earlier included in State Cement Corporation of Pakistan. Three units are excluded from analysis namely Wah cement's as an outlier due to unit's heavy losses, Associated Cement Rohri, due to non-availability of post-privatization data and General Refractories Limited, Dandot Works (National Cement) units due to its closure after privatization. White cement and Pak cement companies pre privatization data is combined with Maple Leaf cement as they were merged after privatization. A total of ten in analysis, eight cement (2 merged) companies are taken for cement sector analysis.

3.5.2. Automobile:

From 1991 to 2019 under the Privatization commission seven companies from the automobile sector are privatized (mentioned in Table 1). Due to heavy loss, National Motors is removed as an outlier from analysis of the automobile sector along with Naya Daur Motors due to its closure after privatization. A total of five companies are covered in the study for automobile sector analysis.

3.5.3. Chemical:

Under the Privatization Commission of Pakistan ownership of thirteen companies from the chemical sector are shifted to the private sector till date (mentioned in Table 1). Among thirteen privatized chemical sector companies three are taken in the analysis because post-privatization data of only four companies are not available out of which one company namely PPVC data is excluded from this analysis due to heavy loss as an outlier. Further two closed companies after privatization Nowshera Chemicals and NPVC are also excluded from the analysis.

3.5.4. Fertilizers:

Six fertilizer companies' ownership is shifted to the private sector from the public from 1991 to 2019 (mentioned in Table 1). Four companies' data are included in the analysis. HPFL and PAFL were merged after privatization and named as Agritech Ltd so there pre privatization data are merged for analysis. Further two companies namely LCFL and PSFL are excluded from analysis as there post-privatization data is not available.

3.5.5. Engineering.

Seven companies under the engineering sector have been privatized from 1991 till 2019 (mentioned in Table 1). Five units in engineering sectors were closed after privatization which are removed from the analysis (Ahmed, 2019). MSCL is excluded from analysis due to heavy loss as an outlier. Only one company Pioneer Steel is added to the analysis.

3.5.6. Energy:

In the energy sector, many companies were privatized from 1991 to 2019 out of which four companies are covered in the analysis (mentioned in Table 1) KAPCO and KESC are listed in

KSE but due to the non-availability of pre privatization data are excluded from the analysis. Similarly, other privatized companies from the energy sector are removed due to the non-availability of data.

Table 1: Details of the companies for sector analysis:

Sr. No	**Companies privatized**	**Privatization year/month**	**Details**
Cement			
1.	Maple Leaf Cement	Jan-92	Included
2.	Pak Cement	Jan-92	Merged in maple
3.	White Cement	Jan-92	Merged in maple
4.	D.G Khan Cement	May-92	Included
5.	Dandot Cement	May-92	Closed after privatization
6.	Garibwal Cement	Sep-92	Included
7.	Zeal Pak Cement	Oct-92	Included
8.	Kohat Cement	Oct-92	Included
9.	Dandot Works – National Cement	Jan-95	Closed after privatization
10.	General Refractories Limited	Feb-96	Closed after privatization
11.	Wah Cement	Feb-96	Excluded due to heavy loss
12.	Associated Cement Rohri	Nov-03	Non-availability of post-privatization data

13.	Thatta Cement	Jan-04	Included
14.	Mustehkam Cement Limited	Nov-05	Included
15.	Javedan Cement Company Limited	Aug-06	Included
Chemicals:			
1.	National Chemical Ltd	Feb-92	Data not available Included
2.	Kurram Chemicals	Feb-92	Data not available
3.	Pak PVC Ltd (PPVC)	Jun-92	Included
4.	Sind Alkalis Ltd	Oct-92	Excluded due to heavy loss
5.	Antibiotics (Pvt) Ltd	Oct-92	Included
6.	Swat Elutriation	Dec-94	Data not available
7.	Nowshera PVC Co. Limited (NPVC)	Feb-95	Closed after privatization
8.	Swat Ceramics (Pvt) Limited	May-95	Data not available
9.	Ittehad Chemicals	Jul-95	Included
10.	Pak Hye Oils	Jul-95	Data not available
11.	Ravi Engineering Limited	Jan-96	Data not available
12.	Nowshera Chemicals	Apr-96	Closed after privatization
13.	National Petrocarbon	Jul-96	Data not available
Automobile			
1.	Al-Ghazi Tractors Ltd. (AGTL)	Nov-91	Included
2.	National Motors Ltd.	Jan-92	Excluded due to heavy loss
3.	Millat Tractors Ltd. (MTL)	Jan-92	Included

4.	Baluchistan Wheels Ltd. (BWHL)	May-92	Included
5.	Pak Suzuki Co. Ltd. (PSCL)	Sep-92	Included
6.	Naya Daur Motors Ltd.	Jan-93	Closed after privatization
7.	Bolan Castings	Jun-93	Included
Fertilizer:			
1.	Pak China Fertilizers Company Limited	May-92	Closed after privatizing it
2.	Pak Saudi Fertilizers Ltd. (PSFL)	Sep-02	Post-privatization data not available
3.	Pak Arab Fertilizers (Pvt) Ltd.	May-05	Included
4.	Pak American Fertilizers (100%)	Jul-06	Merged in Agritech Ltd.
5.	Lyallpur Chemical & Fertilizers (LCFL)	Feb-07	Data not available
6.	Hazara Phosphate Fertilizers Limited (HPFL)	Nov-08	Merged in Agritech Ltd.
Engineering			
1.	Karachi Pipe Mills	Jan-92	Closed after privatization
2.	Pioneer Steel	Feb-92	Included
3.	Metropolitan Steel Mills Limited (MSCL)	May-92	Excluded due to heavy loss
4.	Pakistan Switchgear	Jun-92	Closed after privatization

5.	Quality Steel	Apr-93	Closed after privatizing it
6.	Textile Machinery Co	Oct-95	Closed after privatizing it
7.	Indus Steel Pipe	Jul-97	Closed after privatizing it
Energy			
1.	Mari Gas	Apr 94	Included
2.	Kot Addu Power Company (26%) (KAPCO)	Jun-96	Data not available
3.	SSGC LPG business	Aug-00	Included
4.	NRL (51% shares)	May-05	Included
5.	KESC (73% GOP shares)	Nov-05	Data not available
6.	Attock Refinery	----	Included

A total of twenty-four companies from overall six sectors namely cement, chemicals, automobile, engineering, fertilizers, and energy sectors are taken for assessing the impact of privatization particularly on the sector's financial performance along with the overall sector's financial performance too.

3.6. Model and techniques Specifications:

The econometric model is an analytical depiction of the undergoing objective statements in economic behavior where the illustration relies upon either qualitative or quantitative or both execution for the purposes of hypothesis testing, parameter estimation, or use for prediction or

simulations of the variables under concern (Deaton, 1995). Different authors have used different tools and techniques to measure the impact of different variables on dependent variables.

3.6.1. Specification of the model for empirics:

For our empirical analysis, we use the following specification:

$$FP_i = \beta_\circ + \beta_1 PRIV + \varepsilon_i$$

Whereas FP denotes the financial performance of firms at the particular time *i*, and PRIV denotes privatization of firms. ε_i Represents the error term of the model with the usual properties.

Furthermore, the financial performance (FP) of the firm is assessed as

$$FP_{\ i} = \beta_1 P + \beta_2 L + \beta_3 LV + \beta_4 ME + \beta_5 0P\varepsilon_i$$

Where FP denotes the financial performance of firms at a particular time *i*, in terms of profitably, liquidity, leverage, management efficiency, and output ratios. P denotes the change in profitably of the firms, L denotes the liquidity ratio, LV depicts the leverage ratio, ME illustrates the management efficiency of the firm and OP denotes the output of the company's real sales in particular units. ε_i Denotes the error term of the model with the usual properties.

3.6.2. Data Analysis technique:

To test the hypothesis, specifically for each sector our study will use an extended model of Megginson et al. (1994) employed by Kouser et al. (2012) to evaluate sectors individually. In order to, assess post-privatization performance variations, the study will employ a matched pair methodology (i.e.. compare pre – and post-privatization outcomes). According to Kouser et al. (2012), the first performance indicators for each company for the seven-year period, three years before and three years after privatization will be calculated. For a firm that has been privatized less

than three years is excluded from studies. Secondly, for each privatized unit/firm in a sector, the mean value of every performance indicator, over the pre – and post-privatization periods (before privatization years –3 to – 1 and after-privatization years +1 to +3) is calculated (Bortolotti, Fantini, & Scarpa, 2000). The privatization year is taken as zero and excluded from study mean calculations (Kouser et al., 2012).

Thirdly, after computation of the mean value of the performance indicator of each privatized firm of sectors under study, the mean value of each proxy of the individual sector is calculated using the computed mean value of performance indicator/proxy of the privatized firm of that particular sector (Kouser et al., 2012). Having computed the mean for each sector, the study has employed the T-test testing for significant changes in the variables. Then t-test determines the significance of the analysis after considering the p-value that tells whether the impact of privatization on SOE is noteworthy or not (Boubakri, & Cosset, 1998).

In the general effect of privatization on the overall financial performance of sectors is obtained by adding of individual sectors proxies and its significance is tested by t testing (Kouser et al., 2012). During the inquiry of overall data in various cases when we have used more than one proxies, in that case, the one written first is to be considered more reliable because it uses current measure in either the numerator or the denominator, or both (Onyango, 2014).

A further influence of denationalization on the financial performance of companies privatized sector-wise of the recent five years (2014-2019) is analyzed using quantitative statistical tools mainly tables and graphs (Ochieng & Ahmed, 2014). The study empirical analysis is done through MS Excel software including calculations of mean, median, and application of t-test on the data, and plotting graphs.

CHAPTER 4

EMPIRICAL RESULTS

4.1. Introduction

In this chapter, the study presents the findings of the research and exhibits the major findings.

4.2. Profitability changes:

Profitability is the quality of having gain, benefit, or profit (Becker, 2002).In numerous studies, profitability mainly is used as a measure of evaluation of the financial performance of private and public enterprises (D'souza et al.,2001). SOEs are often unprofitable, then those which are privatized (Megginson & Netter, 2001). This is because SOEs do have other goals such as developing regions that are backward, rising employment than just maximizing profit (Boycko, Shleifer, and Vishny,1993). However, (Yarrow, 1986) stated, that in the privatized enterprise the managers' emphasis on profit goals, as there management is directly accountable to shareholders. The stress of profit goal of privatizing firms let them utilize their human, technological and financial resources more efficiently and reduces the dependence on government subsidies (Boycko et al., 1996; Kikeri et al., 1992). Profitability gets enhanced as the firm's ownership is transferred from the government to the private sector (Pham & Carlin,2009; Pham Duc Cuong,2017; Frydman et al., 1999; Anderson et al.,1997; Smith et al.,1997; Wang, 2011; Cabanda and Ariff, 2002). Two ratios RA (Return on assets) and RE (return on equity) are used as proxies to measure profitability. Table 2 includes the performance measures of our overall hundred percent sample which comprises the six sectors data of twenty-four privatized companies. Two profitability ratios RA

and RE upsurge significantly after privatization while the rise in RE ratio seems less significant. The rise in RA and RE indicates the company has become more efficient as it makes more money on less investment using assets and shareholder's equity.

The RA mean (median), has significantly ameliorated from 0.2577 (0.2505) before privatization to 0.5489 (0.43243) after privatization. The same trend can be grasped in RE which has improved positively from-1.843 (0.890) to 2.721 (1.565) after privatization but is not of note due to its less significance. The overall sector's profitability ratio indicates that profitability has risen overall in six sectors after privatization indicating an improvement in the financial performance of the firms. However, overall average results of sectors profitability show a big picture of how in general majority of sectors have behaved as a result of privatization but cannot depict a particular sector, behavior in terms of profitability. Now a comprehensive and detailed sector-wise analysis is at hand in order to deduce which among the sectors under study has been benefited the most in terms of profitability.

Eight cement companies were taken in analysis. The overall cement sector depicts a positive trend in terms of profitability (Table 3). The RA mean and median from 0.0383 (0.0333) before privatization increase to 0.138 (0.123) after privatization significantly and the same trend is witnessed in RE but is insignificant indicative of in general profitability upswing in the sector.

The automobile sector privatized units analysis is presented in (Table 4). The sector analysis includes the data of five privatized companies. An average enhancement in profitability is seen in the post-privatization period of the automobile sector as the mean and median of RA has raise from 0.0217 (0.022) pre-privatization to 0.0418 (0.051) after privatization. The RE has negatively changed from -0.081(0.18) before to -0.86 (0.16) after privatization in the automobile sector but

is not noteworthy as the p-value (0.66) indicates it insignificant. Although privatization has minutely improved profitability in the automobile sector but not much to consider as profitability ratios are insignificant.

Three of the privatized companies in the chemical sector are included in the analysis. The RA and RE mean (median) before privatization changes significantly from 0.1115(0.116), 0.0613(0.0672) to 0.0613 (0.0672), 0.0516 (0.0427) respectively depicting an overall negative trend in profitability in the chemical sector after privatization specifying a decline in profits after privatization in the sector (Table 5).

Table 6 shows the analysis of the fertilizer sector. The first proxy RA shows a rise of 0.0839 after privatization depicting a positive change and an increase in profitability after privatization in the sector. While the remaining proxy RE mean and median shows negative trend-0.3211(-0.3784) after privatization but as mentioned formerly, first among more the one proxies is considered preferable. Hence, RA provides more realist results signifying a rise in fertilizer sector profits after privatization.

In the engineering sector, RA shows an increasing trend but insignificantly while RE shows an insignificant negative trend. Overall analysis indicates a positive impact but insignificant of privatization on the profitability of the engineering sector (Table 7). Although the positive impact is depicted one company's rise in profit cannot obscure the closure of five companies demonstrating that the engineering sector has been negatively affected by privatization.

In the energy sector, RA mean and median changed from 0.0929 (0.0363) pre privatization to 0.1138 (0.058) after privatization displaying a positive increase. The other proxy RE also

illustrates the same trend, an increase in results can be observed from pre privatization to post-privatization demonstrating an upswing in profits in the sector after privatization (Table 8)

From the above sectorial analysis, we can finally infer that cement, automobile, energy, fertilizer profitability has improved noteworthy illustrating a rise in profits after privatization while contrasting impacts are observed in the chemical sectors and engineering sector.

4.2.1: Recent five years of analysis:

The recent five years' overall sector analysis illustrates that in the long term the profitability hasn't been increased in six sectors under study overall (Figure.3).

Furthermore, sectoral analysis depicts (Figure.3) that just the chemical sector privatized companies' profitability has increased in the long term although immediate privatization in the sector hasn't rise profitability. Conversely, all other sectors than chemical profitability do not shows upsurge in RA ultimately profitability. The results demonstrate that in the long term privatization hasn't stimulated further the profitability of automobiles, cement, fertilizers, and energy to a considerable extent through profits where seen risen in some sectors in the immediate post-privatization period. While RE demonstrates (Figure.4) rises in profits but as mention, formerly emphasis will be laid on the first proxy in conflicting results due to more importance in gauging financial performance.

4.3: Liquidity changes:

Liquidity is the capability of a company or firm to meet its short term financial debt responsibilities they encounter, without disturbing the normal operations of the company. Numerous studies have used liquidity as a variable to measure financial performance (Mbuga and Okech, 2015; Yilma,

2012). State-owned enterprises have low liquidity because of the necessity to cover their investment cost utilizing the funds that have been gathered thereby constraining net worth (Ndisya, 2017). The current ratio is used to measure liquidity (Bdour et al., 2007; Munir, 2013). Liquidity is anticipated to increase as a consequence of privatization. As the proprietor of a public firm, the state is accountable for the company's debts to creditors, who thus have an added guarantee. As such, a public firm has greater current liabilities than a private firm.

The overall sectors result in (Table 2) shows that privatization, in general, has decreased the liquidity performance of non-financial sectors in Pakistan as net changes after privatization in the liquidity performance of six sectors show collectively decreasing trend as mean (median) change is-0.10212 (-0.43892). While testing statistically p-value (0.07) shows results are statistically significant at 10%.

Sector analysis depicts that in the cement sector the liquidity (Table 3) shows a significant positive trend as the change in mean (median) after privatization is 0.0316 (0.0906) with p-value 0.03 while the LD increases after privatization in the automobile sector as the change of mean (median) is 0.032583 (0.031583) of current ratio but insignificant as p-value is 0.96 (Table 4).

Furthermore, liquidity is seen (Table 5) to have risen in the chemicals sector after privatization significantly as the mean (median) change is 0.119283 (0.020583) illustrating a positive impact of privatization on sectors' liquidity performance.

Conversely, liquidity performance has deteriorated significantly after privatization in the engineering sector as the change in mean and median is -0.14888,-0.24758 respectively (Table 6). Fertilizer sector liquidity shows (Table 7) a positive increasing trend after privatization as a change in mean and median is 0.215283 and 0.116583 respectively but insignificant. On the other

hand, the energy sector shows (Table 8) a significant decreasing trend of liquidity performance in the sector after privatization as mean and median change is -0.35199 and -0.45069 respectively.

Concluding the sector analysis the energy and engineering sector shows a significant negative trend in liquidity after privatization. On the contrary cement, chemical shows a significant positive trend while an insignificant positive trend is seen in fertilizers and the automobile sector after privatization.

4.3.1: Recent five years of analysis:

Five years of analysis show (Figure.5) that liquidity has remained consistent in the overall six sectors. Sector-wise liquidity remains unchanged to a considerable extent demonstrating privatization hasn't influenced the liquidity of privatized SOE in sectors understudy in the long term (Figure.5).

4.4: Leverage Changes

For the improved financial performance of the newly privatized firms, it is anticipated that leverage ratios must decline post-privatization. There are numerous reasons that leverage should drop afterward the companies (SOE) are privatized. Public firms usually have particularly high levels of debt mostly as they to private investors, cannot sell their equity, and therefore the mere equity at hand to the companies are capital injections and retained earnings (Megginson et al 1994). Leverage shows the firm's capacity to meet its debt obligations. LV ratio measures the firm's long term financial position and the degree to which the company or firm counts on debt to finance assets. It forms the relationship concerning funds provided by the firm's owner and those supplied by the firm's creditors.

A significant decline in LV performance for overall sector analysis is inferred from analysis as the change in mean (median) is -0.0891(-0.0763) demonstrating a decline in dependency on debt after the privatization of companies for financing overall (Table 2).

In the cement sector, the mean (median) of DE has deteriorated -0.3549 (-0.1318) after privatization demonstrating a decline in leverage of sector but not significant due to p-value 0.89 (Table 3). Similarly, an insignificant declining trend is seen in leverage of the chemical sector as the mean and median of DE changes 0.4333 (0.4205) from 0.4671 (0.445) after privatization (Table 5). While the engineering sector mean (median) of DE shows a rise to 1.3362 (1.3469) from 0.779 (0.7357) after privatization illustrating a rise in leverage but insignificant as t-test and p-value is insignificant (Table 6).

The automobile sector change in the mean (median) of DE is about -0.0891 (-0.0763) which depicts the decline in leverage of sector due to privatization but insignificant due to the p-value (Table 4). Fertilizer sectors portray a positive insignificant rise in leverage as DE mean and median changes to 0.3009 and 0.308 from 0.235 and 0.2366 after privatization with p-value of 0.52 (Table 7).

An increasing but insignificant trend in the leverage of the energy sector is obtained as DE mean(median) change is 0.0082 (0.0216) and the p-value is 0.98 (Table 8).

The leverage shows a decreasing trend in the automobile, cement, and chemical sector but insignificant Similarly not significant, but an increasing trend in leverage is experienced in energy, engineering, and fertilizer sectors after privatization.

4.4.1: Recent five years of analysis:

Five years of analysis shows (Figure.6) that leverage has declined in the overall six sectors. While sector analysis shows (Figure.6) that in the long run fertilizer sector leverage has shown a declining trend unlike in pre-post analysis results depicting financing on the debt has reduced due to privatization in the long run in the sector. Furthermore, the remaining sectors do not show considerable changes in leverage in the long run.

4.5: Management efficiency changes:

Management efficiency is a metric that measures the ability of a company to utilize its assets and manage its liabilities in the current period or in the short-term effectively. It is anticipated mostly that denationalization leads to improvement in management efficiency as the firms that are owned privately their managers are disciplined by a variety of external control mechanisms, such as the market for managers, and also by internal control mechanisms, such as compensation and rewards incentives which led them to focus on their goals hence making firm financially efficient along with the better quality of goods and services (Cuervo and Villalonga, 2000). Assets turnover ratio metrics are used to evaluate ME which conveys how a business efficiently utilizes its assets to make revenues and its capability to manage those assets.

The overall analysis of sectors demonstrates that privatization has improved significantly the management efficiency of companies that are privatized of six sectors as the mean (median) changes from pre privatization 14.36937 (14.098) to 16.1263 (15.398) after privatization with a p-value 0.039 (Table 2).

The sectoral analysis depicts the cement sector management efficiency has shown a significant positive trend as its asset turnover ratio mean and median has changed about 0.459723 and (0.368013) respectively (Table 3). Similarly, The management efficiency is seen to be improved after privatization significantly in the automobile sector as the change in mean and median is 0.259723 and 0.262023 respectively (Table 4).

The management efficiency in the chemical sector has improved significantly after privatization as the asset turnover ratio mean and median has changed to 0.2597 (0.1680) Indicating a positive impact on the management efficiency of the sector (Table 5).

On the other hand, a positive but insignificant trend is observed after privatization in the engineering sector as mean and median changes by 0.18223 (0.0905) post-privatization (Table 6). An improvement in the management efficiency of the fertilizer sector is manifested as the mean median of asset turnover ratio changes 0.2953 (0.2036) after privatization but insignificant (Table.7).

Management efficiency has appeared to have been improved in the energy sector as asset turnover ratio mean (median) changes from pre privatization about 0.300322 (0.2086) after privatization but insignificantly (Table 8).

The sector analysis depicts a significant increase in the automobile, cement, and chemical sector management efficiency after privatization while the insignificant but positive increase in engineering fertilizers and energy sector.

4.5.1: Recent five years of analysis:

Five years' analysis shows (Figure.7) that management Efficiency has been consistent with the pre-post analysis results that is increase in the automobile, cement, and chemical sector management efficiency after privatization while the insignificant but positive increase in engineering fertilizers and energy sector.

4.6: Output changes:

It is likely that the output of firm upsurge after privatization as real sales increases as anew privatized firm now has improved incentives, further flexible financing chances, augmented competition, and larger scope for entrepreneurial initiatives. The output of the privatized companies is analyzed using real sales as a proxy. Eliminating the effect of the rise in prices from nominal sales using CPI and GDP deflator the overall sector analysis illustrates that generally, privatization has increased the output performance of sectors under study but not significantly (Table 2).

However, sector analysis gives a complete picture of each sector output performance in regard to privatization. Cement sectors sales to GDP and inflation (RS) mean and median has grown significantly 29101 (37645) and 31701 (35644) million rupees respectively portraying an overall upsurge in real sales due to privatization in the sector (Table 3). Although prices in the cement sector rose after privatization showing an overall rise in nominal sales, real sales also showed a rise along with price increase.

The output analysis of automobile sectors depicts the overall decline in real sales after privatization. The sales to GDP and inflation (RS) output mean and median after privatization

declines form pre privatization for about 16077 (25025), 15363 (18349) privatization points respectively(Table 4).

In the chemical sector, although the mean and median have increased that of RS after privatization but are not worthy to consider due to the insignificance of the t-test (Table 5). The performance of output in engineering sectors deteriorates significantly after privatization. The real sales (sales to GDP and inflation) mean and median has shown a decline of 11584 (9250) and 14008 (8564) million rupees respectively after privatizing the companies in the sector (Table 6). Along with this, the closure of five units in sectors also signifies that the performance of the sector overall in real sales and nominal has worsened.

The fertilizer sectors' real sales (sales to GDP and inflation) mean and median have shown a decline of 120350 (241861) and 44019 (259860) points respectively after privatizing the companies in the sector significantly (Table 7). This illustrates that output has declined by privatized companies in the sector. The performance of output in the energy sector has shown a positive trend as RS to GDP has risen 1660742 (1116260) and RS to CPI 2263006 (2044231) thousand rupees after privatization but is insignificant (Table 8).

Sectorial analysis of the impact of privatization on output signifies a significant increase in output in the cement sector while insignificant in the chemical and energy sectors. Conversely engineering sector shows significantly and fertilizers and automobile sector insignificant decline in output (real sale) performance.

4.6.1: Recent five years of analysis:

Overall recent five years' analysis displays (Figure.8,9) that in general real sales have risen in the long term due to the privatization.

While particularly analyzing sector analysis depicts (Figure.8,9) the decline in energy sectors real sales have an increase in automobile sector real sales. Furthermore remaining on average are consistent with pre-post analysis results.

CHAPTER 5

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1: Introduction

This section delivers a summary of the analysis, the outcomes, and policy recommendations. The aim of the study was to assess the impact of privatization on the financial performance of six non-financial sectors of Pakistan.

5.2: Summary and discussions

The objective of the study was to assess the effect of privatization on the financial performance of cement, chemicals, automobile, fertilizers, engineering, and energy sector specifically, in Pakistan From six sectors total of twenty-four companies privatized under the Privatization Commission of Pakistan were taken in the study and matched pair methodology was adopted for analysis. Graphs were further used to evaluate the recent five years of the financial performance of privatized companies under study. A total of seven proxies are used in this study for different five indicators namely profitability, liquidity, leverage, management efficiency, and output to witness different financial features of the entities

Overall sector results depict improvement in the financial performance of sectors due to privatization as among five financial performance indicators four indicators showed up in favor of privatization. Furthermore, a recent analysis of overall sectors illustrates that in the long run no further improvement in either of financial performance indicators is observed as what is anticipated

mostly while privatizing SOE that it will grow into a more financially efficient company along with the time **(**Makalou, 1999; Craig, 1999; Odondi, 2008).

Companies privatized in the cement sector showed improvement in financial performance as profitability was upsurge (Ochieng & Ahmed, 2014), along with liquidity (Bdour et al., 2007) output and management efficiency of privatized companies in the sector. The recent five years analysis demonstrated similar trends too in financial performance indicators signifying privatization has affected the financial performance of the cement sector positively favoring privatization.

Similarly, privatization has also enhanced the overall financial performance of privatized companies in the automobile sector as profitability, management efficiency has risen along with output in the long run too.

Fertilizer sector privatized companies' management efficiency was seen improved along with liquidity and profitability but the output deteriorated after privatization showing the major contributor to profits increase was the rise in prices. Corresponding, product prices were upsurge sharply of Pak Arab Fertilizer after privatization. Overall financial performance improved privatized units in the fertilizer sector (Kouser, 2012).

In the chemical, sector privatized units' financial performance in general improved minutely in contrast to automobile and cement sector privatized units. Profitability, liquidity, and management efficiency upsurged in long run too but not to a great extent illustrating the small impact of privatization on financial performance.

On the other hand, financial performance was deteriorated of privatized units in the energy sector after privatizing them as debt financing was increased along with the reduction in real sales while

profitability was risen demonstrating major contributor to profits is the rise in prices (Hussain, 2014). A similar trend was observed in the recent five years analysis too inferring privatization has worsened the financial performance of privatized units in the energy sector.

Furthermore, the engineering sector privatized units' financial performance was deteriorated after privatizing them (Ahmed & Alam, 2018). Four out of five financial performance indicators were seen negatively affect by privatization. Along with these 5 unit closures after privatizing them shows a dismal picture of privatization influence in the sector. A sharp and steep falloff of profitability and real sales in the years of the purchase of SOE in the engineering sector by the private sector illustrates privatized units in the sector have suffered badly. The engineering units' privatization seems to be a catastrophe grounded on all standards of performance. The private sector was merely concerned, in certain cases, simply to buy assets, chiefly the real estate, of the privatized companies in the sector and certainly not envisioned to operate it. (Ahmed, 2019).

5.3: Conclusion:

Our findings, concludes that financial performance was seen greatly improved of privatized units in the cement sector as results illustrate a positive swing in indicators of profitability, liquidity along with improvement in management efficiency and output after privatization in the sector. Furthermore, the leverage of cement sector privatized units showed a decline, demonstrating the reduction in reliance on debt.

Similarly, findings illustrate encouraging the impact of privatization on privatized firm’s financial performance in the automobile sector as indicators profitability, liquidity, leverage (showing declining trend), management efficiency depicts positive image while merely output indicator

among six financial performance indicator is seen worsen by privatization but not too perceptible extent.

The outcomes show fertilizer sectors privatized unit's overall financial performance has improved after privatization as profit has surged along with output and liquidity while in the chemicals sector, minuscule improvement in the financial performance of privatized units is concluded.

Conversely to the cement, automobile, and fertilizers sectors outcomes, the findings of the study concludes deterioration due to privatization of the financial performance of privatized firms in the engineering energy sector in Pakistan as output and liquidity are seen declined along with rising in reliance on debt.

5.4: Recommendations:

- As privatization influences, positively the financial performance of three sectors namely cement automobile and fertilizers privatized companies' understudy, the government as policymakers can think through privatizing further poorly performing SOE in the sector.
- Furthermore, in sectors where financial performance improves after privatization the essential and prime thing for effective privatization is that the country must deregulate and waive off restrictions that are unnecessary and documentation that is too long for the privatized enterprises. Thus denationalization should, therefore, be a fragment of a procedure to brace the private sector through giving over its assets besides improving and creating a regulatory arrangement and improved infrastructure for their operation. For if the government handovers the possession to the private sector but retains it by throttling

by enormous rules the privatization would not increase the financial efficiency and effectiveness of the firms.

- In sectors like engineering and energy where privatized units' financial performance has declined the government should not undertake privatization of the remaining public units and in its place, adopt a substitute approach for strengthening and restructuring of these SOE in the sector.
- The sectors where privatization depreciates the financial performance of units privatized the government must follow the example of China and in place of privatization should entice along with private, foreign investors through less costly incentives to set up a new industry that would progressively concentrate the extent of public sector enterprises in the sector.
- Furthermore, a cost-benefit analysis must be done before privatizing units comprising the analysis to which extent expenditures can be recovered from end-users and, in the event of a shortfall, which sources can be mobilized of finances.

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APPENDICES

APPENDIX A

Figure 3: Profitability (Returns on Assets)

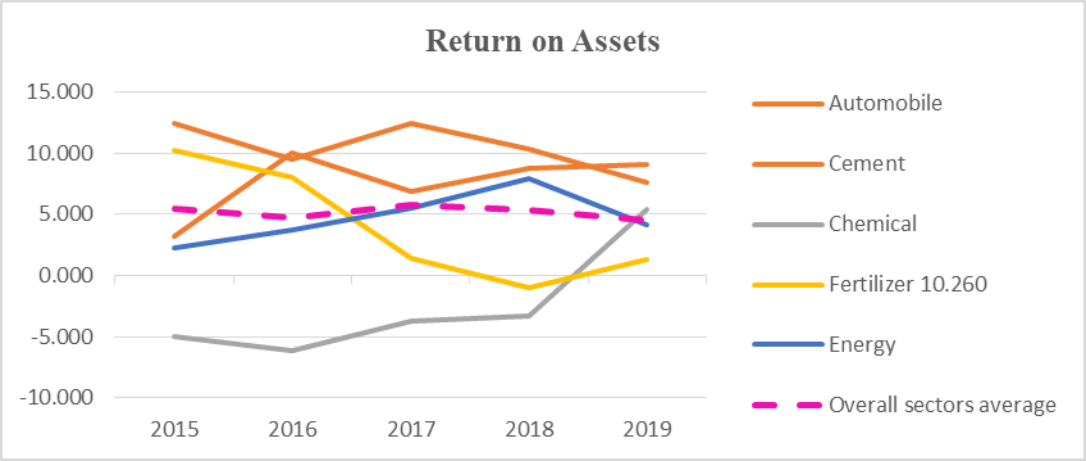


Figure 4: Profitability (Returns on Equity)

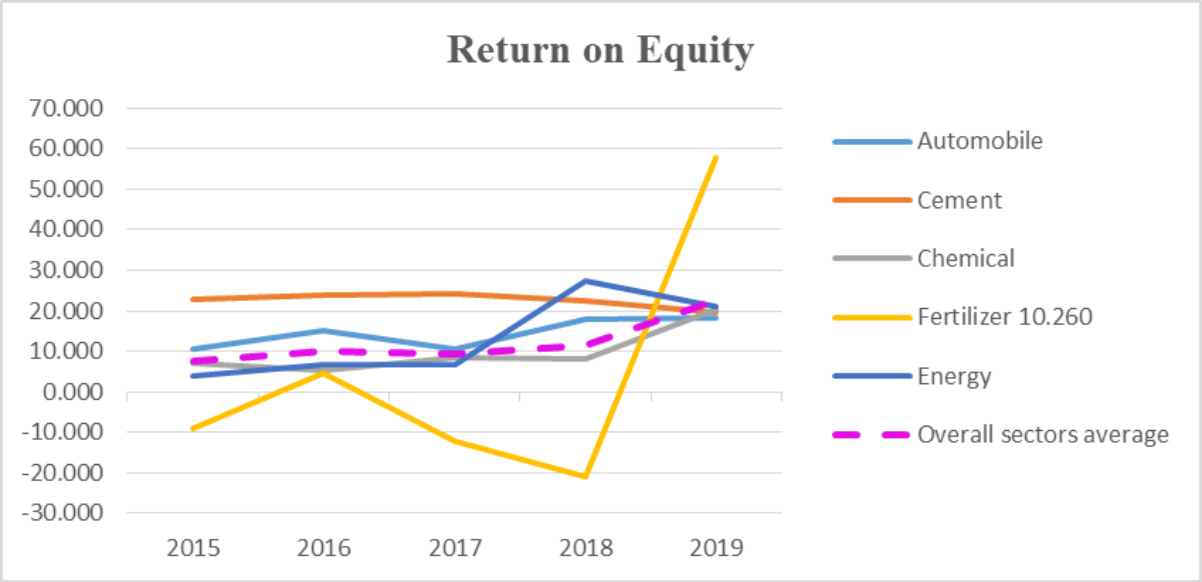


Figure 5: Liquidity*:*

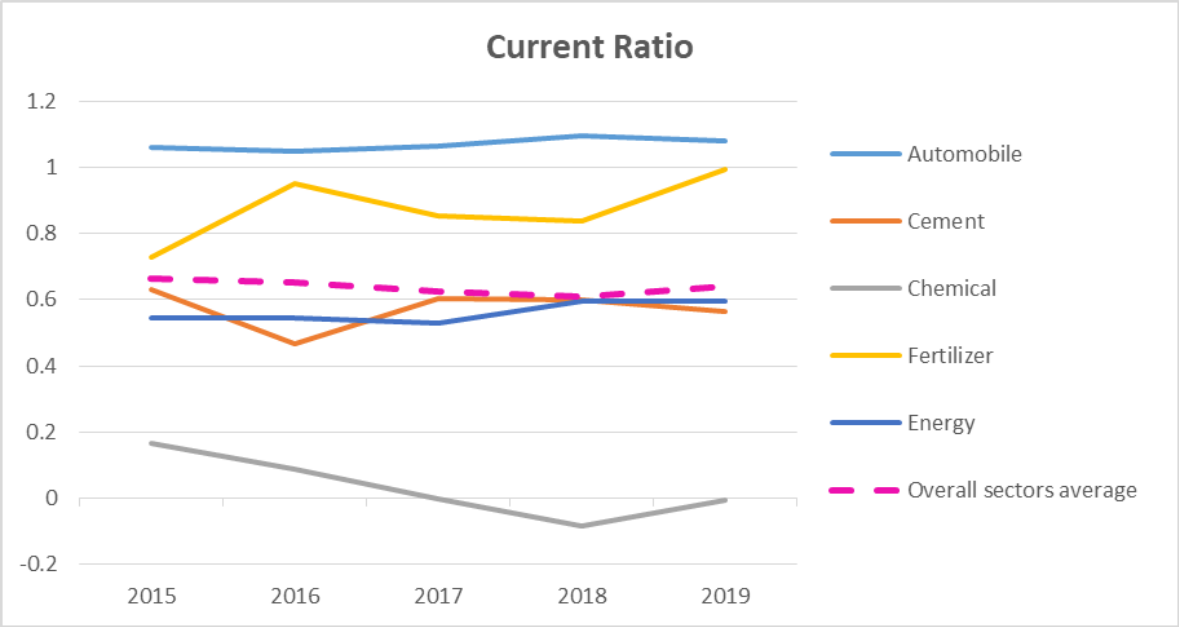


Figure 6*:* Leverage

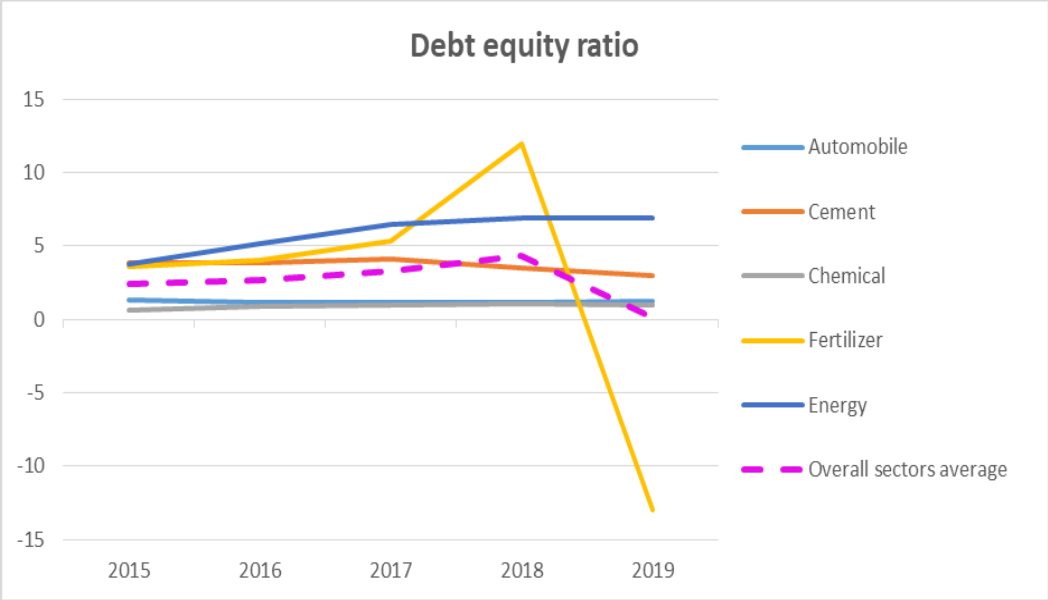


Figure 7: Management Efficiency:

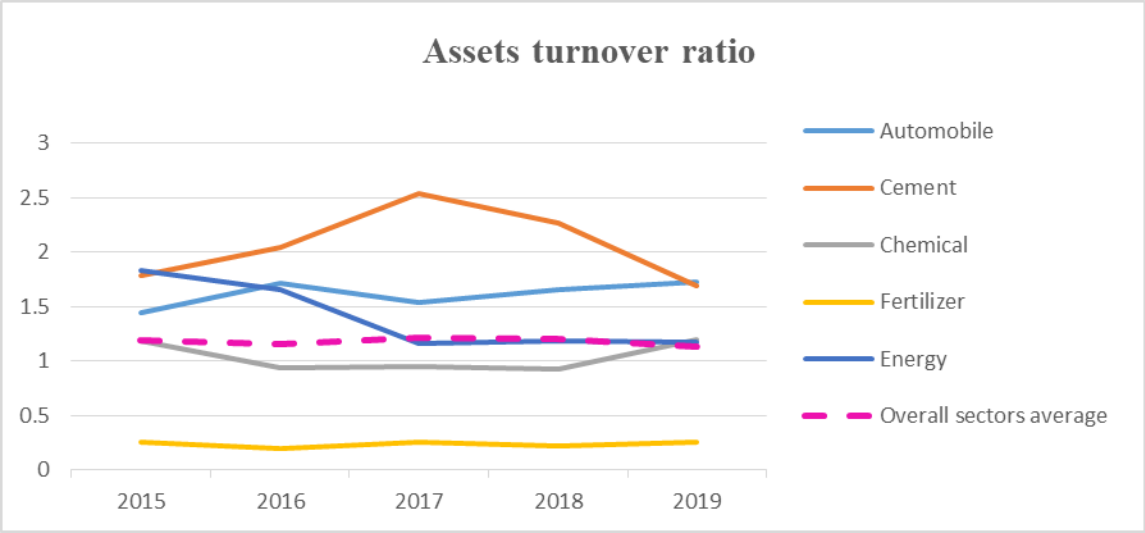


Figure 8: Output (nominal sale/ CPI)

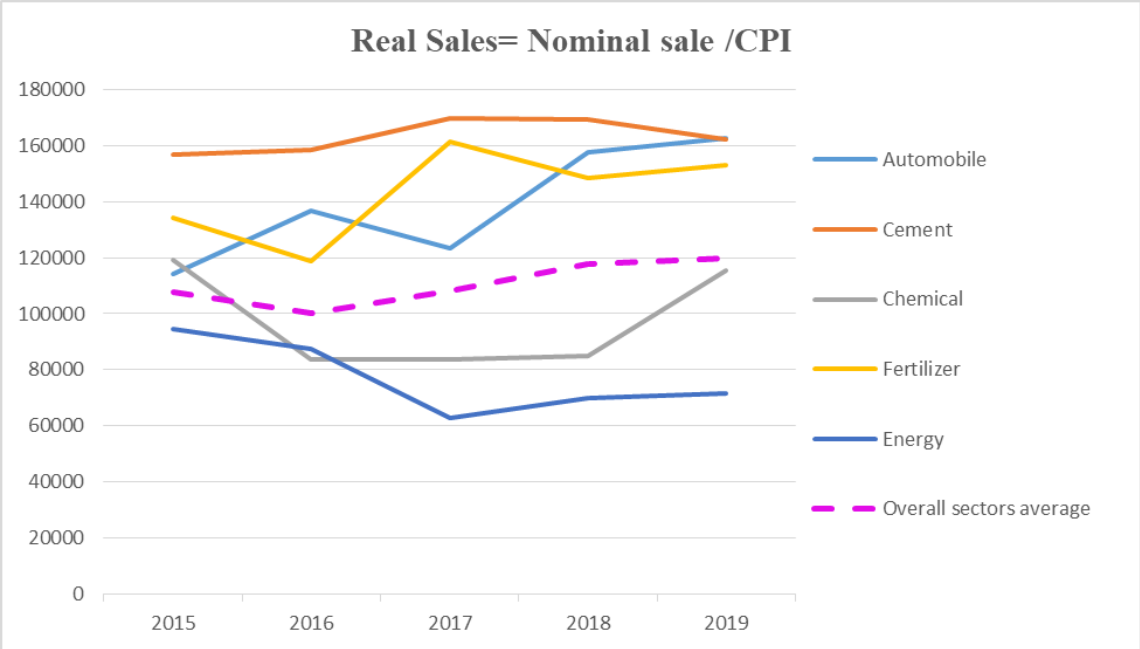
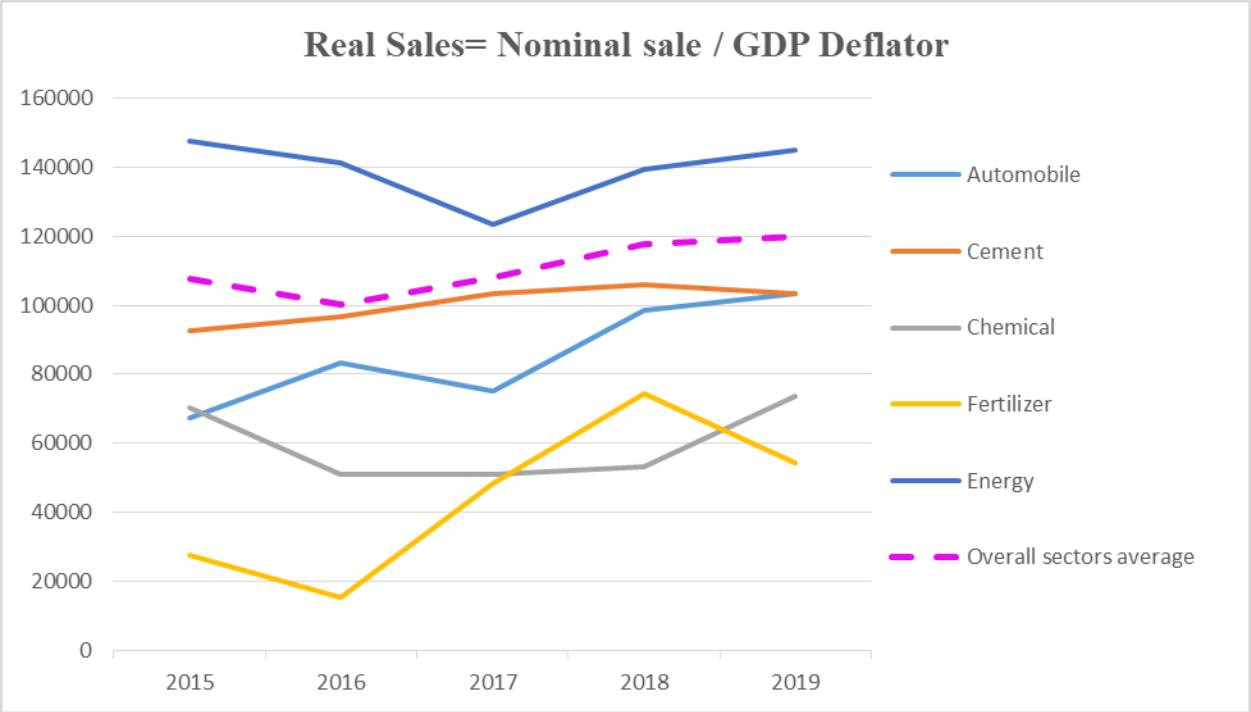


Figure 9: Output (Nominal sale/GDP Deflator)



APPENDIX B

Table 2: Results, and Tests Summary of the all Units Privatized in overall Sectors

Variables	**N**	**Pre-Privatization Mean**	**Post - Privatization Mean**	**Changes in Mean**	**T-test**	**P-Value**
		(Median)	**(Median)**	**(Median)**		
Profitability						
RA (Return on assets)	72	0.2577	0.5489	0.2912	2.12	0.029**
	(72)	(0.2505)	(0.43243)	(0.18193)		
RE (Return on Equity)	72	1.8437	2.7212	0.8775	1.01	0.19
	(72)	(0.8902)	(1.5654)	(0.6752)		
Liquidity						
LD= CR (Current Ratio)	72	7.713514	7.611396	-0.10212	1.78	0.07
	(72)	(7.549714)	(7.110796)	(-0.43892)		
Leverage						
LV=DE=Debt to equity	72	0.7348	0.6457	-0.0891	2.6	0.04
	(72)	(0.7493)	(0.673)	(-0.0763)		
Management Efficiency						
AT (Assets turnover ratio)	72	14.36937	16.12637	1.757001	2.99	0.039
Output						
RS=Sales/GDP deflator	72	3203683	4750256	1546573	0.425	0.682
	(72)	(2175791)	(3052568)	(876777)		
RS=Sales/CPI	72	3175396	5399401	2224005	-1.187	0.274
	(72)	(2405687)	(4203065)	(1797378)		

Table 3 Results, and Tests Summary of the all Units Privatized in Cement Sector

Variables	**N**	**Pre-Privatization Mean**	**Post - Privatization Mean**	**Changes in Mean**	**T-test**	**P-Value**
		(Median)	**(Median)**	**(Median)**		
Profitability(P)						
RA (Return on assets)	24	0.0383	0.138	0.0997	2.234	0.039*
	(24)	(0.0333)	(0.123)	(0.0897)		
RE (Return on Equity)	24	0.2091	0.278	0.0689	-1.99	0.488
	(24)	(0.153)	(0.218)	(0.065)		
Liquidity(L)						
LD= CR (Current Ratio)	24	1.8588	1.8904	0.0316	2.567	0.03
	(24)	(1.7665)	(1.8571)	(0.0906)		
Leverage(LV)						
DE=Debt to equity	24	0.8298	0.4749	-0.3549	1.22	0.89
	(24)	(0.608)	(0.4762)	(-0.1318)		
Management Efficiency(ME)						
AT (Assets turnover ratio)	24	3.108167	3.56789	0.459723	3.98	0.048
	(24)	(3.078767)	(3.44678)	(0.368013)		
Output						
RS=Sales/GDP deflator	24	64082	93183	29101	3.89	0.04
	(24)	(57007)	(94652)	(37645)		
RS=Sales/CPI	24	64465	96166	31701	1.90	0.085
	(24)	(63066)	(98710)	(35644)		

Table 4: Results, and Tests Summary of the all Units Privatized in Automobile Sector

Variables	**N**	**Pre-Privatization Mean**	**Post - Privatization Mean**	**Changes in Mean**	**T-test**	**P-Value**
		(Median)	**(Median)**	**(Median)**		
Profitability(P)						
RA (Return on assets)	15	0.0217	0.0418	0.0201	1.141	0.09**
	(15)	(0.022)	(0.051)	(0.029)		
RE (Return on Equity)	15	-0.081	-0.86	-0.779	-1.02	0.66
	(15)	(0.18)	(0.16)	(-0.02)		
Liquidity(L)						
LD= CR (Current Ratio)	15	1.063162	1.095745	0.032583	0.121	0.96
	(15)	(1.040862)	(1.072445)	(0.031583)		
Leverage(LV)						
DE=Debt to equity	15	0.7348	0.6457	-0.0891	0.98	0.58
	(15)	(0.7493)	(0.673)	(-0.0763)		
Management Efficiency(ME)						
AT (Assets turnover ratio)	15	2.308167	2.56789	0.259723	3.12	0.029
	(15)	(2.184767)	(2.44679)	(0.262023)		
Output						
RS=Sales/GDP deflator	15	197639	181562	-16077	-0.22	0.89
	(15)	(140151)	(115126)	(-25025)		
RS=Sales/CPI	15	197726	182363	-15363	0.2	0.85
	(15)	(154675)	(136326)	(-18349)		

Table 5: Results, and Tests Summary of the all Units Privatized in Chemical Sector

Variables	**N**	**Pre-Privatization Mean**	**Post - Privatization Mean**	**Changes in Mean**	**T-test**	**P-Value**
		(Median)	**(Median)**	**(Median)**		
Profitability(P)						
RA (Return on assets)	9	0.1115	0.0613	-0.0502	1.8	0.011*
	(9)	(0.116)	(0.0672)	(-0.0488)		
RE (Return on Equity)	9	0.1773	0.0516	-0.1257	1.42	0.093**
	(9)	(0.1966)	(0.0427)	-(0.1539)		
Liquidity(L)						
LD= CR (Current Ratio)	9	1.076462	1.195745	0.119283	5.89	0.003
	(9)	(1.064162)	(1.084745)	(0.020583)		
Leverage(LV)						
DE=Debt to equity	9	0.4671	0.4333	-0.0338	-1.3	0.997
	(9)	(0.445)	(0.4205)	(-0.0245)		
Management Efficiency(ME)						
AT (Assets turnover ratio)	9	2.1081	2.3678	0.2597	2..78	0.028
	(9)	(2.0787)	(2.2467)	(0.1680)		
Output						
RS=Sales/GDP deflator	9	69737.99	74478.99	4741	-2.29	0.9
	(9)	(67562.99)	66570.99	-992		
RS=Sales/CPI	9	67998.99	70686.99	2688	-1.99	0.95
	(9)	(69697.99)	73973.99	4276		

Table 6: Results, and Tests Summary of the all Units Privatized in Engineering Sector

Variables	**N**	**Pre-Privatization Mean**	**Post - Privatization Mean**	**Changes in Mean**	**T-test**	**P-Value**
		(Median)	**(Median)**	**(Median)**		
Profitability(P)						
RA (Return on assets)	3	-0.0556	0.0612	0.1168	5.674	1.07
	(3)	(-0.0212)	(0.01143)	(0.03263)		
RE (Return on Equity)	3	1.46	-0.136	-1.596	-2.45	1.19
	(3)	(0.28)	(-0.038)	(-0.318)		
Liquidity(L)						
LD= CR (Current Ratio)	3	1.164623	1.015745	-0.14888	6.99	0.003
	(3)	(1.152323)	(0.904745)	(-0.24758)		
Leverage(LV)						
DE=Debt to equity	3	0.779	1.3362	0.5572	1.10	0.997
	(3)	(0.7357)	(1.3469)	(0.6112)		
Management Efficiency(ME)						
AT (Assets turnover ratio)	3	1.816667	1.9989	0.182233	-1.89	0.128
	(3)	(1.7872)	(1.877)	(0.0905)		
Output						
RS=Sales/GDP deflator	3	25364.99	13780.99	-11584	4.89	0.04
	(3)	(17821.99)	(8571.988)	(-9250)		
RS=Sales/CPI	3	26194.99	12186.99	-14008	2.45	0.085
	(3)	(18046.99)	(9482.988)	(-8564)		

Table 7: Results, and Tests Summary of the all Units Privatized in the Fertilizer Sector

Variables	**N**	**Pre-Privatization Mean**	**Post - Privatization Mean**	**Changes in Mean**	**T-test**	**P-Value**
		(Median)	**(Median)**	**(Median)**		
Profitability(P)						
RA (Return on assets)	9	0.0489	0.1328	0.0839	2.46	0.04*
	(9)	(0.0641)	(0.1218)	(0.0577)		
RE (Return on Equity)	9	0.4835	0.1624	-0.3211	1.99	0.08**
	(9)	(0.5285)	(0.1501)	(-0.3784)		
Liquidity(L)						
LD= CR (Current Ratio)	9	1.000462	1.215745	0.215283	-1.09	1.8
	(9)	(0.988162)	(1.104745)	(0.116583)		
Leverage(LV)						
DE=Debt to equity	9	0.235	0.3009	0.0659	-0.69	0.52
	(9)	(0.2366)	(0.308)	(0.0714)		
Management Efficiency(ME)						
AT (Assets turnover ratio)	9	2.0166	2.3119	0.2953	1.18	0.16
	(9)	(1.9872)	(2.1908)	(0.2036)		
Output						
RS=Sales/GDP deflator	9	633058	512708	-120350	2.98	0.03
	(9)	(636973)	(395112)	(-241861)		
RS=Sales/CPI	9	698921	654902	-44019	1.90	0.095
	(9)	(860523)	(600663)	(-259860)		

Table 8 Results, and Tests Summary of the all Units Privatized in Energy Sector

Variables	**N**	**Pre-Privatization Mean**	**Post - Privatization Mean**	**Changes in Mean**	**T-test**	**P-Value**
		(Median)	**(Median)**	**(Median)**		
Profitability(P)						
RA (Return on assets)	12	0.0929	0.1138	0.0209	1.99	0.06**
	(12)	(0.0363)	(0.058)	(0.0217)		
RE (Return on Equity)	12	0.3103	0.3557	0.0454	1.83	0.67**
	(12)	(0.2273)	(0.2814)	(0.0541)		
Liquidity(L)						
LD= CR (Current Ratio)	12	1.550005	1.198016	-0.35199	2.23	0.025
	(12)	(1.537705)	(1.087016)	(-0.45069)		
Leverage(LV)						
DE=Debt to equity	12	0.5817	0.5899	0.0082	0.81	0.98
	(12)	(0.6478)	(0.6694)	(0.0216)		
Management Efficiency(ME)						
AT (Assets turnover ratio)	12	3.011667	3.311989	0.300322	1.34	0.128
	(12)	(2.9822)	(3.1908)	(0.2086)		
Output						
RS=Sales/GDP deflator	12	2213801	3874543	1660742	-2.89	0.682
	(12)	(1256275)	(2372535)	(1116260)		
RS=Sales/CPI	12	2120090	4383096	2263006	-1.187	0.274
	(12)	(1239678)	(3283909)	(2044231)		