

**THE IMPACT OF CORPORATE GOVERNANCE, OWNERSHIP  
STRUCTURE, AND ECONOMIC AND FINANCIAL  
LIBERALIZATION ON THE FINANCIAL AND OPERATING  
PERFORMANCE OF NEWLY PRIVATIZED FIRMS IN  
SELECTED MENA COUNTRIES**

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## 1. Introduction

Privatization of state-owned enterprises (SOEs) is considered the main vehicle for reinforcement and improvement in private sector performance. In fact, during the past two decades, privatization has become one of the most important economic phenomena in the world. Since the Thatcher government in Great Britain first launched large-scale privatizations, approximately \$ 1.25 trillion has been raised through privatization. Moreover, share issue privatizations (SIPs) accounted for \$ 750 billion between 1980 and 2000 (D'Souza, Megginson, and Nash 2001). This phenomenon is well documented for several developed and developing countries around the world.

In this paper we are concentrating on developing countries, principally selected Middle East and North Africa (MENA) countries, which have decided to embrace a market-oriented economic system. These countries have adopted, within a package of fundamental policies, several privatization programs to improve the performance of their SOEs. The commitment to these policies was usually prescribed by the international donor agencies, such as the World Bank and/or the International Monetary Fund, as a prerequisite for development and structural adjustment loans. While privatization refers to the transfer of ownership from the government to the private sector, structural adjustment programs involve different forms of liberalization measures, such as reduced controls and the removal of all anti-competitive barriers, which change the market dynamics.

Privatization in the MENA region has been progressing more slowly than in other developing countries in Latin America and Asia. This might be due to the fact that many MENA countries are severely inhibited by environmental weaknesses in their efforts to privatize, namely embryonic capital markets, scarce financial resources, a weak private sector, and less than prudent regulations. In the same vein, risk aversion, acute asymmetries of information and poor investment incentive structures are some of the more serious obstacles to the development of a securities market and the pursuit of privatization in MENA countries. Therefore, the implementation of privatization in MENA countries presents serious socio-political challenges due primarily to the widely perceived idea throughout the continent that it is a euphemism for unemployment and reduced government spending on social programs — to the extent that foreign investors participate and make windfall profits, it's perceived as recolonization.

Looking at privatization efficiency signifies the analysis of three important questions.<sup>1</sup> First, what is the relationship which may exist between the type of ownership structure and the performance of privatized firms? Second, what is the role that the privatization process might play in financing public debts and deficits, at least in the short-run? Finally, what are the distributional and political implications that privatization might produce?

However, the primary question is whether privatization improves firm performance and contributes to economic growth. Although a few studies have provided some evidence for other developing countries, the MENA experience has remained unexplored. This study tries to fill this gap by extending the literature on developing countries to the specific context of MENA and tries to assess whether privatization in some MENA countries has delivered its promises. In this study, we examine the performance of newly privatized firms (NPFs) in the selected MENA countries and investigate the impact of different ownership structures and governance and economic liberalization on firm performance.

This study contributes to the existing literature in two ways: (i) It evaluates the impact of privatization on firm performance of a unique sample of newly privatized firms in selected MENA countries (Egypt, Morocco, Tunisia, and Turkey) — a part of the world that has been neglected in the literature. We selected these countries on the basis that they represent the most active countries in the MENA region in terms of economic reform and privatization. (ii) We expand our analysis by looking at the determinants of performance changes of newly privatized firms by focusing on the specific environment of the MENA region. We hypothesize that, in order to explain how privatization works in such an environment, we need to account for (i) the ongoing economic reforms in these countries, such as stock markets and trade liberalization policies, (ii) the different types of post-privatization ownership structure; in which they could affect the outcome of privatization, and (iii) corporate

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<sup>1</sup> See Vickers and Yarrow (1991).

governance variables, such as the board of director compositions. The first set of factors is particularly important since privatization in developing countries is generally implemented as part of a broader program of structural adjustment involving other concomitant economic reforms.

## **2. Institutional framework of privatization**

Developing countries use privatization to improve the productivity of their SOEs; access investment capital and improve service delivery; and reduce the fiscal burden of SOEs losses.

In the early to mid-1990s, in developing countries, privatization proceeds averaged between \$20 to 30 billion on an annual basis. In 1997, proceeds improved to reach \$70 billion due to increased activity in large infrastructure and energy transactions with the lions share coming from Latin America (Argentina, Brazil and Mexico), Kazakhstan, Russia and China. Following the East-Asian crisis of 1997 and the Russian debt crisis of 1998, revenue from privatization plunged. However, starting in 2002, proceeds reached the pre-1997 level resulting mainly from share sales in Telecom and Banking in China, Czech Republic, Slovakia, India, and Saudi-Arabia. The bulk of the transactions were concentrated in Europe and Central Asia followed by Latin America and Sub-Saharan Africa. While 120 countries have pursued privatization programs over the past 14 years, revenues have come mainly from 10 countries Two of these countries are from the MENA region—Saudi Arabia because of the partial sale of “Saudi Telecom” and Morocco with the sale of Regie de Tabac at the beginning of 2000.

The MENA region raised \$19 billion or five percent of their total privatization proceeds from 320 transactions. In the 1990s, revenue from privatization was concentrated in two countries: Egypt (50 percent of the region’s proceeds) and Morocco (40 percent). Transactions in both countries were mainly in manufacturing although Morocco’s proceeds included revenue from energy and banking. In early 2000, the Telecom sector was the leading sector in the privatization program in the MENA countries where “Maroc Telecom” raised \$1.4 billion, “Jordan Telecom” \$108 million and “Saudi Telecom” \$4.1 billion. The following sections will describe in detail the background of privatization in Egypt, Morocco, Tunisia and Turkey.

### **2.1 Background on Privatization in Egypt**

Between 1960 and 1990, SOEs handled most of Egypt’s economic activity under the direction of various ministries. Poor management and weak capitalization of SOEs inevitably had a negative effect on their efficiency and financial viability (Road, 1997). In an effort to improve the Egyptian economy, Egypt launched a privatization program in 1991 as a part of its wider economic reform program. The first step in Egypt’s privatization program was to cut off subsidies to SOEs, followed by removing them from direct ministerial control (Field, 1995). Under the government’s strategy for divestment of SOEs, three approaches were undertaken initially: the first was to sell shares through the domestic stock market as minority and majority initial public offerings (IPOs), the second was to sell strategic stakes of shares to anchor-investors through public auction, and the third was to sell firms to employee shareholder associations (ESAs) (McKinney, 1996). Besides these approaches, some firms were liquidated because they were deemed not economically viable due to an enormous debt burden.

The choice of privatization method depends on market conditions, public opinion, and government objectives. But in fact, the general preference—when implementing the policy of economic liberalization or making it the first step toward complete privatization of an SOE—is to sell shares in the capital market instead of making direct sales to individuals. However, when the stock market is not active (i.e., the absorption capacity of the market is limited), the government will usually select direct sales as an alternative. In addition, this method is favoured when the potential buyers of the firm are known, thus making negotiations easier since the government is familiar with their ability to add value to the firm such as penetrating new markets, bringing new technology, or adding more capital investment.

A government sale of SOEs to ESAs should have a positive impact on labor, which is necessary in building a pro-privatization constituency form within a traditional seat of hostility. In addition, privatization through ESAs tends to be industry and firm specific. In other words, it might be easy to privatize small firms that are labor intensive via ESAs, but it is hardly feasible to do the same in, for

example, engineering firms, which are generally large, and output is capital intensive. Last, in the case of partial privatization (minority IPOs), where the government sells only a limited stake via the stock market, the government remains influential in certain SOEs because of their importance to social welfare (i.e., pharmaceuticals and mills). Profits represent substantial rents in these industries—a fact that might create political opposition to full privatization activities.

The privatization process in Egypt begins with an analysis of the most suitable means of privatization for a particular firm. Firm experts or advisors usually carry this out, and then the boards of directors of affiliated firms review the results of the studies before the necessary legal procedures are put into motion. For example, a sale through the stock market involves the holding company's convening an extraordinary general assembly meeting to look into the proposal for the sale of 51 percent or more of an affiliated SOE through the stock market.<sup>2</sup> The decision is determined by unanimous agreement; once the decision to sell is agreed upon, the holding company then prepares financial statements and evaluations for review by a designated government committee. This committee is responsible for evaluating the SOE and determining the market value of its shares. The holding company selects the promoter and the broker, places an advertisement in the newspaper, and then secures investors' requests through the stock market.

As for an SOE sale to an ESA, the process includes the preparation of an evaluation of the firm and its approval by the company's general assembly. The ministerial privatization committee (MPC) also approves the evaluation before a sales contract is drawn up with the conditions for the transfer of ownership and the payment terms. The ESA is given a discount ranging between 10 to 20 percent of the fair market value and a ten-year mortgage for the balance at a simple interest rate. The holding company provides support to the ESA in different forms, such as orientation and management training along with technical support and investment advice. The holding company also offers the ESA the opportunity to finance its purchases of equipment and other improvements needed to allow the company to continue to grow and maintain a workforce.

The sale to anchor-investors, however, is conducted differently. The process includes agreement to the sale of majority shares to anchor-investors by the extraordinary general assembly of the holding company. The promoter is then selected, an information memorandum is prepared, and promotion announcements are published in local and international papers. This allows potential investors to obtain information and disclosure documents on the firm offered for sale. The advertisement specifies the conditions of the sale and allows investors to carry out technical, financial, and legal analysis of the firm. The buyers submit their offers, and the holding company constitutes a committee to receive and open their bids. A decision committee is formed, and the final decision is made following the technical and financial evaluation of all offers. A recommendation is made to the holding company's board of directors, who then submit its analysis and conclusions to the general assembly for their decision before submittal to the MPC. The decision is reviewed by the MPC, who issues the ultimate determination. At that point, the holding company begins to prepare the sales contract. Ownership is transferred to the investors, and the terms of the contract are executed. Table 1 shows the number of the Egyptian privatized firms, classified by the method of sale. We observe that Egypt's privatization program, which actually started in 1994, had a slow beginning. However, in 1996, a new cabinet was appointed, and the privatization program was accelerated. When the new cabinet began to publicize its program to privatize Egypt's SOEs, the program attracted international interest. In order to increase the stock supply on Egypt's capital market, the government concentrated on full privatization rather than partial privatization<sup>3</sup>; consequently, the value of privatized firms accelerated significantly until [1999-2000]. At that time, the privatization program was delayed for many economic reasons including a shortage in liquidity, a foreign currency crisis, and an overall negative performance of the Egyptian stock market.

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<sup>2</sup> An ordinary general assembly is required for cases of minor stakes, i.e., when less than 50 percent of the firm is sold.

<sup>3</sup> Full privatization means selling 51 percent or more of an (SOE's) shares to the private sector, while partial privatization refers to selling less than 50 percent.

**Table 1: Number of Privatized Firms in Egypt**

Year	Full Privatization			Partial Privatization			Yearly Total		
	Anchor Investor	IPO*	ESA**	Liquidation	IPO*	Asset Sales	Leases	Number	Value***
1993	–	–	–	6	–	–	–	6	n.a.
1994	3	-	7	2	1	–	–	13	664
1995	0	1	3	2	6	–	–	12	1216
1996	3	14	–	1	6	1	-	25	2792
1997	3	14	3	3	2	1	1	27	3148
1998	2	8	12	6	1	3	-	32	2358
1999	9	-	5	7	–	4	6	31	2785
2000	5	1	-	3	-	6	10	25	2476
2001	4	-	1	2	–	3	1	11	1075
2002			2	1		3		6	51
2003						6	3	9	114
<b>Total</b>	<b>29</b>	<b>38</b>	<b>33</b>	<b>33</b>	<b>16</b>	<b>27</b>	<b>21</b>	<b>197</b>	<b>16679</b>

Notes: The table shows the number of privatized firms classified by the method of sale, year-by-year. It also shows the value; of privatized firms for each year and the total number of privatized firms from 1993 until 2003; \* Initial Public Offering; \*\* Employees shareholders association; \*\*\* Millions of Egyptian pounds (rate 1 LE = 0.174 US\$ as of December 2004).

Source: Egyptian Ministry of Public Enterprise Sector (2003).

## 2.2 Background on Privatization in Morocco:

Royal Speech of April 8<sup>th</sup>, 1988, gave the political signal to start the privatization process. One year later Parliament adopted a law (n°39-89) that authorized the transfer of public enterprises to private investors.

The privatization program in Morocco was set up around various objectives: (i) to modernize the national economy and to open it to international trade; (ii) to reduce the burden on the state's budget; (iii) to strengthen the competitiveness and productivity of privatized entities; (iv) to support the creation of new jobs; and (v) to attract foreign investment.

The privatization process begins with the minister in charge of privatization. A Commission of Transfers is set up to assist the minister in the transfer operation. In order to determine the price of SOE shares, an evaluation body composed of 7 members named by Royal decree is formed. Finally, the transfer phase consists of using a selling method: 77 percent of the SOEs are sold through invitation to bid, 17 percent by direct granting, and 6 percent by public offering.

Eleven years after the first privatization operation in 1993, 67 firms out of 114 firms registered on the initial list were sold to private investors, generating proceeds of US \$6.3 billion.

The first phase of the privatization process [1993-1998] included the transfer of 112 entities (75 enterprises and 37 hotels) before 1995. The program was not achieved in due time and was extended till the end of 1998 by adding two more SOEs to be privatized (i.e., "SAMIR" and "SCP"). By the end of 1997, 34 public enterprises and 18 hotels had been sold to private investors. The choice of privatized firms during this first period was based on three main criteria: the importance of the state's participation, the profitability of the firm, and the competitiveness of the sector to which the SEO belonged.

Law n°39-89, authorizing the transfer, has been modified and supplemented by law n°34-98. This new legislation extended the perimeter of privatization to all public enterprises and introduced more flexibility in the privatization process and at the same time, reinforced transparency and equity. The main innovations in the process concerns primarily the suppression of deadline transfers, the possibility offered to pensioners to participate in public offering, the reduction of the list of firms to be privatized, and the refitting of the disposals pertaining to the pre-emption right.

The second phase of privatization, following this legislation change, included bigger and better performing SOEs. New firms were added to the list of potential privatization enlarging the program to new sectors. In 1999, the second GSM license was attributed to "Meditelcom", and 35 percent of the capital of "Maroc Telecom" was sold to "Vivendi Universal". In 2002, only 3 privatizations were implemented out of 11 prepared: 21 percent of the capital of the "Banque Centrale Populaire", 16

percent of the “Société Marocaine des Fertilisants” (FERTIMA), and 11.4 percent of the state participation in “Société Industrielle de Confection de Meknès” were transferred to private investors. In 2003, the privatization process gained momentum by the selling of 4 big entities: “FERTIMA” (Fertilizer industry), “SONIR” (Paper industry), “La régie des Tabacs”, and “SOMACA” (car manufacturing).

An analysis of the privatization proceeds by investors indicated that 82.5 percent of the revenues came from international investors: 17.6 percent from private investors, 16.2 percent from SIPs and 0.7 percent from employees. The bulk of privatization was accomplished after 2000 with two exceptional years—2001 and 2003—producing 78 percent of the revenue.

Table 2 describes the distribution of the privatization transactions from 1993 to –2003. The SIPs method disappeared after 1997, and the bulk of the privatization was achieved between 1993 and 1997.

For the economy, privatization brings positive impact on three dimensions:

Stimulation of the Foreign Direct Investment allowing Morocco to be one of the most attractive countries for foreign investment in the Arab World and Africa;

Reinforcement of key economic sectors such as telecommunications, industry (steel, cement, etc.), energy, finance, and hotels;

Stimulation of the financial market: stock market capitalization was multiplied by 23 since the adoption of the law on privatization.

**Table 2: Number of Privatized Firms in Morocco**

Year	Privatization method				
	Invitation to bid	Direct granting	IPO & invitation to bid	Employees	Combination
1993	1	2	2	1	4
1994	1	3	4	1	3
1995	1	3	1	3	1
1996	-	2	3	1	1
1997	2	3	1	1	4
1998	-	1	-	2	1
1999	2	-	-	-	-
2000	-	-	-	1	-
2001	-	-	-	1	-
2002	-	1	-	-	-
2003	2	2	-	-	-
<b>Total</b>	<b>9</b>	<b>17</b>	<b>11</b>	<b>11</b>	<b>14</b>

Source: Moroccan Privatization Authority (2005).

### **2.3 Background on Privatization in Tunisia**

Privatization in Tunisia is defined as the transfer of the control of ownership or management of a firm from the public to the private sector. It could also take the form of the opening of formerly public sectors to new private investors.

The privatization program, initiated in 1987, had three main objectives: (i) improve the efficiency and the competitiveness of public enterprises; (ii) contribute to the consolidation of the state budget by reducing the subsidy to public companies and by enlarging the base of collecting taxes; and (iii) reinforcing the financial markets by selling public enterprises by initial public offering method.

The first official document, law n°87-47, created the initial institutional structure of public sector reform that is an inter-ministerial commission to choose the enterprises for privatization; a restructuring/privatization commission to undertake the required analysis and structure the privatization transactions; and a follow-up commission to carry out the transactions. As this procedure did not function well, a simpler arrangement was introduced in 1989 with the law n°89-9. This law provides a definition for a public enterprise, specified procedures, roles and responsibilities, and transferred managerial responsibility over a number of enterprises to non-governmental shareholders. Total or partial liquidation of non-viable SOEs was allowed, and firms that could not be privatized



were allowed to be restructured. In 1994, this law was amended again through redefining the public enterprise and permitting the privatization of banks and insurance companies.

The organizational structure of the Tunisian privatization program was more decentralized at the beginning but turned later to be more centralized. During the period [1987-1989], no administrative body was responsible for each transaction. Initially, three commissions were created to manage the public sector reform:

**An inter-ministerial commission:** the “Commission d’Assainissement et de Restructuration des Entreprises à Participation Publique” (CAREPP), chaired by the Prime Minister, and responsible for reviewing and approving all privatization and restructuring proposals;

**An interdepartmental commission:** chaired by the Director General of Participations at the Ministry of Finance and including representatives of the Prime Minister and the relevant ministries and institutions, its main task is the coordination of the activities of the different agencies involved in the transaction.

**A technical commission:** composed of high government officials in charge of advising the state for choosing the right forms of divestiture, it prepares the (SOEs) for sale, and assists the (CAREPP) to deal with the financial and social effects of privatization.

The privatization program can be split into three different phases:

**The first phase** [1987-1994] concerned public enterprises with unstable financial structures. The SOEs were sold through an asset selling method and more frequently, involved the splitting of firms into autonomous entities in order to ease the selling and to reach a wide range of investors. These included SOEs in tourism, commerce, fishing, textiles and agro-alimentary industries.

**The second phase** [1994-1997] included safe and secure SOEs. To this end, the privatization operations were realized through share block sales and initial public offering aiming at developing the Tunisian Stock Exchange.

**The third phase**, which began in 1998, included big companies such as the cement companies, and the use of newer methods like the concession of “Rades Power Energy” entity to a US company, the granting of the second license of the GSM license to an Egyptian operator, and the Build, Own and Operate method.

From the beginning of the privatization program in 1987 and until October 15, 2005, the outcome from privatization are the privatization and reorganization of 194 SOEs, for a total of USD \$ 2 000 million. Table 3 shows that asset sales is the most widespread privatization method followed by the block sales method. Only 12 companies have been sold through the stock exchange (IPO). However, we should notice that block sales method is by far the most revenue generating method for the state even though it is second in number. Concession is another sales method that generates considerable revenue to the state budget in Tunisia.

**Table 3: Number of Privatized Firms in Tunisia**

Privatization method	Number of enterprises	Percentage	Revenues in TDN	Percentage
Block sales	79	40.7	1164	48.5
Block sales + IPO	3	1.5	27	1.1
IPO	10	5.2	83	3.5
Concession	4	2.1	756	31.5
Assets sales	98	50.5	372	15.5
<b>Total</b>	<b>194</b>	<b>100</b>	<b>2402</b>	<b>100</b>

Source: [www.tunisie.info.com](http://www.tunisie.info.com)

Moreover, the service sector, (particularly financial institutions, tourism and commerce) is the sector that provides to the state both the highest portion of privatization revenues (55 percent) and the biggest number of SOEs (99 out of 194) sold to the private sector.

#### **2.4 Background on Privatization in Turkey**

From 1985 on, privatization has become a pillar of the liberalization program in the Turkish economy. The privatization master plan includes 14 objectives from which 6 emerge as the most important: (i)

to transfer the decision power from public to private decision makers in more than half the economy so as to ease the implementation of market forces; (ii) to reduce the number of monopolistic sectors; (iii) to spur financial market development; (iv) to reduce the financial burden of the loosing SOEs on the state budget; (v) to provide financial resource to the Treasury; and (vi) to promote competition so as to improve the performance of public enterprises.

An agency, named Public Participation Fund (PPF), was established in 1984 in order to implement the privatization program. However, the authority responsible for the selling decision was given to the Privatization High Council (PHC) while the joint-ventures operations were authorized by the PPF. The PHC nominates the organizations for privatization through taking state-owned economic enterprises in and out of the privatization portfolio, and is in charge of the method of sale and timing of the privatization procedures.

Since 1985, 29 energy generation and distribution units, 4 power generations, 22 incomplete plants, 6 toll motorways, 2 Bosphorus bridges, 1 service unit and 5 real estates have been taken into the privatization portfolio. Later, 22 of the companies, 4 power generations and 4 real estates were excluded from the portfolio for various reasons. Currently there are 38 companies in the privatization portfolio. Total proceeds from privatization in Turkey reached US\$8.9 billion from 1984 until 2004. During the same period, total privatization expenses were US\$11.2 billion including mainly the transfer to Treasury and the financing of the companies in the privatization portfolio in the form of capital and loan. Drawing some conclusions from the privatization implementations in Turkey, one could say that:

State completely withdrew from cement, animal feed production, milk-diary products, forest products, catering services and petroleum distribution sector, and partially withdrew from the ports and petroleum refinery sector;

The majority of the state shares were sold in tourism, iron, steel, textile, sea freight and meat processing sectors;

Privatization of public banks began with “Sümerbank”, and continued with “Etibank”, “Denizbank” and “Anadolu Bank”;

Public shares in many firms were issued to the public and some to foreign investors (“Netaş” and “Tofaş”) to develop the Istanbul Stock Exchange through integration with international capital markets.

In the initial stages, especially during the period [1988-1991], 27 SOEs had been partially or totally sold to private investors. These consisted of SOEs in airport service-catering (“USAS”), telecommunications (“Teletas”), cement firms (“Citosan”), petro-chemicals (“Petkim”), the iron-steel industry (“Erdemir”), steel-cables (“Çelik-halat”), the food chain store (“Gima”), spare parts (“Ditas”), refinery (“Tüpras”) and a number of other firms. Additionally, during this first phase of privatization, a considerable proportion of state shares in joint ventures were sold such as “Kepes electric”, “Çukurova electric”, “Arçelik” (electrical appliances), “Çelik halat” (steel-cables) and “Tofaş”.

During the period [1991-1997], privatization was mainly focused on the cement industry (“Citosan’s cement”), steel-iron (“Karabük Steel-iron”), airport and airline service (“Havas”), public banks, aircraft tyres (“Petlas”), zinc-lead metal industry (“Çinkur”), Turkish-automotive industry (“TOE”), electricity and gas (“Kepes”, “Cestas”, “Çukurova electric”, “İpragas”), and sugar industry (“Konya sugar plants”). However, other industries, which were less important have included soft beverages, food processing, paper bag and financial institutions.

Privatization practices in recent years [1997-2004] consist of selling very large and extremely profitable public enterprises. The privatization program during this recent period is comprised of “Petrol Ofisi”, “Tüpras” (Petroleum Refinery), “Turkish Telecom AS”, “Havas As” (Airport service), “Sümerbank’s Textile Plants”, “Orüs Forestry Products Industry”, “Sivas Steel-Iron Plan”, and States shares in insurance companies. In 2004, the Turkish government implemented, with the tender phase, the selling of another set of SOEs: “Seka” (Pulp Paper), “Futahya Gübre” (Fertilizer), “Eti Electrometalurgy”, “Çayeli Copper”, “Kütahya Sugar Factories”, “Eti Chrome & Eti Silver Inc”, “Et Ve Balik” (Meat-fish-poultry), and “Sumer Holding” (Textile).

The process of privatization, according to the provisions set out in law n°446, consists of establishing a Value Assessment Commission before each tender. This commission measures, at least, three value assessment methodologies using various criteria regarding the sector and market specifications, future cash-flows, production methods and quotation of its stocks. Following the valuation of the SOEs, the commission selects one of the tender methods: Sealed bid, negotiation, public auction and sealed bid among designated bidders. One should note that a pre-notification to the Competition Authority is made in advance of the announcement of tender conditions where the market share of the SOE to be privatized exceeds 20 percent, and when the turnover of the same entity exceeds 20 trillion Turkish Liras. In addition to this, the firm, which takes over any entity needs to obtain a permit from the Competition Board before starting its activities where acquiring parties' total shares in the relevant product market exceeds 25 percent and turnover bypasses 25 trillion Turkish Liras.

**Table 4: Number of Privatized Firms in Turkey**

Year	Privatization method <sup>4</sup>				
	Block Sale	IPO	Block sale and IPO	International offering	Asset Sale
1988	1	-	1	-	-
1989	4	-	2	-	-
1990	-	9	2	-	-
1991	2	5	4	-	1
1992	8	-	-	-	-
1993	4	-	1	-	3
1994	-	1	-	1	-
1995	4	-	-	-	7
1996	5	-	-	-	3
1997	6	-	-	-	1
1998	5	1	-	1	3
1999	-	-	-	-	3
2000	3	1	-	1	2
2001	-	-	-	-	-
2002	-	-	-	1	5
2003	1	-	-	-	1
2004	9	1	-	1	1
2005	1	1	-	1	-
<b>Total</b>	<b>53</b>	<b>19</b>	<b>10</b>	<b>6</b>	<b>30</b>

Source: Turkish Privatization Authority (2005).

The analysis of Table 4 indicates that block sale is the most used technique to privatize the SOEs in Turkey (53 enterprises). Selling shares to foreigners consists of only 6 transactions over the entire set of privatized firms in Turkey. Asset sales represent only 25 percent of privatized firms. However, to have a better view of the split of privatized firms by method, we present in Table 5 the privatization gross revenues by privatization method. This table confirms that the block is the most chosen method of selling (SOEs) in Turkey. However, over the last two years, we could also observe that the Turkish government tends to use asset sale as the first selling method of public enterprises. International offering accounts for only 10 percent of privatization proceeds.

**Table 5: Privatization Gross Revenues by Method (million \$)**

	[1986-2003]	2004	2005	Total
Block sale	3 524	399	120	4 044
Asset Sale	1 172	676	63	1 910
Public Offering	1 642	65	76	1 784
International Offering	1 026	126	197	1 349
ISE Sale	801	0	454	1 255
Incomplete Asset Sale	4	0	0	4

Source: Turkish Privatization Authority (2005).

### 3. Privatization: Theory and empirical evidence

Over the past few decades, privatization has been an important area for both theoretical and empirical research. As most developing countries have shifted to market-oriented economies, they adopted

<sup>4</sup> We take only the first date for Block sale and IPO, and Asset sale since these methods are implemented over several years.

privatization policies to improve the performance of their SOEs. There is now extensive literature on whether privatization improves firm performance and contributes to the gross domestic product (GDP) growth.

Interestingly, while privatization is based on the premise that it will improve corporate performance and help countries to grow, the ultimate outcome is hard to identify. At the macro level, a cross-country aggregate study by Sachs, Zinnes, and Eilat (2000) finds that privatization does not by itself increase GDP growth, but suggests that a positive effect exists when privatization is accompanied by in-depth institutional reforms.

On the firm level, recent surveys of privatization studies show a large variation of outcomes, ranging from no significant effect of privatization on performance (Bevan, Estrin and Schaffer, 1999), to cautiously concluding that privatization around the world improves firm's performance (Megginson and Netter, 2001), to being fairly confident that privatization tends to improve performance (Shirley and Walsh, 2000, and Djankov and Murrell, 2002). One possible explanation behind inconstancy of the impact of privatization on firm performance is that each study dealt with a different date set with limited access to corporate governance issues (ownership structure and/or board of director composition).

Concentrating on the ownership structure issue, we find that most studies, however, have not made a distinction between the types of firm ownership, whether they are individual owners, or relatively homogeneous groups of owners. Instead, ownership tends to be treated as a relatively simple categorical concept.<sup>5</sup>

Many comprehensive academic studies, which were undertaken concerning the impact of privatization upon firm performance, can be separated into two categories. The first category concentrates on examining the financial and operating performance of privatized firms, while the second comprises of more recent studies that examine the impact of different post-privatization ownership structures on firm performance. Each of these categories will be briefly reviewed.

Before describing the literature pertaining to the incidence of privatization on the performance and efficiency of SOEs, we will devote the first part of this literature review to briefly describe the theoretical models that justify the privatization mood, and assess the hypothetical impact of privatization on the performance of privatized SOEs after controlling for environment and ownership changes following privatization.

### **3.1 Theoretical background**

Governments attempt to privatize their SOEs for several reasons: to raise revenue; to diffuse ownership; to reward political loyalists; to meet the demands of foreign investors; to reduce the administrative burden of state bureaucracy; and to make the private sector responsible for necessary enterprise investments (Nellis, 1991). However, the primary objective is to enhance the efficiency of SOEs and, as a result, to decrease the budgetary burden on the state.

There are various theoretical views why SOEs are less efficient than private ones. Shapiro and Willig (1990) regard SOEs as instruments capable of curing market failures by setting pricing policies that take account of social marginal costs (*the social view*). It should be added that SOEs usually play an important social role as providers of numerous social functions and services: housing; medical care; and so on. These functions and expenses also negatively affected the performance of SOEs.

Private firms should be less subject to political connection (*the political view*). According to Shleifer and Vishny (1994), political interference in SOEs leads to overstaffing, poor choices of product and location, underinvestment and unclear incentives for managers. Private investors generally have long-term considerations when they invest, whereas the electoral assets enjoyed by politicians tend to be more short-lived (Phelps, 1992).

Privatization leads to better incentives (*the incentive view*). Vickers and Yarrow (1988) argue that managers of SOEs may lack incentives or may not be properly controlled. The residual cash flow claims of SOEs are not readily transferable like the shares of a private firm. This impairs residual

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<sup>5</sup> For example, state versus private ownership and domestic versus foreign ownership.

claimant incentives to control managers and, ultimately, deteriorates firm performance (Dewenter and Malatesta, 2001). Supervision by governments is generally bureaucratic and more interested in seeing that regulations have been followed rather than, that opportunities have been seized (Nellis, 1991). A government is under political pressure to preserve established rents (high wages/low effort, high and secure employment, etc.); and it leads to a lack of incentives (Perotti and Guney, 1993). Private firms are supervised by self-interested owners. Private shareholders have stronger motivation to maximize gains than do bureaucrats do, because they own equity and so support the financial consequences of their decisions. Private firms are also more able to afford decent incentives and salaries to managers (Barberis *et al.*, 1996).

Private owners choose the best managers to run their firm efficiently (*the human capital view*). Managers of state firms are chosen for their ability to address political concern. In contrast, managers of private firms are selected for their ability to run firms efficiently (Barberis *et al.*, 1996).

On the other hand, neo-classical economic theory suggests that the relationship between ownership and performance is tenuous. Efficiency is viewed as determined more by market structure and the degree of competition than by ownership (Nellis, 1991). However, privatization strengthens competition, which enforces the efficiency of the firm (*the competition view*). As Kikeri *et al.* (1994) stress, over-extended and poorly performing SOEs have slowed the growth of the private sector (and the increase in competition). Government often blocks the creation of private firms that would compete with SOEs. Private enterprises should be more subject to the discipline of banks than SOEs, because SOEs operate on Kornai's famous "soft budget constraint" (Barberis *et al.*, 1996). They often get finance at less than the market rate of interest and enjoy subsidies from the state.

Boycko, Shleifer and Vishny (1996) develop a model of privatization that explains the relative inefficiency of public firms and the improvements of efficiency after privatization. Two implications of their model for desirable ownership structures for the privatized firms are noteworthy. To facilitate restructuring, privatization must provide the management (or controlling shareholders) with large ownership stakes. Second, their model also suggests that concentrated ownership by large shareholders benefits efficiency but worker ownership hurts efficiency.

### **3.2 Empirical evidence**

Our first round of empirical evidence focuses on financial and operating performance of NPFs. We then turn to our examination of studies that examined possible causes of the performance changes of NPFs.

#### *3.2.1 Financial and Operating Performance*

The financial and operating performance of privatized firms has been studied at many levels: individual firms using case studies; individual countries; and at the international level comprising both emerging and developed markets.

#### **Case and single-industry studies**

At the case study level, Boles *et al.* (1996) estimate the impact of 1987 deregulation and 1990 privatization of "Telecom New Zealand" on price and quality of telephone services. They document significant declines in price of phone service and significant improvement in service levels.

Eckel, Eckel, and Singhal (1997) analyze the effects of privatization on the performance of British Airways and argue that when a firm is privatized, several factors change simultaneously: ownership changes from government to private hands; the firm's objective changes to profit maximization; and changes in regulations, designed to enhance competition in product markets, are likely to take place. All these factors ultimately improve the economic efficiency of the firm.

Newbery and Politt (1997) document significant post-privatization performance improvement of the UK's Central Electricity Generating Boards. However, all the benefits of privatization were captured by producers and shareholders due to insufficient competition.

Ramamurti (1997) also finds a significant increase in labor productivity of the Argentinean national freight upon privatization, although it was accompanied by a significant decrease in employment.

Ros (1999) focuses on International Telecommunications Union (ITU) data and panel regression estimation to assess the impact of privatization and competition on network expansion and efficiency in 110 countries over the period [1986-1995]. He found that both privatization and competition increase efficiency, but only privatization is positively related with network progression.

In a study, focusing on telecommunications companies from 23 OECD countries over the period [1991-1997], Boyland and Nicolleti (2000) investigate the impact of privatization and liberalization on efficiency and they report that privatization leads to lower prices, better services and higher productivity. They also find that all these improvements are linked to competition and that privatization, per se, has no clear impact.

Laurin and Bozec (2000) looked at the profitability and productivity of two Canadian rail companies before and after privatization. They found that Canadian nationals' relative poor performance during its fully state-owned period rapidly converges with that of their private counterparts and surpasses it thereafter.

### **Single-Country studies**

As far as studies on individual countries are concerned, Martin and Parker (1995) find mixed results in performance, in terms of profitability and efficiency, for 11 privatized firms in the UK. While La Porta and Lopez-de-Silanes (1997) address significant improvements in output and sales efficiency of 2118 Mexican privatized firms through June 1992 and find that the gap in performance between privatized firms and privately controlled firms narrows. They also find a significant decrease in the level of employment.

In contrast, Harper (2002) uses 453 separate firms (101 privatized in both waves for a total of 554 observations), in the first and second waves of Czech voucher privatization. He found that while the overall effects from the privatization are positive, the results are affected by the privatization wave, size, and industry of the firm. He also found that ownership concentration in the Czech firms is not an important factor in restructuring firms following privatization.

Ruiz-Mier (2002) examines a sample of 31 of 93 firms that were transferred to the private sector in Bolivia since 1992. To determine the impact of privatization on the performance of the studied firms, he performs two ratio analyses, one with adjusted panel data and the other with adjusted ratios. The ratio analysis presents some evidence that the privatization of SOEs in Bolivia has led to performance improvement. The panel data analysis suggests that privatization is a significant factor in explaining the improvement of operating efficiency of the firms.

Anuati-Neto et al. (2003) focus mainly on the changes in the performance of companies that have been privatized in Brazil since 1991. The study confirms the previous findings in which firms became more efficient after privatization.

Sun and Tong (2003) evaluate the performance changes of 634 SOEs listed on China's two exchanges upon SIPs during the period [1994–1998]. They document that SIPs are effective in enhancing SOEs earnings ability, real sales, and workers' productivity, but are not successful in improving profit returns and leverage after privatization. They also find state ownership has negative affects on firm performance and legal-person ownership has positive affects on firm performance after SIPs, suggesting that legal persons behave differently from the state government. Surprisingly, foreign ownership does not show uniformly strong, positive impacts on firm performance.

Torero (2003) analyzes the impact of privatization through a detailed statistical and econometric analysis of first difference (the difference between pre- and post-privatization performance), and second difference (change in performance of privatized firms relative to the change in performance of SOEs) of several indicators on profitability, operating efficiency, employment, leverage and convergence. The results indicate that privately owned firms are more efficient and profitable than state-owned firms.

Omran (2004) examines the performance of 54 newly privatized Egyptian firms against a matching number of (SOEs) over the period [1994-1998]. The analyses show that privatized firms do not exhibit significant improvement in their performance change relative to SOEs. He, however, argues

that the findings could mean that privatization improved the performance of privatized firms, which, in turn, could have had important spillover effects on SOEs.

Several recent examinations of country privatization show improvement in profitability and efficiency of privatized firms in all sectors.<sup>6</sup>

### *Cross-country studies*

Extensive work addresses the impact of privatization on a broader level, including both emerging and developed countries. In this context, Galal et al. (1994) measure performance changes in 12 privatized firms—mostly airlines and regulated utilities—from both developing and developed economies (Britain, Chile, Malaysia and Mexico). They find no case where workers are made significantly worse off, three where workers significantly benefit, and find net welfare gains in 11 firms.

Meggison et al. (1994), in a large scale and more comprehensive study, compare the pre- and post-privatization performance of 61 firms in 18 countries. The results of this study indicate that there is a significant increase among newly privatized firms in terms of profitability, efficiency, capital investment spending, employment, and dividend payout, while these firms exhibit a significant decrease in leverage.

Pohl et al. (1997) compare the restructuring of over 6300 private and state-owned firms in 7 East European countries during the period [1992-1995]. The results show that privatization increases productivity 3-5 times more than similar SOEs and little difference in performance based on the method of privatization.

Boubakri and Cosset (1998), in a comprehensive study, examine the financial and operating performance of 79 privatized firms from 21 developing countries between 1980 and 1992. Their sample is well diversified, with wide geographical coverage, countries of different levels of development, and firms of different size and in different industries and market structures. Using both unadjusted and market-adjusted measures, they find significant improvements in profitability (124 percent higher on average after privatization), operating efficiency (real sales per employee up 25 percent on average and net income per employee up by 63 percent), capital investment spending (up 116 percent), output, employment level (up 1.3 percent), and dividends, while they observe a decline in leverage - significant only for unadjusted measures. The changes in profitability and efficiency were larger in middle-income countries than in low-income countries. However, in another study of 16 African firms privatized through public share offering during the period [1989-1996] they find insignificant increases in profitability, efficiency and output (Boubakri and Cosset, 1999).

D'Souza and Meggison (1999) examine pre- versus post-privatization performance changes for 17 national telecommunications companies privatized through share offering during the period [1981-1994]. They confirm the same findings for all proxies except employment, where an insignificant decline is shown.<sup>7</sup>

The empirical evidence of these studies suggests that privatization can lead to an improvement in profitability, efficiency, output, capital investment spending, and debt ratio. Only Martin and Parker (1995) document performance declines for six of eleven British firms after privatization. However, the results are not consistent with regard to the employment level. Since the empirical studies discussed above show performance improvements after privatization, a natural subsequent question is to ask why performance increases.

#### *3.2.2. The impact of post-privatization ownership structure*

Most studies treat ownership as a relatively simple concept (e.g., private versus state or state versus foreign), and are not able to distinguish the extent of different forms of ownership on corporate performance. Very few empirical studies look at the impact of different post-privatization ownership structures on firm performance and are mainly focuses on transition countries.

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<sup>6</sup> Appiah-Kubi (2001) for Ghana, Andreasson (1998) for Mozambique, and Due and Temu (2002) and Temu and Due (1998) for Tanzania.

<sup>7</sup> For a complete list of recent works in privatization, see Meggison and Netter (2001).

In this context, Barberies *et al.* (1996) examine performance changes in 452 Russian privatized firms, and conclude that changes in ownership and management styles are likely to lead to a value-maximizing restructuring. For 706 Czech Republic privatized firms, Claessens, Djankov, and Pohl (1997) find that concentrated ownership structure, ownership by local investors, and ownership by bank-sponsored investment privatization funds and strategic investors increase profitability and are value enhancing.

Earle (1998) investigates the impact of ownership structure on the productivity performance of Russian industrial enterprises by comparing the effects of several types of new private 'owner-insiders' (managers and other employees) and outsiders (individual and institutional investors) with continued ownership by the state. He concludes that there is a positive impact of private ownership, relative to state ownership, on labor productivity, and that most of this is due to the positive effects of managerial and other employees' ownership. Using a sample similar to Earle (1998), Earle and Estrin (1998) study whether privatization, competition and hardening budget improve the performance of Russian privatized firms. They find that the increase of private share ownership increases efficiency by 3-5 percent.

Pivovarsky (2003), investigates empirically the relationship between ownership concentration and performance of 370 partially and fully privatized Ukrainian firms. He finds that ownership concentration is positively related to firm performance in Ukraine. The study also documents that concentration of ownership by foreign investors and banks has a more positive influence on performance than do domestic investors. Moreover, the author finds that privatization methods determined, in the long-run, the ownership structure of privatized firms. In the same context, Warzynski (2003) studies the determinants of managerial change and the impact of privatization, competition, and managerial change on firm performance, using survey data from 300 Ukrainian firms. Privatized firms experience fewer turnovers than state firms, which suggest an entrenchment effect. However, managerial change in privatized and *de novo* firms is positively related to performance, which suggests a disciplining impact of private ownership. Although managerial change and privatization do not individually affect performance, together they have a positive effect on profitability. In addition, competition improves profitability and productivity in privatized firms only. These findings suggest that privatization, competition, and managerial change are complementary measures in improving firm performance. In the same vein, Simoneti and Gregoric (2004) provide answers to the basic economic question: what is the incidence of consolidation of managerial ownership on the performance of Slovenian firms? The sample includes a panel of 182 firms observed over the period [1995-1999], and does not show any increase of performance resulting from the consolidation of managerial ownership. A positive effect is found only in the firms with managers' holdings exceeding 10 percent, and only in firms that are listed on the capital market.

In a more comprehensive study, Kocenda and Svejnar (2003) indicate that in the post-privatization period in transition countries, private ownership tends to be associated with superior performance relative to state ownership in terms of some profitability and efficiency indicators. In addition, the study finds that dispersed ownership results in better or equal performance than more concentrated ownership.

Hanousek *et al.* (2004) estimate the effect of ownership type and concentration in Czech Republic. Using specifications based on first-differences and unique instrumental variables, they find that only few private ownership enhance post-privatization performance. Concentrated foreign ownership improves some measures of performance relative to state ownership. This paper documents that firms restructure by first lowering and later, increasing the rate of employment.

In non-transition countries, Gupta (2005) studies the incidence of partial privatization on the performance of privatized firms in India. He indicates that the fraction of equity that is private in a given year has a positive and statistically significant impact on profitability and productivity; for example, a 10 percent point decrease in government ownership would increase profits by 13 percent and 10 percent, and the average product of labour and returns to labor by 8 percent and 5 percent, respectively, and a 10 percent point increase in private equity would increase sales by 27 percent on average. He also finds investment spending on research and development and expenditure on fixed assets significantly increase following a rise in the private share of a firm's equity.



Boubakri et al. (2004) employ a multivariate analysis that attempts to identify the most important determinants of performance changes after privatization on a sample of newly privatized firms in Asia. The study documents a substantial increase in profitability, efficiency and output in former SOEs from Asia. Employment increases but insignificantly. The results show that a friendly institutional environment, a lower political risk, an open economy, more developed stock markets and participation of foreign direct investors in the privatization process are important determinants of performance improvements after privatization.

Boubakri et al. (2005a) conduct a multinational study to search for the factors explaining the performance changes for newly privatized firms using a sample composed of 230 firms privatized in developing countries. They document a significant rise in profitability, efficiency, investment and output, but performance gains vary considerably across regions. They use a multivariate analysis that attempts to identify the most important determinants of performance changes after privatization. The results indicate that macroeconomic factors as well as the corporate governance variables explain mostly the performance improvements of newly privatized firms in developing countries.

In the same vein, Boubakri et al. (2005b) focus on the role of two key dimensions of the ownership structure, the ownership concentration and the type of owners. They examine the relationship between internal and external governance devices and the subsequent performance of 209 newly privatized firms in 25 emerging markets and 14 industrialized countries over the period [1980-2001]. Based on panel data, they show that country-level variables and variables related to the privatization process are key determinants of the level of post-privatization ownership concentration. They find also that ownership concentration is positively related to firm performance and the effect is stronger in those countries in which investor protection is weaker.

In a related paper, D'Souza et al. (2005) use a sample of 129 SIPs from 23 OECD countries. The results indicate a significant increase in profitability, efficiency, output and capital expenditure following privatization. The data indicates that ownership significantly affects post-privatization performance providing a negative relation between ownership (government and foreign) and employment, and a positive relation between ownership and capital spending. When we compare the findings with Boubakri et al. (2005a), it appears that several factors affecting post-privatization performance differ between developed and developing countries. Most evident are the institutional factors such as financial and trade liberalization that are significant in developing countries.

### *3.2.3 The impact of economic and financial liberalization on privatization*

Finally yet importantly, few academic studies examine the impact of privatization when it is accompanied by economic reform and liberalization activities. In fact, privatization in developing countries (DCs) is often accompanied by economic reforms such as stock market and trade liberalization, which could influence the outcomes of a privatization program. Several authors have studied the effect of economic and financial reforms on the economies of (DCs).

For example, Dornbusch (1992) focuses on trade liberalization. He identifies several channels through which trade reforms could bring benefits. Examples include an improved allocation of resources, greater competition and an access to better technologies, inputs and intermediate goods. Thus, irrespective of privatization, trade liberalization could bring changes in the performance of NPFs. Empirically; these results are consistent with Sachs and Warner's (1995) evidence that this policy is closely tied to future growth.

Henry (2000) examines the impact of stock market liberalization on the returns of twelve emerging stock markets. Controlling for macroeconomic fundamentals, co-movements with foreign stock markets and concurrent economic reforms (such as macroeconomic stabilization programs, trade liberalization, privatization and the easing of exchange controls) are examined. The study finds a monthly mean abnormal return of 3.3 percent over an eight-month period leading up to the implementation of the stock market liberalization. The author also documents that privatization has a positive effect on stock returns. However, once he controls for the specific economic conditions of the country, the impact of privatization is no longer significant. The author argues that one possible explanation is that authors do not control for the specific environment of these countries in their studies. In related studies, Bekaert and Harvey (2000), and Bekaert, Harvey and Lundblad (2001a,2001b) analyze the impact of stock market liberalization in emerging markets on, among other

things, the cost of equity capital (expected equity returns) and economic growth. Controlling for a number of other factors (such as the level of stock market development, the size of the trade sector and the macroeconomic environment) to isolate the sole impact of liberalization, they find that stock market liberalization is associated with lower costs of equity capital and higher economic growth rates.

The aforementioned studies and other related studies on privatization have been primarily, limited to those of developed economies or large emerging economies. It seems then, that small economies such as those in the MENA region are very much understudied in the literature. However, Omran (2004, 2005, and forthcoming) provides some evidence on the impact of privatization on firm performance using both accounting and market performance measures. What is even more interesting is his (forthcoming) paper in which it examines whether the performance of privatized firms differs according to the type of ownership structure during the post-privatization period. The paper concludes that firms with concentrated ownership or those that have a homogeneous group of owners - that is those firms sold to anchor-investors and employee shareholder associations - seem to outperform dispersed ownership firms (majority or minority IPOs). The problem here is that the author relies on the privatization method of sale to determine the ownership structure<sup>8</sup>, without considering the evolving ownership structure over time. In this study, we try to fill this gap by tracking the changes in firm ownership structure over time, and testing its impact on firm performance.

In this study we have two main objectives, (i) to first examine the financial and operating performance of privatized firms in selected Middle East and North Africa (MENA) countries in order to determine whether privatization has a positive impact on firm performance and examine the extent to which these results are consistent with previous findings for other countries; and (ii) equally important, to test whether the performance of privatized firms differs according to the type of ownership structure during the post-privatization period.

#### **4. Conceptual framework and testable hypotheses**

When we deal with the outcomes of privatizing the SOEs, we can classify them into three categories. The first category is related to appreciation of the financial and operating performance of privatized firms. The second comprises more recent studies that examine the impact of corporate governance, either external or internal, on firm performance. The third assess whether economic reforms and liberalization indicators explain post-privatization performance changes.

As mentioned previously, most of previous studies document that privatization leads to significant improvements in profitability, operating efficiency, capital investment spending, output, while they observe a decline in leverage<sup>9</sup>, with no clear direction for the impact of privatization on employment. Since the objective of any privatization program is to increase the ability of firms to achieve their goals, we examine this proposition to understand whether privatization increases profitability, operating efficiency and output and decreases the leverage. Moreover, we examine the impact of privatization on the level of employment.

As for ownership structure, we see that few empirical studies look at the impact of different post-privatization ownership structures on firm performance. In fact, owners of fully privatized firms, who pay greater attention to profit goals through increased capital investment spending, find that their firms have increased output and efficiency followed by increased profitability (Boubakri and Cosset, 1998). Additionally, the property rights theory asserts that fully private firms perform better than mixed-ownership firms because of the conflict between private and public shareholders in the latter, which inhibits the monitoring of management (Boardman and Vining, 1989). In addition, Boycko, Shleifer, and Vishny (1996) argue that the higher the fraction of an SOE sold, the lower the possibility that politicians will directly interfere, meaning that any benefits from partial privatization will be

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<sup>8</sup> Two methods of sale (full and partial privatization) were executed to provide four marked types of ownership. Full privatization yielded three types: (1) majority initial public offerings (IPOs) - at least 51 percent of a firm's shares were sold to public via the stock market, (2) employee shareholder associations (ESAs) - the majority of a firm's shares were sold to either (ESAs), or (3) anchor-investors. Partial privatization yielded the fourth type: (4) minority initial public offering (IPOs) - less than 50 percent of a firm's shares were sold to the public via the stock market with the rest remaining in the government's hands.

<sup>9</sup> D'Souza and Megginson (1999) show insignificant changes in the level of employment.

minimal. Many researchers also state that firm performance improves when ownership and managerial interests are merged through concentration of ownership<sup>10</sup>. When major shareholdings are acquired, the control cannot be disputed. Anderson, Makhija, and Spiro (1997) claim that significant concentration of ownership might lower or even completely avoid agency costs, and offer better control of firms. Moreover, full and concentrated ownership implies lower resistance to restructuring (Jelic, Briston, and Aussenegg, 2003). A relating hypothesis must be tested in order to confirm that full and concentrated ownership results in better performance compared with partial and dispersed ownership.

In addition, the growing involvement of foreign investors could affect the post-privatization performance of newly privatized firms. Foreign investors generally require high information disclosure standards, provide new funds to newly privatized firms and, for reputation concerns, maintain a strict control of managers' actions (Dyck 2000, and Shirley, 2002). Therefore, an expectation for validation concerns the positive association, which might exist between post-privatization performance improvements and foreign ownership.

The other internal monitoring mechanisms that relate to the organizational structure of the firm are the board of directors (BOD) and the issue of whether the chief executive officer (CEO) is the chairperson. According to the privatization literature, one reason often put forward to explain the poor performance of state-owned enterprises is the low qualification of government-appointed BOD members and managers. Furthermore, incentives to monitor managerial behavior are poor, leaving managers considerable discretion to pursue their personal agendas (Vickers and Yarrow, 1991, Shleifer and Vishny 1997). Indeed, old-fashioned compensation schemes, based on tenure and not performance, prevail in the majority of developing countries. Changes in the membership of the BOD as well as changes of the CEO can be put in place to ascertain more effective monitoring and management, respectively. The under qualified managers could be replaced by others whose objectives are more aligned with profit maximization, and new monitoring mechanisms could be put in place by the new shareholders. So, one can expect that restructuring the BOD and changing the CEO can affect the post-privatization performance.

As mentioned earlier, there also exist external mechanisms of corporate governance, which include capital market monitoring and the legal system. The monitoring role of the market depends on the size and the sophistication of the local capital market (Levine, 1997, Levine and Zervos, 1998, Subrahmanyam and Titman, 1999). A large and sophisticated market implies a "friendlier" market and regulatory environment, better access to the funds necessary to restructure the newly privatized firms, as well as better monitoring and performance linked compensation for managers. Therefore, we expect that the newly privatized firms in a relatively more sophisticated and larger stock market perform better.

Law and the quality of its enforcement are likely to influence the monitoring role played by the market. La Porta *et al.*, (1998) show that the legal protection of shareholder rights varies around the world. Specifically, countries with an English common law system offer stronger rights to shareholders and higher quality of law enforcement than do countries with a French civil law system. In the same vein, it is argued that a market with a stronger protection of shareholder rights decreases the costs of agency and increases the efficiency of monitoring managers. Consequently, we expect post-privatization performance to be higher for countries where laws protect shareholder rights and which have a legal system that efficiently enforces these laws.

## **5. Data and methodology**

This section describes the sample of newly privatized firms and outlines the methodology we use in our analysis.

### ***5.1 The sample of privatized firms***

The data set for this study was obtained from Egyptian, Moroccan, Tunisian and Turkish firms that have been privatized through stock exchange and have at least three years of both pre- and post-

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<sup>10</sup> See, for example, Walking and Long (1984), Agrawal and Mandelker (1987), Muscarella and Vetsuypens (1990), Castianas and Helfat (1991), Oswald and Jahera (1991), and Baker and Weiner (1992).

privatization data. In order to generate comparable post-issue financial and accounting data, we limit our analysis to SIPs. We collect this data manually from the documents we received from both the stock exchange (prospectus and annual reports) and from the privatization authorities (evolution of ownership structure post-privatization). For the data related to environment, the main source is the World Development Indicators from the World Bank. We deleted financial institutions from our sample because these firms present peculiarities pertaining to their accounting standard and financial structure. We use local currency data in our performance measurements. Whenever possible, we calculate performance indicators that include nominal data in both the numerator and denominator. Other financial ratios are then adjusted to real terms in order to exclude the effects of the relatively high inflationary environment.

The final sample consists of 84 firms privatized through public offerings. It includes 55 Egyptian, 6 Moroccan, 13 Tunisian, and 10 Turkish firms.<sup>11</sup> These transactions took place from 1990 to 2000. Table 6 provides some preliminary descriptive statistics on the sample of this study. We observe a strong concentration of privatization during the period [1994-1996] where 68.65% of privatizations occurred. Conversely, Table A1 in the appendix indicates that the process of privatizations in the region started earlier in Turkey ([1990-1992]), and then intensively in Egypt and in Morocco ([1993-1997]). Tunisia seems to be the last country in this panel to adhere more recently to this process since privatizations continue to occur until now with a sustainable rhythm.<sup>12</sup> These privatized firms are also diversified across different activities with about 58% in industry, 9% in energy and mining activities, and 18% in utilities.

**Table 6: Distribution of Newly Privatized Firms by Year and Activity**

By year			By activity		
Year	Number	Percentage	Activity	Number	Percentage
1990	4	4.77	Pharmaceuticals	6	7.14
1991	5	5.96	Mining	5	5.96
1992	2	2.38	Food Processing	16	19.04
1993	3	3.57	Construction	12	14.28
1994	11	13.09	Tourism	4	4.77
1995	26	30.95	Metallurgical Industries	10	11.9
1996	20	23.8	Trade	6	7.14
1997	6	7.14	Chemical Industries	9	10.71
1998	4	4.77	Industrial Engineering	6	7.14
1999	0	0	Transport	4	4.77
2000	3	3.57	Iron and Steel Industries	2	2.38
			Energy	3	3.57
			Utilities	1	1.2
Total	84	100	Total	84	100

## 5.2 Descriptive statistics

Table 7 presents some descriptive statistics on the macroeconomic variables. Among the four countries, Turkey was the first to launch its stock market liberalization in 1989. Liberalization of stock markets occurred in 1997 in Egypt and Morocco while we observe no stock market liberalization in Tunisia. However, Tunisia, as well as Turkey did proceed officially in 1989. Trade liberalization in Morocco occurred in 1984, and no liberalization occurred in Egypt. In general, trade liberalization occurred before stock market liberalization with the exception of Turkey where the two occurred during the same year, 1989.

According to the fourth column in table 7, Turkey exhibits a very high level of stock market development since the turnover ratio reached an average of 118.6 over the period [1990-2000]. Although at comparable levels, the turnover ratio seems to be quite low for the three other countries, which could signify weak development of their stock markets.

<sup>11</sup> See table A1 in the appendix.

<sup>12</sup> But we know that other firms were privatized without being introduced on the stock market like SITEX (1989), ONP (1992), SIG (1991), or SOTIMACO (1992).

**Table 7: Descriptive Data on Some Macroeconomic Indicators**

Country	Stock market liberalization date	Trade liberalization date	Stock market turnover, mean [1990-2000]	Trade openness, mean [1990-2000]	Real GDP growth (annual %), mean [1990-2000]
Egypt	1997	NL	18.06	49.96	4.47
Morocco	1997	1984	14.54	59.45	2.56
Tunisia	NL	1989	11.74	89.53	5.04
Turkey	1989	1989	118.63	43.09	4.2

Notes: Stock market liberalization date. Data are from Bekaert et al. (2001b). For Tunisia, NL indicates that the stock market is not liberalized. Trade liberalization date. Data are from Sachs and Warner (1995) and IMF country reports. For Egypt, NL indicates that trade is not officially liberalized. Stock market turnover. Total value of shares traded during the period divided by the average market capitalization for this period. Data are from the World Development Indicators database (WDI 2004). Trade openness. The sum of exports and imports of goods and services divided by GDP. Data are from the World Development Indicators database (WDI 2004).

Real GDP growth. Annual percentage growth rate of GDP based on constant local currency. Aggregates are based on constant 1995 US\$. Data are from the World Development Indicators database (WDI 2004).

Table 8 presents some descriptive statistics on the post-privatization ownership structure for the sample of privatized firms. As can be seen from the table, state ownership (government) dominates ownership concentration in both Egypt and Tunisia, whereas private institutions dominate the ownership concentration in Morocco. Foreign investors, however, seem to be active in Tunisia followed by in Egypt, but they have no significant presence in Morocco<sup>13</sup>. Alternatively, it seems that Egypt is the only country that sells part of some SOEs to its employees (ESAs) while this method of sales is not implemented in Tunisia and Morocco. An important implication from this table is that the governments in both Egypt and Tunisia could act more aggressively to sell state controlled entities to the private sector.

**Table 8: Ownership Concentration after Privatization (in percentage)**

	Egypt		Morocco		Tunisia		Turkey	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Government	37.04	39	8.14	8.14	40.15	43.19	n.a.	n.a.
Private institutions	36.82	39	8.14	8.14	38.19	39.1	n.a.	n.a.
Foreign investors	10.38	0	55.27	55.27	10.94	7.78	n.a.	n.a.
Individuals	9.29	0	23.31	20	7.93	0	n.a.	n.a.
Employees	5.27	0	0	0	11.6	5.58	n.a.	n.a.
Others	4.7	0	0	0	8.58	0	n.a.	n.a.
Herfindahl Index	1.46	0	3.28	0	4.57	0	n.a.	n.a.
Number of observations	1.15	0	3.06	0	3.38	0	n.a.	n.a.
	8.77	9	0	0	0	0	n.a.	n.a.
	7.93	8.75	0	0	0	0	n.a.	n.a.
	0.01	0	29.32	29.32	0	0	n.a.	n.a.
	0.03	0	29.32	29.32	0	0	n.a.	n.a.
	31.26	30.64	43.81	40.53	31.51	25.58	n.a.	n.a.
	30.85	30.64	30.87	22.76	28.31	20.6	n.a.	n.a.
			4		13		10	

Notes : The first line shows the ownership concentration calculated as the top three stockholders who own a minimum of 5% of equity, while the second line is based on a minimum of 10%. The Herfindahl index is measured as the sum of squared ownership shares.

<sup>13</sup> A caveat here is that the data provider in Morocco might mix between foreign ownership and private institutions.

## 6. Empirical models

Section 6.1 documents the methods used to compare the performance of privatized firms during three years before and after privatization. Section 6.2 describes the regressions employed to assess the incidence of governance and macroeconomic variables on changes in performance of NPFs.

### 6.1 Uni-variate analysis

The first approach consists of a comparison of indicators of performance observed for the privatized firms during the three years before and after the year of privatization, respectively. As noted by Alexandre and Charreaux (2004), the advantage of this approach is that it allows researchers to compare samples of firms of economically significant size, located in heterogeneous industries, in some countries, and in different periods. The so-called static method tests for significant changes in the level of performance between pre- and post-privatization. It is built upon a statistical methodology consisting of the use of the two-tailed Wilcoxon signed-rank test to test for significant changes in the variables between the pre- and post-privatization periods, as well as a proportion test to determine whether the proportion of firms experiencing a change in a given direction is greater than what would be expected by chance, typically testing whether proportion  $p$  equals 0.5.

The principle of the Wilcoxon analysis is founded upon the consideration of two correlated samples composed of observations of a variable in two different time periods. The test can be conducted as a test of structural change of that variable between the two periods of observation. The two samples are named  $X_A = \{X_{A1}, \dots, X_{An}\}$  and  $X_B = \{X_{B1}, \dots, X_{Bn}\}$ , respectively. The differences  $(X_{Ai} - X_{Bi})$ ,  $i = 1, \dots, n$ , are randomly drawn from the source population. Under the null hypothesis, no significant change in the considered variable that is the same distribution for both the samples occurs. The procedure is numerically run as follows:

$$(X_{Ai} - X_{Bi}) \rightarrow |X_{Ai} - X_{Bi}| \rightarrow \text{rank of } |X_{Ai} - X_{Bi}| \rightarrow \text{signed rank}$$

For differences  $(X_{Ai} - X_{Bi})$ , absolute values  $|X_{Ai} - X_{Bi}|$  are associated, ranked, and signed. Then, the sum of these signed ranks is computed and noted as  $W$ . We observe that, under the null hypothesis,  $W \rightarrow 0$ , so the mean is  $\mu = 0$ , and the variance is defined by:

$$\sigma^2 = \frac{n(n+1)(2n+1)}{6}$$

The statistic of the test is normally distributed as follows<sup>14</sup>:

$$Z = \frac{(W - \mu) \pm 0.5}{\sigma} \rightarrow \mathcal{N}(0,1)$$

If  $\hat{Z} \leq z_{\alpha}^*$ , the null hypothesis is accepted.

The test of proportion is conducted in order to compare the following hypotheses:

$$\begin{cases} H_0 : p = p_0 \\ H_1 : p \neq p_0 \end{cases}$$

It is based on the following discriminate function which is normally distributed:

$$\bar{X} \rightarrow \mathcal{N}\left(p, \frac{p(1-p)}{n}\right)$$

The critical region determines the acceptance of the alternative hypothesis  $H_1$ . It is defined as follows:

$$\omega = \{(x_1, \dots, x_n) / (\bar{X} \leq c_1) \text{ or } (\bar{X} \geq c_2)\}$$

<sup>14</sup> 0.5 is added as a correction for continuity.

$$\begin{cases} c_1 = p_0 - z_{\alpha}^* \sqrt{\frac{p_0(1-p_0)}{n}} \\ c_2 = p_0 + z_{\alpha}^* \sqrt{\frac{p_0(1-p_0)}{n}} \end{cases}$$

In addition to commenting on the full sample of privatized enterprises, we realize similar tests for robustness check for the following four sub-samples following Megginson *et al.* (1994) and D'Souza and Megginson (1999):

Control versus revenue privatization samples. Revenue privatization refers to government ownership of more than 50 percent of a company's shares whereas control privatization refers to government ownership of less than 50 percent of a company's shares. The fundamental implication of Boycko *et al.* (1996) suggests that selling voting control to private investors is most conducive to performance improvements and following D'Souza and Megginson (1999) control privatization would be expected to yield superior performance improvements, more than revenue privatization.

Foreign versus no foreign ownership samples. As argued by Boycko *et al.* (1996) privatization is more effective when both ownership and control are transferred to private investors. Additionally, if these private investors are foreign, privatization can be even more effective. We expect then, that firms with foreign share issues would yield greater performance improvement than those without.

The last sub-sample contrasts the difference between firms privatized in each country. Tunisia and Morocco, in general have thin and less active capital markets compared to those of Egypt and Turkey. The monitoring role of the capital market increases with its liquidity (Holmström and Tirole, 1993). Therefore, we expect the NPFs in relatively more liquid stock markets to perform better.

In addition to the Wilcoxon and proportion tests, we also perform a Kruskal-Wallis test to examine whether significant differences exist between the sub-sample groups. Generally, this procedure is able to test that k population means are equal according to the following alternative hypotheses:

$$\begin{cases} H_0 : \mu_1 = \dots = \mu_k \\ H_1 : \mu_i \neq \mu_j \text{ for at least one set of } i \text{ and } j \end{cases}$$

It is a non-parametric test for the situation where the ANOVA normality assumptions may not apply. Formally, let  $n_i$ ,  $i = 1, \dots, k$ , represent the sample sizes for each of the k groups or samples.  $n_i$  should be at least 5 for the approximation of an usual distribution to be valid. The procedure begins with ranking the combined sample. All the values are ranked from low to high, disregarding to which group each value belongs. If two values are the same, then they both get the average of the two ranks for which they tie. The smallest number gets a rank of 1. The largest number gets a rank of n, where n is the total number of values in all the groups. Next, one must compute the sum of the ranks for group i noted  $R_i$ . The test statistic approximates a chi-square distribution with k-1 degrees of freedom if the null hypothesis of equal populations is true. It is defined as follows:

$$H = \frac{12}{n(n+1)} \sum_{i=1}^k \frac{R_i^2}{n_i} - 3(n+1)$$

**Table 9: Summary of Testable Predictions**

Characteristics	Variables	Predicted relationship
P(1) Profitability	Return on sales (ROS) = Net income ÷ Sales Return on assets (ROA) = Net income ÷ Total assets Return on equity (ROE) = Net income ÷ Equity	$ROS_A > ROS_B$ $ROA_A > ROA_B$ $ROE_A > ROE_B$
P(2) Operating efficiency	Sales efficiency (SALEFF) = Sales ÷ Number of employees Net income efficiency (NIEFF) = Net income ÷ Number of employees	$SALEFF_A > SALEFF_B$ $NIEFF_A > NIEFF_B$
P(3) Output	Real sales (OUTPUT) = Nominal sales ÷ Consumer price index	$OUTPUT_A ? OUTPUT_B$
P(4) Employment	Total employment (EMPL) = Total number of employees Debt to assets (TDTA) = Total debt ÷ Total assets	(cannot predict)
P(5) Leverage		$EMPL_A < EMPL_B$ $TDTA_A < TDTA_B$

Notes : The first column presents the economic characteristics to be examined for changes resulting from privatization (Hypotheses P(1)-P(6)). The second column gives definitions of variables to be used in the empirical analysis. The third column details the predicted changes in these economic characteristics after privatization based both on the avowed objectives of every privatization program and the theoretical background. The index symbols A and B in this column stand for after and before, respectively.

Source: Megginson et al. (1994).

## 6.2 Multivariate analysis

The second approach is based on econometric treatment, and is conducted in order to investigate whether the changes in performance of newly privatized firms vary with the effectiveness of corporate governance, and the extent of economic reforms and environment.

To examine the incidence of privatization on the performance of NPFs, we rely on three aspects of firm performance:<sup>15</sup>

Profitability: We measure profitability by the return on sales (net income to sales),

Efficiency: We measure operating efficiency by the sales efficiency (real sales per employee).

Output: We measure output by real sales (nominal sales divided by the consumer price index).

As in Megginson et al. (1994) and Bobakri et al. (2004), we determine the performance measures presented above for a period of 7 years (3 years prior to privatization and 3 years post-privatization, including the year of privatization itself). We then compute the means before and after privatization for each performance measure. We consider the privatization date to be that on which the government divests, for the first time, a certain amount of shares. In order to examine the determinants of the changes in performance, we perform a multivariate analysis: we regress the changes in performance indicators (i.e., profitability, efficiency, and output) on several potential explanatory variables, namely, macro-economic reforms and environment and corporate governance variables. We also control for firm size and industry effects. Table 10 describes all the variables used in the regression analysis.

For each performance measure, we estimate different specifications of the following cross-sectional regressions:

<sup>15</sup> Although we estimate the regression models for all performance measures, for the sake of space we limit our presented results to those variables that represent the most important measures. Results on other performance measures are available from the author upon request.



$$\text{Performance changes} = \alpha_0 + \beta_1 \text{ governance variables} + \beta_2 \text{ macro-economic variables} \\ + \beta_3 \text{ control variables} + \varepsilon$$

We use the following independent variables related to macro-economic reforms and environment: the changes in the real GDP growth and in the size of the trade sector (the sum of imports and exports over GDP) during the privatization window (-3, -1 and +1, +3). The use of real GDP growth allows us to control for the incidence of economic development on the post-privatization performance of NPFs. The change of the size of the trade sector is a proxy for an economy's openness to trade. We also use two dummy variables to control for trade and financial liberalization date. We consider the following governance variables: (i) a dummy variable which takes the value of 1 if the state gives control of the privatized firm based on Boycko et al. (1996) model, which suggests that, in order to facilitate restructuring and improve performance, control should pass from government to private hands. (ii) A dummy variable, which takes the value of 1 if foreign investors are present in the ownership structure of the privatized firm based on the assumption the involvement of foreign investors in NPFs brings better control and management advice to the firms, which can have a positive impact on their operating performance. Finally, we use a governance index constructed by Gwartney et al. (2001), as a measure of the legal structure and security of property rights and the enforcement of contracts. Higher levels of the index are conducive to governance that is more effective. We also include the change of average turnover as a measure of the stock market liquidity. As discussed above, we expect the monitoring role of the capital market to improve as liquidity increases resulting in a positive impact on the change of performance of NPFs. We use industry dummies in all specifications.

**Table 10: Definitions of Variables Used in Regressions**

Variable	Definition
<b><i>Performance</i></b>	
DROS	Change in return on sales during the privatization window (-3,-1 vs +1, +3)
DROA	Change in return on assets during the privatization window (-3,-1 vs +1, +3)
DSALEFF	Change in net income efficiency during the privatization window (-3,-1 vs +1, +3)
DNIEFF	Change in net income efficiency during the privatization window (-3,-1 vs +1, +3)
DOUTPUT	Change in output during the privatization window (-3,-1 vs +1, +3)
<b><i>Corporate Governance</i></b>	
CONT	Indicator variable that takes the value of 1 if the government relinquishes control of the privatized firm and 0 otherwise.
FOREIGN	Indicator variable that takes the value of 1 if foreign investors are involved for the first time in the ownership structure of the privatized firm and 0 otherwise.
GOV	Measure of the extent of legal protections and enforcement before privatization that comprises three components: rule of law, risk of confiscation and risk of contract repudiation by the government (data from Gwartney et al. 2001).
<b><i>Macro-economic reform &amp; Environment</i></b>	
LIQ	Change in value of shares traded to GDP during the privatization window (-3,-1 vs +1, +3)
FLIB	Indicator variable that takes the value of 1 if the privatization occurs after the stock market liberalization and 0 otherwise.
TRADE	Change of the sum of exports and imports over GDP during the privatization window (-3,-1 vs +1, +3)
TLIB	Indicator variable that takes the value of 1 if the privatization occurs after the trade liberalization date and 0 otherwise.
DGDP	Percentage growth in real GDP during the privatization window (-3,-1 vs +1, +3)
<b><i>Control Variables</i></b>	
Industry indicators	Indicator variables included for six industries defined in Table A1 (Pharmaceutical, construction, food processing, chemicals and metallurgical industries).

## 7. Empirical results

In the sections below, we present and discuss our empirical results concerning each of the government objectives and predicted financial changes described in table 9. We first present and discuss our results for the full sample. Then in the last part of each section we discuss our results for the following sub-samples of our data: control versus revenue privatizations, foreign versus non-foreign participation in privatization and privatization by country. For each of these segments we examine and report whether each sub-sample of firms experiences significant changes in the variable values after privatization. We also test whether the difference between the value changes for the two sub-samples are significant. In the last section, we discuss the regression results through the examination of possible causes of the performance changes.

### 7.1 Post-privatization changes in financial and operating performance

Our first round of empirical analysis measures post-privatization financial and operating performance in our sample of selected MENA countries.

We measure profitability using three ratios: return on sales (ROS), return on assets (ROA), and return on equity (ROE). Table 11 reports on all three ratios but we will focus on ROS because it is based on two flow measures that are less sensitive than are the other two profitability ratios to inflation and conventional accounting practices. Our results show significant improvements in profitability after divestiture. For instance, median adjusted return on sales goes from 5.4 percent before privatization to 7.6 percent after privatization. This significant increase is achieved in 61 percent of the sampled firms. This conclusion for NPFs from our sample is, in general, consistent with those reported in the literature (see Boubakri et al. 2004). The profitably results for our various sub-samples document consistent improvements in ROS only in controlled privatization, non-foreign ownership privatization and in Egypt.

By introducing an SOE into market competition, governments clearly expect that these firms, will use their human, financial, and technological resources more efficiently. To measure efficiency, we employ inflation-adjusted sales per employee (SALEFF) and net income per employee (NIEFF). In the full sample, only net income per employee shows significant median increases following privatization.. Net income per employee goes from a median 61.9 percent of the year 0 value during the -3 to -1 year pre privatization period to 93.6 percent of year 0 output in the post privatization period. Furthermore, NIEFF increased in 62.82 percent of all cases, significant at the 5 percent level. Efficiency improvements (NIEFF) are also the norm for some of our sub-samples: control, non-foreign ownership and Egyptian privatized firms.

For all the reasons discussed above – better incentives, more flexible financing opportunities, increased competition, and greater scope for entrepreneurial initiative – governments expect that real sales will increase after privatization. Alternatively, Boyco et al. (1993) argue that effective privatization will contribute to a decrease in output, since governments can no longer provide managers with subsidies to maintain inefficiently high output levels. We test these competing predictions by computing average inflation adjusted sales levels for the period -3 to -1 (the pre privatization period) and compare it to the three-year average for the post privatization period, +1 to +3. Both the Wilcoxon and proportion tests show that real sales didn't increase or decrease after privatization, which in contrary to evidence provided by other studies performed in developing countries (see Boubakri et al. 2004). Our comparison of sales gains between sub-samples also yields opposite findings to those for efficiency changes. The same three sub-samples – control, non-foreign and Egyptian firms experienced a significantly greater decrease in sales as compared to the corresponding revenue of foreign and other countries firms. Our results confirm in some of our sub-samples the hypothesis of Boyco et al.'s (1996) that predicts, upon privatization, a decrease in production from the inefficient levels observed when the firms were state-owned.

One great concern of all governments implementing privatization programs is that efficiency and productivity will be achieved at the expense of employment and expect large decreases of employment levels after privatization. We examine this by computing average employment levels for the three-year periods -3 to -1 and to +1 to +3, and seeing if employment falls after divestiture. The Wilcoxon test shows a significant median decrease in employment of 433 employees after privatization, from 1770 to 1337. The proportion test statistic, on the other hand, shows that

employment declines significantly at the 10 percent level, with 75 percent of the firms experiencing declining employment levels. This result confirms the fear of the government about implementing privatization programs and is in accordance to what D'Souza et al. (1999) find in a sample of privatized firms surveyed during the 1990s. In contrast, the results of Galal et al. (1992), Megginson et al. (1994), Boubakri and Cosset (1998), Boubakri et al. (2004) all show significant increases in employment – according to at least one measure. In perhaps our most important findings, in one or both test statistics, our findings differ with the results of Megginson et al. (1994), Boubakri and Cosset (1998), Boubakri et al. (2004), and find that three sub-samples (control, non foreign and Egypt privatizations) experienced declines in employment following privatization,. The Wilcoxon and the proportion tests indicate significant declines for control firms, for companies that have no foreign ownership after privatization, and Egyptian firms. In only two cases, there is a significant difference between sub-samples. Privatized firms from which governments reduce their stockholdings to below 50 percent and NPF's from Egypt reduce employment more than do revenue firms and firms from Tunisia, Turkey and Morocco, respectively.

The switch from public to private ownership should lead to a decrease on average because the government's guarantee of removal of debt will increase the firms' cost of debt and because firms will have more access to equity markets. We examine change in leverage by observing changes in total debt to total assets. The Wilcoxon test shows an insignificant median decrease in leverage of 4 percent. The proportion test statistic, alternatively, shows that leverage declined significantly at the 10 percent level, with 75 percent of the firms experiencing declining leverage levels. As for our sub-samples, the unadjusted decrease in leverage after privatization is significant for Morocco when Wilcoxon test is used, and for control and Egyptian privatizations when proportion testing is used. Once more, privatization of control firms, NPF's in Egypt and non-foreign privatizations yield significantly less leverage than do privatization coming from revenue firms, from countries other than Egypt and with non- foreign participation.

**Table 11: Results from Tests of Predictions for the Full Sample of all Privatized Firms**

Variables	N	Median before	Median after	Median change	Z-Statistic for difference in Medians (after-before)	Percentage of firms that changed as predicted	Z-Statistic for significance of proportion change
<i>Profitability</i>							
Return on sales (ROS)	83	0.063	0.085	0.022	1.926***	61.44	2.084**
Return on assets (ROA)	83	0.054	0.076	0.022	0.859	60.24	1.858***
Return on equity (ROE)	83	0.21	0.216	0.0055	-0.772	48.19	-0.329
<i>Efficiency</i>							
Sales efficiency (SALEFF)	78	0.989	0.962	-0.026	-0.321	47.43	-0.453
Net income efficiency (NIEFF)	78	0.619	0.936	0.317	2.045**	62.82	2.264**
<i>Output</i>							
Real sales (OUTPUT)	74	1.034	0.887	-0.146	-0.321	47.43	-0.453
<i>Employment</i>							
Total employment (EMPL)	74	1770	1337	-433	-4.908*	75.67	4.677*
<i>Leverage</i>							
Total debt to total assets (TDTA)	83	0.227	0.187	-0.04	-0.953	66.21	2.953*

Notes: \*, \*\*, and \*\*\* indicate significance levels at 1, 5, and 10 percent, respectively.

**Table 12: Performance Changes Following Control versus Revenue Privatizations**

Variables	N	Median before	Median after	Median change	Z-Statistic for difference in Medians (after-before)	Percentage of firms that changed as predicted	Z-Statistic for significance of proportion change	KW-Statistic for difference between subsamples
<i>Profitability</i>								
Return on sales (ROS)								
Control	48	0.052	0.091	0.39	2.626*	72.91	3.17*	1.159
Revenue	33	0.085	0.0854	0.00049	-0.277	45.45	-0.522	
Return on assets (ROA)								
Control	48	0.044	0.075	0.031	2.021**	66.66	2.305**	0.279
Revenue	33	0.074	0.091	0.017	-0.813	51.51	0.173	
Return on equity (ROE)								
Control	48	0.213	0.238	0.025	0.4	52.08	0.287	4.677**
Revenue	33	0.189	0.142	0.047	-1.599	42.42	-0.87	
<i>Efficiency</i>								
Sales efficiency (SALEFF)								
Control	48	0.981	0.94	-0.041	-0.564	41.66	-1.154	1.23
Revenue	30	1.0035	1.004	0.00054	0.381	50	0	
Net income efficiency (NIEFF)								
Control	48	0.536	0.921	0.385	2.544**	70.83	2.882*	0.285
Revenue	30	0.897	0.98	0.083	0.195	53.33	0.364	
<i>Output</i>								
Real sales (OUTPUT)								
Control	48	1.034	0.808	-0.226	-2.8*	33.33	-2.307**	2.77***
Revenue	26	1.029	0.977	-0.052	-1.232	30.76	-1.968**	
<i>Employment</i>								
Total employment (EMPL)								
Control	48	2759	1808.75	-770.25	-4.595*	83.33	4.612*	12.6*
Revenue	26	1015	880	-135	-1.511	61.53	1.173	
<i>Leverage</i>								
Total debt to total assets (TDTA)								
Control	48	0.176	0.136	-0.041	-1.369	64.58	2.017**	8.04*
Revenue	33	0.271	0.339	0.068	0.089	51.57	0.18	

Notes: \*, \*\*, and \*\*\* indicate significance at 1, 5, and 10 percent levels, respectively.

**Table 13: Performance Changes Following Foreign Participation**

Variables	N	Median before	Median after	Median change	Z-Statistic for difference in Medians (after-before)	Percentage of firms that changed as predicted	Z-Statistic for significance of proportion change	KW-Statistic for difference between sub-samples
<i>Profitability</i>								
Return on sales (ROS)								
Foreign	14	0.102	0.112	0.01	0.471	57.14	0.534	0.161
Non foreign	69	0.054	0.081	0.027	1.976**	62.16	2.767*	
Return on assets (ROA)								
Foreign	14	0.07	0.069	-0.001	-0.785	42.85	-0.534	0.497
Non foreign	69	0.051	0.076	0.026	1.342	63.76	2.284**	
Return on equity (ROE)								
Foreign	14	0.127	0.137	0.0093	-0.722	42.85	-0.534	1.855
Non foreign	69	0.215	0.22	0.0047	-0.248	49.27	-0.121	
<i>Efficiency</i>								
Sales efficiency (SALEFF)								
Foreign	13	0.986	0.948	-0.038	-0.384	38.46	-0.83	0.31
Non foreign	65	0.99	1.017	0.028	-0.232	46.15	-0.62	
Net income efficiency (NIEFF)								
Foreign	13	0.887	0.924	-0.037	0.245	69.23	1.384	0
Non foreign	65	0.597	0.95	0.352	2.121**	63.07	2.208**	
<i>Output</i>								
Real sales (OUTPUT)								
Foreign	13	1.031	0.691	-0.069	-0.524	30.76	-1.385	3.127***
Non foreign	61	1.04	0.818	-0.222	-3.178*	32.78	-2.689*	
<i>Employment</i>								
Total employment (EMPL)								
Foreign	13	1138	1200	62	-0.489	61.53	0.83	1.407
Non foreign	61	1921	1470	-451	-5.208*	78.68	4.479*	
<i>Leverage</i>								
Total debt to total assets (TDTA)								
Foreign	14	0.263	0.296	0.033	0.973	42.85	-0.534	3.131***
Non foreign	69	0.224	0.146	-0.077	-1.534	57.97	1.323	

Notes: \*, \*\*, and \*\*\* indicate significance at 1, 5, and 10 percent levels, respectively.

**Table 14: Performance Changes by Country**

Variables	N	Median before	Median after	Median change	Z-Statistic for difference in Medians (after-before)	Percentage of firms that changed as predicted	Z-Statistic for significance of proportion change	KW-Statistic for difference between subsamples
<i>Profitability</i>								
<b>Return on sales (ROS)</b>								
Egypt	55	0.059	0.081	0.022	2.028**	65.45	2.289**	0.78
Morocco	6	0.08	0.086	0.0068	0.314	50	0	
Tunisia	13	0.076	0.088	0.011	0.245	53.84	0.276	
Turkey	9	0.046	0.056	0.01	0.059	55.55	0.333	
<b>Return on assets (ROA)</b>								
Egypt	55	0.046	0.073	0.027	1.491	63.63	2.019**	6.313***
Morocco	6	0.081	0.092	0.011	0.105	66.66	0.813	
Tunisia	13	0.051	0.073	0.022	-0.524	46.15	-0.277	
Turkey	9	0.13	0.108	-0.022	-0.178	55.55	0.333	
<b>Return on equity (ROE)</b>								
Egypt	55	0.218	0.225	0.01	-0.101	50.9	0.133	12.633*
Morocco	6	0.212	0.15	-0.062	-0.943	33.33	-0.813	
Tunisia	13	0.103	0.112	0.0094	-0.314	46.15	-0.277	
Turkey	9	0.388	0.378	-0.01	-0.296	44.44	-0.333	
<i>Efficiency</i>								
<b>Sales efficiency (SALEFF)</b>								
Egypt	55	0.989	0.959	-0.029	-0.637	43.63	-0.944	2.922
Morocco	6	0.956	1.087	0.131	0.943	50	0	
Tunisia	13	1.001	0.948	-0.052	0.245	46.15	-0.277	
Turkey	4	1.048	1.141	0.092	0.365	50	0	
<b>Net income efficiency (NIEFF)</b>								
Egypt	55	0.551	0.918	0.367	2.17**	67.27	2.55**	2
Morocco	6	0.593	1.058	0.465	1.57	66.66	0.813	
Tunisia	13	0.983	0.896	-0.087	-0.245	53.84	0.276	
Turkey	4	1.177	1.201	0.024	0	50	0	
<i>Output</i>								
<b>Real sales (OUTPUT)</b>								
Egypt	55	1.04	0.8	-0.241	-3.586*	29.29	-3.098*	10.318*
Morocco	6	0.924	1.033	0.109	0.943	50	0	
Tunisia	13	1.001	1.036	0.035	0.245	38.46	0.83	
Turkey	-	-	-	-	-	-	-	
<i>Employment</i>								
<b>Total employment (EMPL)</b>								
Egypt	55	2728	1850	-878	-5.237*	85.45	5.253*	14.048*
Morocco	6	663.5	662.5	-1	-0.631	66.66	0.813	
Tunisia	13	696	762	164	0.979	38.46	-0.83	
Turkey	-	-	-	-	-	-	-	
<i>Leverage</i>								
<b>Total debt to total assets (TDTA)</b>								
Egypt	55	0.182	0.145	-0.036	-0.951	61.81	1.75***	29.719
Morocco	6	0.06	0.0095	-0.05	-2.108**	83.33	1.626	
Tunisia	13	0.343	0.498	0.155	0.804	46.15	-0.277	
Turkey	9	0.597	0.586	-0.012	-0.059	33.33	-1	

Notes: \*, \*\*, and \*\*\* indicate significance at 1, 5, and 10 percent levels, respectively.

**Table 15: Coefficient Estimates from Regressions of Performance Changes of Privatized Firms on Macro-Economic Reforms and Environment and Corporate Governance Variables<sup>a</sup>**

Variables	Cste	Corporate governance			Macro-economic reforms and environment					Control	Adj R <sup>2</sup>	N	F-test	
		CONT	FOREIGN	GOV	LIQ	FLIB	TRADE	TLIB	DGDP	Industry				
<i>Panel A : Profitability</i>														
Return on sales	0.4339	-0.0131119	-0.0507	0.568	-0.0568	1.2705	-.2136*	.2036*	0.0639	-0.0666	Included	0.1298	81	1.62*
DROS	0.403	-.0452**	0.0035	0.558	0.157	0.096	0.094	0.516	0.452					
Return on assets	0.1705	0.045	0.896	-0.0181	0.1747	-0.0275	.1181**	-0.0269	-0.0169	Included	0.1763	81	2.24**	
DROA	0.486		0.662	0.67	0.319	0.05	0.477	0.636						
<i>Panel B : Efficiency</i>														
Sales efficiency	2.6371	0.1278	-0.0122	-0.3746	-1.5675	0.0098	0.5252	-0.058	0.756	Included	0.2707	75	3.19***	
DSALEFF	0.164	0.373	0.929	0.206	0.432	0.961	0.146	0.756	0.844					
Net income efficiency	1.4516	-0.3061	-0.4691	0.0556	2.1759	-0.8534	1.816**	-0.3853	-0.4666	Included	0.0656	75	2.52**	
DNIEFF	0.581	0.482	0.446	0.904	0.658	0.163	0.019	0.435	0.326					
<i>Panel C : Output</i>														
Real sales	0.7876	-0.0067	0.0007	-0.1563	-2.38**	-.251**	0.1479	.2330**	0.2039	Included	0.4163	71	4.69***	
DOUTPUT	0.35	0.945	0.993	0.321	0.023	0.04	0.224	0.057	0.136					

Notes: This table presents the results from regressions conducted to determine the sources of performance changes of privatized firms in selected MENA countries over the period 1993–2001. The dependent variables in the three panels are change in profitability DROS and DROA, change in efficiency DSALEFF and DNIEFF and change in real sales DSAL, respectively. The change in each of the dependent variables is computed by subtracting the 3-year pre-privatization average from the 3-year post-privatization average. The independent variables are related to macro-economic reforms and environment and to corporate governance. We include industry indicators in all specifications. Standard errors are robust. The p-values of the coefficients are reported in parentheses.

a\*, \*\*, and \*\*\* indicate significance levels at 1, 5, and 10 percent, respectively.

## ***7.2 Regression results: potential determinants of post-privatization performance changes***

In Table 14, we report the results of a multivariate regression analysis in which the changes in profitability, efficiency and output are regressed on two groups of independent variables, namely the macro-economic reforms and environment variables. We list and define these variables in Table 3. Table 4 presents the result of our regression. Wherever possible, we compare results to those of Boubakri et al. (2005) and D'Souza et al. (2005). This allows us to identify how factors affecting post-privatization performance in selected MENA countries may differ from developed and developing countries.

Panel A of Table 14 reports the results for the profitability models. In the two specifications (ROS and ROA), we observe a significant (at the 5% and 10% level) positive relationship between the change in profitability and the change in trade openness over the privatization window. This result is consistent with Dornbusch's argument (positive association between trade openness and profitability) and the evidence provided by Boubakri et al. (2005). Thus, trade openness leads to higher competition and allocation of resources. In relation to corporate governance, we document a significant negative relationship between profitability changes and control relinquishment by the government. This result is inconsistent with Boycko et al. (1996) and Shleifer and Vishny (1997) and opposes the findings of Boubakri et al. (2005). Thus when the government retains the control on privatized firms this leads to a better improvement of profitability. Finally, financial liberalization is significantly and negatively related to change in ROS, which means that the performance of NPF's is better before financial liberalization than after.

While Table 11 indicates that newly privatized firms from Egypt, Morocco, Tunisia and Turkey exhibit strong efficiency improvements (Net income efficiency only), our regression isolates only one specific determinant in panel B Table 14. Trade openness is positively and significantly related to change in net income efficiency (NIEFF) which is consistent with the Dornbusch's argument that trade liberalization increases domestic competition and thus the incentives of firms to enhance their efficiency to survive in a highly competitive environment. This is in contrast to the findings of Boubakri et al. (2005), which show that several institutional factors are significantly associated with post-privatization efficiency improvements and the findings of D'Souza et al. (2005), which find no specific determinants of efficiency improvements.

Panel C of Table 14 reports the result of the output model. The results of the regression analysis show that only the macro-economic reforms and environment variables are important determinants of the output changes. Our result shows a significant negative relationship between sales efficiency changes, and capital market development (stock market liquidity and financial liberalization). This means that the decrease of output is more severe after stock market liberalization than before, which confirms the claim that active capital market contributes to push privatized firms to focus on profitable activities by selling losing sectors. Boubakri et al. (2005) and D'Souza et al. (2005) find opposite results on capital market development. In contrast to financial market development, the results indicate that trade liberalization date has a positive impact on output. This evidence suggests that macro-economic reform impacts positively on the performance of privatized firms in accordance with Boubakri et al. (2005) in developing countries but in contrast with D'Souza et al. (2005) in developed countries.

## **8. Conclusion**

This study examines the financial and operating performance of 84 newly privatized firms through Initial Public Offerings in Egypt, Morocco, Tunisia and Turkey during the period 1993 and 2001. For our full sample, unadjusted market results show significant increase in profitability (return on sales), operating efficiency (net income efficiency). We also observe a significant decline in employment and leverage following privatization change. The results of this project are similar to the results found in other papers in developing countries for profitability, operating efficiency and leverage but contrast with the empirical literature for the change in employment, which document increases in employment after privatization.

We also cut our full sample into several dichotomous sub-samples, based on whether voting control is sold or retained by the divesting government, whether the firm is sold to a foreigner or not and whether the firm is from Egypt, Morocco, Tunisia or Turkey. Our results for the sub-sample analysis



indicate strong performance improvements for companies that do not relinquish control from the state, that are not sold to foreigners and that come from Egypt. Employment decline is more severe in Egypt and in companies where the state is no longer in control. Once more, privatization of control firms, NPF's in Egypt and non-foreign privatizations yield significantly less leverage than do privatization coming from revenue firms, from countries other than Egypt and non-foreign participation.

The study seeks to further provide some insight regarding the sources of these performance improvements or decline. The data indicate that mainly the macroeconomic and environment factors appear to drive the performance changes in our sample of newly privatized firms. In the two specifications (ROS and ROA), we observe a significant (at the 5% and 10% level) positive relationship between the change in profitability and the change in trade openness over the privatization window. In relation to corporate governance, we document a significant negative relationship between profitability changes and control relinquishment by the government. Trade openness is positively and significantly related to change in net income efficiency (NIEFF) which is consistent with the Dornbusch's argument that trade liberalization increases domestic competition and thus the incentives of firms to enhance their efficiency to survive in a highly competitive environment.

Our results show that a significant negative relationship exists between sales efficiency changes, and capital market development (stock market liquidity and financial liberalization). This means that the decrease of output is more severe after stock market liberalization than before such liberalization, which confirms the claim that active capital market contributes to the selling of losing activities. In contrast to financial market development, the results indicate that trade liberalization date has a positive impact on output. This evidence suggests that macro-economic reform impacts positively on the performance of privatized firms.

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## Appendix 1

**Table A1: Available Sample of Privatized Firms**

Country	Name of Company	Industry	Issue Date
Egypt	Nile Pharmaceuticals	Pharmaceuticals	1995
	Memphis Pharmaceuticals	Pharmaceuticals	1996
	Cairo Pharmaceuticals	Pharmaceuticals	1996
	Arabia Pharmaceuticals	Pharmaceuticals	1996
	Alexandria Pharmaceuticals	Pharmaceuticals	1996
	Egyptian Financial Industrial	Mining	1996
	Portland Helwan	Mining	1995
	Portland Torah	Mining	1995
	Eastern Company	Mining	1995
	East Delta	Mills	1996
	Middle and West Delta	Mills	1996
	Upper Egypt	Mills	1996
	General for Silos	Mills	1996
	Alex Mills	Mills	1997
	South Cairo Mills	Mills	1996
	Nasr City for Housing and Development	Construction	1996
	Sharms for Housing	Construction	1997
	Upper Egypt for Housing	Construction	1997
	Giza for Contracting	Construction	1997
	Mahmoudia for Contracting	Construction	1997
	Moukhtar Ibrahim for Contracting	Construction	1998
	Heliopolis Housing and Development	Construction	1996
	Nasr Utilities	Construction	1997
	Bisco Misr	Food	1998
	Extracted Oils	Food	1996
	Misr Oil and Soap	Food	1996
	Alnasr for Developing Agricultural Products	Food	1996
	Egyptian Starch and Glucose	Food	1996
	North Cairo Mills	Food	1995
	Middle Egypt Mills	Food	1996
	Construction and Consulting Engineering	Housing and Tourism	1996
	Cairo for Housing and Development	Housing and Tourism	1996
	Egypt for Free Shops	Housing and Tourism	1997
	Alahram Beverage	Housing and Tourism	1996
	Misr Mechanical and Electrical Projects Khromica	Construction and Electricity	1997
		Distribution	
	Elnasr for Civil Works	Construction and Electricity	
		Distribution	
		Construction and Electricity	1998
		Distribution	
	ELMACO	Construction and Electricity	
		Distribution	
		Metallurgical Industries	1996
	Industrial and Engineering Projects	Metallurgical Industries	
		Cotton and International	1997
		Trade	
	Amiria for Cement	Cotton and International	
		Trade	
	Misr for Aluminium	Weaving and Trade	1995
	Nile Cotton Ginning	Chemical Industries	1997
	Arabia Cotton Ginning	Chemical Industries	1997
	United Arab for Spinning and Weaving	Chemical Industries	1996
	Middle East for Paper SIMO	Chemical Industries	1997
	Nile for Kabriet	Chemical Industries	1997
	Kafr Al-Zayat	Chemical Industries	1996
	Pacien	Industrial Engineering	1996
	Alexandria Portland for Cement	Industrial Engineering	1995
Misr for Chemical Industries	Industrial Engineering	1995	
Telemisr	Maritime and Inland	1996	
	Transport		



**Table A1: Continued**

<b>Country</b>	<b>Name of Company</b>	<b>Industry</b>	<b>Issue Date</b>
<b>Egypt</b>	CABLAT	Agriculture and General Services	1997
	IDEAL	Agriculture and General Services	1995
	Arabia and United Stevedoring	Iron and Steel Industries	1997
	El-Wadi for Agricultural Export	Chemical Industries	1998
	Nebaria Agricultural Engineering	Mining	1997
	SONASID	Petroleum Refining	1997
<b>Morocco</b>	FERTIMA	Metallurgical Industries	1996
	SMI	Inland Transport	1996
	SAMIR	Chemical Industries	1997
	CIOR	Metallurgical Industries	1996
	CTM	Transport	1993
	ICF	Food	1993
<b>Tunisia</b>	AMS	Chemical Industries	1993
	Tunisair	Industrial Engineering	1994
	SFBT	Metallurgical Industries	1995
	Alkimia	Trade	1995
	SOTETEL	Metallurgical Industries	1996
	SOTUVER	Trade	1998
	SOTUMAG	Transport	1999
	SIAME	Pharmaceuticals	1999
	Magasin Général	Metallurgical Industries	1999
	SOTRAPIL	Metallurgical Industries	1999
	SIPHAT	Household Appliances	2001
	STIP	Ready-mixed concrete	2001
	Adana	Electric services	2001
<b>Turkey</b>	Arcelik	Iron and Steel Industries	1991
	Bolu	Trade	1990
	Cukurova	Telephone and Telegraph Apparatus	1990
	Eregli	Petroleum bulk stations and Terminals	1990
	Migros	Automobiles and other Motor Vehicles	1990
	Netas	Petroleum	1991
			1992
	Petrol Ofisi		1991
	Tofas		1991
	Tupras		1991