

DISSERTATION

**ECONOMIC STUDY OF RELATIONSHIP BETWEEN PRIVATIZATION AND  
ECONOMIC GROWTH FROM A SAMPLE OF DEVELOPING COUNTRIES**

Submitted by

**Mohamed Meteb Al-Otaibi**

Department of Economics

In partial fulfillment of the requirements  
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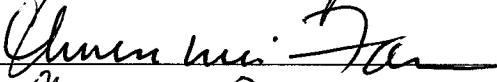
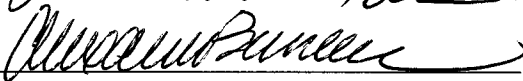
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## **ABSTRACT OF DISSERTATION**

### **ECONOMIC STUDY OF RELATIONSHIP BETWEEN PRIVATIZATION AND ECONOMIC GROWTH FROM A SAMPLE OF DEVELOPING COUNTRIES**

After three decades of privatization worldwide, has the transfer of state-owned enterprises (SOEs)'s ownership to the private sector been welfare improving? What lessons have we learned from this experience so far? And what are the possible implications of this economic policy and what is its impact on economic growth for the developing countries (DCs), in particular, Saudi Arabia, Kuwait, Bahrain, Egypt, Jordan, Iran, Turkey, Morocco, Pakistan, India, Indonesia, Malaysia, Venezuela, Mexico, and Argentina? These are the main questions addressed in this study.

Economists have studied the role of the privatization policy in economic growth to determine what causes economic development. Some argue that privatization of SOE's has a positive impact on real variables such as GDP, while others have not found relationship between privatization programs and economic development.

This study investigates the effect of privatization on economic growth in fifteen countries with developing economies by using a cross-section model (OLS estimation) and a cross section- time series model using panel data analyses including four panel types which are: None, Common, Fixed effect, and Random effect.

The results of the OLS regression reveal that in case of Saudi Arabia, Kuwait, Bahrain, Jordan, Iran, Morocco, Pakistan, India, Indonesia, Malaysia, Venezuela, Mexico, and Argentina, privatization has had a significant impact on the GDP level which reflects the economic growth at a 5% significance level. While in cases of Egypt

and Turkey, the results reveal that there is a negative relationship between privatization indicators and economic growth at a 5% significance level.

The result of the four- panel tests reveal that privatization has a positive and a significant impact at a 5% significance level and this is consistent with study hypothesis that privatization has an impact on the productivity of all factors in the economy, and it leads to improving the investment climate in the developing countries. Hence, the foreign direct investment (FDI) will increase and the economic growth will improve. These results are consistent with the effect of the privatization policy on the economic growth of each country individually (OLS regression) except Egypt and Turkey.

My analysis has significant implications for policy makers of these countries that have yet to undertake large-scale privatization programs, such as Egypt and Turkey. They will have to use the revenue of privatization efficiently, evaluating the companies' assets and decreasing corruption in privatizing the public sector. In addition, these countries should look carefully at the effect of other components on economic growth such factors need to be managed efficiently at the micro and macro level.

The results also suggest that a privatization policy is a must, and that allocating government revenue from privatization efficiently is necessary in order to insure continuous positive impact on economic growth.

**Mohamed M. Al-Otaibi**  
**Department of Economics**  
**Colorado State University**  
**Fort Collins, CO 80523**  
**Spring 2006**

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## **Dedication**

To the memory of my mother,  
To the memory of my first son Meteb,  
To my brother and my sisters, and  
To my wife and our children

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## **LIST OF ACRONYMS**

|        |                                                  |
|--------|--------------------------------------------------|
| Aramco | Arabian- American Oil Company                    |
| BOO    | Build-operate-own                                |
| BOT    | Build-operate-transfer                           |
| CEE    | Central and Eastern Europe                       |
| CIS    | Commonwealth of Independent States               |
| CPTM   | Cash Privatization and Trust Management          |
| DC     | Developing Country                               |
| EAP    | East Asia-Pacific                                |
| EBRD   | European Bank for Reconstruction and Development |
| ECA    | Europe and Central Asia                          |
| EMP    | Employment                                       |
| EU     | European Union                                   |
| FDI    | Foreign Direct Investment                        |
| GATS   | General Agreement on Trade and Services          |
| GATT   | General Agreement on Trade and Tariffs           |
| GDP    | Gross Domestic Product                           |
| GIS    | Government Expenditure                           |
| GMM    | Generalized-method-of-moments                    |
| IHC    | Investment in Human Capital                      |
| ILO    | International Labor Organization                 |
| IMF    | International Monetary Fund                      |
| INV    | Investment (Capital Stock)                       |
| JSCMC  | Joint Stock Company for Medical Care             |
| LAC    | Latin America and Caribbean                      |
| LDCM   | Level of Development of Capital Markets          |
| MEBO   | Manager-employee buyouts                         |
| MEI    | Main Economic Indicator                          |

## LIST OF ACRONYMS

|        |                                                      |
|--------|------------------------------------------------------|
| MENA   | Middle East and North Africa                         |
| MEP    | Ministry of Economic and Planning                    |
| MPP    | Mass Privatization Program                           |
| NTP    | National Treatment Principle                         |
| OECD   | Organization of Economic Cooperation and Development |
| OLS    | Ordinary Least Squares                               |
| OPEC   | Organization of the Petroleum Exporting Countries    |
| OS     | Ownership Structure                                  |
| PC     | Privatization Committee                              |
| POE    | Private owned-enterprise                             |
| PPI    | Private Participation in Infrastructure              |
| PRIV   | Private Output                                       |
| REDF   | Real Estate Development Fund                         |
| RESA   | Royal Embassy of Saudi Arabia                        |
| SABIC  | Saudi Basic Industries Corporation                   |
| SAGIA  | Saudi Arabian General Investment Authority           |
| SAMA   | Saudi Arabia Monetary Agency                         |
| SAS    | South Asia                                           |
| SEC    | Supreme Economic Council                             |
| SOE    | State- owned Enterprise                              |
| SSA    | Sub-Saharan African                                  |
| SSP    | Small-scale Privatization                            |
| Stockm | Stock Market                                         |
| TFP    | Total Factor Productivity                            |
| USSABC | US-Saudi Business Council                            |
| WB     | World Bank                                           |
| WTO    | World Trade Organization                             |

## **Chapter One**

### **Introduction**

#### **1.1 Introduction:**

In today's world, privatization is a global phenomenon—a form of economic restructuring which in its modern form has been most broadly exemplified by the economic policies of the Thatcher Government in Britain during the early 1980s. Since then, privatization has spread rapidly in Australia, New Zealand, Eastern Europe, Sub-Saharan Africa, and South America. By 1992, there had been 15,000 sales of public enterprises globally, the vast majority of which were in Eastern Europe. Currently, more than 100 countries have ongoing privatization programs. In 1999 alone, USD 153.4 billion in transactions occurred (OECD, 2000).

During the 1980s, state-owned enterprises (SOEs) in both developed and developing countries came under increasing scrutiny because of accumulating evidence that such enterprises were performing poorly and creating difficulties for their countries' economies. An equally convincing body of evidence indicates that private enterprises performing similar operations and functions are far more efficient. In response to these findings and as an expression of the growing credibility of free-market economics worldwide, governments have come to consider privatization as an attractive way of solving problems they have encountered with public enterprises.

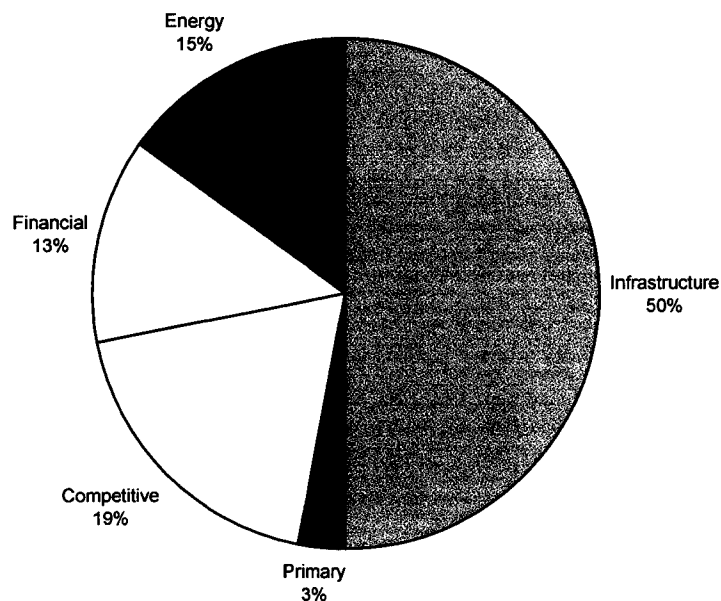
Over the last decade, there has been a widespread change of opinion concerning the role of state and private enterprises in promoting economic growth. A strong consensus has emerged that the achievement of more dynamic economic growth requires

a greater role for the private sector. Behind this consensus is the belief that resources will be managed more productively if they are transferred to the private sector. Bouton (1997) announced that a key element of this new market orthodoxy is the privatization of state-owned enterprises. While privatization has become a global phenomenon, the distribution and intensity of privatization activities continues to be geographically uneven. The most profound changes, of course, have been experienced by the countries of Eastern Europe and the former Soviet Union (Bouton and Sumlinski, 1997).

Since the 1970s, following the experiences of the United Kingdom experiences, both developing and developed countries have accelerated the privatization of traditional public industries, such as electricity, telecommunications, railways and water supply. The term 'privatization' has various connotations, such as ownership transfer (divestment of assets and sale of shares), involvement of private activity (management and operation contract, and leases) and Greenfield projects, which are public goods franchising (Ghosh, 2000). The total amount of privatization revenue from private sector participation transactions by the members of the Organization for Economic Co-Operation and Development (OECD) was USD 47.1 billion in 2000 (OECD, 2002). In developing countries, the privatization activity for the same period amounted to USD 87.8 billion (the World Bank Private Participation in Infrastructure [PPI] Project Database). In the process of economic development and restructuring of the government sector, the timing of privatization is clearly important, since such policy decisions are often irreversible and crucially determine the subsequent economic growth.

Figure 1-1 shows the privatization proceeds by sector from 1990 through 2003. Infrastructure has been the focus of privatization programs, generating half of the privatization proceeds through this period, trailed considerably by the energy and financial sectors, where the proceeds generated by the competitive, primary and energy sectors have been almost 37 percent of privatization proceeds by sector. The databases of the WB indicate that the attention received by the infrastructure and financial sectors has increased in recent years. These two sectors now account for nearly 75 percent of privatization proceeds, up from 60 percent in the 1990s (WB, 2003).

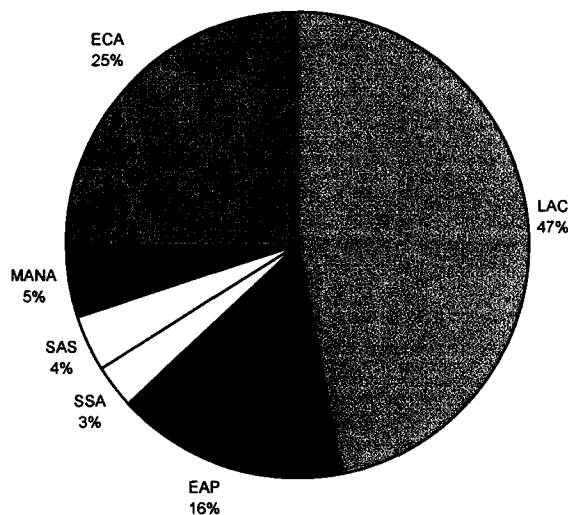
**Figure 1.1 Privatization proceeds by Sector 1990-2003(US\$ billions)**



Source: Kikeri and Aishetu, 2005

As for figure 1-2, it shows the privatization proceeds by region, in developing countries, from 1990 to 2003, and it shows that Latin America and the Caribbean (LAC), Europe and Central Asia (ECA), and East Asia and Pacific (EAP) contributed to the largest share of privatization proceeds, accounting for 47 percent, 25 percent, and 16 percent of total privatization proceeds, respectively, while Middle East and North Africa (MENA), South Asia (SAS) and Sub-Saharan African (SSA) contributed almost to one-fourth of SOE privatization proceeds, accounting for 5 percent, 4 percent, and 3 percent respectively (Kikere and Aishetu, 2005).

**Figure 1.2 Privatization Proceeds by region 1990-2003 (US\$ billions)**



Source: Kikere and Aishetu, 2005

The road to a free market economy requires the selling of publicly owned enterprises. It has long been recognized that publicly owned companies suffer from poor management, poor efficiency, and poor performance. Many governments, however, have been reluctant to relinquish economic control by selling public enterprises, which have been regarded as a policy tool available for controlling public employees. Public enterprises have never been run to generate profits but were rather used to generate political influence (Campos and Esfahani, 1996).

Some governments have been obliged or convinced to follow privatization programs. While the lessons derived from the experience of privatization differ considerably from one country to another there is strong evidence from all countries concerned that privatized companies improve enterprises' performance (Frydman et al, 1997).

Privatization has become a world-wide phenomenon through its effect on economic growth. During the 1990s, privatization generated government revenues of more than \$700 billion, according to the OECD Privatization Database. Since 1989, more than 70,000 enterprises have been privatized in Central and Eastern Europe, and privatization is currently a major item on the policy agenda in China, India, and many other developing economies (Megginson and Netter, 2001).

The relationship between privatization policy and economic growth has been the important subject of economic research in the field of economic development. Most empirical literatures such as Megginson et al, (1994) and Boubakri and Cosset (1999) have found a positive significant impact of privatization on economic growth.

### **1.2 Statement of the Problem:**

The private sector is now being considered by most countries around the world as a viable alternative to government in its traditional role as a provider and/or producer of public goods and services. This movement toward greater participation of the private sector has been influenced by a multitude of factors that differ from country to country. The interaction between any policy change (i.e., privatization) and the environment in which it is implemented is important if policy goals are to be achieved (Boycko et al, 1996).

The success of privatization of public enterprise as a policy of economic development depends on how well privatization measures are attuned to the institutional setting of a particular country. This is because successful privatization efforts around the world have shown that privatization works best when it is only one part of a larger program of reforms designed to create an environment that promotes efficiency and competition (Attiga, 1999).

### **1.3 The Purpose of the Study:**

The purpose of this study is to explore the effects of privatization as an economic policy for economic growth in fifteen of the developing countries, namely and classify based on World bank classification, seven countries from Meddle East: Saudi Arabia, Kuwait, Bahrain, Egypt, Jordan, Iran, and Turkey; Morocco form Africa; Pakistan and India from South Asia; Indonesia and Malaysia from South East Asia, and three countries from Latin America: Mexico, Venezuela, and Argentina.

These countries were chosen due to data availability and in order to differentiate among them geographically, culturally, and economically. Also this study will attempt to analyze the recent empirical studies, classifying them by level of data aggregation. So, the objectives of this study are:

- A) To investigate the economic effects of privatization strategy from macroeconomic perspectives by using the cross section model (OLS regression) and the cross section-time series model (Panel Data Analysis) on a sample of 15 developing economies over the period 1980-2001 to study the effects of privatization programs on economic growth. This will provide empirical evidence concerning the impact of privatization policies in some of the countries implementing this policy.
- B) This study also attempted to identify privatization policy in these countries in order to determine how privatization is perceived by government officials of the countries which expected to participate in the implementation of such programs.

In general, privatization seems to have a positive effect on operational and financial performances under the appropriate legal and institutional frameworks and disciplinary governance structure. The determinants of performance differ on case by case basis. Many of the countries having limited privatization programs are suffering from economic stagnation, and the choice of an appropriate method of privatization could play an important role in economic growth (Bennett et al, 2004).

#### *1.4 The Organization of the Study:*

This study is divided into seven chapters. Chapter One provides an introduction to the study, stating the problem and explaining the purpose and the organization of the study.

Chapter Two provides a review of the literature which covers the global privatization movement, the reasons for privatization, definitions, and the methods used globally to achieve privatization in the face of the opposition, and various arguments about privatization.

Chapter Three explores the implications of privatization programs in different types of economies such as the economies of developing countries (DCs), developed economy (OECD case), and transition economies (Central and Eastern Europe and Russia).

Chapter Four provide a review of privatization in oil-based economies, focusing on the case of Saudi Arabia's privatization strategy.

Chapter Five provides the methodology of the study which is based on Bennett et al (2004) where the relationship between privatization and economic growth in transition economies was measured. In addition, it reviews the outline of the theoretical framework of analysis and discussion of the specifics of the estimating equations. Also, this chapter presents the empirical model for this research and further discusses the study's results, including the economic indicators of the countries in this study with analysis of the data used to test the role of privatization on economic growth.

Chapter Six provides the conclusion of the study and summarizes the key issues of the policy implications for economic restructuring in global economies.

## **Chapter Two**

### **Literature Review**

#### **2.1 Empirical Evidence:**

Privatization is defined as the transfer of ownership in such a way that a majority of the shares or equity in an enterprise passes from state or public ownership into private hands (Nellis, 1999). The privatization of state-owned enterprises (SOE) in formerly centrally-planned economies is one of the most important components of the transformation to a market economy (Mohan, 2002).

The studies on privatization found that there two categories, the first of which emphasize the need for it and focus on the creation of a hard budget competitive environment with market signals leading to reallocation gains. This view does not deny the eventual need to privatize much of the SOE (Frydman, 1997). The second school adopts the idea of the necessity of privatization, and the sooner the better, although scholars in this tradition admit that other conditions and institutions do eventually have to be put in place (Barberis et al, 1996).

The analysis of developing and advanced industrial economies about the privatization-economic growth relationship was found that privatization has improved efficiency gains and increased economic growth. For example, Vining and Boardman (1992) and Megginson et al (1994) present strong evidence that privatized firms do better than state owned enterprises in terms of economic performance criteria.

According to Mohan (2002), the empirical research on the subject of privatization falls into three categories:

1. Case studies
2. Cross-sectional comparisons of public and private sector performance
3. Econometric analysis of pre- and post-divestiture performance of enterprises

#### *2.1.1 Case Studies:*

Case studies in this area focus on the performance of firms privatizing. The firm's performance is compared with its own pre-privatization, with that of other firms that were not privatized, or with firms already in the private sector. Adam et al (1992) used country case studies from eight developing countries and found improvements in efficiency in Malaysian firms after divestiture.

Foreman-Peck and Manning (1988) compared the post-privatization performance of British Telecom with five other telecommunications enterprises in Europe and came up with ambiguous results. These researchers found that BT was apparently less efficient than its counterparts in both Norway (where the company was state-owned) and Denmark (where ownership was mixed), but more efficient than those in Spain and Italy (where ownership was mixed).

Bishop and Kay (1988) compared the performance of a number of divested enterprises in shipping, airline, gas, telecommunications, oil, and automobile industries with that of undivested enterprises in coal, rail, and steel in the United Kingdom, using indicators such as revenue, employment, profits, and profit margins. These authors found an improvement in enterprise performance in both sets of firms. They concluded that the

business cycle and the very threat of divestiture could explain the improvements in performance.

Galal et al (1994) studied 12 privatized firms in four different countries with an emphasis on benefits change of consumers, labor, competitors, and enterprise profits including effects on buyers, the government and other shareholders. They found a positive effect of divestiture on the economy.

### 2.1.2 Cross-Sectional Comparisons of Public and Private Enterprises:

Comparison between private and public sectors yield the same controversy; some studies such as Vining and Boardman (1992) indicated the superiority of the private sectors. They compared factor productivity measures for five hundred private and public international firms, and they found that there is improvement performance private sector performance in terms of quality of services. However, Mohan (2002) reported a variation in results across sectors. He found the public sector in industries with limited competition or with high regulations such as electricity is better. But, the problem with his study is that it does not avoid selection bias, which could occur if some of the state-owned firms happen to have been taken over by the state because they were unable to compete (Mohan, 2002). In addition, Yunker (1975) found that the public US electric power industry sector had lower costs per unit of output and was more efficiency than private sector utilities. This finding was in agreement with Fare et al (1985), who reported that there is efficiency in public-owned utilities.

### 2.1.3 Econometric Analysis of Pre- and Post-Privatization Performance:

The studies in this section look at the performance of a large sample of firms that have undergone privatization, within one country or across many countries. Megginson et al (1994) compared the pre and post privatization financial and operating performance of 61 companies across 18 countries [12 (OCED), 6 developing (non-OECD)] countries, and 32 industries during the period 1961 to 1990. Their finding indicated an increase in profitability, efficiency, employment, and sales after divestiture. However, Mohan (2002) reported that the increase in profitability measured by the return on sales is insignificant for utilities and banking, a finding which agrees with other studies, raising doubts about the benefits of privatization.

This study has one shortcoming, in that it does not consider the changes in the economic environment such as capital market which could contribute to improved performance in the post-divestiture period (Mohan, 2002). The economic environment change has been considered by Frydman et al (1997) in their study of transition economies, part of a work on privatization in Eastern Europe. They combined the comparison of state and private firms and the comparison of pre and post privatization performance to avoid the bias which may result from the choice of good privatized firms. Their analysis was divided into two parts. The first is the comparison between post-privatization performance of privatized firms and state firms. The second is the comparison between the pre-privatization performances of the privatized firms with state firms as well. If a significant difference in performance in the first case was found, then it is logical to conclude that ownership has made a difference.

In addition, they analyzed a sample of about 190 mid-sized companies in the Czech Republic, Hungary, and Poland during the period from 1990 to 1994 (the median employment in the sample was 360 full-time employees and the median sale was \$6 million). They found that privatization has an impact on performance, in terms of revenue, employment, and cost/revenue ratio, the most impact being on revenue. The authors suggest that because revenue falls were arrested, the impact on employment was also positive, a finding contrary to the belief that privatization could impose costs in terms of lower employment. The authors also verified that the effect of privatization is not limited to a particular country, industrial sector, or a particular type of privatized firm. In order to eliminate selection bias, the authors compared the same privatized firms that were outperforming state firms after privatization and also were outperforming the same state firms before privatization. They found a significant effect pre-privatization.

Some studies on privatization compared between competitive enterprises in the private sector with monopoly enterprises in the public sector and they found superior performance in the private sector. Also, some studies found private sector performance superior after comparing competitive enterprises in both private and public sectors, and also they found that small public enterprises in a competitive situation cannot be expected to do better than private enterprises (Galal et al, 1994).

Although there are a number of theoretical and empirical studies on privatization, these are still far from any definitive conclusions, but it seems clear that the estimated privatization effect may be either positive or negative. Shirley and Walsh (2000) pointed out that through the period from 1971 to 1999, 32 out of 52 studies demonstrated the superior performance of private or privatized firms, 15 studies showed

no significant relationship between ownership structure and performance, and five studies concluded that the performance of publicly-owned firms is significantly superior to that of private firms.

Havrylyshyn and McGettigan (1999) also reviewed the privatization effects in countries with transition economies. They found that there is no positive effect of privatization associated with corporate governance in transition economies.

## 2.2 Extent of and Reasons for Privatization:

Privatization has been a global phenomenon. Different regions and countries around the world have embraced privatization to varying degrees with the result that the role of SOEs has declined considerably (Khan, 2003). Megginson et al (1994) showed that the share of GDP accounted for by SOEs in industrialized countries fell from 8.5 per cent in 1984 to less than 6 per cent in 1991 and is now below 5 per cent. For low-income countries, the reduction has been more dramatic, with a decrease from almost 16 per cent of GDP to below 5 per cent. Similar reductions were recorded in middle-income countries, including the transition economies in Central and Eastern Europe.

In a review of the privatization experience in some developed countries, Parker (1998) found that the UK was the first pioneer of privatization, and he also found that the UK leads the rest of Europe in terms of the value of assets sold and the extent to which it has adopted other forms of privatization. He also mentioned that in recent years, privatization activity has intensified in other member states of the EU such as Spain, Portugal and Greece.

Kay and Thompson (1986) and Parker (1998) have summarized some reasons for privatize SOE with respect to industrialized countries as following:

(1) SOE is inefficient and privatization will improve economic efficiency. According to Schmidt (1996) who argued that weak commitment power of well-meaning governments, the monopoly status of SOE and inefficient informational distribution are the causes of poor managerial incentives under state ownership. Shleifer and Vishny (1994), on the other hand, have argued that the politicians' intervention in the SOEs conduct can result in bad management and politicians' interest to increase the level of employment which may negatively affect performance. Privatization gives managers rights over assets and cash flow, which results in the reduction of politicians' influence and efficient management and decisions. This finding has been refined by Bennedsen (2000) who analyzed the effect of privatization on political structure where various coalitions between organized interest groups were competing workers and subsidies.

(2) The monopoly provision of some goods and services has been reduced due to the technological developments in markets such as telecommunications and electricity generation, and this helps in maximizing the liberalization of trade.

(3) The privatization or selling of SOE reduce government debt and remove the risk of future capital injections into loss- incurring SOE.

(4) The divestiture of SOEs can help the development of domestic capital markets.

Furthermore, Khan (2003) has reported that the role of the state in economic life helps privatization in some countries such as the USA, as an example of a free market economy. International financial institutions and free market economists believe that state

should take care of regulating itself, and that the operation and ownership of industrial enterprises and utilities should be left to the private sector.

On the other hand, Gershenkron (1962) argues that in developing countries, a public sector has to play a role in economic growth especially in early stage of development because private sector in the developing economics has neither the experience nor the equipment to create industrial revolution.

In support of this argument, Naqvi and Kemal (1991) have done a study which compares public industrial enterprises and private firms producing similar goods, and they concluded that the changing of the ownership of industry from public to private does not guarantee more efficient operation of specific industrial enterprises. However, they also found that political interference and over-staffing reduced the efficiency of public sector units (Khan, 2003).

Privatization is a right way to provide competition and to strengthen the capital market with thought that competition must be between private sectors and not between public sector units and private sector units (Bouton, 1997). This investment should be attracted by policy and design into new and risky projects rather than through the purchase of profitable enterprises. It is well known that the purchase of existing operational units by foreign investors is not an addition to the capital stock of any country (Kay and Thompson, 1986). Krugman (2002) claimed that many taxpayers prefer privatization and deregulation because of the corruption within government owned entities. Starr (1989) summarized the role of privatization in creating a good society:

a) economic efficiency, b) returning power to communities, and c) reducing government overload.

### 2.3 Theories Concerning Privatization:

Privatization is considered a transition process and therefore few economic theories have developed conclusions and frameworks. There are two analyses of this phenomenon, first focuses on failure factors in production and consumption, and the second is related to the principal-agent theory, which is the established term used for modeling political intervention and corruption.

Jimenez (1995) maintains that allowing SOEs to monopolize the market is the result of a number of factors such as market failure resulting from public goods characteristics (i.e., externalities in production and consumption), economies of scale, asymmetric information, and needing to achieve social and political objectives (i.e., lowered unemployment).

In particular, economies of scale justify governmental monopoly in providing public services. However, recent economic models limit the scope of state-owned monopolies. For example, the Demsetz competition model (1969) implies that if governments were to design efficient auction mechanisms for inviting private firms to public sectors, they could successfully contract out their public enterprises.

Another analysis is called the principal-agent theory, where the publicly- owned enterprises are designed for political objectives such as increasing employment rather than efficiency maximization. Boycko et al, (1996) provided a simple model in which privatization of SOEs can improve economic efficiency and adversely affect politicians. The dilemma investigated by principal-agent theorists is how to get the employee or contractor (agent) to act in the best interests of the principal (the employer) when the

employee or contractor has an informational advantage over the principal and has different interests from the principal. The process of privatization of government depends not only on the relative production costs in the public compared to the private sector, but also on agency or transaction costs. Specifically, the issue hinges on finding the optimum point of privatization, where the marginal total cost (agency costs plus production costs) equal its marginal benefits. This is made more complicated by the fact that there are many forms of separation of ownership from control, including many forms of contracting out, which can carry high agency costs (Jensen and Meckling, 1976).

However, Claessens and Djankov (1998) claimed that SOEs perform better than privatized enterprises because SOEs can account for social objectives and externalities in natural monopoly markets.

Although most of arguments are in favor of privatization, the transition from SOEs to privately owned-enterprises (POE) still remains to be explored. Exceptional studies that address a dynamic aspect of privatization are those of Mussa (1986), in which the optimal path of commercial policy in a program of trade liberalization is considered, and Glaeser and Scheinkman (1996), in which the sequencing of privatization across industries is modeled.

#### 2.4 Definition and Forms of Privatization:

Privatization is one of the economic policies adopted in many countries of the world under the conditions set by international agencies, such as the World Bank (WB) and the International Monetary Fund (IMF). Regardless of the number of countries undergoing privatization, the reality is that a policy of privatization is an instrument of economic reform and development (Somidi, 1998).

Consequently, privatization is expected to have an impact on the economic growth of many countries via global trade since privatization involves encouragement of free trade within and beyond a country's borders (Homedan, 1996). Privatization policy can be defined in two ways, a narrow and a broad definition (Salloum, 1996).

Cantor (1996) has pointed out that privatization is the process of transfer of all or part of public assets to the private sector. Pryor (1992) interpreted privatization as the transfer of ownership of public assets combined with a process of deregulation and liberalization. Butler (1986) defined privatization as transferring the economic activities from governmental responsibility to the private sector by selling public-owned assets to private buyers (i.e., divestiture).

The broad definition considers other forms of transferring economic activities from the government to the private sector where the property rights still under privatized public enterprises controls (Somidi, 1998).

So, under this broad definition, the objectives of privatization policy include the improvement of the economic performance of assets or services, increased public budget revenues and decreased expenditure or limiting of budget deficit, promotion of a free market mechanism, and reduction of public sector size and spending (Hamed, 1986).

This broad definition summarizes the goals of most privatization processes in moving from having a government body run a program to having a private one run it.

Lopez, Shleifer and Vishny (1997) stated that politicians used a cost-benefit analysis when deciding whether to maintain government control of a program or to contract it out to a private company. If they believe that they will lose their public voting base, they will privatize, and conversely, if governmental regulations are needed to keep social benefits, they will not privatize.

## 2.5 Privatization Methods and the choices:

The privatization policy implementation can be achieved by using one or more of the following mechanisms:

### 1) Divestiture:

This is the most common mechanism. It means the transfer of ownership and property rights from the government to a private party. This technique can be accomplished through various procedures such as direct sale of the public unit through auctions or a voucher mechanism.

There are some conditions which help the success of divestiture, such as a developed and efficient financial market, transparency in the process, and the existence of a legal and regulatory framework (Gray, 1996).

### 2) Contracting-Out:

This mechanism for implement privatization does not involve the sale of the units but can be done in one of two forms. One is a leasing contract, which government invites investors to bid for the right to provide services under contract. The other one is a

management contract, which government contracts with private investors to manage certain government activities. This is suitable for service sectors and can be applied to wastewater treatment, health facilities, garbage collection, and medical clinics (Utt, 1989). In addition, this form may be favored by governments because it decreases the risk of asset ownership with benefits from the use of managerial skills and technical knowledge in the private companies. Also, it has less political opposition and reduces the error cost in decision making (Andic, 1990). However, this is a weak form, for instance, US national defense is a public good provided by the government, and even though parts of it are routinely contracted out, it would not be called a case of privatization.

### 3) Deregulation:

Under this technique of privatization, the government changes its laws and regulations to give the private sector the chance to invest in activities that have been previously monopolized by the public sector. Accordingly, the private sector will operate on a market-led basis instead of a bureaucratic-led basis. Some economists call this method privatization by incremental privatization (Andic, 1990).

### 4) Build-Operate-Transfer (BOT):

With this form of privatization, government gives the private sector the opportunity to establish projects in certain sectors, and the private sector earns revenue under an agreement with the government. Then, the private sector operates the projects for a period of time sufficient to pay back project debt and generate a reasonable return to equity and then transfers the project assets back to the government (Hensley and White, 1993). This is a temporary technique of privatization implementation.

#### 5) Build-Operate-Own (BOO):

Under this method, the private investor builds the project and owns it without any commitment to transfer its ownership and operational rights back to the government. The advantage of this and the preceding method is that they provide private financing for building new projects, and the government does not have to provide either managerial participation or the operational and administrative costs associated with large-scale projects (Hensley and White, 1993).

Choosing one or more of these privatization forms depends on several factors, such as the objective of privatization, the operational and financial background of the privatized public enterprises, the status of the country, the time limit of the privatization program, the existence of a capital market, and the availability of investors (Sumidi, 1998). In countries with market-friendly policies, strong administrative capacities, and strong private sectors, rapid privatization may be the appropriate goal. In other countries that need more effort to create the necessary capabilities, privatization is better thought of not as the transfer of assets but as a process of policy changes and institution building activities. However, in some developing countries, it may be best to begin on a small scale and learn by doing. Small firms can either be liquidated or fully divested. With larger firms, the government can either sell a minority share through the stock market, as in India and Turkey, or fully divest its minority shareholding in mixed enterprises, as in nearly half the privatizations in Senegal (World Bank.b, 1995). Experience in some Latin American countries shows that with strong local support, successful large-scale privatization can be accomplished swiftly. In the rush to complete transactions, often too little attention is given to procedures for selling public enterprises, selecting buyers,

defining regulations for monopolistic enterprises, restructuring firms before sale, and dispersing the ownership of the privatized firms. All these problems have arisen in Argentina and the transitional economies, despite considerable government efforts to avoid them (WB,a, 1995).

## **2.6 The Opponents of Privatization:**

Skeptics of privatization believe that there are no efficiency gains from it, arguing that comparative studies of efficiency often ignore a number of key factors by looking only at the operational costs. They believe that in an evaluation of the effectiveness of privatization one should consider on economic efficiency and acceptable with of public values (Naqvi and Kemal, 1991).

Opponents of privatization believe that privatization often comes at the cost of loss of good jobs that pay better because public jobs tend to be more secure offering more benefits than similar private sector jobs. Also, with transfer workforces from public to private will cost money in terms of sick leave and pension payouts. Also, the privatization process, which includes developing a statement of work, putting a service out to bid, choosing a contractor, and negotiating and monitoring the contract, is expensive (Storrs, 2001).

In addition, public worker unions point out that because of the nature of most contractors, worker opportunities for training and advancement are diminished. For example, a janitor working for a local government may work his/her way up in the system via a series of vertical and horizontal moves through various departments. These opportunities virtually disappear for the most skilled employees in specialized firms

(Ballard and Warner, 2000).

Furthermore, opponents maintain that there are also costs associated with the privatization process because government agencies have to administer the process of privatization, write contracts, and monitor performance. As a result, the government labor changes from service providers to contract administrators. Also, the government has to follow up the performance of the contractor because of its responsibility to provide services for the public. If the contractor does not fulfill its obligations, the government has to re-bid the contract.

Opponents of privatization also believe that government workers are more efficient, competent, and experienced than private sector employees doing the same work because they have longevity, whereas the private sector is constantly paying for employee turnover. This turnover leads to the damaging of an organization's learning capacity, health, vitality, and networks that develop from the day-to-day interaction of the same group of experienced employees working to solve problems (Foster, 2000). However, on the other hand, government workers can be complacent, lazy, and taking things for grants.

## 2.7 Privatization and the True Size of Government:

The word privatization was not even used until the early 1980s when Britain's Thatcher made it a priority to reduce government in her country (Yergin, 1998). Many proponents of privatization believe that a good society is one in which the government does that which it can do best and leaves the rest of the services to a free market economy (Hebdon, 1995). By implement privatization, the government's overload that faced will

be decreased and public spending will be declined also. But, proponents believe that the role of government should be restricted to that of enforcing the law, which involves securing public safety and attempting to insure equity of income distribution (Starr, 1988).

The decline of the public sector is reflected in size reduction and the economy operation. Since 1985, a dramatic process of privatization has occurred both in public companies and in public services and activities. The privatization of public companies has received much public attention. This is consistent with the meaning of services privatization that more public services are purchased from private suppliers rather than produced by public employees (Strawczynski and Zeira, 1999). One example is infrastructure construction which has been transferred to private contractors, while government only plans and supervises.

## **Chapter Three**

### **Privatization in Developing, Developed (OECD), and Transition Economies**

The privatization of state-owned enterprises has become an important phenomenon in both developed and developing countries. Over the last decade, state-owned enterprises (SOEs) have been privatized at an increasing rate, particularly in developing countries (Bennett, 2004). The Economist reports that the share of these countries in global privatization revenues increased from 17% in 1990 to 22% in 1996. In 1992, for example, the total sales volume in the developing countries (\$23.2 billion) was, for the first time, larger than the revenues generated by privatizations in industrialized countries (\$17.3 billion) (Plane, 1997).

#### **3.1 Privatization in Developing Countries (DC):**

According to several economists' results (Galal et al, 1994; Kikeri et al, 1992; Vernon-Wortzel and Wortzel, 1989), privatization may have correlation with level of development. Therefore, the privatization experience of industrialized countries that does not need to address the problems of unsophisticated or underdeveloped capital markets cannot be generalized to DCs. Besides, unlike privatization in industrialized countries, privatization in DCs is usually controlled by international donor agencies such as the World Bank or the International Monetary Fund, as a prerequisite for development and structural adjustment loans (Bortolotti et al, 2001). 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 changes the market dynamics (Salloum, 1999).

Privatization on the African continent has been progressing more slowly than in other DCs such as Latin America or Asia for a number of reasons. Environmental weaknesses inhibiting privatization include poorly developed capital markets, scarce financial resources, a weak private sector, and poor regulation (Tanyi, 1997).

Other obstacles to effective privatization and development of securities in Africa are low capital income and aversions to risk of its population combined with severe asymmetries of information, poor investment structures, and institutional instability. However, privatization is perceived as road to unemployment and reduced government spending on important social programs in case of Africa (Bouton, 1997).

Since the 80s, privatization has become an integral part of public policies in the developing world. Governments aim, through their privatization programs, to enhance the efficiency of the SOE sector, to decrease the budgetary burden of the SOEs, and to improve the capital markets. Given the specific goals pursued by various governments, the privatization process has taken different forms, varying from one country to another. While each country's experience is unique, there seem to be some common characteristics, such as the methods of privatization and of partial divestiture. Some other particularities of privatization programs in the developing world are ethnic balance constraint and the capital market conditions (Kikeri et al, 1992).

Table (3.1) describes the privatization proceeds in developing countries from 1988 to 2001 including the total privatization revenue and its share of GDP with the number of privatization sales and public shares as percentage of government revenue. It shows that countries in the Middle East and North Africa (MENA) received more than 50% of all privatization revenues from public share offerings, while Eastern European and Central Asian (ECA) economies received about 13% of their privatization revenues from public share issues. Also, countries in Latin America and the Caribbean (LAC), Sub-Saharan Africa (SSA) and Eastern Europe and Central Asia tend to privatize approximately 62-70 percent of any given state owned enterprise. East Asia is the only region that, on average, privatizes a minority stake (44%) in the enterprise (Brune, 2000).

**Table 3.1:** Global Privatization Proceeds (1988-2001)

| <b>Region</b>                            | <b>Total Privatization Revenues (1988-2001) (US\$ current mil)</b> | <b>Total Privatization Revenues as share of 2001 GDP (%)</b> | <b>Number of Privatization Sales (1988-2001)</b> | <b>Shares of Enterprise Sold (1988-2001)</b> | <b>Public Shares as % of Revenues (1988-2001)</b> |
|------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------|----------------------------------------------|---------------------------------------------------|
| <b>Developing World</b>                  |                                                                    |                                                              | <b>615</b>                                       | <b>61.9</b>                                  | <b>24.6</b>                                       |
| <b>East Asia</b>                         | <b>3591.6</b>                                                      | <b>1.5</b>                                                   | <b>33</b>                                        | <b>44.2</b>                                  | <b>40.9</b>                                       |
| <b>Latin America &amp; the Caribbean</b> | <b>14697.5</b>                                                     | <b>3.9</b>                                                   | <b>104</b>                                       | <b>70.1</b>                                  | <b>21.1</b>                                       |
| <b>Southeast Asia</b>                    | <b>931.8</b>                                                       | <b>1.3</b>                                                   | <b>30</b>                                        | <b>58.3</b>                                  | <b>44.0</b>                                       |
| <b>Sub-Saharan Africa</b>                | <b>1074.2</b>                                                      | <b>2.2</b>                                                   | <b>68</b>                                        | <b>66.0</b>                                  | <b>17.2</b>                                       |
| <b>Eastern Europe.</b>                   | <b>5208.9</b>                                                      | <b>6.0</b>                                                   | <b>361</b>                                       | <b>62.0</b>                                  | <b>13.3</b>                                       |
| <b>Middle East &amp; North Africa</b>    | <b>549.7</b>                                                       | <b>0.8</b>                                                   | <b>19</b>                                        | <b>46.0</b>                                  | <b>57.0</b>                                       |

Sources: WB global development indicators CD-ROM, various years.  
Brune (2000).

Sader (1993) presented an overview of observed patterns in policy implementation of the privatization programs in developing countries as follows:

First of all, there seems to be a predominance of partial privatizations. Indeed, few countries such as Chile and Mexico have implemented full privatization programs on a large scale. Another dominant characteristic of privatization, whether full or partial, is that it has occurred in many countries with gradual or staggered sales (Megginson et al ,1994).

Perotti (1995) has derived a model that establishes that privatization sales should be gradual or staggered, even though securing immediate transfer of control tends to maximize investors' confidences.

### *3.1.1 Method Choices in the DCs:*

The choice of the privatization method is of concern because it is largely determined by the objectives of the government and the particular need of the country. Hence, we observe a large variety of ways in which privatization has been implemented. Some countries, such as Chile, South Korea and Singapore, have utilized public offerings; that is the sale of shares to the public, in general, to spread ownership or to sell assets of SOEs mainly to private investors (Boubakri and Cosset, 1998).

According to Sader (1994), direct sales form accounted for the majority of privatizations in DCs between 1988 and 1993; it was 58% by value and 80% by number of transactions. Direct sales in sub-Saharan Africa, for example, constitute virtually the

only technique. This is due to low value of assets, the underdevelopment of local capital markets, and the widespread use of privatization by liquidating firms and selling their assets (Sader, 1994). Several African governments have also chosen to improve the efficiency of their SOEs without a transfer of ownership through the privatization of management, such as management contracts, leases, and concessions.

A study by the World Bank (1995) reveals that management contracts has been widely used in Africa, primarily in private services such as the hotel industry. It seems that most governments which have carried out a substantial number of privatizations have employed a broad mix of techniques.

Galal et al (1994) examined which services should be privatized and reached the conclusion that competitive enterprises which are small relative to both the product and markets factors should be among the first to be sold. Because they are small relative to domestic sales, there is no danger of their exploiting market power, and the various problems of post-divestiture regulation are avoided. Because they are small relative to the market situations, competitive bidding is feasible and the difficult problems of price setting and negotiations are avoidable. Because they are small in size, rapid changes in performance are possible.

Most of the developing countries implemented such a policy at the beginning of their privatization process. In Malaysia, Singapore, and Thailand, for example, utilities, ports, and airlines were the first to be considered for privatization. Other countries classified public utilities and services as strategic category and these strategic enterprises are completely excluded from the privatization programs; other state allows private to become minority shareholders, reserving voting control by government (Tanyi, 1997).

### 3.1.2 The Level of Development of Capital Markets (LDCM):

LDCM in a country determines whether certain privatization methods can be applied. Thus, where the stock market is undeveloped, it is often not feasible to offer shares in the manner. A private sale to local and foreign investors is the most common of divestiture in such cases (Berg and Shirley, 1987).

Some studies have mentioned the positive relation between privatization and capital markets, where each one can aid the other. This connection has appeared in several countries such as Chile, Jamaica and South Korea, which have increased the number of shareholders and total market capitalization as a result of privatization (WB, 1999). The privatization experience shows that in developing countries where capital markets are weak and regulation poor, stock market sales are not an immediate option (Kikeri et al, 1992).

Limited or none existed of capital markets in the sub-Saharan African countries are a big issue. Few of these countries have shown signs of developing a capital market, which hinders private sector development and prevents voluntary private market financing and private sector development. An inefficient regulatory environment and government interference coupled with ineffective managerial inefficiencies expertise are among the reasons for the fragile state of the private sector in Africa (Tanyi, 1997).

### 3.1.3 Ownership Structures (OSs):

In many DCs, OS is the key of privatization decisions. One of some DC government's objectives in privatization may be to control certain economically strong groups, an aim which at times does not correspond to the actual concentration of domestic private capital. Such groups often include ethnic minorities (i.e., Chinese Malays and Indian Africans) or such power groups like economical or political strong groups. A number of governments have therefore excluded certain ethnic groups from participating in privatization (Berg and Shirley, 1987). Some countries (i.e., Mexico) have restricted foreign investors to minority equity participation for political and social reasons. However, restrictions on foreign ownership will exclude such countries from an important source of new capital, markets, and technology. This is why prior restrictions on foreign involvement in many countries have been applied to certain types of firms (Ramamurti, 1992). Foreign participation has been generally allowed in the privatization of SOEs whose size was relatively large with respect to the domestic capital market (Galal et al, 1994).

Another group frequently participating in the ownership structure of most of the privatized firms is that of workers who have benefited from employee stock ownership schemes in such countries as Chile, Malaysia, Mexico, South Korea, and Taiwan. Indeed, several studies suggest that in spite of layoffs and forced retirements, divestiture did not make the workers of divested firms any worse off. Many governments reserve a block of shares, ranging from 5 to 20 percent, for employees at reduced prices and easy credit terms. This is done in order to garner support for the privatization policy, enhance productivity, and distribute wealth among the less favored (Galal et al, 1994)..

### 3.1.4 Review of the Empirical Literature for the DCs privatization:

Few studies have examined the operating and financial performance of newly privatized firms in developing countries. With the notable exceptions of Galal et al (1994), Megginson et al (1994), and D'Souza and Megginson (1999), the existing empirical literature has focused on the experience of developed countries. The study of Boubakri and Cosset (1998) is important in examining the privatization in DCs with regard to operational and financial performance. This study considers a large set (79) of newly privatized firms headquartered in 21 developing countries that experienced full or partial privatization during the period 1980 to 1992. The sample covers a wide range of DCs in terms of development levels and capital market sizes. Included in the sample, are countries identified as low-income economies (Bangladesh, India, Pakistan), lower middle-income economies (Chile, Jamaica, Nigeria, Philippines, Thailand, Tunisia, Turkey), and upper-middle-income economies (Argentina, Brazil, Greece, Malaysia, Mexico, Portugal, Singapore, South Korea, Taiwan, Trinidad, and Venezuela) All of these classifications are those of the World Bank appearing in the 1999 World Bank report. The sample also includes firms operating in both competitive and non-competitive markets, as well as companies privatized through direct sale to another company, which is a method used in DCs. Since some of the differences between pre-privatization and post-privatization performance might be a result of economy-wide factors, the authors used some measures dealing with market performance as attempt to isolate the effect of privatization from the impact of macro-economic changes on the financial and operating performance of SOEs. Boubakri and Cosset (1998) found that newly privatized firms

exhibit significant increases in profitability, operating efficiency, capital investment spending, real sales. Their evidence suggests that privatization yields greater benefits for companies operating in DCs with high per capita income and for companies whose governments surrender voting control.

In its review of privatization programs, the World Bank (1992) noted that most privatization success stories come from high- or middle-income countries. It is harder to privatize in low-income settings, where the process is more difficult to launch. In spite of this, the study included stories from some low-income countries whose results have been highly positive. It is interesting to note that the study by Megginson et al (1994), while pointing out improvements in profitability in developing countries post-privatization, found increases in efficiency only in companies headquartered in OECD countries. One of the earlier surveys done by Millard et al (1998) noted that there is no evidence of a statistically satisfactory kind to suggest that public enterprises in LDCs have a lower level of technical efficiency than private firms operating at the same level of operation (Mohan,2002).

In its assessment of privatization in sub-Saharan Africa, the World Bank (1994) concluded that such limited privatization has had little impact on efficiency and economic growth. In Mexico, we have two studies with differing conclusions. Weiss (1995) looked at the 500 largest enterprises in Mexico over the period 1985-90 and compared measures such as sales at constant prices, sales per worker at constant prices, and sales per unit of total assets at constant prices. His conclusion stated in terms of the influence of ownership that there is no support for the view that state ownership implies poorer performance than private enterprises.

The findings of LaPorta and Lopez-De-Silanes (1998) are diametrically opposite. Their study covered 218 firms in 26 different sectors, privatized between 1983 and 1991. They found that profitability, measured by the ratio of operating income to sales, increased by 24 percentage points. The authors broke down the gains into three components: increase in prices, reduction in workers, and productivity gains. They found that 57% of the gains were due to productivity increases. The authors also compared competitive and non-competitive markets and found that the former had higher gains in profitability than the latter.

Boubakri and Cosset (1998) have looked at the impact of privatization using the data of 79 companies from 21 developing countries. Significant improvements were found in return on sales, real sales, and capital expenditure/sales, however, not in employment. There are two conditions need to be satisfied for successful outcomes to result from privatization. One is the prior existence of a market-friendly macroeconomic environment, supported by institutional and regulatory capacity (Mohan, 2002). The other is the existence of competitive enterprises in sectors in which privatization takes place.

### 3.2 Privatization in Developed Economies (OECD Countries):

Proceeds or revenues from privatization have been substantial throughout the world. Ever since the beginning of the 1960s, numerous instances of privatization, not only in market-oriented, industrial countries but also in transition and developing countries, have taken place, and at the beginning of the 1990s a real wave of privatization began to develop. In most OECD countries, the wave peaked during the second part of the 1990s. Austria, for example, obtained proceeds from privatization of only \$80 million in 1990-1991, but in 1996-1997 proceeds totaled \$3.9 billion. Germany began with proceeds of \$325 million in 1990-1991, but obtained \$14.3 billion in 1996-1997. An exception is the United Kingdom, where by 1990/91 the peak of privatization proceeds had already reached \$34.7 billion (Schneider, 2003). Schneider pointed out that when figures of privatization of state-owned enterprises are presented as a percentage of GDP in the year 2000, as shown in Table 3-2, the figures presented there cover a wide range. As opposite of Hungary, which was a non-market economy with a large state sector, Portugal realized as the highest amount of privatization proceeds during that period, 20.2% of GDP in 2000. Some OECD countries such as New Zealand, reached 13.9%, followed by Greece with 8.8%, Italy with 8.2%, and Ireland with 7.2%. In terms of the highest actual amounts of privatization proceeds during the 1990s, Italy ranks first with \$98 billion, followed by Australia with \$79 billion, France with \$74 billion, the United Kingdom with \$64 billion, and Japan with \$61 billion. Table 3-2 shows that privatization in the OECD countries of the Eastern and Western type was a major issue in the 1990s. (Belke and Schneider, 2004).

Table 3-3 shows figures over a longer time perspective for only privatization of state-owned enterprises through public share offerings. During the years 1961-2000, the largest number of privatization of state-owned enterprises through public share offerings occurred in Japan with \$146 billion, followed by Great Britain with \$98 billion, Italy with \$85 billion, and France with \$84 billion, while Germany had only \$46 billion of privatization proceeds from state-owned enterprises through public share offerings (Schneider, 2003; OECD, 2000; WB, 1991).

Privatization has also been a key element of structural reform in many other developed and transition economies during the last decade, especially in Germany, South Korea, Italy, Norway, and the Czech Republic (Belke and Schneider, 2004).

Since the beginning of the 80s, numerous privatization efforts in market-oriented industrial countries, as well as in transition and developing countries, have taken place. European countries have appeared to be particularly involved in divestitures. According to Bortolotti et al (2001) Austria, Spain, France, Germany, and Italy implemented between 40 to 80 privatization operations during the period 1977-1999, however, Austria with its 40 operations being at the lower end of this sample. According to Siegmund (1998), 100,000 large public utilities and more than 500,000 small and medium sized public enterprises were privatized during the period from 1980 to 1996.

According to Belke and Schneider (2004), privatization proceeds of 22.9 billion USD were earned in the year 1990, increasing to 153.8 billion USD in 1997, which for the first time decreased to 114.5 billion USD 1998. In the year 1990, the privatization proceeds of the 15 European Union countries were 15.7 billion USD. This figure rose to 66.6 billion USD in 1997, with a decline to 58.6 billion USD in 1998.

Table 3.2: Privatization of State-owned Enterprises: Global Amount Rose from Privatization, 1990-2000

|                       | 1<br>1990/91<br><br>Million<br>USD | 2<br>1992/93<br><br>Million<br>USD | 3<br>1994/95<br><br>Million<br>USD | 4<br>1996/97<br><br>Million<br>USD | 5<br>1998/99<br><br>Million<br>USD | 6<br>2000<br><br>Million<br>USD | 7<br>Total<br>1990-2000<br>(sum of 1-<br>6)<br>Million<br>USD | 8<br>GDP<br>2000<br><br>Billion<br>USD | 9<br>Total<br>1990-<br>2000 in<br>% of<br>2000<br>GDP <sup>1)</sup> | 10<br>Investment of<br>SOE in % of<br>total<br>investment<br>1978-1991 | 11<br>Privatization<br>intensity<br>(9:10) |
|-----------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|---------------------------------|---------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------|
| <b>Austria</b>        | 80                                 | 191                                | 1,735                              | 3,954                              | 2,566                              | 2,08                            | 10,607                                                        | 266.3                                  | 3.9                                                                 | 6.2                                                                    | 0.62                                       |
| <b>Belgium</b>        | n.a.                               | 956                                | 3,297                              | 3,039                              | 2,277                              | n.a.                            | 9,569                                                         | 316.1                                  | 3.0                                                                 | 8.8                                                                    | 0.34                                       |
| <b>Denmark</b>        | 644                                | 122                                | 239                                | 411                                | 4,521                              | 11                              | 6,048                                                         | 205.6                                  | 2.9                                                                 | 13.5                                                                   | 0.21                                       |
| <b>Finland</b>        | n.a.                               | 229                                | 1,529                              | 1,746                              | 5,713                              | 1,82                            | 11,044                                                        | 165.8                                  | 6.6                                                                 | n.a.                                                                   | n.a.                                       |
| <b>France</b>         | n.a.                               | 12,160                             | 9,615                              | 13,288                             | 22,460                             | 17,4                            | 74,961                                                        | 1,755.                                 | 4.2                                                                 | 14.5                                                                   | 0.29                                       |
| <b>Germany</b>        | 325                                | 435                                | 240                                | 14,353                             | 7,098                              | n.a.                            | 29,549                                                        | 2,680.0                                | 1.1                                                                 | 11.6                                                                   | 0.09                                       |
| <b>Greece</b>         | n.a.                               | 35                                 | 117                                | 1,953                              | 8,772                              | 1,38                            | 12,261                                                        | 138.1                                  | 8.8                                                                 | 17.9                                                                   | 0.79                                       |
| <b>Ireland</b>        | 515                                | 344                                | 157                                | 293                                | 4,846                              | 1,45                            | 7,613                                                         | 104.8                                  | 7.2                                                                 | n.a.                                                                   | -                                          |
| <b>Italy</b>          | n.a.                               | 1,943                              | 13,92                              | 33,984                             | 39,230                             | 9,72                            | 98,812                                                        | 1,204.9                                | 8.2                                                                 | 12.5                                                                   | 0.66                                       |
| <b>Luxembourg</b>     | n.a.                               | n.a.                               | n.a.                               | n.a.                               | n.a.                               | n.a.                            | n.a.                                                          | 24.7                                   | n.a.                                                                | n.a.                                                                   | -                                          |
| <b>Netherlands</b>    | 895                                | 780                                | 7,759                              | 2,070                              | 1,816                              | 31                              | 13,630                                                        | 494.6                                  | 2.7                                                                 | 8.1                                                                    | 0.33                                       |
| <b>Portugal</b>       | 2,390                              | 2,826                              | 3,557                              | 7,932                              | 5,884                              | 3,25                            | 25,845                                                        | 128.0                                  | 20.2                                                                | 16.6                                                                   | 1.22                                       |
| <b>Spain</b>          | 172                                | 4,043                              | 4,399                              | 15,201                             | 12,58                              | 1,07                            | 37,476                                                        | 702.4                                  | 5.3                                                                 | 10.7                                                                   | 0.50                                       |
| <b>Sweden</b>         | n.a.                               | 630                                | 3,165                              | 1,840                              | 2,243                              | 8,08                            | 15,960                                                        | 276.8                                  | 5.7                                                                 | 16.0                                                                   | 0.35                                       |
| <b>United Kingdom</b> | 34,731                             | 9,127                              | 8,032                              | 12,154                             | n.a.                               | n.a.                            | 64,044                                                        | 1,294.4                                | 4.9                                                                 | 11.0                                                                   | 0.44                                       |
| <b>EU 15</b>          | 39,752                             | 33,821                             | 57,768                             | 112,2                              | 120,0                              | 46,75                           | 410,321                                                       | 9,758.                                 | 4.2                                                                 | n.a.                                                                   | -                                          |
| <b>Norway</b>         | 73                                 | n.a.                               | 639                                | 695                                | 454                                | 1,03                            | 2,900                                                         | 170.5                                  | 1.7                                                                 | 22.7                                                                   | 0.07                                       |
| <b>Switzerland</b>    | n.a.                               | n.a.                               | n.a.                               | n.a.                               | 4,426                              | n.a.                            | 4,426                                                         | 337.0                                  | 1.3                                                                 | n.a.                                                                   | n.a.                                       |
| <b>Turkey</b>         | 730                                | 989                                | 1,973                              | 758                                | 1,816                              | 2,71                            | 8,978                                                         | 205.1                                  | 4.3                                                                 | 35.7                                                                   | 0.12                                       |

Table 3.2 - Continued: Privatization of State-owned Enterprises: Global Amount Rose from Privatization, 1990-2000

|                       | 1<br>1990/91<br>Million<br>USD | 2<br>1992/93<br>Million<br>USD | 3<br>1994/95<br>Million<br>USD | 4<br>1996/97<br>Million<br>USD | 5<br>1998/99<br>Million<br>USD | 6<br>2000<br>Million<br>USD | 7<br>Total<br>1990-2000<br>(sum of 1-<br>6)<br>Million<br>USD | 8<br>GDP<br>2000<br>Billion<br>USD | 9<br>Total<br>1990-<br>2000 in<br>% of<br>2000<br>GDP | 10<br>Investment of<br>SOF, in % of<br>total<br>investment<br>1978-1991 | 11<br>Privatization<br>intensity<br>(9:10) |
|-----------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-----------------------------|---------------------------------------------------------------|------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------|
| <b>Czech Republic</b> | n.a.                           | n.a.                           | 2,282                          | 1,436                          | 1,176                          | 544                         | 5,438                                                         | 54.0                               | 10.0                                                  | n.a.                                                                    | -                                          |
| <b>Hungary</b>        | 508                            | 2,562                          | 4,830                          | 3,123                          | 441                            | 66                          | 11,530                                                        | 54.4                               | 21.2                                                  | n.a.                                                                    | -                                          |
| <b>Poland</b>         | 194                            | 806                            | 1,826                          | 3,485                          | 5,501                          | 5,993                       | 17,805                                                        | 163.3                              | 10.9                                                  | n.a.                                                                    | -                                          |
| <b>Slovakia</b>       | n.a.                           | 63                             | 1,419                          | 497                            | n.a.                           | n.a.                        | 1,979                                                         | 22.5                               | 8.8                                                   | n.a.                                                                    | -                                          |
| <b>Australia</b>      | 1,061                          | 3,950                          | 10,144                         | 36,011                         | 22,366                         | 6,239                       | 79,771                                                        | 465.2                              | 1.3                                                   | 16.4                                                                    | 0.08                                       |
| <b>Canada</b>         | 2,312                          | 2,004                          | 4,488                          | 1,768                          | 11                             | 11.a.                       | 10,583                                                        | 694.4                              | 1.5                                                   | n.a.                                                                    | -                                          |
| <b>Japan</b>          | n.a.                           | 15,919                         | 13,773                         | 10,388                         | 21,497                         | n.a.                        | 61,577                                                        | 5,639.5                            | 1.1                                                   | 8.2                                                                     | 0.13                                       |
| <b>New Zealand</b>    | 3,912                          | 1,597                          | 293                            | 1,839                          | 1,772                          | n.a.                        | 9,413                                                         | 67.6                               | 13.9                                                  | n.a.                                                                    | -                                          |
| <b>United States</b>  | n.a.                           | n.a.                           | n.a.                           | 3,650                          | 3,100                          | n.a.                        | 6,750                                                         | 9,076.6                            | 0.07                                                  | 3.7                                                                     | 0.02                                       |
| <b>Total OECD- 30</b> | 62,423                         | 107,332                        | 133,873                        | 249,562                        | 275,804                        | 65,063                      | 0,2                                                           | 27,708.6                           | 0.2                                                   | n.a.                                                                    | -                                          |

Sources: Schnieder (2003), Belke and Schnieder (2004), OECD (2002), WB (1991)

Table 3.3: Privatization of State-owned Enterprises through Public Share Offerings, 1961-2000: Issue Size per Country (Million USD)

| Country               | 1961-1989 | 1990-1991 | 1992-1993 | 1994-1995 | 1996-1997 | 1998-1999 | 2000   | Total 1961-2000 | Total 1990-1999 (only PSO) | OECD 1990-1999 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|-----------------|----------------------------|----------------|
| <b>Austria</b>        | 662       | n.a.      | 211       | 1,086     | 733       | n.a.      | n.a.   | 2,692           | 2,030                      | 8,524          |
| <b>Belgium</b>        | n.a.      | n.a.      | n.a.      | 2,571     | 1,100     | n.a.      | n.a.   | 3,671           | 3,671                      | 9,569          |
| <b>Denmark</b>        | n.a.      | n.a.      | n.a.      | 3,006     | n.a.      | n.a.      | n.a.   | 3,006           | 3,006                      | 5,937          |
| <b>Finland</b>        | 367       | n.a.      | 214       | 800       | 285       | 5,573     | 1,900  | 9,139           | 6,872                      | 9,217          |
| <b>France</b>         | 15,478    | 780       | 9,695     | 19,263    | 12,261    | 24,982    | 1,770  | 84,229          | 66,981                     | 57,523         |
| <b>Germany</b>        | 4,536     | n.a.      | n.a.      | 730       | 13,300    | 10,624    | 17,460 | 46,650          | 24,654                     | 22,415         |
| <b>Greece</b>         | n.a.      | n.a.      | 33        | n.a.      | 2,365     | 2,794     | n.a.   | 5,192           | 5,192                      | 10,877         |
| <b>Ireland</b>        | n.a.      | 136       | n.a.      | n.a.      | n.a.      | 4,300     | n.a.   | 4,436           | 4,436                      | 6,155          |
| <b>Italy</b>          | 1,157     | 695       | 2,481     | 10,220    | 34,462    | 36,190    | n.a.   | 85,205          | 84,048                     | 89,084         |
| <b>Luxembourg</b>     | n.a.      | n.a.      | n.a.      | n.a.      | n.a.      | n.a.      | n.a.   | n.a.            | n.a.                       | n.a.           |
| <b>Netherlands</b>    | 2,278     | n.a.      | n.a.      | 11,632    | n.a.      | n.a.      | n.a.   | 13,910          | 11,632                     | 13,320         |
| <b>Portugal</b>       | 434       | 1,829     | 2,375     | 2,255     | 6,428     | 5,998     | n.a.   | 19,319          | 18,885                     | 22,589         |
| <b>Spain</b>          | 2,326     | n.a.      | 3,193     | 3,950     | 13,432    | 21,652    | n.a.   | 44,553          | 42,227                     | 36,379         |
| <b>Sweden</b>         | 165       | n.a.      | 364       | 3,765     | n.a.      | n.a.      | 8,800  | 13,094          | 4,129                      | 7,878          |
| <b>United Kingdom</b> | 51,766    | 27,908    | 7,360     | 6,200     | 5,649     | n.a.      | n.a.   | 98,883          | 47,117                     | 64,044         |
| <b>EU 15</b>          | 79,169    | 31,348    | 25,926    | 65,478    | 90,015    | 112,113   | 29,930 | 433,979         | 324,880                    | 363,511        |
| <b>Switzerland</b>    | n.a.      | n.a.      | n.a.      | n.a.      | n.a.      | 5,600     | n.a.   | 5,600           | 5,600                      | 4,426          |
| <b>Japan</b>          | 82,402    | n.a.      | 7,312     | 3,400     | 6,440     | 46,500    | n.a.   | 146,054         | 63,652                     | 61,577         |
| <b>United States</b>  | 1,650     | n.a.      | n.a.      | n.a.      | n.a.      | 1,425     | n.a.   | 1,425           | 1,425                      | 6,750          |

Sources: Schnieder (2003), Belke and Schnieder (2004), OECD (2002), WB (1991)

### 3.3 Privatization in Transition Economies:

Transition economies which are the economies of former socialist countries and the states of the former Soviet Union began in the early 1990s to transform their economies from a socialist to a market system. A key element in this effort was to build a market-type financial sector. After a decade of these transitions, however, the experiences results of this type of economy are mixed because some transition economies still have a long way to go to build an efficient financial system (Sachs and Yair, 2000).

#### 3.3.1 Privatization in Central and Eastern Europe (CEE):

Privatization is a label that has been applied to a wide range of public-private transactions, ranging on one extreme from more-or-less complete government transfer of state property to private owners to the other where the delivery of publicly funded and regulated services are contracted out (Gray, 1996).

The important view with this phenomenon is that privatization is nothing less than almost complete and large-scale transformation of state property into a private property regime (Freije, 2001). Even when the state retains some parts of its property, it does so when there are sufficiently strong reasons for not privatizing it immediately. Based on the property rights theory, this view holds that clearly defined property rights are more or less sufficient for establishing a market economy (Estrin, 1995). Private property is to be the most efficient and feasible form of property in a regime of market economy while state property and other forms of property are acceptable only as transitional issue (Ronald, 2000). So, the state should play a minimal role in the market economy. Sachs

and Yair (2000) have pointed out that privatization in Central and Eastern Europe has two important implications: it is not understood merely as a change of legal title, transforming state property into private property, but also as a withdrawal of state from its role of regulating the economy

In the beginning of 1990s, a number of market-oriented reformers in transition countries considered privatization to be the most important part of the needed transformation. The influential Russian voucher programs viewed mass and rapid change of ownership as an end in itself. This was the critical point, required to sever communism's link between the state and productive firms. Privatization was the only way to introduce quickly a constituency of private-property owners who would be willing and able to support early market reforms (Claessens and Djankov, 1998). This view was supported by Western advisors on the basis of early favorable experience with voucher auctions and exchanges during the period from 1990 to 1995, privateers such as Boycko et al (1995) and Vassiliyev (1995) argued that privatization should be carried out as rapidly as possible, using simple, standard methods. They believed that the state should neither continue to subsidize nor restructure firms prior to sale, as this was the task of the new private owners and new private money (Boyko et al, 1996).

Also, Vassiliyev (1995) maintained that the maximum possible amount of property should be transferred to the population on a free basis. He rejected the idea of delaying ownership change until large economic reform happened, in terms of enhance competition, or until commercial law was in place and being enforced to both promote corporate governance and protect minority shareholders on the grounds that delay would allow enterprise insiders to strip assets. He feared that And by slowing the growth of a

market pressure group formed by private owners, would strengthen the forces of reaction.

This reasoning led mass and rapid privatization through vouchers to be widely viewed as the optimal solution to the problem of what to do with the huge numbers of enterprises inherited from the communist era. By late 1994, transition countries that had not adopted mass, voucher-based methods were criticized by the radical reformers and some of their advisors for their caution. Some transition economies found themselves in this position such as Hungary, and Poland (Nellis, 1999).

Boyko et al (1995) asserted that the Russian mass privatization program had achieved its principal goals of removing firms from the control of politicians and creating a constituency for a market economy. For instance, Czech government has announced that the transition was over for the country and it transited to a period of normal economics and politics. In case of Poland, its economy began to grow in 1992, and by 1995, it exhibited a 7 % of GDP growth rate, where it the highest in Europe, and this happened with absence of a mass and rapid privatization program. Also, Hungary avoided a mass privatization program. Its strategic was slower, started with privatizing some services enterprises such as infrastructure and banks, through direct sales to moneyed (Parker, 1998).

In contrast, The Czech GDP growth rate declined during the last quarter of 1995, fell by 2.6 percentage points in 1996, turned negative in 1997, and remained so in both 1998 and 1999. Divestiture to diffused owners and poorly regulated voucher funds, combined with a failure to privatize the banking system, removed or lessened pressures to restructure firms. So, Czech performance looked weak in comparison to its near neighbors (Perotti and Oijen, 1999).

According to Stiglitz (1991), in case of transition experiences, privatizing in the absence of a sufficient, market-supporting institutional infrastructure was a serious fault that could and did lead more to asset stripping than wealth creation. He argued that this should readily have been foreseen, if not by the first generation of transition reformers, than at least by their Western economic advisors, particularly those in international financial institutions.

The economic decline and social problems associated with transition economics in general can be avoidable with the appropriate implementation of privatization. Again, it was viewed as a main policy to promote efficiency and provide competitive gains (Frydman et al, 1997).

However, some analysis supports mass privatization and produces a few findings from which the supporters can take comfort. A study by Sachs and Yair (2000) examined the relationship between privatization, institutional reforms, and overall economic performance in transition. The authors found that ownership change was not sufficient to generate economic performance improvements. Such improvement require privatization be accompanied by market-supporting incentives institutions such as regulatory bodies. If there is no minimal level of institution, ownership change may have negative effects. However, it is also acceptable view that improvement in institutions requires some ownership change. Djankov and Murrell (2000) have reviewed some empirical results of privatization in transition economies and they concluded that firms in post-communist states perform better after privatization, as measured by the amount of restructuring undertaken. In most countries, this is true for any and all types of privately-owned firms. Even in those cases where the differences in restructuring between privatized and state-

owned firms are quite small, they are nonetheless almost always positive, which means that there is little evidence that privatization has harmed firm performance, even in Russia and the other countries in the Commonwealth of Independent States (CIS). They evaluated in terms of restructuring the performance of various types new private owners relative to one another and to traditional state ownership; is the category showing the worst-performing.

Some studies, in line with the critical perspective, have found that there to be a trade between speed and quality of privatization. Such studies suggest that transition governments still needing to divest a large number of firms and assets would do better to proceed more slowly, attempting to create the good and stable working conditions needed to attract and retain owners of quality. Finally, despite their agreement with the proposition that institutions matter greatly, these studies reveal that little is known about the way in which institutions work, how they are brought into being, or which ones a reforming government should try to build first, or whether government action to create and sustain institutions is at all efficacious or desirable. Thus, regarding the critical question of institutions, recent research is inconclusive. Despite the fact that many medium and large state-owned firms still exist; privately-owned firms generally perform better than state-owned, and that concentration of ownership is a strong predictor of successful post-privatization performance (Estrin, 1995).

Therefore, if the goal is to maximize restructuring so as to make these firms competitive, able to survive and thrive in market conditions, then core concentrated owners should be selected. This can be done by using sales methods that result in ownership transfer of a controlling stake to owners such as foreign investors, investment

funds and domestic investors having or capable of obtaining a controlling , and managers of firms wishing to invest with the aim of obtaining a control. The obvious problem in transition countries has been that of finding concentrated investors/owners, at least in sufficient quantity. Only Hungary, Estonia, the former East Germany, and Poland have succeeded in relying mainly on direct sales methods seeking to place high quality owners in charge of the assets. CIS countries have lacked the conditions and institutions necessary to attract or produce concentrated investors within a reasonable time frame (Aghion and Schankerman, 1999).

For this reason, mass and rapid privatization failed to produce the anticipated scope and pace of enterprise restructuring. This quickly became more than a financial and economic problem, since in many transition countries, the shortcomings of privatization generated social and political issues too. Voucher holders, who had been promised financial gain, often found their shares devaluing rapidly (Havrylyshyn and McGettigan, 1999). In many CIS countries, workers who originally held a dominant equity stake in the transformed firms, over time found themselves losing that position to managers. Although supporters of privatization claimed it to be a wealth-sharing device, instead, the most of minority shareholders ended up with little, while a small group of the well-placed was enriched by it (Glaeser and Scheinkman, 1996).

In many cases, privatization could have been better managed, but it is neither accurate nor fair to blame privatization for the problems of transition economies (Nellis, 1999). There is evidence shows that in CEE, privatization has proven its worth. Second, even in the CIS, the most thoughtful early reformers recognized that the first objective of privatization was to remove the political links between enterprises and the state. In other

words, efficiency and equity were secondary goals which could come later; it was important to act quickly to forestall the return of the communists. Whether or not, it is true that a change of ownership was by itself insufficient to cut the political-financial links, the general consensus of the outset was that privatization could achieve this separation (Claessens and Djankov, 1998).

### 3.3.2 Privatization in Russia:

Mass privatization of state-owned enterprises in former centrally planned economies has not produced the results its creators had hoped for. When Russian mass privatization began in the early 1990s, its proponents projected that the Russian economy would soon bottom out and then turn upward, as the efficiency incentives put in place by privatization took hold (Vassilyev, 1995). The Russian economy improved some around the mid of 1998 only to collapsed again, as it had in 1991-92 prior to privatization due to the decrease in Russian currency value, the default of government debt, bankrupt bank and corruption in the financial institutions (Lieberman and Nellis, 1994).

The mass privatization proved disappointing in other former Soviet Union countries, with the exception of the Czech Republic which is considered to be a model of the transition from central planning to a market economy. Gordon (1998) has suggested that the failure of privatization to jumpstart the Russian economy may reflect structural flaws in mass privatization as a transition mechanism, rather than the specific circumstances of Russia. He also pointed out several reasons for the failure of the Russian privatization effort:

First, mass privatization of large enterprises is likely to lead to massive insider self-

dealing unless a country has a good infrastructure for controlling self-dealing (Radygin, 1995). The critical factor is lack of controls on self-dealing, and not the details of the privatization plan. If control is given to current managers, as it was in Russian mass privatization, they often will not know how to run a company in a market economy (Ledeneva, 1998). Second, the profit incentives for restructuring privatized enterprises and creating new businesses capable of drawing workers from shrinking enterprises can be swamped by a hostile business environment. In Russia, that environment includes a punitive tax system, official corruption, organized crime, an unfriendly bureaucracy, and a business culture in which getting around the law is seen as normal, even necessary behavior (Clem and Graumer, 2000). Third, corrupt privatization of large firms can compromise future reforms. In Russia, self-dealing was widespread before privatization began, and would have continued if large enterprises had been privatized more slowly. But privatization can make self-dealing easier. In a vicious circle, dirty privatization also reinforces corruption and organized crime, as the new owners use their new wealth to buy judges and government officials. Corrupt officials and company insiders join forces to resist future reforms, while privatization is seen by public as connected with self-dealing, corruption, and organized crime (Vickers and Yarrow, 1991). Russia's economic problems were not caused by privatization because Ukraine has not privatized large firms but it has done with worse economically. Comparing Russia with Ukraine suggests that economic performance of a bad government which is sufficiently corrupt and incapable of sustaining a sensible policy will not be affected either for better or worse by mass privatization because the assets of state-owned enterprises will be controlled by strong group whether privatized or not (Shleifer and Vishny, 1994).

However, Russian privatization, in the beginning of 1997, went through three parts of implement privatization types, which are: the mass-privatization program in 1993-1994, small-scale privatization in 1991-1995, and the cash privatization in late 1994-1996. The small-scale privatization was successful phase of the three, and it quickly transformed most small state-owned services and manufacturing firms into private companies through management- employee buyouts, auctions, and tenders (Leijonhufvud and Craver, 2001).

With mass privatization program (MPP), it involved the sale of some 16,500 medium-sized and large enterprises, among them about 300 of Russia's largest enterprises. This was accomplished by means of a massive distribution of privatization vouchers to the entire Russian population and through the creation of voucher investment funds as intermediaries. Initially, employees of the firms being sold were offered a subscription with a variety of options plans. After that, there were open auction of shares to the general public (Gordon, 1998). Because of the MPP, Russia has formally become a market economy, with over half of its GDP produced in the private sector. While mass privatization was a very important step, it was only the first step towards efficient ownership and production (Barberis et al, 1996). As for small-scale privatization (SSP), it was totally the success application of privatization from the government, where former state employees transforming their mentality and behavior to that of private owners and managers. During small-scale privatization, about 75,000 small businesses were privatized and this success is in keeping with global experience which has shown that small entities that are best prepared for changes in the external environment, because they are able to adjust to market conditions and concentrate to raise efficiency and

productivity. Large and medium Russian enterprises, on the other hand, tend to spend their energies in rent- seeking, mutual crediting, and lobbying for subsidies (Boyko et al, 1995). With cash privatization, shares remain under state ownership at a cash auction after enterprises were sold with mass privatization. This is to raise revenues, secure workers, and maintain social assets of the privatized enterprises (Lieberman and Nellis, 1994).

## **Chapter Four**

### **Privatization in an Oil-based Economy: the Case of Saudi Arabia**

#### **4-1 Introduction**

This chapter presents a study of the privatization in Saudi Arabia included in the Kingdom's seventh development plan (2000-2005) which emphasized the role of the private sector, local labor force development, and non-oil resource development. This vision is supported by an elaboration of the main objectives of privatization, a description of the current situation, and a discussion of the main issues.

Privatization definition will be defined to include not only the sale of government assets to the private sector, but also transfers of management (contracts) and the opening up of sectors previously reserved for the public sector to investment by the private sector(Siddqi,1997).

The role of the public or state in Saudi Arabia will be changed from that of an active participant in the economy to that of an economic policy maker and regulators. The following are among the policies to be applied by the government:

- The responsibility for delivery of the many infrastructure services, which the public sector currently provides, will be moved to the private sector.
- The private sector should play an important role in providing future social sector services; e.g. health, education, and housing.
- The natural resources sector will operate at full levels of private sector efficiency with full accountability to the people of Saudi. However, given the fundamental strategic

importance of this sector, the government will maintain the mechanisms to control levels of production.

- The state will withdraw fully from other sectors such as finance which are normally carried out by the private sector in free market economies.

#### 4.2 Saudi Economy overview

Saudi's economy is an oil-based economy with the government controlling major economic activities. Saudi Arabia has the largest reserves of petroleum in the world (26% of the proved total), ranks as the largest exporter of petroleum, and plays a leading role in the Organization of the Petroleum Exporting Countries (OPEC). The petroleum sector accounts for roughly 75% of budget revenues, 40% of GDP, and 90% of export earnings. About 35% of GDP comes from the private sector (World Factbook, 2004). Roughly 4 million foreign workers play an important role in the Saudi economy, especially, in the oil and service sectors (Alfrian, 2002). With oil export revenues, Saudi economy remains dependent on oil, although investments in petrochemicals have increased the relative importance of the downstream petroleum sector in recent years (Cordesman, 2003).

The combination of relatively high oil prices and exports led to a revenue windfall for the country during 2004 and 2005. For 2004, Saudi Arabia earned about \$116 billion in net oil export revenues, up 35 percent from 2003 revenue levels. Saudi net oil export revenues are forecast to increase in 2005 and 2006, to \$150 billion and \$154 billion, respectively, due to higher oil prices. Increased oil prices and revenues have improved the Saudi economic situation, with real GDP growth of 5.2 percent in 2004, and forecasts of 5.7 percent growth for 2005 (SAMA, 2005).

For fiscal year 2004, Saudi Arabia had been expecting a budget deficit based on an extremely conservative price estimate of \$19 per barrel for oil and prediction of production level of 7.7 million barrel/day. Both of these estimates turned out to be far below actual levels. As a result, the Saudi Finance Ministry was expecting a huge budget surplus of \$26.1 billion, on budget revenues of \$104.8 billion and expenditures of \$78.6 billion (28 percent above the approved budget levels). This surplus is being used for several purposes, including paying down the public debt (to \$164 billion from \$176 billion at the start of 2004), extra spending on education and development projects, increased security expenditures due to threats from terrorists, and higher payments to citizens through subsidies for housing, education, health care (MEP, 2004). For 2005, Saudi Arabia is assuming a balanced budget, with revenues and expenditures of \$74.6 billion each (SAMA, 2005).

The Saudi economy faces serious economic challenges, including high rates of unemployment (around 15 % - unofficial estimates are between 20 and 30%), rapid population growth rates with the consequent need for increased government spending, and serious security threats, including a number of terrorist attacks on foreign workers (Jaber, 2001). Saudi's per capita oil export revenues remain far below the high levels reached during the 1970s and early 1980s. In 2004, Saudi earned around \$4,564 per person, versus \$22,589 in 1980. This 80 percent decline in real per capita oil export revenues since 1980 is in large part due to the fact that Saudi's young population has nearly tripled since 1980, while oil export revenues in real terms have fallen by over 40 percent, despite recent increases (USSABC, 2005).

Meanwhile, Saudi has faced nearly two decades of heavy budget and trade deficits, the expensive 1990/1991 war with Iraq, and total public debt of around \$175 billion. On the plus side, the country does have extensive foreign assets, around \$110 billion (Table 4-1).

Table 4-1: Saudi Data profile (2000-2004)

| <b>Year</b>                           | <b>2000</b> | <b>2001</b> | <b>2002</b> | <b>2003</b> | <b>2004</b> |
|---------------------------------------|-------------|-------------|-------------|-------------|-------------|
| Population (by million)               | 20.2        | 20.5        | 21.9        | 22.5        | 22.9        |
| Population growth (annual %)          | 2.6         | 2.7         | 2.8         | 2.9         | 2.10        |
| Growth of (real) GDP in %             | 4.9         | 0.5         | 0.1         | 7.2         | 5.3         |
| Oil Export growth in %                | 57.9        | -15.6       | 6.7         | 28.9        | 23.3        |
| Non-oil Export growth in %            | 13.9        | 23.7        | 5.7         | 26.9        | 23.8        |
| Import growth in %                    | 7.9         | 3.3         | 3.6         | 14.3        | n.a.**      |
| Inflation in % (CPI)                  | -1.1        | -1.1        | 0.2         | 0.6         | 0.2         |
| Gross fixed capital formation         | 17.5        | 18.4        | 18.1        | 17.6        | n.a.        |
| Non-oil state revenue                 | 6.2         | 6.4         | 6.6         | 7.7         | n.a.        |
| Unemployment in %*                    |             |             |             |             |             |
| Budget deficit in % of GDP            | +3.2        | -3.9        | -2.9        | +4.5        | +10.5       |
| Current account balance in billion \$ | 14.3        | 9.4         | 11.9        | 28.0        | 51.5        |

Sources: SAMA (years 2000-2004), Arab News (2003).

\*n.a.: Not available    \*\*Various unemployment estimates have been given from various agencies. For some time, figures between 8 and 9.6% were offered by the Central Department of Statistics, Ministry of Economic and Planning, but after a registration campaign in late 2004, the Ministry of Labor has claimed that there are only 180.000 job-seekers, implying a figure of about 6%.

Saudi economic policies designed to encourage economic growth include reducing subsidies which is having the most success, to attracting foreign direct investment (FDI). In early 2004, the Saudi government approved a reduction in taxes on FDI (to 20 percent in most sectors; 30 percent in the natural gas sector) as part of an effort to speed up the economic reform and privatization process in the country (SAMA, 2005).

Saudi Arabia has moved slowly towards government subsidy cuts, tax increases, and financial sector reforms. The Saudi government has indicated that it sees privatization as a strategic choice, and has created a Supreme Economic Council (SEC) charged with boosting investment, creating jobs for Saudi nationals, and promoting privatization. In May 2000, a new law aimed at attracting foreign investment to the Saudi energy sector came into effect. The law permits full foreign ownership of Saudi property and licensed projects and sets up the Saudi Arabian General Investment Authority (SAGIA) as the responsible agency for investment (RESA, 2003).

The government in 1999 announced plans to begin privatizing the electricity companies, which follows the ongoing privatization of the telecommunications company. The government is expected to continue calling for private sector growth to lessen the dependence on oil and increase employment opportunities for the Saudi population (AbdulGhafour, 2003). Currently, the Saudi economy is being dominated by the two large state corporations, Saudi oil firm (Aramco) and the Saudi Basic Industries Corporation (SABIC). Aramco with a workforce of 54,000 has a monopoly on Saudi oil development and controls 98 percent of the country's oil reserves. SABIC is the world's eleventh largest petrochemical producer.

#### 4.3 Saudi's Five-Year Development Plans and their objectives

Through five-year development plans, the goal of the Saudi government has been to transform its relatively undeveloped oil-based economy into that of a modern industrial state by allocating its petroleum income while maintaining at the same time traditional Islamic values and customs. Although heavy dependence on petroleum revenue continues, industry and agriculture account for a larger share of economic activity. However, the mismatch between the job skills of Saudi graduates and the needs of the private job market at all levels remains the primary obstacle to economic diversification and development (Looney, 2004a).

Saudi's first two development plans, covering the 1970s, emphasized infrastructure. The results were an increase in total length of paved highways, power generation, and the capacity of the seaports.

For the third plan (1980-85), the emphasis changed. Spending declined on infrastructure, but it rose on education, health, and social services. Diversification and expansion of the productive sectors of the economy did not rise as planned, but the two industrial cities of Jubail and Yanbu were built in order to utilize the country's oil and gas to produce steel, petrochemicals, and refined oil products (Pampanini, 2005).

In the fourth plan (1985-90), the country's basic infrastructure was complete, but education and training remained areas of concern. The plan encouraged private enterprise as well as foreign investment in the form of joint ventures with Saudi public and private companies. The private sector rose in importance, comprising 70% of non-oil GDP by 1987. While still concentrated in trade and commerce, private investment

increased in industry, agriculture, banking, and construction companies. These private investments were supported by generous government financing and incentive programs (i.e., subsidies) (MEP, 2004).

The fifth plan (1990-95) emphasized major goals such as the development of national defenses, improved government social services, regional development, and the creation of greater private-sector employment opportunities for citizens by reducing the number of foreign workers (RESA, 2003).

Figure (4-1) and Table (4-2) show the attention given by the successive development plans to expenditures of development agencies. The table and the figure also show the changing priorities and areas of focus over the first five development plans:

- Average expenditure on infrastructure development during the first and second development plans reached 41.4 and 49.3 percent respectively of the total actual expenditure of the development agencies. It exceeded average expenditure on the development of economic, human, social and health resources, thus establishing the integrated base of infrastructure needed to accelerate socio-economic development.
- During the third development plan, 41.1 percent of total actual expenditure of development agencies was directed towards the completion of infrastructure related to the producing sectors, while expenditure on economic resources development reached 30.7 percent.
- During the fourth and fifth development plans, emphasis was placed on enhancing the capabilities of the Saudi labor force and improving standards of education, health and social services. Thus, expenditure on human resources development accounted for 33 percent and 48 percent, while social and health development

expenditure reached 17.7 percent and 20 percent respectively of total actual expenditure during both plans.

- Expenditure on infrastructure continued over the five plans in response to the growth in demand which resulted from population growth and socio-economic development. Expenditure on the completion of infrastructure during the fourth and fifth plans averaged 25.5 percent of total actual expenditure.
- There has been a steady increase in the share of expenditure on human resources development over the last three plans, which rose from 18.4 percent of total actual expenditure on development agencies during the third plan to 33 percent during the fourth plan and 48 percent in the fifth plan, which is a reflection of the increasing importance of human resource development.

Figure 4-1: Expenditure by Development Agencies in Previous Five Plans (1970- 1995)

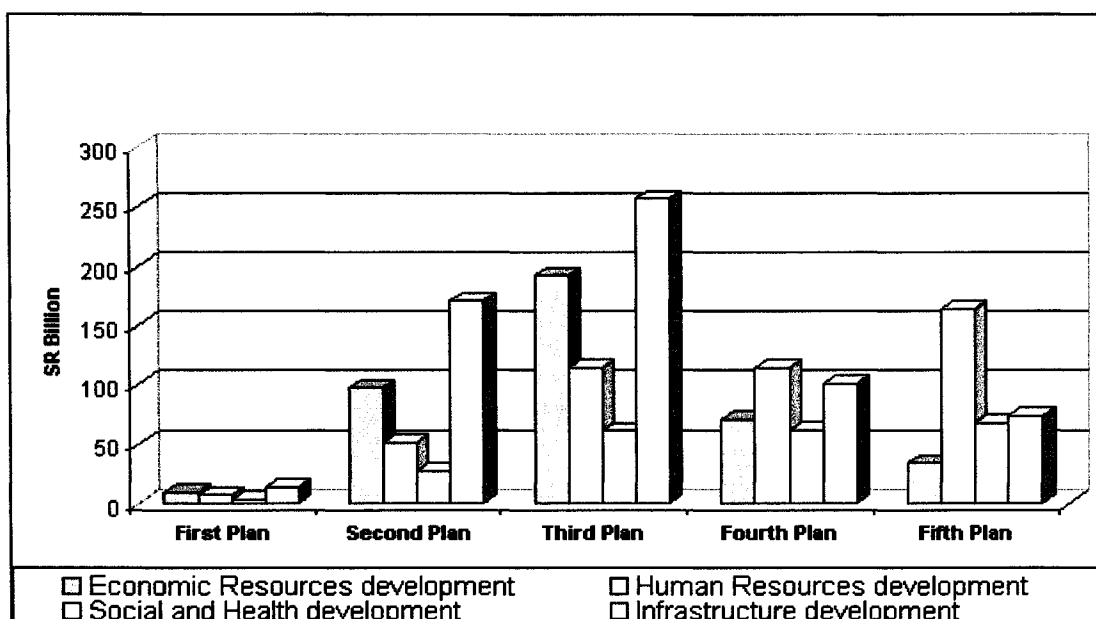


Table 4-2  
Actual Expenditures by Development Agencies  
During the First Five Development Plan (1970-1995)

|                                | First Plan       |      | Second Plan      |      | Third Plan       |      | Fourth Plan      |      | Fifth Plan       |      |
|--------------------------------|------------------|------|------------------|------|------------------|------|------------------|------|------------------|------|
|                                | SR/\$<br>Billion | (%)  | SR/\$<br>Billion | (%)  | SR/\$<br>Billion | (%)  | SR/\$<br>Billion | (%)  | SR/\$<br>Billion | (%)  |
| Economic Resources Development | 9.5/2.5          | 27.7 | 97.3/25.9        | 28.0 | 192.2/51.3       | 30.7 | 71.2/19          | 20.4 | 34.1/9.1         | 10.0 |
| Human Resources Development    | 7.0/1.9          | 20.6 | 51.0/13.6        | 14.7 | 115.0/30.7       | 18.4 | 115.1/30.7       | 33.0 | 164.6/44         | 48.0 |
| Social & Health Development    | 3.5/0.9          | 10.3 | 27.6/7.36        | 8.0  | 61.2/16.3        | 09.8 | 61.9/16.5        | 17.7 | 68.0/18.1        | 20.0 |
| Infrastructure Development     | 14.1/3.8         | 41.4 | 171.3/45.9       | 49.3 | 256.8/68.5       | 41.1 | 100.7/26.9       | 28.9 | 74.2/19.8        | 22.0 |
| Total                          | 34.1/9.1         | 100  | 347.2/92.6       | 100  | 625.2/167        | 100  | 348.9/ 93        | 100  | 340.9/91         | 100  |

Sources: Ministry of Economic and Planning (MEP) Indicators, 2004.

The sixth plan (1995-2000) focused on lowering the cost of government services and sought to expand educational training programs. The plan called for reducing the kingdom's dependence on the petroleum sector by diversifying economic activity, particularly in the private sector. It also continued the effort to nationalize (Saudiize) the labor force (RESA, 2003).

The seventh plan (2000-2005) focused also on economic diversification and a greater role of the private sector in the Saudi economy. For this period, the Saudi government aimed at an average GDP growth rate of 3.16% each year, with projected growths of 5.04% for the private sector and 4.01% for the non-oil sector. The government also set a target of creating 817,300 new jobs for Saudi nationals (MEP, 2004).

The eighth plan (2005-2010) will focus on the empowerment of women, privatization of state-owned corporations, setting up of strategic industries, and the development of mining and tourism sectors. This plan includes a number of projects and programs linked with the welfare of citizens and improvement of their living conditions. Greater participation of women in economic and developmental activities is also called for by implementing programs to improve their capabilities and removing obstacles that stand in the way of their participation (USSABC, 2005).

The Saudi government created these Five-Year Development Plans with the following objectives in mind:

**(1) Economic growth and social stability:**

The macroeconomic goals of the five –years development plans include economic growth, full employment, stable prices and the avoidance of sharp fluctuations in economic activity. Opportunities for Saudi citizens to participate in the development

process has been a permanent goal of successive development plans in order to avoid the types of adverse social impacts which often result from rapid economic growth and modernization seen in many developing countries (Looney, 2004b). In spite of the impacts of the change in oil markets, the following achievements represent successes in these macroeconomic objectives.

- \* Real GDP growth averaged 4.34 percent per year between 1970 and 2000. During the same period, the annual rate of growth in the non-oil sectors averaged 5.22 percent.
- \* The period from 1970-2000 experienced a gradual decline in inflation (measured by the consumer price index), interrupted by the period from 1984-1995, where average inflation did not exceed 2 percent.
- \* Average annual inflation during the sixth plan period (1995-2000) steadily declined and did not exceed 1.2 percent, mainly due to effective demand management by the government and the rationalization of public expenditure. Generally, low inflation contributes to monetary stability by maintaining the purchasing power of the national currency, which is positively reflected in the standard of living and welfare of citizens.
- \* Total Saudi employment has risen from about 1.2 million in 1970 to almost 3.2 million in 2000 with an average annual growth rate of 3.3 percent.
- \* Per capita income (GDP share) of the Saudi citizen has increased from SR 3,750 (\$1000) in 1970 to SR 24,150 (\$6440) in 2000.

**(2) Raising the standard of living and improving the quality of life:**

Over the past thirty years, the five-year development plans have focused on raising the standard of living and improving the quality of life for the Saudi citizens

(MEP, 2004). The most significant accomplishments regarding these goals are reflected in the following indicators:

- \* Life expectancy: in 1970 life expectancy averaged 54 years. This rose to 71.4 years in 1998 as a result of the improved standard of living and better health care.
- \* Private consumption of goods and services in constant prices of 1995 has risen at an average annual rate of 7.68 percent during the period 1970 -2000.
- \* The number of physicians has risen from 1,172 in 1970 to 30,281 in 2000, while the number of hospital beds has grown from 9,039 to 45,032 over the same period.
- \* High quality housing has been made affordable to about 674,800 families as a result of loans provided by the Real Estate Development Fund (REDF), which have amounted to SR 124 (\$33.1) billion from its establishment in 1974 to 2000.
- \* Payments from the social security system amounted to more than SR 2.5 (\$0.7) billion in 1998 compared to SR 39.4 (\$10.5) million in 1970, while payments to people in need of temporary assistance reached SR 450 (\$ 120) million in the same year.

### **(3) Development of human resources**

The importance of human resources development in the Saudi plans is characterized by the continuous support of primary, intermediate, secondary and higher education, as well as technical education, vocational training, and pre-service and in-service training (Looney, 2004b). The result has been an increase in the productive employment of Saudi citizens coupled with a steady upgrading of the skill levels and occupational achievements of the labor force (MEP, 2004).The following indicators reflect the major achievements in the field of human resources development:

- \* Fourteen universities, more than 35 colleges, almost 12 technological colleges, 68 technical education institutes and vocational training centers, and almost 3,100 secondary schools, 5,900 intermediate schools and 12,200 primary schools have been established during the last thirty years.
- \* Graduates of secondary level (male & female) increased from 3,800 in 1970 to more than 165,000 in 2000.
- \* Graduates of technical education and vocational training increased from 420 in 1970 to 13,850 in 2000.
- \* Enrollment in all educational institutions increased from around 600,000 in 1970 to about 4,748,000 students (male & female) in 2000, which represents an average annual growth rate of 7 percent.

#### **(4) Diversifying the economic base**

Another important goal of the Saudi development plans has been to diversify the economic base and reduce dependence on the production and export of oil, which is subject to fluctuations in the world markets (USSABC, 2005). The following achievements have been made in economic diversification:

- \* Non-oil GDP increased more than fivefold during the period 1970-2000. The percentage of contributions of non-oil sectors to GDP increased from 52 percent to 68.4 percent.
- \* The contribution of non-oil revenues to total government revenues increased from 11.5 percent in 1970 to over 24 percent in 1995 and to 34.3 percent in 2000.

- \* The value added of manufacturing industries grew at an average annual rate of 7.4 percent over the period 1970-2000 and the contribution of this sector to GDP increased from 2.1 percent to 5 percent during the same period.
- \* The value of agricultural production increased from SR 4.4(\$1.17) billion in 1970 to SR 35.8 (\$9.5) billion in 2000.
- \* The number of factories operating in the country increased from 199 with total investments of SR 2.8 ( \$0.75) billion in 1970 to 3,123 factories with total investments of SR 230 ((\$ 6103) billion in 2000.

#### **(5) Strengthening the role of the private sector**

From its outset, development planning in Saudi, adopted free market principles ensured which made the private sector a major focus of economic activity (WB, 2002). Because of the increases in oil revenues during the first three plan periods, however, the government naturally assumed a leading role in guiding and stimulating economic development, but the investment and the transformation of financial resources into productive physical assets required the active participation of the private sector as well. Its role included undertaking the necessary construction, operation and maintenance of these assets (Mushayt, 1999). A wide range of financial and regulatory measures have been employed to encourage the private sector to engage in joint ventures with foreign firms and to invest in new capacities using the latest available capital-intensive technology, mainly in agriculture and industry. As a result, the number of private sector companies has risen, along with the volume of private investments in fixed assets and a variety of private manufacturing activities (RESA, 2003). Moreover, the private sector's dependence on government expenditure has decreased significantly (MEP, 2004). The

growing maturity of the private sector and its ability to withstand declining government expenditure are evident in the following indicators:

- \* Private sector production increased by an average annual rate of 5.6 percent over the period 1970-2000, surpassing the 4.3 percent average annual growth rate of GDP during the same period.
- \* The private sector's contribution to GDP and to non-oil GDP amounted to 50.6 percent and 74 percent respectively in 2000, at constant prices of 1995.
- \* Annual private investment rose from SR 1 (\$ 0.27) billion in 1970 to about SR 78.6 (\$ 21) billion in 2000, thus bringing the contribution of the private sector to fixed capital formation to 67.3 percent at current prices.

#### (6) Development and maintenance of infrastructure

The infrastructural network in Saudi is among the most prominent achievements of development planning over the last thirty years. This network is comparable, in terms of quality and capacity, with international standards, and it provides a solid foundation for future economic and social development in the country (USSABC, 2005). The following indicators illustrate the quantitative changes in this regard:

- \* The paved road network grew from 8,000 kilometers (5,000 miles) in 1970 to about 45,400 kilometers (28,400 miles) in 2000. A high quality road network now connects all cities and most of the villages providing a strong base for the balanced growth of economic activity in all regions of the country.
- \* The country has 27 modern airports, including three international airports capable of accommodating the most advanced types of aircraft. This high-quality air transport network ensures swift connections between all main cities.

- \* Electricity generating capacity increased from 344 megawatts in 1970 to 20,266 megawatts in 1998 at an average annual growth rate of 15.7 percent.
- \* Desalination plants' capacity increased from 19,400 cubic meters per day in 1970 to about 2.2 million cubic meters per day in 2000, at an average annual growth rate of over 16.7 percent

The large-scale construction of infrastructure carried out through the development plans has supported the rapid economic and social development of the country. However, the rapidly growing population has increased the need to expand the country's physical infrastructure.

#### **4.4 Saudi Arabia's Privatization Strategy**

The Saudi economy is dominated by massive state corporations which account for about two thirds of GDP. These include firms such as Saudi Aramco, Sabic, the electricity company, the telephone company, and the saline water conversion corporation.

The government is now refocusing its policies toward increasing the private sector role in country's economic development due to a number of factors. These factors include increasing levels of public debt in the country, declining public capital expenditures and lower levels of real growth in the economy (Pampanini, 2005).

In order to facilitate the greater role of the private sector, the government established the Saudi Arabian General Investment Authority (SAGIA). Its function is to handle the investment affairs in Saudi by drafting government policies on local and foreign investment, proposing regulations and legislation to improve the investment environments and preparing studies on potential investment opportunities and promotion.

According to the general trends in the fifth, sixth, and seventh five-year development plans, the government's institutional determination to institute privatization was made clear in 1994 when the government indicated their interest in expanding the role and contribution of the private sector to the ownership and management of state-owned projects (RESA, 2003). In 1997, a ministerial committee was formed to coordinate and oversee privatization programs which include reviewing the sectors proposed to be transferred to the private sector, and defining the overall objectives and principles of privatization. This was followed by the establishment of the Supreme Economic Council (SEC). The SEC was empowered to supervise the privatization program and monitor its implementation in coordination with relevant government agencies. It was also empowered to finalize the activities to be privatized, and draft a strategy and time frame to manage the process (Alfrian, 2002).

In 2002, the SEC released their privatization strategy, which spelled out the objectives, policies, methods, controls and the main issues that needed to be resolved during the program's implementation. The strategy also defined the parameters for prioritization as well as procedures to be adopted to carry out the program (USSABC, 2005).

The privatization strategy was prepared to ensure continued growth in the share of the private sector and its expanded participation in the national economy. It called for transferring certain types of economic activity to the private sector, expanding the participation of the private sector in economic development, and enabling it to carry out its investing and financing role in accordance with the national development plans (Bhaskar and Khan, 1995).

In keeping with the aims of the privatization strategy, the Saudi government has implemented a number of political and economic reforms to encourage political participation, promote economic growth, increase foreign investment, and expand employment opportunities (Looney, 2004a). The government has also privatized major state enterprises, established regulatory authorities to carry out reforms, improved foreign investment laws, revised a broad range of commercial laws, and implemented property rights to foster innovation (USSABC, 2005). It is also becoming a more significant player in international trade by seeking membership in the World Trade Organization (WTO).

#### **4.5 Privatization of Saudi's SOEs**

The Saudi government issued Resolution No. 219 in 1999 listing the sectors and services to be privatized. The resolution also stated that the type, extent and timeframe of private sector involvement in these sectors according to the privatization strategy (RESA, 2003).

In 2002, the Saudi government announced plans to privatize many of its economic sectors (WB, 2003). Sectors open to privatization include: telecommunications, civil aviation, desalination, highway management, railways, sports clubs, health services, government hotels, municipal services, education services, operation and management of social service centers, Saudi employment services, agricultural services, public parks and recreation centers, and cleaning and waste collection (USSABC, 2005). Examples of privatization efforts of Saudi's SOEs include:

(1)Telecommunications: in 2002, the Saudi telecom company was privatized, and 30 percent of its shares were sold to the public.

(2) Postal Services: in 2002 also, the Saudi government approved the transfer of the responsibilities of the state-run postal services from the Ministry of Posts, Telegraphs and Telephones to the private sector. In 2003, the Director General of Postal services reported that privatization of this service has been operating successfully, with about 100 agencies established by the private sector (RESA, 2003).

(3) Saudi Railway Organization: the government has approved two railway projects worth \$2.6 billion and is encouraging the private sector to invest in both projects. The first, a 620-mile railway line, will connect the western Red Sea port of Jeddah with Riyadh, and through the existing line to the eastern Arabian Gulf port of Dammam. The second will link Jeddah to the holy cities with a 310-mile railway line.

(4) Airports: Saudi has 27 airports, including three international airports in Riyadh, Jeddah and Dammam. The Kingdom will privatize the management and operation of local and international airports (USSABC, 2005).

(5) Saudi Arabian Airlines: Saudi Airlines is the largest airline in the Middle East, with a fleet of 117 aircrafts carrying more than 12 million passengers per year to 50 cities on four continents. Research has begun for its partial privatization and the privatization effort promises to be a successful endeavor resulting in increased revenues and enhanced performance. In addition, the SEC approved the opening of the Saudi aviation sector to private enterprise, giving private companies the opportunity to provide domestic airline services (MEP, 2004).

(6) Ports Authority: the Ports Authority has assigned several projects to the private sector to expedite the handling of goods and maritime services at the country's seaports. For

example, Jeddah Islamic port and the King Abdulaziz port in Dammam are now leased by the private sector (USSABC, 2005).

(7) Health Care Sector: Saudi government supports the privatization of some state-run hospitals. Prior to 2003, the Ministry of Health employed a private company to promote its pre- and post-natal healthcare education program. So far, program has been introduced in more than 85 percent of the country's hospitals. The government has also approved the formation of a Joint Stock Company for Medical Care (JSCMC) that will establish, own and manage health facilities, including hospitals.

(8) Urban Transportation System: in 2003, Saudi transportation authority announced that plans to privatize and reorganize the transportation system were underway the development of urban transport will be carried out by the private sector as a means to increase private sector participation. (MEP, 2004).

#### **4.6 Privatization policies and objectives**

Saudi Cabinet Decree NO. 60 of August, 1997 established some objectives of privatization in Saudi and the principles to be applied in order to achieve these objectives. Cabinet Decree No. 257 of February, 2001 states that the Supreme Economic Council (SEC) shall be responsible for supervising the privatization program and monitoring its implementation, in coordination with the relevant government agencies and for determining which activities are to be privatized (MEP, 2004).

The general objectives and strategic principles of the seventh development plan (2000-2005) defined the objective of privatization as increasing the participation of the private sector in activities related to economic and social development. The third strategic

principle of the plan is to continue the policy of enabling the private sector to carry out many economic and social functions, provided that this results in real benefits in terms of reduced expenditure, good performance, and employment opportunities (RESA, 2003, USSABC, 2005). The Saudi government privatization objectives are:

- (1) To improve the national economy's capacity to meet the challenges of international competition through developing private sector participation in economic growth (USSABC, 2005).
- (2) To encouraging private sector investment and effective participation in the national economy, and to increase its share of domestic production in order to achieve growth in the national economy. A strong private sector for government policy makers is one which is able to achieve a comparative advantage and provide better opportunities for diversifying the economic base and moving away from dependence on oil. In order to increase the private sector, privatization should include simplification of procedures to encourage investment in the private sector and ensure that privatized projects are able to achieve growth (RESA, 2003; MEP, 2004).
- (3) To expand ownership of productive assets by Saudi citizens. Privatization can be an effective means of expanding the participation of citizens in the ownership of productive assets in public enterprises and projects by using the method of public subscription, which is considered the most important privatization method for developing the domestic capital market (Alfriani, 2000).
- (4) To encourage local investments of domestic and foreign capital. Privatization reflects the government's commitment to economic reform and projects a positive image for attracting foreign investment. Privatization also helps develop the capital market,

creates new mechanisms for providing capital, and attracts domestic capital outside the country, in addition to foreign capital and domestic savings of residents (Siddiqi, 1997).

- (5) To increase employment opportunities and ensure the continued equitable increase of individual income. Developing the nation's human resources is a basic element of national development; therefore, the privatization program is important in improving human capital by developing appropriate regulations and incentives to encourage the private sector to hire citizens (Saudization) (Jaber, 2001). So, privatization program can be developed to deal with excess staff by training or retraining them, or giving them ownership in the shares of the privatized enterprise as a portion of their compensation (Bhaskar and Khan, 1995).
- (6) To rationalize public expenditure and reduce the burden on the government budget by giving the private sector opportunities to finance, operate, and maintain the services that it is able to provide. The government budget is expected to benefit from reduced allocations for operating expenditures which are the result of the privatization of public establishments or the transferring of the management of public utilities to the private sector through management contracts or leases (MEP, 2004).
- (7) To increase government revenues from returns on participation in activities to be transferred to the private sector and monies obtained through the sale of government properties. The government's aim for privatization is to achieve positive financial results through sales of public project or participation in the profits (Mushayt, 1999).

#### 4.7 Administrative and Implementation of the Privatization Program

As mentioned before, Cabinet Decree No. 257 in 2001 stated that the Supreme Economic Council (SEC) shall be responsible for supervising the privatization program and monitoring its implementation in coordination with the relevant government agencies, and for determining which activities are to be privatized, in according with the recommendations of other government agencies. The activities to be privatized shall be issued by decree of the Cabinet, and the SEC shall develop a strategic plan and timetable for this purpose and assuming responsibility for the supervision each activity to be privatized (MEP, 2004).

The procedures and measures necessary to complete the privatization process shall be implemented in accordance with the pertinent regulations and with Cabinet Decree No. 6/22 issued by the SEC in 2001. This organizes of the Privatization Committee (PC) within the SEC, under the chairmanship of the Council's Secretary-General, with members representing the Ministry of Finance, the Ministry of Industry and Electricity, the Ministry of Commerce, and the Ministry of Planning and National Economy, along with two members from the Advisory Board for Economic Affairs (RESA, 2003). In order for the Committee to carry out the required activities to fulfill its duties and responsibilities with respect to privatization, the PC should be responsible as follow:

1. Recommend which privatization strategy to be approved by the SEC.
2. Recommend the public establishments, projects, and services are to be privatized and establish priorities.
3. Define the regulatory and implementation framework for the privatization process.
4. Monitor and supervise the implementation of privatization activities.

#### 4.8 Privatization Methods and Regulations

Methods of the Saudi privatization program include a number of tools to be used to privatize public establishments, projects, and services, taking into consideration a broad definition of the privatization process. These methods include transfer of shares for management (management contracts), leasing, and sale through public subscription or sale to a principal investor. Each method has its own effects, regulations, and factors that contribute to its success or failure. Generally, more than one method is used to achieve the targeted objectives. It is important to choose the method of privatization in accordance with the above objectives and the best means of achieving them (USSABC, 2005). The Saudi government's basic steps of privatization program implementation are:

1. The PC conducts a study for privatizing an establishment or project proposed for privatization and the relevant government agency, in coordination with the Privatization Committee of the SEC, conducts a study also on the financial and operational position of the entity, subsidiary sectors, expected returns, alternatives to privatization, obstacles to its implementation, and an evaluation of the possibility for privatizing this project or enterprise (RESA, 2003). The relevant agency submits the results of this study and its recommendations to the Privatization Committee.
2. The Privatization Committee issues a recommendation to privatize the enterprise or activity.
3. If a decision to privatize the activity is issued, the government agency responsible for supervising this activity prepares an implementation program for privatization, based on the feasibility studies. After it is approved by the SEC, the procedures and

measures required to complete the privatization procedure are implemented. The implementation program includes the following:

- a. the defining elements of the government's policy for the sector, the appropriate regulatory framework, and the measures and timetable required for implementation
  - b. a definition and plan for dealing with the obstacles to implementation, an evaluation of the need to restructure the establishment (conversion to an enterprise, financial structure, settlements with employees), and the measures and timetable required for implementation
  - c. the development of a preliminary plan for privatizing the establishment, including the percentage of total shares to be sold and method of sale, a timetable for completing the process, and the selection of a general advisor to assist with privatization based on the plan
4. The relevant government authority, under the supervision of the Privatization Committee of the SEC, administers the implementation program for privatization of enterprises. The administration of the implementation program involves the following elements:
- a. defining the tasks of the general advisor
  - b. selecting the general advisor and other technical advisors
  - c. developing an implementation plan for the privatization process
  - d. implementing measures for restructuring the enterprise
  - e. reviewing and evaluating the financial position of the enterprise
  - f. preparing the documents required for selling the enterprise

- g. managing the sale process (e.g. marketing the process, qualifying the investors, inviting bids by investors, evaluating the bids, negotiating terms of the sale, or preparing the sale contract)
- h. selecting methods for dealing with the work force from the following options:
  - (1) employee participation in ownership of the enterprise, which could induce them to support restructuring or privatization
  - (2) fair compensation for employees who retire voluntarily or are terminated
  - (3) obtaining a commitment from the investor to retain current staff
  - (4) training employees in order to upgrade their qualifications

#### **4.9 Criteria for setting priorities of the privatization**

The SEC determines which activities are to be privatized, in conjunction with the recommendations of other government entities. The Privatization Committee of the SEC shall coordinate with the relevant government agencies to begin privatizing the recommended projects on a selective basis in accordance with the criteria for selecting projects to be privatized (MEP, 2004).

The Ministers' Council must approve implementation of the sale, upon the recommendation of the SEC, with respect to matters that affect implementation of the privatization program, such as structure, conditions of sale, or government returns.

With the goal of enhancing the productive capacity of large government enterprises and projects, the priorities for selection for privatization are based on the following criteria:

- positive effect on the national economy

- ability of the enterprise to contribute to society by increasing employment opportunities, making optimal use of the work force, and ensuring the continuous of increase in individual incomes
- ability of private public enterprises to provide adequate public services
- positive impact on capacity of the financial market

After the enterprises and projects to be privatized have been selected on the basis of the above-mentioned criteria, an implementation program will be developed comprising a series of activities which will lead to the creation of a privatization program including coordination and control of the timing for offering shares of the enterprise for sale (USSABC, 2005)

#### **4.10 Saudi Privatization and Institutional Agencies**

##### **I- World Bank (WB) / IMF:**

The World Bank (WB) and the International Monetary Fund (IMF) have suggested that the Saudi' government privatize their state owned enterprises as a part of their overall structural adjustment reforms. The privatization policy is intended to reduce the public budget deficit and to create a market based economy.

To compete in the global market, it is essential that Saudi Arabia increase private sector participation in the economy. Deregulation will allow the private sector to compete with state owned enterprises (WB, 2003). The goal of the World Bank policy is for government subsidies for SOE to be reallocated to investment in infrastructures and social programs (Mushayt, 1999).

The World Bank and the International Monetary Fund look at privatizing state enterprises as essential for introducing a market economy. Privatization will increase not only the size but also the performance of the emerging private sector. It will distribute ownership of SOE more widely and it will promote both foreign and domestic investment. It is hoped that inflation will be reduced by the promotion of private investment in SOE, and that attracting foreign capital investment in privatized firms will reduce external debt as well (SAMA, 2005). The international institutions see privatization of SOEs as a means to reduce public expenditure, pay off foreign debt, and increase government revenues (RESA, 2003).

## II- The World Trade Organization (WTO):

Saudi, as a member of the World Trade Organization since January 2006, is committed to basic principles under the (GATT) conditions such as the National Treatment Principle (NTP). Under this principal, there is no difference between imports and domestic products (USSABC, 2005).

With regards to transparency, the General Agreement on Trade and Services (GATS) says that governments must publish all laws and regulations. Foreign companies and governments can use these inquiry points to obtain information about regulations in any service sector. It is the goal of the WTO to create an open system of operations and encourage members to enhance labor and environmental standards to increase safety for workers and reduce trade impacts on the environment (Sajini, 2004).

## **Chapter FIVE**

### **Methodology, Empirical Results and Analysis**

#### **5.1 Empirical Framework:**

In this chapter, the simple theoretical framework for the empirical analysis following the study of Bennett, Estrin, Maw, and Urga (2004) is presented. This framework allows a number of hypotheses to be tested.

The first hypothesis posits that if the positive effects of privatization on the financial performance and productivity of firms are as predicted by micro-economic theory, these also affect the macro-economic level, raising economic growth. Second, as Djankov and Murrell (2002) have stressed, the type of post-privatization ownership may be significant. For a given level of capital market development, some ownership types are more efficient at matching appropriate buyers with firms and establishing better corporate governance. Third, methods of privatization may affect aggregate demand. In cases where private agents or citizens have spent considerable amounts to purchase shares from the government, this constrains further spending in the private sector which in turn leads to different levels of investment spending by privatized firms and consumption spending by households. On the other hand, the greater revenue for the government may also increase its spending on infrastructure, which may then lead to a positive effect on aggregate productivity (Aghion and Schankerman, 1999). Finally, if economic growth is positively associated with capital market development (Demirguc and Maksimovic, 1998), and if different privatization methods have different effects on capital market development.

This suggests another channel through which the privatization method may affect economic growth.

The Bennett et al model (2004) classified privatization methods, treating them as exogenous policy choices. Then they specified equations for real aggregate demand and supply, in each of which the method of privatization is an argument (i.e. independent variable). By combining these equations, an expression is obtained in which the real GDP depends on the method of privatization and a variety of other factors.

The impact on the growth of the private sector and capital market development is also explored through this model. They distinguished three alternative privatization methods. Mass privatization is defined as occurring when the dominant form of privatization in an economy is that firms are sold at a zero (or nominal) price. Full privatization occurs when the dominant form of privatization is the sale of firms to outsiders for positive prices. Mixed privatization covers all cases that are not adequately represented by either of the first two categories, including Manager-Employee Buyouts (MEBOs) and leased buyouts. In practice, the choice of privatization methods seems in most cases to have more to do with political factors than with pre-transition economic performance (Henry, 2000).

For a given country and time, Bennett et al (2004) denoted real aggregate demand by  $Y^d$ , real aggregate supply by  $Y^s$  and  $p$  is the level of price .

First, the real aggregate demand  $Y^d$  is formulated as a function of the price level ( $p$ ) and the method of privatization ( $M$ ) and with the relevant partial derivative, the  $Y^d$  function is:

$$Y^d = Y^d(p, M) \quad \dots\dots\dots(1)$$

$$\text{Where : } \frac{\partial Y^d}{\partial p} < 0, \quad \frac{\partial Y^d}{\partial M} \begin{matrix} \leq \\ \geq \end{matrix} 0$$

Thus, in addition to being negatively related to the price level ( $p$ ),  $Y^d$  is assumed to depend on the method of privatization ( $M$ ) which is divided into the three kinds of privatization familiar in transition economics where  $M = 1$  denotes mass privatization,  $M = 2$  full privatization, and  $M = 3$  mixed privatization. With mass privatization, it is often the case that share recipients feel richer, at least in the short term, which could be expected to increase their demand for goods, thereby having a positive effect on real wealth. Because the other two methods of privatization involve the transfer of funds from private agents to the government, their effect on aggregate demand depends on relative marginal propensities to spend. These types of privatization could result in a short-term decrease in real consumption and investment demand because of the expenditure associated with them, which leaves buyers short of liquidity. However, if the number of buyers is relatively small, or if firms are purchased by foreigners, this

effect may be small (Djankov and Murrel, 2000). This supports that  $\frac{\partial Y^d}{\partial M_2} > \frac{\partial Y^d}{\partial M_3}$  ,

therefore, the effect of full privatization  $M_2$  on the aggregate demand  $y^d$  for full privatization is higher than the effect of mixed privatization ( $M_3$ ) on aggregate demand ( $y^d$ ). Hence, expected effects on real aggregate demand will be greatest for  $M_1$  and

smallest for  $M_3$ , i.e.  $\frac{\partial Y^d}{\partial M_1} > \frac{\partial Y^d}{\partial M_2} > \frac{\partial Y^d}{\partial M_3}$ .

Then, the real aggregate supply  $Y^s$  can be specified as:

$$Y^s = Y^s(p, M, K, L, A, S, \nu, G) \quad (2)$$

Where :  $\frac{\partial Y^s}{\partial p} > 0$ ,  $\frac{\partial Y^s}{\partial M} > 0$ ,  $\frac{\partial Y^s}{\partial K} > 0$ ,  $\frac{\partial Y^s}{\partial L} > 0$ ,  $\frac{\partial Y^s}{\partial A} > 0$ ,  $\frac{\partial Y^s}{\partial S} > 0$ ,  $\frac{\partial Y^s}{\partial \nu} > 0$ ,  $\frac{\partial Y^s}{\partial G} > 0$

Where K is the private sector capital stock; L is employment; A is the human capital stock; S is a capital market;  $\nu$  is the share of the private sector in national income, and G is the public sector capital stock. By assuming that  $Y^s$  is positively related to p, K, A, and  $Y^s$  is increasing in L.

Different methods of privatization may lead to different majority ownership structures, which causes differentiated impacts on economic performance, as represented by M in equation (2). Using the assumption that full privatization is associated with relatively efficient matching of owners to firms; one may be expected to see most effective corporate governance of this type of privatization. One problem with mass privatization is that it tends to produce diffuse ownership structures with too many agencies. MEBOs and leased buyouts, on the other hand, often lead to the entrenchment

of both managers and workers, which may negatively impact corporate governance.

Since more effective corporate governance is expected to raise aggregate supply, this suggests that full privatization should positively effects economic performance.

One result of the privatization of SOE is that in the private sector such firms tend to increase output, thereby raising the proportion of private output in the national income. This effect will increase aggregate supply,  $Y^s$  and will be treated as a form of technical progress. The reasons for the positive effect of privatization on productivity at the level of the firm include better definition of corporate goals by private firms as well as and some resolution of the incentive problems which tend to accompany with budget constraints of SOE.

Also, privatization may generate externalities, with more extensive market transactions creating a climate of trust, raising business confidence. A major contribution to the growth productivity is provided by small and medium-size privatized firms because they are able to fill the gaps left under Communism where there was a bias towards high capital intensity and against the provision of services (Henry, 2000).

In spite of assumptions to the contrary, Bennett et al, (2004) found no correlation between private sector development and method of privatization though it is likely to be associated with other policy measures with respect to the private sector (i.e., small-scale privatization).

The development of capital markets may be associated with more widespread and cheaper corporate finance, reducing the need for firms to rely on internally generated funds for investment, which will raise  $Y^s$ . Privatization also may generate the development of the capital market, and the larger the proportion of output coming from

the private sector, the greater the scope for benefiting from capital market development (Bennett et al, 2004). Thus, with the expectation that

$$\frac{\partial Y^s}{\partial p} > 0 \quad \text{and} \quad \frac{\partial (Y^s)}{\partial S} > 0, \text{ therefore we can generalize this}$$

formula in one derivative as follows ;

$$\frac{\partial^2 Y^s}{\partial p \partial S} > 0 \quad (3)$$

Bennett et al (2004) also pointed out that there is a potential interaction between privatization method may influence capital market development. For example, implementation of mass privatization policies in Poland was explicitly associated with plans for capital market development.

Privatization methods may have a direct impact on the macro economy through effects on government revenues, and hence on its ability to invest in infrastructure, thereby enhancing economic development. The government would be expected to gain the most revenue from full privatization and the least from mass privatization. Privatization programs in transition economies are a non distortion source of revenue. Therefore, productive investment financed by this revenue will have a positive impact on growth. However, a large proportion of public investment is financed in other ways such as distortional taxation, and so the effect of government expenditure on economic growth may be either positive or negative (Barro, 1991).

Furthermore, because of the assumption that public economy investment performance is inefficient, there is an expectation of a weak positive relationship between public sector investment and real aggregate supply.

By assuming that economic growth is reflected by GDP and let the equilibrium output (Y) denote real GDP with setting  $Y^d = Y^s = Y$ , and then by solving equations (1) and (2) for the price level (p), the price function can be specified as:

$$p = P(M, K, L, A, S, \nu, G) \quad (4)$$

Then, by substituting the price level function, equation (4), into the real aggregate supply  $Y^s$  function, equation (2), the equilibrium output Y is obtained as follows:

$$\begin{aligned} Y &= Y^s [P(M, K, L, A, S, \nu, G), M, K, L, A, S, \nu, G] \\ &= Y(M, K, L, A, S, \nu, G) \end{aligned} \quad (5)$$

$$\text{Where : } \frac{\partial Y}{\partial M} > 0, \frac{\partial Y}{\partial K} > 0, \frac{\partial Y}{\partial L} > 0, \frac{\partial Y}{\partial A} > 0, \frac{\partial Y}{\partial S} > 0, \frac{\partial Y}{\partial \nu} > 0, \frac{\partial Y}{\partial G} > 0$$

Where real GDP increases in K, L, A, S,  $\nu$ , and also increases in G. Putting together our comments concerning the effects on  $Y^d$  and  $Y^s$  of each privatization method, it is suggested that, compared to the other methods of privatization, the direct effect of mixed privatization ( $M_3$ ) will be a relatively low level of Y, but the ranking of the other two methods in this respect is unclear. However, given that with mass privatization the positive effect on demand may be relatively small, we expect that full privatization; because of its relatively efficient matching will have the greatest effect on real GDP, at least in economies with more developed capital markets (Bennett et al, 2004).

## 5.2 Results of Bennett et al's Framework

In this section of the chapter, the results of Bennett et al (2004) study about the impact of privatization proceeds on economic growth in transition economics were presented and compared with the results of my study which is about the relationship between privatization policy and economic growth in 15 developing countries. So, by estimating a cross-country growth model along the lines of Barro (1990) and Mankiw et al (1992), Bennett et al (2004) investigated the impact of differences in privatization method on national economic performance in transition economies. Their approach estimated an economic growth equation using panel data methods over 23 countries for the period 1990-2001. They found that growth is driven primarily by country and time specific factors and significantly influenced by investment, employment growth, and the growth of labor quality. Several institutional elements specific to the transition process, notably the private sector share and capital market development, are also found to be significant determinants of economic development.

Their findings concerning privatization methods may at first seem surprising. While theory would suggest that full privatization would generate the maximum direct enhancement of company performance and provide the greatest indirect effect via government revenue that may be spent on infrastructure, their results did not bear this out. Bennett et al (2004) interpreted these data to mean that the direct impact through improved corporate governance shows up in the factor inputs, especially investment. Thus, the main effect of direct sale may be through the firms' increased access to

financial resources which enables them to invest, rather than through increased technical efficiency.

While Bennett et al (2004) found that full privatization does not appear to have effects on growth; there is evidence in some of the data to indicate that mixed privatization failed to enhance growth. While there is a positive effect of mass privatization in terms of economic growth and this is due in part to political factors.

Bennett et al (2004) have suggested that economic factors may also be at work in this success of mass privatization. It is true that one advantage of full privatization is that of concentrated ownership and shorter management chains, which contrasts with the effects of mass privatization. However, they point out that in any economy, the ability to purchase a firm, or at least a substantial ownership share does not imply the ability to run the firm efficiently. Particularly in the case of an economy with an extremely underdeveloped capital market, in appropriate owners may tend to persist longer. They announced that one advantage of mass privatization, unlike full privatization, is that it leads to some development of the capital market, which is significantly correlated with economic growth. For example, in the Czech Republic, the distribution of shares at nominal cost to the general public led to shares being placed in the hands of privatization funds, which exerted pressure on managers to be relatively efficient. They noted that this argument does not apply to full privatization by foreign investors, but such privatization represents a relatively small percentage of the total, especially in countries with weak infrastructure, severe asymmetric information problems, or political instability.

In his study, Roland (2000) argued that mass privatization may contribute to macroeconomic instability in that it does not enable the supply of public goods to be

expanded because it yields no government revenue. However, an alternative point of view set forth by Bennet et al (2004) is that when shares are distributed at no cost, there is no need for buyers to access funds such as bank credit. Consequently, inflationary pressure is not generated and the interest rate is not driven up, leaving the cost of borrowing for real investment unaffected. Hence, mass privatization can have beneficial macroeconomic effects. Furthermore, this analysis contends that there is a weak effect with respect to public goods because governments do not generally use revenue effectively. Support for privatization programs is linked to the need to remove political interference and bureaucratic inefficiency as far away as possible from firms' operations. But it should also be taken into account that similar political and bureaucratic considerations play a role in the allocation of government expenditure. Thus, although full privatization is more successful than mass privatization in terms of raising more government revenue, the extent to which this is translated into faster economic growth may be disappointing.

The Bennett et al analysis has significant implications for countries, particularly developing economies that have yet to undertake large-scale privatization programs. In India for example, where capital market is relatively developed and macroeconomic problems are less severe than in much of the developing world, direct sale may be the appropriate form of privatization. In Africa however, wealth is generally concentrated in the form of rent earned from natural resource ownership and primary production. Capital markets are generally underdeveloped, and inflation rates and the real cost of borrowing tend to be high.

Based on the Bennett et al (2004) framework, equation (5) represents model with the method of privatization, government investment, and indicators of private sector and capital market development. By exploring the relationships between privatization methods, private sector development, and capital market development, the basic model of real GDP will be obtained as following:

$$GDP_{it} = a_1 + a_2 INV_{it} + a_3 EMP_{it} + a_4 IHC_{it} + a_5 STOCKM_{it} + a_6 \nu_{it} + a_7 GIS_{it} + a_8 FULL_{it} + a_9 MASS_{it} + a_{10} MIXED_{it} + \varepsilon_{it} \quad (6)$$

where i denotes country and t time; GDP is the real gross domestic product ; INV is change in the real capital stock K; EMP is employment L; IHC is investment in human capital A, which is measured by gross enrollment in tertiary education; STOCKM is stock market as a proportion of GDP, which is measured by stock market development S;  $\nu$  is the share of private sector output in GDP, corresponding to P in equation (2); and GIS is the share of government expenditure devoted to investment, which is measured by public capital stock G. The three methods of privatization, M, are denoted by Full, Mixed and Mass; and  $\varepsilon_{it}$  is an independent identically-distributed (i.i.d) error term.

Secondly, for the data used in my estimation, I looked at the time series properties using aggregate time series data of fifteen developing countries<sup>1</sup> for the period between 1980-2001 to analyze the relationship between the privatization program and the economic growth of this group of countries.

Both cross-section (OLS analysis) and panel-data analysis were used to explore both time series and cross-section variation in data to examine the relationship between economic growth and privatization programs in these developing countries. The test is for time-specific and country-specific fixed effects in each regression, and it estimated the performance of the following GDP function:

$$GDP_{it} = a_1 + a_2 K_{it} + a_3 L_{it} + a_4 IHC_{it} + a_7 G_{it} + a_6 Priv_{it} + \varepsilon_{it} \quad (7)$$

Based on the above equation (7), the three kinds of privatization (full, mass, and mixed) were combined into one term called (Priv) instead of the term  $[a_8 FULL_{it} + a_9 MASS_{it} + a_{10} MIXED_{it}]$  in equation (6) as an identification of the privatization variable. At the same time, I included both stock market capitalization (STOCKM), the share of private capital  $v$ , and Investment ( $INV_{it}$ ) in one variable ( $K_{it}$ ) which is a flow to reflect the effect of capital and investment on the economic growth.

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<sup>1</sup>These developing countries are: Saudi Arabia, Kuwait, Bahrain, Egypt, Jordan, Iran, Turkey, Morocco, Pakistan, India, Indonesia, Malaysia, Mexico, Venezuela, and Argentina.

Therefore, our model which is applicable for the unique group of countries is different from Bennett et.al, (2004) to match my empirical estimation. The privatization program impact in each country's economic growth was identified with the data at which the privatization policy was introduced. In each case, the dummy variable is zero in the years before the relevant policy of privatization was introduced and unity thereafter.

### 5.3 Model Specification of the Study

Based on the previous section of this chapter that represented the theoretical framework of Bennett et al (2004) , their empirical model will lead the model with the method of privatization, government investment, and indicators of private sector and capital market development. By exploring relationship between privatization method, private sector development, and capital market development, the basic model of Bennett of real GDP, as explained in details in the previous chapter, is obtained as following:

$$GDP_{it} = a_1 + a_2 INV_{it} + a_3 EMP_{it} + a_4 HK_{it} + a_5 STOCKM_{it} + a_6 V_{it} + a_7 GIS_{it} + a_8 FULL_{it} + a_9 MASS_{it} + a_{10} MIXED_{it} + \varepsilon_{it}$$

However, for our estimation, I looked at the time series properties using aggregate time series data of fifteen developing countries for the period between 1980-2001 to analyze the relationship between privatization program and the economic growth of these group of countries with our own adjustment that match the economic system of our sample (Saudi Arabia, Kuwait, Bahrain, Egypt, Jordan, Iran, Turkey, Morocco, Pakistan, India, Indonesia, Malaysia, Venezuela, Mexico, and Argentina ) and the availability of the data .For instance I unified the indicators of full ,mixed and mass privatization to be a qualitative independent variable (Dummy) instead of three

quantitative independent Variables ( $M_1, M_2, M_3$ ) and taking in our consideration that the economic theory and the theoretical framework implied that;

$$\partial(GDP) / \partial(priv) \geq 0, \partial(GDP) / \partial(HK) \geq 0, \partial(GDP) / \partial(K) \geq 0, \\ \partial(GDP) / \partial(L) \geq 0, \partial(GDP) / \partial(G) \geq 0,$$

where;

*priv* : denotes to the privatization as an independent variable measured by dummy variable.

*HK* : denotes to human capital measured by the two indicators of the World Bank database (the government expenditure on education and the number of students in the secondary school).

*K* : denotes to the change in the capital accumulation over time, and it reflects the investment in the economy.

*L* : denotes to the employment in the economy, and because of lack of the data for a group of countries (Arabic countries), I used the available of International Labor Organization (ILO) about the population in the work age (15:65) years to indicate the labor force in each economy.

*G* : denotes the government expenditure for the economy as a whole.

The empirical framework for this research which allows testing empirically the main hypothesis of the study that the privatization policy has a positive and significant impact on the economic growth for the developing countries individually using OLS regression and the whole group of countries as a unit using panel data methodology.

capital formation as an indicator for the capital, employment, and government expenditure. The gross domestic product (GDP) is used as an indicator for the economic growth.

#### 5.4 Regression Analysis

I specified the regression of this study by using the two tests of data analyses of fifteen developing countries to answer the question of whether there is a strong connection between privatization and economic growth. These two types are: the OLS regression model and the cross section-time series model (Panel data analysis) and I've tested them according to the following procedures.

##### 5.4.1 OLS regression model

The OLS regression tests each of 15 countries individually are conducted and the GDP function is:

$$GDP_i = \alpha_1 + \alpha_2(Priv_i) + \alpha_3(L_i) + \alpha_4(K_i) + \alpha_5(HK_i) + \alpha_6(G_i) + \varepsilon_i \dots\dots\dots(8)$$

where all variables are re-labeled for a more immediate interpretation of the estimates. The symbol *i* denotes country and its range is from (1:15); GDP is the level of gross domestic product, and I used the fixed price for 1995.  $Priv_i$  is the privatization indicator, and I present it as a dummy variable for this policy which is equal to zero for the period of the public sector (1980-1990) and equal to one for the period (1991-2001). I used the active population (age15+) as an indicator for the employment (*L*) in the economy of each country.

With respect to Human capital (HK), the World Bank database provides an indicator that is obtained by combining enrollment of the number of students in the secondary school and the government expenditure on education. (K) denotes the capital factor in the economy, and I used the capital formation as an indicator for it.

With respect to the government expenditure (G), I used the total government consumption as the indicator for government expenditure. All of these indicators are used as a series (1980-2001) for each country separately. I estimated fifteen equations for fifteen countries to test if privatization has a significant impact on the economic growth, and the following table reflects the estimation (using OLS) of these equations.

**Table 5.1** OLS results for the fifteen developing countries- individually

| <b>Variable</b><br><b>Country</b> | <b>Constant</b> | <b>Privatization</b>     | <b>HK</b>               | <b>L</b>               | <b>K</b>                | <b>G</b>                |
|-----------------------------------|-----------------|--------------------------|-------------------------|------------------------|-------------------------|-------------------------|
| Saudi Arabia                      | 9.68E+10        | 1.22E+10<br>(2.990941)*  | -3.49E+09<br>(-1.43296) | 5105979<br>(2.993775)  | 2.27E+08<br>(0.6584)    | -6.85E+08<br>(-3.0917)  |
| Kuwait                            | 2.77E+10        | 5.79E+09<br>(3.111356)   | 8.22E+08<br>(1.42217)   | 3418327<br>(0.9876)    | -2.07E+08<br>(-1.3149)  | -3.81E+08<br>(-3.67393) |
| Bahrain                           | -1.16E+09       | 2.29E+08<br>(1.58086)    | 3.41E+08<br>(0.84184)   | 1641526<br>(9.50212)   | 742707.4<br>(0.08829)   | -73469239<br>(-5.42000) |
| Egypt                             | -3.62E+10       | -5.94E+08<br>(-0.34792)  | 1.69E+08<br>(2.29191)   | 2151986<br>(215198)    | 4879125<br>(0.06301)    | 0.62111<br>(2.01287)    |
| Jordan                            | 0.003654        | 0.428696<br>(6.169120)   | -0.191429<br>(-9.78279) | 3.336856<br>(4.053858) | 0.000248<br>(0.01554)   | 0.022858<br>(2.319780)  |
| Iran                              | -1.53E+10       | 1.01E+10<br>(2.841694)   | -6.67E+09<br>(-3.25829) | 1980433<br>(2.84169)   | 5.07E+08<br>(2.19442)   | 2.52E+09<br>(3.89666)   |
| Turkey                            | -8.69E+10       | -1.33E+09<br>(-0.246647) | 9.87E+08<br>(1.228713)  | 3935555<br>(3.23977)   | 1.37E+09<br>(3.91516)   | 6.17E+08<br>(0.629802)  |
| Morocco                           | 2.05E+10        | 30803456<br>(0.01611)    | -5.46E+08<br>(-1.94396) | 3203774<br>(5.045364)  | 70747465<br>(0.32049)   | -1.20E+09<br>(-2.38057) |
| Pakistan                          | -4.48E+10       | 1.49E+09<br>(1.44624)    | 2.47E+09<br>(1.36415)   | 1138102<br>(15.9806)   | 8.21E+08<br>(2.56782)   | 41556562<br>(0.30493)   |
| India                             | -2.15E+11       | 6.18E+09<br>(0.625423)   | -7.58E+09<br>(-3.59808) | 1005898<br>(7.803773)  | -4.89E+08<br>(-0.35207) | 1.621168<br>(2.94224)   |

**Table 5.1- Continued:** OLS results for the fifteen developing countries- individually

| <b>Coefficients</b><br><b>Country</b> | <b>Constant</b> | <b>Privatization</b>   | <b>HK</b>               | <b>L</b>               | <b>K</b>               | <b>G</b>               |
|---------------------------------------|-----------------|------------------------|-------------------------|------------------------|------------------------|------------------------|
| Indonesia                             | -3.76E+11       | 5.30E+09<br>(0.668772) | 3.34E+10<br>(0.86993)   | 3559214<br>(9.19913)   | 2.15E+09<br>(3.16252)  | 1.144444<br>(1.06558)  |
| Malaysia                              | -9306.980       | 146.8675<br>(0.57835)  | 5.56E-05<br>(1.80289)   | 193.4546<br>(1.91375)  | -14.93651<br>(-1.1894) | 2.33E-07<br>(4.90890)  |
| Mexico                                | 8.07E+10        | 3.85E+10<br>(1.660200) | 3.18E+09<br>(2.80293)   | -1073577<br>(-0.56206) | 2.60E+08<br>(0.27887)  | 1.192178<br>(6.715581) |
| Argentina                             | -3.27E+11       | 3.93E+09<br>(0.428239) | 1.23E+08<br>(0.027069)  | 18639899<br>(12.85173) | 7.13E+09<br>(8.01905)  | 0.384954<br>(0.38214)  |
| Venezuela                             | 1.48E+10        | 6.60E+09<br>(4.201298) | -1.93E+08<br>(-1.71073) | 3790618<br>(4.80591)   | 5.08E+08<br>(6.41048)  | .059318<br>(0.25337)   |

\* The figures in parenthesis represent t-statistics

#### 5.4.1.1 Analysis of OLS Results

A) Looking at the Saudi Arabia estimates in Table 5.1, I found that privatization has a significant impact on the GDP level, which is reflected in the increase in economic growth at the 5% significance level. The difference between the GDP in case of applying privatization and the GDP level in case of not applying privatization is more than 12 billion dollars, and the policy implication of this result is that a privatization policy is necessary for economic growth in Saudi Arabia. On the other hand, the estimation showed that human capital (HK) has no significant impact on the GDP. The intuition behind that is that government expenditure on education is not productive in the current years and the social benefit will be realized only in the long run.

With respect to labor (L), for the Saudi economy, it seems that this is playing an important role in the economic growth. It has had a significant positive impact on economic growth, and increasing the labor input by one million units has led to an increase in the GDP level by more than 51 million dollars. This outcome is also consistent with the theoretical framework of the research.

With respect to capital (K) in the Saudi economy, it has not had a significant impact on the GDP. The intuition behind that is that the marginal productivity of capital is low relative to the productivity of labor. It seems that the Saudi economy has an abundance of capital due to massive importing of new machines and various kinds of technologies without adopting strategies to effectively manage this capital investment.

On the other hand, the government expenditure in general has had a significant negative impact on economic growth, and the intuition behind that is most government expenditure deals with development projects which have impact on the economy in the long run but not in the short run. As a result, this expenditure can be regarded as a burden on the economy for the last twenty years.

B) Looking at Kuwait estimates, I found that privatization has had a significant positive impact on the GDP level, reflecting economic growth at the 5% significance level. The difference between applying privatization and not applying privatization on the GDP level is more than five billion dollars with the policy implication that privatization is an appropriate policy for the next decades in the Kuwaiti economy.

On the other hand, the estimation showed that HK did not have a significant impact on the GDP. The intuition behind this is that the government expenditure on education is not productive in the current years and the social benefit might appear in the long run.

With respect to labor for the Kuwaiti economy, it seems that this is also playing an important role in the economic growth because it has a significant positive impact on the economic growth. Therefore, increasing labor in the economy by one million units leads to increasing the GDP level by more than 3.4 million dollars, which is consistent with the theoretical framework of the research.

Capital in the Kuwaiti economy has a negative impact on the GDP and the intuition behind that is the marginal productivity of capital is extremely low relative to the productivity of labor. In addition, the war of 1990 destroyed most of the capital of this country.

On the other hand, the government expenditure in general has a significant negative impact on the economic growth and the intuition behind that is most of government expenditure is on development the military and infrastructures projects, so it has been a burden on the economy for the last twenty years. The policy implication of this result is that carefully planning the government expenditure is very important.

C) Looking at Bahrain estimates, I found that privatization has not had an impact on the GDP level that reflects economic growth at the 5% significance level. Also, the estimation showed that HK does not have a significant impact on the GDP. The intuition behind that is the government expenditure on education is not productive in the current years and the social benefit might appear in the long run.

With respect to labor, for Bahrain economy, it seems that it is playing an important role in the economic growth because it has a significant positive impact on the economic growth, so increasing the labor in Bahrain economy by one million unit leads to increasing the level of GDP by more than 1.6 million dollars a year, which is also consistent with the theoretical framework of the research. The policy implication for this result is that enhancing immigration to Bahrain should continue for a higher economic growth rate. Capital in the Bahrain economy has not had a significant impact on the GDP, and the intuition behind that is the marginal productivity of capital is low relative to the productivity of labor. It seems that the Bahrain economy has an abundance of capital because of massive importing of new machines and different kinds of technologies without adapting strategy in this country. On the other hand, the government expenditure in general does have a significant negative impact on economic growth, and the intuition behind this is that most government expenditure is spent on infrastructure projects, so it

has been a burden on the economy for the last twenty years. Therefore, the policy implication for this result is that reviewing governmental expenditure programs every year and applying a cost benefit analysis for them is necessary.

D) Looking at Egypt's estimates, I found that privatization has not impacted on the GDP level at the 5% significance level. This result is in conflict with the logic of the effect of a privatization path on economic growth, which is that privatization cause an increase in FDI, which leads to increase the economic growth. However, according to the IMF database, the external debt of Egypt reached 31.5 billion dollars, and Egypt rescheduled the debt twice in 1990s which negatively affected the FDI. This negative condition overshadowed the benefit of privatization on FDI and economic growth. The policy implication of this result is that overall economic conditions complement or conflict with one another , so good economic conditions such as external creditworthiness ,lower inflation rate and stable monetary and fiscal policy complement the privatization policy and vice versa . Another reason for the Egypt result might be a decrease in demand for public enterprises offered for privatization, which decreased the productivity in the Egyptian economy as a whole. On the other hand, the estimation showed that HK had positive and significance impact on the GDP. The intuition behind this is that the government expenditure on education became productive because Egypt increased the expenditure on education a long time ago, so the social benefit has become tangible in the economy. The implication for this finding is that the government should continue to increase expenditure on education at different level, primary and secondary school. With respect to labor, it seems that it is playing an important role because it has a significant positive impact on the economic growth, which is also consistent with the theoretical

framework of the research. Capital in the Egyptian economy has not had a significant impact on the GDP. The intuition behind this is that the marginal productivity of capital is low relative to the productivity of labor, and it seems that the Egyptian economy has abundance of capital through huge importing of new machines and different kinds of technologies without adapting strategy in this country. On the other hand, the government expenditure in general does have a significant positive impact on economic growth, and this might be because of the tight restriction imposed by the IMF on the Egyptian government expenditure.

E) Looking at Jordan's estimates, I found that privatization has had a positive and significant impact on the GDP level that reflects economic growth at the 5% significance level. The difference between GDP level with privatization and without privatization is almost 0.4286, because the Jordan equation is in the log. The policy implication of this result is that a privatization policy is appropriate to promote growth in the Jordan economy. On the other hand, the estimation showed that HK has a negative and significant impact on the GDP. With respect to labor for Jordan's economy, it seems that it is playing an important role in economic growth because it has a significant positive impact on the economic growth and this is also consistent with the theoretical framework of the research. Capital in the Jordanian economy has a positive and a significant impact on the GDP, and the intuition behind this is that the marginal productivity of capital is lower relative to labor productivity, and it seems that the Jordanian economy has a good balance between capital and labor in the economy. On the other hand, the government expenditures in general do have a significant positive impact on the economic growth and the intuition behind this is that most of government expenditure was spent on

development projects a long time ago and has become productive in current years. At the same time, the Jordanian government as a relatively democratic system uses the government budget rationally.

F) Looking at Iran estimates, I found that privatization has had a positive and significant impact on the GDP level that reflects economic growth at the 5% significance level. The difference between the GDP level with privatization and without privatization is more than ten billion dollars. Therefore, the policy implication of this result for Iranian Economy is that applying a privatization policy is necessary along with a stable economic and political condition to insure continued economic growth. On the other hand, the estimation showed that HK had a negative impact on the GDP. The intuition behind this is that government expenditure on education and enrollment of young people in school is very low because of 10 years of war with Iraq with large number of students were drafted into the military instead of attending school. With respect to labor, it seems that it is playing an important role in economic growth because it has a significant positive impact on the economic growth. The result shows that increasing the labor input in the economy by one million has led to an increase in the GDP level by 1.98 million dollars, which is also consistent with the theoretical framework of the research. Capital in the Iranian economy has a positive and significant impact on the GDP, and the intuition behind this is that the marginal productivity of capital is high. It seems that the Iranian economy has a balance between capital and labor in the economy. In addition, government expenditure in general has had a significant positive impact on the economic growth and increase government expenditure by one million dollars which leads to an increase in the GDP level by more than two billion dollars. The intuition behind this is that that government

spending on infrastructure projects a long time ago became productive in current years. At the same time, the Iranian government is using the government budget more rationally.

G) Looking at Turkey estimates, I found that privatization has not had a significant impact on the GDP level that reflects economic growth at the 5% significance level. According to the IMF database, the inflation rate in 1992 in Turkey was about 70% (using the consumer price index), which negatively affected the FDI to Turkey and dominated the benefit of privatization on the FDI and economic growth. The policy implication of this result is that Turkish economy needs both a more stable macroeconomic foundation and a privatization policy to complement one another, similar to the Egypt case. Another factor influencing this result might be the decreasing demand for public enterprises offered for privatization. In addition, decreasing productivity in the Turkish economy as a whole as a consequence of natural crises such as earthquake occurring in Turkey during the last decade may have played a role in the results. On the other hand, the estimation showed that HK has not had a significant impact on the GDP. For the Turkish economy, it seems that labor is playing an important role in the economic growth because it has had a significant positive impact on economic growth, which is consistent with the theoretical framework of the research. Capital in the Turkish economy has a positive and significant impact on the GDP, and the intuition behind this is that the marginal productivity of capital is as high as the marginal productivity of labor. It seems that the Turkish economy has a balance between capital share and labor share in the production function. On the other hand, the government expenditure in general has not

had a significant impact on economic growth and this might be because of the increase in government expenditure for the natural crises such as earthquake in the last decade.

H) Looking at Moroccan estimates, I found that privatization has not had a significant impact on the GDP level that reflects economic growth at the 5% significance level. This might be due to decreasing demand for public enterprises offered for privatization coupled with a decrease in productivity in the public sector, which became a burden on the Morocco economy. The estimation showed that HK has not had a significant impact on the GDP either, and the intuition behind this is that government expenditure on education has become less productive. With respect to labor, it seems that it is playing an important role in the economic growth because it has a significant positive impact, which is consistent with the theoretical framework of the research. Capital in the Moroccan economy has a positive but insignificant impact on the GDP, and the intuition behind this is that the marginal productivity of capital is low relative to the productivity of labor. It seems that the Moroccan economy has an inefficient policy of capital because they have imported large numbers of new machines and various kinds of technologies without adapting the strategies to effectively manage this source. In regards to government expenditure in general, it shows a negative impact on economic growth, and this might be due to unwise expenditures of the dominant group such as royal family or political group.

I) Looking at Pakistan estimates, I found that privatization has not had a significant impact on the GDP level that reflects economic growth at the 5% significance level. The estimation also showed that HK has not had a significant impact on the GDP, and the intuition behind this is that government expenditure on education is not

productive because the attendance of students at school is decreasing because of the war with India on the Kashmir borders. With respect to labor, it seems that it is playing an important role in economic growth because it has a significant positive impact on the economic growth, which is consistent with the theoretical framework of the research. Capital in the Pakistani economy has a positive and a significant impact on the GDP, and the intuition behind that is the marginal productivity of capital is high. The Pakistani economy has a balance between capital and labor in the economy. On the other hand, the government expenditure in general has not had a significant impact on economic growth, possibly due to the fact that most government spending is on development projects such as infrastructure projects and the war, so it is a burden on the economic growth and does not support it.

J) Looking at India's estimates, I found that privatization has not had a significant impact on the GDP level that reflects economic growth at the 5% significance level. The policy implication of this result is that privatization should be undertaken with a complementing stable economic policy. The estimation also showed that HK has had a significant negative impact on the GDP, and the intuition behind this is that government expenditure on education is a burden on the government budget in India. With respect to labor, it seems that it is playing an important role in the economic growth because it has had a significant positive impact on economic growth, which is consistent with the theoretical framework of the research. Capital in the Indian economy has not had a significant impact on the GDP. On the other hand, the government expenditure has had a positive and a significant impact on the economic growth, and the intuition behind this is

that most Indian government expenditure has been handled rationally and efficiently, something which the government should continue to take care in the future.

K) Looking at Indonesia estimates, I found that privatization has not had a significant impact on the GDP level that reflects economic growth at the 5% significance level. The estimation also showed that HK has not a significant impact on the GDP at the 5 % significance level. On the other hand, labor is playing an important role in the economic growth in the Indonesian economy at the 5 % significance level, which is consistent with the theoretical framework of the research. Capital in the Indonesian economy has had a positive and a significant impact on the GDP. The intuition behind this is that the marginal productivity of capital is high, and it seems that the Indonesian economy has a balance between capital and labor in the economy. On the other hand, the government expenditure in general has not had a significant impact on economic growth and the intuition behind this is that most government spending has been on development projects and natural disasters like earthquakes and flooding, which have occurred often in Indonesia over the last twenty years. The policy implication of this result is that the factors of production in Indonesia are necessary for higher economic growth.

L) Looking at Malaysia's estimates, I found that privatization has not had a significant impact on the GDP level that reflects economic growth at the 5% significance level. On the other hand, the estimation showed that HK has had a positive and significant impact at the 5 % significance level on the GDP. The intuition behind this is that government expenditure on education has become productive during the study period and the government should continue to increase its expenditure on education. With respect to labor, it seems that it is playing an important role in the economic growth

because it has a significant positive impact at the 5 % significance level, which is also consistent with the theoretical framework of the research. Capital in the Malaysian economy has not had a significant impact on the GDP and the intuition behind this is that the marginal productivity of capital is low relative to the productivity of labor. The Malaysian economy has an abundance of capital through massive importing of new machines and various kinds of technologies without adapting effective strategies to deal with them. On the other hand, the government expenditure in general has had a positive and significant impact on the economic growth. This is partly because the Malaysian government has begun to spend efficiently and partly because of the export-led growth strategy that the Malaysian government is following.

M) Looking at Mexico's estimates, I found that privatization has not had a significant impact on the GDP level at the 5% significance level. On the other hand, the estimation showed that HK has had positive and significant impacts at the 5% significance level on the GDP, and increasing the government expenditure by one million dollars on education leads to increasing the GDP level by more than three million dollars. The intuition behind this is that the government expenditure on education became more productive during the study period. With respect to labor, for Mexico's economy, it seems that it does not play an important role in economic growth because of the huge migration from Mexico to the USA. Capital in the Mexican economy has had a positive but insignificant impact on the GDP at the 5% significant level but it is still more productive than labor. On the other hand, the government expenditure in general does have a positive and significant impact on economic growth, and this is because the

Mexican government has begun instituting restrictions on the international institutions and the lending banks from all over the world.

N) Looking at Argentina's estimates, I found that privatization, HK and Government expenditure have not had a significant impact on the GDP at the 5% significance level. With respect to labor, for Argentina's economy, it seems that it does play an important role in the economic growth, and increasing the labor inputs by one million unit leads to increasing the GDP level by more than 18 million dollars. Capital in the Argentinean economy has a positive and significant impact on the GDP at the 5% significance level. So there is a balance between the labor share and capital share in the production function in the Argentinean economy.

O) Looking at Venezuela's estimates, I found that privatization has had a positive and significant impact on the GDP level that reflects economic growth at the 5% significance level. The difference between the GDP with and without privatization is \$ 6.6 billion. Therefore, the policy implication for Venezuela is that privatization is necessary for higher economic growth. On the other hand, the estimation showed that HK has not had a significant impact at the 5% significance level on the GDP. The intuition behind this is that government expenditure on education is not productive during the study period. With respect to labor, it seems that it is playing an important role because it has a positive impact at the 5% significance level on economic growth. Therefore, increasing the labor input in the economy by one million units leads to increasing the GDP level by more than 3.7 million dollars, which is consistent with the theoretical framework of the research. Capital in the Venezuelan economy has a positive and significant impact on the GDP at the 5% significance level, and increasing the investment

in capital by one million dollars leads to an increase in the GDP level by more than 0.5 billion dollars. The intuition behind this is that the marginal productivity of capital is as high as the productivity of labor, and it seems that the Venezuelan economy is well balanced between capital and labor. On the other hand, the government expenditure in general does not have a significant impact on the economic growth. This is because the Venezuelan government started its development strategy after 1970, and most of the government expenditures have gone to development projects which have long run economic goals.

#### 5. 4.2 Cross Section-Time Series Model (Panel Data Analysis)

This type of data analysis tests the whole group of countries as a unit and the GDP function is :

$$GDP_{it} = \alpha_1 + \alpha_2(Priv_{it}) + \alpha_3(L_{it}) + \alpha_4(K_{it}) + \alpha_5(HK_{it}) + \alpha_6(G_{it}) + \varepsilon_{it} \dots\dots\dots(9)$$

where all variables are re-labeled for a more immediate interpretation of the estimates. *i* denotes country and its range is from (1:15), and *t* denotes the time and the range of the study period (1980-2001). GDP is the logarithm of the first difference of gross domestic product and I used the 1995 price as the base price; Priv is the privatization indicator and it takes as a dummy variable for this policy which is equal to zero for the period of the public sector (1980-1990) and equal to one for the period (1991-2001). I used the active population (age15+) as an indicator for the employment (L) in the log form in the economy of each country .With respect to human capital (HK) denotes the log of government expenditure on education. The World Bank database provides an indicator that was obtained by combining the enrollment of students in secondary schools and the

government expenditure on education. (K) denotes the first difference of capital formation as an indicator for the capital factor. With respect to the government expenditure (G), I used the total government consumption in log form as an indicator for G, and all of these indicators are used as a series (1980-2001) for the pooled fifteen countries (Panel).

I estimated four panel types for fifteen cross sections over 22 years to test if privatization has a significant impact on economic growth, and Table 5.2 reflects the estimation results using the four types of Panel data analysis which are:

- (1) First OLS Panel or None Model: this model measures the impact of the independent variables without including the intercept.
- (2) Common Model: in this model a constant term is included in the regression, and this might have an effect on the estimation.
- (3) Fixed Model: this model does not include a constant term for the study group together, but it includes a constant for each country individually, and this gives results close to the individual countries' OLS.
- (4) Random Effect Model: this model includes the constant coefficient and at the same it includes a random effect for each country individually.

**Table 5.2:** Results of estimation four panel analysis- whole group of countries as a unit

| Panel type<br>Coefficients             | None*                       | Common<br>Model**        | Fixed<br>Effect Model    | Random Effect<br>Model   |
|----------------------------------------|-----------------------------|--------------------------|--------------------------|--------------------------|
| <b>Constant</b>                        |                             | 0.091494                 | <b>IV***</b>             | 0.025003+(V)****         |
| <b>Privatization</b>                   | 0.013936<br>(2.301549)***** | 0.015372<br>(2.503923)   | 0.015824<br>(1.531662)   | 0.012530<br>(2.046719)   |
| <b>HK</b>                              | -0.00098<br>(-0.15839)      | -0.001195<br>(-0.19338)  | 0.011596<br>(0.699354)   | -0.002963<br>(-0.442569) |
| <b>L</b>                               | 0.001421<br>(0.85494)       | 0.002205<br>(1.254299)   | -0.023217<br>(-0.887076) | 0.001007<br>(0.620407)   |
| <b>K</b>                               | 0.064754<br>(3.98)          | 0.066028<br>(4.024817)   | 0.065378<br>(3.970864)   | 0.064688<br>(3.965907)   |
| <b>G</b>                               | 0.000590<br>(0.648027)      | -0.003759<br>(-1.125334) | 0.004879<br>(0.545892)   | -0.001391<br>(-1.272415) |
| <b>R squared</b>                       | 0.070004                    | 0.07575                  | 0.128335                 | 0.086827                 |
| <b>Probability of<br/>F-statistics</b> | 0.000216                    | 0.000251                 | 0.002995                 | NA                       |

\* None; means that the OLS estimates for the panel are without intercept.

\*\* Commons; means that an intercept is included in the panel OLS regression.

\*\*\* IV; doesn't include a common intercept.

\*\*\*\* V; It includes a common intercept

\*\*\*\*\* the figures in the parenthesis are the t-statistics. And if it is greater than 1.96, it will be significant at 5 % significant level.

#### 5.4.2.1 Analysis of Four Panel Regression Results

By analyzing the results of the four panel data models, I found that privatization has a positive and a significant impact at 5% significance level and applying the privatization policy leads to an increase in economic growth from around 1.25 to 1.5 percent using the four models. This is consistent with study hypothesis because privatization has a great impact on the productivity of all factors of production in the economy and it leads to improving the investment climate in the developing countries. As a result, the foreign direct investment (FDI) will increase and the economic growth will improve. These results are consistent with the effect of privatization policy on the economic growth of five countries in the study which are Saudi Arabia, Kuwait, Jordan, Iran and Venezuela (OLS regression results). The policy implication of the pooled models is that privatization policy is a necessary condition for the economic growth of the pooled countries, and the governments of these economies should adopt macroeconomic policies that support a privatization program.

With respect to human capital, the none, common, random effect and fixed effect do not have a significant impact on the economic growth in the short run for the all of the countries on average, and this reflects the idea that government expenditures on education in the study group are not productive and do not have an immediate positive impact on the economic growth in the short run.

Also, labor does not have a significant impact on economic growth for the pooled countries, and increasing capital inputs by 1% leads to increasing the economic growth of the pooled economies by 6 %, which is consistent with the results of the Solow model.

The none, common and random effect models results seem to indicate that capital is more productive relative to labor in the pooled countries. With respect to government expenditure, it does not have a significant impact on economic growth for this group of countries. The fixed effect model results also showed an insignificant impact of the labor factor on economic growth. The intuition behind this is that the majority of labor in these developing countries consists of unskilled workers. On the other hand, capital seems to be more productive relative to labor in the pooled regression, which is a reasonable result for developing countries as a whole.

With respect to government expenditure, two regressions (none and fixed effect) showed that it does not have a significant impact on economic growth for this group of countries. The common and random effect results showed also government expenditure to have an insignificant impact on economic growth for this group of countries.

The F-test supports the model as a whole at the 1 % significance level, and taking the first difference and the log of the variables overcomes the problem of heteroscedasticity and the nonstationarity of the data if it exists. Also the R-squared is low, because of the nature of the panel data and the cross section, relative to time series data.

The question becomes, which of these models is the best? We used the statistical criterion, the F-test, which sets that the probability at which we reject the null hypothesis at 0.00025 for the common pooled regression model. This means that the confidence level of the correct model is more than 99.99 %, which is the highest level in the four models. At the same time, the determination coefficient of this model is also acceptable, but it is not used in the literature as an indicator in the best model.

Table (5.3) summarizes the results of the four panel data analysis models for economic effects of variables (Priv, HK, L, K, and G) on GDP.

**Table 5.3: Panel Data Analysis Models Results**

| <b>Model<br/>Variable</b> | <b>None</b> | <b>Common</b> | <b>Fixed effect</b> | <b>Random effect</b> |
|---------------------------|-------------|---------------|---------------------|----------------------|
| <b>Privatization</b>      | +           | +             | +                   | +                    |
| <b>Human Capital</b>      | –           | –             | +                   | –                    |
| <b>Labor</b>              | +           | +             | –                   | +                    |
| <b>Capital</b>            | +           | +             | +                   | +                    |
| <b>Gov.Expenditure</b>    | +           | –             | +                   | –                    |

## 5.5 Conclusion

In developing countries privatization, if implemented appropriately, may play an important role in generating growth. Using data available from World Bank database and the International Labor Organization database, the impact of privatization on economic growth was investigated. The OLS regression analysis suggests that the privatization policy affected positively the economic growth in the following countries: Saudi Arabia, Kuwait, Bahrain, Jordan, Morocco, Iran, Pakistan, India, Indonesia, Malaysia, Argentina, Mexico, and Venezuela, while it affected negatively but insignificantly on the economic growth in Egypt and Turkey. Logically, privatization has a positive impact on FDI, which leads to an increase economic growth, but in the case of Egypt, the situation is different. While Egypt's external debt amounted to around \$ 21 billion in 1980 and increased to \$ 31.9 billion in 1998 (i.e., it is increased by more than 52%), Egyptian government rescheduled the debt on more than one occasion. This may have affected Egypt's creditworthiness with associated negative effects on FDI. So, the impact of privatization on Egypt's economic growth is overshadowed by the negative impact of the debt crisis in 1990s. With respect to Turkey, its economy suffered from high inflation (70%) during the 1990s, according to the IMF database, which may have had a negative impact on FDI, thereby negating the benefits of privatization on economic growth.

At the same time, the panel data approach also showed that privatization has a positive and significant impact on economic growth, and that the other factors vary with respect to their effects on GDP, with impacts of variables differing from one model to

another. So the policy implication is that applying a privatization policy is important for the economic growth of developing countries in general.

With respect to the other factors included in the analysis, I found an impact of labor, capital, human capital and government expenditure on the economic growth of these countries but these impacts are different from one country to another. The results of this study are consistent with these of Bennett et.al, (2004), which used different data sets for different sample countries, and tested for alternative methods of privatization.

## **Chapter SIX**

### **Summary, Conclusion and Suggestions**

#### **6.1 Summary and Conclusion**

The relationship between privatization, as an economic development policy, and economic growth is a debated issue. Some economists argue that the privatization policy does not have any effect on real variables such a GDP level that reflects economic growth (see Gershelnkron, 1962; Naqvi and Kemal, 1991; Shirley and Walsh, 2000; Foster, 2000). On the other hand, a large number of empirical researchers have found evidence of a relationship between privatization and economic growth (see Bishop and Kay, 1988; Starr, 1989; Vining and Boardman, 1992; Galal et al, 1994; Megginson et al, 1994; Frydman et al, 1997; Mohan, 2002; Khan, 2003).

The purpose of this study is to explore the hypothesis that in developing countries, privatization if implemented appropriately may play an important role in generating economic growth. In this study, data available from the World Bank database, IMF statistics, and the International Labor Organization database for fifteen developing economies, namely, Argentina, Bahrain, Egypt, India, Indonesia, Iran, Jordan, Kuwait, Malaysia, Mexico, Morocco, Pakistan, Saudi Arabia, Turkey, and Venezuela, during the period from 1980-2001 were used. Using that data, OLS estimation, and panel data analyses including four panel types which are: None, Common, Fixed effect, and Random effect, the impact of privatization on economic growth in the case of these countries was investigated. Other developing countries were not included due to the lack of data availability during the required period.

The results of the OLS regression reveal that in the cases of Saudi Arabia, Kuwait, Iran, Venezuela, Jordan, privatization has had a significant positive impact at 5% significance level on the GDP level that reflects economic growth. In the other countries in the study, it appears that privatization should be complemented by a high level of stable macroeconomic policies that support this policy.

The result of the four panel tests reveal that in all but the fixed effect model privatization has a positive and a significant impact at 5% significance level and the best model according to F-probability level is the common pooled regression model, which supports the study hypothesis. This is because privatization has a great impact on the productivity of all factors of production in the economy, and it leads to an improvement in the investment climate in developing countries. Therefore, foreign direct investment (FDI) will increase and economic growth will improve.

The analysis shows that the use of privatization policy positively affected economic growth in the pooled countries together using the common pooled regression model. With respect to the countries for which privatization has not had a significant impact on the GDP level, these countries should work in a complementary economic environment that strongly support the privatization policy. In other words, they should strive to build strong confidence in the national economy for foreign investors, decrease the level of inflation, decrease the budget deficit to an appropriate percentage level of GDP, decrease the level of corruption in the economy, and institute a stable macroeconomic policy

With respect to other factors included in the analysis, the results show an impact of each of them (Labor (L), Capital (K), Human Capital (HK), and Government

Expenditure (G)) on the economic growth in the sample countries, and this impact varies from one country to another.

The Panel data approach reveals that while privatization has a positive and significant impact on economic growth, the other factors have different effects from one model to another. This result is consistent with Bennett et. al, (2004), who used different data sets for different sample countries, and tested for alternative methods of privatization.

## **6.2 Implications and Suggestions**

The empirical analysis shows that privatization plays an important role in economic growth using panel regression analysis and applying this policy leads to an increase in economic growth of around 1.3 % and has played an important role for the five countries of Saudi Arabia, Kuwait, Iran, Venezuela, Jordan using OLS regression. The fact that privatization policy has had a significant impact on economic growth seems due in part to the fact that most of the chosen countries have implemented privatization efficiently. For best results, each country should follow a unique method in privatization which is both appropriate for its economic conditions and acceptable for its society. The analysis has significant implications for policy makers of countries that have yet to undertake large-scale privatization programs, for example Egypt and Turkey. They should use the revenue of privatization efficiently, evaluating the companies' assets, and decreasing corruption in privatizing the public sector to maximize the benefits of privatization.

In addition, in the case of countries for which privatization has not had a significant impact, it is important to concentrate on complementary economic conditions that will support privatization. It seems important to look at the effect of other factors on economic growth. These factors need to be used efficiently at the micro and macro level, especially government expenditure on education and the society as a whole. They should also learn from mistakes made in other countries that spent their revenues inefficiently on luxurious goods.

With respect to Saudi Arabia, Kuwait, Bahrain, Iran, Argentina, Mexico, Pakistan, Indonesia, Malaysia, Jordan and Venezuela, it is recommended that a privatization policy is necessary and that allocating government revenue from privatization efficiently is required for it to have a continuous positive impact on economic growth.

At the same time, capital, labor, and government expenditure should be used efficiently and expenditures on education should be evaluated according to social indicators periodically because of its long term social benefits.

Due to the lack of data availability for the range of the required period, 1980-2001, this study tested data from only fifteen developing countries by using OLS regression and Panel data analysis to determine the link between privatization and economic growth at the macroeconomic level i.e., the country level. A suggestion with this issue for developing economies is to determine the relationship between privatization and economic growth at the microeconomic level by using data from individual firms involved to study the role of privatized firms on GDP and employment with their contribution to economic growth.

This study found that privatization programs in developing countries with policies which have been imposed by the IMF are more likely to succeed because of these supporting macroeconomic policies adopted by the governments. So it is important for a government to analyze policy issues, make regulation changes, choose among alternative privatization methods, and complete deals transparently.

Another suggestion is that a privatization policy should be a part of public policies associated with economic reform, liberalization, and improved competition. This will help to ensure foreign direct investment (FDI), which is important in upgrading productivity and increasing employment opportunities. A sound privatization policy will also help to generate new investment opportunities and create new tools for investment and economic restructuring, which are vital for the growth and diversification of a national economy.

Some experiments have shown that the benefits from privatization on economic development are most sustainable where competition is free, the economy stable, and the regulatory sector strong (WB, 1995). This leads to the recommendation that the process of transferring property from public to private ownership and/or transferring management from the government to the private sector to improve the national economy, be done under conditions which promote competition and discourage monopolies.

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## **Appendix**

### **Sources of Data**

Data were obtained from four sources:

- 1) World Development Indicators, various years, CD-ROM, World Bank.
- 2) World Bank Reports, MENA Countries Database, 1980-2001.
- 3) International Monetary Fund (IMF), various years, IMF country reports.
- 4) International Labor Organization Database, various years.
- 5) European Bank for Reconstruction and Development (EBRD), various years.
- 6) OECD, Main Economic Indicator (MEI), 2000-2003.
- 7) Saudi Arabia Monetary Agency (SAMA).
- 8) Ministry of Economy and Planning (MEP), Saudi Arabia, various years.

The data sources used in this study to test the relationship between privatization and economic growth describe 15 developing economies and provide information for 1980-2001 on macroeconomic variables, including GDP (which is converted into US dollars using the exchange rate), employment rate, fixed capital investment, and government sector shares in GDP.

## Study Data and Estimation Results

The following tables provide the collective Study data with estimation results for each country of the fifteen developing countries.

**Table A.1:** Data analysis for Saudi Arabia

| Year | GDP_SA   | GDP95_SA | ED_SA | GE_SA    | GC_SA    | K_SA     | SCH_SA   | EM_SA    | Privt_SA |
|------|----------|----------|-------|----------|----------|----------|----------|----------|----------|
| 1980 | 1.56E+11 | 1.08E+11 | 2.6   | 15.73515 | 2.46E+10 | 21.6687  | 29.45574 | 5347.062 | 0        |
| 1981 | 1.55E+11 | 1.1E+11  | 3     | 24.49421 | 3.8E+10  | 19.53709 | 33.6772  | 5710.969 | 0        |
| 1982 | 1.21E+11 | 9.79E+10 | 4.6   | 30.55    | 3.7E+10  | 27.18853 | 35.7326  | 6109.479 | 0        |
| 1983 | 1.08E+11 | 9.87E+10 | 4.9   | 34.02164 | 3.66E+10 | 26.34817 | 38.9293  | 6534.625 | 0        |
| 1984 | 9.97E+10 | 9.6E+10  | 5.2   | 34.44964 | 3.44E+10 | 33.03842 | 39.0345  | 6975.257 | 0        |
| 1985 | 8.67E+10 | 9.21E+10 | 5.5   | 36.43615 | 3.16E+10 | 20.92458 | 40.07856 | 7421.626 | 0        |
| 1986 | 7.32E+10 | 9.72E+10 | 5.6   | 39.23664 | 2.87E+10 | 19.85533 | 40.8763  | 7874.434 | 0        |
| 1987 | 7.36E+10 | 9.59E+10 | 5.6   | 39.10177 | 2.88E+10 | 18.99816 | 42.231   | 8331.425 | 0        |
| 1988 | 7.61E+10 | 1.03E+11 | 5.6   | 34.16401 | 2.6E+10  | 20.91918 | 43.0563  | 8776.658 | 0        |
| 1989 | 8.3E+10  | 1.03E+11 | 5.6   | 31.06721 | 2.58E+10 | 21.60908 | 43.8773  | 9190.225 | 0        |
| 1990 | 1.05E+11 | 1.12E+11 | 5.7   | 30.64619 | 3.21E+10 | 19.52856 | 43.95853 | 9559.481 | 1        |
| 1991 | 1.18E+11 | 1.24E+11 | 5.1   | 37.32694 | 4.41E+10 | 21.22885 | 45.37129 | 9876.217 | 1        |
| 1992 | 1.23E+11 | 1.27E+11 | 6.1   | 32.28652 | 3.98E+10 | 22.21283 | 48.38704 | 10148.23 | 1        |
| 1993 | 1.19E+11 | 1.27E+11 | 6.5   | 28.78965 | 3.41E+10 | 24.24748 | 51.97347 | 10398.98 | 1        |
| 1994 | 1.2E+11  | 1.27E+11 | 6     | 26.56712 | 3.19E+10 | 20.08311 | 55.20706 | 10661.7  | 1        |
| 1995 | 1.28E+11 | 1.28E+11 | 5.3   | 25.66325 | 3.28E+10 | 20.71026 | 57.87849 | 10960.76 | 1        |
| 1996 | 1.58E+11 | 1.3E+11  | 6.2   | 24.50783 | 3.87E+10 | 18.09733 | 60.84222 | 11304.12 | 1        |
| 1997 | 1.65E+11 | 1.32E+11 | 7.2   | 26.18547 | 4.32E+10 | 18.3007  | 65.3376  | 11686.01 | 1        |
| 1998 | 1.46E+11 | 1.34E+11 | 7.2   | 28.38928 | 4.14E+10 | 22.4202  | 67.74157 | 12100.27 | 1        |
| 1999 | 1.61E+11 | 1.33E+11 | 7.2   | 25.52892 | 4.11E+10 | 21.14349 | 68.47658 | 12535.5  | 1        |
| 2000 | 1.89E+11 | 1.4E+11  | 7.2   | 26.02015 | 4.91E+10 | 18.70791 | 67.8066  | 12983.1  | 1        |
| 2001 | 1.86E+11 | 1.42E+11 | 7.2   | 27.0189  | 5.04E+10 | 18.86455 | 69.6543  | 13442.5  | 1        |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.2:** Data analysis for Kuwait

| Year | GDP_KW   | GDP95_KW    | ED_KW | GE_KW    | GC_KW    | K_KW     | SCH_KW   | EM_KW    | Privt_KW |
|------|----------|-------------|-------|----------|----------|----------|----------|----------|----------|
| 1980 | 2.86E+10 | 21581710862 | 2.3   | 11.17298 | 3.2E+09  | 13.92068 | 80.12141 | 821.639  | 0        |
| 1981 | 2.51E+10 | 17474775553 | 2.3   | 14.21741 | 3.56E+09 | 16.63088 | 85.26321 | 873.593  | 0        |
| 1982 | 2.16E+10 | 15322784686 | 3.7   | 19.27145 | 4.16E+09 | 25.19357 | 86.2563  | 922.673  | 0        |
| 1983 | 2.09E+10 | 16918528178 | 3.9   | 21.15925 | 4.42E+09 | 24.78598 | 88.2564  | 971.43   | 0        |
| 1984 | 2.17E+10 | 17805043102 | 4     | 20.9379  | 4.54E+09 | 21.02413 | 89.2563  | 1023.721 | 0        |
| 1985 | 2.14E+10 | 17046954780 | 4.3   | 22.40176 | 4.8E+09  | 18.85428 | 90.84776 | 1081.577 | 0        |
| 1986 | 1.79E+10 | 18507066034 | 3.9   | 26.96985 | 4.83E+09 | 22.10998 | 95.2653  | 1148.595 | 0        |
| 1987 | 2.24E+10 | 20014013921 | 3.9   | 22.03766 | 4.93E+09 | 17.54423 | 96.2563  | 1222.187 | 0        |
| 1988 | 2.07E+10 | 18002671523 | 3.9   | 26.27243 | 5.44E+09 | 15.6958  | 92.3256  | 1290.998 | 0        |
| 1989 | 2.43E+10 | 22664496222 | 3.9   | 25.39725 | 6.18E+09 | 12.29893 | ..       | 1339.565 | 0        |
| 1990 | 1.84E+10 | ..          | 3.5   | 38.74925 | 7.14E+09 | 17.62511 | 42.92446 | 1358.196 | 1        |
| 1991 | 1.1E+10  | ..          | 9.7   | 76.22212 | 8.39E+09 | 41.85571 | 50.67826 | 1340.539 | 1        |
| 1992 | 1.99E+10 | 17432096018 | 7.7   | 55.54964 | 1.1E+10  | 22.36334 | 54.2708  | 1293.562 | 1        |
| 1993 | 2.39E+10 | 23357345825 | 7.7   | 35.86435 | 8.59E+09 | 17.19154 | 58.24919 | 1237.101 | 1        |
| 1994 | 2.48E+10 | 25327810097 | 7.7   | 33.92276 | 8.43E+09 | 16.15176 | 62.04337 | 1198.862 | 1        |
| 1995 | 2.66E+10 | 26558310992 | 5.6   | 32.95899 | 8.75E+09 | 15.1041  | 64.08411 | 1198.332 | 1        |
| 1996 | 3.11E+10 | 25840518803 | 5.3   | 27.63625 | 8.59E+09 | 15.30689 | 65.12309 | 1242.807 | 1        |
| 1997 | 2.99E+10 | 26148144027 | 5     | 27.05298 | 8.08E+09 | 13.86313 | 68.2563  | 1325.105 | 1        |
| 1998 | 2.51E+10 | 26974020754 | 5     | 31.5047  | 7.91E+09 | 19.05695 | 55.20878 | 1432.428 | 1        |
| 1999 | 2.92E+10 | 26541682601 | 5     | 27.724   | 8.09E+09 | 15.02701 | 55.57158 | 1545.195 | 1        |
| 2000 | 3.58E+10 | 27564328616 | 5     | 22.60941 | 8.1E+09  | 7.524338 | 72.2563  | 1648.87  | 1        |
| 2001 | 3.28E+10 | 27281645978 | 5     | 26.31003 | 8.63E+09 | 8.610918 | 78.2536  | 1740.152 | 1        |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.3:** Collective Data for Bahrain

| year | GDP_BAH  | GDP95_BAH | ED_BAH | GE_BAH   | GC_BAH   | K_BAH    | SCH_BAH  | EM_BAH  | Privt_BAH |
|------|----------|-----------|--------|----------|----------|----------|----------|---------|-----------|
| 1980 | 3.07E+09 | 3.61E+09  | 4.9    | 13.02996 | 4E+08    | 46.12729 | 64.00927 | 226.747 | 0         |
| 1981 | 3.47E+09 | 3.42E+09  | 4.9    | 14.4643  | 5.02E+08 | 41.61364 | 75.2653  | 239.541 | 0         |
| 1982 | 3.65E+09 | 3.16E+09  | 4.9    | 17.01926 | 6.2E+08  | 36.27809 | 78.2563  | 251.194 | 0         |
| 1983 | 3.74E+09 | 3.36E+09  | 4.9    | 18.12162 | 6.77E+08 | 43.85502 | 82.2536  | 261.993 | 0         |
| 1984 | 3.91E+09 | 3.53E+09  | 4.9    | 20.57883 | 8.04E+08 | 42.58086 | 95.2356  | 272.446 | 0         |
| 1985 | 3.65E+09 | 3.36E+09  | 4.9    | 22.78057 | 8.32E+08 | 35.64926 | 97.20801 | 282.934 | 0         |
| 1986 | 3.05E+09 | 3.4E+09   | 4.9    | 27.21965 | 8.31E+08 | 26.62717 | 95.26352 | 293.474 | 0         |
| 1987 | 3.39E+09 | 3.76E+09  | 4.9    | 24.37667 | 8.27E+08 | 25.45868 | 96.2563  | 304.004 | 0         |
| 1988 | 3.7E+09  | 4.02E+09  | 4.9    | 24.36607 | 9.02E+08 | 20.1997  | 97.2563  | 314.746 | 0         |
| 1989 | 3.86E+09 | 4.03E+09  | 4.6    | 24.55427 | 9.49E+08 | 24.63688 | 98.5623  | 325.965 | 0         |
| 1990 | 4.23E+09 | 4.21E+09  | 4.7    | 24.21403 | 1.02E+09 | 16.42983 | 99.67767 | 337.85  | 1         |
| 1991 | 4.62E+09 | 4.69E+09  | 4.8    | 23.39114 | 1.08E+09 | 28.59941 | 98.22349 | 350.429 | 1         |
| 1992 | 4.75E+09 | 5E+09     | 4.7    | 23.85804 | 1.13E+09 | 29.4167  | 99.05394 | 363.642 | 1         |
| 1993 | 5.2E+09  | 5.64E+09  | 4.7    | 22.2728  | 1.16E+09 | 18.3041  | 99.31278 | 377.495 | 1         |
| 1994 | 5.57E+09 | 5.63E+09  | 4.9    | 21.01844 | 1.17E+09 | 19.63313 | 98.43369 | 391.959 | 1         |
| 1995 | 5.85E+09 | 5.85E+09  | 4.8    | 20.84659 | 1.22E+09 | 14.60853 | 96.97822 | 406.951 | 1         |
| 1996 | 6.1E+09  | 6.09E+09  | 4.6    | 20.23711 | 1.23E+09 | 14.40527 | 94.31946 | 422.635 | 1         |
| 1997 | 6.35E+09 | 6.28E+09  | 4.4    | 19.48226 | 1.24E+09 | 17.44649 | 94.63518 | 438.872 | 1         |
| 1998 | 6.18E+09 | 6.58E+09  | 4.4    | 20.7647  | 1.28E+09 | 21.42273 | 93.36932 | 454.916 | 1         |
| 1999 | 6.62E+09 | 6.84E+09  | 4.4    | 20.8171  | 1.38E+09 | 12.14398 | 101.9988 | 469.773 | 1         |
| 2000 | 7.97E+09 | 7.21E+09  | 4.4    | 17.55814 | 1.4E+09  | 16.8374  | 101.3341 | 482.788 | 1         |
| 2001 | 7.94E+09 | 7.21E+09  | 4.4    | 18.45483 | 1.46E+09 | 12.54902 | 102.3256 | 493.576 | 1         |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.4:** Data analysis for Egypt

| Year | GDP_eg   | GDP95_eg | ED_eg | GE_EG    | GC_EG    | K_EG     | SCH_EG   | EM_EG    | Priv_EG |
|------|----------|----------|-------|----------|----------|----------|----------|----------|---------|
| 1980 | 2.29E+10 | 2.99E+10 | 3.3   | 15.66891 | 3.59E+09 | 27.51409 | 50.47105 | 25716.06 | 0       |
| 1981 | 2.34E+10 | 3.1E+10  | 4.5   | 19.01848 | 4.45E+09 | 29.50924 | 53.856   | 26286.56 | 0       |
| 1982 | 2.56E+10 | 3.41E+10 | 5     | 17.82397 | 4.56E+09 | 30.07555 | 56.3562  | 26890.82 | 0       |
| 1983 | 2.81E+10 | 3.66E+10 | 4.5   | 17.21142 | 4.84E+09 | 28.72983 | 58.653   | 27528.01 | 0       |
| 1984 | 3.06E+10 | 3.88E+10 | 4.5   | 18.03256 | 5.53E+09 | 27.48386 | 59.3652  | 28195.35 | 0       |
| 1985 | 3.47E+10 | 4.14E+10 | 4.5   | 17.24013 | 5.98E+09 | 26.67512 | 61.37644 | 28890.86 | 0       |
| 1986 | 3.59E+10 | 4.25E+10 | 4.5   | 16.52936 | 5.93E+09 | 23.70685 | 65.365   | 29616.09 | 0       |
| 1987 | 4.05E+10 | 4.36E+10 | 4     | 14.25341 | 5.77E+09 | 26.08277 | 67.56125 | 30372.97 | 0       |
| 1988 | 3.5E+10  | 4.59E+10 | 3.9   | 13.93534 | 4.88E+09 | 34.91937 | 72.6532  | 31160.15 | 0       |
| 1989 | 3.96E+10 | 4.82E+10 | 3.7   | 12.63167 | 5.01E+09 | 31.77452 | 75.2653  | 31975.57 | 0       |
| 1990 | 4.31E+10 | 5.09E+10 | 3.5   | 11.2859  | 4.87E+09 | 28.81284 | 76.21508 | 32818.15 | 1       |
| 1991 | 3.7E+10  | 5.15E+10 | 3.7   | 11.19157 | 4.14E+09 | 21.1696  | 74.79506 | 33685.87 | 1       |
| 1992 | 4.19E+10 | 5.37E+10 | 3.4   | 10.42401 | 4.36E+09 | 18.18809 | 74.89318 | 34580.12 | 1       |
| 1993 | 4.72E+10 | 5.53E+10 | 3.8   | 10.17423 | 4.8E+09  | 16.21519 | 75.74453 | 35507.13 | 1       |
| 1994 | 5.19E+10 | 5.75E+10 | 4.1   | 10.28571 | 5.34E+09 | 16.57143 | 76.92269 | 36475.39 | 1       |
| 1995 | 6.02E+10 | 6.02E+10 | 4.4   | 10.53922 | 6.34E+09 | 17.20588 | 76.51204 | 37490.2  | 1       |
| 1996 | 6.77E+10 | 6.32E+10 | 4.4   | 10.37159 | 7.02E+09 | 16.60326 | 74.9207  | 38551.64 | 1       |
| 1997 | 7.59E+10 | 6.66E+10 | 4.4   | 10.14774 | 7.7E+09  | 18.15708 | 79.5612  | 39654.97 | 1       |
| 1998 | 8.21E+10 | 6.97E+10 | 4.4   | 10.1762  | 8.35E+09 | 21.10752 | 81.25283 | 40794.37 | 1       |
| 1999 | 8.91E+10 | 7.41E+10 | 4.4   | 10.1622  | 9.05E+09 | 20.52301 | 83.53036 | 41961.72 | 1       |
| 2000 | 9.94E+10 | 7.78E+10 | 4.4   | 9.743136 | 9.69E+09 | 18.33481 | 85.67814 | 43149.36 | 1       |
| 2001 | 9.85E+10 | 8.01E+10 | 4.4   | 11.90022 | 1.17E+10 | 15.46517 | 89.5621  | 44356.94 | 1       |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.5:** Data analysis for Jordan

| Year | GDP_JORD | GDP95_JORD | ED_JORD | GE_JORD  | GC_JORD  | K_JORD   | SCH_JORD | EM_JORD  | Priv_JORDt |
|------|----------|------------|---------|----------|----------|----------|----------|----------|------------|
| 1980 | 3.96E+09 | 3.96E+09   | 4.1     | 28.82318 | 1.14E+09 | 36.68559 | 59.1083  | 1125.797 | 0          |
| 1981 | 4.45E+09 | 4.14E+09   | 3.9     | 31.06241 | 1.38E+09 | 45.38215 |          | 1174.391 | 0          |
| 1982 | 4.83E+09 | 4.45E+09   | 3.6     | 28.09359 | 1.36E+09 | 38.2576  | ..       | 1236.308 | 0          |
| 1983 | 5.04E+09 | 4.54E+09   | 4.2     | 25.88724 | 1.3E+09  | 32.25242 | ..       | 1305.458 | 0          |
| 1984 | 5.15E+09 | 4.93E+09   | 4.1     | 26.98092 | 1.39E+09 | 28.8281  | ..       | 1373.005 | 0          |
| 1985 | 5.12E+09 | 5.1E+09    | 4.8     | 26.31918 | 1.35E+09 | 20.53757 | 52.17227 | 1433.297 | 0          |
| 1986 | 6.18E+09 | 5.46E+09   | 3.3     | 26.18321 | 1.62E+09 | 20.53522 | ..       | 1482.115 | 0          |
| 1987 | 6.53E+09 | 5.62E+09   | 3.3     | 26.56434 | 1.73E+09 | 23.34511 | ..       | 1523.201 | 0          |
| 1988 | 6.05E+09 | 5.51E+09   | 4.1     | 26.68698 | 1.61E+09 | 23.51616 | ..       | 1568.298 | 0          |
| 1989 | 4.13E+09 | 4.77E+09   | 5.9     | 26.08659 | 1.08E+09 | 23.74268 | ..       | 1633.786 | 0          |
| 1990 | 4.02E+09 | 4.82E+09   | 6.3     | 24.88101 | 1E+09    | 31.85924 | 44.60099 | 1730.444 | 1          |
| 1991 | 4.19E+09 | 4.91E+09   | 6.3     | 25.98858 | 1.09E+09 | 25.86599 | 47.18476 | 1863.705 | 1          |
| 1992 | 5.37E+09 | 5.83E+09   | 5.2     | 21.67084 | 1.16E+09 | 33.13396 | 47.79106 | 2027.302 | 1          |
| 1993 | 5.67E+09 | 6.1E+09    | 5.9     | 21.85423 | 1.24E+09 | 36.24199 | 50.47695 | 2206.036 | 1          |
| 1994 | 6.3E+09  | 6.4E+09    | 5.9     | 22.39977 | 1.41E+09 | 32.97694 | 52.46049 | 2378.327 | 1          |
| 1995 | 6.81E+09 | 6.81E+09   | 6.1     | 23.28031 | 1.59E+09 | 32.56156 | 55.27966 | 2528.776 | 1          |
| 1996 | 7.03E+09 | 6.95E+09   | 5.9     | 24.16723 | 1.7E+09  | 30.05473 | 56.32777 | 2651.697 | 1          |
| 1997 | 7.32E+09 | 7.17E+09   | 5.6     | 25.27722 | 1.85E+09 | 25.45632 | ..       | 2752.137 | 1          |
| 1998 | 7.96E+09 | 7.38E+09   | 5.6     | 24.22495 | 1.93E+09 | 21.7158  | 87.93593 | 2838.496 | 1          |
| 1999 | 8.13E+09 | 7.61E+09   | 5.6     | 24.04543 | 1.96E+09 | 25.1708  | 87.66262 | 2923.966 | 1          |
| 2000 | 8.45E+09 | 7.91E+09   | 5.6     | 25.08178 | 2.12E+09 | 27.20961 | ..       | 3018.079 | 1          |
| 2001 | 8.83E+09 | 8.24E+09   | 5.6     | 22.99163 | 2.03E+09 | 25.90915 | ..       | 3123.244 | 1          |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.6:** Data analysis for Iran

| Yaer | GDP_IRA  | GDP95_IRA | ED_IRA | GE_IRA   | GC_IRA   | K_IRA    | SCH_IRA  | EM_IRA   | Privt_IRA |
|------|----------|-----------|--------|----------|----------|----------|----------|----------|-----------|
| 1980 | 9.27E+10 | 5.4E+10   | 6.6    | 20.80393 | 1.93E+10 | 29.57904 | 41.94547 | 21751.37 | 0         |
| 1981 | 1E+11    | 5.24E+10  | 5.2    | 20.92692 | 2.09E+10 | 22.7548  | 42.2563  | 22658.86 | 0         |
| 1982 | 1.25E+11 | 6.01E+10  | 3.7    | 18.12273 | 2.26E+10 | 15.90353 | 43.2563  | 23662.42 | 0         |
| 1983 | 1.53E+11 | 6.8E+10   | 3.4    | 16.08379 | 2.47E+10 | 23.14484 | 43.98563 | 24722.41 | 0         |
| 1984 | 1.61E+11 | 6.84E+10  | 3.1    | 14.7909  | 2.38E+10 | 24.34324 | 44.0.213 | 25783.2  | 0         |
| 1985 | 1.8E+11  | 6.95E+10  | 3.2    | 15.4836  | 2.78E+10 | 21.05176 | 44.96027 | 26804.08 | 0         |
| 1986 | 2.12E+11 | 6.32E+10  | 3.9    | 14.60907 | 3.1E+10  | 22.14101 | 47.2563  | 27777.82 | 0         |
| 1987 | 1.38E+11 | 6.32E+10  | 3.4    | 13.57111 | 1.87E+10 | 25.45992 | 48.5263  | 28715.56 | 0         |
| 1988 | 1.25E+11 | 6.05E+10  | 3.5    | 14.34131 | 1.8E+10  | 19.06869 | 52.24526 | 29618.46 | 0         |
| 1989 | 1.23E+11 | 6.31E+10  | 3.3    | 11.85334 | 1.46E+10 | 23.75311 | 53.2653  | 30492.9  | 0         |
| 1990 | 1.2E+11  | 7.02E+10  | 3.4    | 11.06357 | 1.33E+10 | 28.62523 | 55.19251 | 31348.12 | 1         |
| 1991 | 1.25E+11 | 7.77E+10  | 3.2    | 10.71157 | 1.8E+10  | 33.23107 | 58.75522 | 32172.29 | 1         |
| 1992 | 1.05E+11 | 8.25E+10  | 3.9    | 10.42282 | 1.46E+10 | 35.37229 | 63.7944  | 32973.77 | 1         |
| 1993 | 5.62E+10 | 8.42E+10  | 4.4    | 14.57595 | 8.19E+09 | 29.01296 | 68.7695  | 33806.67 | 1         |
| 1994 | 6.6E+10  | 8.49E+10  | 3.8    | 12.60114 | 8.32E+09 | 24.24099 | 71.9573  | 34742.94 | 1         |
| 1995 | 8.74E+10 | 8.74E+10  | 3.3    | 13.03256 | 1.14E+10 | 19.56886 | 74.99564 | 35830.72 | 1         |
| 1996 | 1.05E+11 | 9.22E+10  | 3.2    | 13.56352 | 1.42E+10 | 20.94978 | 76.67871 | 37092.99 | 1         |
| 1997 | 9.93E+10 | 9.53E+10  | 3.2    | 13.90525 | 1.38E+10 | 21.52967 | 78.5263  | 38505.9  | 1         |
| 1998 | 1.02E+11 | 9.72E+10  | 3.2    | 13.36768 | 1.37E+10 | 21.18951 | 81.97268 | 40012.48 | 1         |
| 1999 | 9.96E+10 | 9.96E+10  | 3.2    | 13.54901 | 1.35E+10 | 15.5211  | 80.04565 | 41530.22 | 1         |
| 2000 | 1.02E+11 | 1.06E+11  | 3.2    | 14.39652 | 1.46E+10 | 27.38455 | 78.07152 | 42997.85 | 1         |
| 2001 | 1.14E+11 | 1.11E+11  | 3.2    | 13.20197 | 1.51E+10 | 29.27177 | 82.2563  | 44391.99 | 1         |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO databases.

**Table A.7:** Data analysis for Turkey

| Year | GDP_TU   | GDP95_TU | ED_TU | GE_TU    | GC_TU    | K_TU     | SCH_TU   | EM_TU    | Privt_TU |
|------|----------|----------|-------|----------|----------|----------|----------|----------|----------|
| 1980 | 7.09E+10 | 8.7E+10  | 1.9   | 11.55252 | 8.19E+09 | 18.16405 | 34.6452  | 27596.6  | 0        |
| 1981 | 6.65E+10 | 9.12E+10 | 2     | 9.840733 | 6.54E+09 | 17.86928 | 35.635   | 28421.59 | 0        |
| 1982 | 6.44E+10 | 9.45E+10 | 2     | 9.943418 | 6.4E+09  | 16.95265 | 36.256   | 29298.07 | 0        |
| 1983 | 6.15E+10 | 9.92E+10 | 2.3   | 9.388095 | 5.78E+09 | 16.28546 | 38.5623  | 30212.42 | 0        |
| 1984 | 5.99E+10 | 1.06E+11 | 1.7   | 8.335504 | 4.99E+09 | 16.18033 | 39.564   | 31145.04 | 0        |
| 1985 | 6.72E+10 | 1.1E+11  | 1.5   | 7.515597 | 5.05E+09 | 16.51315 | 41.55169 | 32081.57 | 0        |
| 1986 | 7.56E+10 | 1.18E+11 | 1.4   | 7.588072 | 5.74E+09 | 18.84757 | 43.256   | 33016.72 | 0        |
| 1987 | 8.69E+10 | 1.29E+11 | 1     | 7.822869 | 6.8E+09  | 25.66669 | 45.2564  | 33953.92 | 0        |
| 1988 | 9.01E+10 | 1.32E+11 | 1.1   | 7.612631 | 6.86E+09 | 25.14263 | 45.653   | 34898.09 | 0        |
| 1989 | 1.07E+11 | 1.32E+11 | 1     | 9.343358 | 1E+10    | 23.47252 | 46.562   | 35857.62 | 0        |
| 1990 | 1.51E+11 | 1.45E+11 | 1.9   | 10.96244 | 1.65E+10 | 24.34636 | 47.33097 | 36838.31 | 1        |
| 1991 | 1.51E+11 | 1.46E+11 | 2.1   | 12.36193 | 1.86E+10 | 22.72323 | 48.67776 | 37838.19 | 1        |
| 1992 | 1.59E+11 | 1.55E+11 | 2.5   | 12.85787 | 2.04E+10 | 23.85837 | 51.75203 | 38853.01 | 1        |
| 1993 | 1.79E+11 | 1.67E+11 | 3.2   | 13.02226 | 2.34E+10 | 27.60657 | 53.40722 | 39883.19 | 1        |
| 1994 | 1.3E+11  | 1.58E+11 | 3.2   | 11.64828 | 1.51E+10 | 21.47915 | 56.3231  | 40929.3  | 1        |
| 1995 | 1.69E+11 | 1.69E+11 | 2.2   | 10.7858  | 1.83E+10 | 25.47356 | 56.95212 | 41990.03 | 1        |
| 1996 | 1.81E+11 | 1.81E+11 | 2.2   | 11.57077 | 2.09E+10 | 24.55132 | 58.22113 | 43068.24 | 1        |
| 1997 | 1.89E+11 | 1.95E+11 | 2.2   | 12.25939 | 2.32E+10 | 25.11079 | 60.3162  | 44159.12 | 1        |
| 1998 | 2E+11    | 2.01E+11 | 2.2   | 12.70038 | 2.53E+10 | 24.1792  | 63.387   | 45244.5  | 1        |
| 1999 | 1.84E+11 | 1.91E+11 | 2.2   | 15.17496 | 2.79E+10 | 23.35344 | 57.73225 | 46300.44 | 1        |
| 2000 | 1.99E+11 | 2.05E+11 | 2.2   | 14.07807 | 2.81E+10 | 24.50816 | 60.985   | 47310.69 | 1        |
| 2001 | 1.48E+11 | 1.9E+11  | 2.2   | 14.14522 | 2.09E+10 | 16.48843 | 65.0356  | 48267.18 | 1        |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.8:** Data analysis for Morocco

| Year | GDP_MOR  | GDP95_MOR | ED_MOR | GE_MOR   | GC_MOR   | K_MOR    | SCH_MOR  | EM_MOR   | Privt_MOR |
|------|----------|-----------|--------|----------|----------|----------|----------|----------|-----------|
| 1980 | 1.88E+10 | 2.16E+10  | 4.9    | 18.34135 | 3.45E+09 | 24.20449 | 26.01476 | 11140.09 | 0         |
| 1981 | 1.53E+10 | 2.1E+10   | 5.3    | 19.07653 | 2.91E+09 | 26.11664 | ..       | 11514.97 | 0         |
| 1982 | 1.54E+10 | 2.3E+10   | 5.3    | 18.29862 | 2.82E+09 | 28.22082 | ..       | 11867.49 | 0         |
| 1983 | 1.39E+10 | 2.29E+10  | 5.5    | 16.76977 | 2.34E+09 | 23.99178 | ..       | 12207.48 | 0         |
| 1984 | 1.28E+10 | 2.39E+10  | 5.1    | 15.55745 | 1.98E+09 | 25.2849  | ..       | 12550.72 | 0         |
| 1985 | 1.29E+10 | 2.54E+10  | 5      | 15.8424  | 2.04E+09 | 27.12041 | 35.40832 | 12908.79 | 0         |
| 1986 | 1.7E+10  | 2.75E+10  | 4.4    | 15.35108 | 2.61E+09 | 22.79672 | ..       | 13283.99 | 0         |
| 1987 | 1.87E+10 | 2.68E+10  | 4.6    | 15.71711 | 2.95E+09 | 21.08655 | ..       | 13672.42 | 0         |
| 1988 | 2.22E+10 | 2.96E+10  | 4.2    | 15.38441 | 3.42E+09 | 20.99694 | ..       | 14072.27 | 0         |
| 1989 | 2.28E+10 | 3.03E+10  | 5      | 15.68136 | 3.58E+09 | 23.68364 | ..       | 14480.02 | 0         |
| 1990 | 2.58E+10 | 3.15E+10  | 5      | 15.49455 | 4E+09    | 25.2925  | 35.26524 | 14893.21 | 1         |
| 1991 | 2.78E+10 | 3.37E+10  | 4.6    | 15.55287 | 4.33E+09 | 22.62102 | 35.72454 | 15310.76 | 1         |
| 1992 | 2.85E+10 | 3.23E+10  | 5.1    | 16.81518 | 4.78E+09 | 23.20718 | 36.17085 | 15733.97 | 1         |
| 1993 | 2.68E+10 | 3.2E+10   | 5.3    | 18.07738 | 4.84E+09 | 22.45984 | 37.35104 | 16165.25 | 1         |
| 1994 | 3.04E+10 | 3.53E+10  | 5      | 17.1318  | 5.2E+09  | 21.34513 | 37.8811  | 16608.01 | 1         |
| 1995 | 3.3E+10  | 3.3E+10   | 4.9    | 17.38966 | 5.74E+09 | 20.72971 | 38.51348 | 17064.09 | 1         |
| 1996 | 3.66E+10 | 3.7E+10   | 4.9    | 16.8529  | 6.17E+09 | 19.58331 | 39.09019 | 17534.61 | 1         |
| 1997 | 3.34E+10 | 3.62E+10  | 4.9    | 17.78212 | 5.94E+09 | 20.70127 | 39.02722 | 18016.96 | 1         |
| 1998 | 3.58E+10 | 3.9E+10   | 4.9    | 18.02327 | 6.46E+09 | 22.15582 | 37.81511 | 18504.65 | 1         |
| 1999 | 3.53E+10 | 3.9E+10   | 4.9    | 19.1702  | 6.76E+09 | 23.42733 | 39.33796 | 18988.88 | 1         |
| 2000 | 3.33E+10 | 3.93E+10  | 4.9    | 19.14392 | 6.38E+09 | 24.37501 | ..       | 19463.24 | 1         |
| 2001 | 3.42E+10 | 4.19E+10  | 4.9    | 17.90096 | 6.13E+09 | 24.6     | ..       | 19925.01 | 1         |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.9:** Data analysis for Pakistan

| Year | GDP_PAK  | GDP95_PAK | ED_PAK | GE_PAK   | GC_PAK   | K_PAK    | SCH_PAK  | EM_PAK   | Priv_PAK |
|------|----------|-----------|--------|----------|----------|----------|----------|----------|----------|
| 1980 | 2.37E+10 | 2.63E+10  | 1.5    | 10.03505 | 2.38E+09 | 18.4818  | 14.24322 | 45365.16 | 0        |
| 1981 | 2.81E+10 | 2.84E+10  | 1.4    | 10.16406 | 2.86E+09 | 18.77417 | ..       | 46921.97 | 0        |
| 1982 | 3.07E+10 | 3.03E+10  | 1.4    | 10.34122 | 3.18E+09 | 19.26123 | ..       | 48599.5  | 0        |
| 1983 | 2.87E+10 | 3.23E+10  | 1.5    | 11.41808 | 3.28E+09 | 18.79979 | ..       | 50366.57 | 0        |
| 1984 | 3.12E+10 | 3.39E+10  | 1.7    | 12.08689 | 3.77E+09 | 18.27052 | ..       | 52178.6  | 0        |
| 1985 | 3.11E+10 | 3.65E+10  | 1.8    | 12.09894 | 3.77E+09 | 18.32018 | 17.17398 | 54000.18 | 0        |
| 1986 | 3.19E+10 | 3.85E+10  | 2      | 12.7615  | 4.07E+09 | 18.77434 | ..       | 55835.65 | 0        |
| 1987 | 3.34E+10 | 4.1E+10   | 1.9    | 13.53447 | 4.51E+09 | 19.13433 | ..       | 57687.79 | 0        |
| 1988 | 3.85E+10 | 4.41E+10  | 1.8    | 15.51017 | 5.97E+09 | 18.01421 | ..       | 59519.39 | 0        |
| 1989 | 4.02E+10 | 4.63E+10  | 1.9    | 16.78491 | 6.74E+09 | 18.91146 | ..       | 61284.56 | 0        |
| 1990 | 4E+10    | 4.84E+10  | 2      | 15.13676 | 6.06E+09 | 18.93537 | 22.70269 | 62958.68 | 1        |
| 1991 | 4.55E+10 | 5.08E+10  | 2.1    | 14.31805 | 6.51E+09 | 19.0264  | 25.64422 | 64513.24 | 1        |
| 1992 | 4.86E+10 | 5.48E+10  | 2      | 12.90794 | 6.28E+09 | 20.25051 | 25.57475 | 65977.75 | 1        |
| 1993 | 5.15E+10 | 5.57E+10  | 2.3    | 13.10387 | 6.75E+09 | 20.83537 | 24.97049 | 67456.89 | 1        |
| 1994 | 5.19E+10 | 5.78E+10  | 2.4    | 12.11335 | 6.29E+09 | 19.56801 | 24.2998  | 69094.26 | 1        |
| 1995 | 6.07E+10 | 6.07E+10  | 2.4    | 11.74352 | 7.13E+09 | 18.57034 | 25.66482 | 70990.47 | 1        |
| 1996 | 6.33E+10 | 6.36E+10  | 2.4    | 12.6451  | 8.01E+09 | 19.02755 | 25.81423 | 73187.5  | 1        |
| 1997 | 6.24E+10 | 6.43E+10  | 2.3    | 11.89357 | 7.42E+09 | 17.95663 | ..       | 75649.24 | 1        |
| 1998 | 6.22E+10 | 6.59E+10  | 2.3    | 11.26411 | 7.01E+09 | 17.74974 | ..       | 78301.91 | 1        |
| 1999 | 5.86E+10 | 6.83E+10  | 2.3    | 10.3601  | 6.07E+09 | 15.56494 | 26.44    | 81033.47 | 1        |
| 2000 | 6.08E+10 | 7.12E+10  | 2.3    | 11.17272 | 6.79E+09 | 16.01377 | 24.13    | 83761.67 | 1        |
| 2001 | 5.87E+10 | 7.32E+10  | 2.3    | 10.25615 | 6.02E+09 | 15.93501 | ..       | 86461.83 | 1        |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.10:** Data analysis for India

| year | GDP_IND  | GDP95_IND | ED_IND | GE_IND   | GC_IND   | K_IND    | SCH_IND  | EM_IND   | Privt_IND |
|------|----------|-----------|--------|----------|----------|----------|----------|----------|-----------|
| 1980 | 1.82E+11 | 1.57E+11  | 2.9    | 10.08055 | 1.83E+10 | 18.68922 | 29.85612 | 423305.7 | 0         |
| 1981 | 1.88E+11 | 1.67E+11  | 3.1    | 10.12752 | 1.9E+10  | 22.40985 | 35.235   | 433835.1 | 0         |
| 1982 | 1.95E+11 | 1.73E+11  | 3.1    | 10.6952  | 2.08E+10 | 21.66449 | 36.2356  | 444533.7 | 0         |
| 1983 | 2.12E+11 | 1.85E+11  | 3.2    | 10.57696 | 2.25E+10 | 19.67963 | 36.9863  | 455438.2 | 0         |
| 1984 | 2.07E+11 | 1.93E+11  | 3.4    | 10.847   | 2.24E+10 | 21.59787 | 36.9653  | 466602.5 | 0         |
| 1985 | 2.27E+11 | 2.03E+11  | 3.5    | 11.41548 | 2.59E+10 | 23.67091 | 37.87293 | 478058.1 | 0         |
| 1986 | 2.44E+11 | 2.13E+11  | 3.4    | 12.05327 | 2.94E+10 | 23.20319 | 38.6543  | 489841.8 | 0         |
| 1987 | 2.73E+11 | 2.22E+11  | 3.2    | 12.41452 | 3.39E+10 | 22.11332 | 39.6532  | 501923.8 | 0         |
| 1988 | 2.91E+11 | 2.44E+11  | 3.7    | 12.02015 | 3.5E+10  | 23.69161 | 42.3265  | 514190.9 | 0         |
| 1989 | 2.92E+11 | 2.6E+11   | 4      | 11.91105 | 3.48E+10 | 23.66104 | 43.256   | 526487.3 | 0         |
| 1990 | 3.17E+11 | 2.75E+11  | 3.9    | 11.61122 | 3.68E+10 | 24.06546 | 44.40187 | 538713.3 | 1         |
| 1991 | 2.67E+11 | 2.78E+11  | 3.7    | 11.37392 | 3.04E+10 | 21.93481 | 44.88446 | 550809.3 | 1         |
| 1992 | 2.44E+11 | 2.92E+11  | 3.6    | 11.21869 | 2.74E+10 | 23.78766 | 48.54009 | 562840   | 1         |
| 1993 | 2.74E+11 | 3.07E+11  | 3.5    | 11.37369 | 3.12E+10 | 21.25404 | 48.98148 | 574981   | 1         |
| 1994 | 3.23E+11 | 3.3E+11   | 3.6    | 10.72692 | 3.46E+10 | 23.37984 | 48.77294 | 587479.4 | 1         |
| 1995 | 3.55E+11 | 3.55E+11  | 3.3    | 10.84299 | 3.85E+10 | 26.52995 | 48.81369 | 600509.4 | 1         |
| 1996 | 3.85E+11 | 3.81E+11  | 3.2    | 10.65079 | 4.1E+10  | 22.12975 | 49.4352  | 614129.2 | 1         |
| 1997 | 4.1E+11  | 3.98E+11  | 3.2    | 11.31006 | 4.63E+10 | 22.93304 | 47.30511 | 628274.5 | 1         |
| 1998 | 4.14E+11 | 4.24E+11  | 3.2    | 12.1644  | 5.03E+10 | 21.36929 | 41.82432 | 642845.6 | 1         |
| 1999 | 4.45E+11 | 4.49E+11  | 3.2    | 12.85919 | 5.73E+10 | 23.59183 | 48.70154 | 657688.4 | 1         |
| 2000 | 4.57E+11 | 4.67E+11  | 3.2    | 13.21336 | 6.04E+10 | 22.90192 | 50.2635  | 672684.8 | 1         |
| 2001 | 4.77E+11 | 4.92E+11  | 3.2    | 13.1243  | 6.26E+10 | 22.5     | 52.2653  | 687798.1 | 1         |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO databases.

**Table A.11: Data analysis for Indonesia**

| Year | GDP_INDO | GDP95_INDO | ED_INDO | GE_INDO  | GC_INDO  | K_INDO   | SCH_indo | EM_indo  | Priv_indo |
|------|----------|------------|---------|----------|----------|----------|----------|----------|-----------|
| 1980 | 7.8E+10  | 7.46E+10   | ..      | 10.5247  | 8.21E+09 | 24.06828 | 29.00789 | 89388.94 | 0         |
| 1981 | 9.25E+10 | 8.07E+10   | ..      | 11.04392 | 1.02E+10 | 26.69409 | ..       | 91822.14 | 0         |
| 1982 | 9.47E+10 | 8.16E+10   | ..      | 11.53887 | 1.09E+10 | 27.75664 | ..       | 94373.85 | 0         |
| 1983 | 8.54E+10 | 8.85E+10   | ..      | 10.40582 | 8.88E+09 | 31.32078 | ..       | 97018.04 | 0         |
| 1984 | 8.87E+10 | 9.48E+10   | ..      | 10.01909 | 8.89E+09 | 26.49313 | ..       | 99716.98 | 0         |
| 1985 | 8.86E+10 | 9.81E+10   | ..      | 11.5847  | 1.03E+10 | 27.55692 | 41.28047 | 102442.4 | 0         |
| 1986 | 8.38E+10 | 1.04E+11   | ..      | 10.73001 | 8.99E+09 | 28.23698 | ..       | 105183.7 | 0         |
| 1987 | 7.88E+10 | 1.09E+11   | ..      | 9.080944 | 7.16E+09 | 29.09252 | ..       | 107945.6 | 0         |
| 1988 | 8.88E+10 | 1.16E+11   | 0.8     | 8.522657 | 7.57E+09 | 28.84453 | ..       | 110732.9 | 0         |
| 1989 | 1.01E+11 | 1.27E+11   | 0.6     | 8.741198 | 8.87E+09 | 32.56388 | ..       | 113556   | 0         |
| 1990 | 1.14E+11 | 1.38E+11   | 0.6     | 8.84404  | 1.01E+10 | 30.66844 | 44.0145  | 116421   | 1         |
| 1991 | 1.28E+11 | 1.51E+11   | 0.6     | 8.314884 | 1.07E+10 | 31.55376 | 43.49498 | 119323.5 | 1         |
| 1992 | 1.39E+11 | 1.62E+11   | 0.6     | 8.757701 | 1.22E+10 | 30.47806 | 43.46354 | 122254.5 | 1         |
| 1993 | 1.58E+11 | 1.73E+11   | 0.5     | 9.023304 | 1.43E+10 | 29.47842 | 44.86429 | 125210.8 | 1         |
| 1994 | 1.77E+11 | 1.86E+11   | 0.6     | 8.114181 | 1.44E+10 | 31.05729 | 48.15846 | 128188.6 | 1         |
| 1995 | 2.02E+11 | 2.02E+11   | 0.6     | 7.829064 | 1.58E+10 | 31.92814 | 51.48169 | 131182.7 | 1         |
| 1996 | 2.27E+11 | 2.18E+11   | 0.6     | 7.566959 | 1.72E+10 | 30.6915  | 55.73264 | 134192.4 | 1         |
| 1997 | 2.16E+11 | 2.28E+11   | 0.6     | 6.84281  | 1.48E+10 | 31.75126 | ..       | 137210   | 1         |
| 1998 | 9.54E+10 | 1.98E+11   | 0.6     | 5.693508 | 5.43E+09 | 16.77496 | ..       | 140214.1 | 1         |
| 1999 | 1.4E+11  | 1.99E+11   | 0.6     | 6.604457 | 9.25E+09 | 11.3674  | 54.88275 | 143177.9 | 1         |
| 2000 | 1.52E+11 | 2.09E+11   | 0.6     | 7.081003 | 1.08E+10 | 14.6086  | 56.99848 | 146081.8 | 1         |
| 2001 | 1.45E+11 | 2.16E+11   | 0.6     | 7.433844 | 1.08E+10 | 17.04179 | ..       | 148915.6 | 1         |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.12:** Data analysis for Malaysia

| Year | GDP_MAL  | GDP95_MA | ED_MA | GE_MA    | GC_MA    | K_MA     | SCH_MA   | EM_MA    | Privt_MA |
|------|----------|----------|-------|----------|----------|----------|----------|----------|----------|
| 1980 | 2.49E+10 | 2297.114 | 5     | 15.99349 | 3.99E+09 | 27.39662 | 47.68859 | 57.02036 | 0        |
| 1981 | 2.55E+10 | 2397.001 | 5.7   | 17.50918 | 4.46E+09 | 31.50825 | 48.5236  | 57.21952 | 0        |
| 1982 | 2.73E+10 | 2476.081 | 5.8   | 17.73402 | 4.84E+09 | 33.58566 | 50.2635  | 57.3791  | 0        |
| 1983 | 3.07E+10 | 2563.297 | 5.4   | 15.23923 | 4.68E+09 | 34.0781  | 49.5623  | 57.49561 | 0        |
| 1984 | 3.46E+10 | 2689.218 | 5     | 14.28156 | 4.94E+09 | 30.22329 | 52.01253 | 57.56697 | 0        |
| 1985 | 3.18E+10 | 2586.655 | 5.6   | 14.79364 | 4.7E+09  | 24.8387  | 52.94742 | 57.5923  | 0        |
| 1986 | 2.82E+10 | 2540.936 | 6.5   | 16.3903  | 4.63E+09 | 23.40177 | 53.2653  | 58.05987 | 0        |
| 1987 | 3.22E+10 | 2598.88  | 6     | 14.87328 | 4.79E+09 | 20.87293 | 56.23563 | 58.49398 | 0        |
| 1988 | 3.53E+10 | 2772.022 | 4.7   | 14.23406 | 5.02E+09 | 23.54316 | 58.2563  | 58.91345 | 0        |
| 1989 | 3.88E+10 | 2933.266 | 4.5   | 14.06213 | 5.46E+09 | 28.14689 | 55.2563  | 59.34069 | 0        |
| 1990 | 4.4E+10  | 3104.034 | 4.2   | 13.79397 | 6.07E+09 | 32.36033 | 56.32574 | 59.80102 | 1        |
| 1991 | 4.91E+10 | 3317.393 | 4.5   | 13.69419 | 6.73E+09 | 37.79075 | 57.12784 | 59.88209 | 1        |
| 1992 | 5.92E+10 | 3523.359 | 4.8   | 13.01018 | 7.7E+09  | 35.36255 | 57.65319 | 59.95159 | 1        |
| 1993 | 6.69E+10 | 3776.817 | 4.6   | 12.63117 | 8.45E+09 | 39.18394 | 57.81812 | 60.02114 | 1        |
| 1994 | 7.45E+10 | 4023.35  | 4.4   | 12.26491 | 9.14E+09 | 41.20229 | 56.16966 | 60.09079 | 1        |
| 1995 | 8.88E+10 | 4310.192 | 3.9   | 12.37324 | 1.1E+10  | 43.6401  | 58.69825 | 60.16053 | 1        |
| 1996 | 1.01E+11 | 4624.783 | 4.3   | 11.10537 | 1.12E+10 | 41.47904 | 61.21706 | 60.46754 | 1        |
| 1997 | 1E+11    | 4840.252 | 4.1   | 10.76705 | 1.08E+10 | 42.97308 | 6832563  | 60.76122 | 1        |
| 1998 | 7.22E+10 | 4380.327 | 4.1   | 9.768997 | 7.05E+09 | 26.59964 | 70.41799 | 61.16218 | 1        |
| 1999 | 7.91E+10 | 4540.673 | 4.1   | 11.12733 | 8.81E+09 | 22.382   | 70.32302 | 61.55264 | 1        |
| 2000 | 9E+10    | 4796.601 | 4.1   | 10.81915 | 9.74E+09 | 26.87014 | 70.32922 | 61.89944 | 1        |
| 2001 | 8.8E+10  | 4707.815 | 4.1   | 12.2     | 1.07E+10 | 28.86455 | 75.2536  | 61.90345 | 1        |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.13:** Data analysis for Mexico

| Year | GDP_MEX  | GDP95_M<br>EX | ED_MEX | GE_MEX   | GC_MEX   | K_MEX    | SCH_MEX  | EM_MEX   | Privt_MEX |
|------|----------|---------------|--------|----------|----------|----------|----------|----------|-----------|
| 1980 | 1.94E+11 | 2.22E+11      | 3      | 10.03855 | 1.95E+10 | 27.15722 | 48.6371  | 37040.31 | 0         |
| 1981 | 2.5E+11  | 2.41E+11      | 3.5    | 10.76697 | 2.69E+10 | 27.38387 | ..       | 38235.98 | 0         |
| 1982 | 1.74E+11 | 2.4E+11       | 3.8    | 10.47011 | 1.82E+10 | 22.9112  | ..       | 39465.97 | 0         |
| 1983 | 1.49E+11 | 2.3E+11       | 2.7    | 8.8022   | 1.31E+10 | 20.75051 | ..       | 40740.86 | 0         |
| 1984 | 1.76E+11 | 2.38E+11      | 2.7    | 9.235007 | 1.62E+10 | 19.86087 | ..       | 42074.91 | 0         |
| 1985 | 1.84E+11 | 2.44E+11      | 2.7    | 9.229541 | 1.7E+10  | 21.17547 | 56.53698 | 43476.47 | 0         |
| 1986 | 1.29E+11 | 2.35E+11      | 2.7    | 9.102247 | 1.18E+10 | 18.53824 | ..       | 44948.59 | 0         |
| 1987 | 1.4E+11  | 2.39E+11      | 2.6    | 8.791759 | 1.23E+10 | 19.26055 | ..       | 46482.38 | 0         |
| 1988 | 1.83E+11 | 2.42E+11      | 2.4    | 8.4139   | 1.54E+10 | 22.56087 | ..       | 48059.21 | 0         |
| 1989 | 2.23E+11 | 2.52E+11      | 2.1    | 8.268561 | 1.84E+10 | 22.94289 | ..       | 49653.57 | 0         |
| 1990 | 2.63E+11 | 2.65E+11      | 2.3    | 8.384014 | 2.2E+10  | 23.14162 | 53.25318 | 51245.56 | 1         |
| 1991 | 3.14E+11 | 2.76E+11      | 2.5    | 9.077895 | 2.85E+10 | 23.3286  | 53.12074 | 52829.44 | 1         |
| 1992 | 3.64E+11 | 2.86E+11      | 3      | 9.930524 | 3.61E+10 | 23.29163 | 53.85667 | 54405.66 | 1         |
| 1993 | 4.03E+11 | 2.92E+11      | 3.5    | 11.0305  | 4.45E+10 | 20.99806 | 55.67566 | 55968.24 | 1         |
| 1994 | 4.21E+11 | 3.05E+11      | 4.5    | 11.55933 | 4.86E+10 | 21.7158  | 58.29545 | 57512.22 | 1         |
| 1995 | 2.86E+11 | 2.86E+11      | 4.6    | 10.45068 | 2.99E+10 | 19.82011 | 61.17285 | 59034.65 | 1         |
| 1996 | 3.32E+11 | 3.01E+11      | 4.6    | 9.649519 | 3.21E+10 | 23.10595 | 63.96409 | 60531.16 | 1         |
| 1997 | 4.01E+11 | 3.21E+11      | 4.6    | 9.911625 | 3.97E+10 | 25.86281 | 68.02675 | 62002.75 | 1         |
| 1998 | 4.21E+11 | 3.37E+11      | 4.6    | 10.39833 | 4.38E+10 | 24.31952 | 70.51409 | 63459.06 | 1         |
| 1999 | 4.8E+11  | 3.5E+11       | 4.6    | 11.02511 | 5.3E+10  | 23.45195 | 73.40466 | 64914.07 | 1         |
| 2000 | 5.8E+11  | 3.73E+11      | 4.6    | 11.07453 | 6.42E+10 | 23.49301 | 75.31289 | 66378.35 | 1         |
| 2001 | 6.18E+11 | 3.72E+11      | 4.6    | 11.55626 | 7.14E+10 | 20.72304 | ..       | 67853.05 | 1         |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.14:** Descriptive Data for Argentina

| year | GDP_ARG  | GDP95_ARG | ED_ARG | GE_ARG   | GC_ARG   | K_ARG    | SCH_ARG  | EM_ARG   | Privz_ARGt |
|------|----------|-----------|--------|----------|----------|----------|----------|----------|------------|
| 1980 | 7.7E+10  | 2.19E+11  | 2.4    | 2.98E+09 | 2.18E+09 | 25.25779 | 56.21945 | 19519.83 | 0          |
| 1981 | 7.87E+10 | 2.06E+11  | 2      | 1.99E+08 | 3.30E+09 | 22.69109 | 61.2563  | 19766.09 | 0          |
| 1982 | 8.43E+10 | 1.96E+11  | 1.6    | 3.99E+09 | 4.25E+09 | 21.75495 | 63.2564  | 20032.7  | 0          |
| 1983 | 1.04E+11 | 2.04E+11  | 1.5    | 4.88E+09 | 5.84E+09 | 20.88775 | 68.6534  | 20316.24 | 0          |
| 1984 | 7.91E+10 | 2.08E+11  | 2.4    | 3.10E+09 | 6.99E+09 | 19.96409 | 6935641  | 20610.37 | 0          |
| 1985 | 8.97E+10 | 1.92E+11  | 1.3    | 4.99E+09 | 4.99E+09 | 17.58907 | 70.1811  | 20910.77 | 0          |
| 1986 | 1.02E+11 | 2.08E+11  | 1.2    | 1.99E+08 | 6.98E+09 | 17.46176 | 70.86546 | 21215.6  | 0          |
| 1987 | 1.09E+11 | 2.14E+11  | 1.2    | 4.00E+09 | 5.16E+09 | 19.55487 | 70.98325 | 21527.67 | 0          |
| 1988 | 1.27E+11 | 2.08E+11  | 1.2    | 4.32191  | 5.49E+09 | 18.64004 | 71.0689  | 21852.43 | 0          |
| 1989 | 7.66E+10 | 1.92E+11  | 1.1    | 4.494396 | 3.44E+09 | 15.5147  | 71.9854  | 22197.44 | 0          |
| 1990 | 1.41E+11 | 1.88E+11  | 1.1    | 3.135428 | 4.43E+09 | 13.99698 | 71.10492 | 22567.2  | 1          |
| 1991 | 1.9E+11  | 2.12E+11  | 2.1    | 3.321761 | 6.3E+09  | 14.63698 | 72.3423  | 22964.46 | 1          |
| 1992 | 2.29E+11 | 2.37E+11  | 3.1    | 2.975538 | 6.81E+09 | 16.70241 | 70.04229 | 23384.96 | 1          |
| 1993 | 2.37E+11 | 2.51E+11  | 3.3    | 13.51038 | 3.2E+10  | 19.05643 | 69.35816 | 23817.68 | 1          |
| 1994 | 2.57E+11 | 2.66E+11  | 3.8    | 13.18691 | 3.39E+10 | 19.93898 | 69.12887 | 24247.45 | 1          |
| 1995 | 2.58E+11 | 2.58E+11  | 3.5    | 13.34945 | 3.44E+10 | 17.93774 | 72.69167 | 24663.34 | 1          |
| 1996 | 2.72E+11 | 2.72E+11  | 3.2    | 12.50168 | 3.4E+10  | 18.08218 | 76.80492 | 25061.18 | 1          |
| 1997 | 2.93E+11 | 2.94E+11  | 3.2    | 12.06202 | 3.53E+10 | 19.37013 | 85.2456  | 25444    | 1          |
| 1998 | 2.99E+11 | 3.06E+11  | 3.2    | 12.49477 | 3.74E+10 | 19.93495 | 89.05962 | 25816.93 | 1          |
| 1999 | 2.84E+11 | 2.95E+11  | 3.2    | 13.72673 | 3.89E+10 | 18.01402 | 93.68611 | 26188.36 | 1          |
| 2000 | 2.84E+11 | 2.93E+11  | 3.2    | 13.8273  | 3.93E+10 | 16.19265 | 96.65362 | 26564.49 | 1          |
| 2001 | 2.69E+11 | 2.8E+11   | 3.2    | 10.62627 | 2.85E+10 | 14.1143  | 98.5698  | 26945.88 | 1          |
|      |          |           |        |          |          |          |          |          |            |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

**Table A.15:** Data analysis for Venezuela

| Year | GDP_VENZ | GDP95_VENZ | ED_VENZ | GE_VENZ  | GC_VENZ  | K_VENZ   | SCH_VENZ | EM_VENZ  | Privt_VENZ |
|------|----------|------------|---------|----------|----------|----------|----------|----------|------------|
| 1980 | 6.94E+10 | 6.02E+10   | 3.7     | 11.78643 | 8.18E+09 | 26.39355 | 21.25919 | 8951.633 | 0          |
| 1981 | 7.8E+10  | 6E+10      | 4.3     | 12.72022 | 9.92E+09 | 24.4252  | 22.23563 | 9284.49  | 0          |
| 1982 | 7.92E+10 | 5.88E+10   | 4.3     | 12.52205 | 9.92E+09 | 27.68959 | 23.25632 | 9607.507 | 0          |
| 1983 | 8.12E+10 | 5.66E+10   | 4.9     | 11.83381 | 9.61E+09 | 12.2063  | 23.89563 | 9923.972 | 0          |
| 1984 | 5.99E+10 | 5.74E+10   | 4.1     | 10.30952 | 6.17E+09 | 17.5     | 23.9865  | 10239.33 | 0          |
| 1985 | 6.2E+10  | 5.75E+10   | 3.9     | 10.43684 | 6.47E+09 | 18.50656 | 24.00593 | 10557.9  | 0          |
| 1986 | 6.05E+10 | 6.12E+10   | 3.7     | 11.18381 | 6.77E+09 | 20.93641 | 29.3562  | 10880.09 | 0          |
| 1987 | 4.8E+10  | 6.34E+10   | 4.1     | 10.20965 | 4.9E+09  | 24.56921 | 32.2356  | 11205.42 | 0          |
| 1988 | 6.02E+10 | 6.71E+10   | 3.8     | 10.52451 | 6.34E+09 | 27.95465 | 33.2564  | 11536.3  | 0          |
| 1989 | 4.36E+10 | 6.14E+10   | 3.5     | 9.560382 | 4.16E+09 | 12.70524 | 33.89563 | 11875.5  | 0          |
| 1990 | 4.86E+10 | 6.53E+10   | 2.6     | 8.424748 | 4.09E+09 | 10.22378 | 34.67729 | 12225.05 | 1          |
| 1991 | 5.35E+10 | 7.17E+10   | 3.6     | 9.647678 | 5.16E+09 | 18.70267 | 34.72628 | 12586.18 | 1          |
| 1992 | 6.08E+10 | 7.6E+10    | 4.5     | 9.172313 | 5.57E+09 | 23.71733 | 34.74028 | 12958.66 | 1          |
| 1993 | 6E+10    | 7.62E+10   | 4       | 8.544188 | 5.13E+09 | 18.75688 | 35.08494 | 13341.1  | 1          |
| 1994 | 5.84E+10 | 7.44E+10   | 5       | 7.229332 | 4.22E+09 | 14.14735 | 35.13757 | 13731.23 | 1          |
| 1995 | 7.74E+10 | 7.74E+10   | 4.4     | 7.122946 | 5.51E+09 | 18.11389 | 35.14974 | 14127.35 | 1          |
| 1996 | 7.05E+10 | 7.72E+10   | 4.4     | 5.012766 | 3.54E+09 | 16.55475 | 39.54457 | 14528.6  | 1          |
| 1997 | 8.87E+10 | 8.22E+10   | 4.4     | 6.47773  | 5.75E+09 | 21.04456 | 45.2563  | 14935.3  | 1          |
| 1998 | 9.58E+10 | 8.23E+10   | 4.4     | 7.540797 | 7.23E+09 | 21.86701 | 56.97327 | 15348.07 | 1          |
| 1999 | 1.03E+11 | 7.73E+10   | 4.4     | 7.511273 | 7.76E+09 | 18.10207 | 59.33166 | 15768.01 | 1          |
| 2000 | 1.21E+11 | 7.98E+10   | 4.4     | 7.227199 | 8.76E+09 | 17.21518 | 59.3282  | 16195.53 | 1          |
| 2001 | 1.25E+11 | 8.19E+10   | 4.4     | 7.969812 | 9.96E+09 | 18.73386 | 65.2563  | 16630.77 | 1          |

Sources: WB, different issues and CD-ROM databases.

IMF, international financial statistics, year book, different issues plus CD-ROM.

ILO database.

| Dependent Variable: GDP95_SA |             |                       |             |        |
|------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares        |             |                       |             |        |
| Date: 03/11/06 Time: 04:51   |             |                       |             |        |
| Sample: 1980 2001            |             |                       |             |        |
| Included observations: 22    |             |                       |             |        |
| Variable                     | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                            | 9.68E+10    | 1.26E+10              | 7.656701    | 0.0000 |
| ED_SA                        | -3.49E+09   | 2.43E+09              | -1.432969   | 0.1711 |
| EM_SA                        | 5105979.    | 1705532.              | 2.993775    | 0.0086 |
| PRIV_SA                      | 1.22E+10    | 4.09E+09              | 2.990941    | 0.0086 |
| K_SA                         | 2.27E+08    | 3.44E+08              | 0.658400    | 0.5196 |
| GE_SA                        | -6.85E+08   | 2.22E+08              | -3.091700   | 0.0070 |
| R-squared                    | 0.946388    | Mean dependent var    | 1.16E+11    |        |
| Adjusted R-squared           | 0.929634    | S.D. dependent var    | 1.65E+10    |        |
| S.E. of regression           | 4.36E+09    | Akaike info criterion | 47.45857    |        |
| Sum squared resid            | 3.05E+20    | Schwarz criterion     | 47.75613    |        |
| Log likelihood               | -516.0443   | F-statistic           | 56.48759    |        |
| Durbin-Watson stat           | 1.621613    | Prob(F-statistic)     | 0.000000    |        |

| Dependent Variable: GDP95_TU |             |                       |             |        |
|------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares        |             |                       |             |        |
| Date: 03/11/06 Time: 20:50   |             |                       |             |        |
| Sample: 1980 2001            |             |                       |             |        |
| Included observations: 22    |             |                       |             |        |
| Variable                     | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                            | -8.69E+10   | 1.37E+10              | -6.331066   | 0.0000 |
| SCH_TU                       | 9.87E+08    | 8.04E+08              | 1.228713    | 0.2369 |
| EM_TU                        | 3935555.    | 1214760.              | 3.239779    | 0.0051 |
| PRIV_TU                      | -1.33E+09   | 5.41E+09              | -0.246647   | 0.8083 |
| K_TU                         | 1.37E+09    | 3.49E+08              | 3.915160    | 0.0012 |
| GE_TU                        | 6.17E+08    | 9.80E+08              | 0.629802    | 0.5377 |
| R-squared                    | 0.988623    | Mean dependent var    | 1.46E+11    |        |
| Adjusted R-squared           | 0.985068    | S.D. dependent var    | 3.85E+10    |        |
| S.E. of regression           | 4.70E+09    | Akaike info criterion | 47.60614    |        |
| Sum squared resid            | 3.53E+20    | Schwarz criterion     | 47.90370    |        |
| Log likelihood               | -517.6675   | F-statistic           | 278.0731    |        |
| Durbin-Watson stat           | 1.364863    | Prob(F-statistic)     | 0.000000    |        |

| Dependent Variable: D(LOG(GDP_JORD))                |             |                       |             |        |
|-----------------------------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares                               |             |                       |             |        |
| Date: 03/11/06 Time: 20:59                          |             |                       |             |        |
| Sample(adjusted): 1981 2000                         |             |                       |             |        |
| Included observations: 9                            |             |                       |             |        |
| Excluded observations: 11 after adjusting endpoints |             |                       |             |        |
| Variable                                            | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                                                   | 0.003654    | 0.265241              | 0.013776    | 0.9899 |
| ED_JORD                                             | -0.191429   | 0.019568              | -9.782799   | 0.0023 |
| D(LOG(EM_JORD))                                     | 3.336856    | 0.823131              | 4.053858    | 0.0270 |
| PRIV_JORD                                           | 0.428696    | 0.069491              | 6.169120    | 0.0086 |
| LOG(D(K_JORD))                                      | 0.000248    | 0.015979              | 0.015546    | 0.9886 |
| GE_JORD                                             | 0.022858    | 0.009853              | 2.319780    | 0.1031 |
| R-squared                                           | 0.987937    | Mean dependent var    | 0.005120    |        |
| Adjusted R-squared                                  | 0.967832    | S.D. dependent var    | 0.171099    |        |
| S.E. of regression                                  | 0.030687    | Akaike info criterion | -3.895205   |        |
| Sum squared resid                                   | 0.002825    | Schwarz criterion     | -3.763722   |        |
| Log likelihood                                      | 23.52842    | F-statistic           | 49.13877    |        |
| Durbin-Watson stat                                  | 2.788471    | Prob(F-statistic)     | 0.004450    |        |

| Dependent Variable: GDP_KW |             |                       |             |        |
|----------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares      |             |                       |             |        |
| Date: 03/11/06 Time: 19:54 |             |                       |             |        |
| Sample: 1980 2001          |             |                       |             |        |
| Included observations: 22  |             |                       |             |        |
| Variable                   | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                          | 2.77E+10    | 4.94E+09              | 5.612078    | 0.0000 |
| ED_KW                      | 8.22E+08    | 5.78E+08              | 1.422172    | 0.1742 |
| EM_KW                      | 3418327.    | 3461230.              | 0.987605    | 0.3380 |
| PRIV_KW                    | 5.79E+09    | 1.86E+09              | 3.111356    | 0.0067 |
| K_KW                       | -2.07E+08   | 1.58E+08              | -1.314930   | 0.2071 |
| GE_KW                      | -3.81E+08   | 1.04E+08              | -3.673938   | 0.0021 |
| R-squared                  | 0.871844    | Mean dependent var    | 2.42E+10    |        |
| Adjusted R-squared         | 0.831795    | S.D. dependent var    | 5.58E+09    |        |
| S.E. of regression         | 2.29E+09    | Akaike info criterion | 46.16756    |        |
| Sum squared resid          | 8.38E+19    | Schwarz criterion     | 46.46512    |        |
| Log likelihood             | -501.8431   | F-statistic           | 21.76948    |        |
| Durbin-Watson stat         | 1.740616    | Prob(F-statistic)     | 0.000001    |        |

Dependent Variable: GDP95\_ARG  
Method: Least Squares  
Date: 03/11/06 Time: 04:48  
Sample: 1980 2001  
Included observations: 22

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| C        | -3.27E+11   | 3.89E+10   | -8.407369   | 0.0000 |
| ED_ARG   | 1.23E+08    | 4.54E+09   | 0.027069    | 0.9787 |
| EM_ARG   | 18639899    | 1450380.   | 12.85173    | 0.0000 |
| PRIV_ARG | 3.93E+09    | 9.18E+09   | 0.428239    | 0.6742 |
| K_ARG    | 7.13E+09    | 8.89E+08   | 8.019051    | 0.0000 |
| GE_ARG   | 0.384954    | 1.007359   | 0.382142    | 0.7074 |

|                    |           |                       |          |
|--------------------|-----------|-----------------------|----------|
| R-squared          | 0.980956  | Mean dependent var    | 2.36E+11 |
| Adjusted R-squared | 0.975005  | S.D. dependent var    | 3.98E+10 |
| S.E. of regression | 6.29E+09  | Akaike info criterion | 48.19056 |
| Sum squared resid  | 6.34E+20  | Schwarz criterion     | 48.48812 |
| Log likelihood     | -524.0962 | F-statistic           | 164.8351 |
| Durbin-Watson stat | 1.525671  | Prob(F-statistic)     | 0.000000 |

Dependent Variable: GDP95\_BAH  
Method: Least Squares  
Date: 03/11/06 Time: 04:58  
Sample: 1980 2001  
Included observations: 22

| Variable | Coefficient | Std. Error | t-Statistic | Prob.  |
|----------|-------------|------------|-------------|--------|
| C        | -1.16E+09   | 2.44E+09   | -0.472955   | 0.6426 |
| ED_BAH   | 3.41E+08    | 4.05E+08   | 0.841843    | 0.4123 |
| EM_BAH   | 16415268    | 1727537.   | 9.502125    | 0.0000 |
| PRIV_BAH | 2.29E+08    | 1.45E+08   | 1.580866    | 0.1335 |
| K_BAH    | 742707.4    | 8411781.   | 0.088294    | 0.9307 |
| GE_BAH   | -73469239   | 13554325   | -5.420354   | 0.0001 |

|                    |           |                       |          |
|--------------------|-----------|-----------------------|----------|
| R-squared          | 0.988561  | Mean dependent var    | 4.86E+09 |
| Adjusted R-squared | 0.984986  | S.D. dependent var    | 1.41E+09 |
| S.E. of regression | 1.72E+08  | Akaike info criterion | 40.99563 |
| Sum squared resid  | 4.76E+17  | Schwarz criterion     | 41.29319 |
| Log likelihood     | -444.9520 | F-statistic           | 276.5450 |
| Durbin-Watson stat | 1.525085  | Prob(F-statistic)     | 0.000000 |

| Dependent Variable: LOG(GDP95_EG)                   |             |                       |             |        |
|-----------------------------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares                               |             |                       |             |        |
| Date: 03/11/06 Time: 21:05                          |             |                       |             |        |
| Sample(adjusted): 1981 2001                         |             |                       |             |        |
| Included observations: 21 after adjusting endpoints |             |                       |             |        |
| Variable                                            | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                                                   | 6.572554    | 1.215762              | 5.406119    | 0.0001 |
| LOG(ED_EG)                                          | -0.110790   | 0.097116              | -1.140803   | 0.2718 |
| LOG(EM_EG)                                          | 1.763628    | 0.105921              | 16.65041    | 0.0000 |
| PRIV_EG                                             | -0.062309   | 0.033724              | -1.847641   | 0.0845 |
| D(LOG(K_EG))                                        | -0.065045   | 0.055726              | -1.167239   | 0.2613 |
| LOG(GE_EG)                                          | -0.042185   | 0.104696              | -0.402930   | 0.6927 |
| R-squared                                           | 0.993022    | Mean dependent var    | 24.66709    |        |
| Adjusted R-squared                                  | 0.990697    | S.D. dependent var    | 0.273252    |        |
| S.E. of regression                                  | 0.026356    | Akaike info criterion | -4.199263   |        |
| Sum squared resid                                   | 0.010420    | Schwarz criterion     | -3.900828   |        |
| Log likelihood                                      | 50.09226    | F-statistic           | 426.9505    |        |
| Durbin-Watson stat                                  | 1.268911    | Prob(F-statistic)     | 0.000000    |        |

| Dependent Variable: GDP95_IND |             |                       |             |        |
|-------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares         |             |                       |             |        |
| Date: 03/11/06 Time: 20:23    |             |                       |             |        |
| Sample: 1980 2001             |             |                       |             |        |
| Included observations: 22     |             |                       |             |        |
| Variable                      | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                             | -2.15E+11   | 5.11E+10              | -4.206339   | 0.0007 |
| ED_IND                        | -2.73E+10   | 7.58E+09              | -3.598082   | 0.0024 |
| EM_IND                        | 1005898.    | 128898.9              | 7.803773    | 0.0000 |
| PRIV_IND                      | 6.18E+09    | 9.89E+09              | 0.625423    | 0.5405 |
| K_IND                         | -4.89E+08   | 1.39E+09              | -0.352071   | 0.7294 |
| GC_IND                        | 1.621168    | 0.550997              | 2.942246    | 0.0096 |
| R-squared                     | 0.995343    | Mean dependent var    | 2.94E+11    |        |
| Adjusted R-squared            | 0.993887    | S.D. dependent var    | 1.05E+11    |        |
| S.E. of regression            | 8.18E+09    | Akaike info criterion | 48.71494    |        |
| Sum squared resid             | 1.07E+21    | Schwarz criterion     | 49.01250    |        |
| Log likelihood                | -529.8644   | F-statistic           | 683.8703    |        |
| Durbin-Watson stat            | 1.418569    | Prob(F-statistic)     | 0.000000    |        |

| Dependent Variable: GDP95_INDO                      |             |                       |             |        |
|-----------------------------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares                               |             |                       |             |        |
| Date: 03/11/06 Time: 20:19                          |             |                       |             |        |
| Sample(adjusted): 1988 2001                         |             |                       |             |        |
| Included observations: 14 after adjusting endpoints |             |                       |             |        |
| Variable                                            | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                                                   | -3.76E+11   | 6.36E+10              | -5.914755   | 0.0004 |
| ED_INDO                                             | 3.34E+10    | 3.83E+10              | 0.869938    | 0.4097 |
| EM_INDO                                             | 3559214.    | 386907.4              | 9.199135    | 0.0000 |
| PRIV_INDO                                           | 5.30E+09    | 7.92E+09              | 0.668772    | 0.5225 |
| K_INDO                                              | 2.15E+09    | 6.80E+08              | 3.162520    | 0.0133 |
| GC_INDO                                             | 1.144444    | 1.074003              | 1.065587    | 0.3177 |
| R-squared                                           | 0.980462    | Mean dependent var    | 1.80E+11    |        |
| Adjusted R-squared                                  | 0.968250    | S.D. dependent var    | 3.61E+10    |        |
| S.E. of regression                                  | 6.43E+09    | Akaike info criterion | 48.30247    |        |
| Sum squared resid                                   | 3.30E+20    | Schwarz criterion     | 48.57635    |        |
| Log likelihood                                      | -332.1173   | F-statistic           | 80.29071    |        |
| Durbin-Watson stat                                  | 0.748397    | Prob(F-statistic)     | 0.000001    |        |

| Dependent Variable: GDP95_IRA |             |                       |             |        |
|-------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares         |             |                       |             |        |
| Date: 03/11/06 Time: 04:54    |             |                       |             |        |
| Sample: 1980 2001             |             |                       |             |        |
| Included observations: 22     |             |                       |             |        |
| Variable                      | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                             | -1.53E+10   | 1.29E+10              | -1.193125   | 0.2502 |
| ED_IRA                        | -6.67E+09   | 2.05E+09              | -3.258291   | 0.0049 |
| EM_IRA                        | 1980433.    | 267429.4              | 7.405444    | 0.0000 |
| PRIV_IRA                      | 1.01E+10    | 3.54E+09              | 2.841694    | 0.0118 |
| K_IRA                         | 5.07E+08    | 2.31E+08              | 2.194427    | 0.0433 |
| GE_IRA                        | 2.52E+09    | 6.46E+08              | 3.896663    | 0.0013 |
| R-squared                     | 0.961961    | Mean dependent var    | 7.77E+10    |        |
| Adjusted R-squared            | 0.950074    | S.D. dependent var    | 1.72E+10    |        |
| S.E. of regression            | 3.84E+09    | Akaike info criterion | 47.20156    |        |
| Sum squared resid             | 2.36E+20    | Schwarz criterion     | 47.49912    |        |
| Log likelihood                | -513.2172   | F-statistic           | 80.92492    |        |
| Durbin-Watson stat            | 1.523621    | Prob(F-statistic)     | 0.000000    |        |

| Dependent Variable: GDP95_MOR                      |             |                       |             |        |
|----------------------------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares                              |             |                       |             |        |
| Date: 03/11/06 Time: 20:28                         |             |                       |             |        |
| Sample(adjusted): 1980 1999                        |             |                       |             |        |
| Included observations: 12                          |             |                       |             |        |
| Excluded observations: 8 after adjusting endpoints |             |                       |             |        |
| Variable                                           | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                                                  | 2.05E+10    | 1.18E+10              | 1.740475    | 0.1324 |
| SCH_MOR                                            | -5.46E+08   | 2.81E+08              | -1.943968   | 0.0999 |
| EM_MOR                                             | 3203774.    | 634993.6              | 5.045364    | 0.0023 |
| PRIV_MOR                                           | 30803456    | 1.91E+09              | 0.016110    | 0.9877 |
| K_MOR                                              | 70747465    | 2.21E+08              | 0.320497    | 0.7595 |
| GE_MOR                                             | -1.20E+09   | 5.06E+08              | -2.380578   | 0.0547 |
| R-squared                                          | 0.975978    | Mean dependent var    | 3.30E+10    |        |
| Adjusted R-squared                                 | 0.955960    | S.D. dependent var    | 5.18E+09    |        |
| S.E. of regression                                 | 1.09E+09    | Akaike info criterion | 44.75900    |        |
| Sum squared resid                                  | 7.10E+18    | Schwarz criterion     | 45.00145    |        |
| Log likelihood                                     | -262.5540   | F-statistic           | 48.75423    |        |
| Durbin-Watson stat                                 | 3.678852    | Prob(F-statistic)     | 0.000089    |        |

| Dependent Variable: GDP95_PAK |             |                       |             |        |
|-------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares         |             |                       |             |        |
| Date: 03/11/06 Time: 04:58    |             |                       |             |        |
| Sample: 1980 2001             |             |                       |             |        |
| Included observations: 22     |             |                       |             |        |
| Variable                      | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                             | -4.48E+10   | 7.38E+09              | -6.062807   | 0.0000 |
| ED_PAK                        | 2.47E+09    | 1.81E+09              | 1.364151    | 0.1914 |
| EM_PAK                        | 1138102.    | 71217.51              | 15.98064    | 0.0000 |
| PRIV_PAK                      | 1.49E+09    | 1.03E+09              | 1.446242    | 0.1674 |
| K_PAK                         | 8.21E+08    | 3.20E+08              | 2.567823    | 0.0206 |
| GE_PAK                        | 41556562    | 1.36E+08              | 0.304935    | 0.7643 |
| R-squared                     | 0.996809    | Mean dependent var    | 4.97E+10    |        |
| Adjusted R-squared            | 0.995812    | S.D. dependent var    | 1.48E+10    |        |
| S.E. of regression            | 9.60E+08    | Akaike info criterion | 44.43061    |        |
| Sum squared resid             | 1.48E+19    | Schwarz criterion     | 44.72817    |        |
| Log likelihood                | -482.7367   | F-statistic           | 999.5735    |        |
| Durbin-Watson stat            | 1.642597    | Prob(F-statistic)     | 0.000000    |        |

| Dependent Variable: GDP95_MA |             |                       |             |        |
|------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares        |             |                       |             |        |
| Date: 03/11/06 Time: 20:34   |             |                       |             |        |
| Sample: 1980 2001            |             |                       |             |        |
| Included observations: 22    |             |                       |             |        |
| Variable                     | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                            | -9306.980   | 5983.439              | -1.555457   | 0.1394 |
| SCH_MA                       | 5.56E-05    | 3.08E-05              | 1.802890    | 0.0903 |
| EM_MA                        | 193.4546    | 101.0866              | 1.913752    | 0.0737 |
| PRIV_MA                      | 146.8675    | 253.9421              | 0.578350    | 0.5711 |
| K_MA                         | -14.93651   | 12.55782              | -1.189419   | 0.2516 |
| GC_MA                        | 2.33E-07    | 4.74E-08              | 4.908906    | 0.0002 |
| R-squared                    | 0.969984    | Mean dependent var    | 3445.458    |        |
| Adjusted R-squared           | 0.960604    | S.D. dependent var    | 922.0948    |        |
| S.E. of regression           | 183.0222    | Akaike info criterion | 13.48409    |        |
| Sum squared resid            | 535954.3    | Schwarz criterion     | 13.78165    |        |
| Log likelihood               | -142.3250   | F-statistic           | 103.4087    |        |
| Durbin-Watson stat           | 1.202298    | Prob(F-statistic)     | 0.000000    |        |

| Dependent Variable: GDP95_MEX                      |             |                       |             |        |
|----------------------------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares                              |             |                       |             |        |
| Date: 03/11/06 Time: 20:43                         |             |                       |             |        |
| Sample(adjusted): 1980 2000                        |             |                       |             |        |
| Included observations: 13                          |             |                       |             |        |
| Excluded observations: 8 after adjusting endpoints |             |                       |             |        |
| Variable                                           | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                                                  | 8.07E+10    | 3.72E+10              | 2.168058    | 0.0668 |
| SCH_MEX                                            | 3.18E+09    | 1.14E+09              | 2.802930    | 0.0264 |
| EM_MEX                                             | -1073577.   | 1910045.              | -0.562069   | 0.5916 |
| PRIV_MEX                                           | 3.85E+10    | 2.32E+10              | 1.660200    | 0.1408 |
| K_MEX                                              | 2.60E+08    | 9.31E+08              | 0.278870    | 0.7884 |
| GC_MEX                                             | 1.192178    | 0.177524              | 6.715581    | 0.0003 |
| R-squared                                          | 0.992604    | Mean dependent var    | 2.97E+11    |        |
| Adjusted R-squared                                 | 0.987321    | S.D. dependent var    | 4.18E+10    |        |
| S.E. of regression                                 | 4.71E+09    | Akaike info criterion | 47.68693    |        |
| Sum squared resid                                  | 1.55E+20    | Schwarz criterion     | 47.94767    |        |
| Log likelihood                                     | -303.9650   | F-statistic           | 187.8891    |        |
| Durbin-Watson stat                                 | 1.659133    | Prob(F-statistic)     | 0.000000    |        |

| Dependent Variable: GDP95_VENZ |             |                       |             |        |
|--------------------------------|-------------|-----------------------|-------------|--------|
| Method: Least Squares          |             |                       |             |        |
| Date: 03/11/06 Time: 20:39     |             |                       |             |        |
| Sample: 1980 2001              |             |                       |             |        |
| Included observations: 22      |             |                       |             |        |
| Variable                       | Coefficient | Std. Error            | t-Statistic | Prob.  |
| C                              | 1.48E+10    | 6.62E+09              | 2.237898    | 0.0398 |
| SCH_VENZ                       | -1.93E+08   | 1.13E+08              | -1.710738   | 0.1064 |
| EM_VENZ                        | 3790618.    | 788740.9              | 4.805911    | 0.0002 |
| PRIV_VENZ                      | 6.60E+09    | 1.57E+09              | 4.201298    | 0.0007 |
| K_VENZ                         | 5.08E+08    | 79301195              | 6.410485    | 0.0000 |
| GC_VENZ                        | 0.059318    | 0.234109              | 0.253378    | 0.8032 |
| R-squared                      | 0.977511    | Mean dependent var    | 6.93E+10    |        |
| Adjusted R-squared             | 0.970483    | S.D. dependent var    | 9.33E+09    |        |
| S.E. of regression             | 1.60E+09    | Akaike info criterion | 45.45516    |        |
| Sum squared resid              | 4.11E+19    | Schwarz criterion     | 45.75271    |        |
| Log likelihood                 | -494.0067   | F-statistic           | 139.0902    |        |
| Durbin-Watson stat             | 2.171682    | Prob(F-statistic)     | 0.000000    |        |

Dependent Variable: D(LOG(GDP95?))  
Method: Pooled Least Squares  
Date: 03/11/06 Time: 21:27  
Sample(adjusted): 1988 2001  
Included observations: 11  
Excluded observations: 3 after adjusting endpoints  
Number of cross-sections used: 15  
Total panel (balanced) observations: 165

| Variable           | Coefficient | Std. Error         | t-Statistic | Prob.    |
|--------------------|-------------|--------------------|-------------|----------|
| PRIV?              | 0.005601    | 0.010457           | 0.535650    | 0.5929   |
| LOG(EM?)           | -3.53E-05   | 0.002181           | -0.016193   | 0.9871   |
| LOG(GC?)           | 0.001215    | 0.001204           | 1.008867    | 0.3146   |
| D(LOG(K?))         | 0.077749    | 0.021691           | 3.584450    | 0.0004   |
| LOG(ED?)           | 0.000965    | 0.007679           | 0.125661    | 0.9002   |
| R-squared          | 0.078004    | Mean dependent var |             | 0.031117 |
| Adjusted R-squared | 0.054954    | S.D. dependent var |             | 0.051820 |
| S.E. of regression | 0.050376    | Sum squared resid  |             | 0.406036 |
| F-statistic        | 3.384154    | Durbin-Watson stat |             | 1.799002 |
| Prob(F-statistic)  | 0.010916    |                    |             |          |

Dependent Variable: D(LOG(GDP95?))  
Method: Pooled Least Squares  
Date: 03/11/06 Time: 21:41  
Sample(adjusted): 1981 2001  
Included observations: 21 after adjusting endpoints  
Number of cross-sections used: 15  
Total panel (unbalanced) observations: 305

| Variable           | Coefficient | Std. Error         | t-Statistic | Prob.    |
|--------------------|-------------|--------------------|-------------|----------|
| C                  | 0.091494    | 0.067631           | 1.352835    | 0.1771   |
| PRIV?              | 0.015372    | 0.006139           | 2.503923    | 0.0128   |
| LOG(EM?)           | 0.002205    | 0.001758           | 1.254299    | 0.2107   |
| LOG(GC?)           | -0.003759   | 0.003341           | -1.125334   | 0.2613   |
| D(LOG(K?))         | 0.066028    | 0.016405           | 4.024817    | 0.0001   |
| LOG(ED?)           | -0.001195   | 0.006181           | -0.193383   | 0.8468   |
| R-squared          | 0.075751    | Mean dependent var |             | 0.032703 |
| Adjusted R-squared | 0.060296    | S.D. dependent var |             | 0.052976 |
| S.E. of regression | 0.051354    | Sum squared resid  |             | 0.788534 |
| Log likelihood     | 475.8021    | F-statistic        |             | 4.901199 |
| Durbin-Watson stat | 1.616924    | Prob(F-statistic)  |             | 0.000251 |

| Dependent Variable: D(LOG(GDP95?))<br>Method: Pooled Least Squares<br>Date: 03/11/06 Time: 22:19<br>Sample(adjusted): 1981 2001<br>Included observations: 21 after adjusting endpoints<br>Number of cross-sections used: 15<br>Total panel (unbalanced) observations: 258 |             |                    |             |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------|-------------|----------|
| Variable                                                                                                                                                                                                                                                                  | Coefficient | Std. Error         | t-Statistic | Prob.    |
| PRIV?                                                                                                                                                                                                                                                                     | 0.027004    | 0.010966           | 2.462476    | 0.0145   |
| LOG(EM?)                                                                                                                                                                                                                                                                  | -0.030311   | 0.029429           | -1.029969   | 0.3041   |
| LOG(GC?)                                                                                                                                                                                                                                                                  | 0.001967    | 0.008575           | 0.229434    | 0.8187   |
| D(LOG(K?))                                                                                                                                                                                                                                                                | 0.060036    | 0.016600           | 3.616589    | 0.0004   |
| LOG(SCH?)                                                                                                                                                                                                                                                                 | -0.000167   | 0.003064           | -0.054559   | 0.9565   |
| Fixed Effects                                                                                                                                                                                                                                                             |             |                    |             |          |
| _EG--C                                                                                                                                                                                                                                                                    | 0.305720    |                    |             |          |
| _SA--C                                                                                                                                                                                                                                                                    | 0.227764    |                    |             |          |
| _IND--C                                                                                                                                                                                                                                                                   | 0.392045    |                    |             |          |
| _INDO--C                                                                                                                                                                                                                                                                  | 0.350465    |                    |             |          |
| _MOR--C                                                                                                                                                                                                                                                                   | 0.254595    |                    |             |          |
| _TU--C                                                                                                                                                                                                                                                                    | 0.296323    |                    |             |          |
| _BAH--C                                                                                                                                                                                                                                                                   | 0.158789    |                    |             |          |
| _KW--C                                                                                                                                                                                                                                                                    | 0.176071    |                    |             |          |
| _VENZ--C                                                                                                                                                                                                                                                                  | 0.242472    |                    |             |          |
| _MA--C                                                                                                                                                                                                                                                                    | 0.098670    |                    |             |          |
| _JORD--C                                                                                                                                                                                                                                                                  | 0.216015    |                    |             |          |
| _IRA--C                                                                                                                                                                                                                                                                   | 0.288867    |                    |             |          |
| _ARG--C                                                                                                                                                                                                                                                                   | 0.258958    |                    |             |          |
| _MEX--C                                                                                                                                                                                                                                                                   | 0.294396    |                    |             |          |
| _PAK--C                                                                                                                                                                                                                                                                   | 0.316833    |                    |             |          |
| R-squared                                                                                                                                                                                                                                                                 | 0.164164    | Mean dependent var |             | 0.032631 |
| Adjusted R-squared                                                                                                                                                                                                                                                        | 0.097437    | S.D. dependent var |             | 0.051977 |
| S.E. of regression                                                                                                                                                                                                                                                        | 0.049380    | Sum squared resid  |             | 0.580338 |
| Log likelihood                                                                                                                                                                                                                                                            | 420.4403    | F-statistic        |             | 2.460247 |
| Durbin-Watson stat                                                                                                                                                                                                                                                        | 1.698271    | Prob(F-statistic)  |             | 0.000895 |

Dependent Variable: D(LOG(GDP95?))  
Method: GLS (Variance Components)  
Date: 03/11/06 Time: 22:06  
Sample: 1981 2001  
Included observations: 21  
Number of cross-sections used: 15  
Total panel (unbalanced) observations: 305

| Variable                                       | Coefficient | Std. Error         | t-Statistic | Prob.  |
|------------------------------------------------|-------------|--------------------|-------------|--------|
| C                                              | 0.025003    | 0.021068           | 1.186740    | 0.2363 |
| PRIV?                                          | 0.012530    | 0.006122           | 2.046719    | 0.0416 |
| LOG(EM?)                                       | 0.001007    | 0.001623           | 0.620407    | 0.5355 |
| LOG(GE?)                                       | -0.001391   | 0.001093           | -1.272415   | 0.2042 |
| D(LOG(K?))                                     | 0.064688    | 0.016311           | 3.965907    | 0.0001 |
| LOG(ED?)                                       | -0.002963   | 0.006695           | -0.442569   | 0.6584 |
| Random Effects                                 |             |                    |             |        |
| _EG--C                                         | 0.002794    |                    |             |        |
| _SA--C                                         | -0.003697   |                    |             |        |
| _IND--C                                        | 0.003137    |                    |             |        |
| _INDO--C                                       | 0.000980    |                    |             |        |
| _MOR--C                                        | -0.000344   |                    |             |        |
| _TU--C                                         | 5.20E-06    |                    |             |        |
| _BAH--C                                        | 0.001555    |                    |             |        |
| _KW--C                                         | 0.000411    |                    |             |        |
| _VENZ--C                                       | -0.003792   |                    |             |        |
| _MA--C                                         | 0.001200    |                    |             |        |
| _JORD--C                                       | 0.001107    |                    |             |        |
| _IRA--C                                        | -0.000215   |                    |             |        |
| _ARG--C                                        | -0.002855   |                    |             |        |
| _MEX--C                                        | -0.002206   |                    |             |        |
| _PAK--C                                        | 0.002304    |                    |             |        |
| GLS Transformed Regression                     |             |                    |             |        |
| R-squared                                      | 0.086827    | Mean dependent var | 0.032703    |        |
| Adjusted R-squared                             | 0.071557    | S.D. dependent var | 0.052976    |        |
| S.E. of regression                             | 0.051045    | Sum squared resid  | 0.779085    |        |
| Durbin-Watson stat                             | 1.632371    |                    |             |        |
| Unweighted Statistics including Random Effects |             |                    |             |        |
| R-squared                                      | 0.093625    | Mean dependent var | 0.032703    |        |
| Adjusted R-squared                             | 0.078469    | S.D. dependent var | 0.052976    |        |
| S.E. of regression                             | 0.050855    | Sum squared resid  | 0.773285    |        |
| Durbin-Watson stat                             | 1.644614    |                    |             |        |