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Jordan  
Constraints Analysis

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# Constraints Analysis for Jordan

## 1. Introduction

The Millennium Challenge Corporation (MCC) is a United States Government agency established in 2004 to administer the Millennium Challenge Account (MCA), which finances development projects in low and lower-middle income countries. The main objective of the MCC is to combat poverty through the promotion of sustainable economic growth. MCC declared Jordan as an eligible country for MCA funding in early 2007.

This study, the Constraints Analysis (CA), represents a primary endeavor to clearly identify possible constraints to economic growth in Jordan. It is based on the Growth Diagnostics school of thought originally introduced by Hausmann, Rodrick, and Velasco of Harvard University and follows a defined problem tree to help identify fundamental impediments to economic growth. The analysis in Jordan further benefited from a consultation process that included academia, nongovernmental organizations, and representatives of the private sector and government to identify such barriers.

Since late 1980s, Jordan has been actively implementing a series of market-based structural reform programs aiming at achieving a private sector-led and outward-oriented growth. As a result of Jordan's reform efforts, particularly on the macroeconomic level, Jordan's current performance remains strong, growth is robust, core inflation is contained, the current account deficit is narrowing, reserves are comfortable, and the fiscal situation continues to improve. Consequently, the macroeconomic environment requires continued scrutiny but does not appear to be a constraint to growth at this time.

Despite Jordan's continuing processes to upgrade its business environment, it still faces several *micro risks* that may reduce the profitability of private investments. These constraints include, among others, the high costs of starting new businesses and the time necessary for carrying out import/export procedures. Together, these micro risks constitute a constraint on Jordan's economic growth.

A major impediment to growth that the CA reports is the future limited availability of water. Jordan is ranked among the four most water-poor countries in the world and has been actively seeking new ways to exploit water resources, such as the Disi Aquifer and the Red-Dead projects, to mitigate the problem. However, further demand-side management policies are urgently in need, especially, a more efficient pricing structure which reflects the 'fair value' of water. Currently, the agriculture sector uses 60 percent of available water but contributes less than 3 percent to GDP.

As for the availability and quality of human capital, Jordan's performance is above average when compared to benchmark countries in the region. Jordan's public expenditure on education reached 6.4 percent of its GDP, compared to 6.0 percent in the benchmark countries. Jordan reports a high level of attainment in education, leading to a highly educated labor force, and positive returns on education, with premiums paid to higher levels of qualification. However, business leaders in several sectors complain that low-skilled and semi-skilled workers lack

appropriate skills and work practices, and concerns about weak professional skills among the educated, such as management and marketing skills, are also frequently heard. As a result of these mixed signals, human capital is an area that bears further investigation but cannot be considered a constraint to growth at this time,

This report is divided in the following sections; 1) a short country background, 2) a detailed discussion of framework adopted in the constraint analysis, 3) findings related to low return to economic activity, and finally; 4) findings related to high cost of financing.

## 2. Country Background

### 2.1 Natural Capital

A relatively small country, Jordan occupies an area of 92,300 square kilometers at the junction of the Levantine and Arabian areas of the Middle East. The country is bordered on the north by Syria, the east by Iraq, and by Saudi Arabia on the east and south. To the west are Israel and the occupied West Bank. Jordan's only outlet to the sea is the Gulf of Aqaba, located on the Red Sea, to the south. The strategic importance of Aqaba stems from its unique position as it is one of the most feasible locations for cargo transport to a variety of countries in the region.

Jordan's natural resources for agricultural production are very limited. Only about 2.1 percent of the land mass is considered arable. Jordan is among the world's most water-poor countries, and many of its arid and semi-arid areas are still at the threat of high rate of desertification. The process has been accelerated by unsupervised management and land use practices of overgrazing, cultivation and plowing of marginal soils and woodland removal in the high rainfall zones. Due to the overuse of groundwater resources, the regions of irrigated highlands and the Jordan Valley were also affected by aspects of salinization and alkalization of soil. In addition to human induced factors, climatic factors of irregular rainfall and periodic droughts are contributing to the problem. Since water is necessary for both human and economic development, this extreme water scarcity will clearly continue to be a very serious constraint to Jordan's economic growth. Total water deficit is forecasted to be 637 MCM in 2010 and to increase to almost 681 MCM in the next decade, which send an alarming signal on the future scarcity of water in Jordan, see Table below.



**Table 2: Future water demand, supply and deficit in Jordan (Million Cubic Meters/year)**

	2010	2020	2030	2040
Total Water Demand	1518	1772	2025	2279
Domestic	489	729	969	1209
Industrial	129	143	156	170
Irrigation	900	900	900	900
Total Water Supply	880.6	1084.9	1273.0	1460.5
Surface water	372.9	467.7	467.7	467.7
Ground water	305.7	330.2	356.3	380.8
Water Deficit Total	-637.4	-687.1	-752.0	-818.5

Source: Disi Water Conveyance Project – Hashemite Kingdom of Jordan 2005

In spite of these challenges, the infrastructure for water delivery is extensive. Fully 97 percent of the population has access to an improved fresh water source and over 90 percent has access to sanitation facilities. The challenge for the Government is to promote sustainable use of its very limited water resources.

## **2.2 Economic Background**

The Jordanian economy has displayed a strong resilience over the past few years, despite external shocks that have included the unstable geopolitical conditions in the region, the surge in international oil prices, and the decline in foreign assistance coming into the country. GDP recorded an annual growth rate averaging 6.4 percent at constant market prices over the period 2002-2006, twice the growth rate recorded during the previous five-year period. During the first three quarters of 2007, GDP grew at an annualized rate of 5.8 percent, down only slightly from the same period in 2006.

Despite consistently strong economic growth, the prevailing view is that income is not distributed evenly among Jordanians. Jordan's economy needs to grow at a higher rate in order to alleviate poverty, which remains a serious problem in Jordan, even though it declined significantly from 21.0 percent in 1997 to 14.7 percent in 2006<sup>1</sup>, though un-official statistics claims that this percentage is higher in Jordan. During the last decade the government has focused on devising and implementing measures to propel economic growth to higher and sustainable levels including stabilizing exchange rate policy, adopting reforms on the macroeconomic level and easing the investment environment to attract more FDI's, in the hope to reduce poverty and unemployment and achieve sustainable growth, (Appendix 1, Figure 1).

## **3. Framework of the Constraints Analysis**

This Constraints Analysis (CA) is an exercise designed to help identify fundamental impediments to economic growth. The methodology was originally introduced by Ricardo Hausmann, Dani Rodrik and Andres Velasco in their "Growth Diagnostics" paper and other publications related to growth diagnostics<sup>2</sup>. It rests on an understanding that private investment drives sustainable growth in an economy. Conditions limiting the fundamental profitability of investment or restricting private appropriation of returns from investment create disincentives for private investment activity. Difficulties may lie in the intrinsic profitability of an economic activity due to features of the physical setting of a country or the absence of necessary complements to investment, such as physical infrastructure or human resources. Returns on investment might be fundamentally adequate and yet investment still does not take place because the private sector does not receive, or perceives it would not receive, a sufficient share of those returns.

The CA is a structured inquiry that examines critical constraints at the macroeconomic level that inhibit private investment and hence economic growth. The objective of the CA is to identify the

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<sup>1</sup> The current poverty line in Jordan adopted by the National Aid Fund for cash assistance purposes is JD 432.00 (\$610.00) per capita.

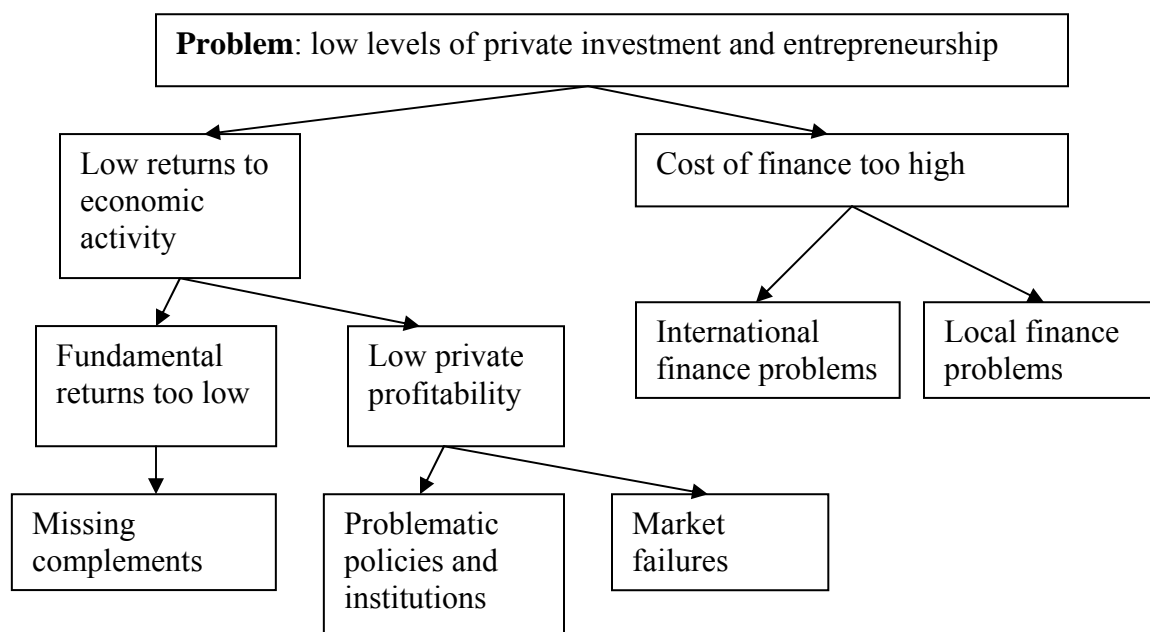
<sup>2</sup> Ricardo Hausmann, Dani Rodrik, Andres Velasco (2005) Growth Diagnostics, Harvard University.

“binding” constraints on investment that, if addressed, will make the greatest contribution to sustainable economic growth. The significance of tackling these binding constraints is rooted in the empirical relationship between growth and poverty reduction. Economic growth is necessary to achieve reductions in poverty, either by expanding employment or by generating the resources needed to afford the mechanisms of welfare assistance a society chooses to maintain.

There is often confusion in specifying which economic problems are true impediments to growth. Not all conditions, bad policies or weak institutions are equally binding on investment outcomes. In comparison to other countries an economy can rank poorly in some indicator yet still perform well. This will be seen in various places in context of Jordan, as discussed in the following text. Certainly a country might exhibit a number of conditions that do not establish ideal incentives for private investment. Not all of these can be expected to be “binding” constraints at one time.

This CA follows an organization that somewhat simplifies the problem tree taxonomy that is used in standard growth diagnoses. We consider two broad areas of inquiry. First, we examine: (1) conditions related to low underlying returns to economic activity. These conditions can be further divided into problems relating to (a) missing or inadequate complements for investment, including physical infrastructure, human capital and natural resources; (b) problematic policies and institutions, involving microeconomic or macroeconomic risks that affect how much of the profitability of economic activity the private sector can lay claim to and retain; and (c) market failures. Second, we examine (2) conditions related to a high cost of financing investment, which can occur because (a) external financing is problematic or because (b) domestic capital markets function poorly or are inefficient. The framework of the CA is presented in the following diagram:

Diagram 1: Constraints Analysis Problem Tree





The application of the constraints analysis for Jordan relies on direct and indirect evidence of potential constraints. Constraints are often manifest in relative prices, so direct evidence includes but is not restricted to data on the prices of goods and services. Indirect evidence can play a significant role in the analysis because binding constraints often lead to behavior that is designed to avoid them. For example, in some countries one could see a high degree of informality in economic activity in response to high costs of doing business formally.

In practice, judgment of whether direct or indirect data provide evidence of a problem will rely on benchmarking – comparisons against accepted standards, if they exist, and against prevailing experience in other countries. Since benchmarking for growth diagnostics is done with the objective of identifying the key constraints to private investment and growth, it is important to select an appropriate group of comparator countries. The core group of comparators should consist of countries that share similar characteristics with the country of interest, and are at a similar stage of development, but it should also include good performers in the region. Here, the group of benchmark countries selected for Jordan consists of Egypt, Morocco, Tunisia and Turkey. This group may vary depending on the question that is addressed, and below some comparisons are made against a larger set of countries, including the set of all Lower Middle Income Countries (LMICs) and sets of countries worldwide drawn from all income groups.

The CA is intended to help prioritize areas for potential reform or investment of limited resources. It can do so by directing focus not on all possible constraints, inefficiencies and complaints presently operating within an economy but on a core set of issues that are of the most immediate importance.

## **4. Elements related to low return to economic activity**

Low returns to economic activity are the primary constraint on private investment in an economy, usually, this due to low private profitability or low underlying economic returns. We discuss details in the following subsections.

### **4.1 Elements related to low underlying economic returns**

Low underlying economic returns can lower the incentive to make investments that expand economic activity and lead to economic growth. There are two key complementary factors of production that could cause low returns: deficiencies in human capital or inadequate physical infrastructure. Based on the available evidence, neither human capital nor infrastructure appears to be a critical constraint on aggregate growth in Jordan at this time. Overall, Jordan's level of capital formation, as well as its recent record attracting foreign direct investment, suggests that returns to investment are fundamentally attractive. The segmentation of the labor market between foreign and domestic workers, however, does seem to limit income growth for many Jordanians. We discuss details in the following subsections.

#### 4.1.1 Human Capital

If human capital were constrained relative to capital, infrastructure, or other complementary factors, one would expect to notice the following economic phenomena:

- Low levels of educational attainment in the population;
- High rates of return to education, high premiums for particular qualifications, or high differentiation in wages depending on skills and knowledge, with educated or highly skilled employees commanding much higher wages than those with little education or fewer qualifications;
- Substantially distorted distribution of unemployment depending on the level of education, with low unemployment among the holders of higher education;
- Substantial efforts of enterprises aimed at providing continuous training to their employees, because businesses require much higher qualification than offered on the labor market.

**Returns to Education:** Data for Jordan show positive returns to education. The results of a Mincer regression analysis using data from the 2005 Employment and Unemployment Survey (EUS) conducted by DOS indicated that, in aggregate, each year of education increases the hourly wage a worker receives, with an effect that is stronger for women than for men (Appendix A, Table 1). Some analyses expand the Mincer equation by including marital status, nationality, sex, and work hours per week. However, for Jordan results do not differ significantly by including these additional variables.

The data likewise indicate differentiated returns by level of education (Appendix A, Figures 1 and 2). These results are also reflected in recent analytical work by the World Bank<sup>3</sup>. The return to education has been increasing in Jordan; whereas, for the MENA region as whole there is some indication that returns to education recently are declining (Appendix A, Table 2). Despite the fact that the return to education is positive and relatively high, it is not sufficient to affirm that human capital is constraint to growth.

**Educational Attainment:** Much investment in developing human capital has and is continuing to occur<sup>4</sup>. Jordan's public expenditure in education was 6.4 percent of GDP, on average, during the period 1995-2003. This compared favorably to rates of 5.6 percent in Egypt, 5.9 percent in Morocco, and 6.8 percent in Tunisia. Jordan stands as one of the first MENA countries to have equipped all public schools with computers and internet connections as an integral component of plans to promote the development of a knowledge-based economy. Educational attainment within the population is high. Laying aside issues of possible adverse labor market incentives related to high public sector employment, there have been strong incentives for pursuing

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<sup>3</sup> World Bank (2008), The Road Not Traveled; Education Reform in the Middle East and Africa, MENA Development Report, p.

<sup>4</sup> Across a broad spectrum of measures, Jordan ranks well against its comparators. For example the illiteracy rate in Jordan is 9.7 percent, where illiteracy stands at 28.6 percent, 47.7 percent and 25.7 percent for Egypt, Morocco and Tunisia, respectively. TIMSS tests, which measure the relative amount of language and math captured by those who are reaching the end of lower secondary school, score Jordan at 426 as compared to Egypt which scored 406, Morocco 362 and Tunisia 420. At the University level, the share of students who major in science /technology and engineering in Jordan is 30 percent as compared to 10.2 percent, 18.3 percent, 31 percent in Egypt, Morocco and Tunisia, World Bank (2008).

education, and educational attainment is projected to continue to expand substantially over the next ten years<sup>5</sup>.

**Distribution of Unemployment:** The composition of unemployment in Jordan is changing, reflecting a growing demand for a skilled, professionally qualified work force. Individuals with less than a secondary education still comprise the largest share of the total number of unemployed (Appendix A Figure 3:2). Over the past two decades, however, this group has accounted for a declining share of total employment, as education levels in the overall population have grown. In contrast, the share of workers with a Bachelor's Degree or more advanced education has grown from only 6.3 percent of total employment in 1973 to 21.3 percent in 2006. (Appendix A, Table 3). Unemployment within this group is the highest in the population when disaggregated by education, suggesting that there are not enough high skilled jobs for the educated workforce that Jordan produces (Appendix A, Figure 3:1). Competition continues to intensify. Unemployment is highest among those with a Bachelor's degree or more advanced education, and it appears to be increasing, with unemployment rates among this group increasing to almost 25.9 %in 2006, compared to 14.7% in 2001. In contrast unemployment among the less educated declined slightly over the same period (Appendix A, Table 4).

Employment in Jordan is primarily a phenomenon affecting youth. Youth literacy of 99.4 percent suggests that low skills, *per se*, are not the primary cause of unemployment among this age group. Given the high population growth rate and the increasing share of young people attaining higher levels of education, larger numbers of well qualified youth are entering the workforce and facing difficulty finding placement. In total, individuals aged 20 to 39 years constitute the largest share of unemployed at 76.1 percent in 2006 (Appendix A, Table 4).

Unemployment also displays a strong gender disparity. Unemployment among educated women increased from 29.8 percent in 2001 to 51.5 percent in 2006 (Appendix A, Table 4).<sup>6</sup> This trend is likely to continue as well-educated women enter the workforce in larger numbers. Apart from those who leave school early and struggle within an increasingly skills-based economy, many of the unemployed appear to be so not because they lack appropriate skills but because they voluntarily choose to be unemployed. To some extent, the long prominence of the public sector within the economy has contributed to this problem by providing expectations of high wages and benefit. This may lead jobseekers to set a high "reservation wage" at odds with declining real wages outside government over the last ten years or more. In Jordan, the public sector share of total employment in 2000 had reached 44 percent compared to 29 percent, 10 percent and 22 percent in Egypt, Morocco and Tunisia respectively.<sup>7</sup>

**Emigration:** According to the Ministry of Labor, about 350,000 Jordanians work outside the country – of them, about 171,000 educated Jordanians working in the Gulf Cooperation Council (GCC) countries. Evidence suggests that educated Jordanians seek jobs in GCC countries because these countries provide higher wages and employment not available in Jordan,

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<sup>5</sup> World Bank (2008).

<sup>6</sup> Women who identify themselves as housewives are considered to be outside the labor force. A recent study by the Center for Strategic Studies (2006) at the University of Jordan found that distance was the most important reason why unemployed women rejected job offers.

<sup>7</sup> World Bank (2008) The Road Not Traveled, p. 226.

(Appendix A, Table 5).<sup>8</sup> As a result, it appears that Jordan exports its educated labor, particularly, to Gulf States, even as it imports unskilled labor.<sup>9</sup>

In its report on education in the MENA region<sup>10</sup>, the World Bank estimated the elasticity of employment to growth to be approximately 1.2 in the period from 1990 to 2001. This result is compatible with growth that does not rely upon capital-intensive development. Crudely, this elasticity implies that GDP would need to grow more than 3 points above the recent average of 6 percent to generate jobs to absorb the currently unemployed. The high elasticity, however, is also associated with limited improvements in labor productivity. This can be related to past public sector employment growth that had absorbed a sizeable shares of growth in the active population. Jordan is implementing steps to reduce the size of its public sector; in so doing, will contribute to help attenuate the influence of the public upon the operation of labor markets.

**Mismatches in the Labor Market:** The World Bank's recent study of employment identified three mismatches in Jordanian labor market, as follows.<sup>11</sup>

- **Geography.** Many of the new jobs created in recent years are not physically located where potential workers reside. Between 2000 and 2005, 55 percent of the jobs created were in Amman, which is home to 38 percent of the unemployed. In most other governorates, job creation was typically not commensurate with the governorate's share in total unemployment. This is of particular importance because recent census data show surprisingly low mobility among working-age Jordanians. Low mobility is likely due to strong attachments to home and to high housing prices in Amman. To promote job creation in disadvantaged locations, Jordan has been implementing a policy of offering tax incentives to businesses that locate in selected districts<sup>12</sup>. Other efforts, including the recent housing initiative launched by his majesty the King to create more building space for residential units, may also help encourage the unemployed to relocate to areas where demand for labor is high.
- **Employability.** According to a survey by the Center for Strategic Studies,<sup>13</sup> 61 percent of employers believed that Jordanian workers were less valuable than foreign workers because they put in less effort, took less responsibility, worked less, and were absent more than foreign workers. The survey also indicates that employers perceive foreign workers to be more productive than Jordanian workers, even though Jordanian workers are comparable in terms of quantity of education and training. As documented in the World Bank's recent study of unemployment in Jordan, the

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<sup>8</sup> World Bank (2008, p251), going by revealed preferences, migrants in MENA must have decided to migrate because they believed that it was to their advantage to do so. This conclusion is supported by several factors. For both the educated and uneducated individuals in countries like Egypt, Yemen, and Jordan, higher wages overseas are an important pull factor. And indeed, the wage rate differentials between, say, the Gulf States and these countries are manifold. This factor alone would probably have been sufficient to convince some to migrate

<sup>9</sup> World Bank (2008, p251), based on the work permits granted to Egyptians by occupation, Egyptian migrants in the Gulf States are more skilled than those in Jordan, Lebanon, and Iraq.

<sup>10</sup> World Bank (2008) *The Road Not Traveled*, p. 223

<sup>11</sup> World Bank (2007) *Resolving Jordan's Labor Market Paradox of Concurrent Economic Growth and High Unemployment*.

<sup>12</sup> A study by the U.S. Agency for International Development (USAID 2004) concluded that the influence of the available incentives on location of investment was minor.

<sup>13</sup> Center for Strategic Studies. 2006. "Study on Employment in Jordan: Replacement of Foreign Labor." Economic Studies Unit, Jordan University. September.

majority of unemployed Jordanians match the educational qualifications of foreign workers and possesses more job and relevant prior experience<sup>14</sup> (Appendix A, Figure 5). Thus, it would appear that the level of training of Jordanians vis-à-vis foreign workers is not a central issue.

- **Expectations.** Although individuals vary in the importance they place on various job characteristics, a high enough wage can usually compensate for undesirable features. But unemployed Jordanians appear to be unwilling to accept many of the existing jobs at prevailing wages. When unemployed Jordanian workers were asked about their willingness to accept jobs from a list of widely available jobs at prevailing wages, about 46 percent of respondents indicated a willingness to accept at least one of the jobs.<sup>15</sup> The other 54 percent of unemployed Jordanians want to work but will not take the available jobs, unless the pay is significantly higher than presently offered. Labor economists refer to the second group as “voluntarily unemployed.” Hence focusing on the involuntarily unemployed should be a high priority. Most programs to assist the involuntarily unemployed combine employment services, training, and income support.

In the meantime, the focus on constraints to growth affecting employment should shift from perceived shortcomings in Jordan’s investment in human capital formation to the consideration of conditions that inhibit job creation in general and bias job creation where it does occur towards low-wage employment.

**Vocational Training**<sup>16</sup>: The current Technical Vocational Education and Training (TVET) Fund is under reform. The new Training and Employment Fund to be established in its place will be based on demand-driven funding mechanism with programs geared towards providing relevant pre-service training to prospective employees and upgrading the skills of employees already in-service. Areas of significant focus include training for tourism (through the USAID-funded Siyaha project), logistics, automobile repair and electronics. In addition, the National Company for Employment and Training (NET), a public/private joint venture bringing together Ministry of Labor, the Jordan Armed Forces and the Jordan Contractors Association, was created July, 2007, to train up to 5,000 local workers per year for jobs in the rapidly growing construction sector.

**Overall, we do not find strong evidence that the four characteristics of an economy constrained by human capital apply in Jordan.** Jordan has invested heavily in education of its population, including women, and the level of educational attainment is relatively high—certainly when compared to the region and also against selected benchmark countries. Positive returns to education are evident in Jordan, with premiums paid to higher skill levels. Levels of unemployment among individuals having secondary and higher education, and the emigration of

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<sup>14</sup> World Bank (2007) Resolving Jordan’s Labor Market Paradox of Concurrent Economic Growth and High Unemployment. Jordanians on average have an average of 5.1 years of experience in their current employment as compared to 3.9 years among foreign workers and on average possess 4.1 years of prior relevant experiences as compared to 3.8 among foreign workers.

<sup>15</sup> According to the Center for Strategic Studies (2006) survey, respondents were asked whether or not they would be willing to accept factory work – the job with the highest acceptance rate -- at various wages: 22 percent of respondents said they would accept at 115JD per month, 44 percent at 150JD, 61 percent at 180JD and 69 percent at 200JD. According to Employment in Enterprises survey (EIE) the prevailing wage for factory work is 154 JD, By interpolation, World Bank argue 46 percent would be willing to accept factory work at 154JD per month. All other types of jobs had lower acceptance rates.

<sup>16</sup> Ministry of Labor (Dec. 2007), Labor Compliance Jordan Apparel Sector Actions to Date and Next Steps

well educated individuals suggest that, on balance, the supply of qualified individuals is not problematic. Whereas foreign workers occupy about half of new jobs created at the lower end of the wage scale, it is not true that skilled Jordanian workers are unavailable to take up those positions.

#### **4.1.2 Infrastructure:**

Evidence indicates that Jordan is efficient in providing the basic infrastructure for business and public uses (Appendix B, Figure 1). Access to electricity is universal. As of 2004, the share of the population without access to an improved water source was 3 percent in Jordan, compared to 19 percent in Morocco, 7 percent in Tunisia, 4 percent in Turkey and 2 percent in Egypt. Access to improved sanitation was also above 90 percent in Jordan, compared to 88 percent in Turkey, 85 percent in Tunisia, 73 percent in Morocco and 70 percent in Egypt. When compared to the benchmark countries, the overall quality of Jordan's infrastructure – including its railways, roads, telephones/fax and electricity – ranked second after only Tunisia (Appendix B, Figure 2)<sup>17</sup>. As a result, Jordan's infrastructure is not currently seen as a major constraint on private sector development or economic growth.

**Energy:** Access to electricity now extends throughout the country. Electricity services function well, with relatively low economic losses due to service disruptions or deficiencies in the power supply (Appendix B, Figures 4 and 5). Electric power transmission losses are average for the benchmark countries (Appendix B, Figure 6). However, Jordan is not particularly efficient in its use of energy, with high energy consumption relative to the volume of company sales and low returns to each unit of energy consumed (Appendix B, Figures 7 and 8).

For many years, Jordan benefited from heavily discounted supplies of oil from neighboring Iraq. More recently, Jordan has converted its electricity generation from the use of oil to natural gas, with the expectation that natural gas would provide a cost effective alternative to the use of oil. However, natural gas costs have been rising, and as a result, the cost of generating electricity may soon approach that in some of the more industrialized states in the US.<sup>18</sup> In the short run, the government's plan to increase electricity prices to reduce the strains of energy subsidies on the fiscal budget will force some industries implement better efficiency in the use of electricity.

Jordan's primary export industries are not particularly energy intensive. If the price of these industries pay for electricity were to increase, for example, by 50 percent, the total cost of inputs would increase by less than ten percent. Higher electricity costs will likely have significant impacts upon domestic consumption, which may affect the welfare of some groups in the short term, but the overall removal of subsidies of energy prices will also improve consumption efficiency among household and industries<sup>19</sup>.

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<sup>17</sup> Evaluations are based on composite indices that consider, for example, delays in obtaining connections (Appendix B, Figure 3), and other performance indicators that show Jordan operating at or above average for the region.

<sup>18</sup> Electricity master plan published by electricity regulatory commissions shows that the overall marginal cost of electricity generation is 3.5 US cents/KWh. This cost is not extraordinarily high in comparison to costs seen in the US.

<sup>19</sup> A study published by SABEQ program tries to examine the impact of the removal of the fuel subsidy on the manufacturing industry in Jordan, the study segment the sectors to three sub- sectors that belong to heavy, medium and low energy intensity industries: Group 1, Industrial activities where total energy costs (fuel and electricity) constitute more than 50 percent of total input costs. Group 2, Industrial activities where total energy costs (fuel and

**Ground Transportation:** As a trading economy, Jordan's economic growth is highly related to improvements in its trade logistics. This includes port handling and congestion, railroad expansion, and the quality and expansion of its roads. The road network is of particular importance given that the World Bank's Public Expenditure Review (PER) estimates that 99 percent of exports and 72 percent of imports are transported by trucks.

Based on ratings published by the World Economic Forum, the quality of roads in Jordan ranks above the average for its benchmark countries (Appendix B, Figure 9).<sup>20</sup> However, this seems to be deteriorating over time as the percentage of roads classified as "bad" or "acceptable" grows (Appendix B, Figure 10). Public expenditure on roads has increased gradually, from 1.0 percent to 1.7 percent of GDP from 1999 to 2003, but most of the funds seem to be channeled into paving new roads, as evident from Jordan's 100 percent rate for paved roads, a figure much higher than in other developing countries. This comes at the expense of maintaining existing roads that are of extreme importance for economic development. In comparison to other countries the density of the road network appears inadequate in terms of kilometers of roads per square kilometer or population per square kilometer (Appendix B, Figure 11). Transport costs, however, remain competitive in the region even after the recent lifting of fuel subsidies (Appendix B, Figures 12 and 13).

**Policy Governing Regulation of the Transportation Sector:** In 2005, the transportation sector was fully liberalized from all restrictions and freight tariffs. The truck freight transportation sector currently comprises 13,377 trucks of which 58 percent are individually owned and 42 percent are owned by registered transportation companies.

Based on this regulatory framework, declines in the freight tariffs, over the past couple of years, have been evident since most of the rates were set in a competitive environment. Newly published evidence by the Ministry of Transportation shows that, in general, freight tariffs in Jordan are at least on par with their regional comparators. Evidence, as reported in the table below, suggest that trucking costs do not show signs of being a binding constraint which might impede further economic growth.

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electricity) constitute between 50-20 percent of total inputs costs. Group 3, Industrial activities where total energy costs (fuel and electricity) constitute less than 20 percent of total input costs. The study finds that the impacts relatively vary from an industrial activity to another based on the use of energy and the indirect impact of the other inputs used in the production process. Moreover, for most of Group3, the use of electricity is greater than the use of fuel in the total energy mix; Exports of this Group surpassed those of both Groups 1 and 2. Exports of this Group represented 85.5 percent of total exports in the industrial sector in 2005 followed by the share of Group 1 at 14.1 percent, and Group 2 at 0.31 percent. Group 3 includes 8 manufacturing activities which are (Manufacture of Structural Non-Refractory Clay and Ceramic Production, Manufacture of Bakery Products, Manufacture of Casting Iron and Steel, Manufacture of Wearing Apparel except Fur App, Manufacture of Soap and Detergents, Cleaning and Polishing Preparations Perfumes & Toilet Preparation, Manufacture of Pharmaceuticals Medicinal Chemical & Botanical Prod, Manufacture of Basic Iron & Steel, Manufacture of Vegetable & Animals Oils & Fats)

<sup>20</sup> World Economic Forum (2006) Global Competitiveness Report.

Land Transport Charges in the Region in \$ per Ton				
From	To			
	Amman	Damascus	Riyadh	Central Iraq
Aqaba	18	44	60	68
Tartous	27	14	46	69
Jeddah	52	106	77	175
Dubai	122	146	32	122

**Cost of Transportation between Population Centers and Industrial Zones:** One particularly challenging transportation issue has been the lack of readily available public transport for workers in remote areas, where unemployment is high and where a number of Jordan's Qualified Industrial Zones are located. The Public Transportation Regulatory Commission (PTRC) has licensed 19 bus rental companies in an effort to meet demand on infrequently traveled routes and routes that are time sensitive – such as those routes traveled by workers in and out of the Qualified Industrial Zones only during rush hours each day. These 19 companies have a total of 380 buses that vary in size and capacity. PTRC reports that the bus rental companies have been accommodating factories' demands of transporting their workers by signing private contracts with the factories operating in the zones. The costs of such contracts are set by the parties, and there are no fixed and set tariffs. Given the number of these companies, and the market structure which these companies operate in, one would expect an outcome close to the competitive equilibrium. In addition to the efforts carried out by the PTRC, the Ministry of Labor is also examining transportation arrangements for industrial zone workers. Together, these efforts should address or at least control the cost of transportation for this viable sector of the economy. While the availability of local transport may have a significant impact on the ability of workers to get – and keep – jobs, these transportation costs do not appear to be a binding constraint on overall economic growth.

**Railway:** The rail system is underdeveloped as compared to other countries. Largely confined to servicing the phosphate mining industry, there may be scope for expanding the network to handle freight and passenger traffic in other areas, and for improving the efficiency of existing operations. There is no evidence, however, that an underdeveloped rail system has hindered growth.

**Airport Transportation:** Jordan has three international airports, with Queen Alia Airport accepting the majority of passengers. Jordan is in the process of upgrading its airport infrastructure and revisiting laws and regulation governing investment into the sector, which is expected to introduce competition. Queen Alia Airport is currently under expansion through a BOT project that led by "Aéroport de Paris", after expansion the Airport will be able to cater 9 million passengers, as much three times of its current capacity. This expansion is expected to improve Jordan's capabilities to grow benefiting from tourism, business services and high value added industries.

**Water and Sanitation:** On average, Jordan performs much higher than the benchmark countries on the percentage of total population with access to improved sanitation facilities. Also, Jordan shows relatively high performance in terms of access to water services when compared to benchmark countries. Overall, Jordan's water infrastructure seems to be quite adequate, and on par or ahead of benchmark countries.



To date, there is little evidence that water scarcity has been a constraint to economic growth. The reliability of the water supply within the system, however, is problematic and can only worsen in time without further intervention. Jordan's water balance deficit is expected to widen over the coming years due to further population growth (expected renewable water resources in 2025 to reach 104 m<sup>3</sup>/capita down from the current 150 m<sup>3</sup>/capita). Increased future demand for fresh water will be a significant challenge for policy makers. Although industries with high value added per unit of water have developed in Jordan, and industry and tourism have become focal points for foreign and domestic investment, it will be increasingly difficult to continue to expand these areas without additional supplies, conservation or reallocation of existing supplies of water. Of these options, the reallocation of existing supplies of water may provide the greatest scope for ensuring adequate supplies for domestic and industrial use.

At present, agriculture consumes 60 percent of supplies but contributes less than 3 percent to the economy's GDP, agriculture rate of return per cubic meter is JD 0.36, whereas, in the industrial sector is JD 40 (Appendix B, Figure 14 & Figure 15).

**Telecommunications:** Jordan's investment in telecommunications infrastructure is substantial. In 2005 investment in telecommunications amounted to approximately 1.23 percent of GDP<sup>21</sup>, which is high among lower middle income economies. In terms of level of liberalization, quality and availability of services, penetration and usage, and cost of services, Jordan's telecommunications sector is on par with comparators or exemplary (Appendix B, Figure 16)<sup>22</sup>.

**Overall, Jordan's infrastructure is well developed and not presently a binding constraint. The future availability of water, however, is a critical issue requiring immediate attention.**

## 4.2 Elements related to low private profitability

At times, investments are not undertaken even when the overall returns are high, because potential investors do not anticipate appropriating a large enough share of the returns with certainty. This problem is referred to as "low appropriability." There are three main elements that may lead to low appropriability. The first is *micro risks*, which are intimately related to the business environment: Is there much corruption? Are property rights well established? Are taxes excessive or punitive? The second is *macro risks*, which are primarily related to the stability of the economy and its linkages with the global economy overall. Some factors, such as regional political instability, are largely beyond the government's control. However, the government can encourage stability by ensuring that fiscal and monetary policies are not destabilizing and that the financial sector is healthy and robust. The third element is *market failures*, whereby the concern is that the public good problems of information (e.g., learning externalities, spillovers from innovation, coordination failures) may result in inadequate incentives for investors to

<sup>21</sup> Institute for Management Development (2007) IMD World Competitiveness Yearbook (Lausanne, Switzerland: IMD)

<sup>22</sup> Based on weighted indicators such as waiting time to acquire a fixed line connection, the extent of network digitization, fault rates and mobile coverage. The World Bank 'Telecom infrastructure development for corporate data in the MENA region', Report for, 9 September 2002. In its indicators for Jordan, the Human Development Report (2005) is less optimistic about telecom infrastructure, as Jordan scored forth in row in the number of main lines and mobile subscribers, and third in internet users (per 1000) compared to Egypt, Morocco, Tunisia and Turkey. One may argue here, however, that HDR is not updated in terms of the number of mobile subscribers, as this number registered 4.3 million (almost 76 percent of the population) in 2006 compared to 3.1 million (almost 57 percent of the population) in 2005

identify and exploit higher-productivity activities. We examine the evidence for the importance of each of these elements below.

#### **4.2.1 Micro risks**

This section reports on how Jordan performed against the benchmark countries in the World Bank's Enterprise Survey and the International Finance Corporation's Doing Business Report and identifies possible sources of significant micro-risk that might contribute to low appropriability.

Based on the Enterprise Survey, Jordan's performance on business environment indicators is ambiguous (Appendix C, Figure 1). On a number of indicators, Jordan performs better than a number of the benchmark countries, and on others, it performs worse<sup>23</sup>. Overall, Jordan has considerable room for improvement in the individual indices for such areas as tax administration, corruption, and business licensing.

According to indicators monitored in the Doing Business Report, Jordan's rank on the ease of doing business has been declining over the last three years (Appendix C, Figure 2). With respect to its regional comparators Jordan's performance is average in this index. Egypt and Turkey improved their overall rating significantly between the 2007 and 2008. Jordan might not have performed better than Tunisia and Morocco in this index had it not registered some progress in some areas of economic reform (Appendix C, Figure 3).

Among the indicators that recorded the fastest decline over the last two years are the enforcement of contracts, the employment of workers, and the closing of businesses. The last two recorded the largest fall. The employment of workers and closing of businesses are among those in which Jordan has scored reasonably well in the past and still does not perform badly vis-à-vis its regional comparators. The enforcement of contracts is one area among certain other indicators in which Jordan has not scored well against all other countries in addition to its regional comparators (Appendix C, Figure 4). Jordan is also weak in resolving commercial disputes, ranking worst in the official cost required to file a commercial dispute, in comparison with the benchmark countries and second worst in the number of days required to receive payment through a court order (Appendix C, Figure 5).

Among other areas in which Jordan scores particularly badly is the cost of starting a business. Jordan comes last in all sub-indices in terms of the time, cost, and minimum capital needed to start up a business (Appendix C, Figure 6). Significantly, the latter two sub-indices score the poorest in comparison with the benchmark countries. Jordan also scores second last in terms of costs accompanying licenses and permits (Appendix C, Figure 7).

Jordan also stands out for the processes and procedures accompanying imports and exports. Although the number of documents needed to import/export are average in comparison to the benchmark countries, the time necessary for carrying out import/export operations is longest in Jordan (Appendix C, Figure 8). This seems to be a particular concern for Jordan for several reasons. Jordan is a small and open economy that relies heavily on its trade and commercial

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<sup>23</sup> Tunisia's results are not available for this part of analysis.

agreements, and therefore, long waiting times for processing imports and exports could affect its investment environment and impede economic growth.

In terms of taxation, Jordan's performance on tax related indicators remains relatively good. Jordan has a lower total tax rate, measured as a share of profits, than all the other benchmark countries and a lower average number of tax payments per year than all but Turkey (Appendix C, Figure 9). Furthermore, Jordan scored the best compared with the benchmark countries in the time needed for preparing, documenting, and paying taxes (Appendix C, Figure 10).

In the getting credit component, Jordan scores well in terms of the strength of legal rights. However, the depth of credit information index is notably low, which reflects the poor accessibility and quality of credit information in Jordan (Appendix C, Figure 11). This can be attributed to the limited coverage of Jordan's public credit registry, which is carried out only by the Central Bank of Jordan, and the complete lack of private credit information.

**Overall, a number of micro risks appear to be a source of low private profitability. Together, these may be a binding constraint on private investment.**

#### 4.2.2 Macro risks

The 2007 Global Competitiveness Report identified Jordan as being at a competitive disadvantage due to its budget deficit, public debt and inflation (placing, respectively, 112, 105 and 85 in a ranking of 131 countries). In contrast, the IMF<sup>24</sup> argued that "Jordan's economic performance remains strong, growth is robust, core inflation is contained, the current account deficit is narrowing, reserves are comfortable, and the fiscal situation continues to improve", thus painting a picture of a more stable macroeconomic environment. In the following sections we examine the factors that are possible sources of macroeconomic risk and, hence, of low private appropriability of returns on investment. We will argue below that there is no major macro-risk that, at present, is a substantial drag on growth in Jordan.

**Inflation.** Monetary policy in Jordan aims at containing the inflation rate within levels that do not harm economic growth. With the Jordanian dinar pegged to the US dollar, the Central Bank of Jordan (CBJ) needs to accommodate interest rate decisions adopted by the Fed. As the US reduced interest rates throughout 2007, the CBJ did the same on its instruments. To contain inflation, it therefore must continue to absorb excess liquidity in the market by auctioning certificates of deposits (CDs).

Economic models suggest that almost 38 percent of the inflation in Jordan is explained by the prices of imports<sup>25</sup>. Jordan's inflation rate (as measured by the GDP deflator) grew rapidly from

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<sup>24</sup>Though Jordan has managed to rein public debt burden, the IMF (2007) reported that the focus will be on three potential medium-term challenges: the still-high public debt ratio, budget deficit and current account deficit, and, as shown by the public debt sustainability analysis, while Jordan's debt burden is expected to decline sharply even under adverse shocks, its profile depends on continued strong fiscal adjustment.

<sup>25</sup>The following regression is of inflation (CPI) on GDP(Y) and liquidity M2 and Prices of Imports (M):  
$$\pi = -0.19Y + 0.34M2 + 0.23M$$

1 percent of imports prices will induce an increase in inflation by 0.23 percent, however, the increase in imports value will induce a multiple effect on GDP and liquidity, and then we can take the sum all elasticity as proxy. Therefore: 1 percent of imports prices will induce an increase in inflation by 0.38 percent. Oil is almost 20 percent

0.7 percent in 2000 to reach 6.5 percent in 2006, partly as the result of the rise in oil prices, which tripled after 2000. Despite the growth in inflation, real economic growth rates in Jordan trended upward and were less volatile during the period 2000-2006 compared to Egypt, Morocco, Tunisia and Turkey (Appendix D, Figure 1). Thus, it can be said that the relation between real economic growth and inflation is a negative relation (Appendix D, Figure 2).

One may argue here that higher prices are an inevitable consequence of high liquidity and government expenditure, and that inflation is the price of strong economic growth. Unpublished research by the CBJ argued that the rise in inflation has a limited impact on real economic growth, in line with this argument, the IMF recently projected that 2008 inflation rates would reach 9 percent and real growth rates would hit 5 percent. Hence, we can conclude that inflation has not held back growth in Jordan. In fact, inflation rates have been lower, on average, in Jordan than in the benchmark countries, registering 2.9 percent during the period 1996-2006, as compared to 47.4 percent, 5.0 percent, 3.1 percent and 1.8 percent in Turkey, Egypt, Tunisia and Morocco.

Like other countries in the region Jordan remains exposed to further increases in energy and food prices in global markets. This may influence real economic growth in the near future, but on the positive side, Jordan has demonstrated its commitment to implement sound monetary policy and is also undertaking measures to improve fiscal discipline.

**Budget Deficit.** The ratio of Jordan's budget deficit (excluding aid) to GDP stood at 15.3 percent in 2003, fell to 7.1 percent in 2005 and rose to 10.4 percent in 2006. It is expected to register 11.8 percent in 2007 (Budget Revision 2007)<sup>26</sup>. The budget deficit widened during the period 2002-2007 for several reasons including the rise in current expenditure on wages and salaries, pensions, oil subsidies, and defense and security. The ratio of Budget deficit to GDP (excluding grants) in Jordan has been much more volatile compared to benchmark countries and remains higher than Egypt and Morocco (Appendix D, Figure 4). To fill the budget gap, Jordan will likely remain reliant on foreign assistance, which has proven to be volatile in recent years (Appendix D, Figure 3).

The ratio of private investment to GDP increased from 12.0 percent in 2003 to 20.3 percent in 2006, reflecting, in part, improvements in the investment environment and reform policies<sup>27</sup>.

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of Imports then: 1 percent in prices of oil will induce an increase about 0.075 percent in inflation. Therefore: If we assume the prices of oil US\$60 then US\$ 5 is almost 8.3 percent. Therefore, if oil prices rise by US\$5 this will induce 0.625 percent in inflation. If we assume the prices of oil US\$75 then US\$ 5 is almost 6.6 percent. Therefore, if oil prices rise by US\$5 this will induce a rise in inflation 0.495 percent. . If we assume the prices of oil US\$100 then US\$ 5 is almost 5.0 percent. Therefore, if oil prices rise by US\$5 this will induce a rise in inflation 0.375 percent. Hence, on average a rise by 5 US\$ will cause the inflation to rise on average by 0.5 percent.

<sup>26</sup> The rise in budget deficit and public debt worsen the Jordanian credit rating, as it depends on debt volume and budget deficit (National Agenda & Standards and Poor's). The Jordanian performance in this field rated Jordan in the speculations investment at BB in 2004, and that increases the cost of investment in Jordan compared to other countries in the region and the world, especially if we take into account the vulnerability of Jordan to the surrounding political environment. In July 2007 a report published by Standard & Poor's Rating Services said Jordan's banking system (foreign currency BB/Stable/B, local currency BBB/Stable/A-3) was "much improved in recent years but still relatively high risk, Standards and Poor's 2007. Meanwhile, GCR (2007) macroeconomic stability pillar rated budget deficit and public debt 112/131 and 105/131 respectively which is a competitive disadvantage.

<sup>27</sup> The decline in private investment in Jordan during 1993-1999 is attributed to the decline in worker remittances, worsening of fiscal deficit and increased uncertainty, as the fiscal policy variable (budget deficit) could be capturing

This trend followed improvements in the ratio of the budget deficit to GDP during the same period. It is evident that investment has been inversely related to the size of the budget deficit (Appendix D, Figure 5), mostly likely through the mechanism of sales of debt instruments by the CBJ that result in a reallocation of domestic capital resources. Meanwhile, as shown below, there is little evidence that government market operations so far have bid up the cost of finance within Jordan.

The notion of a “crowding out” effect is controversial. The following indicators offer some evidence that there has been little such effect in Jordan.

- Government discipline in terms of borrowing has improved. The government has not been active in terms of direct borrowing but showed some activity in terms of issuing treasury bills and bonds. Overall, the share of the public sector in total credit declined from 10.1 percent in 1998 to 4.7 percent in 2006, but the percentage change of treasury bills and bond purchased by the banks to domestic credit (total credit extended by the banking system ) increased from 3.4 percent in 2001 to 4.3 percent in 2007. In addition, excess liquidity in the central bank of Jordan increased to JD 468 million in 2007. This suggests that the banking system is highly liquid, as the liquidity ratio is much above the level required.
- Domestic borrowing improves the efficiency of the banking portfolio and reduces risk. The government is borrowing domestically and spends domestically, so, the domestic borrowing went back to the banking system. In addition, the central bank accumulated JD 1.99 billion of CDs in 2007 out of which JD 0.54 billion will mature in 3 months, hence, the central bank is capable of injecting the banking system with much liquidity if CBJ witness a serious decline in the liquidity position.

On-going fiscal consolidation (one example of which is the recent removal of fuel subsidies) should help reduce Jordan’s reliance on foreign aid inflows and improve the country’s prospects for containing macroeconomic instability. As a result, we conclude that the budget deficit is not now a critical constraint on private investment<sup>28</sup>.

**Current Account Deficit:** Jordan’s fiscal position has its counterpart in the current account deficit. Jordinvest (2007)<sup>29</sup> forecasted that the current account deficit would decline slightly from 13.8 percent of GDP in 2006 to 12.5 percent in 2007. The trade gap is expected to see a slight rise or remain close to its level in 2006, while foreign aid is projected to increase by a tangible sum.

Expectations of a larger influx of foreign capital from Arab countries, growth in the local capital market, and higher demand by non-Jordanians for real estate would all contribute to a surplus. Moreover, the proceeds from government privatization may also contribute to an improvement.

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the same effects as the crowding out variable (Sources of Growth, World Bank 2001). With economic growth slowing down, budget rigidities began to pose challenges to the adjustment process. A combination of declining revenue collections and rigid expenditures caused the overall deficit to widen since 1996.

<sup>28</sup> The share of government investment in GDP has displayed substantial volatility over time, but has been on a downward trend. The ratio of private investment to public investment is around 2.5, which is higher than the average in MENA that is around 2. IMF (2007) commented on Jordan’s strong economic performance in past years and on policies to sustain this performance. Policies include a medium-term public debt target, continuation with a currency peg, and policies to narrow the current account deficit (fiscal consolidation, prudent monetary policy, and measures to improve the business environment).

<sup>29</sup> Jordan Economic Outlook 2007, Jordinvest.

Jordinvest projected that total external trade (domestic exports plus imports) will witness a 9.2 percent growth to 106.5 percent of GDP in 2007. This reflects expectations that domestic exports will rise by 11 percent and merchandise imports by 8.6 percent. Taking these figures into consideration, the trade deficit is projected to reach 42.4 percent of GDP, down slightly from 2006. The projected surge in domestic exports follows expectations of continued activity at Qualified Industrial Zones (QIZs), despite stiffening competition from similar zones in neighboring countries. The Iraqi market is expected to hold on to its position as the second largest market for Jordanian goods after the US. However, projections of higher demand by local industries for such raw materials as iron, steel, cement, textile yarn, and fabrics, will likely contribute to a fatter import bill in 2007.

Compared to the benchmark countries, Jordan's current account to GDP ratio had the largest range and volatility during the period 1993-2005 (Appendix D, Figure 6). It remains an area of concern. Given low domestic rates of saving, the deficit is fully financed by inflows of foreign direct investment and other capital flows<sup>30</sup>, including large inflows attributable to the conflict in Iraq. Jordan remains exposed to regional uncertainties that may affect these inflows. Given its low foreign liabilities, however, Jordan should be in a good position to absorb possible shocks to capital flows<sup>31</sup>. To the extent that capital flows into Jordan reasonably can be expected to continue in response to a favorable investment environment<sup>32</sup>, and given Jordan's present, comfortable international reserve holdings, Jordan's current account deficit is not an imminent risk of macroeconomic instability constraining growth.

**Generally, we argue that the micro and macro challenges mentioned above are not impeding economic growth. They should, however, be monitored carefully.** The latest statement of the Ministry of Finance indicated that the budget deficit is projected to expand in 2008, even as the government will purchase external debt of US\$ 2.35 billion to reduce pressures on the budget deficit. Expectations of continued strong FDI inflows should also help finance the current account deficit.

#### **4.2.3 Market failures**

The capacity and incentives for innovation – in the application of technology, in the development of new products and services – are important determinants of Jordan's ability to benefit from globalization. Particularly following the end of textile and garment quotas, removing any distortions that hinder efficient diversification and application of technology in exports may contribute to sustaining overall export growth.

One indicator of innovation is the change in the composition of Jordan's exports over time. The average number of exports from Jordan (Appendix E, Figure 1) as well as the composition of exports (Appendix E, Table 1) has increased over time. Moreover, Jordan has increased the number of exports of higher added value (Appendix E, Figure 2).

Another rough indicator of innovation activity is the number of patent applications (Appendix E, Figure 3). The number of applications from non-residents exceeds the number of applications

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<sup>30</sup> Current Account deficit is equivalent to government deficit and private sector deficit.

<sup>31</sup> An analysis is provided in S. Chami, Donald McGettigan and Stanley Watt (2007) Jordan's International Reserve Position: Justifiably Strong, IMF Working Paper WP/07/103.

<sup>32</sup> Including foreign aid, disbursements of which are projected to exceed USD 600 million in 2008.

from resident, but both of them show an upward trend, which suggests growing innovation activity in recent years. In the period of 2000 to 2004 Jordan averaged 42 patent applications per year against an average of 13 annually for LMICs overall.

Jordan is roughly at the same level as other countries within the region in terms of company spending on research and development (R&D)<sup>33</sup> (Appendix E, Figure 4), but falls below the median of countries worldwide. The Global Competitiveness Report scores Jordan 2.7 on a scale of 7 for the extent of collaboration on research between industry and academic institutions (Appendix E, Figure 5). By this measure Jordan lags behind all comparators except for Egypt, but only Tunisia among the benchmark countries scored above the median for all countries of 3.4.

Regarding the capacity for innovation, Jordan scores at the average for the benchmark countries. Its score in the GCR index, however, indicates that Jordanian enterprises obtain technology principally from licensing or imitating foreign companies, not by conducting formal research or by pioneering their own new products and processes (Appendix E, Figure 6). On this indicator, Jordan matches the median GCR score worldwide. Despite Jordan's relatively high achievement in education, the evidence on levels of innovation is mixed, as a variety of indicators demonstrate.

**The conclusion is that innovation is taking place in Jordan but is not working very well. As a result, innovation does not appear to be a binding constraint to growth, but there is considerable scope for improvement.**

## 5 Elements related to high cost of finance

For a given absolute return on investment, the *rate* of return on investment may be low because the cost of funds is high, and hence investment does not take place. High costs for financing investments can result from two causes: (1) conditions affecting the cost of attracting international finance, or (2) the efficiency of domestic capital markets, financial sector institutions and the related legal and regulatory frameworks.

On balance, if the high cost of finance is the primary constraint on private investment, this is due largely to the impact of the debt burden and country risk on international finance or a poorly-performing domestic financial sector. If the cost of external financing is not expensive then a high cost of finance might be attributed to the operations of local financial markets. We discuss details in the following subsections.

### 5.1 Elements related to poor international finance

Conditions that affect the cost of international finance relate to ratings of a country's sovereign debt, access to international capital markets, the cost of borrowing in those markets and conditions that inhibit foreign direct investment.

**Structure and Cost of External Debt:** Though the outstanding level of external debt is high in Jordan, the ratio of external debt to GDP declined from 78 percent in 2001 to 52 percent in 2006 (Appendix F, Figure 1). Short-term external debt is a small share, at only 7.6 percent of total

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<sup>33</sup> Here and following, we use the Global Competitiveness Report assessments for comparisons among benchmark countries instead of IFC Enterprise Survey because the last do not incorporate Jordan.

debt. Most of Jordan's external debt is concessional, consisting of bilateral and multilateral loans. The share of concessional external financing in total external debt (bilateral, multilateral and bonds) was about 65.5 percent in 2007. This suggests that overall the cost of external financing for Jordan has not been expensive.

The shares of external debt held in US dollars and Euros were 29.6 percent and 22.3 percent in 2007 respectively. The impact of the recent depreciation of the dollar against the Euro has been limited as external debt rose by USD million 118.9 in 2006 (an increase of almost 1.6 percent). There is no evidence that pegging of the dinar to the dollar has affected Jordan's sovereign risk rating, Jordan's access to external financing or the average cost of its external borrowing.

**Inward FDI:** UNCTAD's index of FDI potential is an average of 12 variables that attempts to measure the attractiveness of an economy to foreign investors. By the UNCTAD measure, Jordan ranks 59<sup>th</sup> out of 141 economies scored for the period 2003-2005. UNCTAD's index of FDI performance is a measure that ranks countries by the FDI received relative to their economic size. It is the ratio of a country's share in global FDI flows to its share of global GDP. An index score of greater than one indicates that a country receives more FDI inflows than its relative economic size. By this measure, Jordan recently ranks well, placing eighth out of 141 countries evaluated for the period 2004-2006. These two measures suggest that Jordan in recent years has been relatively successful in attracting FDI relative to its potential indices (Appendix F, Figure 5).

Inflows of foreign direct investment (FDI) reached US\$ 3.120 billion in 2006<sup>34</sup>, equivalent to 22 percent of GDP. Measured either as percentage of GDP or on a per capita basis, Jordan's FDI inflows exceed those of the benchmark countries (Appendix F, Figures 2 and 3). Foreign aid to Jordan, in contrast, is relatively small (Appendix F, Figure 4) as a share of GDP.

A detailed statistical breakdown of 2006 inflows is not yet available, but in 2005, the largest share of realized investments<sup>35</sup> channeled into the financial services sector (50 percent). The remainder went into mining and quarrying (16 percent), telecommunication and postal services (6 percent), research and development, manufacturing of chemicals, and hotels and restaurants (4 percent each), with lesser amounts into insurance and pension funding, wholesale and commission trade, manufacturing of other non-metallic mineral products, and rental and leasing.

Jordan does not have difficulty obtaining concessional finance. Its official debt is primarily concessional, long-term debt. **Thus, external financing does not appear to be a significant constraint to Jordan's growth.**

## 5.2 Elements related to poor domestic finance

Where constraints exist in the cost of domestic capital, they are often due to poorly-functioning capital markets and institutions that lower the efficiency of capital allocation and increase the risk of banking crises. These problems can be broken down into *poor financial intermediation*, on the one hand, and *low domestic saving* on the other. Below, we analyze the elements of the domestic financial sector.

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<sup>34</sup> UNCTAD (2006) World Investment Report.

<sup>35</sup> DOS (2007) FDI Survey.



**Domestic Finance:** Jordan's banking system is fully privately owned, comparatively well developed, highly monetized, profitable and efficient<sup>36</sup>. The balance sheet of local banks grew by 14.9 percent, in 2006, following growth of 13.5 percent in 2004 and 18.3 percent in 2005. On the assets side<sup>37</sup>, domestic assets grew by 14.7 percent, accounting for 73.3 percent of the overall increase in total assets in the banking sector by the end of 2006. This increase was chiefly attributable to the wide increase in "claims on the private sector (resident)" and "claims on the public sector." On the liabilities side, "deposits of the private sector (resident)" were up by 15.7 percent; accounting for nearly half the total increase in liabilities, whereas "capital, reserves and provisions," "foreign liabilities," and "unclassified liabilities" each accounted for substantially smaller shares of the increase.

The financial system strengthened significantly as a result of structural reforms and the general rebound in economic activity after 1992, which led to increased profitability among commercial banks. During the period 1998-2002, banks were capitalized well above the minimum required level. The ratio reached its peak level of 21.4 percent in 2006. The increase was attributed to banks capital increase and the rise in profits during 2003-2006 (Appendix F, Table 2). In 2006, the CBJ adopted further procedures and measures aiming at enhancing the institutional capacity of the banking units and strengthening their capability in risk management, based on best international practices, including resolutions of Basle II.

The banking system in Jordan has been highly liquid in the past few years. This is evidenced mainly by a liquidity ratio that ranged between 179.6 percent and 161.4 percent over the period from 2003 to 2006. This was well above the minimum required level of 100 percent. The liquidity ratio showed a declining trend as banks widened their credit facilities during the same period. The available data about earnings shows that the ratio of net profits to total assets increased from 0.3 percent in 2000 to 1.7 percent in 2006 (Appendix F, Figure 6). In addition, net profit to total loans increased from 4.4 percent in 2000 to 18.6 percent in 2006. The increasing trend of profitability during 2000-2006 may be attributed to the following factors:

- The expansion of credit during the same period.
- The widening maturity gap between deposits and loans and advances structure.
- The improved assets quality of the banking system.

The financial system is deeper than before, as evidenced by the increase of the ratio of broad money (M2) to GDP from 112 percent on average in the 1990s to 140.4 percent in 2006. The ratio of total assets to GDP also increased to 241.1 percent in 2006, up from 179.3 in the 1990s. This suggests a more trusted banking system (Appendix F, Table 1). Total credit advanced by the banking system as a percent of GDP increased from 73 percent in the 1990s to 97 percent in 2006. The deepening of the financial system encompassed enhancing financial intermediation, improving the payments system, and establishing an active stock exchange. We can conclude that domestic financial sector does not presently appear to pose a constraint to growth.

**Interest Rates:** Lending rates in Jordan showed a downward trend between 1998 and 2005, dropping from above 12 percent in 1999 to 7.6 percent in 2005. The same is true of deposit

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<sup>36</sup> GCR ranked financial market Sophistication in Jordan at 55/131 while IMD 2007 ranked banking and financial services in Jordan at 24/55 compared to 43/55 in Turkey.

<sup>37</sup> In the area of Business Efficiency, IMD ranked banking assets to GDP at 11 and considered as strength.

rates, which dropped from 8.0 percent to 2.9 percent over the same period. (Appendix F, Figure 7). Real rates are very reasonable and competitive if we compare them to Morocco, Egypt and Turkey. Real lending rates declined from 11.7 in 1999 to 4.1 percent respectively in 2005, while real deposit rates declined from 7.7 percent to -0.6 percent over the same period.

Though the interest rate margin increased, it remained below levels in Turkey and Egypt during 2004-2005. This suggests that the Jordanian banking system is more competitive compared to Turkey and Egypt. The ratio of classified loans<sup>38</sup> to total loans have declined from 14.3 percent in 2000 to 4.3 percent in 2006, and the ratio of provisions against classified loans to total classified loans increased from 42.6 percent in 2001 to 80 in 2006. This change reflects the high liquidity position maintained by licensed banks and indicates that the asset quality has improved over the past few years.

Real Lending rates are relatively low, which means less inflationary expectations and more attractive investment environment, this may be true if we take into consideration high reserves level accumulated by the Central Bank of Jordan that reached US\$ 6.96 billions in Nov. 2007, which cover more than 6 months of imports, compared to US\$ 1.99 billions in 1999.

**Distribution of Credit by Sector.** Total credit extended by banks showed an increasing trend during the period 2000-2006.<sup>39</sup> Total credit annually grew by 9.1 percent in the 1990s, on average, then grew by 15 percent in 2004 and above 20 percent in both 2005 and 2006.<sup>40</sup> This growth impacted certain sectors more than others. Credit to GDP extended to agriculture, and transportation and mining and industry declined between 1998 and 2006, while credit to stocks and construction increased substantially over the same period (Appendix F, Figure 8). The exceptional credit growth rate was an outcome of the high demand for bank loans in the fast growing construction sector and high demand for stocks, this high demand was triggered by low real interest rates and strong economic performance, which then was financed by loans from the banking system implying increasing trust in the banking system.

Credit distribution increased in favor of individuals (consumer) credit during the period 2002-2006, rising to JD 3.2 billion in 2006 from JD 1.2 billion in 2002. Accordingly, the ratio of credit extended to companies dropped to 66 percent in 2006 compared to 76 percent in 2002 (Appendix F, Figure 9).

Workers' remittances increased to register JD 1.78 billions in 2006 compared to JD 1.17 billions in 2000. Remittances are generally classified under current transfers in the Balance of Payments, suggesting that they are used to finance consumption activities. However, remittances also have the effect of contributing to an accumulation of higher reserves, which in turn support the stability of the JD exchange rate (Appendix F, Figure 9).

**Credit Extended According to Borrower:** The private sector accounts for more than 90 percent of total credit in Jordan (Appendix F, Table 3). It is worth noting that the government has not been active in terms of direct borrowing, although it did show some activity in terms of

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<sup>38</sup> IMD 2007 ranked financial risk factor in Jordan at 32/55 compared to 38/55 in Turkey.

<sup>39</sup> Doing Business Report 2008 reported that getting credit in Jordan was ranked 84 compared to 135, 115, 97 and 68, in Morocco, Egypt, Tunisia and Turkey respectively.

<sup>40</sup> IMF 2007 reported that while banking sector indicators are strong, the effects of past rapid credit growth require careful monitoring.

indirect borrowing. As a result, the share of the public sector in total credit declined from 10.1 percent in 1998 to 4.7 percent in 2006. The new Public Debt Management Law of 2001 requires that “the government’s domestic borrowing shall be carried out by issuing government securities and the government shall be prohibited from direct domestic borrowing from commercial banks or any other institutions”. The law also limits the outstanding domestic debt to 60 percent of GDP, the outstanding external debt to 60 percent and the total outstanding public debt to 80 percent of GDP. This may help explain part of the behavior of the government during the last few years in terms of borrowing.

**Low domestic saving.** The evidence on savings in Jordan is mixed. Jordan’s large foreign debt and current account deficit do suggest a low domestic savings rate. If savings were inadequate, however, one would observe a high willingness to remunerate savings through high interest rates to depositors or government bond holders. Yet real interest rates are low at under 5 percent, and the spread between rates for lending and borrowing is close to this level. As noted above, the shortfall in savings is compensated by strong capital inflows, including foreign direct investment and workers’ remittances. Jordan has one of the world’s highest levels of remittances. Also noted above, compared to benchmark countries, taxation is moderate, so taxation does not appear to be so high that it would depress savings.

**In general we conclude that Jordan’s access to external financing is good and not excessively expensive. Moreover, intermediation by the banking system in Jordan appears to be efficient. As a result, the cost of financing is not high in Jordan and is not a binding constraint to growth at this time.**

## 6 Key Findings

Based on a wide range of evidence, the key constraints to growth in the Jordanian economy are the following:

Constraints to growth:

1. **Infrastructure:** Overall, Jordan's infrastructure is well developed and not presently a binding constraint. The future availability of water, however, is a critical issue requiring immediate attention. Although, scarce water is not currently a significant growth constraint, Jordan is among the ten most water-poor countries in the world. Inefficient pricing and management policies aggravate the resource constraint, as over 60% of available water is absorbed by agriculture, which accounts for about less than 3% of GDP. **Improving the availability of water for domestic and other industrial uses a priority area for further problem definition.**
2. **Micro-risk:** A number of micro risks appear to be a source of low private profitability, which in turn may be a binding constraint on private investment. **These include, among others, the high costs of starting new business and long waiting times for processing imports and exports.** Jordan needs to do more to improve business conditions leading to higher rates of domestic and foreign investment and creation of higher-wage jobs.

Additional observations:

3. **Human capital:** Jordan has invested heavily to achieve impressive rates of attainment in education, particularly in comparison to most countries in the MENA region. Jordan, however, is not creating enough jobs for educated individuals (especially those holding a bachelor degree and above). The unemployment rate among educated women is very troubling. The growing sophistication of the Jordanian economy is placing individuals without a basic education at a particular disadvantage. **Three crucial mismatches explain the simultaneous existence of increasing labor demand and high sustained unemployment in Jordan.** Geography: New jobs and prospective workers are far apart. Employability: Although Jordanian workers have sufficient education, vocational training, and job experience, employers often prefer foreign workers. Expectations: Jordanians maintain a false optimism about their employment. It is unclear whether there is a pronounced lack of specific vocational skills, but vocational and other government programs are in place to address the issue. Moreover, evidence indicates that positive return to education and trends in educational attainment in Jordan are strong. Therefore, human capital is not a binding constraint to investment.
4. **Market failure:** The capacity and incentives for innovation (e.g., in the application of technology, in the development of new products and services) are important determinants of Jordan's ability to benefit from globalization. However, information-related market failures are likely present, but do not appear to be critically important at this time (e.g., learning externalities, spillovers from innovation, coordination failures).
5. **Macro risks:** macro-environment indicators including **inflation rate, high budget deficit and high current account** are significant challenges. Monetary policy in Jordan aims at containing inflation rate at levels that do not harm economic growth, but imported inflation could induce more high inflation rates and may constraint economic growth. In view of on-going fiscal consolidation (one example of which is the recent removal of fuel subsidies) which should help reduce Jordan's reliance on foreign aid inflows and improve

the country's prospects for containing macroeconomic instability, and strong donor support for further fiscal and economic reform, Hence, the mentioned challenges are not impeding economic growth and not a major threat to attract more investment now.

6. **Cost of finance:** The financial system strengthened significantly as a result of implementing structural reforms and the general rebounding of the economic activities after 1992, and the associated increased profitability of the commercial banks. The deepening of the financial system encompassed enhancing financial intermediation, improving the payments system, and establishing an active stock exchange. Real deposit and lending rates are declining. Intermediation by the banking system in Jordan is efficient and not poor, the cost of financing is not high in Jordan and is not a binding constraint to growth at this time.

Table 1: Key Findings of Jordan Constraints Analysis

Area	Binding	Threshold	Non-binding	Uncertain Status
HC: professional/higher education				
HC: vocational skills				
Infrastructure: general				
Infrastructure: governorate transportation between population centers and economic centers				
Natural capital: water availability				
Macro risks				
Micro risks <sup>41</sup>				
Market failure/innovation				
Financing				

<sup>41</sup> Including high transport costs due to market structure of industry.

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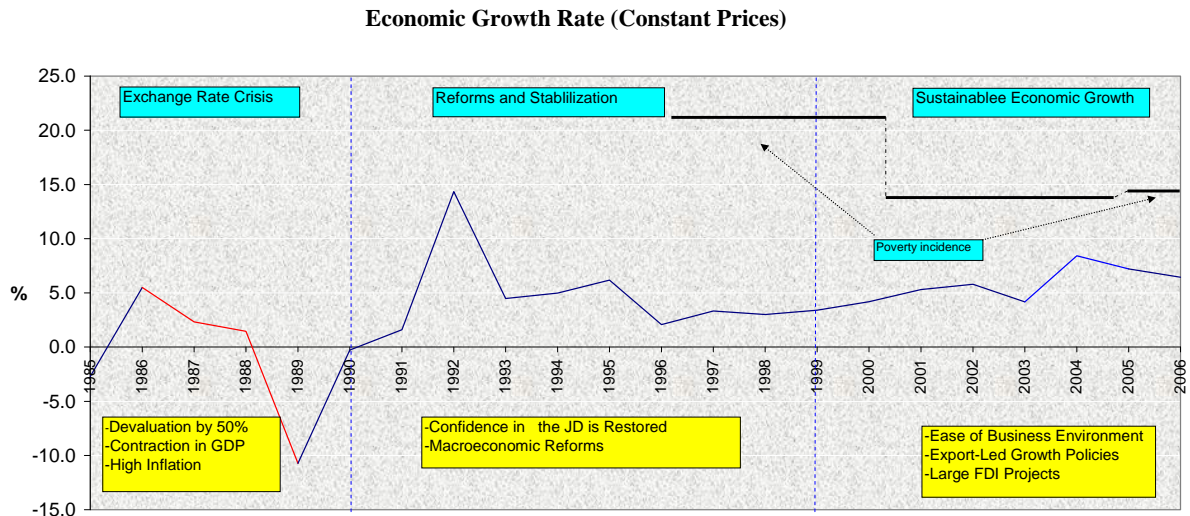
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## Appendixes

## Appendix 1: Country Background

Figure 1: Real Economic Growth and Poverty



Source: MCA.

## Appendix A: Human Capital Data

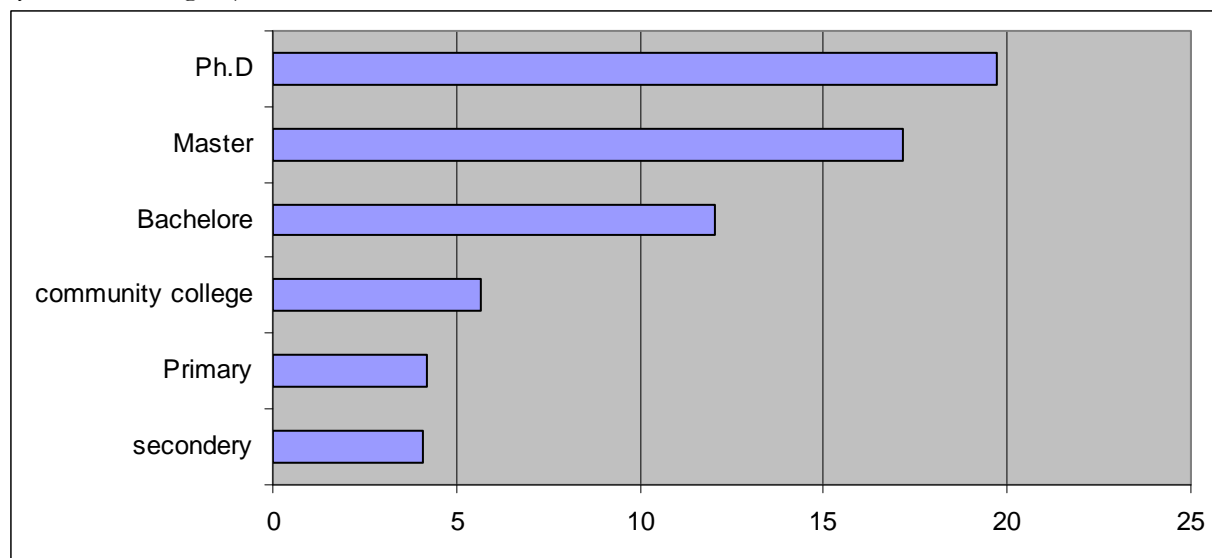
Table 1: Rates of Return on Education<sup>42</sup>

variables	Aggregate	T-ratio	Male	T-ratio	Female	T-ratio
<i>Constant</i>	4.321	489.32	4.311	464.23	3.98	142.95
<i>Years of Education</i>	0.0553	93.97	0.0576	90.637	0.0758	43.87
<i>Years of Work Experience</i>	0.0274	52.53	0.0287	51.33	0.0157	10.19
<i>Years of Work Experience<sup>2</sup></i>	-0.0003	29.12	-0.00034	30.16	-0.00005	1.2
R <sup>2</sup> :	0.253		0.270		0.300	
F-ratio:	3988.161		3770.518		677.13	

<sup>42</sup>  $\ln W = B_0 + B_1 \text{educ} + B_2 \text{exp} + B_3 \text{exp}^2 + e$

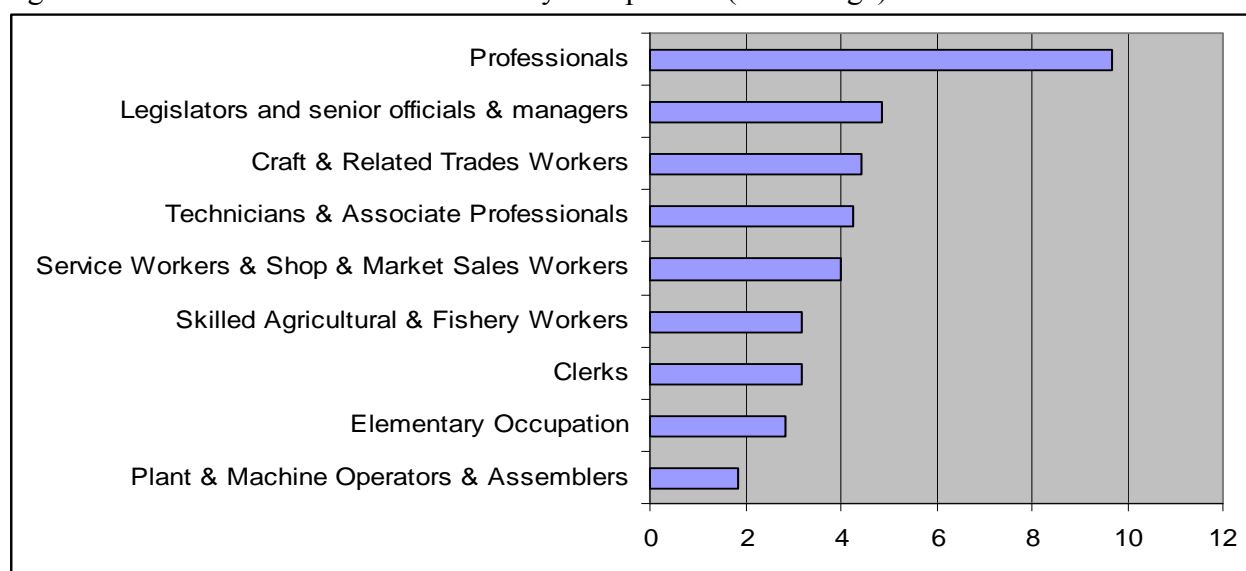
Where ( $\ln W$ ) is the natural logarithm of the wage per hour, educ is completed years of schooling, and exp represents years of work experience. The coefficient  $B_1$  represents the percentage increase in salary per hour for each additional year of education (rate of returns on one additional year of education). Data source: EUS 2005.

Figure 1: Economic returns to education by the level of education (Percentage change in wage rate by obtained degree)<sup>43</sup>



Source: MCA-Jordan calculations

Figure.2: Economic returns to education by occupations (Percentage).



Source: MCA-Jordan Calculations

<sup>43</sup> To calculate economic returns to education by level in Jordan, we can run the Mincer regression by using different levels of education, and using the next formula to calculate the returns to education for each level.

$$r_k = \beta_k - \beta_{k-1} / S_k$$

Where:

$r_k$ : rate of return for k level of education

$\beta_k$ : The estimated coefficient for k level of education

$\beta_{k-1}$ : The estimated coefficient for the previous level of education

$S_k$ : years of education

Table 2: Returns to Education

<b>Private and Social Rates of Return to Education by Level of Education, 1970s–1990s</b> (percent annually per year of schooling within level)			
	Primary	Secondary	Tertiary
Jordan 1997	3	4	7
Jordan 2002	2	4	9
Egypt 1998	5	6	9
Morocco 1991	8	10	12
Source: World Bank (2008), the Road Not Traveled; Education Reform in the Middle East and Africa, MENA Development Report (calculations based on HEIS Survey 2002)			

Table 3: Composition of Employment by Education

<b>Employment and Education ( percent)</b>			
	Non-Secondary and Secondary	Community College	Bachelor Degree and above
1973	89.0	4.7	6.3
1980	85.4	7.4	7.2
1990	75.9	11.9	12.2
2000	69.0	13.4	17.6
2004	69.0	11.7	19.3
2005	67.9	12.3	19.8
2006	67.3	11.4	21.3
Source: DOS, Several Statistical Yearbook			

Figure 3: Unemployment according to Education

Figure 3:1: Unemployment Rates by Level of Education

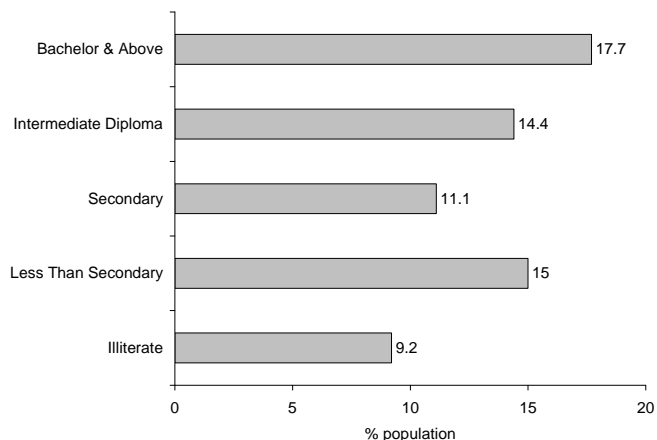
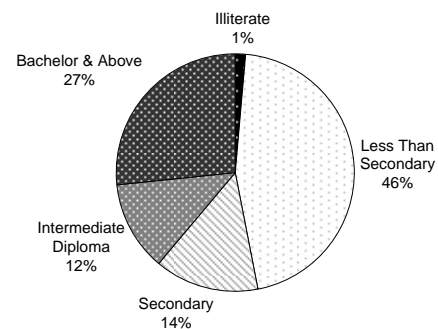
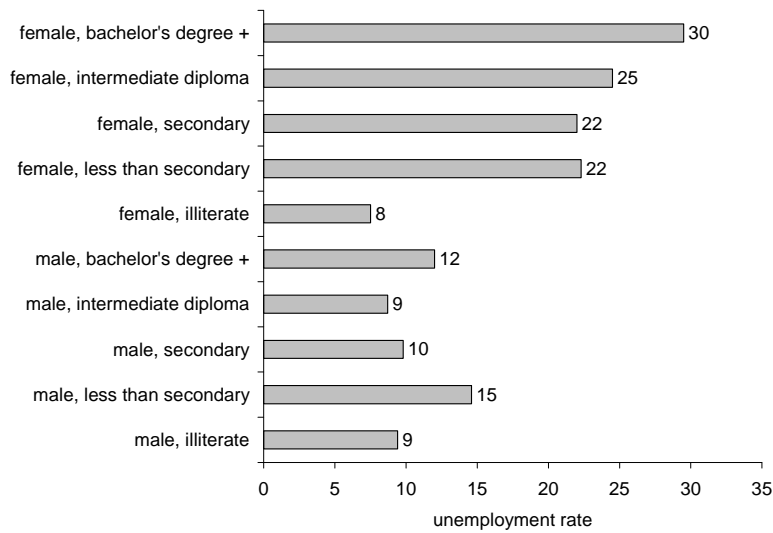


Figure 3:2: Educational Status Distribution of the Unemployed Population



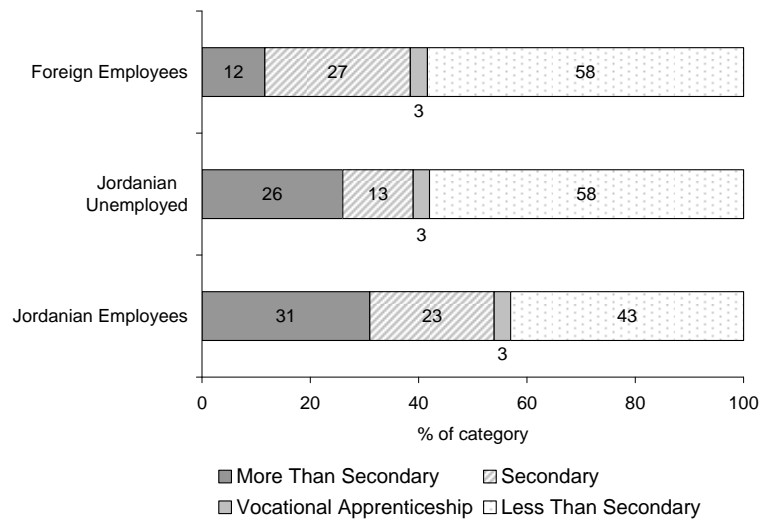
Source: Employment and Unemployment Survey (2005), Census (2004)

Figure 4: Unemployment Rate by Gender and Education



Source: EUS 2005.

Figure 5: Educational Achievement of Jordanian and Foreign Workers, 2004



Sources: Employment in Enterprise Survey 2004; EUS 2004

Table 4: Unemployment by Education and Age

<b>Unemployment and Education</b>						
	2001			2006		
	Male	Female	Total	Male	Female	Total
Illiterate	2.6	0.9	2.2	1.9	0.1	1.4
Non-Secondary	69.2	19.8	58.8	64.9	10.3	49.6
Secondary	12.1	14.7	12.7	12.3	10.1	11.7
Community College	5.4	34.8	11.6	4.9	28.1	11.4
Bachelor Degree and above	10.7	29.8	14.7	16.0	51.5	25.9
Unemployment Rate	13.7	20.6	14.7	11.9	25.0	14.0
<b>Unemployment and Age</b>						
	2001			2006		
	Male	Female	Total	Male	Female	Total
15-19	4.3	20.6	17.3	14.4	2.6	14.0
20-24	48.3	36.2	38.7	34.8	46.3	38.0
25-39	44.5	32.1	34.7	34.9	46.4	38.1
40-54	2.3	9.7	8.1	9.6	4.5	8.2
55-64	0.0	1.4	1.1	2.3	0.1	1.7
	13.7	20.6	14.7	11.9	25.0	14.0

Source: DOS, Several Statistical Yearbook (2006)

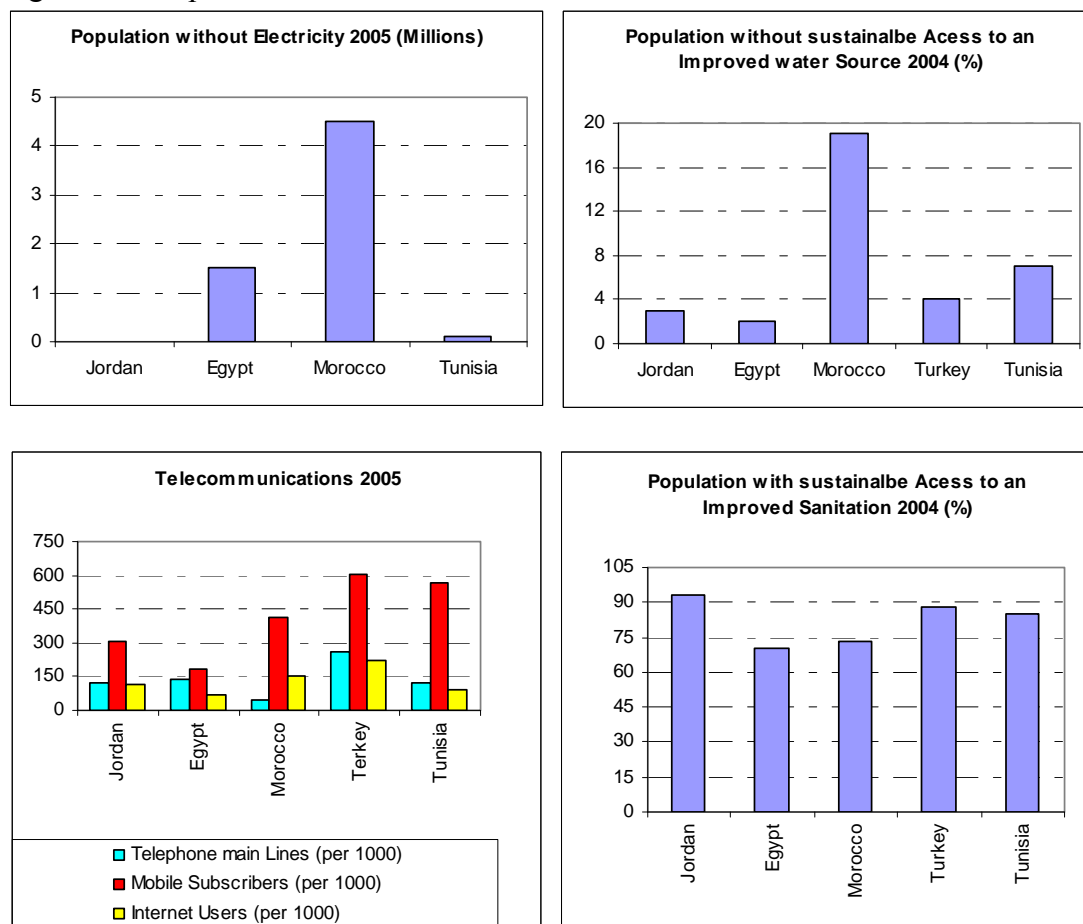
Table 5: Numbers of Educated Jordanians Working in Gulf States

Educational level	Gender / thousands		Sectors/ thousands		Number of Jordanian expatriates/ thousands	Country
	female	male	Private	Public		
Bachelor degree or higher	30	45	41	34	75	U.A.E
Diploma or higher	3,5	47,5	*20	*32	52	Saudi Arabia
Secondary level or higher			19	13	32	Kuwait
Secondary level or higher	1,5	8,5	7,5	2,5	10	Qatar
Secondary level or higher	0,4	2,6	0,7	2,3	3	Oman
					171	Total

Source: Ministry of Labor

## Appendix B: Infrastructure Data

Figure 1: Comparison of Infrastructure Indices



Source: Human development Report 2004-2007

Figure 2: Comparison of Infrastructure Quality

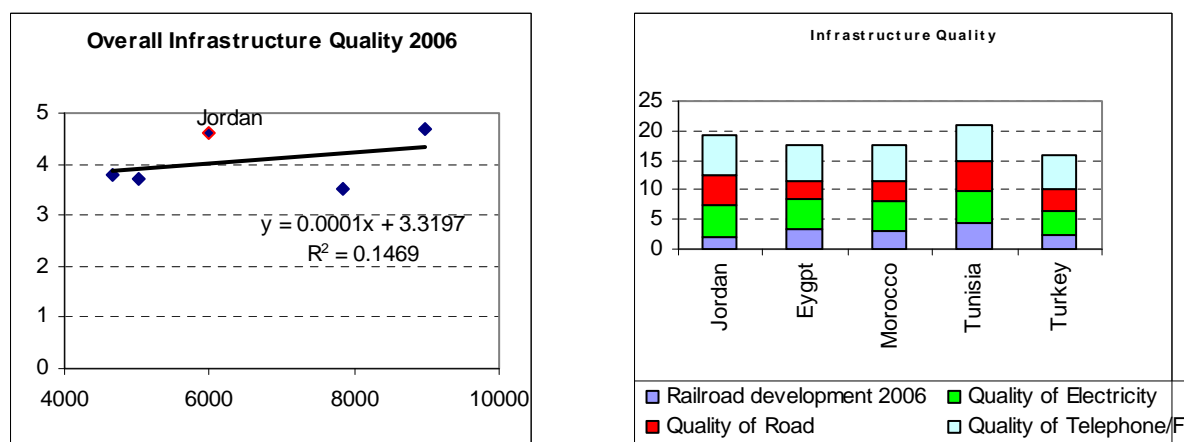
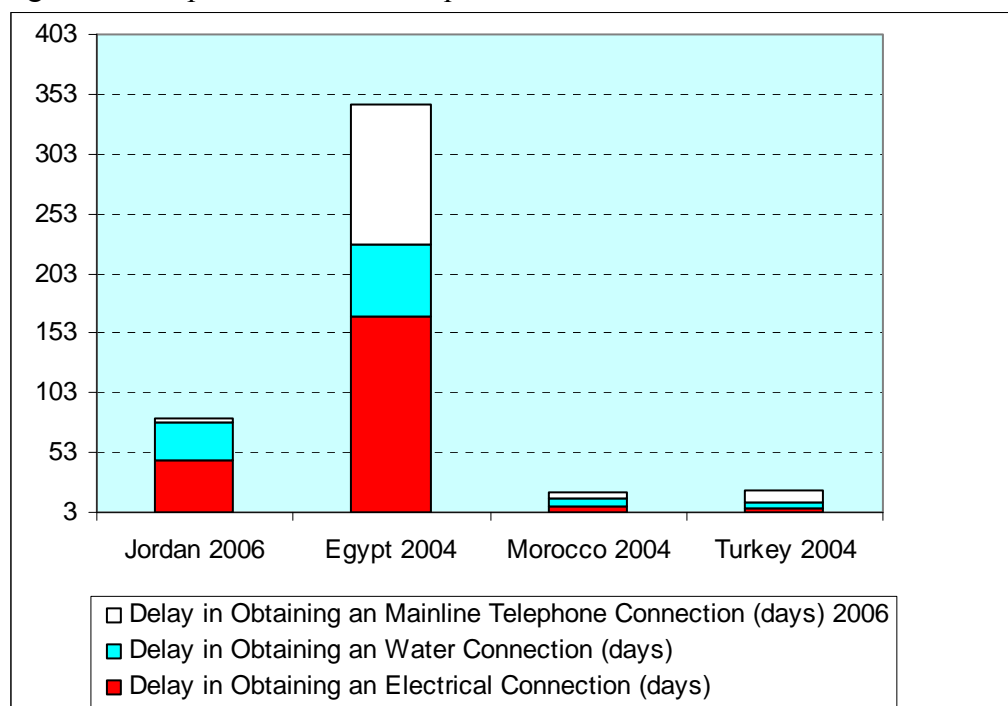
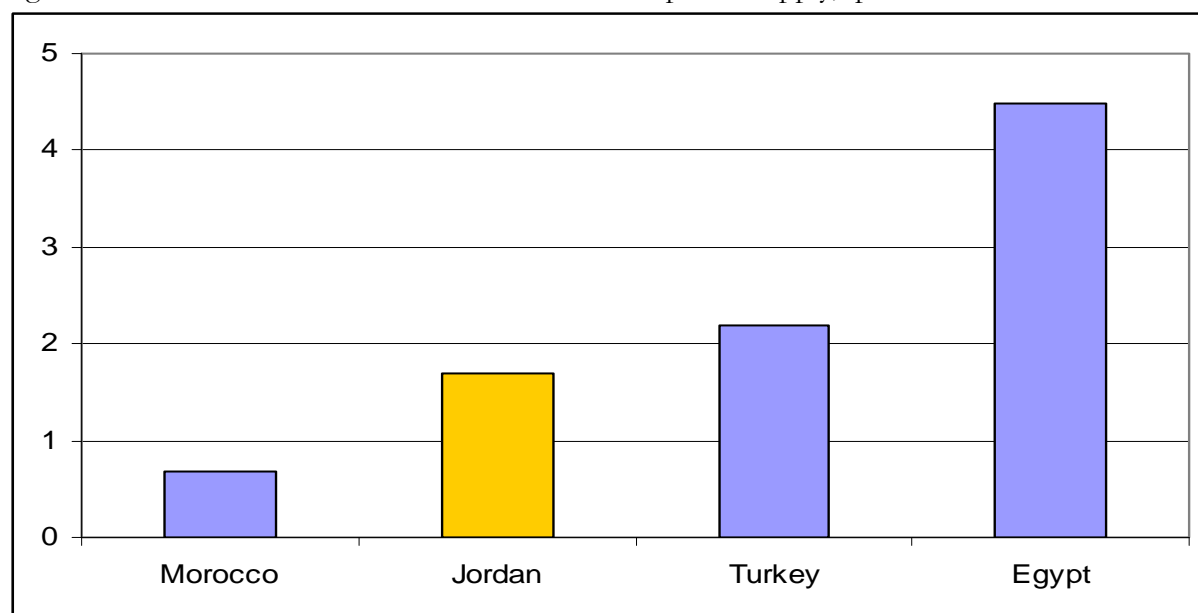


Figure 3: Comparison of Time Required for Connection to Infrastructure Services



Source: World Bank, Enterprise survey.

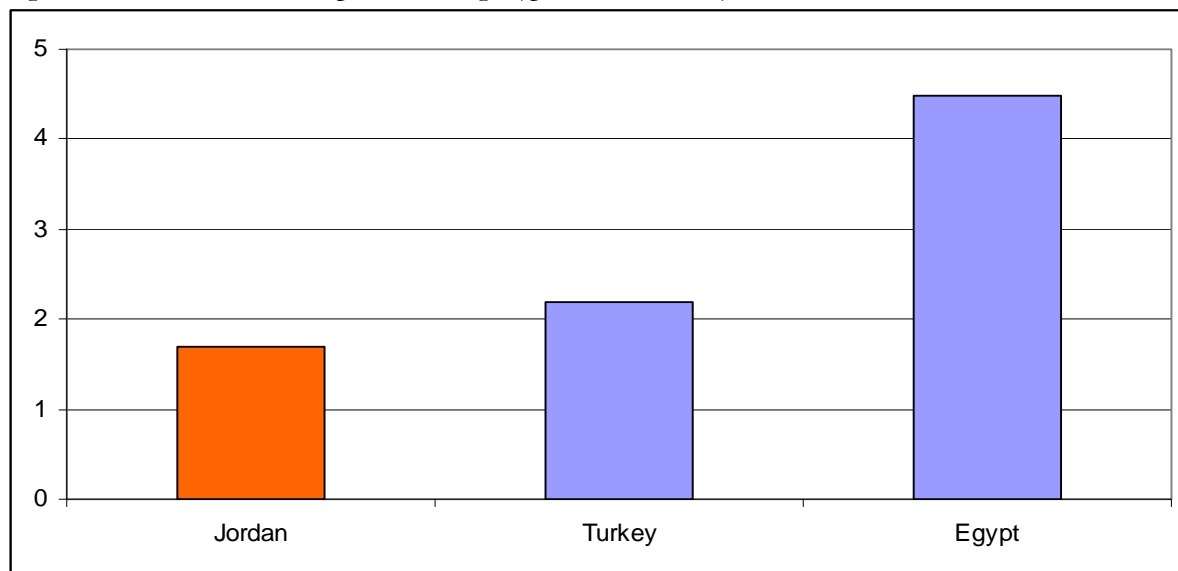
Figure 4: The lost value due to deficiencies in electric power supply, percent from sales



Source: Enterprise Survey, WB, 2005

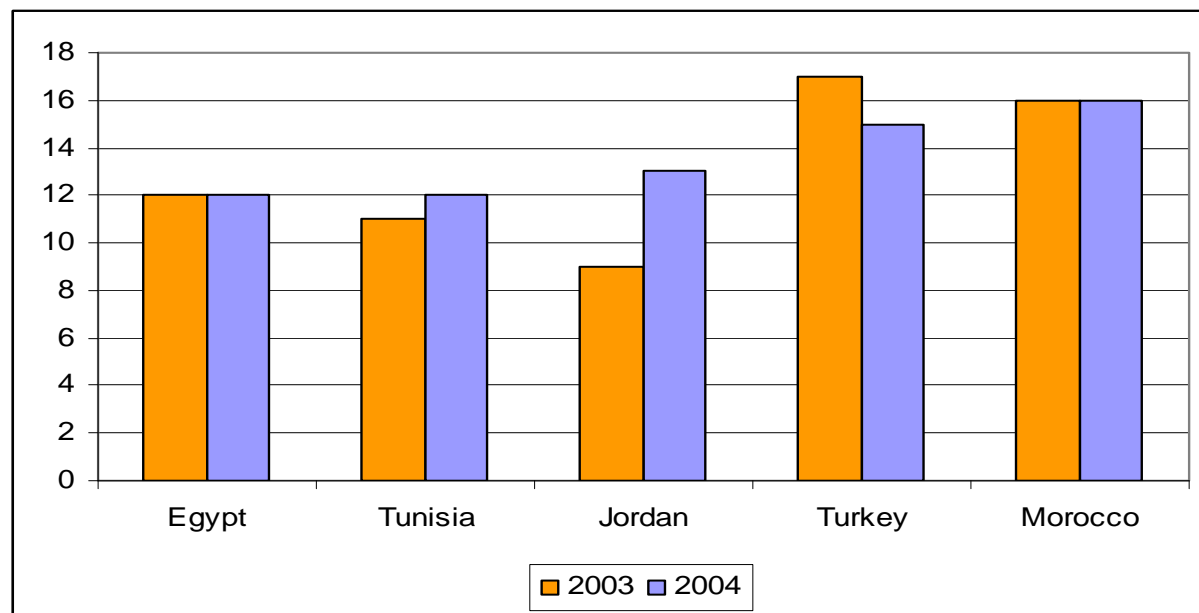


Figure 5: Value lost due to power outage ( percent of sales)



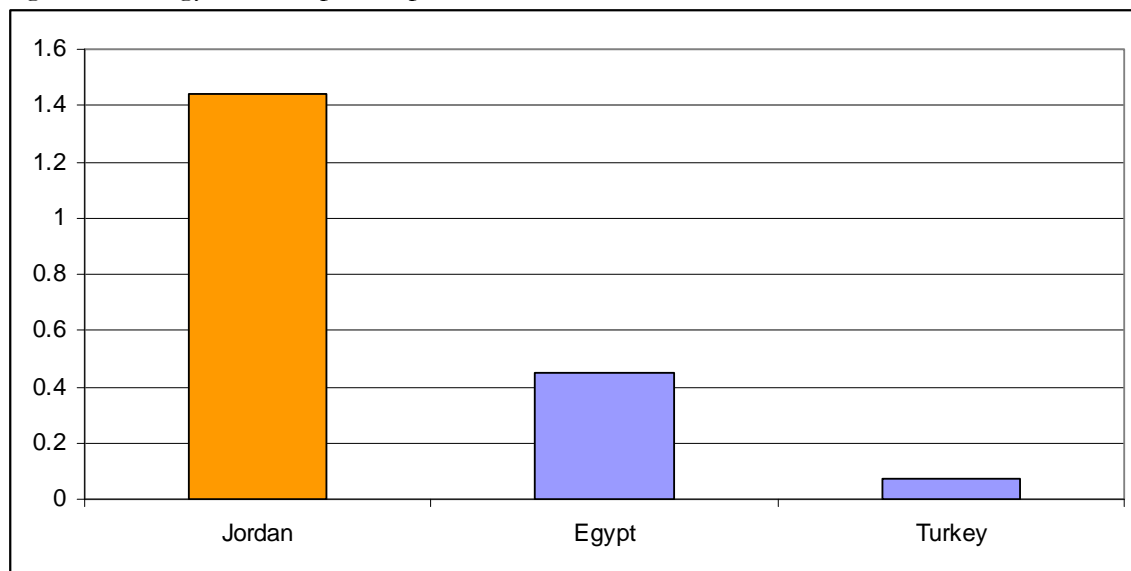
Source: World Development Indicators, WB, 2007

Figure 6: Losses of electric power in the course of its transportation and distribution, percent of obtained energy



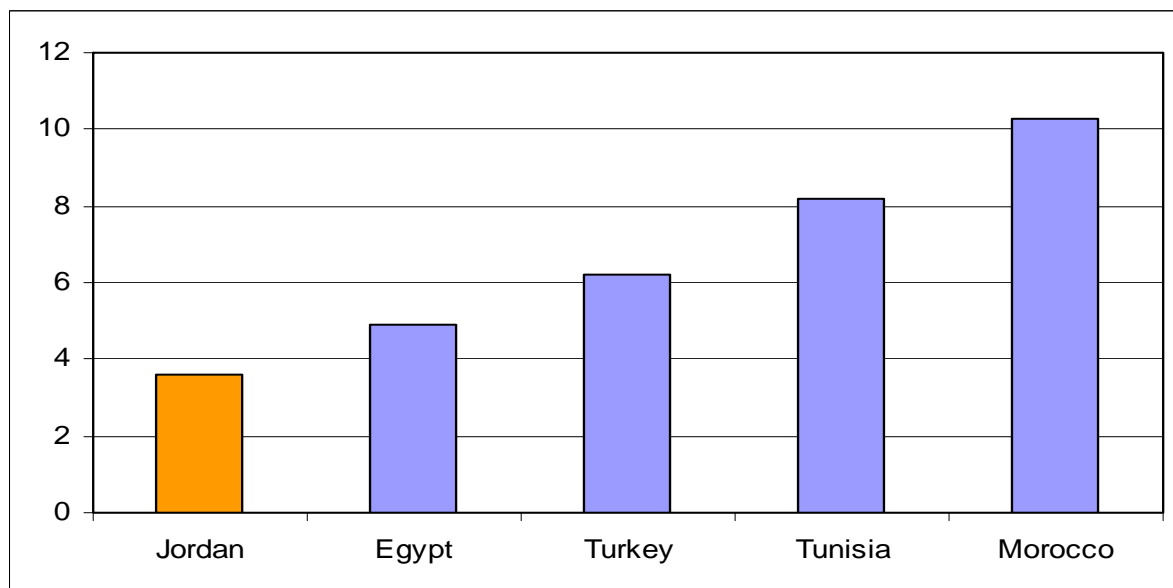
Source: World Development Indicators, WB, 2007

Figure 7: Energy Consumption, percent of sales



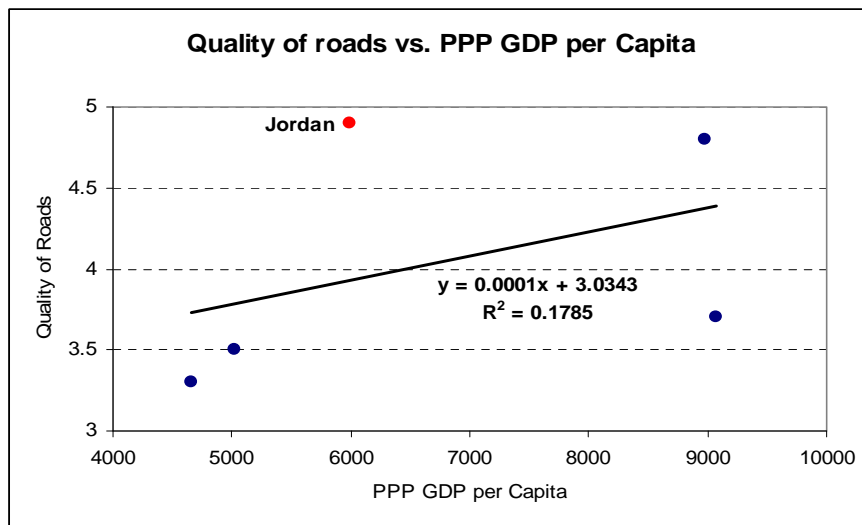
Source: Enterprise Survey, WB, 2005

Figure 8: GDP per one unit of energy used (2000 PPP USD/kg oil equivalent).



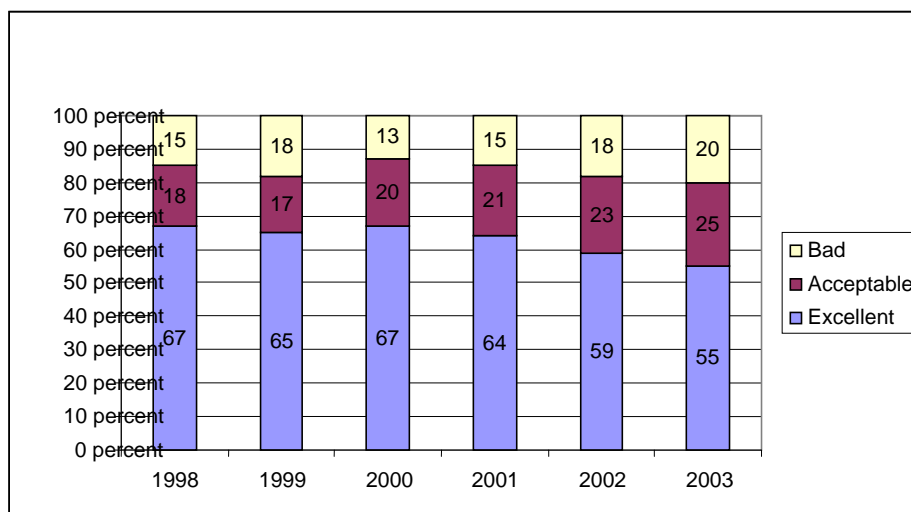
Source: World Development Indicators, WB, 2007

Figure 9: Quality of Roads



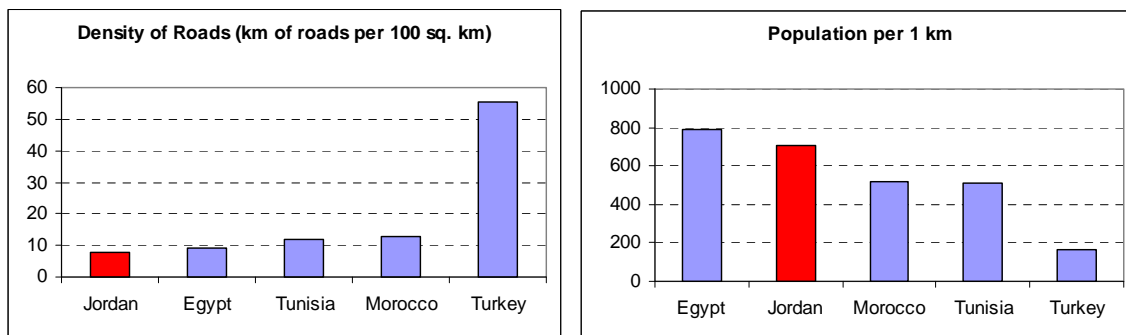
Source: Global Competitiveness Report 2006, WEF

Figure 10: Condition of Roads in Jordan (1998-2003)



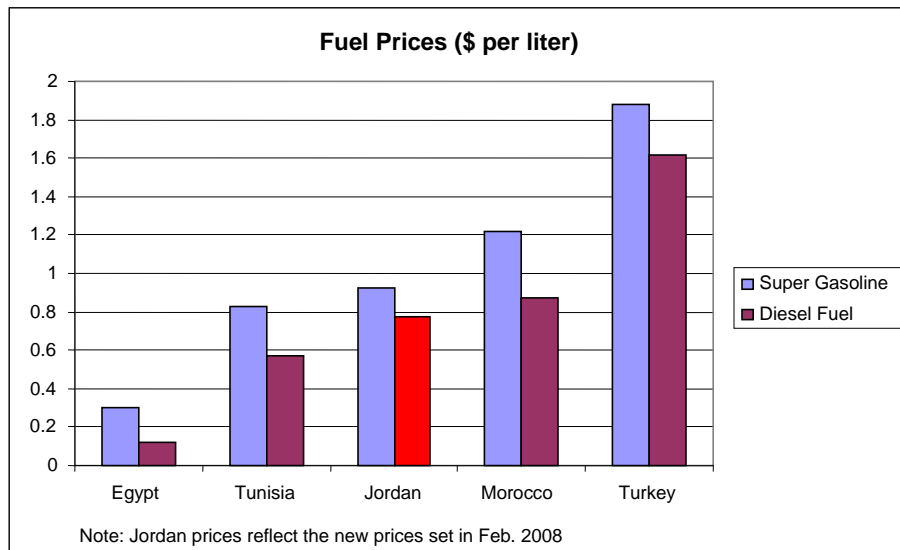
Source: Public Expenditure Review 2004, WB

Figure 11: Density of Roads and Population per 1 Km of Road



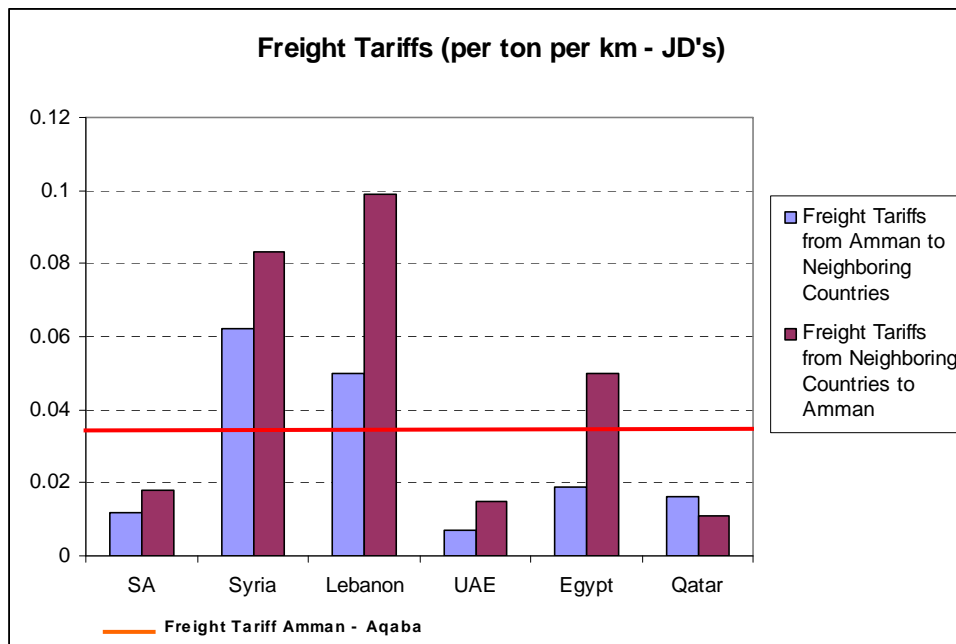
Source: World Development Indicators 2007, WB

Figure 12: Fuel Prices in Jordan



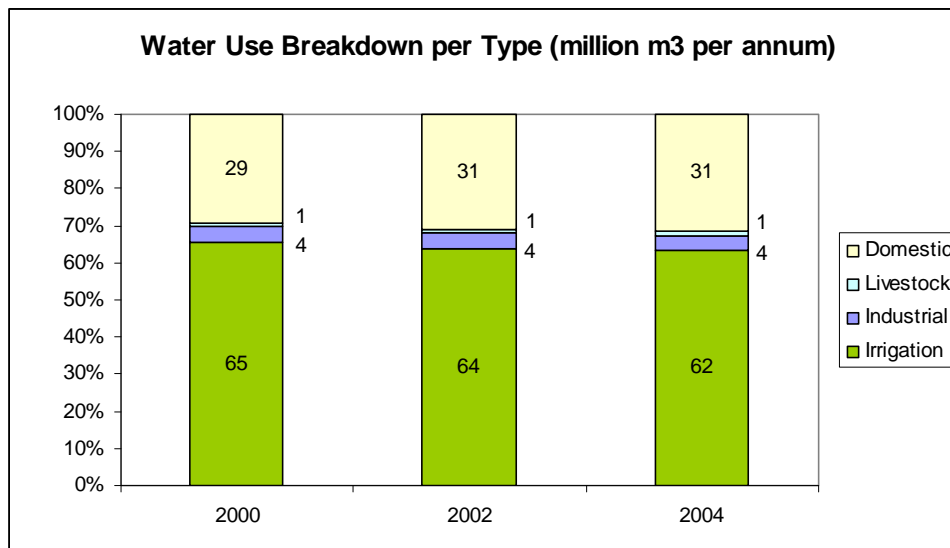
Source: World Development Indicators 2007, WB

Figure 13: Freight Tariffs (JD per ton per km)



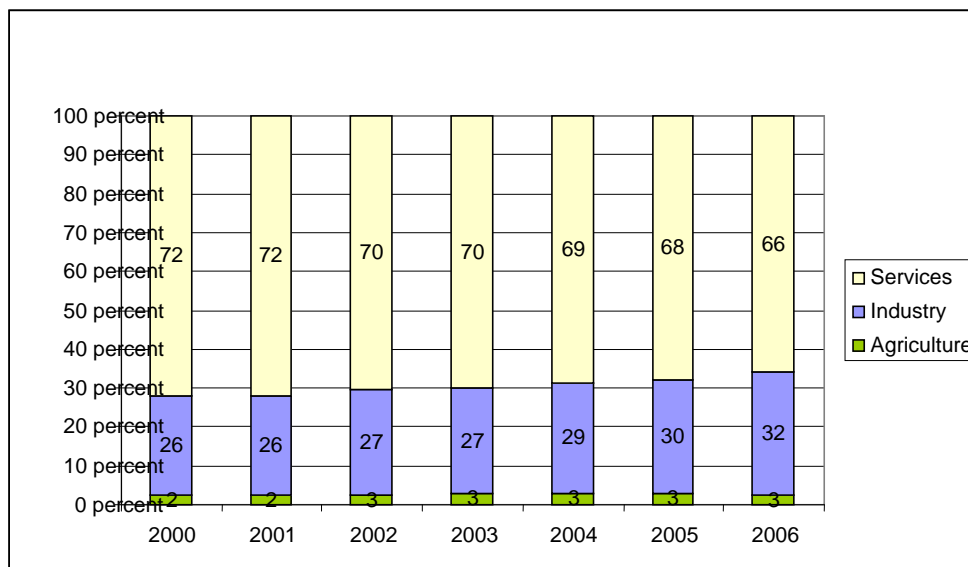
Source: Ministry of Transportation

Figure 14: Water Use Breakdown



Source: National Water Master Plan, Ministry of Irrigation

Figure 15: GDP by Economic Activity



Source: SIMA, World Bank

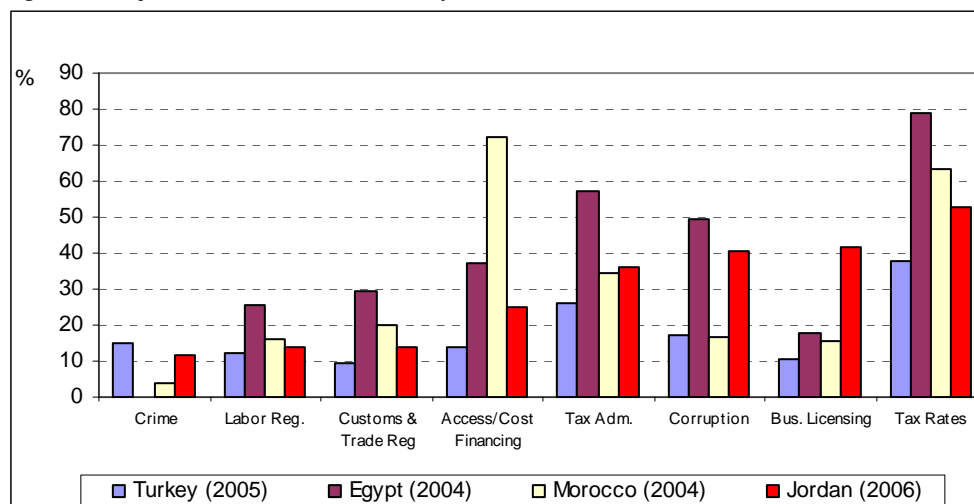
Figure 16: Comparison of Quality of Communications

	Jordan	Egypt	Morocco
Level of liberalization	Green	Orange	Green
Quality/Availability of Services	Orange	Orange	Green
Penetration of Services and Usage	Green	Orange	Orange
Cost of Services	Orange	Orange	Orange

Overview of telecom development in the countries under study. Green = best performance; Orange = average performance, Red = poorest performance [Source: WB 2002]

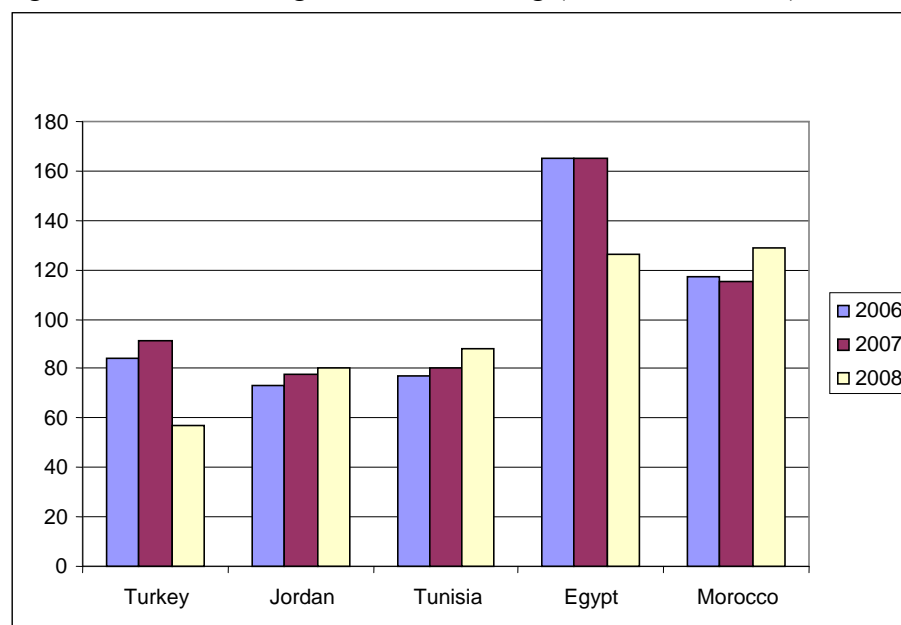
## Appendix C: Microeconomic Risks Data

Figure 1: Major Mentioned Constraints by Firms



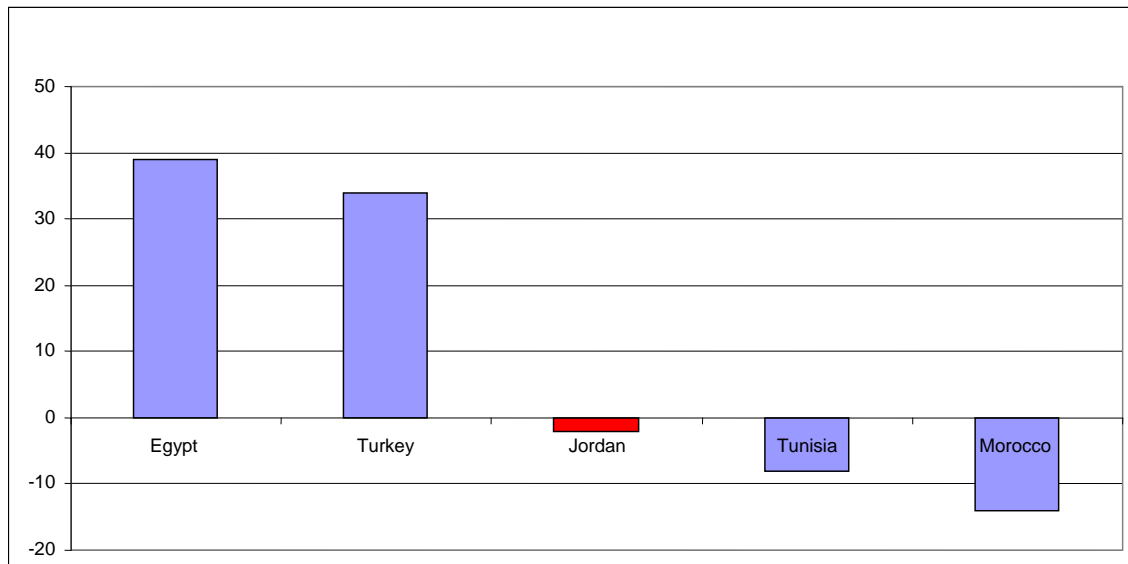
Source: Enterprise Survey

Figure 2: Ease of Doing Business Ranking (2006, 2007, 2008)



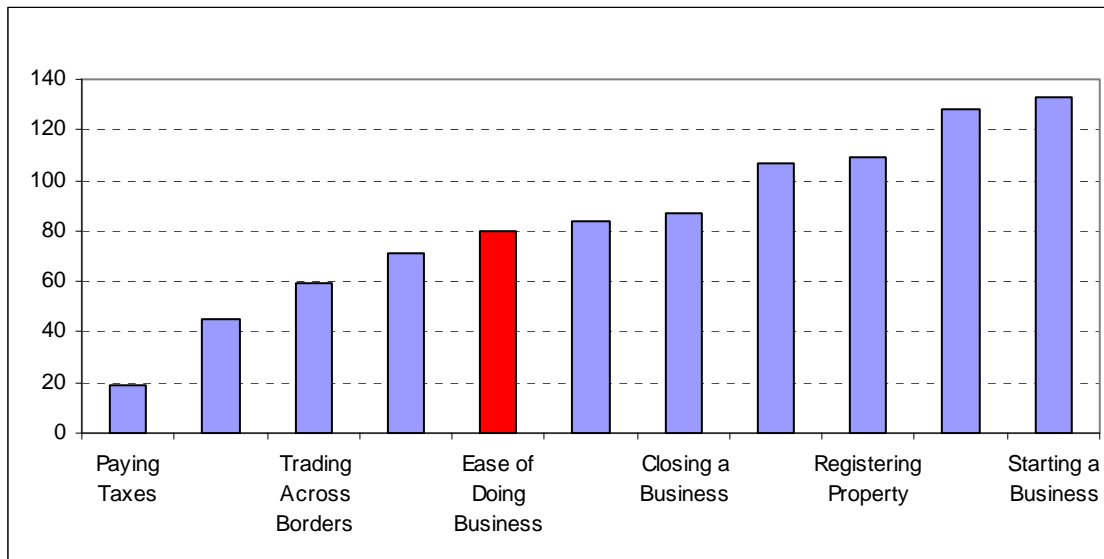
Source: Doing Business Report, 2008

Figure 3: Change in Ease of Doing Business (2007 vs. 2008)



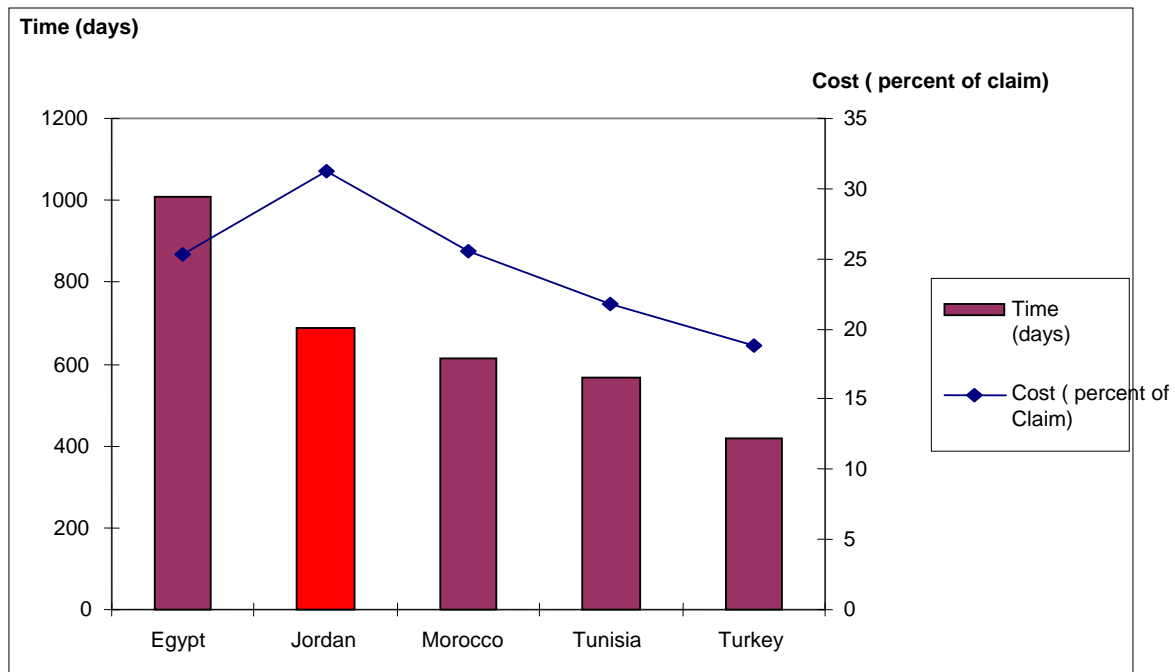
Source: Doing Business Report, 2008

Figure 4: Ranking of Doing Business Components in Jordan (2008)



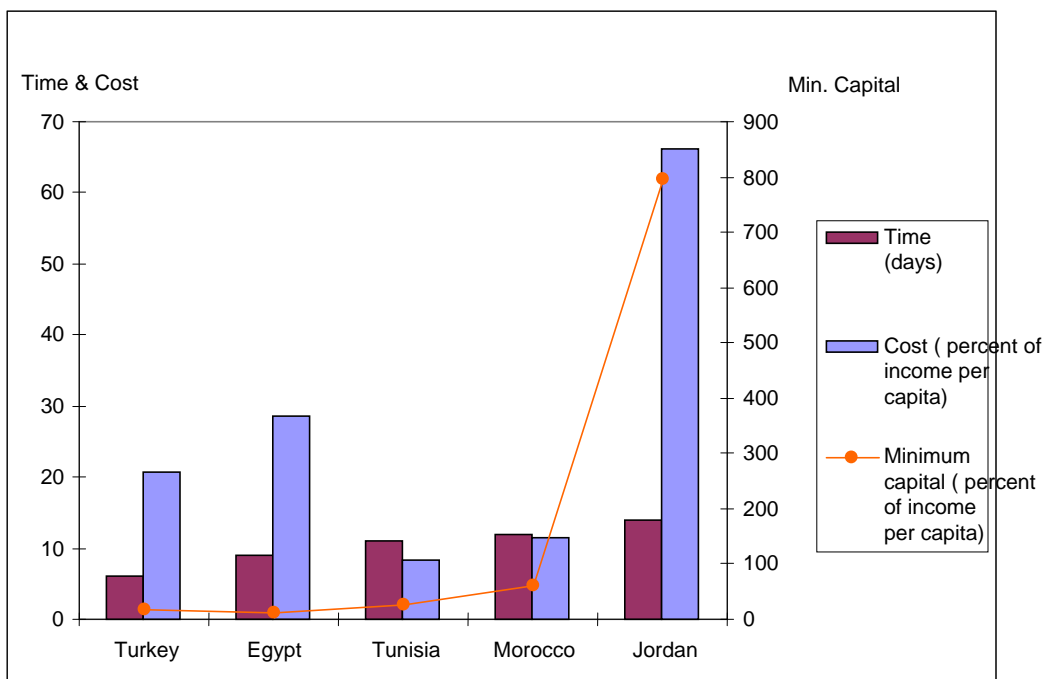
Source: Doing Business Report, 2008

Figure 5: Enforcing Contracts Components



Source: Doing Business Report, 2008

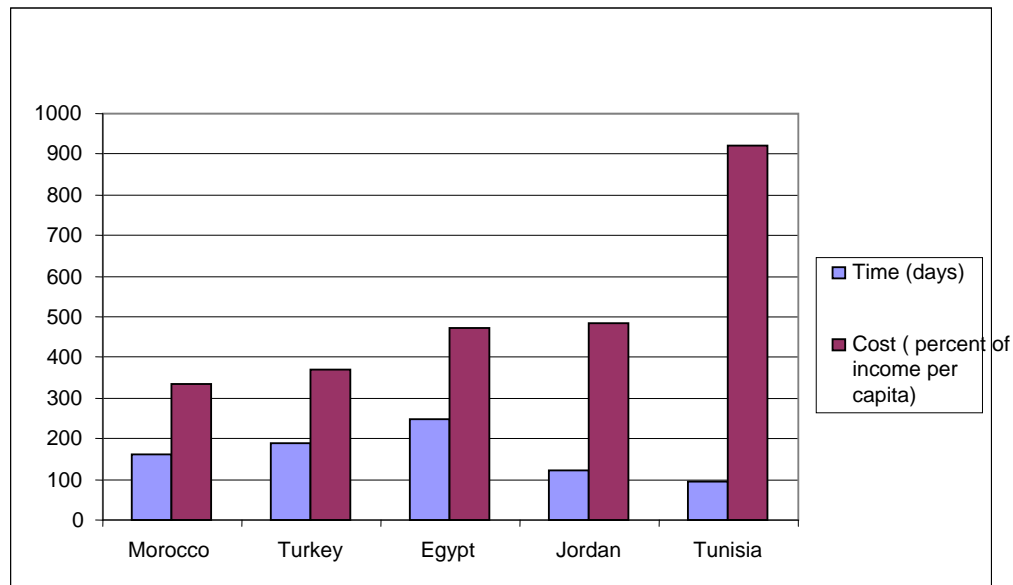
Figure 6: Comparison of Cost to Start a Business Component



Source: Doing Business Report, 2008

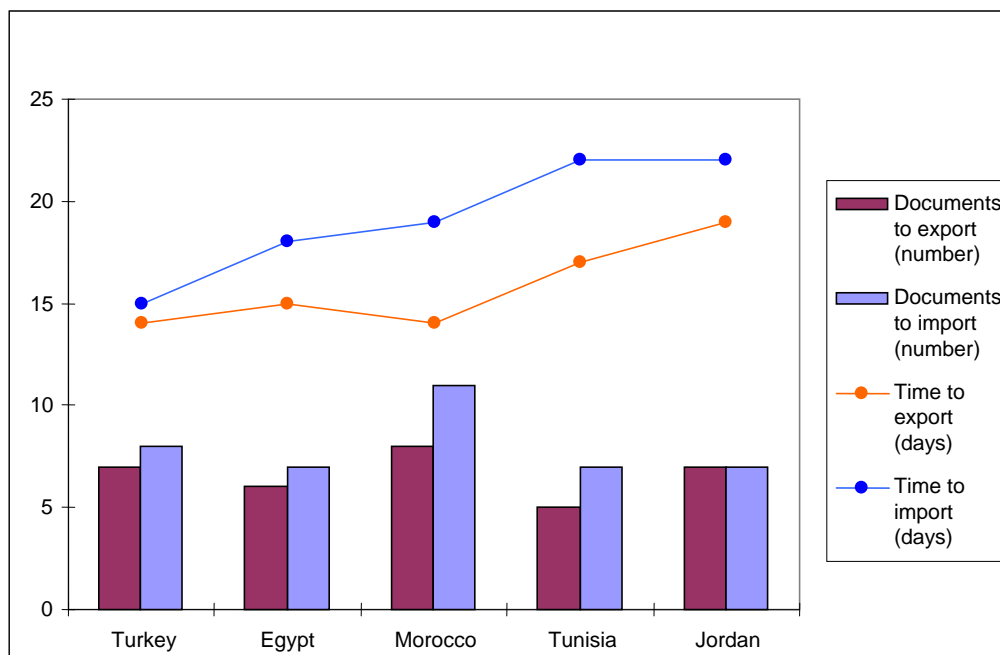


Figure 7: Comparison of Dealing with Licenses Component



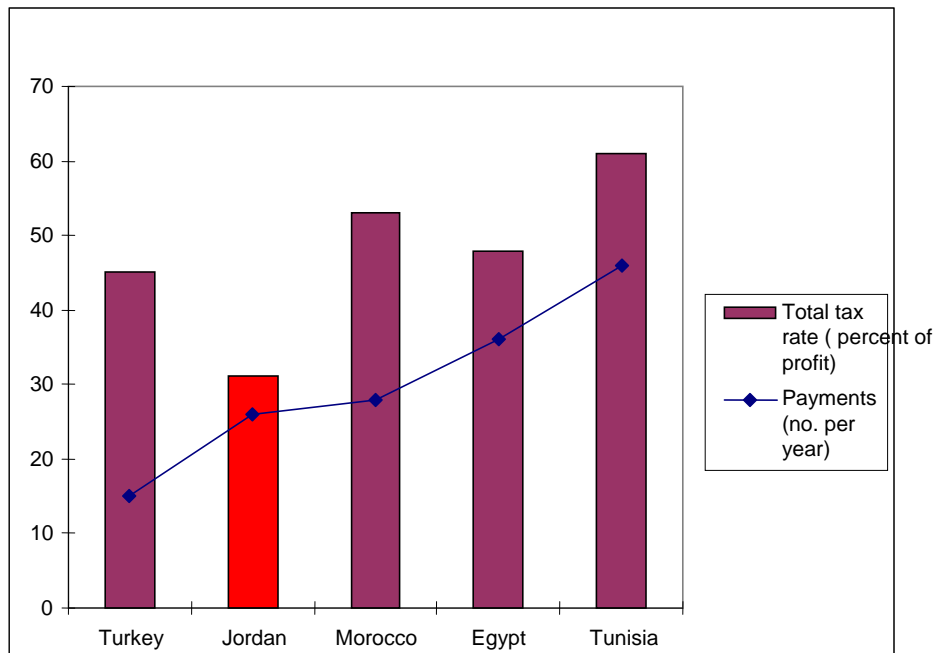
Source: Doing Business Report, 2008

Figure 8: Comparison of Trading Across Borders Component



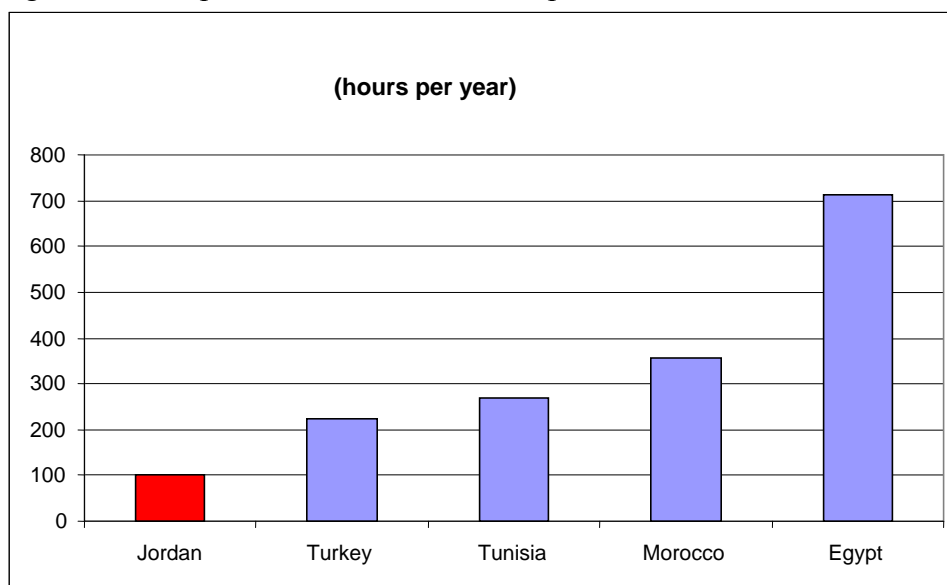
Source: Doing Business Report, 2008

Figure 9: Comparison of Paying Taxes Component



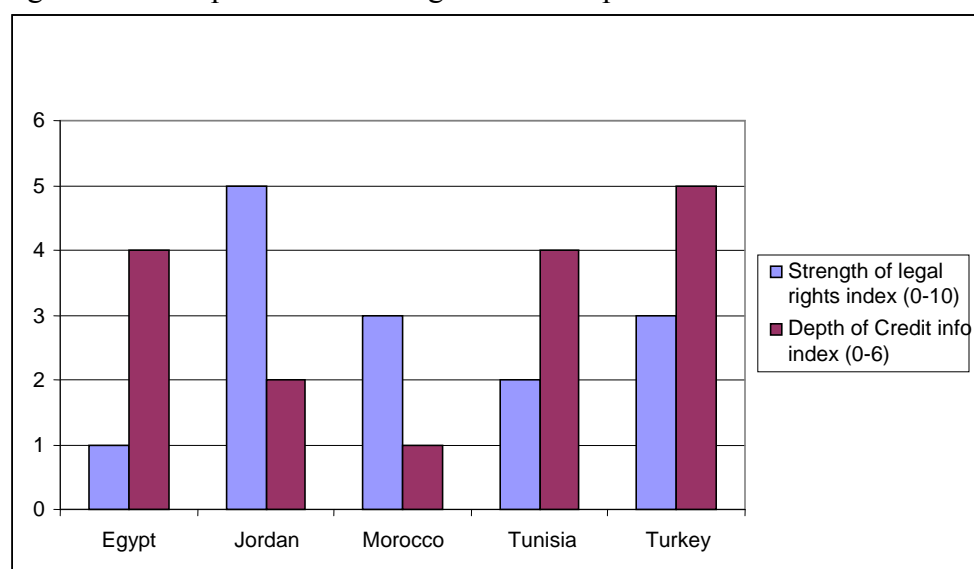
Source: Doing Business Report, 2008

Figure 10: Comparison of the Time for Preparation, Documentation and Payment of Taxes



Source: Doing Business Report, 2008

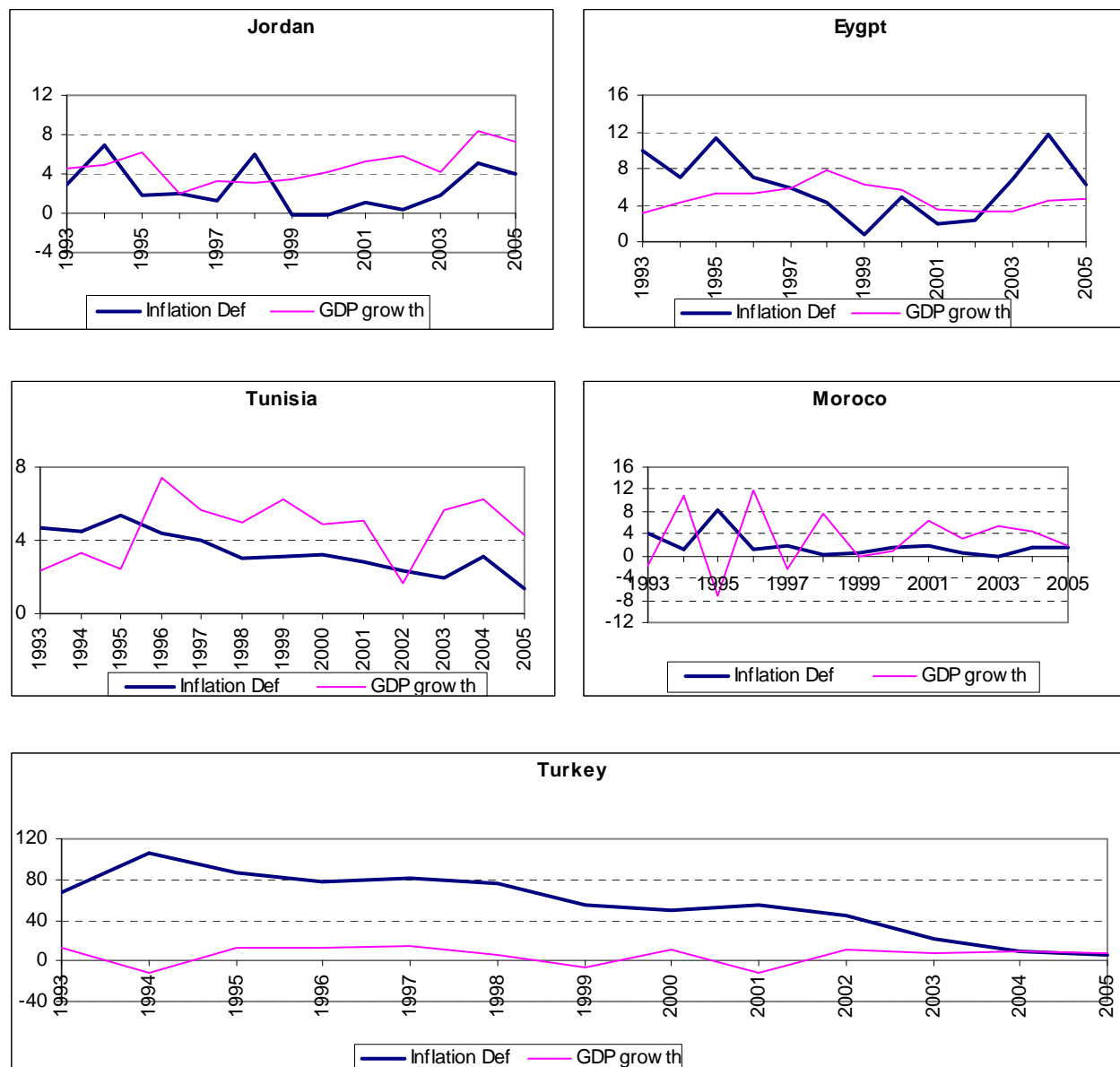
Figure 11: Comparison of Getting Credit Component



Source: Doing Business Report, 2008

## Appendix D: Macroeconomic Risks Data

Figure 1: Comparison of Real Growth and Inflation



Source: International Financial Statistics, IMF 2007.

Figure 2: Relationship of Real Growth and Inflation

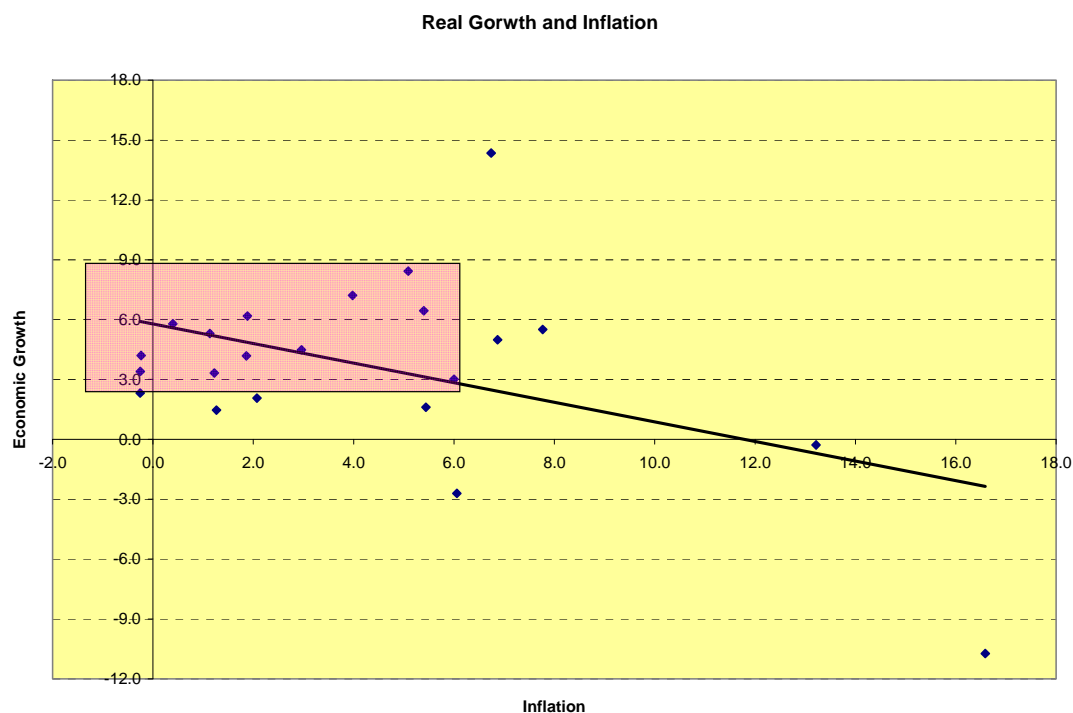
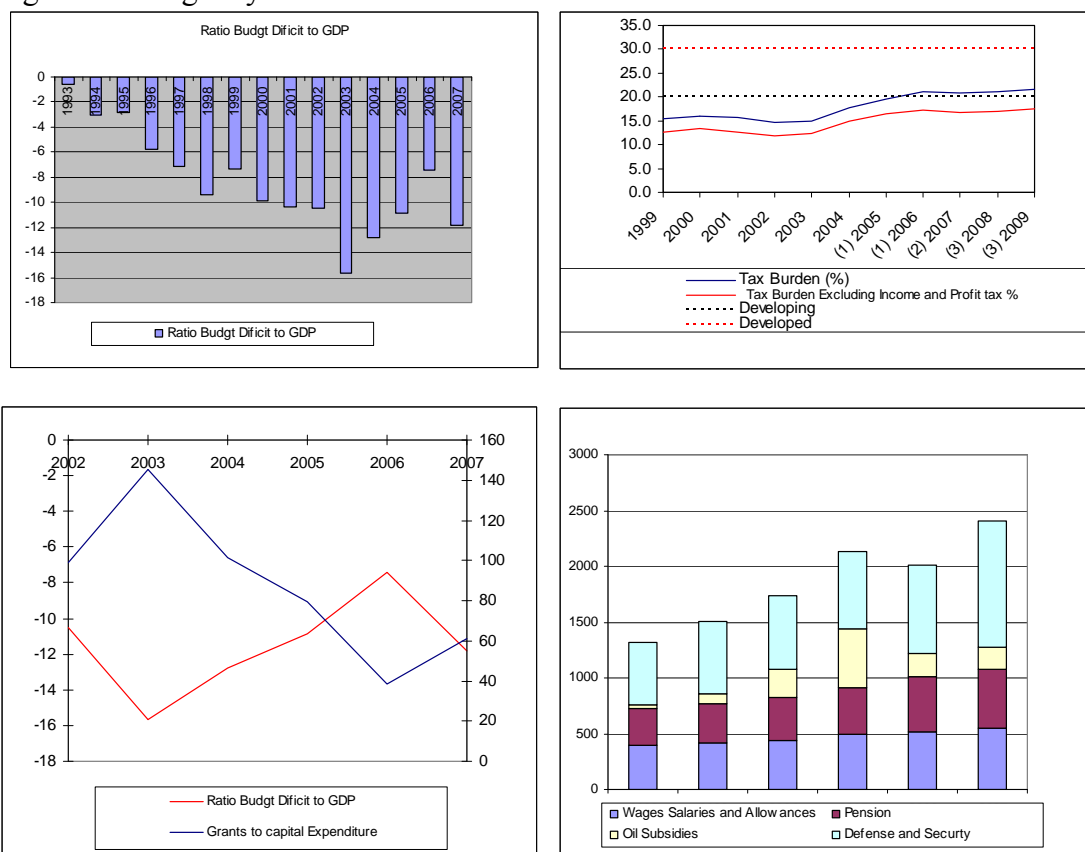
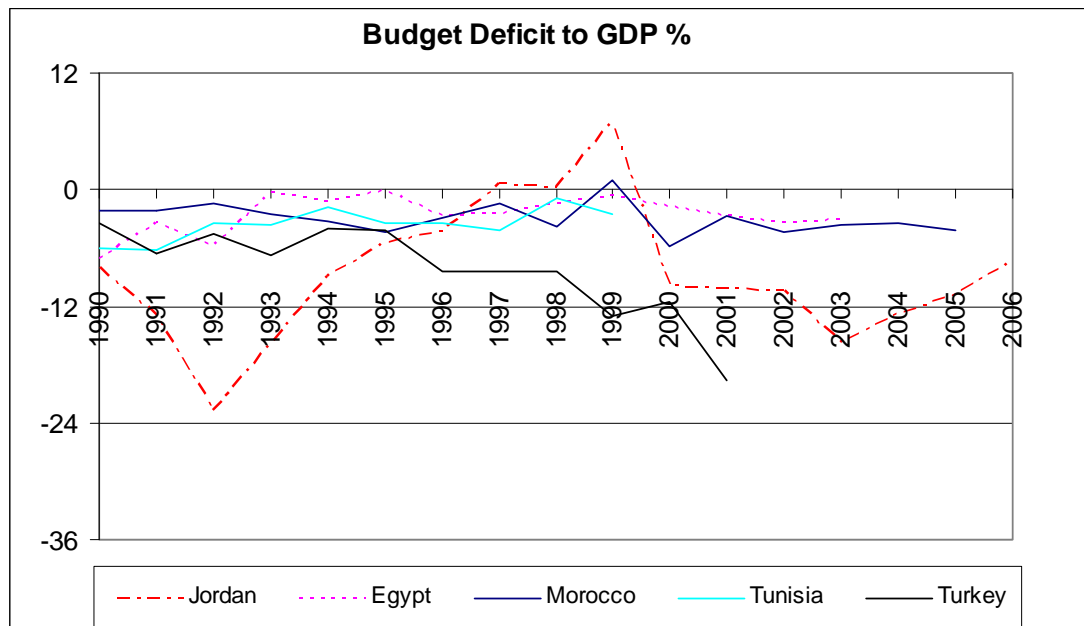


Figure 3: Budgetary Statistics



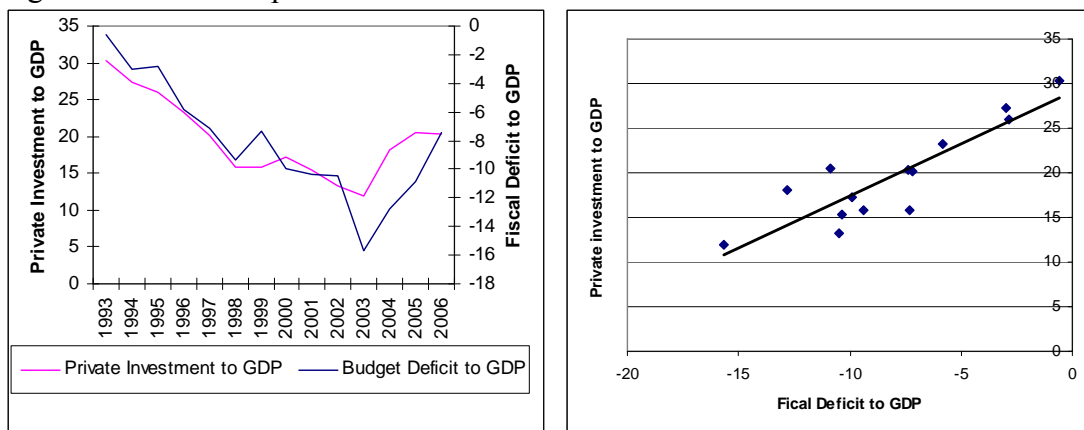
Source: MOF, IMF Projections for 2008,

Figure 4: Comparison of Budget Deficits to GDP ( percent)



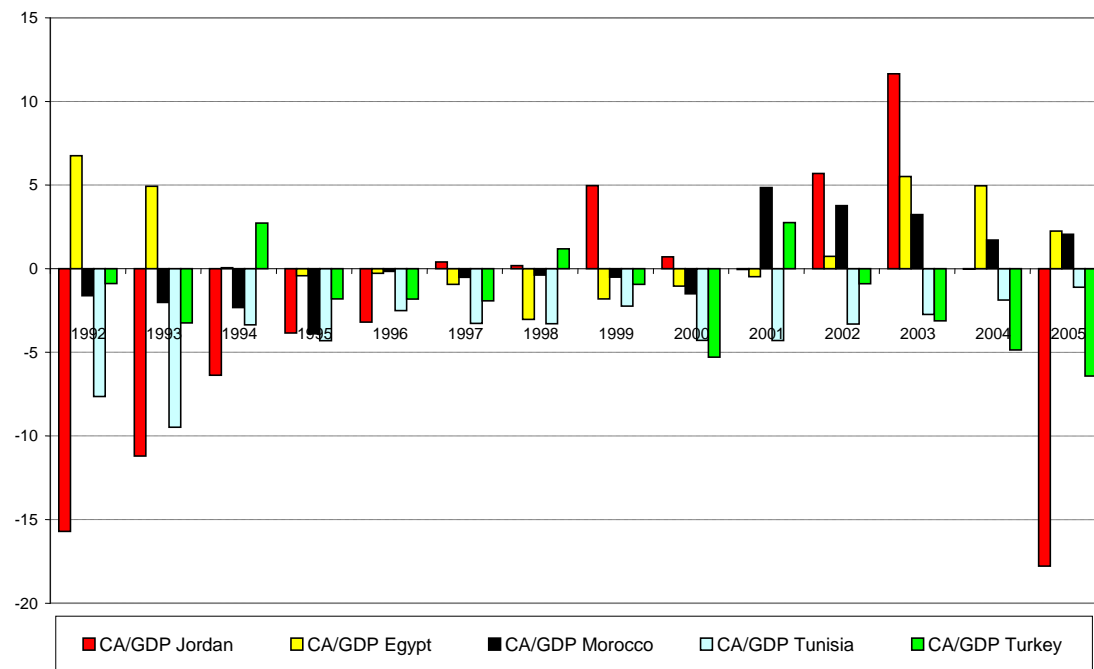
Source: IFC, IMF 2007.

Figure 5: Relationship of Private Investment to the Fiscal Deficit Ratio



Source: IMF 2004 and 2007, MCU calculation.

Figure 6: Comparison of Current Account Deficit to GDP Ratios



Source: International Financial Statistics, IMF 2007.

## Appendix E: Innovation Data

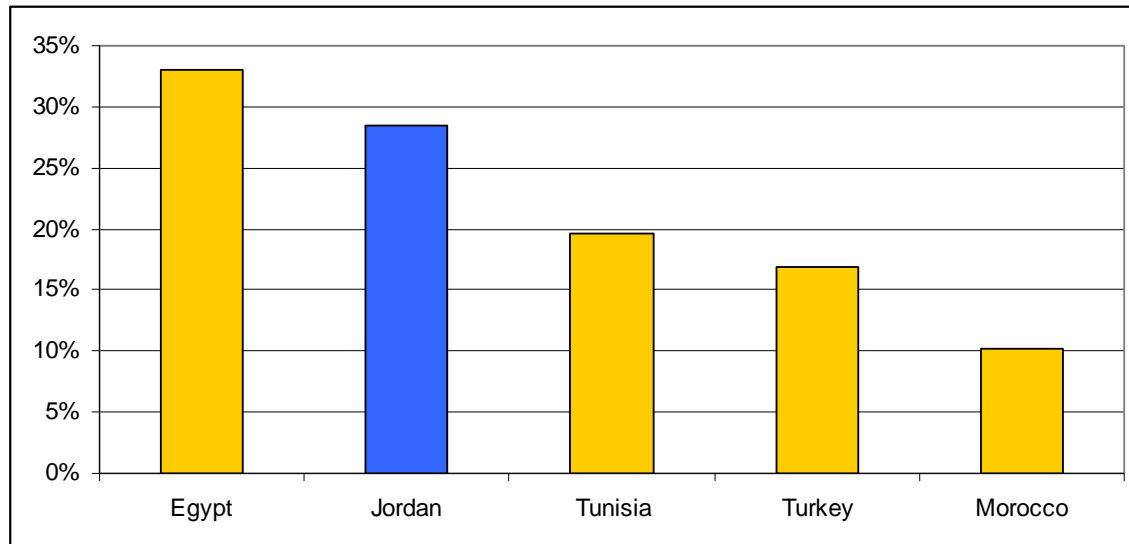
Table 1: The Jordanian top ten exports in 1994 and 2006, four digits

1994				2006		
#	Code	Description	Value (Million JD)	code	Description	Value (Million JD)
1	0702	TOMATOES, FRESH OR CHILLED	18.67	0702	TOMATOES, FRESH OR CHILLED	72.54
2	8702	MOTOR VEHICLES FOR THE TRANSPORT OF TEN OR MORE PERSONS,INCLUDING THE DRIVER - NUMBER.	19.11	6110	JERSEYS,PULLOVERS,CARDIGANS,WAIST-COATS AND SIMILAR ARTICLES,KNITTED OR CROCHETED .	100.64
3	3402	ORGANIC SURFACE-ACTIVE AGENTS ( OTHER THAN SOAP ); SURFACE-ACTIVE PREPARATIONS,	19.44	2510	NATURAL CALCIUM PHOSPHATES, NATURAL ALUMINIUM CALCIUM PHOSPHATES AND PHOSPHATIC CHALK .	112.89
4	3808	INSECTICIDES, RODENTICIDES, FUNGICIDES, HERBICIDES ANTI-SPROUTING PRODUCTS	23.80	6106	WOMEN'S OR GIRLS' BLOUSES,SHIRTS AND SHIRT-BLOUSES, KNITTED OR CROCHETED .	119.20
5	2523	PORTLAND CEMENT, ALUMINOUS CEMENT, SLAG CEMENT, SUPERSULPHATE CEMENT AND SIMILAR HYDRAULIC CEMENT.	27.33	3102	MINERAL OR CHEMICAL FERTILISERS, NITROGENOUS .	125.65
6	1516	ANIMAL OR VEGETABLE FATS AND OILS AND THEIR FRACTIONS, PARTLY OR WHOLLY HYDROGENATED.	61.58	7113	ARTICLES OF JEWELLERY AND PARTS THEREOF, OF PRECIOUS METAL OR OF METAL CLAD WITH PRECIOUS METAL .	135.16
7	3102	MINERAL OR CHEMICAL FERTILISERS, NITROGENOUS .	86.69	3004	MEDICAMENTS ( EXCLUDING GOODS OF HEADING NO.30.02, 30.05 OR 30.06 ).	151.25
8	3004	MEDICAMENTS ( EXCLUDING GOODS OF HEADING NO.30.02, 30.05 OR 30.06 ) FOR RETAIL SALE .	91.12	3104	MINERAL OR CHEMICAL FERTILISERS, POTASSIC .	184.25
9	3104	MINERAL OR CHEMICAL FERTILISERS, POTASSIC .	92.88	6204	WOMEN'S OR GIRLS' SUITS,ENSEMBLES,JACKETS,BLAZERS....	219.66
10	2510	NATURAL CALCIUM PHOSPHATES, NATURAL ALUMINIUM CALCIUM PHOSPHATES AND PHOSPHATIC CHALK .	100.39	6114	OTHER GARMENTS,KNITTED OR CROCHETED	238.64

Source: Department of Statistics, The Harmonized System.

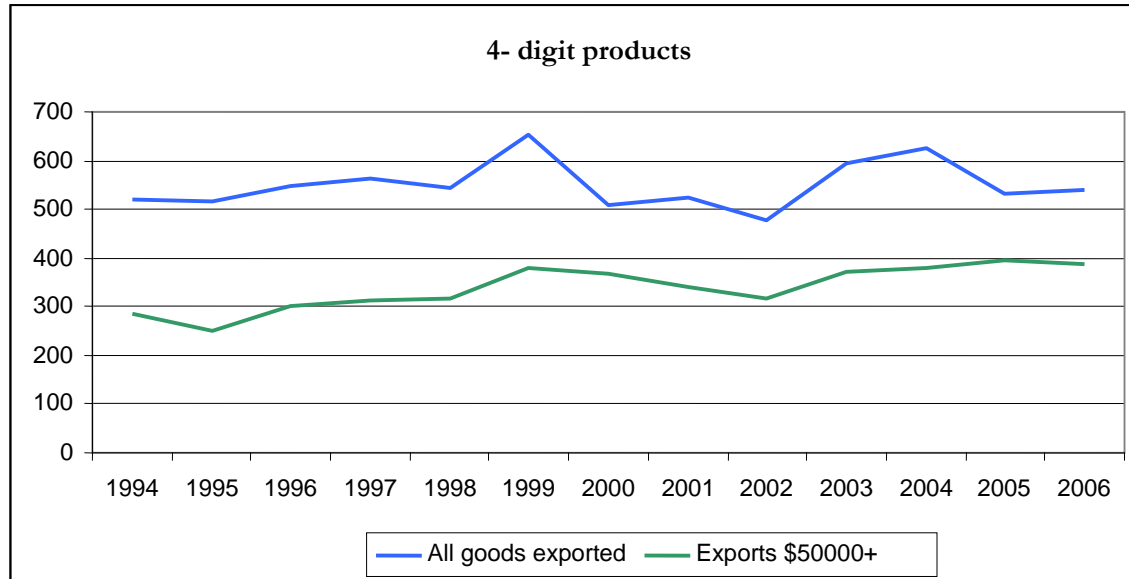


Figure 1: Change in the number of exported goods that exceed 100 thousand \$, percent, 2001 vs. 2005.



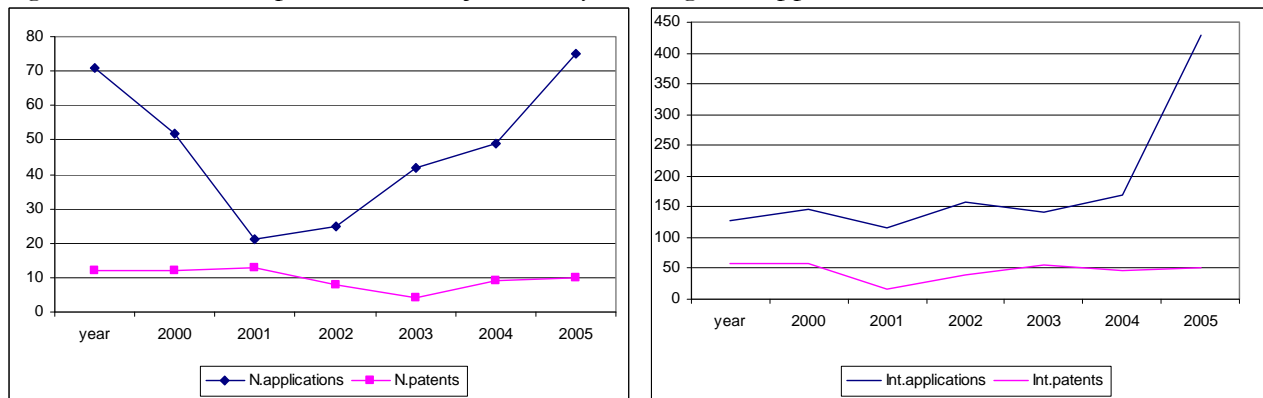
Source: ComTrade and MCU calculations

Figure 2: Evolution of Jordan's Exports



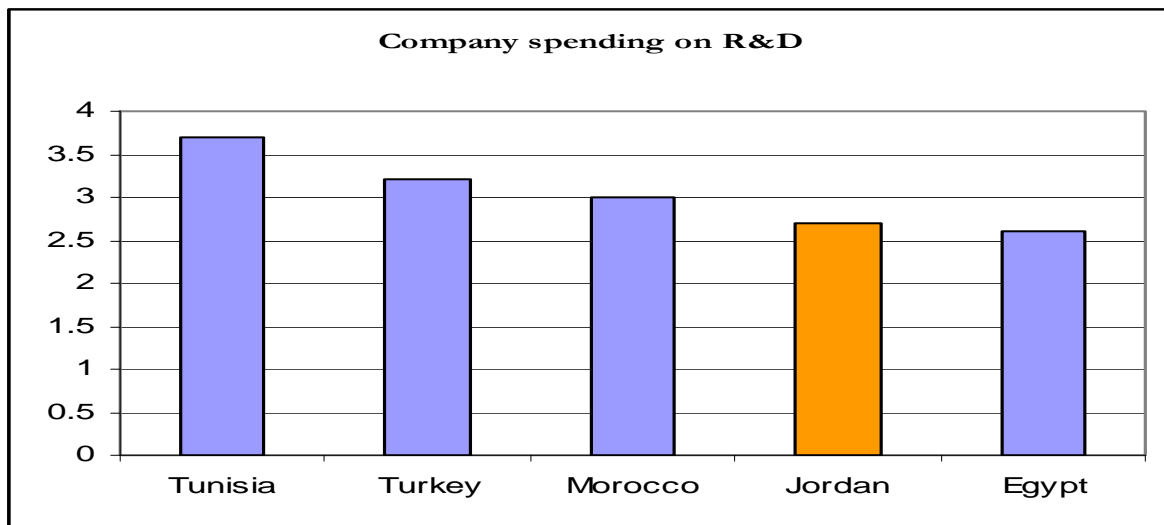
Source: Department of Statistics, The Harmonized System.

Figure 3: Number of patents filed in Jordan, by the origin of applicants



Source: department of industrial intellectual rights, Ministry of Industry and Trade.

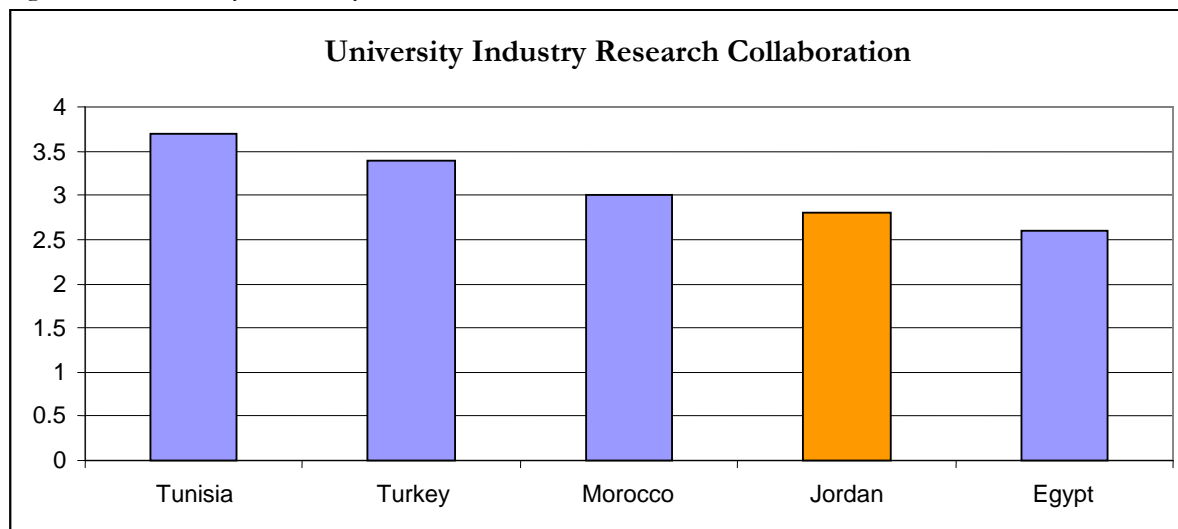
Figure 4: Company spending on R&D<sup>44</sup>



Source: Global Competitiveness Report 2007.

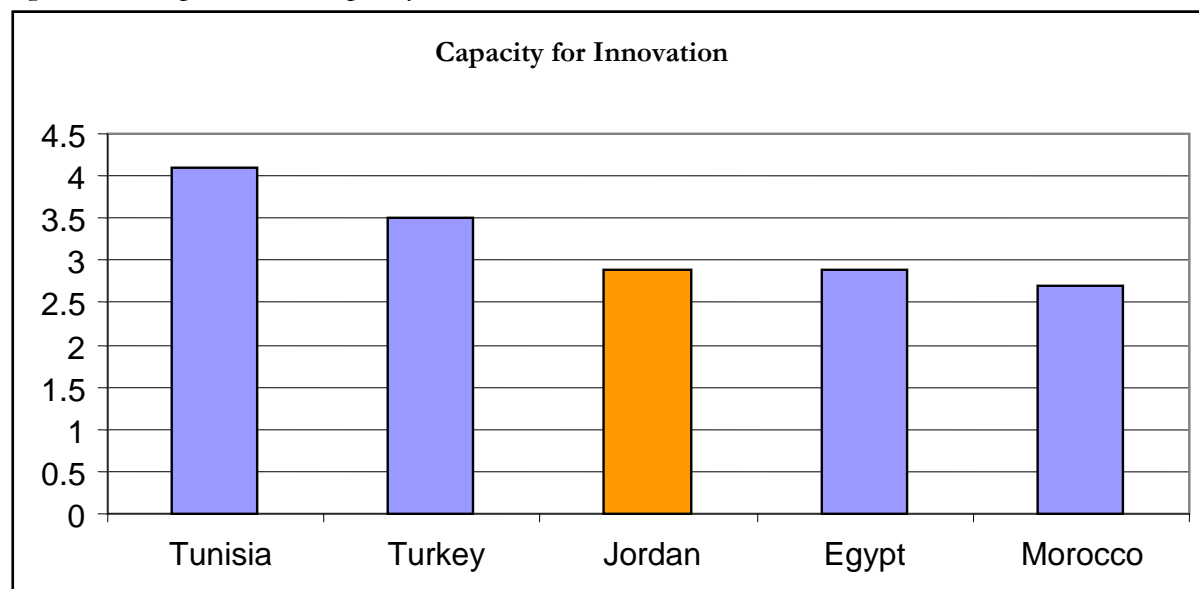
<sup>44</sup> The indicator measures companies spending on R&D using the interval from (1-7), where 1= do not spend money on R&D, while 7= spend heavily on R&D.

Figure 5: University/Industry research collaboration<sup>45</sup>



Source: Global Competitiveness Report 2007.

Figure 6: Comparison of Capacity for Innovation<sup>46</sup>

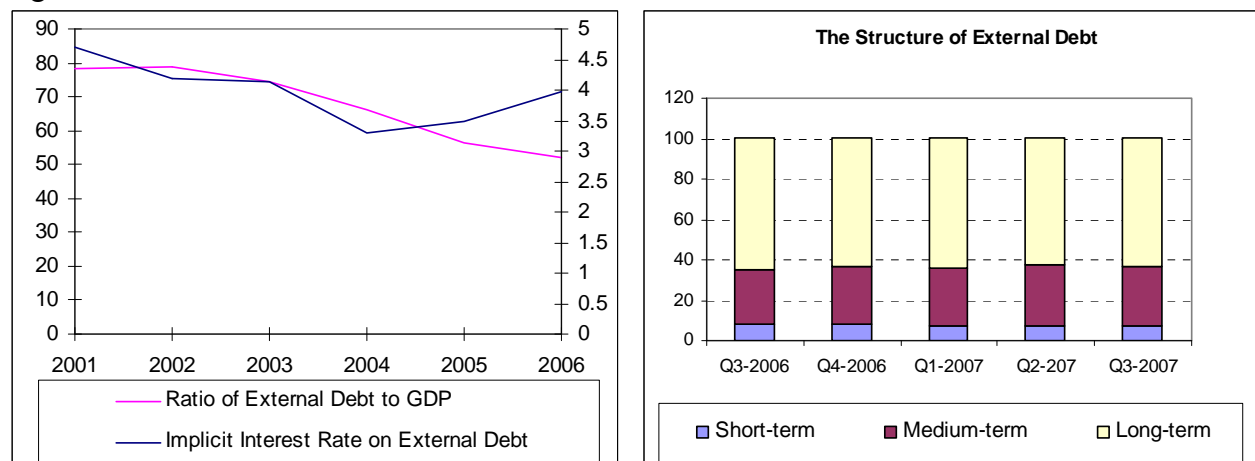


<sup>45</sup> The indicator measure the existence of collaboration between university and company using the interval from (1-7), where 1= minimal or nonexistent, while 7= intensive and ongoing.

<sup>46</sup> The indicator measure companies way for obtain technology using the interval (1-7), where 1= exclusively from licensing or imitating foreign companies, while 7= by conducting formal research and pioneering their own new products and processes.

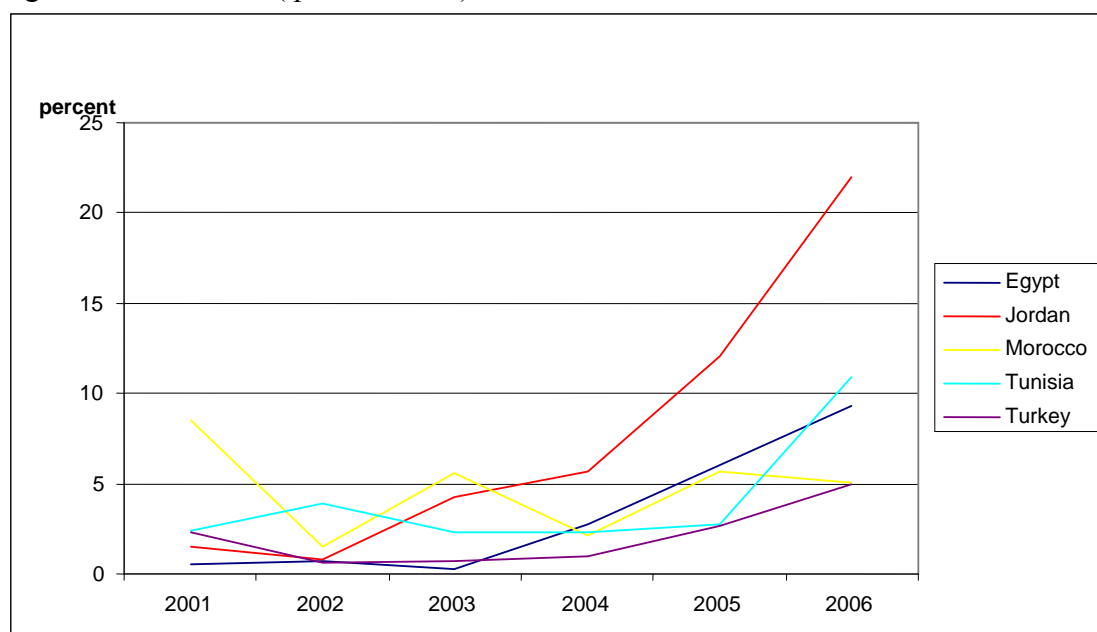
## Appendix F: Cost of Finance Data

Figure 1: Structure of Jordan's External Debt



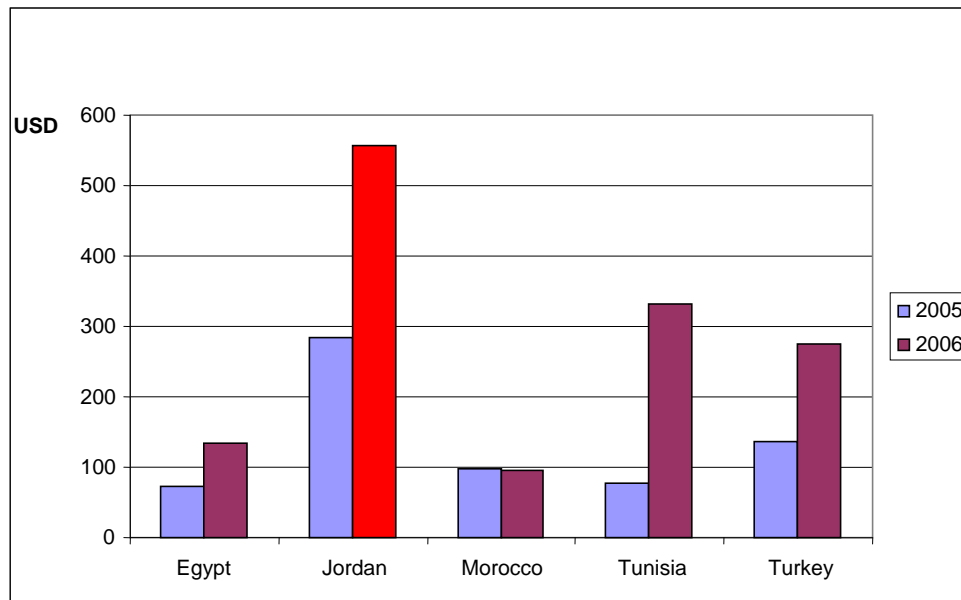
Source: Ministry of Finance monthly bulletin (2008) and quarterly bulletin (2007).

Figure 2: FDI Inflow ( percent GDP)



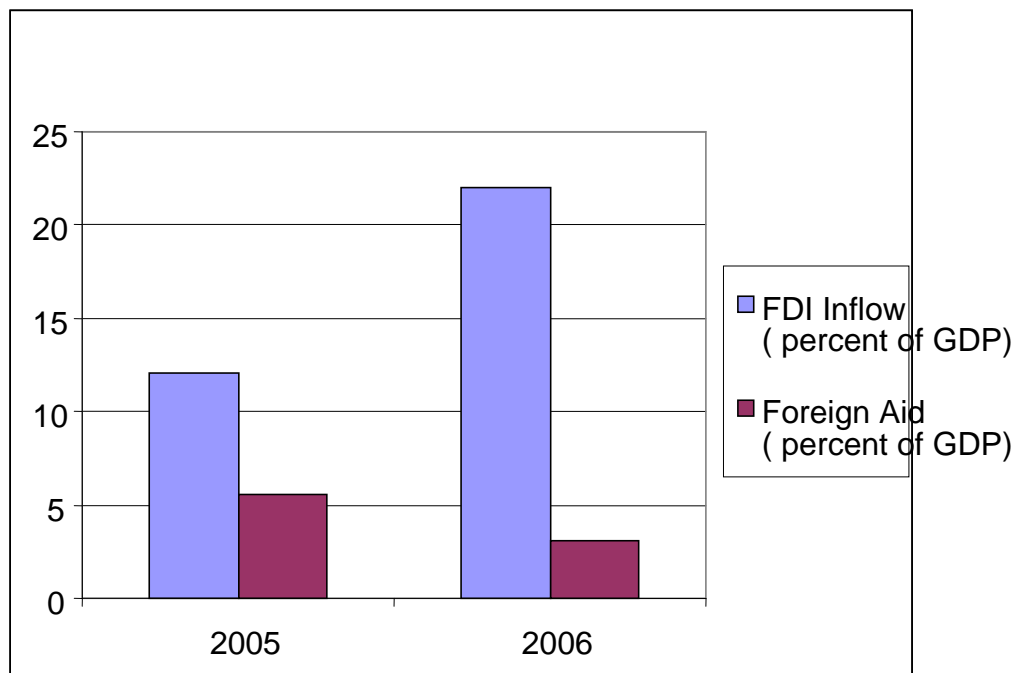
Source: UNCTAD (2007) World Investment Report.

Figure 3: Comparison of FDI Inflows per Capita (2005-2006)



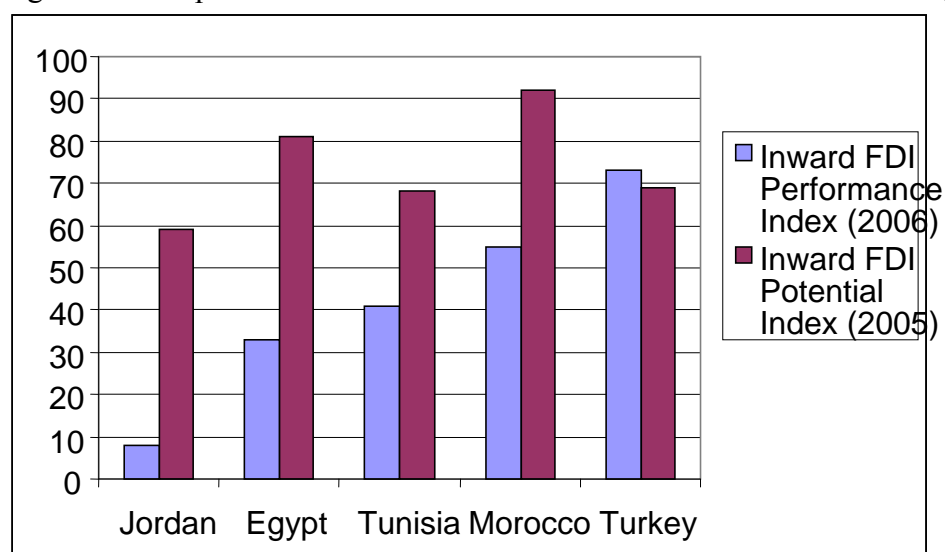
Source: UNCTAD (2007) World Investment Report.

Figure 4: FDI Inflow vs. Foreign Aid ( percent of GDP)



Source: UNCTAD (2007) World Investment Report; IMF

Figure 5: Comparison of Inward FDI Performance and Potential Indices (2005, 2006)



Source: UNCTAD (2007) World Investment Report.

Table 1: Banking System Assets

	2000	2001	2002	2003	2004	2005	2006
Banking Assets	12913.5	14153.6	15119.3	15701.5	17821.1	21086.5	24237.6
<b>Banking System Assets Ratio to GDP ( percent)</b>							
M2/GDP	123.9	123.6	123.9	130.9	130.8	137.2	140.4
Assets/GDP	215.3	222.4	222.5	217.2	220.5	234.0	241.1

Source: Central Bank of Jordan Several Publications

Table 2: Capital Adequacy Ratio and Legal Liquidity Ratio ( percent)

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Capital Adequacy Ratio	21.7	21.2	19.4	17.4	17.5	15.9	17.8	17.6	21.4
Liquidity Ratio Min legal Ratio is 100 percent <sup>47</sup>						179.6	173	168	161.4

Source: Financial Stability Report CBJ 2007, IMF 2006.

<sup>47</sup> The minimum legal ratio was 30 percent before 2003.

Figure 6: Banking Statistics

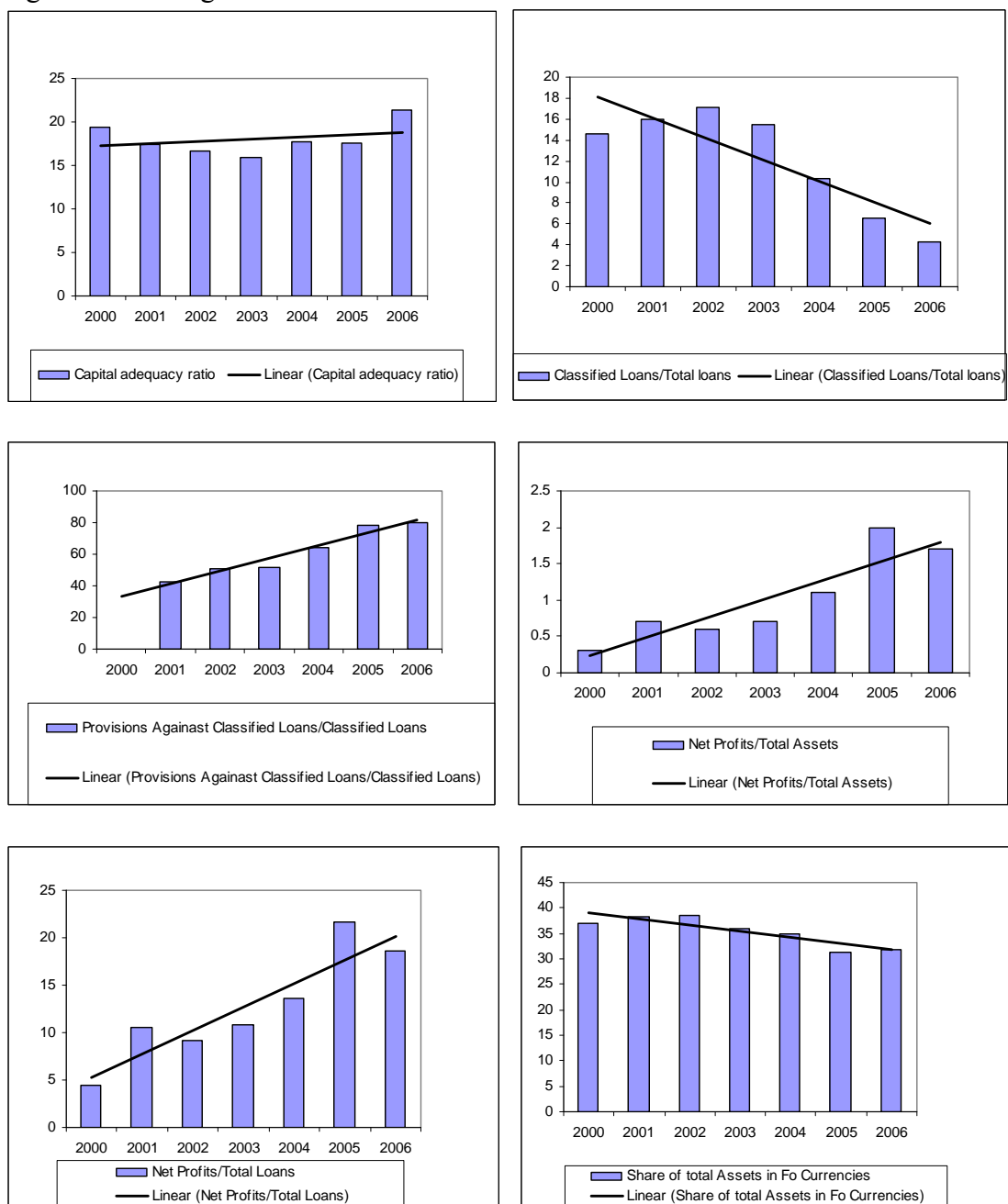
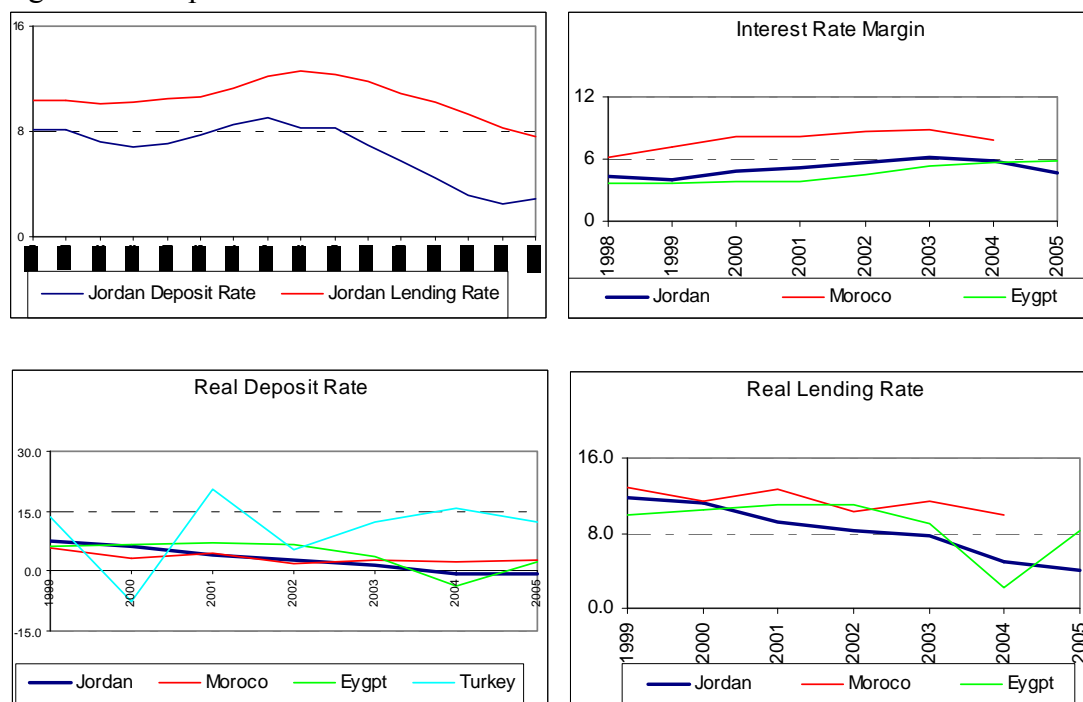


Figure 7: Comparison of Interest Rates



Source: International Financial Statistics, IMF 2007.

Figure 8: Credit Growth and Composition of Credit

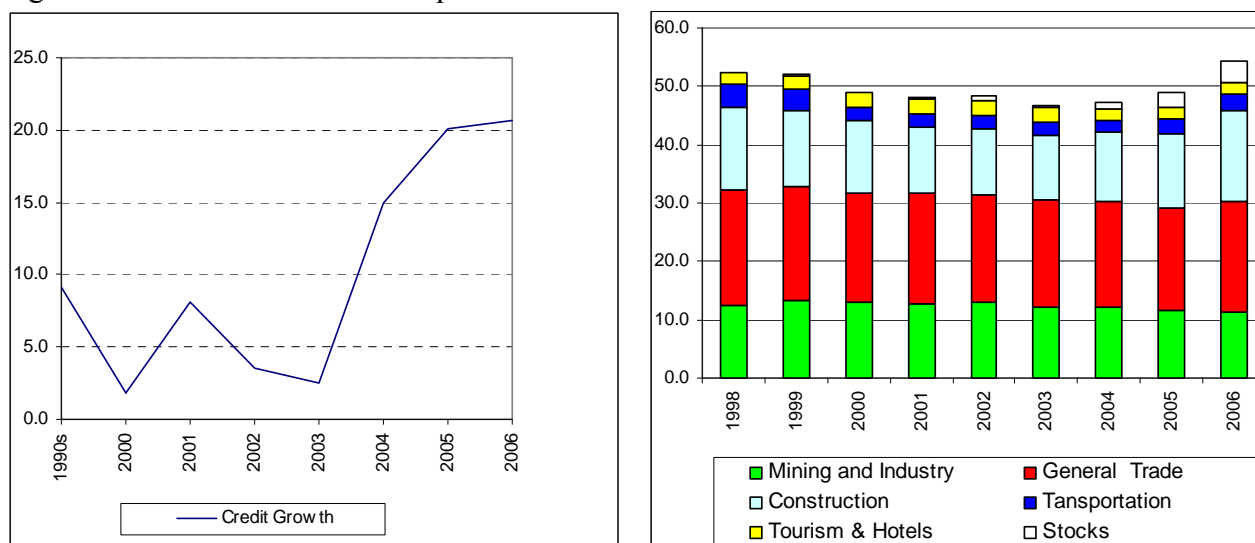
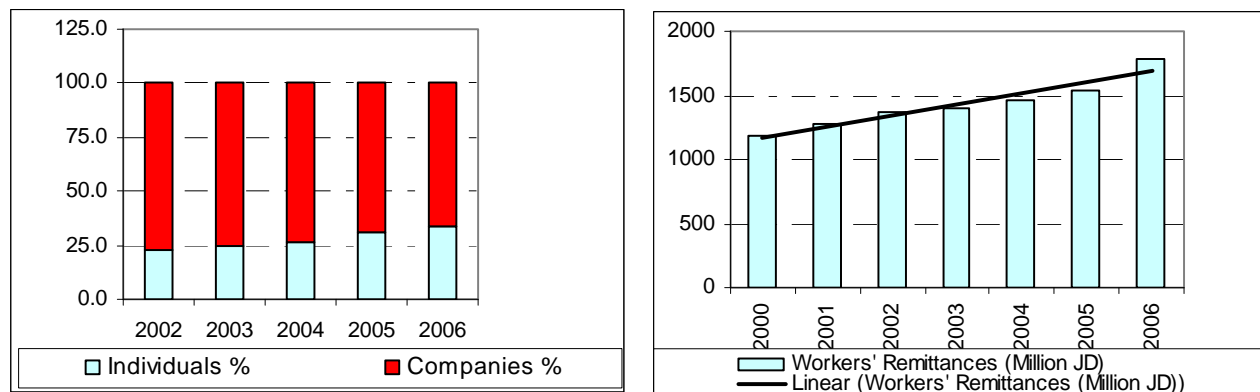




Figure 9: Credit to Individuals and Companies; Remittances (JD million)



Source: CBJ annual Report 2006

Table 3: Credit Extended According to Borrower (JD million)

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Central Government and Public Entities	432	419	355	284	280	302.7	441.2	396.8	459.6
Private Sector (resident)	3653	3827	3969	4429	4585	4667.3	5479	7097.4	8981.9
Private Sector (non-resident)	201	220	222	236	263.4	290	254.2	229.6	312.9
Total	4286	4466	4546	4949	5130	5262.4	6189.2	7744.3	9761.9

## Macroeconomy

### Monetary Policy

	Jordan	Middle East & North Africa	Lower Middle Income Benchmark
Money supply (M2), % GDP (2004)	133.2	79.6	40.5
Money supply (M2), % change, year on year, 2005	21.1	6.9	-6.4
Money supply (M1), % change, year on year, 2005	29.4	..	..
Ratio of M2 to M1 (2005)	3.04	..	..
Growth in the broad money supply (% growth rate, 2004)	11.7	16.0	14.2
Inflation rate (2004), %	3.4	3.6	5.5
Average annual inflation of consumer prices, 2000-2005, %	2.13	2.61	5.33
Standard deviation of inflation, 2000-2005, %	1.1	4.61	9.65
Composition of money supply growth (2004)			
Net credit to government (% total)	24.7	..	..
Credit to the private sector (% total)	55.4	..	..
Net credit to non-financial public enterprises (% total)	14.2	..	..
Net foreign assets (% total)	41.5	..	..
Other items, net (% total)	-35.8	..	..
Interest rate spread, lending rate minus deposit rate (2005)	4.7	4.8	7.5
Real interest rate (2005)	3.3	..	..
Lending interest rate, (% , period average, 2005)	7.0	..	..
Deposit interest rate, (% , period average, 2005)	3.2	..	..
Money-market interest rate (% , period average, 2005)	6.5	..	..

### Fiscal Policy

Government expenditure as % of GDP (2004)	38.0	27.9	21.4
Government revenue as % of GDP (2004)	26.2	29.4	19.3
Overall budget balance, including grants, % GDP (2004)	-1.9	..	..

		High Five Average	Low Five Average
<b>Composition of government expense (2004)</b>			
Wages and salaries (% total)	15.7	52.5	6.2
Goods and services (% total)	3.5	47.7	6.0
Interest payments (% total)	8.4	18.8	1.9
Subsidies and other current transfers (% total)	26.3	71.8	2.6
Other expenses (% total)	46.0	22.1	0.3
<b>Composition of government revenue (2004)</b>			
Taxes of income and profits (% total)	10.2	53.7	3.3
Taxes on goods and services (% total)	38.7	57.9	5.0
Taxes on international trade (% total)	12.5	34.1	0.5
Other taxes (% total)	5.4	5.4	0.0
Social security contributions (% total)	..	45.0	0.5
Other net revenue (% total)	30.4	..	..
Grants (% total)	37.8	65.4	3.2

### External sector

		Middle East & North Africa	Lower Middle Income Benchmark
Debt service ratio, % exports (2003)	16.4	12.3	11.6
Trade, % GDP (2003)	114.6	66.0	78.1
Concentration of exports (top three exports, 3-digit SITC)	37.2	..	..
Net barter terms of trade (1995=100)	97.0	98.0	98.0
Real effective exchange rate (1995=100)	114.5	..	..
Trade policy index (5=poor, 1=excellent)	4	4	5

### Structure of merchandise exports

Agricultural raw materials as % of total merchandise exports	0.2	0.9	2.3
Fuel as % of total merchandise exports	0.3	43.8	5.8
Manufactures as % of total merchandise exports	68.8	31.0	48.1
Ores and metals as % of total merchandise exports	16.1	1.5	3.2
Food as % of total merchandise exports	14.5	8.6	14.3

# International Finance

	Jordan	Middle East & North Africa	Lower Middle Income Benchmark
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## External Debts (USD million, 2003 except as otherwise indicated)

Public medium- & long-term	7170	..	..
Private medium- & long-term	0	..	..
<b>Total medium- &amp; long-term debt</b>	7172	..	..
Official creditors	6820	..	..
Bilateral	4790	..	..
Multilateral	2030	..	..
Private creditors	352	..	..
Short-term debt	743	..	..
Interest arrears	0.4	..	..
Use of IMF credit	421	..	..
<b>Total external debt</b>	8336	..	..
Principal repayments	297.5	..	..
Interest payments	251.4	..	..
Short-term debt	28.3	..	..
<b>Total debt service</b>	549.0	..	..
<b>Country credit rating</b>	44.0	36.4	29.7

## Private financial flows

Inward FDI potential index (0=poor, 1=excellent) 2002	0.26	0.18	0.17
Direct investment in Jordan (USD million, 2004)	620.3	..	..
Direct investment abroad (USD million, 2004)	-15.0	..	..
Inward portfolio investment, including bonds (USD million, 2004)	535.0	..	..
Outward portfolio investment (USD million, 2004)	-439.0	..	..
Other investment assets (USD million, 2004)	-659.9	..	..
Other investment liabilities (USD million, 2004)	69.5	..	..
<b>Financial Balance (net inflow of private funds)</b>	110.9	..	..

## Ratios (%)

Total external debt/GDP	99.3	..	..
Public & publicly guaranteed long-term debt (% of GNI, 2004)	4.85	2.11	3.77
Multilateral debt service (% of GNI)	49.29	26.87	24.31
Debt-service ratio, paid (% of earnings from exports, 2004)	8.2	10.6	13.1
Aid, %GNI (2003)	12.6	1.2	1.3
Current account balance, % GDP (2004)	-2.6	3.6	-1.7
Debt service ratio, % exports (2003)	16.4	12.3	11.6
Total debt service as % of GNI (2004)	5.98	4.44	4.38
Foreign direct investment, % GDP (2004)	3.8	1.0	2.0
Gross private capital flows, % GDP (2004)	18.1	..	10.7
Present value of debt, % GNI (2003)	84	47.2	43.7
Remittance receipts, % exports (2003)	43.3	13.1	8.1
Trade, % GDP (2003)	114.6	66.0	78.1

## Foreign Reserves (end period)

Total reserves including gold	3174.4	..	..
Total international reserves, excluding gold	3062.2	..	..
Gold, national valuation	112.2	..	..
Gross international reserves, months of imports (2004)	7.7	8.7	4.0

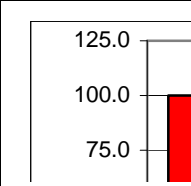
<b>Exports growth, goods and services (% growth rate, 2003)</b>	20.4	4.9	5.8
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Source: USAID Data Supplement, September 2005, EIU Country Profile, 2006

<b>Domestic saving</b>	<b>Jordan</b>	<b>Middle East &amp; North Africa</b>	<b>Lower Middle Income Benchmark</b>
Financial system deposits (% of GDP, 2005)	1.064	0.587	0.438
Gross domestic savings (% of GDP, 2005)	-8	27	31
		<b>Millions of JD (current 2005 prices)</b>	<b>In percent of GDP</b>
<b>Resources</b>		15607	173%
GDP (at market prices)		9013	100%
Imports		6594	73%
<b>Use of resources</b>		15607	173%
Consumption		10392	115%
<i>Government</i>		1740	19%
<i>Other</i>		8652	96%
Investment		2244	25%
<i>Fixed capital formation</i>		2244	25%
<i>Public</i>		577	..
<i>Private</i>		1667	..
<i>Change in inventories</i>		0	0%
Exports		2971	33%
<b>Savings-investment balance</b>		-1586	-18%
Gross National Savings		658	7%
<i>Government</i>		131	5%
<i>Other</i>		527	3%

Source:

IMF (2006). Jordan--Concluding Statement for the 2006 Article IV Consultation and Fourth post-Program Monitoring Discussion (November 28).



# Financial intermediation

Jordan	Middle East & North Africa	Lower Middle Income Benchmark
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## Financial indicators

### Extent of bank credit

Domestic credit to private sector, % GDP (2004)	72.5	56	24.6
Private credit by deposit money banks (2005)	0.748	0.403	0.305

### Cost of borrowing

Interest rate spread, lending rate minus deposit rate (2005)	4.7	4.8	7.5
Real interest rate, (2003)	7.3	8.4	8.9

### Banking sector financial health

Bank overhead costs as % of total assets	0.026	0.023	0.055
Net interest margin (% of interest bearing assets)	0.030	0.033	0.062

### Legal and institutional restrictions

Cost to create collateral, % of per capita GDP (2004)	56.3	37.6	11.2
Legal rights of borrowers and lenders index, (0=poor, 10=excellent), 2004	6	4	5

### Stock market capitalization rate, % GDP (2003)

111.2	31.5	25.1
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