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**THE OIL CURSE AND LABOR MARKETS:
THE CASE OF SAUDI ARABIA**

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Abstract

Oil income enables generous government sector wage and employment policies in Saudi Arabia. Combined with availability of low-cost foreign labor and rapidly growing working age population, large disparity between government and private sector salaries skews Saudi worker preferences for government sector employment, increases their reservation wages for private sector employment, and results in high unemployment. Initiatives under 2011 Royal Decrees for increased government sector employment and compensation may further exacerbate Saudi unemployment in the longer run. Oil curse in Saudi Arabia is also on persistent and large Saudi unemployment.

JEL Classification: J11, J24, J31, J38, J82

Keywords: Oil curse, Saudi Arabia's labor markets, government wage and employment policies, unemployment

ملخص

دخل النفط يمكن من دفع أجور سخية في القطاع الحكومي وسياسات التوظيف في المملكة العربية السعودية. جنبا إلى جنب مع توافر العمالة الأجنبية الرخيصة والنمو السريع للسكان في سن العمل، هناك تفاوت كبير بين الرواتب الحكومية ورواتب القطاع الخاص يقلل من التفضيلات لادماج العامل السعودي في القطاع الحكومي، ويزيد من أجور الاحتياط من أجل التوظيف في القطاع الخاص، ويؤدي الى ارتفاع معدلات البطالة. قد تؤدي المبادرات تحت المراسيم الملكية 2011 لزيادة العمالة في القطاع الحكومي والتعويض من تفاقم البطالة في السعودية على المدى البعيد. لعنة النفط في المملكة العربية السعودية هي أيضا لعنة على البطالة السعودية بشكل مستمر وكبير.

1. Introduction

Oil endowment facilitated unprecedented economic and social development in Saudi Arabia and the Gulf region. Since the 1970s oil income has enabled economic prosperity through large spending on infrastructure, investment in human capital and provision of a wide range of social services. It has also generated positive externalities for growth across the region by increasing trade and cooperation and contributed to an impressive rise in human development indicators.¹

However, abundant oil wealth also has a negative impact on economic development. The conjecture of a negative correlation between oil endowment and economic growth is broadly called the oil curse. That correlation has been researched widely in the literature with particular focus on two main sources of the oil curse. One main source is the loss of competitiveness due to domestic currency pegging to the U.S. dollar, the reserve currency in which oil is priced globally. Although the expediency of pegging enables stable inflation and interest rates, it reduces non-oil export competitiveness. The Gulf Cooperation Council (GCC) countries' currencies are pegged to the dollar. In those countries, loss of non-oil export competitiveness curbs non-oil sector growth and diversification that cannot be compensated for by other means (technology, know-how, export sophistication) (Elbadawi and Gelb, 2010). Low economic diversification limits private sector investment opportunities and causes private investment to become dependent on the stimulus of government expenditure. Moreover, oil price volatility reflects on overall macroeconomic instability, while pegging disables active monetary policy, a fundamental macroeconomic management tool. In addition, foreign capital inflows from oil exports create inflationary pressures.² Even when domestic currency is not pegged, large demand for oil, and therefore for the oil exporting country's currency, results in currency appreciation (the Dutch disease).

Another main source of the oil curse is the ill effects of rent seeking and political largess oil income enables resulting in inefficient use of the resource, particularly in the absence of strong institutions and checks and balances for the management of oil income (Elbadawi and Soto, 2011; Collier and Hoeffler, 2008). In that context, a fundamental impact of the oil curse is on labor markets, which is the main focus of this paper in the case of Saudi Arabia. The source of the oil curse on Saudi Arabia's labor markets is the politically expedient largess that oil income enables by making affordable financing of high public sector employment and wages. Combined with availability of low-cost foreign labor and rapidly growing working age population, large disparity between government and private sector salaries skews Saudi worker preferences for government sector employment, increases their reservation wages for private sector employment, and results in high unemployment.

The paper is planned as follows. In Section II, we make some observations on the oil curse in relation to institutional weaknesses. In Section III, we review the underlying causes of labor market distortions in Saudi Arabia that can be traced to the oil curse, including past policies and new initiatives. In Section IV, we document the salient facts about Saudi Arabia's labor markets that result in high unemployment among citizens. In that light, in Section V we evaluate the possible impact of the 2011 Royal Decrees labor markets. Those decrees include

¹ According to *World Bank*, from 1980 to 2009, Saudi Arabia's overall human development index rose from 65 to 76; life expectancy increased from 62 to 74 years; infant mortality declined from 66 per 1,000 live births to 16; education expenditure rose from 3 percent of GNI to 7 percent.

² An oil-rich country and the country whose currency is used for the peg may also have conflicting monetary policy requirements in different historical episodes. For example, when oil prices rose to very high levels during 2007-08, the GCC countries faced unprecedented inflationary pressures and needed to follow contractionary monetary policy, whereas the United States was compelled to follow expansionary monetary policy in the face of the breaking financial crisis. It has been argued that more flexible exchange rate regimes can enhance GCC trade competitiveness and stimulate economic diversification and growth, especially if the intended GCC monetary union becomes a reality (Abed and others, 2003; Khan, 2009; Nandwa, 2011).

measures directly related to persistent and high Saudi unemployment. We compare the new measures to past labor market policies and argue that they are not likely to decrease long term unemployment and they may even exacerbate the existing labor market distortions. In Section VI, we conclude with some observations on labor market policies that can correct labor market distortions and increase employment of citizens.

2. The Oil Curse and Institutions

Institutional weaknesses may have a greater impact on long-term economic performance of oil exporters than the Dutch disease. Many studies have found a negative correlation between oil endowment and growth.³ A common finding of most studies is that resource curse cannot be attributed to resource availability but rather to the way it is exploited and managed. The point is that governments should be concerned with the institutional arrangements that ensure sound policies for resource exploitation, revenue management and investment in order to prevent political largesse, rent seeking, waste and corruption. Great benefits can be reaped through developing institutions that ensure firm rules for resource management, including transparency and decentralized decision-making independent of political interference. With strong institutional arrangements for efficient resource use, revenue management and investment, oil endowment need not have a negative impact on economic diversification and growth.⁴

2.1 Institutional weaknesses

The institutional approach to the oil curse falls in the broad and well-documented hypothesis that economic development is positively correlated with strong institutions.⁵ Some advanced industrial countries, including United Kingdom, Norway and Holland, have become oil exporters by utilizing advanced technologies for oil extraction (deep sea drilling, shale mining). They already had strong institutions that had evolved through their history of industrialization without disproportionate dependency on resource endowments. Established democratic regimes, good governance and public accountability have enabled those countries to manage their oil resources efficiently and without creating rent-dependent societies. However, in countries where abundant oil resources were much more easily accessible with less advanced and less costly technologies, including Saudi Arabia and other GCC countries, democratic regimes and public accountability had not taken root historically before oil became a commodity in global demand. Those countries were initially less developed, less skilled and much poorer, with no appreciable industry and industrial work discipline but they quite suddenly became major exporters that by far dominate global oil production and exports at present.

If a country that already has established good governance comes upon oil, then the natural resource endowment is managed well and evidently it is not a curse on economic performance. However, if a country that has historically less developed institutions suddenly faces extraordinary demand for its resource endowment with the emergence of oil-based energy production, then oil wealth becomes a curse that has a negative impact on economic growth. That outcome does not come as a surprise, especially if much of what the country has to do to is to take a pick to the sand and pump oil that is there as a result of the country's primordial geology, its history that has placed it in that particular geography and the initial

³ Recent literature includes Ali and Elbadawi (2012), Anshasy and Bradley (2009), Arezki and van der Ploeg (2010), Elbadawi and Gelb (2010), Elbadawi and Soto (2011), Frankel (2010-2011), Hausmann and Rigobon (2002), OECD (2010), Schmidt-Hebbel (2012), van der Ploeg (2007, 2009, 2010), van der Ploeg and Poelhekke (2009),

⁴ An OECD report (2010) underlines: "*Weather resources are a blessing or a curse depends on several factors: Is resource income consumed or saved? Is it invested in high or low return enterprises? What percentage of the population benefited? To what extent the government has been transparent and responsible in managing the resources?*"

⁵ A seminal reference from new institutional economics is by North (1994). Rodrik and others (2002) provide extensive evidence that the role of institutions in growth performance is more significant than geography and trade.

state of its institutions and governance quality whose historical evolution does not have much to do with oil wealth. Ironically, before the combustion engine, oil might be a curse because it contaminated precious water resources.

It appears that developing countries without appreciable resource endowments have made greater strides not only in growth performance but also in democratization, openness and public accountability in the last half century.⁶ Among other things, this phenomenon reflects the emergence of competitive working and middle classes that inevitably vie for political power and obtain it in varying degrees. Without resource rent, those classes cannot be pacified and co-opted primarily because they pay the taxes that support political power. As the maxim goes, without representation, there is no taxation and without taxation, there is no representation. So, along with the oil windfall, rent distribution falls in the hands of existing political elites that run them. Oil income enables the inherited *ancien régimes* to perpetuate themselves and maintain the *status quo* by pacifying emerging working and middle classes through rent distribution, as expedient for the elite (Ali and Elbadawi, 2012). As much as oil is a curse on development when indigenous institutions are weak, oil may also be a curse on indigenous institutional development, not to mention external support for *ancien régimes* motivated by secure access to oil.

2.2 Weak and strong institutions and disincentives

In the case of Nigeria, Sala-i Martin and Subramanian (2003) propose redistribution of oil income through per capita transfers to citizens in order to prevent corruption, waste and political patronage.⁷ This proposal is similar to the arrangement that exists in Alaska where each U.S. citizen and resident of the State for at least one year receives a dividend check every year out of the interest earned on oil royalties deposited to an account called the Alaska Permanent Fund, created in 1976 after oil was discovered (Hartzok, 2004).⁸

Variants of such funds already exist in most GCC countries, notably including the legally established large national oil funds in the United Arab Emirates and Kuwait, although returns from fund assets are not distributed to citizens but reinvested for future generations. However, operations of those funds remain opaque, an issue addressed internationally by the Santiago Summit in 2008. In contrast to Alaska, Norway and Chile, opaqueness (including closely guarded size of accumulated wealth) reflects institutional weaknesses, which points to a large measure of political arbitrariness—or at least the possibility of it—in using accumulated national wealth, including soft budget constraints and general lack of well-defined long term budgeting rules.⁹ Such social and political pressures typically become manifest in the form of *ad hoc* wage increases granted to government sector workers, more government sector hiring, and increased expenditure on various subsidies and transfers (we will discuss this point in detail in the case of 2011 Royal Decrees in Saudi Arabia).¹⁰

⁶ Collier and Hoeffler (2008) offer some evidence that democracy appears to enhance economic growth except in the presence of substantial natural resources. They underline that in the absence of checks and balances, democracy (elections) and resource rents can have a deleterious impact on economic performance because such rents undermine the development of checks and balances.

⁷ The classical argument on the taxation side is the efficiency and simplicity of lump-sum or head tax, especially when more complex income tax schemes are difficult to administer and open doors to evasion and corruption. Head tax is regressive and creates inequalities. However, on the per capita transfer side, such concerns may be addressed through redistributive schemes financed by the portion of oil income retained by the government, as in Alaska.

⁸ The law mandates that 25 percent of oil income be invested in the Fund and the rest be spent on public goods and services (education, social services, infrastructure).

⁹ See Schmidt-Hebbel's (2012) comprehensive review of the wealth funds of Chile and Norway and the evolution of transparent rules and oversight that apply to those funds.

¹⁰ Such pressures are not confined to oil funds but they also emerge in other countries when government revenue is short and politicians placate social aversion to increased taxation with an eye on raiding accumulated social security funds on the expedient presumption that one day they can be replenished. But votes are counted before that day comes, if it ever does.

However, it should be noted that in Kuwait strictly binding and explicit legal restrictions apply to the oil fund: A legally mandated share of oil export receipts must be transferred to the fund and, in order to make a transfer to government, an act of Parliament is necessary (a large transfer was made only once in the history of Kuwait's fund to repair the damage of the first Gulf war). In Saudi Arabia, there is no national oil fund. The Saudi Arabia Monetary Agency holds large reserves accumulated from balance of payments surpluses and independent organizations also hold large reserves (Table 1). The operations of the latter remain rather opaque.

Oil funds can minimize waste and corruption, to the extent they are managed transparently and independently of political influence but they can also impel creation of rent-based societies and curb work effort, even in countries with well-developed institutions and legally binding checks and balances. In Alaska it is acknowledged that annual dividends have created resistance to taxation even for the purposes of maintaining a balanced budget. Moreover, as we document below in the case of Saudi Arabia, rent transfers may create an endowment effect with a deleterious impact on employment and may serve as a disincentive to for workers to acquire marketable skills (Ali and Albadawi, 2012).

2.3 Conduits of oil rent transfers: budgets and public sector employment

Without active monetary policy because of currency pegging, the remaining macroeconomic management tool is fiscal policy in the GCC countries. Heavy reliance on oil revenue for budgetary financing is where the oil curse becomes much more visible because budget is the main conduit of transferring oil rents to citizens in which the main channel of transfer is the government sector wage bill.¹¹

Reliance on oil income for budgetary revenue tends to soften budget constraints and bloat public expenditure. In the absence of significant taxation to raise non-oil revenues, citizens' claims for more expenditure (increased public sector salaries, transfers, subsidies) acquire a greater measure of legitimacy and forcefulness when oil prices rise. Evidently, without taxation there is a large constituency for more expenditure by using higher oil rent but a small constituency for levying taxes to finance more expenditure. Budgetary expenditure tends to rise when oil income is high, resulting in countercyclical fiscal policy. But much of the increased expenditure becomes vested as a permanent part of the budget (in particular, public sector wage bill) and cannot be decreased when oil income is low. Ali and Elbadawi (2012) present strong evidence that per capita oil income is positively correlated with wage income, with a quarter of a one-dollar increase in oil income going to the public sector wage bill.

Furthermore, using public sector wages and benefits, transfers and subsidies (below-market energy prices, subsidized housing loans, utilities) as conduits of transferring oil income to citizens creates price distortions and attendant market inefficiencies that amount to inefficient utilization of oil income with a negative impact on growth performance. Such fiscal eventualities underline the importance of robust institutional arrangements and checks and balances for the management of oil revenue (credible budget rules, hard expenditure constraints, greater reliance on taxation and other non-oil revenue, rationalization of subsidies and transfers).

2.4 Saudi Arabia: the oil curse and income inequality

An important distortion that should also be highlighted is the impact of the oil curse on intra-generational and intergenerational income inequality. The first concerns the income disparity

The result is passing on the burden of taxation to future generations or debasing social security obligations by inflation tax. For the same reasons, bankrupt pension plans in local governments are not uncommon.

¹¹ In Saudi Arabia, budgetary wage bill absorbs more than 50 percent of current expenditure and about 30 percent of oil exports (Table 2).

between workers of the same generations and the second concerns sustainability of income across generations over time. For assessing oil income sustainability in the actuarial sense, the fundamental criterion is the sustainability of *per capita* oil income from the existing endowment into the foreseeable future.¹² On that basis, with its vast oil endowment, Saudi Arabia easily passes the actuarial sustainability test, even with its fast population growth (Table 1). However, this is a narrow definition of sustainability because it ignores labor market equilibrium. A broader and more substantive sustainability assessment needs to take into account the sustainability of *total per capita* income, that is, the imputed *per capita* oil income *plus* wage income (Al-Sheikh and Erbas, 2012).¹³ Sustainability of wage income is much more relevant for policy formulation when actuarial oil income sustainability is easily at hand.

The rising disparity between increasing public and declining private sector wages of Saudis indicates that oil income is not distributed equitably between workers of the same generations because public sector workers—making up more than 50 percent of total Saudi employment—receive a substantially higher share in the form of salaries and benefits than private sector workers.¹⁴ Furthermore, if the average wage of future generations is lower than the average wage of present generations, then intergenerational *total per capita* income sustainability is not viable, even if *per capita* oil income is sustainable. For full employment of future generations, private sector wages need to decline in the long run to a level below the present level; therefore, intergenerational total income is *not* sustainable. Thus, with declining wages, the oil curse also creates intra-generational and intergenerational income inequality.

3. The Oil Curse on Saudi Arabia’s Labor Markets: General Observations

3.1 Demography and Labor Market Distortions

Many of the above symptoms of oil dependency have been observed in the GCC countries including Saudi Arabia, the largest economy in the GCC.¹⁵ In Saudi Arabia, in common with the other GCC countries, there are a number of tension points (distortions) in labor markets whose sources can be traced to oil income. Those tension points primarily reflect the underlying demographics and government wage and employment policies.

Demographic evidence indicates that Saudi Arabia has a young indigenous population reflecting the high population growth rate. Its indigenous labor force is expanding along with rapid growth of working age population and increasing labor force participation, as more males and females are seeking higher education and females are entering the labor force in increasing numbers. In countries with such demographic characteristics, unless investment and capital accumulation keep up with rapid population growth, the typical result is a decline

¹² In the actuarial evaluation of *exhaustible* resource sustainability, the discounted present value of estimated oil endowment under the ground is hypothetically converted to financial capital at an initial period. As a minimum requirement of sustainability, rate growth of estimated income from financial capital should match rate of population growth so as to leave *per capita* income (transfer) constant over time. Saudi Arabia’s proven oil reserves in 2009 were estimated at 265 billion barrels, projected to last about 80 years at the current rate of production (3.2 billion barrels per year) (Table 1).

¹³ We think oil endowment is in a special category that compels right policy decisions now for the benefit of future generations. This is because oil endowment is *exhaustible* and it is not private but *public* wealth to which all generations are entitled. As such, its sustainable utilization for improving labor and other income of future generations is a fundamental pillar of public policies to be followed by the *custodian* but not the owner of the natural resource, the government.

¹⁴ It is difficult to argue that, on average, public sector Saudi workers are so much more productive than those in the private sector so they are paid higher wages. Sfakianakis and others (2011) provide evidence for sharply declining government sector productivity (output per worker) since 2004; they also report a declining trend in private sector productivity since 2005.

¹⁵ Individual country circumstances vary and the structure of the GCC economies and composition of their exports are changing. For example, in UAE and Bahrain, non-hydrocarbon sector accounted for 66-75 of GDP; the GCC average of non-hydrocarbon sector share is estimated at about 50 percent (IMF, 2010). In Saudi Arabia, the same share averaged at about 70 percent of GDP during 2003-2010. Our comparative observations suggest that the oil curse on labor markets is smaller, the smaller the oil endowment per capita.

in the average wage. However, Saudi Arabia's resource endowment affords it high public sector employment and wages. This employment policy is the major conduit through which oil income is transferred to citizens but it creates significant tension points in labor markets. Oil endowment has enabled economic prosperity and social development but at the same time it has created a huge welfare state. It has engendered a society accustomed to generous transfers and subsidies with a preference for public sector employment. Relative to private sector employment, this preference reflects higher wages, generous pension plans and other benefits, shorter working hours and, importantly, a secure source of lifetime income irrespective of work effort and productivity. However, labor markets have become increasingly strained in the face of rapidly growing indigenous population.

In a recent study (Al-Sheikh and Erbas, 2012), we identified the following tension points in Saudi Arabia's labor markets.¹⁶ Various transfers and subsidies extended to citizens as a minimum guaranteed income (importantly, free education and healthcare) create an *endowment effect*, so some citizens may choose not to work relying only on endowment income and family support. Additionally, the endowment effect may serve as an incentive for delaying labor force participation, for example, by extending the duration of university education because education is provided free of charge. Average salary (even excluding benefits) in the government sector is much higher than the average salary that Saudi citizens can fetch in the private sector. The higher public sector wage sets a benchmark as a *reservation wage* for citizens and serves as a disincentive for them to seek employment in the private sector at the going wages. Those who delay employment in the private sector in anticipation of public sector employment register as unemployed. Availability of *cheap foreign labor* at nearly all skill levels at wages significantly lower than citizens' wages decreases citizens' competitiveness in the private sector. On average, *skill level* of foreign workers is higher and their work effort and productivity exceeds those of citizens. Moreover, it appears that there is a social stigma attached to citizens accepting low-skill jobs, perhaps attributable to an implicit endowment effect because citizens feel they are entitled to oil wealth and income. Easy availability and large-scale employment of cheap low-skilled foreign labor may compound that stigma. Saudi quotas established for selective job categories under the rubric of Saudiization policies (mostly clerical jobs, especially in the banking and retail sectors) may be compelling evidence of such social attitudes. *Foreign labor can be easily hired and fired* both in the public and private sectors, whereas letting go Saudi workers in both sectors is difficult and costly, even for the fundamental economic reason of low productivity relative to wage in the private sector. While the number of foreign workers can be easily adjusted to demand reflecting cyclical market conditions and long term growth, the *Saudi population and labor force are growing rapidly* and high growth will persist in the longer run according to various demographic projections. Saudi students' *educational preferences* lean on majors that are more inclined for government sector rather than private sector jobs (Arts, Humanities, Islamic Studies). Overall, some 40 percent of Saudi students prefer majors that do not have competitive marketability in the private sector relative to foreign skilled labor.

As a result, there has been a *persistent and large decline in wages* that citizens can fetch in the private sector and *persistent and high unemployment* in the last decade.

3.2 The oil curse and past labor market policies

A menu of employment policies has long been on the table to correct labor market distortions, including, most significantly, public sector hiring and wage policies and education policies to improve citizens' marketable skills relative to foreign workers. In

¹⁶ By and large, the following tension points are representative of labor markets of the other GCC countries in varying degrees.

reality, however, public sector hiring has been increasing steadily in Saudi Arabia. Furthermore, while private sector wages have been declining sharply, public sector wages are rising reflecting both regular yearly scale raises and generous discretionary raises granted by the government typically when oil income is high. The growing disparity between public and private sector wages has exacerbated labor market distortions in the private sector by skewing Saudi preferences for government sector employment and increasing their reservation wages for private sector employment, thus resulting in high unemployment among citizens (especially, young educated females and, to a smaller extent, young males).

In view of Saudi Arabia's vast oil wealth and citizens' entitlement to it as its ultimate owners, the political difficulty of radically changing public sector employment and wage policies is easy to appreciate. It is a particularly difficult political choice to allow public sector wages to decline over time to levels more compatible with private sector wages in order to stimulate a preference for private sector employment among citizens. Consequently, instead of active market-based wage and employment policies, the government has followed passive policies that aim at increasing Saudi employment by fiat establishing Saudi employment quotas in certain sectors.

3.3 The oil curse, employment and the royal decrees of 2011

A recent initiative mandated by the Royal Decrees of 2011 (February 23 and March 18) created a large economic policy package to address rising social needs. The Royal Decrees provide for more public sector hiring and further government salary increases and higher transfers. They also promulgate unemployment benefits and institute more aggressive guidelines for Saudiization. We assess this recent package's possible impact on labor markets, Saudi private sector employment and wages in light of the lessons we draw from the impact of past policies.

It is Saudi Arabia's large oil income that makes possible the financing of the large and generous public expenditure package the Royal Decrees mandate. The measures relating to labor markets and unemployment amount to a continuation of past policies that have created tension points in labor markets with a significant negative impact but without a significant positive impact on Saudi private sector employment and wages. In the longer run, those measures might even further exacerbate Saudi unemployment and they are unlikely to rein in the persistent decline in Saudi wages in the private sector. Similar policies in the past have contributed to unemployment in the face of the rapidly growing Saudi labor force. If such policies are continued, the disparity between public and private sector wages will increase into the foreseeable future. That disparity is also the main source of income inequality between present and future generations that are equally entitled to the exhaustible resource and the income it yields.

4. Saudi Labor Markets and Unemployment

In this section we examine some salient characteristics of the Saudi demographics and labor markets in relation to the tension points discussed in Introduction.

4.1 Demography and labor force

4.1.1 Total population

Saudi population growth rate is high, averaging 2.4 percent per year during 2007-2009. Saudi population is young and 30 percent of the population is below 15 years of age compared to the industrial countries' average of 18 percent (Table 3). According to the U.S. Census Bureau (USCB) projections, total Saudi and non-Saudi population will grow by a cumulative 23 percent during 2010-2030.

4.1.2 Saudi 15-34 age group population

The USCB projections for the share of the Saudi and non-Saudi population in the 15-34 age group is 41 percent of total population during 2010-20. The same source projects that the cumulative growth (7 percent) and population share (38 percent) of this age group will remain high for the next two decades (2010-2030) (Table 3). Compared to industrial countries, the share of this age group is much higher.

In recent years, the 25-29 and 30-34 age groups population growth rates have been significantly higher than the other age groups. The 20-34 age group makes up more than half of the labor force and the bulk of entry and junior level employment (Table 6).

4.1.3 Labor force composition and growth

Saudi workers make up about half of total Saudi and non-Saudi labor force (Table 4). Saudi males have a 48 percent share in total male labor force and Saudi females have a 54 percent share in total female labor force. Males dominate the Saudi labor force (83 percent).

In recent years, average Saudi labor force growth was 3.2 percent with the male labor force growing by 3.5 percent; those rates are significantly higher than the overall population growth rate (2.4 percent). High labor force growth rate reflects high growth rates in the 20-25 and 30-34 age groups.

4.1.4 Employment

Saudi employment-to-population ratio is very low (20 percent) compared to the industrial countries' average (58 percent) (Table 4).¹⁷ The female ratio is especially low (3 percent). This may be explained by the following facts: (a) the share of Saudi population below 15 years of age in total is large (30 percent); (b) most Saudis continue education until the age of 20; (c) to some extent, the high unemployment rate that labor force entrants face may delay labor force entry until the age of 20.

In recent years, overall Saudi employment grew at the rate of 2.7 percent; female employment growth rate was more than 4 percent (Table 5). Overall employment growth rate was significantly below the population growth rate in the 25-29 and 30-34 age groups (more than 3 percent) (Table 3).

4.1.5 Participation

Saudi labor force participation ratio is also very low (23 percent), about one-third of the industrial countries' average (Table 3).¹⁸ The female ratio is especially low (4 percent). Low participation may be partly explained by: (a) the large share of the population less than 15 years of age in total; (b) low 15-19 age group participation; in 2009, that age group made up only 1 percent of total Saudi labor force (Table 6).

4.1.6 Saudi Unemployment

Overall Saudi unemployment rate averaged 10.5 percent during 2007-2009. Unemployment rate for males was nearly 7 percent; in contrast, unemployment rate for females was very high at 27 percent (Table 5). However, during the same period, overall unemployment registered a significant decline, mainly reflecting the sharp decline in unemployment rate for females.

In 2009, Saudi workers in the 15-34 age group made up 52 percent of the total Saudi labor force, about the same as the 20-34 age group and the latter group's population increased rapidly (Tables 3, 6). Therefore, it is not surprising that the unemployment rate for Saudis in the 15-34 age group (20 percent) is nearly double the overall Saudi average. The

¹⁷ Employment-to-population ratio is the proportion of civilian non-institutional population aged 15/16 years of age and older who are employed (The U.S. Bureau of Labor Statistics—BLS—definition).

¹⁸ Labor force participation ratio is total labor force as a percent of the civilian non-institutional population aged 15/16 years of age and older (BLS definition).

unemployment rate (40 percent) for the 15-19 age group is dramatically higher, nearly four times the Saudi average; however, that group accounts for only 1 percent of the Saudi labor force. Unemployment rate for the 25-29 age group (20 percent) is also twice as large as the overall Saudi average. This is in line with the large population share (30 percent) and large population growth (2.7 percent) of the 20-34 age group (Table 3). However, unemployment rate for the 30-34 age group (6 percent) is significantly lower than the overall rate, although female unemployment rate in that group is very high (about 16 percent) (Table 6). Unemployment rate is negligible for the 35-65+ age group (less than 1 percent).

Very high unemployment rates for Saudi females reflect the high population share of the 20-34 age group in general, as well as the increasing female education level and labor force participation. The younger workers in the 15-29 age group, especially females, bear the brunt of unemployment. In view of the projections that the share of the 15-34 age group will stay high in the next two decades, it is likely that high unemployment will persist in the long run.

4.1.7 Non-Saudi Unemployment and Competition

Unemployment rate for non-Saudis is nearly zero, which is not surprising because foreign labor force is in Saudi Arabia to work (Table 6). Notice that non-Saudi concentration is high in the 15-34 age group labor force (95 percent of males). On average, non-Saudis make up 44 percent and Saudis make up 56 percent of the labor force in that age group.

Nearly one out of ten workers in the private sector are non-Saudis (see below). Given foreign workers' more marketable skills and work effort, they pose stiff competition for Saudi workers in that sector.

4.2 Private Sector Employment and Salaries

4.2.1 Employment

Non-Saudi workers make up the bulk of private sector employment with an 88 percent share; Saudi share is only 12 percent (Table 7).

During 2007-2009, overall Saudi employment in the private sector declined by about 1 percent but female employment growth was impressive (7.6 percent) (Table 7). Nevertheless, female Saudi share in total private sector employment is low (1 percent of total employment and 7 percent of Saudi employment).

During the period 2007-2010, overall Saudi private sector employment gain is 1 percent and female employment growth is even higher (9.4 percent). Notwithstanding the impact on data of methodology change in 2009, the overall Saudi employment gain in the private sector in 2010 is impressive (6.3 percent). This apparent upswing in private sector Saudi employment is promising. It is possible that, facing large unemployment, Saudi workers are accepting lower wages in the private sector and employers are responding to the large decline in wages. The gains in private sector Saudi employment may also reflect the impact of the Saudiization efforts in certain sectors.

The bulk of Saudi workers in the private sector are employed in three job categories: clerical, sales, and services (60 percent) (Table 8). Saudi females make up 97-98 percent of total Saudi and non-Saudi employees in clerical and sales job categories. This points to Saudi worker (especially female) preference for such jobs and the impact of the Saudiization efforts in those sectors.

Those ratios are reversed for non-Saudi workers; 84-98 percent foreign workers are employed in occupations other than clerical, sales workers and services. Saudi male workers make up 4 percent of employment in the basic engineering support category, while foreign male workers make up 98 percent. Similarly, foreign workers dominate in the agriculture, professionals/specialists, technicians, and industries categories.

4.2.2 Salaries

Table 10 shows the large nominal decline in private sector monthly salaries both for Saudi and non-Saudi workers in recent decades. During 1996-2010, the decline in the weighted-average Saudi salary is more than 50 percent. Considering that cumulative CPI inflation rate during 1996-2010 was about 27 percent, the decline in real salaries is much higher.¹⁹

It appears that the decline in private sector Saudi salaries has abated both during the periods 2007-2009 and 2007-2010; salaries may have risen by 12 percent in 2010. Data on percent change in salaries by education level during 2008-2010 indicate that the decline in salaries during 2008-2010 was mainly for the less-educated group (Group A), while for the more educated group (Group B) salaries did not change appreciably.²⁰ Keeping in mind that the unemployment rate for the Saudi workers in the 15-34 age group is high (20 percent) (Table 6), it is reasonable to surmise that Group A is largely made up of the 15-34 age group workers, so it is likely that this is the age group whose salaries declined the most (data on age groups and education levels are not available).

While Saudi private sector salaries have declined sharply in the last decade, so have non-Saudi salaries by a larger margin. During 2007-2010, Saudi weighted-average salary was four times the non-Saudi salary (Table 9). Although this large disparity reflects the concentration of foreign workers in low-pay and low-skill jobs, even excluding agricultural, industrial support, and basic engineering support workers, Saudi weighted-average wage is about three times the non-Saudi weighted average wage. Saudi private sector wages are not competitive with non-Saudi wages. Relatively much lower wages and with better skills and work effort on average, non-Saudi workers are highly competitive relative to Saudi workers in the private sector. This explains the 88 percent share of non-Saudi workers in the private sector.

4.3 Government Sector Employment and Salaries

4.3.1 Employment

Government sector employment grew steadily for both male and female Saudi workers during 2007-2010 by 4-6 percent (Table 7). While 52 percent of Saudis workers are employed in the government sector, only 1 percent of non-Saudi workers are employed in that sector. In percent of Saudi private sector employment, Saudi male share is 56 percent and female share is 16 percent. However, in percent of Saudi government sector employment, Saudi female concentration is 84 percent, which indicates a strong female preference for government sector employment.

4.3.2 Salaries

In contrast to private sector Saudi salaries, government sector salaries have been steadily increasing, reflecting regular yearly merit raises (about 4 percent) and extraordinary salary increases granted at government discretion (Table 10). The weighted-average Saudi salary (including transportation allowance) in the government sector is three times higher than the weighted-average Saudi salary in the private sector. Unless private sector Saudi wages make unprecedented large gains, the 2011 Royal Decree's impact will increase that ratio. It is not surprising that Saudi workers have a strong preference for government sector employment.

¹⁹ During 2008-2009, occupation-wise the largest decline in wages was in the clerical, sales and services job categories where Saudi workers concentrate in the private sector; the decline in the weighted-average salary in those categories was 14 percent (the caveat applies that data compilation methodology changed in 2009).

²⁰ Group A's weighted average salary has risen sharply in 2010 (10-13 percent); however, for the same group, data indicate a 4.3 percent decline male workers' salaries during 2008-2010 (the caveat applies that data compilation methodology changed in 2009).

4.4 Educational Profile of Saudis

Educational attainment has been found to be a significant determinant of growth.²¹ In terms of investment in education, Saudi Arabia measures up rather well to high-income developed countries.²² However, the type of education should also matter. For example, technical educational attainment has more immediate applications to industry and management, as opposed to and without prejudice, say, a degree in divinity or medieval literature. Market-oriented education enhances worker's labor market competitiveness and educational preferences reflect market demand. The main market incentive to choose one type of education or another is the wage a worker anticipates to earn. Labor market distortions that affect the wage in a given profession can therefore have significant effects on educational preferences *inter alia*. The fundamental labor market distortion that has an impact on educational preferences in Saudi Arabia is the much higher wages in the government sector relative to the private sector with government sector jobs almost exclusively reserved for Saudis.

Table 11 shows the numbers and shares of higher education degrees obtained by Saudi students and their educational preferences. Saudi females have a significantly larger share among total graduates and about 7 percent of females in the 20-25 age group are obtaining higher education degrees. This points to increasing female labor force participation, which may further strain the decline in both male and female private sector salaries. Furthermore, given the strong female preference for government sector jobs, female private sector unemployment may rise further in the coming years.

Educational preferences of a significant proportion of Saudi students lean on majors that appear to be more suitable for government sector employment than for private sector employment in competition with skilled foreign workers. On average, close to 40 percent of Saudi students major in areas more oriented toward government sector employment.²³ This is especially true in the case of students already in higher education (registered) and those seeking graduate degrees. To significant extent this preference might reflect the market response of students to higher wages in the government sector. It is also likely reflects the Saudiization quotas favoring Saudis in clerical, sales, and services job categories given Saudi occupational preferences.

On the other hand, notice that more than 80 percent of Saudi entrants to higher education prefer more private sector oriented majors, business administration having the largest weight (27 percent). This is a promising trend for Saudi employment in the private sector. If that trend persists in the coming years, we may expect Saudi employment to increase in the private sector, especially if, after graduation, entrants to the labor force accept lower wages

²¹ Elbadawi and Soto (2011) provide a review and some supporting results. Gylfason (2011) argues that resource extraction industries are less labor intensive and do not require high-skilled labor. Workers released from traditional types of employment (e.g., agriculture) are not skilled enough to find employment in other industries and, unless education is an active policy, such workers do not enhance their skills, especially when a good part of their sustenance is coming from oil rent transfers. To those observations, we should add the presence of cheap foreign labor in Saudi Arabia at all skill levels.

²² According to the World Bank Development indicators, the following facts emerge. Share of expenditure on education in total government spending averaged at about 23 percent and the share of education in GDP averaged at 6.5 percent during 2000-2009, compared to high-income countries' averages of about 13 and 5 percent respectively. The literacy rate for youth (ages 15-24) in 2009 was 98 percent compared to high-income countries 100 percent. Adult literacy rate (ages 15 and above) in 2009 was 86 percent, compared to nearly 100 percent in high-income countries (this may reflect the impact of low-skilled expatriate workers). Also in 2009, expenditure per student (in percent of per capita GDP) in primary and secondary education averaged about 18 percent, compared to high-income countries' average of 23 percent. Saudi Arabia fares better in terms of spending on education than the GCC average.

²³ Our classification of majors that appear to be more oriented toward government sector employment is in line with the estimate by Sfakianakis and others (2011); they estimate that 41 percent of Saudi students prefer majors in Humanities and Arts.

relative to the government sector in the face of high unemployment in the 20-29 age group (Table 5).

5. The 2011 Royal Decrees: What Not to Do

The political aspects of this initiative are beyond the purview of this paper but its impact on Saudi labor markets and employment calls for assessment. The measures undertaken with the Royal Decrees are summarized in Box 1 (Explanatory Remarks). The cost of the initiatives is estimated at SRLs 400 billion (US\$110 billion). The intention was spending about SRLs 117 billion (US\$31 billion) in 2011. According to our classification, the components of the package that have a direct bearing on labor markets are under the categories of government sector employment, and, transfers, welfare payments and subsidies. Those components amount to 30 percent of the package, with the rest allocated to longer-term capital expenditure.²⁴ The package shown in Box 1 does not include two important additional measures. One measure is the promulgation of unemployment benefits and the other is the new guidelines to accelerate Saudiization of employment in the private sector.

Large one-time transfers to the Real Estate Development Fund (SRLs 40 billion) and the Saudi Credit and Savings Bank (SRLs 20 billion) include subsidy elements. The Real Estate Development Fund is the entity that pays the SRLs 500,000 transfer, increased from SRLs 300,000 by the 2011 Royal Decrees, for Saudis to build their own homes. The Saudi Credit and Savings Bank gives interest free loans; loans approved for social needs (marriage, family, building conservation) made up 99 percent of total approved loans in 2008. It is also noteworthy that the two-month's salary bonus granted to government sector employees also applies to stipends, salaries and scholarships paid to students in public institutes and universities. No doubt such transfers and subsidies meet important social needs and provide relief for lower income families. However, they also create a significant endowment effect that deters or delays Saudi labor force participation; they also enhance Saudi workers' reservation wages for private sector employment.

In the government sector employment category, salaries and benefits of government sector employees are increased further, widening the gap between government and private sector Saudi salaries.²⁵ Such measures result in higher Saudi reservation wages for private sector jobs and a strong preference for government sector jobs, as they have in the past. Granted that the intended 60,000 increase in government sector employment will significantly reduce Saudi unemployment at present. However, unless the government continues enlarging government sector employment in the future, this measure cannot contain unemployment in the face of the rapidly growing working age population in the long run. The government sector cannot indefinitely be a repository of employment for those who are unemployed in the private sector. Increasing private sector employment of Saudi workers is imperative for achieving any long term decline in unemployment.

The sharp increase in government sector minimum wage to from SRLs 1,750 to SRLs 3,000 per month will increase the existing disincentive for Saudi workers to improve their qualifications and work effort to seek private sector employment and render them less competitive with non-Saudi workers who overwhelmingly dominate the private sector. In

²⁴ Importantly, the SRLs 250 billion allocated to housing construction (more than 60 percent of the total package) will go to good use in meeting housing shortages in the country.

²⁵ Our estimates indicate that, at the average merit raise of 4 percent, the weighted-average government sector salary excluding transportation allowance rises to SRLs 11,785 per month. With the two-month's salary granted to government employees as a bonus under the 2011 Royal Decrees, the average salary rises to more than SRLs 13,000 in 2010. This corresponds to a more than 16 percent raise in 2011, which may be compared to the reported average increase in private sector salaries by 12 percent in 2010 (Table 9). Although the salary bonus in 2011 is one-time, it is also likely that the sharp increase in government sector minimum wage will increase the weighted-average government sector salary even further in the coming years.

recent years, the weighted-average non-Saudi salary was less than SRLs 1,000 per month or one-third of the new Saudi minimum wage in the government sector. Moreover, the promulgation of unemployment allowance (to go in effect in 2012 according to IMF) in the amount of SRLs 2,000 per month is double the average non-Saudi salary in the private sector and it is a relatively attractive match to the new minimum government sector wage of SRLs 3,000 per month.²⁶ Although to be paid up to the maximum of 12 months, the generous unemployment benefit relative to government sector minimum wage may effectively delay alternative employment for Saudi workers at the lower skill and lower wage rungs in the private sector. Recall that the Saudi private sector weighted-average salary is estimated at SRLs 3,500 per month in 2010 or about one-third of the weighted-average Saudi government sector salary. The new measures will increase that disparity further. For a low-skilled worker, the minimum wage of SRLs 3,000 per month may be more attractive than the average wage of SRLs 3,500 per month in the private sector (which includes the wages of more skilled and more senior workers), especially if the low-skilled worker is covered for a year by unemployment payments of SRLs 2,000 per month, while he or she delays private sector employment with an eye on government sector employment. Such a worker's preference for government sector employment is compounded by less stressful working conditions, better benefits and longer vacations, guaranteed lifetime employment, better pensions, and perhaps by the higher social status attached to a lower-level government job than to a lower-level private sector job by the prevailing social values. Of course, in the meantime, such a worker will register as unemployed.

Finally, it is likely that the new and on the surface more aggressive measures for Saudiization by fiat (the "traffic light" rating of private sector firms by the degree of Saudi employment) will not find a wide political constituency in the private sector, as in the past. This simply reflects the economic reality of the profit-maximizing firm seeking cheaper, more skilled and more dedicated labor, which, at this time, non-Saudi workers supply amply and supply is not likely to diminish in the foreseeable future.²⁷ Recall that, at present, non-Saudi workers earn one-third to one-fourth of the salaries Saudi workers earn and make up 88 percent of private sector employment.

Thus, in our view, the measures in the government sector employment category, and some elements of welfare payments and subsidies, do not address the documented tension points in the Saudi labor markets that result in high unemployment among Saudis. To the contrary, those measures appear to fall in the "*what not to do*" category because they may further exacerbate the existing labor market distortions that result in high unemployment.

6. Conclusions: The Oil Curse on Labor Markets and What to Do

Saudi Arabia's labor market conditions can be traced to its vast oil endowment. The source of the oil curse on Saudi Arabia's labor markets is the politically expedient largess that oil income enables by making affordable financing of high public sector employment and wages, transfers and subsidies that serve to deter adoption of market-based policies to increase Saudi employment. In the long run, the cumulative impact of those policies may even elevate the existing tension points to a breaking point.

In contrast, if oil income did not exist, public sector could not afford to be as large a repository of employment for citizens at wages far above private sector wages so as to have a

²⁶ In 2011, Saudi Arabian Monetary Agency (SAMA) opened 1.2 million accounts for unemployment benefits recipients, reflecting the expected number of applicants. The number of Saudi unemployed was estimated at about 0.9 million in 2010. It appears that along with growing number of unemployed in 2011, the authorities anticipate a large number of applications from those workers who did not count among the unemployed previously.

²⁷ Sfakianakis and others (2011) report that close to a million visas were issued for foreign workers in 2009, double the number issued in 2005; during 2009-2010, two million visas were issued.

significant impact on Saudi's reservation wages for private sector employment. Saudi workers would have a compelling incentive to seek private sector jobs at the going market wages and to improve their marketable skills, productivity and work effort. Thus, Saudi unemployment would decline. Employment and wages would follow a natural path reflecting capital accumulation and population growth and labor markets would be on the long run full-employment path.

In our view, labor market policies to reduce unemployment are in stark contrast to the recent initiative and they have been on the table for a long time.²⁸ Those policies fall into the category of “*What to do*”. Significantly, they include: Budget constraints need to be hardened to disable discretionary salary raises for government sector workers. As noted in Introduction, there is a consensus in the literature that what matters in avoiding the oil curse is not natural resource availability but rather the way that resource is managed and invested. The wide disparity between government sector Saudi wages and private sector wages needs to be reduced to incentivize job seeking in the private sector at the going wages, acquisition of better marketable skills, and higher productivity and better work habits. Unlimited access to cheap foreign labor at all skill levels needs to be restricted. Although the availability of low-wage foreign labor is a boon to Saudi employment and economic growth, labor markets as open as those in Saudi Arabia are not a reality in industrial countries. Foreign entry to labor markets in industrial countries is restricted to protect employment of nationals. Such protection results in higher labor costs and lower growth. However, the technological endowment of industrial countries and their workers' overall high skill levels relative to foreign workers compensate for efficiency losses. This is not the case in Saudi Arabia. Therefore, labor market policies need to face the reality that there is a trade-off between cheap foreign labor and higher employment for Saudis. The recent measures also include some disincentives for private sector firms with low Saudi employment in the form of visa application restrictions to hire foreign workers. Whether such measures will be more successful than the quota system remains to be seen. However, as in the past, such measures are unlikely to find a strong constituency behind them in the private sector where the profit motive leads hiring decisions.

There are no income or consumption taxes in Saudi Arabia apart from some user fees and charges, such as foreign worker license fees paid by employers. Thus, implicit benefits from the use of public goods and subsidized goods and services are not recouped by the government budget to a significant extent. This set-up, in effect, is a substantial implicit subsidy to foreign workers and their private sector employers that remains untaxed. Taxation of consumption and income may increase the relative cost of employing foreign workers by increasing their reservation wages and it can provide much stronger policy tools to increase private sector Saudi employment through tax incentives. Moreover, taxation may provide additional revenue to finance employment measures and welfare and transfer schemes and, thus, it may reduce intra-generational and intergenerational inequalities in the present distribution of oil income.

Market mechanisms that motivate educational preferences of students toward higher paying jobs appear to be perversely in effect in Saudi Arabia. Indeed, a large proportion of Saudi students opt for majors that are more suitable for government sector employment. There is a need to reorient the education system to endow Saudi students with more technical and marketable skills for them to become more competitive with skilled foreign workers in the private sector. However, “*This will demand drastic shifts in cultural perceptions of both work and entitlement*”, as Sfakianakis and others (2011) underline. A promising trend is that more

²⁸ For a more detailed discussion, see Al-Sheikh and Erbas (2012).

than 80 percent of the majors entrants to higher education prefer are private sector oriented. This is likely to increase the Saudi employment in the private sector in the coming years.

These policies are not easy political choices, at least in the short run. On the other hand, pecuniary placation of potentially restive segments of the society might do more harm than good in addressing unemployment pressures in the long run.

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Explanatory Remarks on Selective Initiatives Taken Under: the 2001 Royal Decrees

Box 1 shows the various expenditures mandated by the 2011 Royal Decrees. We classify those measures under three categories: measures that have an impact on government sector wages and employment; measures that include transfers, welfare payments and subsidies; and, capital expenditures.

1. *Two-month's salary bonus to all government sector employees (SRLs 32 billion):* This is a one-time bonus. All military personnel were moved up by one step in the salary scale; there are virtually no female employees in the military, excluding those employed in small numbers at border checkpoints. Two-month's bonus also applied to student stipends, salaries and scholarships paid in public institutes and universities.
2. *Sixty thousand new employees to be hired by the Interior Ministry (SRLs 2.2 billion):* The kinds of jobs that will be created are yet to be announced.
3. *Social Security (SRLs 6.5 billion):* Reportedly allocated mainly to the Ministry of Social Affairs toward subsidies and transfers for poverty relief and related social programs.
4. *Student scholarships (SRLs 1.1 billion):* Allocated for study abroad.
5. *Real Estate Development Fund (SRLs 40 billion):* This fund assists Saudis to build their own homes by paying a subsidy, which was increased from SRLs 300,000 to SRLs 500,000 in 2011. The SRLs 40 billion is a one-time transfer to the Fund. The transfer may lower long waiting period for such assistance.
6. *Credit and Savings Bank (SRLs 20 billion):* This bank extends interest-free credit for trade and industry and other production activities, and, for social needs (building conservation, marriage and family loans). In 2008, loans for social needs made up 99 percent of total approved loans; marriage and family loans together made up 96 percent of total approved loans. Total outstanding loans in 2010 were SRLs 14.6 billion.

Box 1: Saudi Arabia: Measures Adopted Under the 2011 Royal Decree

Measure	Estimated cost (In SRL billion)
Government sector employment ¹	48.7
Two-month's salary bonus to public sector civilian employees. Military personnel moved up by one step in base salary scale.	32.0
Cumulative 15 percent cost-of-living allowance (5 percent per year) during 2008-2010 to be treated as a part of base salary toward increased pension upon retirement. ²	4.5
Increase in minimum wage for government employees (from SRL 1,750/mo. to SRL 3,000/mo.)	10.0
Hiring 60,000 new employees at Ministry of Interior ³	2.2
Transfers, welfare payments and subsidies ³	69.5
Social security (part of welfare payments and subsidies)	6.5
Real Estate Development Fund	40.0
Credit and Savings Bank	20.0
Other ⁴	3.0
Capital expenditures ³	282.0
Building of 500,000 housing units	250.0
Transfer to Housing Authority	15.0
Transfers for building and expansion of hospitals	16.0
Other ⁴	1.0
Total	400.2
	<u>In percent of 2010 GDP</u>
Total	24.8
Government sector employment	3.0
Transfers, welfare payments and subsidies	4.3
Capital expenditures	17.5

Notes: 1. Expenditure intended for 2011 unless otherwise indicated. Government sector employment; category excluded intended unemployment benefits; 2. Government sector retirees also benefit from the same allowance; 3. Some expenditure to be spread over several years; 4. Includes various transfers.

Sources: Saudi Arabian authorities; IMF; authors' classification.

Table 1: Saudi Arabia: Summary Economic Indicators

	2008	2009	Provisional 2010	2003-2010 Averages
Oil Sector				
Proven reserves (billion barrels)	264	265
Oil export price (US\$/barrel)	95	59	76	61
Real Sector				
(Percent growth)				
GDP	4.2	0.2	3.8	4.0
Oil	4.3	-7.8	2.2	3.2
Non-oil	4.3	3.5	4.9	4.5
Private sector	4.8	2.7	4.2	4.8
Government sector	2.4	5.2	6.3	3.2
(Percent share in total)				
GDP	100	100	100	100
Oil	30	28	27	31
Non-oil	70	72	73	69
Private sector	47	48	48	46
Government sector	23	24	24	23
External Sector				
(In US\$ billion)				
Merchandise exports (CIF)	313	192	240	200
Oil	281	163	207	175
<i>Percent share in total</i>	<i>90</i>	<i>85</i>	<i>86</i>	<i>88</i>
Non-oil	32	29	33	24
<i>Percent share in total</i>	<i>36</i>	<i>34</i>	<i>39</i>	<i>12</i>
Official foreign assets (net)	503	474	520	318
Saudi Arabia Monetary Agency	438	405	440	263
Government institutions and independent organizations	66	69	79	56

Sources: Saudi Arabian authorities, IMF, British Petroleum and SIMIRAD, and authors' calculations.

Table 2: Saudi Arabia: Fiscal Indicators (2003-2010 averages)

	In percent of					
	GDP	Non-oil GDP	Total revenue	Total expenditure	Current expenditure	Oil exports
Total Revenue	46	94	100			
Oil	40	82	87			77
Non-oil	6	12	13			
Total expenditure	34	69		100		69
Current	26	53		78	100	54
<i>of which:</i>						
Wages and salaries	14	28	33	41	53	29
Subsidies	1	2	2	3	4	2
Capital	7	16	19	22		16

Sources: Saudi Arabian authorities, IMF, British Petroleum and SIMIRAD, and authors' calculations.

Table 3: Saudi Arabia: Demographic Characteristics

(In percent)				
2007-2009 averages	Population growth rate	Population share		
Total	3.4	100		
Saudi	2.4	70		
Male	2.4	35		
Female	2.4	35		
Non-Saudi	5.8	30		
(In percent)				
Projected cumulative (Saudi and non-Saudi)	Total population growth rate	15-34 age group		
		Growth rate	Average share in total pop.	
2010-2020	8	10	40	
2010-2025	16	9	39	
2010-2030	23	7	38	
(Percent share in total)				
2009-2010 averages				
Saudi Arabia				
Age group	Total	Male	Female	2007-2009 average pop. growth rate (in percent)
< 15	30	28	33	-0.7
15-65+	70	72	67	2.8
15-34	41	41	40	2.3
15-19	10	9	11	0.9
20-24	10	10	10	2.0
25-29	10	11	10	3.2
30-34	10	10	9	3.0
20-29	21	21	20	2.6
20-34	31	31	30	2.7
35-65+	29	31	27	3.7
2010				
U.S., Canada and Australia average				
Age group	Total	Male	Female	
< 15	18	19	18	
15-65	82	81	82	
15-34	27	28	27	
15-19	7	7	7	
20-24	7	7	7	
25-29	7	7	7	
30-34	7	7	7	
20-29	14	14	13	
20-34	21	21	20	
35-65+	55	53	56	

Sources: Saudi Arabia CDIS; U.S. Census Bureau; authors' calculations.

Table 4: Saudi Arabia: Labor Force Characteristics

(2007-2009 averages unless otherwise indicated)			
(Percent share in total)			
	Total labor force	Total male labor force	Total female labor force
Total labor force	100	100	100
Saudi ¹	49	--	--
Male	41	48	--
Female	8	--	54
Non-Saudi	51	--	--
Male	44	52	--
Female	7	--	46
(In percent of)			
	Total male population		Total female population
Saudi labor force ¹	--		--
Male	38		--
Female	--		8
(Percent growth)			
Labor force ¹		2.4	
Saudi		3.2	
Male		3.5	
Female		1.8	
Non-Saudi		1.6	
(In percent)			
	Saudi Arabia (Saudi only)		Industrial countries ³
		Age group	
	15+		15/16+
Employment-to-population ratio ²			
Total	20		58
Male	18		65
Female	3		52
Labor force participation ratio ⁴			
Total	23		62
Male	20		69
Female	4		55
Labor force composition			
Male	83		54
Female	17		46
		Age group ⁵	
Labor force participation ratio ⁴	15-34		15/16-34
Total	41		27
Male	22		14
Female	18		13

Notes: ¹ Data reflect household surveys of a sample of 23,000, including civilian as well as informal sector participants who are considered private sector employees. Data compilation methodology changed in 2009. The reference for the detailed explanation of the methodology used is provided in the reference of this paper. ² The proportion of the civilian non-institutional population aged 15/16 years of age and older who are employed (U.S. Bureau of Labor Statistic--BLS--definition). ³ BLS data; simple averages for United States, Canada, Australia, Japan, France, Germany, Italy, Netherlands, Sweden and United Kingdom; 2007-2010. ⁴ Total labor force as a percent of the civilian non-institutional population aged 15/16 of age and older (BLS definition). ⁵ U.S. Census Bureau data; United States, Canada and Australia only; 2010.

Sources: Saudi Arabia CDSI; U.S. Bureaus of Labor Statistics (BLS); U.S. Census Bureau (UCB); authors' calculations.

Table 5: Saudi Arabia: Saudi and Non-Saudi Employment and Unemployment, 2007-2009

2007-2009 average (percent change)	
Employed	
Saudi	2.7
Male	3.8
Female	4.3
Non-Saudi	0.8
Unemployed	
Saudi	-2.2
Male	-1.0
Female	-5.1
Non-Saudi	5.3
Unemployment rate	
Saudi	-2.2
Male	-1.0
Female	-5.1
Non-Saudi	5.3
2007-2009 average (in percent of respective labor forces)	
Unemployment rate	
Saudi	10.5
Male	7.3
Female	26.7
Non-Saudi	0.5

Sources: Saudi Arabia CDSI; authors' calculations.

Table 6: Saudi Arabia: Unemployment rates and Shares of Saudi and Non-Saudi Workers in Saudi, Non-Saudi, and Total Labor Force by Age Group, 2009

Age group ¹	(In percent)								
	Unemployment rate in respective labor force ²			Share in respective labor force ³			Share in total labor force ⁴		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
	Saudi								
15-65+	6.9	28.4	10.5	100	100	100	42	8	50
15-34	13.6	41.1	19.5	49	68	52	44	12	56
15-19	43.4	45.9	43.5	1	0	1	53	2	55
20-24	30.3	71.2	39.3	11	16	11	59	17	76
25-29	12.7	45.5	20.3	19	29	21	48	14	62
30-34	3.7	15.5	6.0	18	23	19	36	9	45
20-29	19.1	54.5	27.1	30	44	32	63	10	73
20-34	13.2	41.1	19.2	48	67	51	44	12	56
35-65+	0.6	2.1	0.8	51	32	48	39	5	44
	Non-Saudi								
15-65+	0.3	0.7	0.3	100	100	100	43	7	50
15-34	0.3	0.7	0.3	95	81	62	36	8	44
15-19	0.0	0.0	0.0	1	0	1	40	5	45
20-24	0.1	0.2	0.1	4	6	4	20	5	24
25-29	0.1	0.2	0.1	12	16	13	32	7	38
30-34	0.1	0.3	0.1	22	29	23	46	9	55
20-29	1.2	1.7	1.3	16	22	16	22	34	24
20-34	0.2	0.6	0.3	38	4	13	36	8	44
35-65+	0.0	0.1	0.0	62	0	0	50	6	56

Notes: 1 Age group 15-65+ is defined as the total labor force. 2 Saudi unemployment rate measured with respect to Saudi labor force only. Non-Saudi unemployment rate measured with respect to non-Saudi labor force only. 3 Saudi share measured with respect to Saudi labor force only. Non-Saudi share measured with respect to non-Saudi labor force only. 4 Saudi share and non-Saudi share measured with respect to total Saudi and non-Saudi labor force.

Sources: Saudi Arabia Ministry of Economy and Planning; authors' calculations.

Table 7: Saudi Arabia: Private Sector and Government Sector Employment Growth and Shares

Period	Saudis			Non-Saudis			Saudi and non-Saudi
	Male	Female	Total	Male	Female	Total	
(Percent change)							
2007-2009 averages							
Total	1.8	5.3	2.5	8.6	3.8	8.5	7.1
Private sector	-1.2	7.6	-0.7	8.7	1.9	8.6	7.3
Government sector	6.0	5.1	5.7	-3.0	9.1	2.5	5.5
2007-2010 averages							
Total	2.1	4.5	2.6	6.7	2.7	6.6	5.6
Private sector	0.5	9.4	1.0	6.8	1.3	6.7	5.9
Government sector ¹	4.5	3.8	4.3	-2.3	6.8	1.9	4.1
2009-2010 averages ¹							
Private sector	5.7	14.9	6.3	0.9	-0.7	0.8	1.4
2007-2009 averages ²							
(Percent share)							
Total	100	100	100	100	100	100	100
Private sector	56	16	48	99	72	99	88
Government sector	44	84	52	1	28	1	12
(Percent share in total employment)							
Private sector	11	1	12	86	1	88	100
Government sector	62	30	92	4	4	8	100
(Shares in total Saudi and total non-Saudi employees)							
Private sector	93	7	100	98	2	100	--
Government sector	67	33	100	50	50	100	--

Notes: 1 The reported change in government sector employment during 2009-2010 is zero. 2 Only the 2007-2009 averages are presented because there is no appreciable difference between the averages for 2007-2009 and the averages for 2007-2010. The methodology change in 2009 creates discontinuity between the period 2009-2010 and the previous years.

Sources: Saudi Arabia Ministry of Civil Service; authors' calculations.

Table 8: Saudi Arabia: Composition of Private Sector Employment by Occupation, 2008-2009 Average ¹

Occupations	In percent of total workers in each occupation category			
	Saudi workers		Non-Saudi workers	
	Male	Female	Male	Female
Directors and managers	8	4	0	0
Professionals/Specialists	9	15	6	12
Technicians	8	25	5	44
Clerical	22	26	0	0
Sales workers	10	9	3	0
Services	28	18	35	33
Agriculture ²	2	0	9	0
Industries ³	3	2	4	10
Basic engineering support	11	1	38	1
Total	100	100	100	100
(Percent shares)				
Clerical, sales, services	60	53	38	33
Other occupations	40	47	62	67
(In percent of total Saudi and Non-Saudi workers in each occupation category)				
Directors and managers	89	98	11	2
Professionals/Specialists	16	41	84	59
Technicians	16	24	84	76
Clerical	94	97	6	3
Sales workers	29	98	71	2
Services	9	23	91	77
Agriculture ²	2	25	98	75
Industries ³	7	11	93	89
Basic engineering support	4	48	96	52

Notes: ¹ Methodology change in 2009 does not appreciably affect averages from 2008 to 2009. ² Including animal husbandry and fisheries. ³ Including transportation equipment workers and other related workers.

Sources: Saudi Arabia Ministry of Labor; authors' calculations.

Table 9: Saudi Arabia: Weighted Average Monthly Salaries in Private Sector, 1996-2010

Year	Weighted-average salary per month (in SRLs)					
	Saudi			Non Saudi		
	Male and female	Male	Female	Male and female	Male	Female
1996	7,210	n.a.	n.a.	2,261	n.a.	n.a.
2000	7,043	n.a.	n.a.	2,354	n.a.	n.a.
2007	3,624	3,722	2,260	1,011	1,000	1,573
2008	3,601	3,680	2,418	1,008	998	1,578
2009 ¹	3,125	3,192	2,247	765	757	1,343
2010 ¹	3,500	3,590	2,418	912	902	1,639
(2007-2010 average)						
Ratio of Saudi salary to non-Saudi salary	3.8	3.9	1.5	--	--	--
(Percent change) Private sector salary						
Period	Male and female	Male	Female	Male and female	Male	Female
1996-2010 ¹	-51.5	n.a.	n.a.	-59.7	n.a.	n.a.
1996-2008	-50.1	n.a.	n.a.	-55.4	n.a.	n.a.
2009-2010 ¹	12.0	12.5	7.6	19.2	19.1	22.0
Weighted-average salaries by education groups						
2008-2009						
Group A ^{1,2}	--	-15.1	-6.9	--	-28.0	-17.7
Group B ^{1,3}	--	0.0	0.0	--	0.0	-0.2
2009-2010						
Group A ^{1,2}	--	13.0	10.1	--	47.8	28.3
Group B ^{1,3}	--	0.0	0.0	--	0.0	-0.3
2008-2010						
Group A ^{1,2}	--	-4.3	2.3	--	4.7	4.9
Group B ^{1,3}	--	0.1	0.0	--	0.0	0.2

Notes: ¹ The figures for 2009, 2010 reflect change in methodology in 2009. ² Group A comprises: Illiterate, Read and Write, Elementary School, Secondary School, High School, Diploma, and Bachelor's degree. ³ Group B comprises: Masters Degree, Ph.D., Higher Diploma, Fellowship.

Sources: Saudi Arabia authorities; authors' calculations.

Table 10: Saudi Arabia: Weighted-Average Government Sector Compensation, 2005-2010

	Salary/month	Average transportation allowance/mo. (In SRLs)	Total Salary/month
2005-2007 ¹	9,789	38	9,827
2008 ²	10,278	38	10,316
2009 ²	10,792	38	10,830
2010 ²	11,332	38	11,370
Government sector total Saudi salary in multiples of private sector Saudi salary			
	2007	2.7	
	2008	2.9	
	2009	3.5	
	2010	3.2	
	2007-2010 average	3.1	

Notes: ¹ An extraordinary raise on scale salaries was granted in 2005 and remained in effect through 2007. Extraordinary raises apply only to scale salaries and transportation allowance. The annual merit raise in SRLs is not affected by extraordinary raises. ² A five percent extraordinary raise in scale salaries was granted as of 2008 to apply in 2008, 2009 and 2010.

Sources: Saudi Arabia Ministry of Civil Services; Al-Sheikh and Erbas (2010); authors' calculations.

Table 11: Saudi Arabia: Higher Education Degrees Obtained by Saudi Males and Females, 2007-2009, and, Saudi Educational Preferences, 2010

	2007	2008	2009	2007-2009 average
Number of Students				
Total	95,353	99,908	101,341	--
Male	37,544	39,337	40,047	--
Female	57,809	60,571	61,294	--
(In percent total)				
Total	100	100	100	100
Male	39	39	40	39
Female	61	61	60	61
(In percent of 20-29 age group population ¹)				
Total	2.7	2.8	2.8	2.7
Male	2.1	2.2	2.2	2.1
Female	3.3	3.4	3.4	3.3
(In percent of 20-24 age group population ¹)				
Total	5.3	5.5	5.6	5.5
Male	4.2	4.3	4.4	4.3
Female	6.5	6.7	6.7	6.6
Student Educational Preferences, 2010				
	Graduate students	Registered students	New entrants	Total
(In percent of total)				
Government sector oriented ²	64	60	17	38
Islamic Studies	13	9	4	7
Education	15	13	3	8
Humanities	16	19	4	11
Other ³	20	19	6	13
Private sector oriented ²	36	40	83	62
Business Administration	8	14	27	20
Information	7	7	14	11
Life Sciences	5	5	10	7
Physics	4	4	9	6
Engineering	4	4	9	7
Other ⁴	8	7	15	11
Total	100	100	100	100

Notes: ¹ Calculated by prorating U.S. Census Bureau estimates for Saudi and non-Saudi population for the age group using the figures for Saudi (male and female) share in total Saudi and non-Saudi population, reported by Saudi Arabia authorities. ² Authors' classification. ³ Includes: teacher training; arts; social and behavioral sciences; health; social services; others. ⁴ Includes: law; mathematics and statistics; media and journalism; manufacturing and productive industries; architecture.
Sources: Saudi Arabia Ministry of Education; authors' calculations.