



PRIVATIZATION AND ECONOMIC DIVERSIFICATION IN SAUDI ARABIA: AN EMPIRICAL STUDY

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Abstract

The recently announced Vision 2030 and National Transformation Program (NTP) outlined goals and objectives to diversify and transform the Saudi Arabia economy. The Vision and NTP envisage a greater role for the private sector, including through privatization and expanding the use of Public-Private Partnership programs (PPPs), with a view to increasing efficiency, productivity, and job opportunities for nationals in the private sector. The purpose of this paper is to study the relationship between privatization and economic diversification in Saudi Arabia by elaborating an econometric model (ARDL approach) to identify factors, including privatization, that affected economic diversification. Using annual data over the period 1980-2017, our results show that privatization improve economic diversification. However, many difficulties are still hindering the growth of the private sector.

Keywords: Privatization, Economic diversification, Normalized Herfindahl-Hirschman Index, Autoregressive Distributed Lag (ARDL) Model, Saudi Arabia

Acknowledgement

Financial support from Sheikh Mohammed Al-Fawzan Macroeconomic Forecasting Chair (SMFChair) is gratefully acknowledged

INTRODUCTION

The recently announced Vision 2030 and National Transformation Program (NTP) outlined goals and objectives to diversify and transform the economy. The Vision and NTP envisage a greater role for the private sector, including through privatization and expanding the use of Public-Private Partnership programs (PPPs), with a view to increasing efficiency, productivity, and job opportunities for nationals in the private sector.

The current growth model has weaknesses. More diversification would reduce exposure to volatility and uncertainty in the global oil market, help create private sector jobs and increase productivity and sustainable growth. A number of policies have been adopted to diversify the Saudi economy and reduce reliance on oil. Saudi Arabia is considering privatization programs as part of the policy response to the decline in oil prices.

Over the past decades, Privatization and other policies to increase the role of the private sector have been applied in Saudi Arabia, but government has maintained a large role in the economy. The share of the private sector in economic activity increased by only 10 percentage points over the past 15 years (IMF(2016a)). This reflects mainly the dominance of the oil sector which has been largely untouched by previous privatization programs. It also reflects the slow and narrow implementation of previous privatization programs, focusing on profitable enterprises in a few sectors.

Research on the diversification experience in Saudi Arabia point to the role of the presence of a large state-owned enterprises (SOEs) sector and their wide-ranging mandates as a barrier to entry that limits competition and diversification (Callen& al. (2014)).

To stimulate the private sector, improve productivity and reduce the fiscal burden of supporting inefficient enterprises, the authorities have already privatized few state-owned enterprises and are now working on Public-Private Partnership programs (PPPs). Saudi Arabia aims to raise around \$200 billion in the next several years through privatization programs in 16 sectors ranging from oil to healthcare, education, airports and grain milling. It separately wants to raise another \$100 billion through the sale of a five percent stake in Saudi ARAMCO (*Al-Ghalayini, B.M.K. (2018)*).

Privatization is one of the major programs which the government will depend on to fulfill its goals. Privatization will work on enhancing the role of the private sector in providing municipal, healthcare, educational and transportation services. The goals of privatizing services is decreasing their costs and improving their quality.

The purpose of this paper is to re-examine the relation between privatization and economic diversification in Saudi Arabia by elaborating an econometric model to identify factors, including privatization that affected economic diversification.

First, we provide a brief review of the theoretical links between privatization and economic growth and diversification, and we shed light on what do the Saudi Arabia expect of privatization. The next section of the paper proposes an assessment and a measurement of economic diversification in Saudi Arabia. In the third section, we use Auto Regressive Distributed Lag (ARDL) approach, initiated by Pesaran, H. & Shin, Y. (1999) and popularized by Pesaran H. & al. (2001), to characterize the relationship between privatization and economic diversification..The final section provides a summary and draws some broad conclusions.

WHAT DO THE KSA EXPECT OF PRIVATIZATION: REVIEW OF THE LITERATURE?

The private sector plays a major role in economic diversification and economic growth (Luciani, G. (2006)); Radetzki, S.(2012)). However, this is not the case in Saudi Arabia. Hertog, M. (2013) concluded that private sector contributions to economic growth and job creation in Saudi Arabia are less than other countries with similar economic structures, such as Norway, Chile, and Indonesia.

In the case of the Saudi economy, the government fully owns big companies like the Saudi Arabian Oil Company (ARAMCO) and is also the majority shareholder of other companies like the Saudi Basic Industries Corporation (SABIC) and Saudi Electricity Company (SEC). Additionally, more than 70% of the shares of most banks and companies traded in the Saudi stock market are owned by government agencies, including the Public Pension Agency, General Organization for Social Insurance, and the Public Investment Fund (PIF), a fund managed and supervised by the government through the Ministry of Finance.

Saudi Arabia has past experience of partial privatizations, for example SABIC (Saudi Arabia Basic Industries Corporation, one of the world's largest petrochemicals manufacturers) in 1985 and Saudi Telecom in 2002. However, the strategy now outlined in Vision 2030 seeks to take this further, even extending to Saudi ARAMCO.

To increase the role of the private sector in the economy, as envisaged in Vision 2030, privatization and PPPs and reforms to further strengthen the business environment, attract foreign investment, and encourage the development of the capital markets will be important (IMF, (2016a)).

In anticipation of an extension of the privatization program, the Capital Market Authority and Tadawul (the Saudi Stock Exchange) have recently relaxed restrictions on foreign investment in Saudi-quoted stocks (MEES(2016a)).

Privatization, when well executed, can bring clear benefits to the economy in both macro and micro level.

In the macro level, privatization can bring clear benefits to the economy in terms of economic growth and diversification, employment and an improved fiscal balance for the government. Davis, J. & al. (2000) showed a significant and positive relationship between privatization and economic growth. This result is consistent with findings in the literature that growth tended to be more rapid where the share of the private sector in GDP was higher. (Megginson, W. L. & Netter, J.M. (2001)). Job losses could result in the short term, but over the longer term the overall impact of privatization on employment will be positive (Gupta S., C. Shiller & Ma, H. (1999)).

The fiscal effects of privatization have been generally positive (McKenzie, D. & Mookherjee, D. (2005)). Dividends to the budget from public enterprises declined but these losses were offset by increased tax collections. Privatization was also associated with a decline in public debt. Some countries (Argentina, Egypt, Hungary and Mexico) expressed an explicit intention to use privatization proceeds for debt reduction and were able to reduce their debt which initially ranged between 40% to 130% of GDP (IMF (2016a)).

In the micro level, as distilled from the literature (Stevens, P. (1997)) a privatization program may have many objectives that can be summarized as follows:

- State-owned enterprises (SOEs) are intrinsically inefficient, and simply changing the property rights will therefore lead to improved performance.
- A privatized entity provides better incentives for management to drive a better performance.
- Privatization forces greater accountability on senior managers, thereby overcoming a key problem in SOEs arising from asymmetry of information associated with the economic concept of principal-agent analysis.
- * Privatization gives enterprise clear and unequivocal targets, like maximizing shareholder value, hence the privatized enterprise is no longer required to act as an instrument of the government's social or regional policy.
- Privatization reduces the financing constraints on SOEs, meaning that a lack of finance resulting from existing chronic budget deficits would be remedied by means of access to capital markets both at home and abroad.

ASSESSMENT OF ECONOMIC DIVERSIFICATION IN SAUDI ARABIA

Economic Diversification in Saudi Arabia

Traditionally, economic diversification has been used as a strategy to transform the economy from using a single source to multiple sources of income, involving large sections of the population. There are two well-known dimensions of economic diversification. Vertical diversification and Horizontal diversification (IMF (2016b)). Vertical diversification would focus on

sectors where the country has an immediate comparative advantage. It might be very difficult to promote several sectors at the same time against the pull towards non-traded sectors that result from high domestic demand fueled by oil revenue-funded public spending.

However, horizontal diversification strategies would consist of expanding activities beyond those sectors, across businesses not necessarily related to each other, and specifically to oil. Because of new technologies or economies of scale, firms may profit from synergies and diversification. Horizontal diversification would also be affected by how governments choose to spend oil revenues.

The collapse in world oil prices since mid-2014 has reinforced two imperatives for Saudi Arabia. First, there is the need to raise revenue in order to balance state budgets. The second imperative has been that diversification of the economy away from dependence on oil is essential. As part of this is the promotion of the private sector as a generator of both tax revenues and employment especially for the large numbers of young people entering the jobs market, and as a means of mitigating vulnerability to volatile oil prices.

The experiences of oil-exporting countries show that it is very difficult to diversify economies that rely on oil, particularly if the oil production horizon is long. Like GCC countries, Diversification of the economic base has been a key objective of economic and social development ever since the development planning system was initiated in Saudi Arabia.

Saudi Arabia has been implementing policies to support economic diversification for many years. These policies have focused on providing a stable macroeconomic environment; strengthening the business environment; investing in infrastructure, education, and skills; targeting the development of specific sectors; and promoting entrepreneurship through SMEs (Callen et al. (2014)).

After decades of planning, non-oil sectors have grown in value at an average annual rate of 6.2%, with their share in real GDP growing from 51.1% at the beginning of the First Development Plan to 77.1% at the end of the Eighth Plan, while non-oil exports grew at an average annual rate of 6.7% (Al-Bassam B.(2015)).

Al-Bassam B.(2015) studies economic diversification in Saudi Arabia between 1970 and 2013. The findings show that first, the Saudi Government has achieved little success in diversifying its economy. Then, the role of the private sector in diversifying the economy is still weak since it depends heavily on government spending.

Banafeha,W. & Ibnrubbian, A.(2018) assess the efforts of Saudi government to diversify its economic resources over a period of 45 years (from 1970 to 2014) (nine development plans) using two measures namely, instability of private GDP and its relation to oil prices instability, and relative contribution of private and public sectors to GDP. The analysis indicated that over

the last two development plans (8th and 9th plans), Saudi government has succeeded in moving towards economic diversification compared to the previous seven development plans.

Measuring Economic Diversification

Different measures have been used to measure economic diversification in different countries. However, there is no consensus among economists on the most adequate measure of economic diversification since each measure takes into account only one aspect of economic diversification.

There are many statistical indicators to measure diversification. These indicators may vary according to the measuring efficiency and the purpose of measuring. Some indicators measure the dispersion, others measure the concentration or diversification.

The Normalized Herfindahl-Hirschman Index is considered as the most popular indicator which is going to be used in this study. It measures the extent to which a particular economy is dominated by a few sectors.

Herfindahl-Hirschman index was used widely in eighties by department of justice in USA to measure monopoly level in an industry and was used also by United Nation Conference on Trade and Development (UNCTAD) to measure the level of exports diversification. Normalised Herfindahl-Hirschman index take the following formula (Lapteacru, I. (2012), Haouas I & HeshmatiA. (2014)):

$$HHI = \frac{\sqrt{\sum_{i=1}^N \left(\frac{x_i}{X}\right)^2} - \sqrt{\frac{1}{N}}}{1 - \sqrt{\frac{1}{N}}}$$

Where, (N) is the number of economic activities, (x_i/x) is the share of economic activity in sector i of the total economy and N is the number of sectors in the economy (e.g. the share of exports by sector i in the total exports).

The value of the index ranges from zero (full diversification) to one (no diversification). A country with a perfectly diversified economy will have an index close to zero. A higher value indicates more concentration or greater specialization.

In this study, a composite index is proposed for economic diversification index consisting of four components: GDP, Non-Oil Exports, Domestic Credits to Private Sector and Fixed Capital Accumulation.

To calculate the Normalised Herfindahl-Hirschman index, we use time series data covering the period (1980-2017). This annual data will be retrieved from Saudi Arabian Monetary Authority(SAMA).

Diversification in GDP

To measure the diversification in production, the study computed Normalised Herfindahl-Hirschman index for GDP over the period (1980-2017). Figure (1) illustrates the trend of Herfindahl index which declines indicating increasing levels in GDP economic diversification from (0.45) in 1980 to (0.13) in 2017.

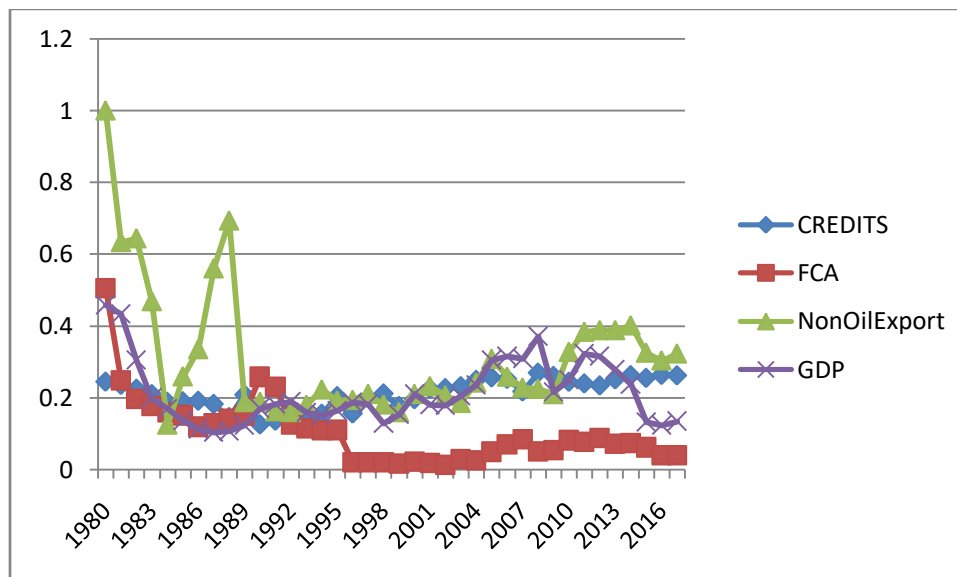
Diversification in Exports

Diversification in GDP is important but not sufficient because diversification in exports is also significant. The role of exports in diversification is bigger for gulf countries that depend heavily on oil exports. Following figure (1) shows a decline in Normalised Herfindahl-Hirschman index which means an increase in diversification from (1)(No diversification) in 1980 to (0.32) in 2017.

Diversification in Fixed Capital Accumulation

Fixed capital accumulation is an important indicator for economic diversification because it shows specifications and the development in investment. Normalised Herfindahl-Hirschman index decreased on average annually, from (0.51) in 1980 to (0.04) in 2017 referring to the existing of diversification in investments.

Figure 1: Normalised Herfindahl-Hirschman index for GDP, Non Oil Exports, Fixed Capital Accumulation and Domestic Credits over the period (1980-2017)



Source: author calculations

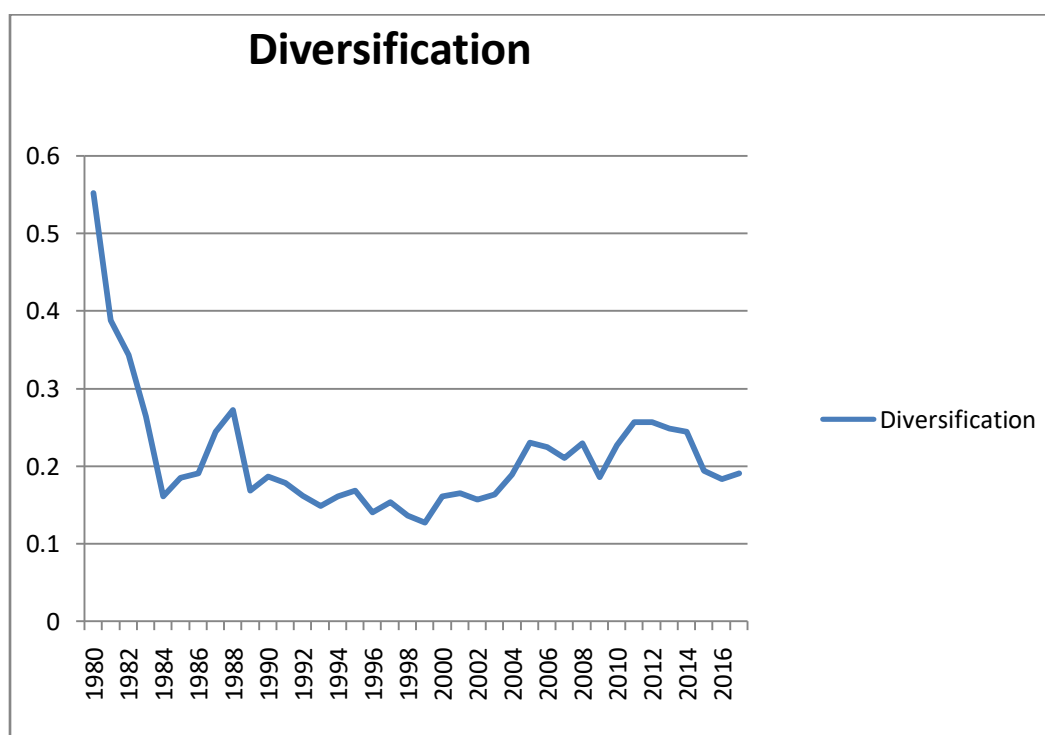
Diversification in domestic credits

Domestic credits to private sector are an important indicator for economic diversification because it shows how credits are allowed to different investments. Normalised Herfindahl-Hirschman index decreased on average annually, from (0.24) in 1980 to (0.12) in 1990. After, this date, we remark an increase of the Normalised Herfindahl-Hirschman index (0.26 in 2017) referring to the existing of more concentration in domestic credits to private sector.

Composite Indicator of Economic Diversification

Economic diversification is not only limited in Production diversification but it also should include diversification in non-oil exports, in Fixed Capital Accumulation and in domestic private credits. The study computed the average of the previous indicators for the period (1980-2017) and the results are illustrated in figure (2).

Figure 2: Economic diversification index over the period (1980-2017)



Source: author calculations

The estimation for the composite indicator reveals a reduction from (0.55) in 1980 to (0.19) in 2017. The reduction of HH composite Index refers to an increase in economic diversification in Saudi Arabia.

RESEARCH METHODOLOGY

Data

In this study, we use time series data for the following variables: Diversification (Composite Indicator of Economic Diversification), Domestic credits to private sector as proxy of privatization (DCPRIVATE), Oil rents (OILRENTS) and Foreign direct investments(FDI). The data cover the period (1980-2017) and will be retrieved from SAMA and World Bank (World Development Indicators 2018). The choice of this period can be explained by the fact that all privatization programs were done in this period. Then, this period covers all development plans in Saudi Arabia.

Table 1: Descriptive statistics

	<i>Diversification</i>	<i>DCPrivate</i>	<i>Oilrents</i>	<i>FDI</i>
Mean	0.211728625	27.56299	33.42033	1.692581
Standard Error	0.012854629	2.132705	1.875311	0.430195
Median	0.187604957	25.49013	29.00872	1.085013
Standard Deviation	0.079241257	13.14688	11.40707	2.651902
Minimum	0.127052868	6.804895	15.94445	-1.94012
Maximum	0.552440554	58.11449	64.04434	8.496352
Count	38	38	37	38

Econometric model Methodology privatization and diversification

To explore the impact of privatization on economic diversification, we apply the ARDL approach to cointegration (Pesaran, H.& al. (2001)). The ARDL approach to cointegration, also known as bounds testing, has certain advantages in comparison to other cointegration methodologies such as full maximum likelihood, based on Johansen, S. and Juselius, K. (1990), and the residual based approach (Engle, RF. and Granger, CWJ. 1987). While the traditional cointegration techniques are sample size sensitive, the ARDL approach is ideal even with a small sample, which is the case in this study. Then, it does not restrict the variables of interest to be integrated of the same order. The ARDL approach to cointegration can be applied when the variables are a mixture of integrated of order zero $I(0)$, one $I(1)$ or partially integrated. In addition, the ARDL estimates the long-run relationship using a single reduced form equation, unlike the traditional approach that employs a system of equations (Shrestha, M B. & Chowdhury, K (2007)).

In addition, the ARDL method avoids the problem of pre-testing for the order of integration of the individual variables, which is a matter of crucial importance in any empirical analysis.

According Pesaran, H. & al. (2001), the ARDL approach requires the following two steps. In the first step, the existence of any long-term relationship among the variables of interest is determined using an F-test. The second step of the analysis is to estimate the coefficients of the long-run relationship and determine their values.

RESULTS AND DISCUSSIONS

ADF Unit root test

Before conducting the empirical analysis, it is important that all the variables used be subjected to unit root tests. This is important in order to ensure that no variable is integrated of order two or higher.

The Augmented Dickey-Fuller unit root test results reported in table 2 show that all the variables are integrated of order 0 or 1. All variables are not integrated of order 2. The lag length in ADF was automatically selected by SIC. The results confirm the possibility to estimate the model with ARDL method.

Table 2: ADF Unit root test

Variable	Calculated ADF statistics		Order of Integration
	Level	First difference	
Diversification	-3.070207***	-	I(0)
DCPRIVATE	1.745395	-4.918090***	I(1)
OILRENTS	-1.696717	-6.277078***	I(1)
FDI	-2.071042**	-	I(0)

*** Significant at 1% level, **Significant at 5% level

Cointegration test

To investigate whether Diversification, DCprivate, Oilrents and FDI share a common long term relationship, The bounds F-test for cointegration (Table 3) indicate that the variables share a long-run relationship.

The F-statistic of the bound test (8.433041) exceeds the corresponding upper critical bound values at 1% of significance level. So we can reject the null hypothesis of no cointegration. We conclude the existence of a long run relationship between Diversification and the regressors.

Table 3: Bounds F-test for cointegration

Null hypothesis: No cointegration		
Computed F-statistic	8.433041	
Bounds critical values	Lower I(0)Bound	Upper I(1)Bound
1% significance level	4.29	5.61
5% significance level	3.23	4.35
10% significance level	2.72	3.77

The results (table 4) show that, DCPRIVATE as proxy of privatization, Oil rents (Oilrents) and Foreign Direct Investment (FDI) are statistically significant determinants of economic diversification. As expected more domestic credits to private sector have a significant and a negative effect. Greater domestic credits to private sector leads to more diversification.

Table 4: Estimated Long run coefficients

Dependent Variable: Diversification

Variable	Coefficient	Std. Error	t-Statistic	Prob
DCPRIVATE	-0.002758***	0.000615	-4.487319	0.0003
OILRENTS	0.005376***	0.000701	7.667681	0.0000
FDI	0.007680**	0.003657	2.099731	0.0511
C	0.062854***	0.011471	5.479482	0.0000

*** Significant at 1% level, **Significant at 5% level

We expect the coefficient of Oil rents to be positive and statistically significant implying higher oil dependency associated with higher Normalised Herfindahl-Hirschman composite index and so smaller economic diversification.

The results show, that oilrents have a significant and positive effect. Higher oil rents leads to more concentration and so to less economic diversification. So, higher oil dependency is associated with smaller economic diversification.

FDI have a significant and a positive effect. So, higher FDI flows are associated with smaller economic diversification. This unexpected result can be explained by the fact that foreign direct investment in Saudi Arabia are concentrated in few sectors. Recent FDI has been concentrated in the services sectors in the domestic market (business services and contracting) and on sectors that overuse resources and foreign labor, while FDI in non-oil manufacturing industries has remained quite modest (Al Bakr A.(2015)).

Diagnostics tests results

Heteroskedasticity and Ramsey reset tests were carried out to ensure that the model and estimates were cleared of any econometric problems and the results are presented in Table 5.

The Breusch– Pagan–Godfrey test for Heteroskedasticity also reported a statistically insignificant F-statistics of 1.789059 with a p-value of 0.1245, thus indicating the absence of heteroskedasticity among the error terms.

The Ramsey-RESET stability test for the correct functional form of the model shows that the model was correctly specified since the F-statistics of 0.013419 was insignificant, with a p-value of 0.9092.

Table 5: Diagnostics tests of the estimated ARDL model

Test	F-statistic	p-value
Breusch– Pagan–Godfrey test	1.789059	0.1245
Ramsey reset test	0.013419	0.9092

CONCLUSION

To achieve economic diversification, Saudi Arabia should continue to strengthen macro-economic stability and improve regulatory and institutional frameworks. Promoting the institutional environment is key for GDP diversification (Rodrik 2004b). A business environment conducive to private sector growth is necessary for economic diversification. The business environment plays a key role in promoting private sector development and hence greater economic diversification (IMF (2016b)).

Increasing efficiency and productivity should be the main objectives of the privatization programs which may need to shift focus to less efficient enterprises and government services. Privatization could also help address fiscal pressures. Proceeds from assets sale can be part of the financing of the fiscal deficit or could be used to to reallocate and diversify the government's asset portfolio (IMF (2016a)).

Despite the efforts the Saudi government exerts to diversify its economy and support the emergence of a private sector-led economy, many difficulties are still hindering the growth of private sector. These obstacles include (Banafea Waheed and Abdullah Ibnrubbian (2018)):

- Direct and indirect dependence of private sector on government subsidies, free loans, low price energy and generous government contracts and favorable purchase agreements.

- The private sector is thus required to generate national human capital, where low-skilled, non-Saudi workers dominate 83 per cent of the total number of the private sector employees.
- Government-delayed payments to private sector. The government has to pay its liabilities to the private companies on time.

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