

# Commentary

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## **Toward Fiscal Stability and Sustainable Development: The Role of Sovereign Funds in Saudi Arabia**

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## The boundary between an oil-revenue stabilization fund and a sovereign wealth fund is not a bright line

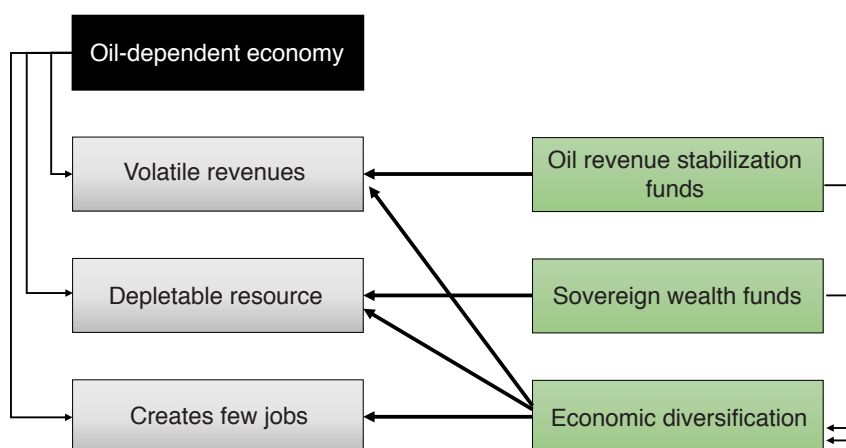
The study, “Optimal Policies for Managing Oil Revenue Stabilization Funds: An illustration using Saudi Arabia,” conducted by researchers from KAPSARC, was recently published in the journal *Resources Policy* (AlKathiri et al. 2020). It developed a model that optimizes the buildup and drawdown of a stabilization fund. It offers key insights into managing a stabilization fund to support fiscal stability over the short and medium term. Its results indicate that the boundary between an oil-revenue stabilization fund and a sovereign wealth fund is not a bright line. This commentary extends the paper’s analysis by exploring the potential role of sovereign funds, both short-term stabilization and long-term savings funds, in achieving fiscal stability and sustainable development in Saudi Arabia.

### The macroeconomic challenges of managing oil windfalls

Oil-dependent economies are exposed to various issues that can limit their growth and development. There are three major problems associated with a heavy reliance on oil revenues. First, oil provides uncertain revenue streams due to oil price fluctuations in the global market. Second, it is a non-renewable resource that is constantly being depleted. Third, the oil industry is capital-intensive and creates fewer jobs compared with other industries.

Different tools can help to mitigate these issues, and each tool serves different objectives, as depicted in Figure 1. Oil revenue stabilization funds address the issue of oil revenue volatility by stabilizing government expenditure in the face of oil price fluctuations. Sovereign wealth funds (SWFs) (savings funds) address the risk posed by the depletion of oil by generating a sustainable source of income to replace the depleted resource’s revenues. Other objectives of these funds include improving intergenerational equity and isolating the economy from the adverse macroeconomic effects associated with the dependence on oil revenues. While these funds can be sufficient for developed oil-exporting countries (e.g., Norway), they are insufficient for most developing countries with high population growth because they do not directly generate jobs in the local economy. Finally, economic diversification decouples the economy from oil dependence in the long run and, therefore, reduces revenue volatility. It helps to establish non-oil industries that can remain after resource depletion and creates more jobs to absorb the growing working-age population.

**Figure 1.** A simplistic illustration of how stabilization funds, SWFs, and economic diversification address the problems associated with oil dependence.



Source: KAPSARC 2020.

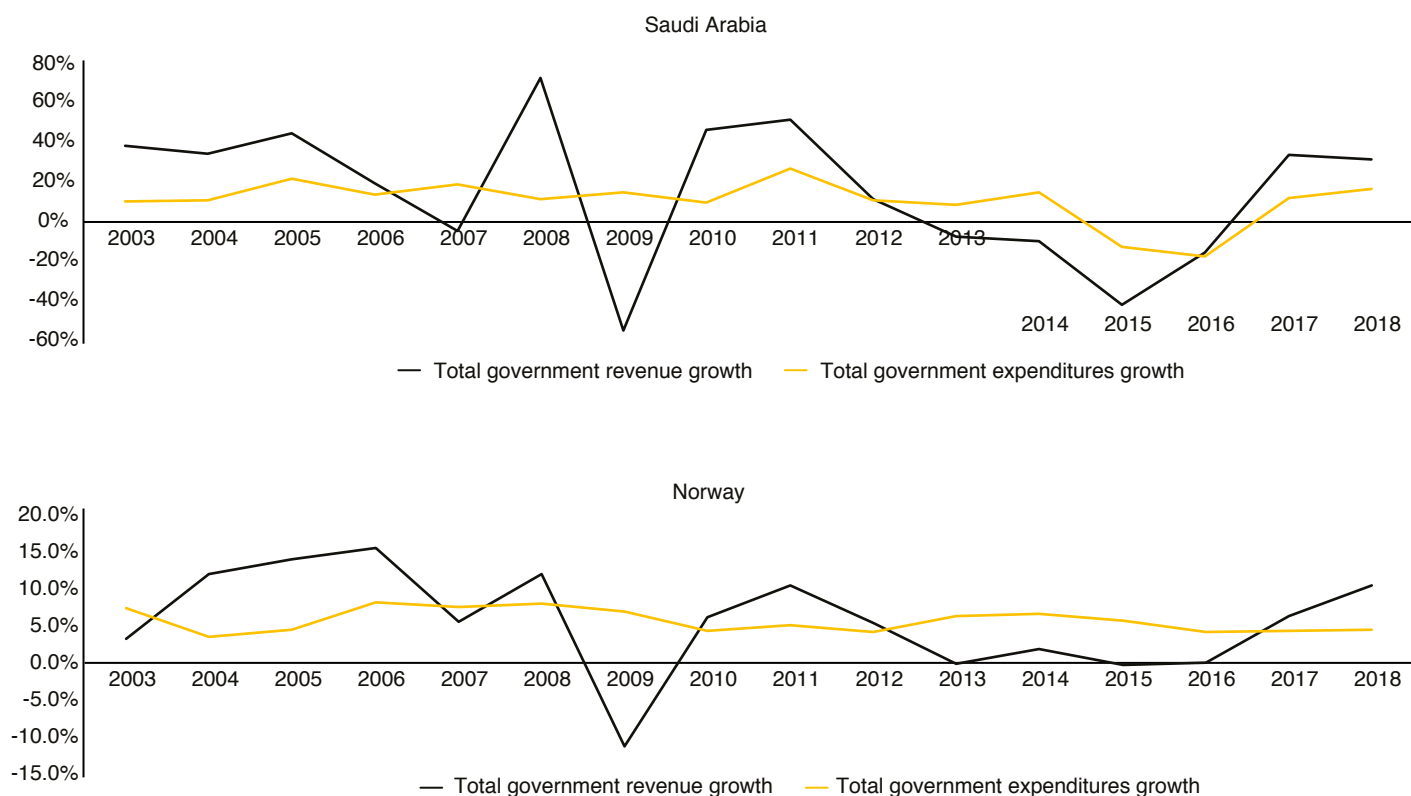
## The short-term view: Addressing the volatility of oil revenues

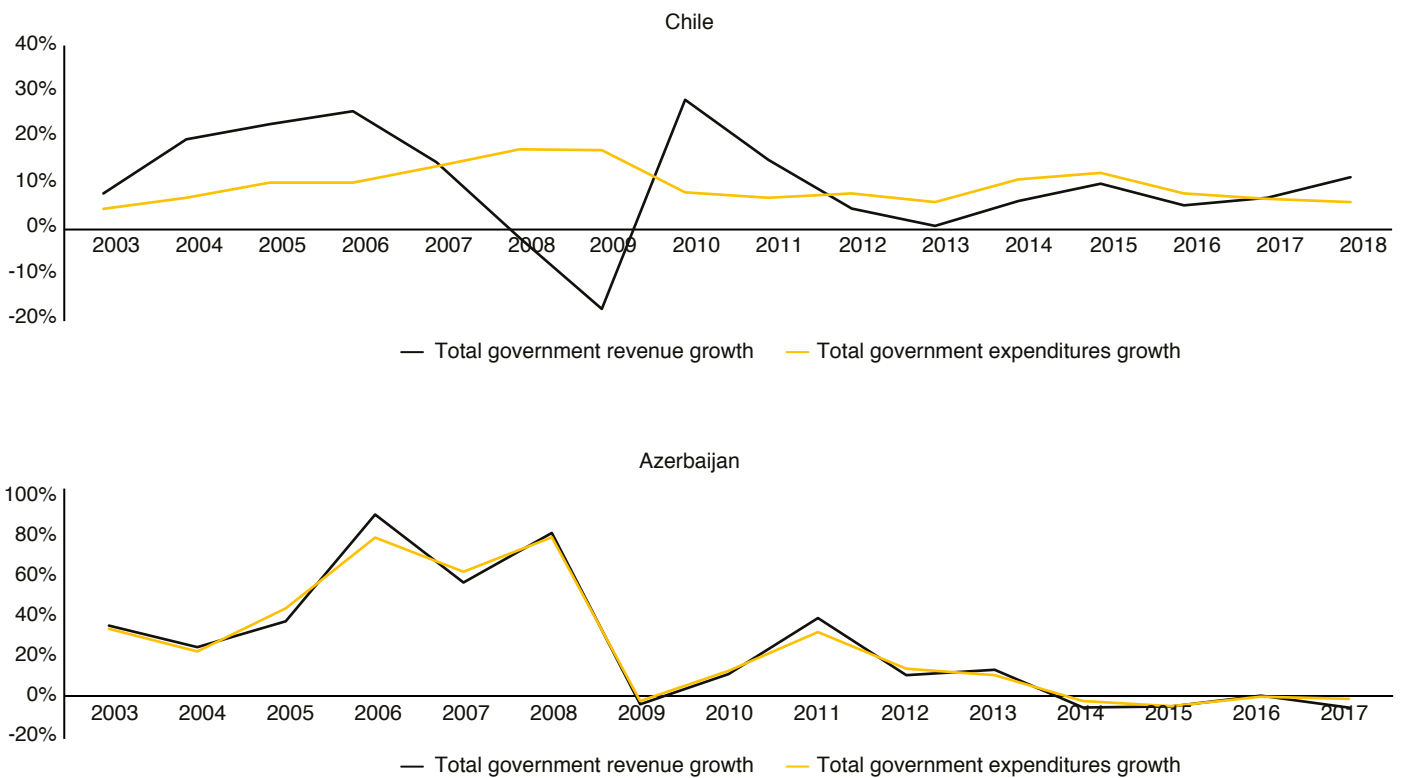
To mitigate the impact of volatile revenues on fiscal budgets, oil-exporting countries establish oil revenue stabilization funds as a buffer against price fluctuations. Stabilization funds aim to smooth consumption over time by making it less correlated with oil revenues and less disruptive to the investment climate. Unlike SWFs (i.e., savings funds), where the focus is on generating sustainable streams of income that can replace lost oil revenues after resource depletion, stabilization funds provide only short-term fiscal stabilization. Some countries use one fund for both stabilization and savings purposes, while others have separate funds with their own objectives and mandates.

The key question for managing a stabilization fund is how much to save during oil boom cycles and how much to withdraw from it when prices are low. These decisions imply a tradeoff between current and future consumption and depend on several factors, including future oil revenue expectations, the size of the fund, and the ability of the country to borrow in downturns to finance its fiscal budget. Successfully stabilizing the fiscal budget is not contingent on the existence of a stabilization fund. In fact, many countries, such as Iran, and Venezuela, failed to achieve macroeconomic stabilization despite their formal establishment of stabilization funds (Bauer 2017). In contrast, Saudi Arabia and Chile use their reserves or funds to stabilize expenditure by adopting countercyclical fiscal policies. Figure 2 shows the co-movement of government expenditure and revenue growth for four resource-rich countries.

**Oil-exporting countries establish oil revenue stabilization funds as a buffer against price fluctuations**

**Figure 2.** Government expenditure and revenue growth for four resource-exporting countries.





Sources: SAMA; Statistics Norway; Banco Central De Chile; The State Committee of Republic of Azerbaijan.

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Although some people refer to the Saudi Arabian Monetary Authority's (SAMA's) foreign reserves as an SWF, it is actually more a foreign exchange reserve, the goal of which is to protect the stability of the Saudi riyal's currency peg to the United States dollar (US\$). Reserves accumulated as a result of measures taken to ensure the currency peg are referred to as de-facto sovereign wealth funds, as explained in Wills and van der Ploeg (2014). According to Venables and Wills (2016), the difference between an SWF and a foreign exchange reserve is that the former accumulates oil revenues as foreign assets before they enter the domestic economy, while the latter accumulates foreign reserves after oil revenues have been spent domestically. Part of SAMA's foreign reserves has not been spent and is considered pure oil revenue savings. Specifically, the deposits and reserves of the government (Table 2), which represents 34% of SAMA's foreign reserves, is under the direct control of the government for budget financing. The government saves budget surpluses in this account, part of which can be allocated to the Public Investment Fund (PIF), which is Saudi Arabia's official SWF, or other development and pension funds.

**Table 1.** SAMA assets.

|                               | Foreign currencies and gold | Cash in vault | Deposits with banks abroad | Investments in foreign securities | Other assets | Total  |
|-------------------------------|-----------------------------|---------------|----------------------------|-----------------------------------|--------------|--------|
| <b>2017 (in billion US\$)</b> | 61.12                       | 6.88          | 100.79                     | 331.91                            | 6.94         | 507.64 |
| <b>Percentage</b>             | 12%                         | 1.4%          | 19.9%                      | 65.4%                             | 1.4%         | 100%   |

Source: SAMA (2017).

**Table 2.** SAMA liabilities.

|                               | Currency issued | Govt. deposits and reserves | Govt. institution deposits | Regulatory deposits for financial institutions | Foreign institution deposits in local currency | SAMA bills and repurchase agreements | Other liabilities | Total  |
|-------------------------------|-----------------|-----------------------------|----------------------------|--|--|--------------------------------------|-------------------|--------|
| <b>2017 (in billion US\$)</b> | 61.12           | 171.03                      | 23.56                      | 26.01  | 4.93   | 37.01                                | 183.99            | 507.64 |
| <b>Percentage</b>             | 12%             | 33.7%                       | 4.6%                       | 5.1%   | 1%   | 7.3%                                 | 36.2%             | 100%   |

Source: SAMA (2017).

As illustrated in Figure 2, Saudi Arabia was able to decouple government spending from fluctuating oil revenues by using the government's reserves held by SAMA as a buffer against oil price shocks. In AlKathiri et al. (2020), we developed a model for managing oil revenue stabilization funds to maximize the welfare of households by creating tradeoffs between current and future consumption. The derived savings rule from the model matches what we would expect: the larger the fund, the smaller the additions during periods of high revenues and the bigger the withdrawals during periods of low revenues. By applying the model to the observed revenues of Saudi Arabia from 2003-2015, we estimate the optimal savings in each year as a function of oil revenue and the size of the fund, and we compare the outcome with what has been observed historically. We show that the pattern of the buildup and drawdown of the government's reserves closely matches the optimal savings rule derived by the model until 2011, where actual savings started to deviate from the optimal path as a result of the rapid increase in government spending. Our ex-post analysis shows that applying the optimal policy from 2003 until 2015 would have achieved the same welfare outcome as what was actually achieved, but with a fund size US\$115 billion larger. This shows the importance of smoothing public spending over time.

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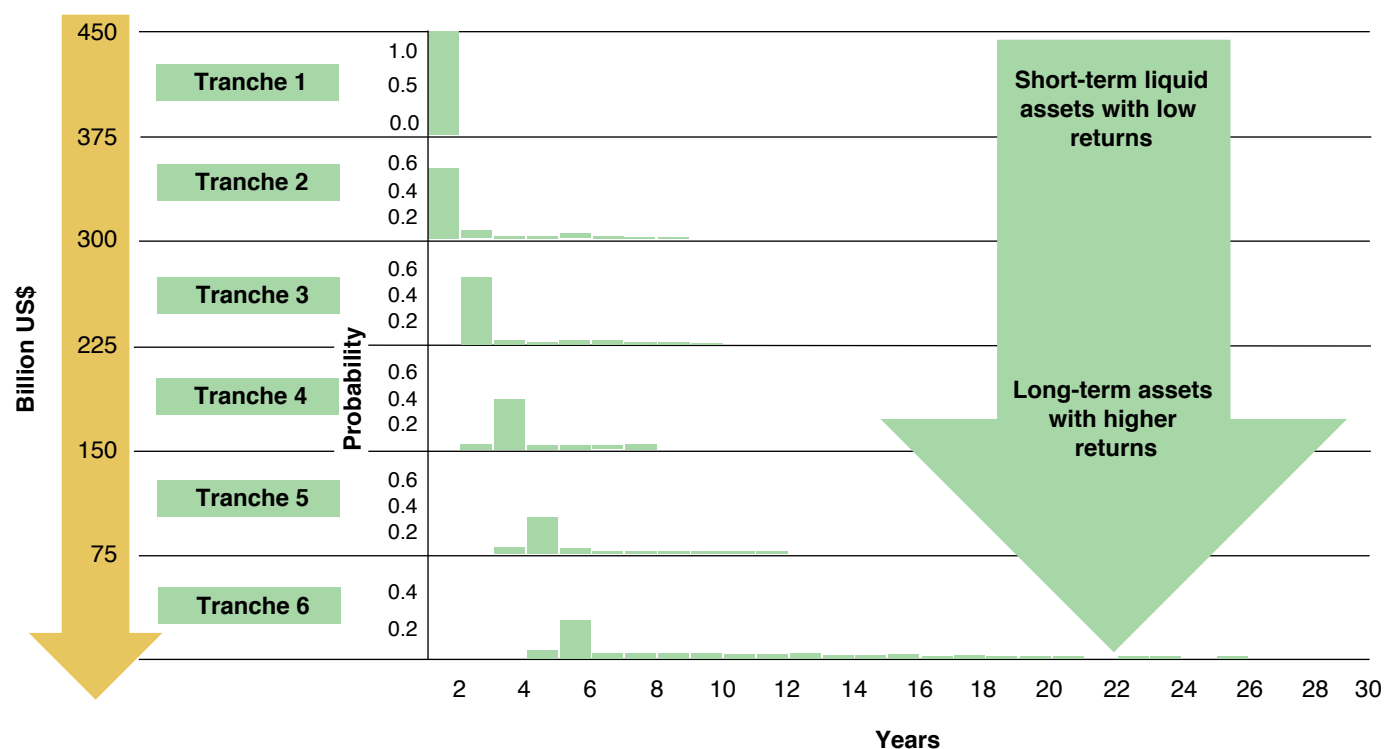
## Stabilization funds' assets have to be liquid enough and readily available to meet their objectives of protecting their respective economies from fiscal instability

### The investment strategy for stabilization funds and the role of debt financing

Stabilization funds' assets have to be liquid enough and readily available to meet their objectives of protecting their respective economies from fiscal instability. The proper management of these funds is crucial for their success in mitigating macroeconomic volatility, and they require integrating with alternative sources of financing fiscal deficits. While budget deficits can be covered through debt-financing, the availability of a stabilization fund provides a strong balance sheet that can give negotiation power to the government when it attempts to reduce the cost of its debt. Hence, the decision as to whether to issue government bonds or withdraw from the stabilization fund will be based on the opportunity cost of withdrawing from the fund. Debt should not be issued if its cost exceeds the return on the corresponding amount in the stabilization fund. Some poorly managed funds have no clear goals and their operations do not make economic sense. For example, some governments save resource revenues in funds yielding low returns and issue debt at rates of interest that are higher than the yields they receive (Venables and Wills 2016).

The assets of a stabilization fund can be divided into sequential tranches, with each tranche tapped after the depletion of the preceding tranche. The choice of investment for each tranche will differ based on the estimate of the time it will take to start withdrawing from each tranche. Following the work of AlKathiri et al. (2020), Figure 3 divides a stabilization fund of \$450 billion into six tranches, with \$75 billion in each, to illustrate how different tranches could be managed. As the graph shows, the first tranche will most likely be needed to finance the budget shortfall immediately and, therefore, should be kept in the form of cash or assets that are very easy to liquidate.

Figure 3. Probability distribution of the first time each tranche is tapped.



Source: AlKathiri et al. (2020).

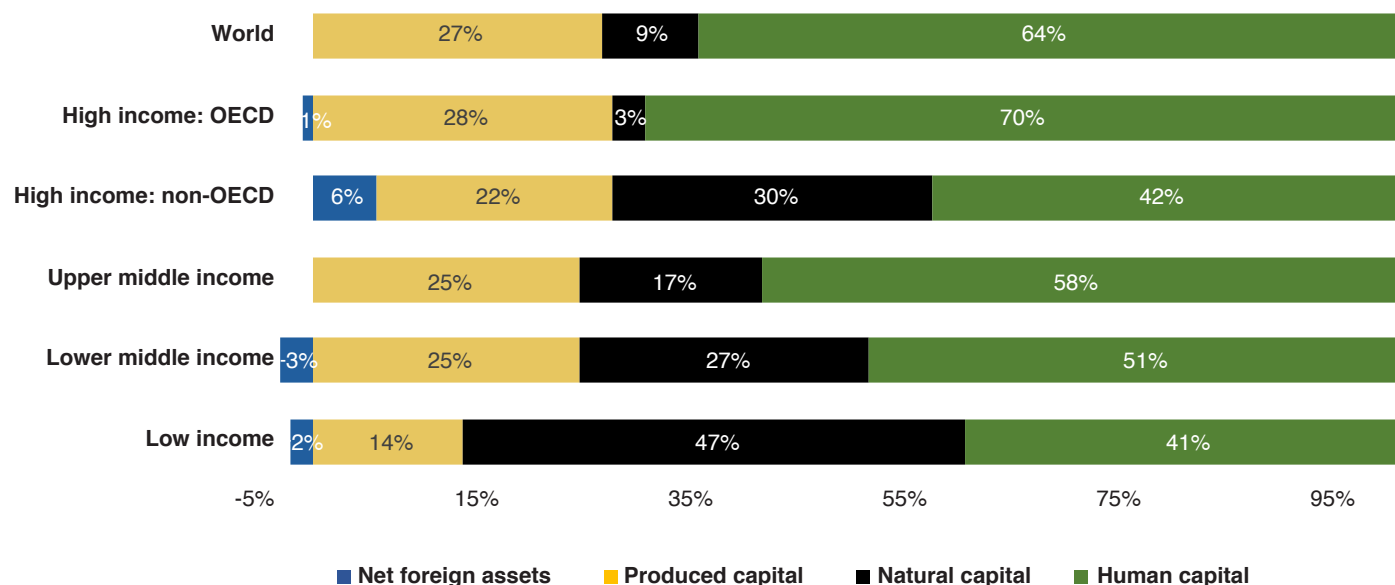
On the other hand, subsequent tranches have longer timeframes and can be invested in longer-term bonds or assets with higher returns. The last two tranches begin to resemble the kinds of assets appropriate for an SWF, where the underlying assets should never be withdrawn and should be invested in long-term investments with higher returns.

### The long-term view: Transforming oil revenues into sustainable sources of income

Another major issue confronting oil-dependent economies is the exhaustibility of the resource. Specifically, how should they prepare to replace oil revenues as the resource depletes? Before addressing this issue, it is important to understand what constitutes the wealth of a nation. The World Bank (2018) provides estimates of “comprehensive wealth” for 141 countries and defines it as the sum of produced capital, natural capital, human capital, and net foreign assets. Therefore, the wealth of a country is its cumulative stock of assets. On the other hand, gross domestic product (GDP) is a flow measure of income derived from the stock of wealth. A country can boost its GDP by depleting its wealth (Hamilton and Hepburn 2014), thus financing unsustainable consumption at the expense of future generations. As Figure 4 illustrates, human capital is the most important component of wealth, as it represents the largest share of wealth in all income groups, except the low-income group, where natural capital dominates. As countries transition from low- to medium- and high-income countries, the share of natural capital declines, whereas the shares of both produced and human capital increase (World Bank 2018).

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Figure 4. The composition of wealth.



Source: World Bank (2018).



## How can oil wealth be efficiently transformed into other types of wealth?

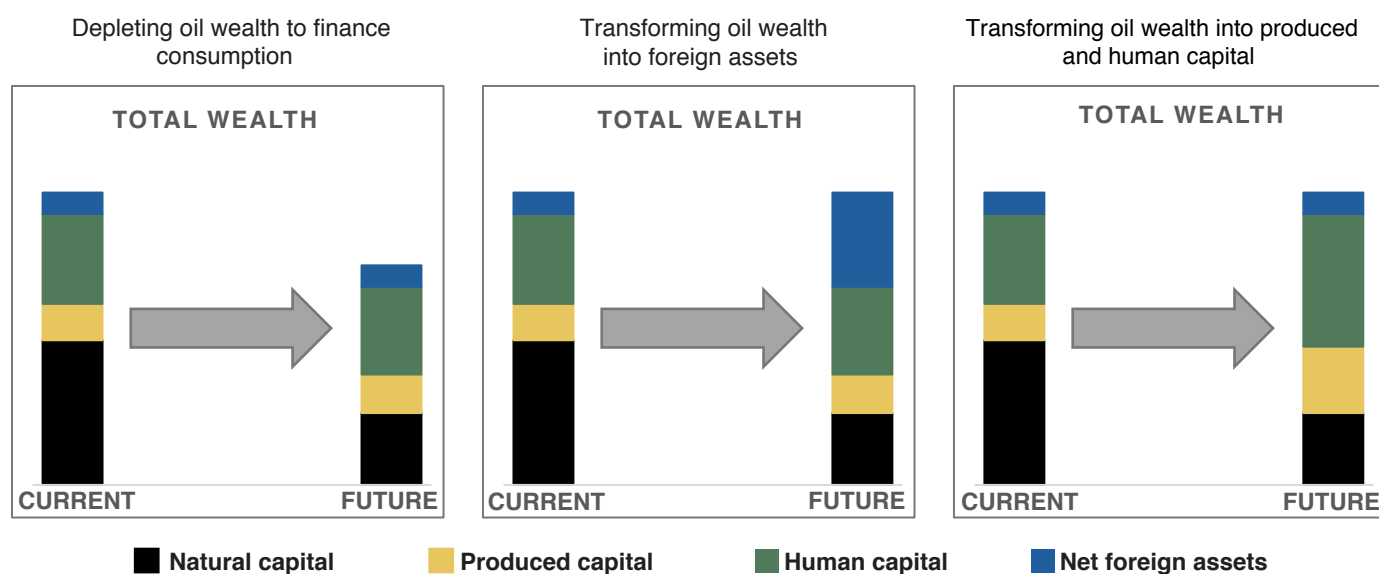
## The disadvantages of these traditional SWFs are their minimal contribution to the development of the domestic economy and their inability to generate jobs for citizens

How can oil wealth be efficiently transformed into other types of wealth? Hartwick's rule (Hartwick 1977) suggests that resource rent should be invested in other forms of productive capital to offset falling stocks of non-renewable resources. If the revenue generated by the depletion of non-renewable resources is used to finance extra consumption, wealth will decline, and financing this level of additional consumption is difficult to sustain.

Traditional SWFs invest externally and therefore transform oil wealth into foreign assets. The main objective of these funds is to protect the economy from macroeconomic instability, such as revenue volatility and real exchange rate appreciation, and to promote intergenerational equity. The most successful fund of this kind cited in the literature is the Norwegian Government Pension Fund Global (GPF). Its functions include both budget-stabilization and savings, with an implicit focus on protecting the economy from the so-called 'Dutch disease' (Alsweillem and Rietveld 2017). Norway transfers all its resource revenues to the fund and limits its structural non-oil deficit to 4% of the fund, which can be financed by drawing down the fund. The disadvantages of these traditional SWFs are their minimal contribution to the development of the domestic economy and their inability to generate jobs for citizens. In fact, resource rents are just being transformed into financial rents without any improvement in the productive base of the economy.

Other SWFs have domestic development objectives and invest in their local economies, transforming oil wealth into produced capital and, potentially, human capital. In contrast to foreign investments, an SWF's domestic investments support the development of non-oil sectors that generate jobs for the local population. Creating jobs for the growing youth population in Saudi Arabia is critical, since a large number of younger citizens are expected to enter the labor force in the next few years. Figure 5 illustrates the implications of using oil wealth to finance current consumption, invest in foreign assets, or invest in the domestic economy for the size and composition of future wealth.

**Figure 5.** A simplistic illustration of the implication of using oil wealth to finance current consumption, invest in foreign assets, or invest in the domestic economy on the size and composition of future wealth.



Source: KAPSARC 2020.



The PIF's strategy is to invest domestically and internationally to enable economic diversification and growth in key strategic sectors. Its four primary objectives include: 1) growing its assets to US\$400 billion by 2020, which it expects to generate an annual return of 4%-5%; 2) unlocking new sectors in the economy; 3) building strategic partnerships; and 4) localizing cutting-edge technology and knowledge. It also contributes indirectly to 28 Saudi Vision 2030 objectives beyond those with which it is tasked. PIF's domestic capital expenditure is not part of the government's fiscal budget. For example, budgeted government expenditure for 2018 is US\$260.8 billion, of which US\$54.7 billion is capital expenditure. On top of that, the spending estimates of PIF and the National Development Fund (NDF) are roughly US\$22.1 and US\$13.3 billion, respectively.

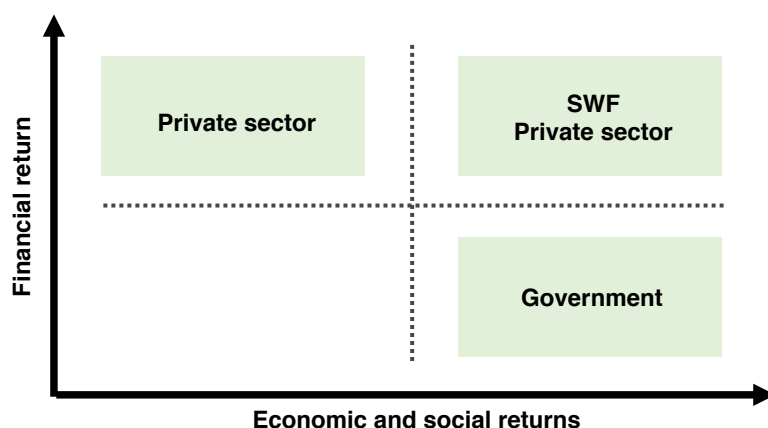
As pointed out by Gelb et al. (2014), an SWF should not replicate the role of the fiscal budget or financial institutions and should seek investments that crowd-in rather than crowd-out private sector investments. Gelb et al. (2014) also show that public investments can be assessed based on their financial, economic and social returns. Examples of investments that produce high economic and social returns include infrastructure projects, public schools, and public hospitals. In general, investments with high economic and social returns but low financial returns should be part of the fiscal budget. This is because such investments may require future cost commitments for operations and maintenance, which should be taken into account when planning for the fiscal budget. In contrast, an SWF should seek investments with high financial, economic and social returns.

The Kingdom's traditional economic structure incentivizes the private sector to seek government projects in the non-tradeable sector, which generates high profits at a lower risk than projects in non-oil tradable sectors that are highly exposed to competition in the export markets (Callen et al. 2014). This justifies an SWF stepping in to fill the gap by investing in profitable strategic industries, which could attract private sector investment. Investments that provide high financial returns and low economic and social returns should be left to the private sector. An SWF should engage in such investments by acquiring foreign assets instead, which can alleviate real exchange rate appreciation. Figure 6 shows a simplified graph for the allocation of domestic investments among the government, the private sector, and the SWF.

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**Figure 6.** The allocation of domestic investment among the government, private sector, and SWF.





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### **Investing in the domestic economy and the risk of ‘Dutch disease’**

The so-called ‘Dutch disease’ results from the appreciation of the real exchange rate lowering the competitiveness of non-resource tradable sectors (Corden and Neary 1982; Corden 1984). In a fixed exchange rate system, this begins with a large influx of foreign currencies from the exports of natural resources that increases the national income. If the foreign currencies are converted to the local currency and spent in the domestic economy, it generates extra domestic demand for goods and services from both non-tradable and tradable sectors. Without easy access to the global labor market, higher domestic demand pushes up wages, which leads to higher prices for domestically produced goods and services. Hence, one unit of a foreign currency buys fewer goods and services in the local economy. Price increases for domestic tradable goods and services reduces foreign and domestic demand for them since imports become less expensive. Consequently, the tradable sector shrinks in size. There are no substitution effects in the non-tradable sector, so an increase in the demand for its outputs significantly raises the price level of the sector. This, in turn, causes real exchange rates to appreciate.

On the other hand, access to an elastic supply of low-wage labor helps to prevent real exchange rates from appreciating. Increasing the supply of migrant low-wage labor offsets the rise in the domestic demand for non-tradable goods and services. Saudi Arabia, for example, was able to mitigate the appreciation of its real exchange rate through the reliance of its private sector on cheap foreign labor and pegging its exchange rate to the US\$. However, such a reliance decreases labor productivity, disincentivizes technological innovation, prevents nationals from being employed in the private sector and increases their unemployment rate. The availability of low-wage foreign workers also incentivizes the private sector to seek government projects in the non-tradeable sector, which hinders the development of other productive non-oil tradable sectors (Callen et al. 2014).

The ongoing structural changes in the labor market will likely increase wages and could see a significant portion of foreign workers replaced with Saudi workers. Therefore, the leakage of oil rents outside the economy (through workers’ remittances) could diminish. Furthermore, local content initiatives are likely to contribute to lower outflows of oil income. Traditionally, large expenditure on imported goods, coupled with an elastic supply of foreign labor, controlled domestic inflationary pressures resulting from the inflows of oil income, and helped to expand the economy’s absorptive capacity. Capital spending by PIF needs to take the absorptive capacity of the economy into consideration to prevent macroeconomic ‘overheating’ that could damage the efficiency of this spending. The inflexibility of the Saudi labor market presents a serious bottleneck that could limit the ability of the economy to absorb more inflows of oil income. Therefore, government investment programs that enhance the productivity of the labor force, in order to offset its inflexibility, are essential.

### **Conclusion**

As an oil-dependent economy, Saudi Arabia is vulnerable to volatile and uncertain revenue streams that could induce pro-cyclical fiscal policies. The instability of Saudi government spending has adverse effects on the country’s investment climate because it discourages the private sector from making long-term investments. The associated cost of revenue volatility for the Saudi economy is significant, as outlined in Pierru and Matar (2014).

A stabilization fund provides short-run protection against oil revenue volatility by smoothing government expenditure through time, accumulating reserves when oil revenues are high and allowing the government to draw down from it when oil revenues are low. If this is coupled with clear and transparent fiscal discipline, it can reduce fiscal uncertainty and create a more predictable investment climate. The management of a stabilization fund should be integrated with alternative sources of financing, including domestic and international debt issuance, to minimize the total cost of borrowing.

Long-term issues associated with finite oil resources and the revenues they generate can be tackled by establishing a sovereign wealth fund. Unlike a stabilization fund, the assets of a sovereign wealth fund should never be withdrawn. Instead, these assets should be treated as an endowment that generates sustainable streams of income for current and future generations. In fact, the aim of a sovereign wealth fund is to transform oil wealth underground into other forms of wealth above the ground. By investing in foreign assets, the fund transforms oil assets into foreign assets that yield financial rents rather than oil rents. To enable economic diversification, the fund can invest domestically by unlocking strategic sectors of the economy and creating more jobs for its growing population. The fund should seek domestic investments with high financial, economic and social returns. These investments should crowd-in rather than crowd-out private sector investment by creating an attractive entrepreneurship ecosystem in strategic industries. However, the macroeconomic implications of a sovereign wealth fund investing in its domestic economy must be taken into consideration. Capital spending beyond the absorptive capacity of the economy can push-up inflation, leading to the appreciation of the economy's real exchange rate, and lowering the competitiveness of its non-oil tradable industries. Investments that increase the efficiency of doing businesses in the non-tradable sector can expand the absorptive capacity of the economy and alleviate the appreciation of its real exchange rate.

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## About the project

Strategies can be developed to help mitigate the effects of oil price shocks on the Kingdom's economy. Oil stabilization funds provide short-run protection against oil revenue fluctuations. The Saudi government's deposits and reserves held at the Saudi Arabian Monetary Authority (SAMA) have historically served as a buffer to decouple the government's budget from oil revenue fluctuations. Sovereign wealth funds create income for future generations to replace revenue streams from depletable resources – one of the purposes of Saudi Arabia's Public Investment Fund. We have developed a framework for optimizing policies for adding to and withdrawing from stabilization funds, and applied it to Saudi Arabia as a case study. We will pursue this work by creating an integrated framework for linking stabilization funds with sovereign wealth funds. Recent data show the dependence of the country's non-oil sector's growth to oil prices, whereas non-oil sector growth is key to achieving the Kingdom's economic diversification objectives. We will study this dependence through an in-depth analysis of the country's data, its national accounts and economic theory.

## About KAPSARC

The King Abdullah Petroleum Studies and Research Center (KAPSARC) is a non-profit global institution dedicated to independent research into energy economics, policy, technology and the environment across all types of energy. KAPSARC's mandate is to advance the understanding of energy challenges and opportunities facing the world today and tomorrow, through unbiased, independent, and high-caliber research for the benefit of society. KAPSARC is located in Riyadh, Saudi Arabia.

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