Principles for Managing Lebanon’s Natural Resource Revenues
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Key Messages

• The Government of Lebanon is unlikely to see any hydrocarbon revenues over the next decade. The most optimistic projections are that oil and gas revenues would start to be collected at least seven to eight years from now and will not exceed two percent of GDP even at peak production. These projections are conditional on a commercial discovery being made this year and there being no delays in field development, both of which are improbable. Additionally, Lebanon’s latest energy plan calls for a large proportion of any commercial gas discovery to be earmarked for domestic energy production. In short, revenue estimates remain highly speculative and could be negligible.

• The Government of Lebanon may wish to create a special fund to allocate hydrocarbon revenues to underfunded expenditure items, similar to funds in Alabama (USA) (capital improvement and environmental protection), Alaska (USA) (cash transfers), Ecuador (social security, social projects and the environment), Texas (USA) (university education) or Timor-Leste (education and infrastructure as elaborated in the strategic development plan), or for fiscal stabilization, such as in Chile or Peru.

  – Lebanon’s oil fund can be an institution that invests in foreign assets and allocates a moving average of the interest earned, and perhaps a portion of the principal, to an underfunded expenditure item, such as renewable energy, pensions, foreign scholarships, public transport or environmental protection. Alternatively, it can be an earmarking passthrough account that directly finances these projects or sectors. Prior to establishing such a fund, it would be useful to agree on a national vision for economic development, for instance elaborated in a national development plan, in order to guide decisions on priority projects or sectors in which to invest.

  – Lebanon could establish a fiscal stabilization mechanism anchored by a counter-cyclical fiscal rule, which might necessitate a sovereign wealth fund once public debt declines to a sustainable level.

• A pre-condition for establishing such funds is fiscal sustainability. Sovereign wealth funds that save and invest in foreign assets are only politically and economically viable in countries where the interest rate on fund savings is greater than the interest rate paid on foreign-denominated debt. This is not the case in Lebanon nor is it expected to be in the foreseeable future.

  – Currently, interest rates on public debt range from 5 to 12 percent in real terms annually, whereas the average return on sovereign wealth fund investments is between 3 to 5 percent, also in real terms, depending on risk appetite and tolerance for asset value volatility. Lebanese public debt represents more than 150 percent of GDP and debt service payments constitute more than half of all government expenditures.
- A fund that earmarks oil revenue for domestic debt reduction would not address: (1) Lebanon’s twin deficits (current account and fiscal), since the revenues are too small and too far in the future to make an impact in the short- to medium-terms; nor (2) Improve the livelihoods of Lebanon’s citizens, since it would benefit commercial bank shareholders without reducing the overall debt burden.

- Against this backdrop, a publicly-owned financial endowment is unlikely to last for long. When faced with a choice to draw down on a fund with liquid assets or risk sovereign default, governments rationally choose to seize fund balances, even if regulations prohibit such action. In recent years, Algeria, Argentina, Ghana, Mongolia and Venezuela have each faced this situation with a similar result.

- Prior to establishing an oil fund, the Government of Lebanon ought to: (1) Reduce public debt to sustainable levels; and (2) Enact and enforce fiscal rules to credibly commit to fiscal sustainability in the future, for instance through ratification of a Fiscal Responsibility Act, as well as a compliance mechanism such as a fiscal council. Fiscal rules that reduce the overall debt burden, such as expenditure rules or (structural) balanced budget rules, can form the basis of a Fiscal Responsibility Act.

- In summary, countries that have benefited most from natural resource production have invested in sectors and projects that improve livelihoods for present and future generations, and smoothed year-to-year overall fiscal expenditures. Lebanon could follow examples set out by Chile, Norway, Peru and the UAE by investing in public education, productive infrastructure, and future high-growth sectors, as well as establishing a sound macroeconomic framework. This would require: (1) addressing the fiscal burden imposed by debt servicing; (2) implementing a long-term fiscal framework with a compliance mechanism; (3) raising additional fiscal revenues, preferably from the non-resource sector; and (4) addressing structural challenges that represent large burdens on taxpayers, such as the cost and supply of electricity and the significant civil service wage bill.
Introduction

The administrative track of the Petroleum Sector in Lebanon started in 2010 upon the adoption of the Offshore Petroleum Resources Law, which constitutes the legal framework governing the management of the sector. It was followed by a series of executive decrees known as the “Petroleum Activities Regulations”.

In November 2012, the Lebanese Petroleum Administration was created by virtue of a decree issued by the Council of Ministers and consequently started operating within a month.

The Lebanese Petroleum Administration elaborated an action plan setting the deadlines for the first licensing round for the exploration of petroleum resources in Lebanese offshore. Qualification requirements for the round were approved in March 2013 before the resignation of Najib Mikati’s Cabinet, which led to the blocking of the launching of this round.

Between 2013 and early 2017, several political factors that remain vague and ambiguous up until today led to delaying the adoption of the decrees relevant to the Tender Protocol and division of offshore blocks, which therefore led to delaying the launching of the first licensing round. This (in addition to the global decrease of oil and gas prices) diminished the enthusiasm of international petroleum companies.

On the 5th of January 2017, the Council of Ministers adopted the pending decrees (relevant to the Tender Protocol and the division of Offshore blocks), thus launching the first licensing round which was completed in October when a consortium of 3 companies being Total (French) acting as operator, Eni (Italian) and Novatek (Russian), as non-operators, submitted two offers for offshore blocks 4 and 9. In January 2018, the Lebanese State, represented by the Minister of Energy and Water, signed an Exploration and Production Agreement (EPA) with the consortium.

On the 16th of December 2019, the Minister of Water and Energy declared the issuance and delivery of the first license to the Consortium to perform the exploration of petroleum in block 4.

While waiting for the results of exploration drillings in block 4, Lebanon still has years ahead before starting to collect financial earnings generated by the extraction and sale of gas. However, this does not mean that Lebanon still hasn’t collected, until this date, dividends, since the beginning of the sector track in 2010.

There are currently two sources for the returns generated by this sector and benefiting the Lebanese State, i.e. the application fees payed by companies in order to participate in the first offshore licensing round and the sale of the seismic surveys data to interested companies.
Lebanese Context

Hydrocarbon Potential

According to the Lebanese Petroleum Authority (LPA) and independent geological assessments, seismic data indicates the possible presence of natural gas and oil in commercial quantities in Lebanon’s maritime territory. The first offshore licensing round was held in 2017 where two blocks were awarded to a consortium consisting of Total (40 percent), ENI (40 percent) and Novatek (20 percent). Exploration in one of these two blocks is expected to begin in December 2019. In April 2019, the government declared a licensing round covering five more offshore blocks.

Given the lack of information on volumes or even probability of making a commercial discovery, the value of these resources and production timeline are speculative. According to Richmond Energy Partners data, industry commercial success rates for exploration between 2012 and 2016 were 31 per cent overall and 7 percent for frontier areas such as Lebanon. The timeline from making a commercial discovery to production can easily last a decade. Furthermore, natural gas prices are dependent on regional demand and can be highly volatile.

The LPA’s most optimistic projections are that oil and gas revenues would start to be collected at least 7-8 years from now and will not exceed two percent of GDP (current equal to USD 1 billion per year) in any given year, even at peak production. These estimates are much lower than the USD 200 billion in government revenue over the lifespan of all fields circulated by Audi Bank in February 2018. Projections are also conditional on a commercial discovery being made in 2019 and there being no delays in field development, both of which are improbable.

What’s more, Lebanon’s latest energy plan calls for a large proportion of any commercial gas discovery to be earmarked for domestic energy production. This is because undersupply of power is a significant bottleneck to economic development, and fuel imports are a major cause of chronic budget deficits and the government’s fiscal challenges. Thus, the LPA has stated that “the priority is to supply the Lebanese local market with natural gas for electricity generation [since the economy] will benefit from this relatively cheaper and cleaner source of energy.”

In short, any revenue estimates remain highly speculative. Public statements that suggest that hydrocarbon revenues can be generated quickly and in large sums unrealistically raise expectations and contribute to further overborrowing and overspending without adequate collateral. The government would be well advised to lower expectations or risk citizen disappointment or economic backlash.

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Economic Context

Lebanon is currently experiencing simultaneous balance of payments, sovereign debt and financial sector crises. As of December 2019, informal capital controls have been imposed on foreign currency accounts, a dual exchange rate has been established, unemployment is rising fast, depositors have been forced to convert part of their foreign currency earnings in commercial banks to Lebanese pounds, and Lebanon’s sovereign debt has been downgraded to “junk” status. Some commercial banks may already be insolvent. Public debt-to-GDP stands at more than 150 percent, with debt levels having risen year-on-year since 2012. With a budget deficit of more than seven percent, this figure is set to rise again this year.4

The current account deficit is more than 25 percent of GDP, supported by a currency pegged to the US dollar which is overvalued and therefore encourages imports and discourages exports. Stress test results show that commercial banks’ capital adequacy ratios fall below Basel II minimum requirements under a scenario of low growth and a significant fall in real estate prices, both of which are occurring. This situation is exacerbated when sovereign credit ratings fall, which is also happening. What’s more, almost all Lebanese banks are highly exposed to Lebanese sovereign debt; 15-20 percent of most banks’ Tier 1 assets are domestic sovereign debt while two may be 95 percent exposed.5 They are even more exposed to central bank debt; as of July 2019, the central bank was in a net negative position vis-à-vis the commercial banks to the tune of USD 62 billion plus LBP 129 trillion.6

The government’s chronic budget deficits have been largely financed by Lebanese commercial banks. Foreign creditors have effectively locked Lebanon out of international markets by charging high interest rates on foreign-denominated debt; the yield on Lebanon’s Eurobonds maturing in nine years rose above 13.5 percent in September 2019.7 Local banks are now charging the government between 7.5-10 percent per year on 3- to 10-year government bonds denominated in Lebanese pounds.8 Credit default swaps rates on US dollar-denominated 5-year treasury bonds in November 2019 implied a 58 percent probability of default within the next year and a 78 percent probability within the next five years.9 In June, only Argentinian and Zambian government bonds were considered riskier than Lebanese debt, among countries that have issued sovereign debt on international markets.10 Today, Lebanese debt is the riskiest.

Interest on sovereign debt now represents more than 50 percent of government revenue.11 In order to pay this interest, the government must collect taxes. However, due to weak productive sectors—agriculture, manufacturing, utilities and services combined represent only 22 percent of the economy—it must rely on consumption-based sources of income, namely goods and services taxes, trade taxes and property taxes rather than taxes on domestic income or production.12

Consumption levels are maintained largely by an overvalued exchange rate that drives imports. In order to keep the currency at its pegged level and pay for these imports, the economy needs foreign currency. Until recently, this currency was largely generated by remittances from Lebanese expatriates; over the past decade, remittances have averaged more than USD 6 billion a year, equal to 16 percent of GDP. Lebanon received USD 1,500

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6 Based on central bank and commercial bank balance sheets.


per person in 2016, more than any other non-island nation. In short, if foreign currency inflows stop or reverse, systemic risks start to materialize.

Recent reports indicate that the country is expected to lose approximately one quarter of its foreign currency reserves in 2019, valued at USD 6 billion. One set of analysts have suggested that, at this rate of decline, the government is likely to remain solvent for another 12 months.

Some Lebanese policymakers have implied that the hydrocarbon sector could provide the necessary foreign currency to stymie the outflow and restore confidence in the economy. However, as the analysis above shows, the oil and gas production timeline and potential revenue from Lebanese fields make this impossible. As the IMF has stated, “Neither donor assistance, resolution of the Syrian conflict, nor any prospective revenue from oil and gas would, in itself, sustainably resolve Lebanon’s debt dynamics.”

In this context, it would make little sense to invest any Lebanese hydrocarbon revenues in foreign assets, as has been proposed in Lebanese sovereign wealth fund bill drafts. The average 20-year nominal rate of return on a balanced portfolio is 5-6 percent, or 2-3 percent in real terms. The government would therefore lose several cents on each dollar it saved and invested in foreign assets relative to a scenario where it uses the money to pay down public debt. Should borrowing rates drop below five percent per year in nominal terms, a case could be made for investing in foreign assets.

Another option would be for the government to invest hydrocarbon revenues in the domestic economy. This would be an optimal choice should the social rate of return on domestic investment exceed 5-6 percent per annum. The social rate of return refers to increased productivity associated with investments in education, social services and infrastructure, as well as non-economic benefits, such as lower crime, a cleaner environment and more fulfilling livelihoods. The social rate of return is dependent on several factors, but largely on the quality of public investment.

Lebanon undoubtedly suffers from both an infrastructure gap and a public service gap. The World Economic Forum’s Global Competitiveness Index ranks Lebanon at 130 out of 137 countries in quality of infrastructure. According to the PISA 2015 ranking of 15-year old educational performance, Lebanon scores 60th out of 70 jurisdictions in mathematics, 65th in science and last in reading. Invested well, hydrocarbon revenues could be used to address these and other bottlenecks to development.

Unfortunately, Lebanon’s only Public Expenditure and Financial Accountability (PEFA) assessment, carried out in 2011, has not been made public, making it difficult to objectively assess the government’s ability to invest well in public projects. However, the World Bank’s Capital Investment Plan for Lebanon stated that “challenges in core [public investment management] functions need to be addressed to help mitigate the risk of bad or inappropriate projects being undertaken, repeated cost overruns, implementation delays and poor investment outcomes. […] Moreover, weak or lack of public procurement oversight continues to contribute to distorting fairness and competition, resulting in favoring the elite in capturing the major market opportunities.”

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These findings imply that any spending of hydrocarbon revenues via the normal budget process may be mismanaged. Among the governments options are: (1) Improving public financial management to ensure that financial resources are converted into productive services and infrastructure; (2) Establishing a separate entity that ensures that hydrocarbon revenues are managed more effectively than other types of fiscal revenues; and (3) Cross-party agreement on a capital investment plan that supports national development. These options are not mutually exclusive. Examples of each are presented below.


General Principles of Hydrocarbon Revenue Management

Managing fiscal revenues is one of any government’s primary responsibilities. Governments must decide what systems and rules will determine how public funds are controlled and must make decisions around how revenues are distributed.

Hydrocarbon revenues often receive special attention due to their characteristics. First, natural resources projects can increase fiscal revenues suddenly and be large relative to overall government revenue. The sudden cash windfall often occurs during so-called ‘peak production’ on a new field, usually several years after production starts. In many cases, the government spends this entire windfall, without saving a portion or paying down public debt. While government officials, politicians and the general public may expect spending to improve schools, electricity, and other public services, instead the result may be a rise in domestic wages and non-tradeable prices without any substantial development outcome. Alternatively, capital inflows can lead to real exchange rate appreciation, which can harm domestic exporters. Together, these effects can cause a decline in non-oil or non-mineral industries and a lower standard of living for those disconnected from the resource sector. This is commonly known as the ‘Dutch disease’.

There is strong evidence of Dutch disease effects in Angola, Azerbaijan, Iran, Russia, Trinidad and Tobago and Venezuela, as well as at the subnational level in Brazil, Indonesia and Peru. On the other hand, there is no evidence of Dutch disease in oil-producers Ghana, Egypt, Indonesia, Malaysia or Tunisia since their oil or gas windfalls have been too small to cause Dutch disease or their economies are diversified. There is little risk of oil and gas-fuelled Dutch disease in Lebanon due to the prospective size of the sector relative to the economy, though inflows of foreign currency-denominated inflows have led to Dutch disease effects in Lebanon in the past.

A secondary challenge associated with large and sudden revenues is that they can, and often do, generate significant conflict between political groups, each trying to capture a share of the economic rents. This problem is generally amplified by overly optimistic expectations regarding the size of the revenue windfall. This “presource curse”—which manifests in over-spending and political fights over the resource even before production has started, driven by news of huge resource discoveries—has been estimated to cause an approximate one percent drop in long-term annual growth.

Second, commodity prices and production are volatile. Prices are particularly volatile and have become more so since the mid-2000s, as can be seen in Figure 1. The policy challenge lies in how to manage this volatility. Government spending is often directed related to government revenues, meaning government expenditures often increase and decrease in line with changes in revenue. Sudden increases in spending, for instance due to an oil revenue windfall, can lead to poor public expenditure decisions – for example construction of concert halls, new airports and other legacy projects rather than well thought-out water, sanitation, education or electricity projects – and poor quality infrastructure since it takes more than a calendar year to adequately plan and execute projects. When revenues decline, governments often face debt crises or are unable to pay for government salaries or operations and maintenance of new infrastructure.

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18 ‘Dutch disease’ refers to the deindustrialization of an economy that can occur as a result of a large capital inflow. The disease is caused by a real exchange rate appreciation that causes exports to become more expensive, as well as by a shifting of labour and capital from other industries into the ‘boom sector’, for example the oil and gas sector. The capital inflow must be extremely large to cause the Dutch disease.

The impact on the private sector can be equally devastating as businesses invest when they receive government contracts and scale back or go bankrupt when government contracts dry up.

*Figure 1. Commodity price volatility (2005 = 100)*

Third, oil and gas are finite or non-renewable resources. Some large oil fields only generate significant revenues for a decade, while others produce for several. This implies that governments have a single chance to spend or save the revenues appropriately. Still, many resource-rich countries do not save, invest, or pay down public debt to benefit future generations when they are receiving their revenue windfalls, leading to a long boom period followed by an economic recession or even depression. To prevent these long-run boom-bust cycles, resource-rich countries should invest their windfalls in public services and infrastructure that will grow the economy, or in financial assets, rather than consume them all in the present.

These three sets of characteristics—large and sudden rents, volatility and finite nature—suggest that non-renewable resource revenues could be managed differently than other types of revenues. Whether or not they should be depends on the size of resource revenues relative to other fiscal revenues or the size of the national economy. Should they be large enough to necessitate special treatment, there are several policy options available to governments to improve resource governance. The next section discusses one set of options, the establishment of extra-budgetary hydrocarbon funds.

*Source: IMF*
Extra-Budgetary Hydrocarbon Funds, Including Sovereign Wealth Funds

Many countries use extra-budgetary funds to manage their natural resource revenues. In fact, all but a handful of large oil or mineral producers have established a resource-financed special fund. Together, these funds manage trillions of dollars in resource revenues annually.

In some cases, these funds are merely accounts within the state treasury, created for political purposes to demonstrate a commitment to financing a certain expenditure item (e.g. education) or for accounting purposes. In other cases, they are institutions that are subject to different rules than the rest of the government's financial transactions. They may even have their own staff and legal standing. Drawing on the IMF definition, extra-budgetary funds are defined here as “general government transactions, often with separate banking and institutional arrangements, which are not included in the annual state (national) budget law and the budgets of subnational levels of government.”

There are several legitimate reasons why a government might establish an extra-budgetary fund. First, traditional budgets are set on an annual basis, whereas funds can serve as multi-year funds. Timor-Leste Infrastructure Fund is essentially a multi-year earmarked budget. Parliament must approve the fund’s budget and spending must be channeled through normal budget processes, however the fund retains any unspent funds at the end of the year. Since its inception, the Infrastructure Fund has financed projects that have electrified 75 percent of Timor-Leste territory, rehabilitated ports, irrigated three regions and paved many public roads.

Second, the budget process sometimes does not function well, especially in low-capacity environments. Extra-budgetary funds can be subject to more stringent transparency, oversight and governance standards than the budget, and be allocated more qualified staff, in order to create islands of good governance inside the government. While this may be true in theory, real world examples of these “islands of good governance” are rare.

Third, funds can be used to earmark revenues for a specific purpose. For example, the oil- and land sales-financed Texas Permanent University Fund in the U.S. earmarks interest earned to the public university system in the state. Similarly, Alabama’s (U.S.) Forever Wild Trust Fund, financed by between 3-5 percent of the state’s oil and gas revenues, allocates money to environmental protection. While the Texas fund is a sovereign wealth fund, a special type of extra-budgetary fund discussed below, the Alabama fund is just an account within the budget.

Fourth, funds can protect a specific stock of fiscal revenues from political interference. Most government pension funds are established as extra-budgetary entities in order to safeguard this pool from appropriation for other purposes. This enhances senior citizens’ confidence that they will receive their full pension benefits many years in the future. The Canada Pension Plan and France’s Fonds de réserve pour les retraites are good examples of such funds. They both have clear objectives, legal structures, investment strategies
and codes of conduct for staff and managers, and publish comprehensive annual and quarterly reports. They also have strong independent audits that are published online and compliance mechanisms to ensure that the funds are managed in the best interest of their ultimate beneficiaries, retired citizens.22

Sovereign wealth funds

Sovereign wealth funds (SWFs) are special types extra-budgetary funds. According to the International Forum on Sovereign Wealth Fund, a SWF is defined as a government-owned entity, established for a macroeconomic purpose, which does not have liabilities and invests at least partly in foreign assets. As of 2019, there were approximately 60 SWFs financed by hydrocarbon revenues or by fiscal surpluses in countries dependent on natural resources. Within the MENA region, the governments of Algeria, Bahrain, Iran, Kuwait, Libya, Oman, Qatar, Saudi Arabia, the United Arab Emirates, and Saudi Arabia have established at least one each, in some cases multiple funds.

Sovereign wealth funds are generally created to serve one or several of the following purposes:

• Smoothing expenditures: Governments can save a portion of fiscal revenues in funds (sometimes formally called “stabilization funds”) when revenues are high and draw down on these funds when revenues decline in order to prevent “boom–bust” spending cycles. For example, the American state of Wyoming has been able to grow through periods of temporary oil and mineral price declines due in part to the availability of a pool of funds to draw on during downturns.

• Sterilizing capital inflows: Sovereign wealth funds can help mitigate “Dutch disease” by sterilizing large capital inflows; in this case, foreign exchange inflows associated with large remittances; foreign aid; or natural resource sector sales. Countries such as Norway and Saudi Arabia have kept their exchange rates under control or inflation lower than it would have been otherwise by saving resource revenues in foreign assets rather than spending them domestically.

• Saving fiscal surpluses: Governments may wish to run a fiscal surplus over the long term in order to create an endowment for future generations. Some governments may find it difficult to spend all resource revenues as they are collected without generating significant waste, since they do not have the “absorptive capacity”—the skills, technology and administration to spend large amounts of money quickly and efficiently without generating inflation—to spend the entire revenue windfall immediately. As a result, some governments have elected to “park” some revenues in foreign assets until they develop enough capacity to spend the money well or until the economy grows enough to absorb the revenues. With small populations, high personal incomes, and vast oil wealth, many Persian Gulf countries, including Kuwait, Oman, Qatar, and the United Arab Emirates, as well as Norway, have chosen to save for these reasons.

• Earmarking revenues for public investments: SWFs can be used to limit the discretion of politicians in making spending decisions by earmarking revenues for specific public investments like water systems, sanitation, electric power, medications, or education programs. Importantly, earmarking does not refer to making public spending decisions through the fund’s choices of asset holdings, bypassing the...
formal budget process. Doing so could damage the integrity of the public financial management system, possibly circumventing accountability mechanisms such as parliamentary oversight and audits, and lead to the use of resource revenues for patronage.

- Ring-fencing natural resource revenues: Given oil and gas revenues are the product of negotiations with a handful of companies rather than broad-based taxation, as well as the fact that payments are often large and secret, natural resource revenues are often a target of misappropriation. Sovereign wealth funds can help protect public funds from corruption or mismanagement, as long as they are subject to strict transparency provisions and effective oversight. For example, the São Tomé and Príncipe National Oil Account is subject to rigorous disclosure requirements that ensure that fund operations are scrutinized and oil and gas revenues are all accounted for.

**International experience of extra-budgetary natural resource funds**

Among traditional SWFs, Chile’s Social and Economic Stabilization Fund, Norway’s Government Pension Fund Global, Peru’s Fiscal Stabilization Fund, the Qatar Investment Authority and the Permanent Wyoming Mineral Trust Fund are among those that have helped stabilize fiscal expenditures and/or save for future generations.

Each of these funds’ operational and governance rules are unique. However, the Norwegian and Peruvian examples may be most relevant to the Lebanese context, since Norway’s fund is often referred to by policymakers while Peru offers a useful model for Lebanon (see Box 1).

**Box 1: Norway and Peru Case Studies**

**Norway Case Study**

Despite its name, Norway’s Government Pension Fund Global has no formal pension obligations. Instead, the fund was established in 1990 to stabilize fiscal expenditures and save for future generations. However, due to an economic downturn at the start of the 1990s, it only started accumulating money in 1996.

In Norway, petroleum revenues, including sales of state equity in the oil sector, minus the government’s direct investments in the sector, are deposited into the Government Pension Fund Global. Returns on fund investments are also placed back into the fund. The amount that is then transferred from the SWF to the treasury is determined by a fiscal rule that the structural non-oil budget deficit shall be equal to the expected real return on the fund, estimated at three percent. Simplified, this means that the government can spend all its non-oil revenue plus three percent of the value of the fund, but may increase spending above this amount during economic downturns and must spend less than this amount during boom times. The calculations that determine the “structural non-oil budget balance” are clearly stated by the Ministry of Finance.

Given that the fund is valued at approximately USD 1 trillion, this implies a USD 30 billion non-oil deficit, on average. In other words, the fund can provide up to USD 5,500 per person per year to the budget. However, in recent years, the government has spent less than three percent in order to comply with the “structural” portion of the fiscal policy guidelines.
While the ultimate authority over the fund rests with the Parliament—passing legislation governing the fund, approving the annual budget, appointing the Supervisory Council members (described below) and reviews reports—the Minister of Finance acts as the fund owner. The Ministry delegates operational management to the Norges Bank, Norway’s central bank, within a mandate that includes investment guidelines, risk management and internal control. It also monitors and evaluates fund performance.

The Central Bank Executive Board is the fund’s operational manager. It specifies the details of the investment mandate and outlines principles of risk management and asset allocations. The Board delegates day-to-day trading and other operational activities to a department called Norges Bank Investment Management.

The Supervisory Council, which is named by Parliament, supervises the Central Bank’s activities and ensures that the rules governing operations are observed. It has the right of access to information and investigative powers and reports to Parliament. The external auditor for the fund is selected and reports to the Supervisory Council. The fund is also subject to a high degree of transparency; it discloses detailed information on its assets, external fund managers, external audits and relevant operational information and policies on its website.

The Ministry of Finance’s investment mandate is strict. The fund may not invest in highly risky asset classes, may not invest in Norway and is subject to ethical investment guidelines. As of 2018, the target asset allocation was 35 percent in fixed income or money market instruments, 60 percent in equities and five percent in alternative assets.

The fund’s average nominal annual return from 2010-17 was a respectable 7.6 percent.

Peru Case Study

In 1999, Peru passed its Law on Fiscal Responsibility and Transparency, following a deterioration in public finances and regular sovereign defaults from the 1980s to 1997. Over the years, several amendments have been made to the law, though the principles of fiscal stability and sustainability have remained. As of 2018, the fiscal rules in the law and regulations were: (1) Public debt cannot exceed 30 percent of GDP; (2) Fiscal deficit to converge to 1 percent of GDP by 2021; (3) Real recurrent expenditure (wages and salaries, goods and services, pensions) of the government cannot increase by more than 3 percent annually (estimated potential GDP growth); and (4) Any new permanent spending plans require new permanent revenue sources. Also, within the first seven months of an election year, recurrent expenditure of the government cannot exceed 60 percent of the budgeted amount. In most years, these rules generate fiscal surpluses.

The law also includes an escape clause that allows a three-year relaxation of the targets in case of national emergency as declared by Congress or in case of recession, a term defined in law. Finally, the law mandates the creation of an independent fiscal council and requires reporting explicit contingent liabilities. In practice, the Ministry of Economy and Finance publishes the fund’s balance sheet, deposits, withdrawals and overall returns on an annual basis, but not details on fund investments.

The law established a Fiscal Stabilisation Fund, managed by the Ministry of Economy and Finance and overseen by a Board by the Minister of Economy of Finance, the Central Bank Governor and a representative of the President. The Board has published an investment mandate which requires the fund to only invest in money market or fixed
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Income instruments. In practice, returns have been modest, averaging around 2 percent annually.

Deposits consist of budget surpluses along with 10 percent of the sales of privatized assets or state concessions. Previously, 30 percent of royalties from non-renewable resource extraction were deposited into the fund, but this provision was removed in 2013. The interest earned on the fund can be used to support the budget (prior to 2013, the fund reinvested the interest). No other withdrawals of the principal can be made except in case of national emergency or recession.

The fund used to be capped at 4 percent of GDP but can now be larger if public debt is below 30 percent of GDP. Once the fund reaches 4 percent of GDP, all revenues from privatization of assets and concession must be deposited into a Public Infrastructure and Public Services Fund which is administered by Proinversion, a state-owned agency that implements private-public-partnerships across various sectors. The budget surplus must either go to paying down the public debt if it is too high or is accumulated in the fund if debt levels are low enough. As of 2018, the fund’s balance stood at approximately USD 6 billion, or less than 3 percent of GDP.

The Alaska Permanent Fund, Chile’s Pension Reserve Fund and the Texas Permanent University Fund have each invested oil, gas or mineral revenues to finance specific expenditure items, in these cases cash dividends for citizens, pensions and tertiary education respectively. Chile’s Pension Reserve Fund, for instance, is allocated 0.2-0.5 percent of GDP annually, of which a portion is derived from copper sales. Funds from the Pension Reserve Fund can only be used to pay for pension and social welfare liabilities and are capped based on a formula. The fund is subject to strict statutory investment rules, a high degree of transparency and strong independent oversight.

The Texas Permanent University Fund may be one of the most relevant for the Lebanese context. Established in 1876, the fund collects oil, gas and mineral revenues from lands endowed to it by the U.S. State of Texas. Approximately five percent of the fund’s net value, which stood at about USD 22 billion as of 2018, is used to finance construction projects, scholarships, research and student services within the Texas public university system. The fund is one of the world’s most transparent and is subject to multiple levels of independent oversight, including by external auditors.

The Alabama Capital Improvement Trust Fund (U.S.), Ecuador’s Fondo de Ecodesarrollo, and Mongolia’s General Local Development Fund and Timor-Leste’s Infrastructure Fund and Human Capacity Development Fund, have each earmarked natural resource revenues to specific domestic projects ranging from electricity to environmental protection to subnational government treasuries via the budget process.

For example, the Alabama Capital Improvement Trust Fund is allocated 28 percent of the state’s oil and gas revenues net of corporate income taxes. Similarly, the Forever Wild Land Trust Fund, which purchases land for nature preserves and public use and carries out educational programs, receives most of its funding from the 3.3 percent of oil and gas revenues and a small share of the earnings of the Alabama Trust Fund, a SWF.

Ecuador collects a dollar per barrel produced in the Amazon region in the Fondo de Ecodesarrollo and distributes this amount between Amazonian municipalities, provincial councils and parish councils. Of the 58 percent of Fondo de Ecodesarrollo


revenues designated for Amazonian municipalities, 40 percent is divided equally among all municipalities and 60 percent is distributed based on population.\textsuperscript{44}

Timor-Leste’s Infrastructure Fund and Human Capacity Development Fund are good examples of earmarking funds linked to strategic development plans. Both behave as multi-year earmarked budgets which finance plans and projects that will boost the low-income Southeast Asian country’s long-term economic growth and help alleviate poverty. Their financing comes directly out of Timor-Leste’s Petroleum Fund which in turn is the recipient of all of the government oil and gas revenues. The funds’ 5-year budgets are reviewed and approved by parliament and are executed according to normal budgetary procedures. In 2015, the Infrastructure Fund spent USD 292 million on projects, including electricity, irrigation, sanitation and drainage in the capital, a highway and an airport rehabilitation.\textsuperscript{45} In terms of transparency, governance and effectiveness, these funds are in many ways models to emulate.

Earmarking can be a useful political messaging tool and can act as a commitment mechanism for current and future government administrations. It can also guarantee a source of funding for certain expenditure items, such as environmental protection, that often receive little or no funding. On the other hand, earmarking suffers from the challenge of fungibility; since money is interchangeable, a government can shift money from one source (e.g., oil revenues) into a project, but then transfer the previous allocation of money from that project to another, leading to a net impact of zero. Thus, earmarking often leads to a negligible change in budget allocations.

While rarer, there are also successful cases among funds that invest in domestic assets outside the normal budget process. Brazil’s Banco Nacional de Desenvolvimento Economico e Social (BNDES) has, since its founding in 1952, sequentially invested in infrastructure, capital goods, the industrial sector (especially petroleum, mining and energy) and finally small and medium-sized enterprises. The institution is well-known for its long-term outlook, crowding-in private investment and filling the investment gap during Brazil’s debt crisis. While the bank has been criticized for relying too much on state subsidies, it is widely cited as an example of an effective domestic investment institution.\textsuperscript{46} In a similar example, the Korean Development Bank (KDB) helped develop the Korean economy by providing credit at favourable interest rates to improve domestic corporations’ competitiveness. KDB invested in physical infrastructure (e.g., energy, highways, ports) and targeted industries (e.g., fertilizers, cement, oil refining, steel, automobiles, electronics). More recently, KDB has shifted towards supporting small and medium-sized enterprises’ investments in new technologies, biotechnology and the creative economy. This is to reduce Korean dependence on manufacturing.\textsuperscript{47}

On the other hand, for each case of a well-run extra-budgetary fund, there is a case where a fund is simultaneously a macroeconomic tool and serves the personal interests of the political elite, or where the is mismanaged or takes excessive risks and is therefore ineffective. In extreme cases, funds are established to avoid public scrutiny or finance pet projects. As the Overseas Development Institute writes, “transactions outside the budget are unlikely to be subject to the same kind of financial discipline as are budget operations (for example, state-owned enterprises may have their own financial regulations and appoint their own auditors), partly because they are financially independent and partly because they are not explicitly compared with other public expenditures. This may result in an increased level of fraud, irregularity, or the use of
such funds for unauthorized purposes. In addition, the use of extra-budgetary funds means the reported level of government expenditure may be understated. It also is more difficult to compare the finances of two governments if they have different levels of extra-budgetary funds.”

Stories of extra-budgetary funds being mismanaged, not achieving their objectives or being used for patronage or corruption can be found on every continent. One of the most extreme examples of excessive risk-taking, poor managerial capacity, conflict of interest and high management fees is the case of the Libyan Investment Authority (LIA). As an example of excessive risk-taking, in 2010 the LIA made a USD 1.2 billion bet with Goldman Sachs on a derivatives instrument. It lost USD 1.18 billion out of the USD 1.2 billion. The LIA’s 2012 USD 300 million investment in Palladyne International Asset Management, a previously unheard-of fund with links to the former chairman of Libya’s National Oil Corporation, is an example of a clear conflict of interest. Of note, despite investing only slightly more than half of these funds, Palladyne recorded more than USD 50 million in losses from 2008 to mid-2010. One example of high management fees is the LIA payment of USD 27 million in fees on a USD 300 million investment with Permal, a fund manager. The fund lost USD 120 million with Permal.

The 1Malaysia Development Berhad (1MDB) fund, established in 2009, has proven to be another major source of alleged corruption and mismanagement. Designed to attract investment into Malaysia by forming joint ventures with foreign firms, the fund actually indebted itself to over USD 11 billion by 2014. Among its more suspect transactions are a USD 1 billion investment in a Saudi oil company in 2009 which has gone missing; funds that were diverted in 2012 from an Abu Dhabi state fund to a firm in the British Virgin Islands (a secrecy jurisdiction); and USD 4 billion that have been misappropriated from Malaysian state firms. The U.S., Switzerland, Singapore and the U.K. have laid criminal charges or continue corruption and money laundering investigations related to the fund.

The Iranian fund is an example of an extra-budgetary fund becoming a parallel budget or state-within-a-state, undermining parliamentary accountability, democratic institutions and public financial management systems. The USD 40 billion National Development Fund provides loans to private-sector companies, cooperatives and economic enterprises owned by public non-governmental institutions through agent banks. While the fund does not provide information on the current investment allocation of its portfolio, news reports indicate that fund money has been allocated to the domestic tourism, petrochemical, upstream petroleum, and water sectors, among others. The fund is directly controlled by the executive and therefore some decisions bypass normal budgetary and parliamentary procedures. Similarly, the USD 10 billion Russian Direct Investment Fund, explicitly financed by oil revenues, invests in domestic companies virtually without independent oversight, creating an unaccountable source of financing for supporters of the ruling regime. The fund is currently subject to U.S. sanctions due to management’s alleged involvement in corruption.

Of special relevance to the Lebanese context are those SWFs that were established by governments in so-called “debt spirals”, situations where increasing levels of debt and interest payments eventually become unsustainable, leading to an excessive portion of the public revenues being allocated to interest payments or some type of default. Most
sovereign wealth funds are financed out of fiscal surpluses (e.g., Chile, Kazakhstan, Norway, Qatar, Saudi Arabia, and Timor-Leste) and/or were established in countries with low or declining public debt levels (e.g., Botswana and the Russian Federation). However, sovereign wealth funds are sometimes created prematurely where unsustainable debt levels mean that the earnings from foreign financial investments are lower than the interest rate being paid on public debt.

In these cases, the government is faced with a choice between defaulting or drawing down on savings; many have understandably chosen the latter, even when technically illegal. In Argentina, the public pension fund made over USD 14 billion in low-interest loans to the government from 2013–2014. In Ghana—where transparent and conservatively-managed SWFs yielded a net return of around 1 percent annually but where the country paid more than 9 percent interest on its Eurobond issuances—the government drained the oil-financed Ghana Stabilization Fund by placing a ceiling on the size of the fund. In Venezuela, the government emptied the investment fund for Macroeconomic Stabilization Fund by amending the reference value for oil prices and by increasing presidential discretion for withdrawals. In Algeria, the autocratic government simply drew down on public savings unilaterally.

In Mongolia, the government invested mineral revenues in its Fiscal Stability Fund with Mongolian commercial banks that generally pay 7 to 9 percent interest in domestic currency. In contrast, the government is paying 14 percent on short-term domestic debt and nearly 6 percent on its latest Eurobond issuances. Interest payments on Mongolian public debt alone were greater than USD 450 million in 2017, 50 percent more than the government spent on healthcare and 70 percent more than on education for the whole country. As a result, it has amended its Fiscal Stability Law 12 times since it was approved in 2010, bypassing the law’s requirement to save in the fund.

Good governance of extra-budgetary funds

While these stories illustrate the downsides and dangers of creating extra-budgetary funds, especially SWFs, in context where they are inappropriate, there are measures that governments can take to improve the chances that funds will improve public financial management.

Many of the challenges can be addressed through constitutional, legislated or other statutory rules or institutions, such as:

- Management and organizational structure: Strong institutional structure, staffing policies and internal controls of a fund are essential. This involves clear lines of communication between different levels of the institutional hierarchy and a strong internal chain of accountability, both within the fund and between the fund and higher authorities.

- Inflow / deposit rules: Inflow or deposit rules determine which revenue streams (e.g., license fees, royalties, oil revenues) will enter the fund, where the money comes from (e.g., the treasury department, internal revenue department, directly from companies), and the timing of such deposits (e.g., monthly, annually).
• Outflow / withdrawal rules: The outflow or withdrawal rules determine how much money, which flows (e.g. interest, a percentage of principal), and when revenues will be transferred from the fund to the treasury to be spent according to the annual budget. These sets of rules are distinct from the allocation of assets for investment purposes. Rather than for loans, these withdrawals are meant for final consumption.

• Investment rules: Funds’ investment decisions are generally subject to guidelines, constraints and prohibitions. These are generally meant to prevent excessive risk taking and conflict of interest. Among the rules commonly prescribed are asset allocation criteria, ethical standards, eligible assets, currency restrictions, minimum credit ratings, limits on high-risk assets, restrictions on private market instruments, and liability limits. The rules and guidelines also specify the remunerations scheme for external managers, limiting fees and risk-taking.

• Transparency: Fund transparency involves clear roles and responsibilities of government institutions, public and easy access to financial and operational information, open decision-making, reporting and assurances of integrity of information, for example through an external audit. Transparency is important for a number of reasons. For instance, it enables oversight bodies, such as parliament, to monitor fund activities and builds trust with citizens.

• Oversight: Oversight bodies identify noncompliance with rules, waste, fraud, abuse and mismanagement, and suggest or enforce corrections. When well designed, they can encourage government to meet their own objectives and follow their own rules. Funds can be subject to oversight from the supreme audit institution, independent external auditor, judiciary, parliament, regulatory agency, or multistakeholder group. In practice, this means setting up an institutional structure whereby all decisions are being overseen by at least two organizations, one internal and one external.

Consensus building is also important, as politicians and oversight bodies are unlikely to enforce the rules unless they have a feeling of ownership over those rules. There are many models of consensus building, from parliamentary debates to public surveys to political ententes.

There is no best practice with regard to organizational structure, inflow and outflow rules, or investment rules, though there are international standards for transparency, oversight and management structure. The most well-known of these are the Santiago Principles, and the IMF’s Guide on Resource Revenue Transparency and Manual on Fiscal Transparency. Good governance of state-owned companies—especially strategic development funds, PPP funds and national development banks financed by natural resource revenues—are informed by a set of general standards developed by international organizations and think tanks. The Organisation for Economic Co-operation and Development’s (OECD) Guidelines on Corporate Governance of State-Owned Enterprises and its guide for practical implementation, Accountability and Transparency: A Guide for State Ownership, represent a list of standards for all state-owned enterprises endorsed by a set of governments. The World Bank’s Corporate Governance of State-Owned Enterprises: A Toolkit is a more comprehensive resource for state-owned company governance, though not a set of standards. The
Extractive Industries Transparency Initiative's (EITI) new standard also requires that implementing countries indicate which extractive revenues are recorded in the national budget and allocated to special funds such as sovereign wealth funds or state-owned enterprises.
Conclusion and Recommendations for Lebanon

The pre-conditions for establishing a traditional SWF—namely large, destabilizing foreign currency inflows and sustainable public debt dynamics—do not currently exist in Lebanon. Moreover, given the country’s modest non-renewable resource potential and the portion of fiscal revenues allocated to debt servicing, it is unlikely that the pre-conditions will be met in the short- to medium-term.

At the same time, should the Government of Lebanon begin to collect significant resource revenues, perhaps a decade from now, it would be prudent to have a plan for how to use or manage this money. Several non-exclusive options are available to the government, described below.

Option 1. Institutionalize a fiscal framework to promote long-term fiscal stability and sustainability

Several governments have passed constitutional amendments, laws or regulations that help smooth fiscal expenditures over the long-term and promote inter-generational equity. Generally, this is accomplished through the enactment of “fiscal rules”, permanent constraints on public finances. These rules encourage governments to limit overall spending increases and engage in counter-cyclical fiscal policy, meaning that they are permitted to increase spending during recessions and must cut spending growth during boom years.

Fiscal rules are particularly important in countries that have discovered oil or gas. Elevated expectations of hydrocarbon revenues often encourage governments to behave imprudently, overspending and overborrowing. This “presource curse” is enabled by lenders and rating agencies that use hydrocarbon potential to make lending terms more attractive to governments.59

While there is no one-size-fits-all for the design of fiscal rules, expenditure rules—such as Peru’s described above—are generally more effective and have higher rates of compliance that balanced budget rules or debt rules. Revenue rules, such as have been proposed in Lebanon, are generally ineffective at meeting macroeconomic stability and sustainability goals since governments can continue to borrow while they are required to save in a fund.

Fiscal rules can generate fiscal surpluses which can be placed in SWFs for long-term savings or stabilization purposes. Alternatively, the fiscal surpluses can be allocated to debt repayments. Both options promote inter-generational equity; reducing debt and saving in a fund can be equivalent if the interest rate on sovereign debt is equal to the returns on foreign assets.

Certain countries have enacted fiscal rules that save a portion of oil and gas revenues once they meet a quantified threshold. For example, in Mexico’s recent SWF legislation, the fund only starts saving once oil revenues reach 4.7 percent of GDP. In Tanzania’s unratified Oil and Gas Revenue Management Act, revenues from oil and gas royalties,
government profit share, corporate income tax and dividends from state participation are placed in a Revenue Holding Account to be spent through the budget. Of this amount, the part that is greater than 3 percent of GDP is saved in a SWF, the Revenue Saving Account. Lebanon could pass a rule that requires savings once debt levels have reached a certain ceiling or when the average real interest rate on public debt drops below 4 percent.

**Option 2. Establish a SWF that acts as endowment for underfunded expenditure items**

Lebanon could establish a SWF financed by hydrocarbon revenues which allocates a moving-average of the interest and potentially a percentage of the principal to a chronically underfunded expenditure item, like the Alaska Permanent Fund, Chilean Pension Reserve Fund or Texas Permanent University Fund. Public transport and renewable energy would be practical candidates in the Lebanese context, though pensions, foreign scholarships and environmental protection are also chronically underfunded.

Several institutional arrangements are possible, from channeling the withdrawals through the normal budget process to establishing a separate though small bureaucracy guided by an independent board of directors and professional staff, as in the case of the Texas fund. Regardless of the institutional setup, the fund would need to comply with the Santiago Principles and other international good governance standards.

**Option 3. Establish a separate treasury account to earmark hydrocarbon revenues to underfunded expenditure items**

Lebanon’s hydrocarbon revenues could be channeled to the same underfunded expenditure items without necessitating the establishment of an endowment such as a SWF. Instead, a law could be passed that requires that hydrocarbon revenues be earmarked for this item, as has been done in the cases of Alabama, Ecuador and Timor-Leste.

The downside of this option relative to the previous option is that, since hydrocarbon revenues are volatile, the funding source for these items would also be volatile. A SWF, on the other hand, could smooth spending more efficiently. The upside would be that it would not necessitate investment in foreign or domestic assets via asset allocation, which carries significant political and financial risks, as documented in this paper.

Similar to Option 3, spending could either be channeled through the normal budget process or overseen by a board, perhaps consisting of Lebanese officials and international financial institutions or other qualified and reliable parties. To promote effective spending, a special unit could be established to approve contracts and monitor compliance with those contracts, as in the case of Timor-Leste.

**Option 4. Spend hydrocarbon revenues in accordance with a nationally-agreed economic development plan**

The Government of Lebanon could create a sovereign wealth fund that is merely a holding account within the treasury in order to comply with the Offshore Petroleum Resources Law. However, spending out of this fund and the treasury...
more generally would be aligned with a nationally-agreed economic development plan, possibly drawing on initial work conducted to research the Capital Investment Plan.

While an anathema to most Western countries, 5- to 10-year development plans have proven useful tools for many resource and non-resource-rich governments, including Abu Dhabi (UAE), Bolivia, Dubai (UAE), Indonesia and Malaysia. These plans can encourage governments to focus on spending priorities that trigger sustainable growth rather than on legacy projects or increasing government salaries unsustainably. This option would not require the establishment of any new institution (except perhaps a compliance mechanism) nor would it lead to volatile outlays for spending projects. On the other hand, it would require significant planning and a formidable amount of political consensus to function properly.

Some plans have been better conceived and implemented than others. Malaysia, one of the success stories, has adopted 11 five-year medium-term plans since 1971, which are subsets of decade-long economic policies. Implementation is assured by a complex coordination machinery that monitors and enforces compliance.  

Timor-Leste’s Strategic Development Plan (2011-2030) outlines programs to improve infrastructure around the country, create ‘business incubators’, invest in agriculture and fisheries, establish a tourism infrastructure, reduce red tape and invest in small businesses. In short, in addition to value addition in the oil and gas sector, the plan envisions expanded agriculture, small scale industry and tourism sectors.46 Yet, despite the plan, education and agricultural spending has decreased in recent years. The agricultural, real estate and manufacturing sectors have not grown at all since 2003 and the trade, transport and hospitality sector has only grown slightly in per capita terms. Non-oil tax collection has only seen marginal improvements over the last decade. In contrast, the construction and public administration sectors have grown substantially. 61 Unlike Malaysia, Timor-Leste did not create the institutions to enforce the plan.

Additional recommendations

A Strategic Investment Fund or Development Bank May Undermine National Development Goals

Some Lebanese policymakers have proposed channelling hydrocarbon revenues through a ‘strategic investment fund’ (SIF), essentially a development bank that invests in domestic assets. The fund would have a dual mandate, to make financial returns and grow the Lebanese economy through purchases of shares or other assets based in Lebanon. Its aim would be to “crowd-in” private sector investment and provide long-term capital as equity or debt on commercial terms.

The global experience with strategic investment funds and national development banks is quite mixed and comes with greater risks than a traditional SWF, as demonstrated by the cases of the Development Bank of Mongolia and the Russian Direct Investment Fund, both mentioned above. This is due mainly to their ability to pick which domestic assets to invest in, supporting certain businesses and shareholders while not supporting others. They are inherently political vehicles, often captured by elites and used for patronage purposes. In the Lebanese political context, these institutions would not be recommended.

Promote Openness and Accountability of Any New Fund

Any extra-budgetary fund should meet the highest standards of openness, accountability and good governance. In practice, this would mean establishing an effective management and organizational structure, clear and appropriate inflow and outflow rules, clear and appropriate investment rules, strong public disclosure requirements and robust independent external oversight.

The Government can Take its Time

Given that significant hydrocarbon revenues are unlikely to be collected for at least seven to eight years, there is no need to rush the establishment of a fund. At the same time, discussion of a fiscal responsibility or sovereign wealth fund law can help focus policymakers on the importance of a macroeconomic framework that supports stable and sustainable budgeting in Lebanon.
About the Author

Andrew Bauer is a public finance and governance consultant. He provides technical assistance on public financial management; sovereign wealth fund and state-owned enterprise governance; intergovernmental transfers; and mining and petroleum sector regulation. He has advised governments, parliaments and international organizations in more than 25 countries, including Canada, Guyana, Indonesia, Kyrgyzstan, Libya, Mexico, Mongolia, Myanmar, Timor-Leste and Uganda. A former senior economic analyst at the Natural Resource Governance Institute, he also served on the Government of Canada’s G8/20 team in the Department of Finance and has worked for several governmental, private sector, academic and non-profit organizations. He is the author of several publications on public finance and has been featured by the BBC, the Economist and Reuters. He holds a BA from McGill University and an MSc from Oxford University.
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