DESIGNING A FISCAL FRAMEWORK FOR A PROSPECTIVE COMMODITY PRODUCER: OPTIONS FOR LEBANON[1]

ABSTRACT

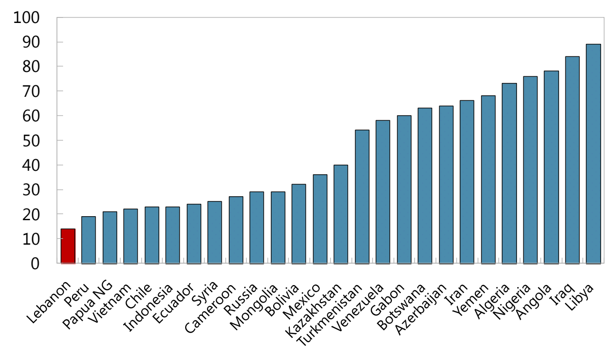
Lebanon might become a natural gas producer over the next decade. It will thus need to reformulate its fiscal framework to take into account potential revenue from natural resources. The prospective fiscal framework should initially be focused on ensuring fiscal sustainability and intergenerational equity—given that natural resources are exhaustible; managing volatility of resource revenue could be considered at a later stage. Strong institutional arrangements need to underpin the prospective framework, with the pace of resource wealth use set in line with Lebanon's capacity constraints.

A. Background

Lebanon is expected to become a commodity producer over the next decade—although presumably smaller than others. Recent seismic surveys suggest that Lebanon's gas resources could be in excess of 25 trillion cubic feet (tcf)—not particularly large by international standards. Still, revenue could potentially increase significantly for many years to come, although starting from 2020 at the earliest. Cross-country evidence shows that resource revenue is substantial in many countries, with reliance especially high in some developing countries.

Natural Resource Revenue, 2001-10

(In percent of total revenue)

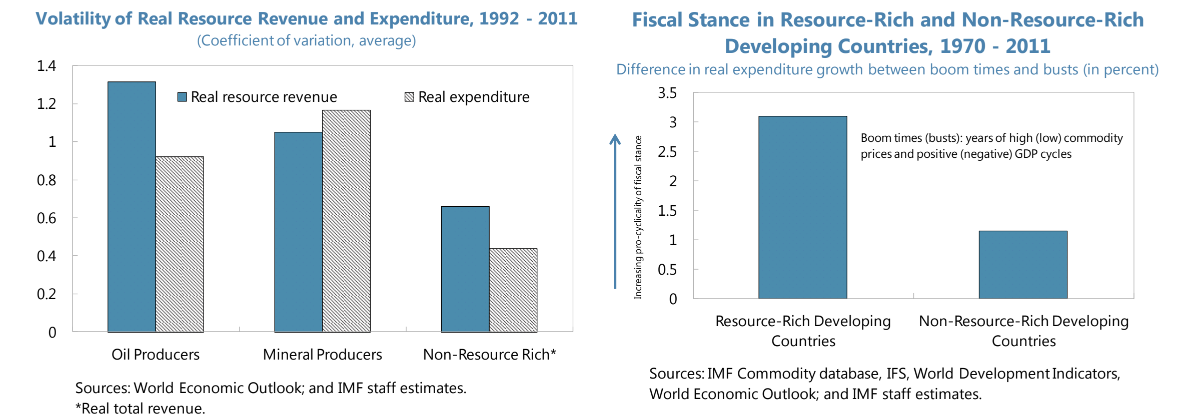


Source: IMF staff estimates.

1. **Changing status to a commodity producer introduces challenges to macro-fiscal management.** Natural resource revenues are exhaustible, raising issues of sustainability and intergenerational equity. This calls for smoothing government consumption over time, to avoid the need for massive fiscal adjustment once the resource wealth has been depleted. Furthermore, high dependence on natural resources can result in high volatility of revenues and spending. Indeed, volatility has been much higher among commodity producers than in non-commodity producers (Figure 1). Accordingly, procyclicality of fiscal policy can be a very serious concern in commodity producers, where spending during boom and bust commodity price episodes is found to be more procyclical than in non-commodity producers.

[1] Prepared by Mariusz Jarmuzek with contributions from Najla Nakhle.

Figure 1. Fiscal Policy in Commodity-Producing and Non-Commodity Producing Countries



2. **Against this background, the Lebanese authorities will inevitably face a number of important fiscal policy challenges.** There will be a need to decide on (i) how to assess the macro-fiscal stance to inform policy decisions; (ii) what revenue shares to save and invest, considering large developing needs as well as significant capacity constraints; and (iii) how to set up or strengthen institutions to ensure an efficient and transparent use of resource wealth.

3. **This paper is structured as follows.** The next section provides an overview of fiscal frameworks in commodity-producing countries. The paper then discusses some options for revamping Lebanon's fiscal framework, taking into account long-term fiscal sustainability and exhaustibility. It identifies some key institutional considerations to ensure that resource wealth is used efficiently and transparently, and provides conclusions and policy implications.

B. Considerations for Fiscal Frameworks in Commodity-Producing Countries

4. **First and foremost, commodity producers need to go beyond traditional measures of fiscal stance in their fiscal policy formulation.** When a country relies significantly on resource revenue, the overall fiscal balance and the primary balance can be misleading indicators of the fiscal stance (Box 1). The appropriate measure is obtained by excluding resource revenue, as done in non-resource primary balances (NRPB).

5. **Exhaustibility and price volatility are key issues for fiscal frameworks in commodity producers.** The Fund has recently refined its advice for formulating fiscal policy in these countries.[2] Exhaustibility raises issues of sustainability and intergenerational equity, and calls for smoothing government consumption over time. Price volatility often leads to revenue (and spending) volatility and might require the adoption of policies to limit procyclicality. The relative

[2] This section draws on Baunsgaard et al. (2012) and IMF (2012a), IMF (2012b), and IMF (2012c).

importance of these objectives varies by country circumstances, such as the degree of resource dependence and the reserve horizon (the shorter the horizon, the more important exhaustibility considerations would be). Thus, fiscal policy should focus on: (i) ensuring long-term sustainability; (ii) providing instruments to help manage volatility; and (iii) strengthening fiscal institutions.

Box 1. Assessing the Macro-Fiscal Stance in Commodity Producers

For countries with short reserve horizons, the key fiscal indicator to assess the fiscal stance is the non-resource primary balance (NRPB). The NRPB is computed by excluding resource revenue from the primary balance; it identifies the impact of government operations on domestic demand, since resource revenues typically originate abroad. A lower NRPB would indicate an expansionary fiscal stance. Setting fiscal policy on the basis of this indicator can help delink fiscal policy from the volatility of resource revenues, and facilitates an explicit link to the sustainability framework. For example, a sizeable fiscal expansion after a spike in natural resource prices and revenues—whereby both revenue and spending increase—would not be detected if the fiscal stance were measured on the basis of the overall or primary balances, whereby the NRPB would rightly point to a loosening of fiscal policy.

Targeting a structural primary balance is an important complement to the NRPB in countries with long reserve horizons. In these countries, resource revenues can be decomposed into a structural component and a cyclical component using various approaches, including a price-based smoothing rule (see the next section). The structural primary balance is equal to the NRPB plus the structural component of resource revenues. In this manner, the structural primary balance target could be set to ensure a sustainable fiscal policy framework, and the smoothing rule would delink expenditures from externally-driven volatility in commodity prices. The structural balance approach allows for the assessment of the sustainability of fiscal policy in a similar manner as for non-commodity-producing countries.

Ensuring long-term sustainability

6. **In countries with short reserve horizons, ensuring long-term sustainability should be the main focus of the fiscal framework.** Pressures in countries running a large non-resource primary deficit could arise well ahead of the time when resources are exhausted. To prevent this outcome, fiscal policy should be anchored in the NRPB target derived from applying three possible methodologies: the Permanent Income Hypothesis (PIH), the Modified Permanent Income Hypothesis (MPIH), and the Fiscal Sustainability (FS) approach.

- **The traditional PIH framework sets the fiscal target (NRPB) at a level that is consistent with future financial wealth**. Under this approach, the NRPB remains constant over time, and is financed by the rate of return on the net present value of projected resource revenues, so that the resource wealth remains constant over time and is never depleted.

- **The MPIH can help accommodate a more front-loaded spending path than allowed under the traditional PIH**. Instead of preserving financial wealth at a constant level over time, the MPIH allows financial assets to be drawn down for a few years during the scaling-up period. The drawdown would, however, need to be offset by fiscal adjustment in the future, to rebuild financial assets to the same level as under the traditional PIH.

- **The FS framework accounts for the potential impact of the scaled-up spending on growth and non-resource revenues.** This is a significant departure from the MPIH. An NRPB allowing a drawdown of government wealth to build human and physical capital and eventually stabilizing it at a lower level than under the PIH or the MPIH can still be consistent with fiscal sustainability objectives. Lower financial wealth will however generate a lower stream of resource-related income to the budget, resulting in a lower NRPB. Fiscal spending can still be stabilized at a higher level because higher growth will generate larger non-resource revenues.

Strengthening fiscal institutions

7. **A credible commitment to macro-fiscal stability and effective use of resource wealth should be supported by a strong public financial management (PFM) system.** The PFM system should ensure as part of the budget process (i) a transparent and comprehensive presentation of resource revenue and the underlying non-resource fiscal position; (ii) a sustainable long-term fiscal strategy based on prudent revenue projections; and (iii) transparent mechanisms for project appraisal, selection, and prioritization of investment to ensure that the resource revenue is used to support long-term economic development. The World Bank's Extractive Industries Transparency Initiative (EITI) sets transparency requirements in the reporting of natural resource management covering both revenue and spending—and therefore can be helpful to commodity producers.

8. **A fiscal responsibility law could establish a legal basis and an effective enforcement mechanism for a new rule-based fiscal policy.** Fiscal responsibility laws (FRLs) are permanent institutional arrangements to promote fiscal discipline, increasingly gaining support in advanced economies and emerging markets in Latin America, Europe, and Asia. FRLs may include procedural and numerical rules, or both. *Procedural rules* aim to enhance transparency, accountability, and fiscal management by generally requiring the government to commit up front to a monitorable fiscal policy strategy, usually for a multi-year period, and to report and publish fiscal outcomes and strategy changes on a routine basis (for example, Chile and Peru). *Numerical fiscal* rules in FRLs are also common, and are intended to establish permanent constraints on fiscal policy, generally in terms of an indicator of fiscal performance. Mechanisms to encourage enforcement encompass sanctions for noncompliance—both reputational (for example, in European countries) and personal on public officials (for example, in Brazil).

C. Options for Lebanon's New Fiscal Anchors

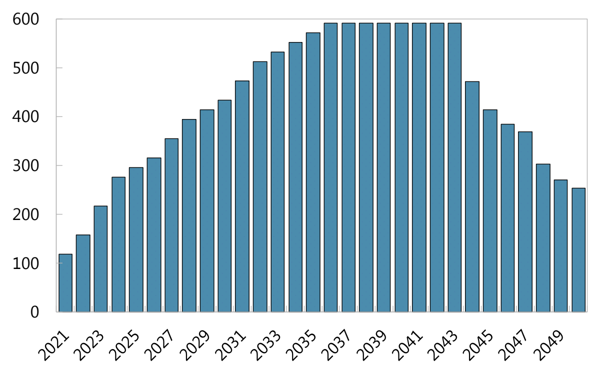
9. **The government should start developing a new fiscal framework reflecting Lebanon's prospective commodity-producer status**. Based on the discussion above, the below scenario reflects the assumptions on prospective resources:

- *Baseline scenario—short reserve horizon*. Simulations aim at ensuring sustainability by computing benchmarks and comparing key fiscal indicators for: (i) the traditional PIH rule; (ii) the modified PIH rule; and (iii) the fiscal sustainability rule.

Ensuring sustainability

10. **The baseline scenario assumes a hypothetical production profile drawing on existing information and international experience.** The main assumption is based on recoverable reserves of around 13 Tcf, obtained by discounting recoverable reserves of over 25 tcf by half, to account for uncertainty associated with new fields. Production is assumed to start only in 2021, reflecting the need to finalize negotiations with bidding firms by end-2014, and to advance on exploration by 2018. Drawing on international experience, production is expected to last for 35 years, with full capacity reached by 2036.[3] It would decline at a fast rate after 2043 so that by 2055, production levels would be significantly lower. Given the assumed decline, the government should have saved over time a sufficient share of resource revenues to prepare for this scenario, and invested in productive assets that support growth in the rest of the economy.

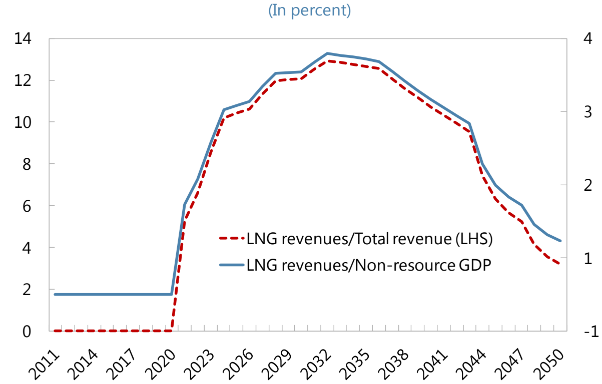
Production Profile
(In tcf)



Source: IMF staff calculations.

11. **Under this baseline production profile, resource revenues are moderately sizeable.** They are estimated to reach around 4 percent of GDP and represent almost 14 percent of total revenues by the end of the next decade.[4] This would be a substantial source of revenue to the budget and could provide much needed fiscal space to address pressing development needs. Serious deficiencies in the infrastructure sectors have deepened impediments to Lebanon's competitiveness, fiscal stability, and economic growth. Thus, resource revenue could provide a good opportunity to invest in high-return infrastructure projects in electricity, telecommunications, water, and the

LNG Revenues
(In percent)



Source: IMF staff estimates.

[3] The assumed production profile draws mainly on the experience in Israel, which shares the same basin as Lebanon; it is also consistent with Mozambique's experience.

[4] The fiscal impact focuses only on revenue, while there could be some impact through transfers to the electricity company. The latter are quite sizeable and could free up significant amounts of resources.

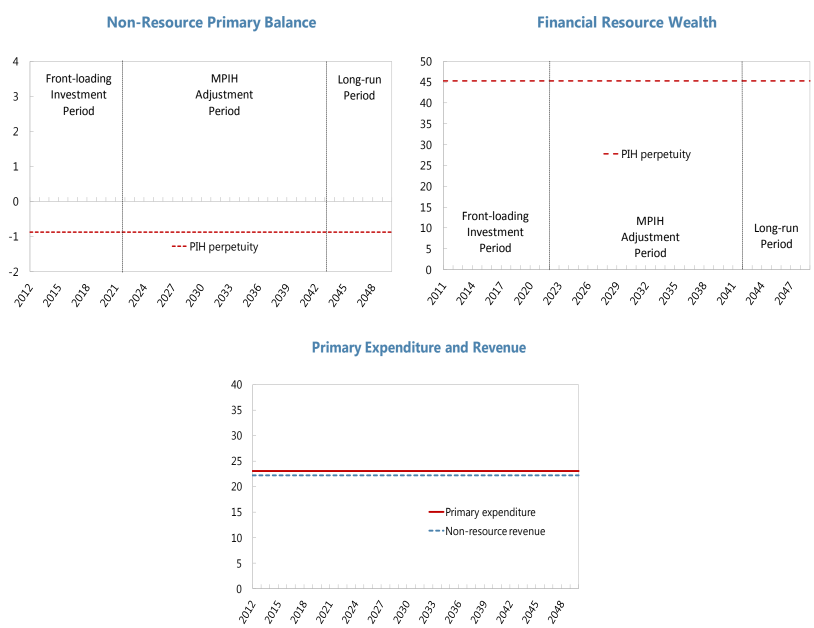
transportation network—these have been singled out as binding constraints for raising Lebanon's growth potential (World Bank, 2012). In particular, the electricity sector requires a major overhaul, focusing on improving service delivery through increased generation capacity, reduced fiscal burden, and enhanced institutional and legislative set-up for private sector participation (GoL, 2010).

The PIH Framework

12. **The PIH framework sets the fiscal target consistent with future financial wealth**. Under current estimates, NRPB consistent with a PIH rule is a deficit of about 0.9 percent of GDP. The constant NRPB—combined with an assumption of constant non-resource revenue at 22 percent of non-resource revenue—stabilizes primary expenditure permanently at 23 percent of non-resource GDP. This approach has the advantage of simplicity and stability, though it is relatively conservative.

Figure 2. PIH Framework Results

(In percent of non-resource GDP)



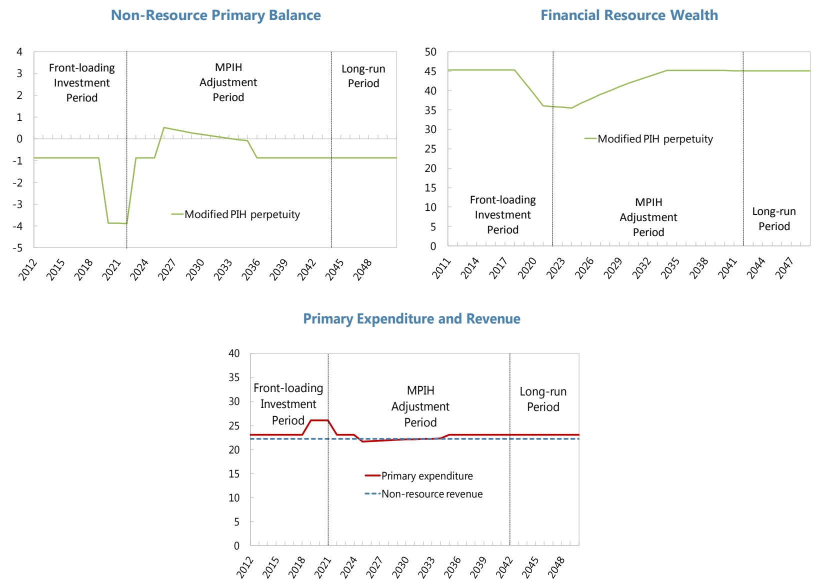
Source: IMF staff calculations.

The Modified PIH Framework

13. **The MPIH framework sets the fiscal target consistent with future financial wealth, but allows for scaling up investment.** In the calibration for Lebanon, an MPIH scenario allows for an increase in annual capital spending equivalent to 5 percent of non-resource GDP on average, for 5 years (over the period 2019–24 in the chart). The period of front-loaded

investment then needs to be compensated by an annual improvement in the NRPB smoothed over more than 10 years.

Figure 3. Modified PIH Framework Results
(In percent of non-resource GDP)

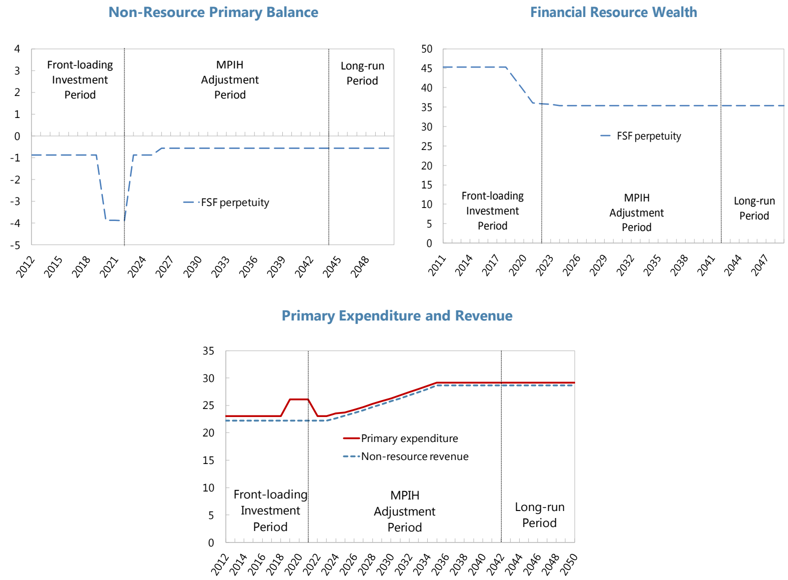


Source: IMF staff calculations.

The Fiscal Sustainability Framework

14. **The FS framework explicitly takes into account the growth impact of the additional public investment.** After the period of front-loaded investment, a new PIH exercise is performed for the remaining gas wealth and financial assets accumulated until then, but taking into account the growth impact of the additional public investment. Assuming a permanent additional effect of 1 percent on real growth and a reduction in the positive value of the interest rate-growth differential, the wealth level eventually decreases to around 35 percent of non-resource GDP; the NRPB is stabilized at a lower deficit. The fiscal multiplier of public investment is assumed to become larger than 1 just after the front-loaded period, and to return to its steady state level of 1 in the long run. Even if the NRPB is lower under the FS framework than under the PIH, the level of primary expenditure is higher due to the additional growth impact and the multiplier effects of the economy.

Figure 4. Fiscal Sustainability Framework Results
(In percent of non-resource GDP)



Source: IMF staff calculations.

D. Strengthening Lebanon's Institutions

15. **Substantial PFM reforms are essential in preparation for the more complex environment that would arise with the natural resource windfall.** Specifically, the following aspects of PFM need to be addressed to put a prospective fiscal framework on a sound footing:

- *The presentation of gas revenue should be transparent and comprehensive*. The ministry of finance (MoF) should build capacity to provide reasonable forecasts for natural resource prices, production, and fiscal revenues, as well as to analyze risks related to the central scenario. It would be equally important to ensure transparent and consistent presentation of non-resource fiscal balances.

- *Budgets should have a medium-term focus, with a strong revenue forecasting framework*. The MoF should strengthen the macro-fiscal unit charged with forecasting resource revenue through building capacity to identify risks to macroeconomic stability, growth and debt sustainability, as well as monitoring budget execution during the year. These outputs would form the basis for effective medium-term economic and fiscal frameworks to shift the focus of policy away from purely short-term objectives.

- *The coordination and selection of public investment projects should be strengthened*. As the size and complexity of investment projects tend to increase substantially, it is important to have in place a robust public investment unit capable of selecting projects and preparing cost benefit analysis. As a first step, the unit should develop an operational manual to help guide their operations and procedures. Furthermore, the internal control systems need to be further developed to allow timely follow-up of project implementation. This may require hiring new staff, including engineers and other technical experts that can ensure proper monitoring of project implementation.

- *The government could adopt the World Bank's EITI*. Lebanon is currently not participating, but could benefit from it through an improved investment climate by providing a clear signal to investors and international financial institutions that the government is committed to greater transparency.

16. The Lebanese authorities are also considering setting up a Sovereign Wealth Fund (SWF). SWFs generally help achieve two main objectives: (i) fiscal and macroeconomic stabilization; and (ii) accumulation of financial savings for intergenerational equity and fiscal sustainability. A third less common objective is the financing of development needs. In Lebanon, the 2010 Offshore Petroleum Law includes the establishment of a SWF to manage gas revenues. Some possible uses would include debt repayments and infrastructure spending. The SWF is expected to be established at the central bank.

17. A comprehensive policy framework should underpin the operations of the SWF. The SWF should operate under clear corporate governance rules and should be integrated within the government's budgetary policies (see Das, Mazarei and van der Horn, 2010). For example, if gas revenues were used to pay public debt while government borrowing continued apace, debt would be on an upward path again; experience in many countries shows that accumulating assets in a SWF while the government continues to borrow heavily does not lead to good management of natural resource wealth. Therefore, SWFs are not a substitute for fiscal adjustment. Spending decisions should not be linked to flows in or out of the SWF, nor SWF asset levels; and gas revenue earmarking for various purposes should be avoided, as it would lead to budget rigidities.

18. **In the absence of a strategy for fiscal consolidation and debt reduction, discussions of SWFs would be premature.** It is important to start a dialogue on the role that SWFs could play so that policymakers and public at large can have a more informed debate around these issues. The establishment of a SWF should be eventually spelled out, in detail, in a separate law that would specify the legal and administrative framework for the fund, the investment options, how the returns would be spent and how the fund should be linked to the general budget.

19. **Over time, an FRL could also strengthen fiscal discipline by anchoring fiscal decisions on a rule-based framework.** International experience suggests that a well-designed FRL can contribute to improved fiscal management, if supported by critical preconditions, mainly including a strong political commitment to fiscal discipline, sufficiently developed PFM systems, and good transparency and accountability practices. While some of these elements are currently not present in Lebanon, they could nonetheless be developed over time.

E. Conclusions and Policy Implications

20. **Lebanon will need to reformulate its fiscal framework to take into account potential windfall from natural resources**. If natural resources are confirmed and proven to be sizeable, Lebanon will become a commodity producer; this implies that natural resource exhaustibility and price volatility will gain special importance for fiscal policy formulation. Exhaustibility raises issues of sustainability and intergenerational equity, and calls for smoothing government consumption over time, ensuring balanced growth, and avoiding the need for abrupt and significant fiscal adjustment once resource wealth has been depleted. Price volatility complicates fiscal planning because it leads to revenue volatility and procyclicality. The relative importance of these objectives varies by country circumstances, in particular based on the degree of resource dependence and reserve horizon.

21. **As current estimates put Lebanon's gas resources at relatively moderate levels, prudent policies should be implemented.** For example, an aggressive borrowing policy in anticipation of future resource revenues would be counterproductive, given the uncertainty about the magnitude and the temporal profile of the expected resource revenue. The authorities should thus adopt a very prudent approach to fiscal policy when preparing to manage gas resources.

22. **The prospective fiscal framework should initially focus on ensuring fiscal sustainability and intergenerational equity.** Fiscal anchors could be preferably determined by the MPIH or the FS framework—as they both account for scaling up of public investment.

23. **Strong institutional arrangements need to underpin the prospective framework, with the pace of resource wealth use set in line with capacity constraints.**

- Substantial PFM reforms are essential in preparation for the more complex environment arising from the natural resource windfall. Specifically, reforms should include: (i) transparent and comprehensive presentation of gas revenue and non-resource fiscal position; (ii) medium-term budget focus, with strong revenue forecasting framework; (iii) stronger budget coverage; (iv) stronger coordination and selection of public investment projects; and (v) adherence to the World Bank's EITI initiative.

- Consideration of a Sovereign Wealth Fund should be integrated in sound fiscal policies, to ensure good management of the gas wealth.

- Adopting a fiscal responsibility law could strengthen fiscal discipline by anchoring fiscal decisions in a rule-based framework over time—once the preconditions for a successful implementation of an FRL have been put in place.

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