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Designing a Fiscal Framework for a Prospective Commodity-producer: Options for Lebanon

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Abstract: Lebanon is expected to have gas resources in its Mediterranean basin, and these could turn the country into a natural gas producer over the next decade. Lebanon's economy and institutions will thus need to adapt to the challenges and opportunities that such change will bring. In this paper, we address how Lebanon's fiscal framework will need to be reformulated to take into account potential resource revenue. Designing a fiscal regime appropriately is an absolute prerequisite to make sure that the government can receive a fair share of the resources while investors face appropriate incentives to invest and develop the sector. This step should be followed by setting macro-fiscal anchors and supporting institutions. The prospective framework should be focused on ensuring fiscal sustainability and intergenerational equity, given the estimated relatively short horizon of Lebanon's gas resources. Strong institutional arrangements also need to underpin the prospective framework, to ensure that the pace of resource wealth's use is set in line with Lebanon's capacity constraints.

Keywords: fiscal policy, commodity producers, resource revenue management

1 Introduction

Lebanon is expected to become a commodity producer over the next decade, albeit 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 (Figure 1). Still, revenue could potentially increase significantly for many years to come, although starting from 2020 at the earliest.

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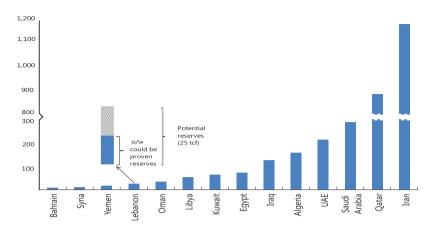


Figure 1: Proven natural gas. Source: BP Statistical Review 2013.

Setting an appropriate fiscal regime for Lebanon is an important prerequisite for the design of a prospective fiscal framework. While Lebanon has substantially advanced work on establishing its petroleum fiscal regime encompassing a set of tax and nontax instruments, the regime has not yet been finalized and approved. Evidence from commodity-producing countries indicates that petroleum fiscal regimes vary greatly across nations, with the sector state of development, the time preference for government revenues, and other social and economic concerns often shaping the fiscal terms and the structure of the regime governing the industry. Simulations suggest that the government take in petroleum-producing countries ranges from about 60% to 85% (IMF 2012d), making the sector a very attractive source of fiscal revenue (Figure 2).

The prospective framework will need to address potential 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 3). Accordingly, procyclicality of fiscal policy can be a concern in commodity producers, where spending during boom and bust commodity price cycles is found to be more procyclical than in non-commodity producers.

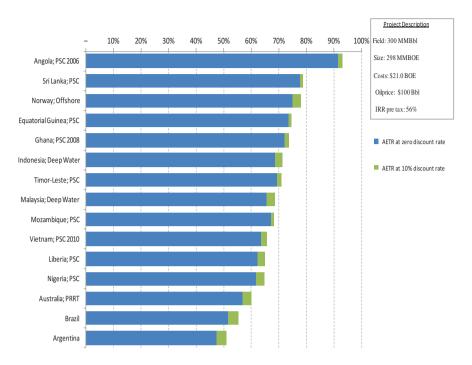


Figure 2: Average effective tax rate for selected petroleum-producing countries. Source: IMF staff estimates.

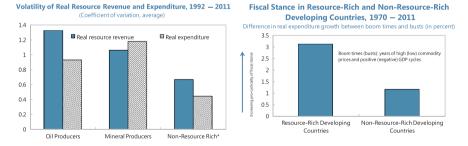


Figure 3: Fiscal policy in commodity-producing and non-commodity-producing countries. Source: IMF Commodity database, IFS, World Development Indicators, World Economic Outlook; and IMF staff estimates. *Real total revenue.

Against this background, the Lebanese authorities will inevitably face a number of important fiscal policy challenges. There will be a need to decide on (1) an

This paper proposes how Lebanon's fiscal framework will need to be reformulated to take into account potential resource revenue (Jarmuzek et al, 2014). Designing a fiscal regime appropriately is an absolute prerequisite to make sure the government can receive a fair share of the resources while investors face appropriate incentives to invest and develop the sector. This step should be followed by setting macro-fiscal anchors and supporting institutions. The prospective framework should be focused on ensuring fiscal sustainability and intergenerational equity, given the estimated relatively short horizon of Lebanon's gas resources. Strong institutional arrangements also need to underpin the prospective framework, to ensure that the pace of resource wealth's use is set in line with Lebanon's capacity constraints. While there are many analyses of fiscal regime design and macro-fiscal anchors setup, they are typically conducted separately. This study contributes to the literature by integrating the empirical framework for fiscal regime design with macro-fiscal anchors design.

The paper is structured as follows. Section 2 presents key principles for fiscal framework design in commodity-producing countries and simulations for upstream petroleum fiscal regime options for Lebanon, putting these options into an international context. Section 3 presents key principles for macro-fiscal anchors design and simulations underpinning options for Lebanon, taking into account long-term fiscal sustainability and exhaustibility issues. Section 4 identifies some institutional considerations to ensure that resource wealth is used efficiently and transparently including placements in a natural resource fund. The final section provides conclusions and policy implications.

2 Options for Lebanon's Fiscal Regime

2.1 Key Design Principles

When designing a fiscal regime for oil and gas, countries need to strike a balance between maximizing the present value of government revenue and attracting investment into the sector.¹ To achieve this goal and be internationally competitive, oil and gas fiscal regimes should have the following characteristics: (1) ensure early and dependable revenue for the government; (2) be neutral in the sense of not distorting investment decisions; (3) be progressive, securing a larger share for the government in highly profitable projects, while reducing the tax burden on the investor in times of low profitability; and (4) be consistent and transparent, avoiding project-specific fiscal arrangements.

These multiple objectives and principles typically require multiple fiscal instruments, and country circumstances may require tailored advice. However, a regime combining a modest royalty, a tax-targeted explicitly on rents² (including production sharing arrangements), and the standard corporate income tax (CIT) has appeal for many countries. Such a regime ensures that some revenue arises from the start of production, and that the government's revenue rises as rents increase with higher commodity prices or lower costs. Conversely, such a regime will also ensure that the tax burden on investors falls in times of lower prices or higher costs, enhancing the stability and credibility of the system.

Finally, the fiscal regime should also be simple for taxpayers to comply with and for the revenue authority to administer. This should include, however, clear and transparent rules and regulations to mitigate the sector's vulnerability to abusive transfer pricing.

2.2 Evaluating Fiscal Regime Options for Lebanon

The fiscal regime for the petroleum sector in Lebanon has not been finalized yet. However, the government has already decided on the structure of the regime and the main fiscal terms, which have been made public and discussed with different stakeholders. The proposed regime contains several parameters that will be subject to competitive bidding. As a result, the definitive fiscal regimes applying to the different Lebanese blocks will only be known after bids are evaluated and blocks awarded.³

¹ For a detailed discussion of the design and implementation issues for fiscal regimes in commodity-producing countries see Daniel et al. (2010) and IMF (2012d).

² Revenues in excess of all necessary costs of production including the minimum rate of return to capital (sometimes "super-normal profits").

³ Lebanon's first petroleum licensing round, which was originally announced in 2011, has been postponed on several occasions for legislative and political reasons. The bidding round is assumed to take place in 2016 only for the purposes of the simulation.

The proposed regime comprises fixed and sliding scale royalties for gas and oil, respectively, cost recovery limit (biddable), a production sharing scheme based on the R-factor⁴ (biddable), and CIT. In designing a fiscal regime, the usual practice is to ensure government revenue from the time production commences while also providing the government an increased share in more profitable projects. The proposed royalty, CIT, and profit-based production share combined form a fiscal package that should achieve these objectives, assuming that the biddable parameters are set at reasonable levels. The remainder of this section presents a fiscal evaluation of four regime options for Lebanon and then compares the results against a selected group of petroleum-producing countries from the region and elsewhere.

Given the number of biddable parameters in the model exploration and production agreement (EPA), four possible fiscal regime options are evaluated for Lebanon. The first three options are based on the publicly available terms for the EPA,5 and Lebanon's standard income tax law, with the three biddable parameters under the EPA set to achieve a "low," "medium," and "high" government take. The fourth option is also based on the draft EPA, but it includes a higher CIT rate of 25% as an alternative (all other parameters remain unchanged). The four options evaluated can be used as a guide for possible outcomes for government profit shares and/or cost recovery ceiling under competitive bidding (Table 1).

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Fiscal parameters	Low	Medium	High	25 % CIT			
		4% for gas					
Royalty	5 %–12 % incre rate	5%12% incremental sliding scale for oil based on daily production rate					
Cost recovery limit 100%		75 %	50 %	75 %			
R-factor petroleum prof	it sharing						
R < 1	25 %	30 %	50 %	30 %			
1 < R < 3	25-45%	30-60 %	50-75 %	30-60 %			
R>3	45 %	60 %	75 %	60 %			
CIT		15 %		25%			
Dividend withholding tax			10 %				
Interest withholding tax	(10 %					

⁴ The R-factor or "payback ratio" is a mechanism commonly used in petroleum fiscal regimes. It is calculated as the ratio between cumulative cash inflows and cumulative capital expenditures. Once a ratio of one is reached, all exploration and development costs to the date of sharing have been recovered from cumulative net revenues.

⁵ See http://www.lpa.gov.lb/epa.php

2.2.1 Profile of Government Revenue

The path of government revenue under the four regime options is subsequently evaluated. Figure 2 displays the revenues collected by the government from royalty, profit petroleum sharing, CIT, and withholding taxes. The profile of government revenue mainly reflects the production profile of the two stylized gas projects evaluated.⁶ The first project is a relatively small field with total production of approximately 2 Tcf. The second project is larger in size, with total production of 6.1 Tcf. With a price assumption of US\$12.9/Mcf in constant dollars of 2013, the small field yields a pretax internal rate of return (IRR) of 19.5%, while the medium field has a pretax IRR of 26.8%.

As expected, the results show that the "high" government take option generates significantly larger revenue for the government than the other three options. The option with a higher CIT rate sits in between the "medium" and "high" government take options. While under all four options, the government starts receiving revenue from day 1 of production (mainly due to the royalty), the magnitude of these early revenues is significantly larger under the "high" government take option as a result of the combination of a low-cost recovery limit (50%) with a high minimum state share of profit petroleum (also 50%) (Figure 4).

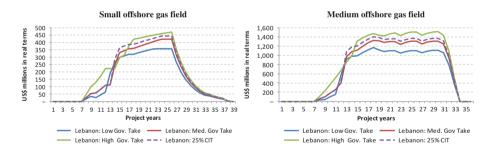


Figure 4: Government revenues under fiscal regime options.

⁶ The project economics of the two fields assume that the medium gas project is 6.1 Tcf with horizon of 26 years, while the small gas project is 2 Tcf with horizon of 30 years. It is further assumed that the gas projects are segmented, with the upstream gas company paying tariffs to the pipeline and LNG Plant Company. That is, the simulations assume that the EPA fiscal terms and CIT only apply to the upstream activities, while the midstream tariffs (pipeline and LNG plant tariff) are treated as transportation and processing costs and netted back from the LNG price.

2.2.2 Revenue Generating Capacity, Progressivity, and Tax Burden on Marginal Projects

The revenue generating capacity of the four fiscal regime options is estimated based on the average effective tax rate (AETR) or "government take." The AETR is calculated as the ratio of government revenue from a profitable project to the project's pretax net cash flows. Figure 5 shows the AETR of the four fiscal regimes evaluated both under the small and medium gas fields.

The government take under the options presented here varies between 57% and 78% in undiscounted terms. As shown on Figure 5, the "low" government take option yields the lowest AETR of 57% under the small field, while the "high" government take option yields the highest AETR of 78% under the medium field. When using a discount rate of 10%, the AETRs are higher, especially in the small field where the frontloaded effect of the (implicit or explicit) royalty is more prominent.

The degree of progressivity of the tax regime is equally important for governments and investors. A more progressive regime allows the government to increase its share of revenue when the investment is highly profitable, while giving some relief to investors for projects with low rates of return. In addition, a progressive regime could attract investment for marginal projects (increasing government revenue in the long run), just as a heavy fiscal burden on a project could deter investment altogether.

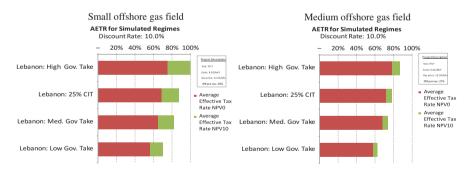


Figure 5: AETR under fiscal regime options.

Figure 6 illustrates the progressivity of the four fiscal regime options based on the government share of total benefits⁸ over a range of projects' pretax

⁷ For a detailed discussion of how to evaluate fiscal regimes see Luca and Mesa Puyo (2015).

⁸ Total benefits are defined as revenues minus operating costs and capital replacement computed from the date of commencement of production. In other words, total benefits

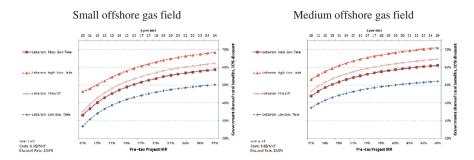


Figure 6: Government share of total benefits under fiscal regime options.

IRRs. A progressive fiscal regime would yield higher share of total benefits for the government as the profitability of the project increases; progressivity is only relevant above the minimum acceptable rate of return required by the investor. Especially under the smaller field, the four options evaluated are quite progressive, with the "medium" government take and the 25% CIT rate options displaying the highest level of progressivity. However, it is important to note that while progressivity allows countries to capture a higher share on the upside, it may also mean that countries share some risk by reducing their global take on the downside (unless there is sufficient minimum government revenue whenever production is occurring).

The relative burden that the different options would put on a marginal project is also compared. A key indicator is the "breakeven price" or the minimum price required to meet the minimum rate of return required by the investor (assumed in the model to be 12.5% in real terms). As shown on Figure 7, only the "high" government take option under the small field example requires a higher breakeven price than the one assumed for the rest of the analysis presented in this report. Another interesting point to note is that regardless of the project chosen, the difference between the lowest and the highest breakeven price among the four options for Lebanon is relatively modest at roughly \$2/Mcf.

An alternative indicator to measure the burden on a marginal investment is the marginal effective tax rate (METR). The METR illustrates the relative fiscal

represent the available net proceeds from which taxes are paid, debt is serviced, and equity providers are rewarded, measured here at a 10% discount rate.

⁹ The range of project pre-tax IRR is obtained by varying prices. The price corresponding to each pre-tax IRR is depicted in the top horizontal axis. This analysis does not imply a ranking of projects by IRR, as only one project is evaluated at a time.

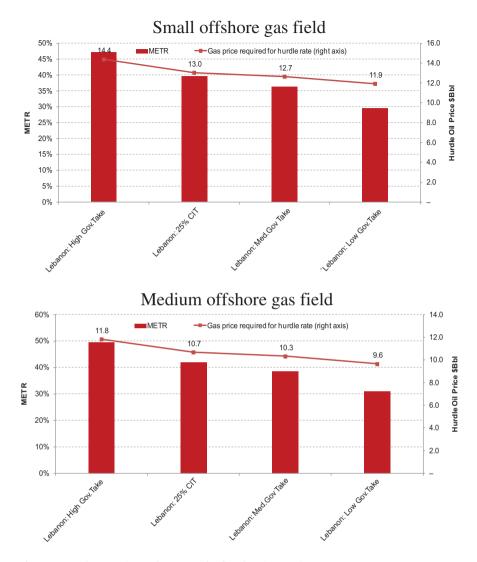


Figure 7: Breakeven price and METR under fiscal regime options.

wedge taken from the project by the fiscal regime at the margin of project viability. In other words, the METR is the difference between the pretax IRR and the posttax IRR as a percentage of the pretax IRR for a project that yields the minimum posttax IRR required by the investor. For the two projects evaluated, the METR varies from 29% to 47% among the four options modeled (Figure 7).

2.3 International Comparisons

The four options for Lebanon are compared with fiscal regimes of other petroleum-producing countries from the region and elsewhere. The comparator countries in the sample include some established gas exporters (Egypt, Norway, and Trinidad and Tobago), petroleum producers (Australia, UK), and some developing countries with recent proven petroleum discoveries (Mozambique, Ghana).

The international comparison confirms the results of the AETR, progressivity, and breakeven price analysis conducted for the four options. For example, the "low" government take option falls in the lower end of the sample under the AETR, in line with countries such as Australia and Mozambique. The "medium" government take and the 25% CIT option come in the middle of the AETR range, with a similar government take to the United Kingdom, Israel, and Oman. Similarly, the "high" government take option sits at the bottom of the upper end of the sample, after countries such as Trinidad and Tobago, Egypt, and Norway which have relatively high AETRs.

In terms of progressivity, the four options appear to be relatively more progressive than most other countries in the sample. However, countries like Norway, the United Kingdom, and Ghana appear to exhibit more progressive regimes than the four options for Lebanon, perhaps due to the use of rent taxes (similar to Lebanon) and the absence of royalties (unlike Lebanon).

Finally, the four options also appear to be in line with international comparators in terms of METR and breakeven prices. The "low" government take option requires breakeven prices similar to Australia, Norway, and Mozambique, while the other three options sit in the middle-to-upper part of the range along countries like the United Kingdom, Norway, Israel, and Oman (Figure 8).

3 Options for Lebanon's Macro-Fiscal Anchors

Having established the fiscal regime, the government should start developing macro-fiscal anchors. The calibration of anchors is underpinned by an assumption on the government take of 60%, which is consistent with the evaluation of the fiscal regime presented in the previous section.¹⁰

¹⁰ The assumption on the government take at 60% is conservative given no history of natural resources in Lebanon and perceived fragmented political environment.

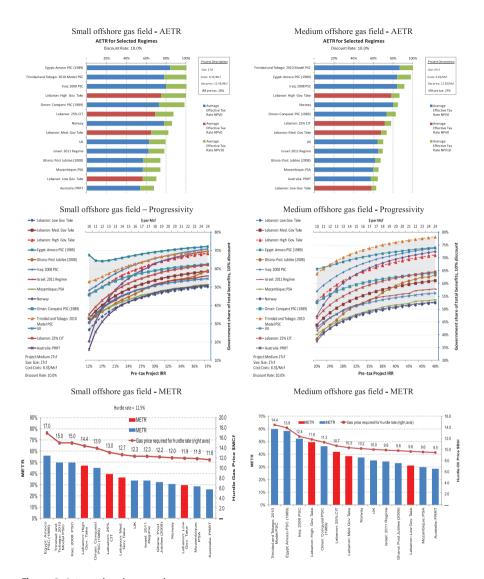


Figure 8: International comparisons.

3.1 Key Concepts

In countries like Lebanon 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 non-resource primary balance (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.¹¹

- 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 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 an initial 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.

3.2 Calibrating Anchors

The calibration 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 in 2016, and to advance on exploration by 2018. Drawing on international experience, production is expected to last for 35 years, with full capacity reached by 2036.¹² It would decline at a fast rate after 2043 so

¹¹ IMF 2012a, 2012b, 2012c.

¹² 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.

Production Profile

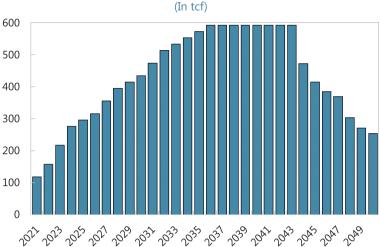


Figure 9: Production profile. Source: IMF staff calculations.

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 (Figure 9).

Under this baseline production profile, resource revenues are moderately sizeable. They are estimated to reach around 4% of GDP and represent almost 14% of total revenues by the end of the next decade. 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 transportation network – these have been singled out as binding constraints for raising Lebanon's growth

¹³ 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.

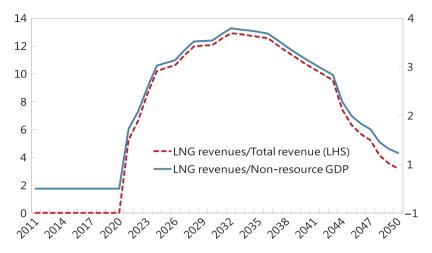


Figure 10: LNG revenues (in percent).

Source: IMF staff estimates.

potential (World Bank 2012). In particular, the electricity sector requires a major overhaul (GoL 2010b) (Figure 10).

3.2.1 The PIH Framework

The PIH framework sets the fiscal target consistent with future financial wealth. Under current estimates, the NRPB consistent with a PIH rule is a deficit of about 0.9% of GDP. The constant NRPB - combined with an assumption of constant non-resource revenue at 22% - stabilizes primary expenditure permanently at 23% of non-resource GDP. This approach has the advantage of simplicity and stability, though it is relatively conservative (Figure 11).

3.2.2 The Modified PIH Framework

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% of non-resource GDP on average, for 5 years (over the period 2019– 24). 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 12).

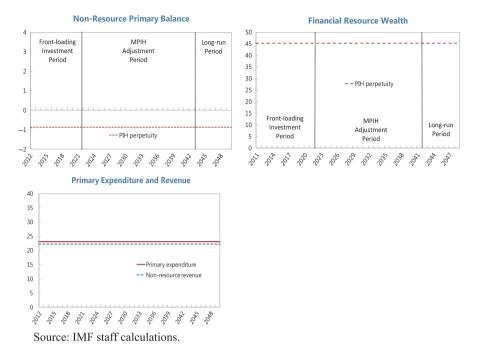


Figure 11: PIH framework results. Source: IMF staff calculations.

3.2.3 The Fiscal Sustainability Framework

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% on real growth and a reduction in the positive value of the interest rategrowth differential, the wealth level eventually decreases to around 35% of non-resource GDP; the NRPB is stabilized at a lower deficit. The fiscal multiplier of public investment is assumed to become larger than one just after the front-loaded period, and to return to its steady state level of one 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 13).

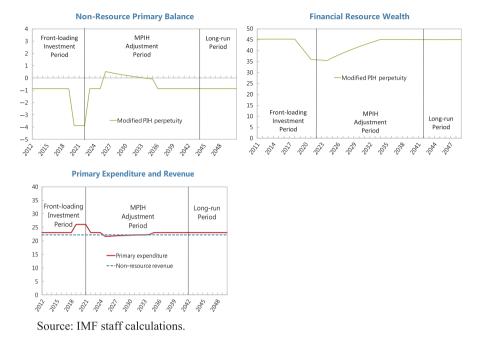


Figure 12: Modified PIH framework results.

Source: IMF staff calculations.

4 Strengthening Lebanon's Institutions

Supportive fiscal institutions – mainly a stringent public financial management (PFM) system combined with a fiscal responsibility law (FRL), a well-designed transparently managed natural resource fund, and an independent fiscal agency – can effectively supplement a rule-based fiscal policy framework.

Substantial PFM reforms are essential in preparation for the more complex environment that would arise with the natural resource windfall. The PFM system should ensure (1) a transparent and comprehensive presentation of resource revenue and the underlying non-resource fiscal position; (2) a sustainable long-term fiscal strategy; and (3) transparent mechanisms for project appraisal, selection, and prioritization of investment. In this context, the Extractive Industries Transparency Initiative (EITI) is a relevant standard as it has widened the transparent reporting of natural resource wealth management.

Over time, adopting a FRL could also strengthen fiscal discipline by anchoring fiscal decisions on a rule-based framework. International experience

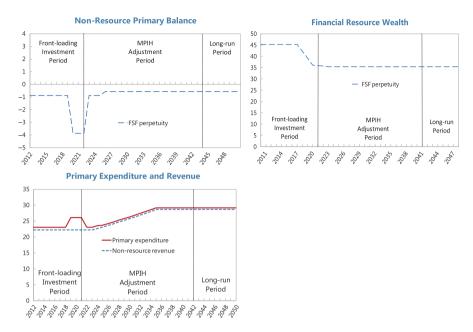


Figure 13: Fiscal sustainability framework results. Source: IMF staff calculations.

suggests that a well-designed FRL holds the potential of contributing to the improvement of fiscal management, if supported by critical preconditions including mainly a strong political commitment to fiscal discipline, sufficiently developed PFM systems, and good transparency and accountability practices. The Lebanese authorities could therefore consider designing and implementing a FRL aimed at (1) improving fiscal discipline by requiring the government to declare and commit to a prudent fiscal policy and strategy; (2) making fiscal policies more predictable and credible by establishing rules and procedures that the government must follow in the design and implementation of fiscal policy; and (3) establishing transparent mechanisms by which others can assess how well the government is complying with its established processes, goals, and priorities.

Building on strengthened PFM systems and well-designed FRL, a SWF could enhance the fiscal policy framework. ¹⁴ Given Lebanon's fiscal, institutional, and governance challenges, key considerations for the SWF design would include (1)

¹⁴ For a detailed discussion of the design and implementation issues of SWFs, see Das, Mazarei, and van der Horn (2010).

adequate framework, (2) clear and comprehensive objectives, (3) consistency with macro-fiscal framework, (4) flexible inflow/outflow rules, and (5) robust governance structure. It is however important to emphasize that in the absence of a strategy for fiscal consolidation and debt reduction, discussions of SWFs would be misplaced; or in other words, it might be fruitless to accumulate assets in a SWF while the government continues to accumulate significant liabilities elsewhere.

Establishing a fiscal council could further strengthen the fiscal policy framework by enhancing the quality of budget discussions and fostering greater transparency. Fiscal councils can exercise important supporting functions for fiscal policy. In commodity-producer countries, FCs could help chart a financially sustainable and intergenerationally equitable expenditure path. By limiting political manipulations of commodity price cycles and estimated reserves of nonrenewable resources, a FC can alleviate immediate spending pressures fueled by cyclical peaks in prices or overoptimistic assessments of medium-term revenue paths (IMF 2013c). More generally, an independent FC could have an important role in assessing the reliability of the macroeconomic and revenue assumptions underpinning the budget and estimating the fiscal impact of proposed measures. In addition, forecasts produced by FCs can serve as a neutral baseline to assess the fiscal cost and macroeconomic impact of policy proposals.

5 Conclusions and Policy Implications

Lebanon will need to reformulate its fiscal framework to take into account potential revenue from natural resources. If natural resources prove to be commercially viable and sizeable, Lebanon will become a commodity-producing country. Under these circumstances, it is an absolute prerequisite for the design of a prospective framework to set a fiscal regime appropriately – as this is the first step to attract investors and ensure a sustainable and sound development of the resource sector. This step should be followed by setting macro-fiscal anchors and supporting institutions. From a macro-fiscal perspective, exhaustibility and price volatility of natural resources 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 massive fiscal adjustment once resource wealth has been depleted.

As current estimates put Lebanon's gas resources at relatively moderate levels, prudent policies should be implemented. An aggressive borrowing policy

in anticipation of future resource revenues or excessive zeal to maintain government participation in all development projects could be counterproductive, given the uncertainty about the fiscal regime as well as the magnitude and temporal profile of the expected resource revenues. Even if these revenue profiles are in line with the assumptions behind the baseline or alternative scenario, the associated resource revenues are expected to be only moderate in size by international standards. This suggests that a very prudent approach to fiscal policy should be exercised when managing natural resources.

The broad design of the fiscal regime for the sector proposed in draft legislation (not yet approved by cabinet) seems to be appropriate. The regime is a combination of a modest royalty, profit-based production sharing, and CIT. Royalty will generate government revenue from the start of production; production sharing based on the *R*-factor is likely to achieve a higher government share from highly profitable projects, while providing a relief to investors in times of low prices or high costs; and the imposition of the standard CIT will ensure that the sector receives the same corporate tax treatment as other sectors of the economy. Moreover, the four regime options modeled here appear to generate a government take in line with that observed in other petroleum-producing countries in the region and elsewhere. However, a more precise government take will only be known once bids are received and blocks are awarded.

The prospective macro-fiscal anchor should initially be focused on ensuring fiscal sustainability and intergenerational equity. The preferred option would be to focus the framework on ensuring sustainability and intergenerational equity, with fiscal anchors preferably determined by the MPIH framework or the FS framework that both account for the scaling up of public investment.

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

- Substantial PFM reforms are absolutely essential in preparation for the more complex environment that would arise with the natural resource windfall. Specifically, reforms should include (1) transparent and comprehensive presentation of petroleum revenue and non-resource fiscal position; (2) budgets should focus on the medium term, with a strong revenue forecasting framework in place; (3) the coordination and selection of public investment projects needs to be strengthened; and (4) adherence to the EITI initiative would be highly advisable.
- Adopting a FRL could strengthen fiscal discipline by anchoring fiscal decisions on a rule-based framework. Key elements of the design would include
 (1) clear goals and instruments with a strong enforcement mechanism,
 (2)

- monitoring and communication, (3) broad coverage of fiscal activities, (4) flexibility, and (5) legally binding framework.
- Establishing a SWF could enhance the framework. Key elements of the design would include (1) adequate framework, (2) clear objectives, (3) consistency with macro-fiscal framework, (4) flexible inflow/outflow rules, and (5) robust governance structure. In the absence of a strategy for fiscal consolidation and debt reduction, discussions of SWFs would be misplaced. Put differently, it might be fruitless to accumulate assets in a SWF while the government continues to accumulate significant liabilities elsewhere.
- Establishing an independent fiscal council could further strengthen the framework by enhancing the quality of budget discussions and fostering greater transparency.

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