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A country's debt is a double-edged sword: It can represent a means to an end, allowing a country to cover its deficit or carry out investments but it can also constitute a threat if it is accumulated without a clear management and sustainability vision.

For the PIIGS (Portugal, Ireland, Italy, Greece and Spain), debt, which was initially accumulated as a means to an end, became a threatening macroeconomic weakness for these countries and eventually for Europe as a whole. Up until this day, Greece is deep into debt negotiations with its fellow European governments which are only willing to unlock more assistance funds if Greece engages in serious reforms.

This begs the following questions: When is debt sustainable and when is it not? What should policy makers look at when assessing a country's debt level? The essential key to be highlighted is that debt cannot be regarded in absolute terms but rather in relative terms. The level of debt should be assessed against the size of the economy and against the ability of the country to pay back its dues.

In a recent study by the International Monetary Fund (IMF) entitled "When Should Public Debt Be Reduced?" the concept of debt sustainability is nuanced. According to the study, for countries with ample fiscal space, the cost of paying down public debt to achieve debt sustainability exceeds the "crisis-insurance" benefit from lower debt. Therefore, having sustainable levels of debt does not always imply a reduction in the debt to GDP ratio. For countries with an initially low debt to GDP ratio and a robust fiscal position, debt levels can increase to finance public investments and generate growth, which in turn will end up reducing the debt to GDP ratio.

However, using expansionary fiscal policy to steer growth is not desirable in the case of Lebanon, as the country has one of the highest debt to GDP ratios in the world with no fiscal leeway. Today, the relevance of a debt sustainability assessment is especially striking since the debt to GDP ratio has reversed its previous downward trend and has been on an upward trend for the past two years amidst tough economic times. A forward-looking view on the future of Lebanon's public debt is therefore essential for steering policy actions and much needed reforms.

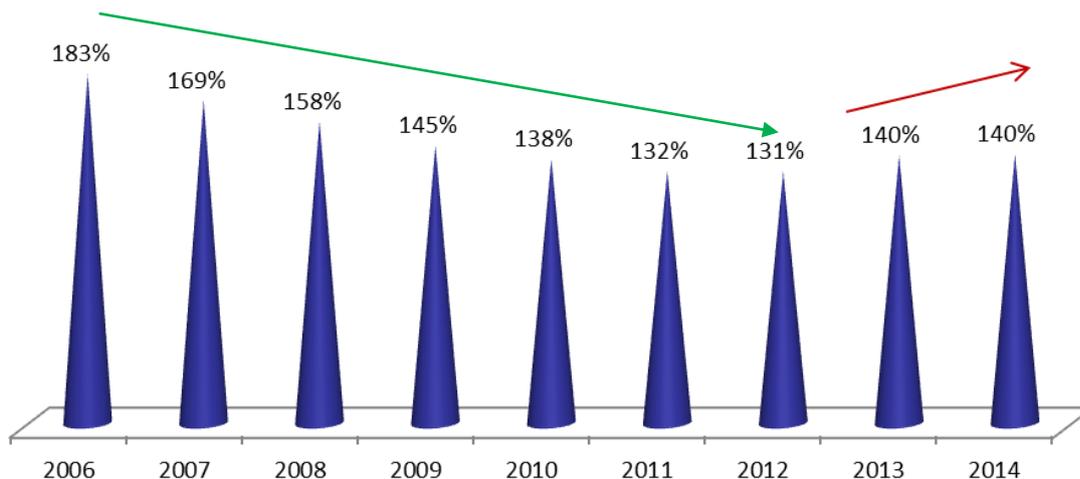
Historical Trends Shaping Public Debt in Lebanon

After the civil war, the efforts poured into reconstruction and exchange rate stabilization placed upward pressure on government spending, which eventually outpaced the accumulation of government revenues. The resulting fiscal deficit sent the public debt soaring by 775% to \$38.5B over the period 1993-2005. The debt to GDP ratio eventually peaked at 183% in 2006 as a result of further fiscal deterioration.

In the period 2007-2010, the economic, political and international background allowed for Lebanon's debt to GDP ratio to take a downward path tumbling from 183% in 2006 to 138% in 2010. Between 2007 and 2010, the picture was a bright one as fiscal discipline and confidence were both restored, as the economy grew at an average pace of 9%, as rival Lebanese factions reached an agreement in the Qatari capital of Doha, as international interest rates dropped after the global financial crisis and as the country benefitted from donors' support.

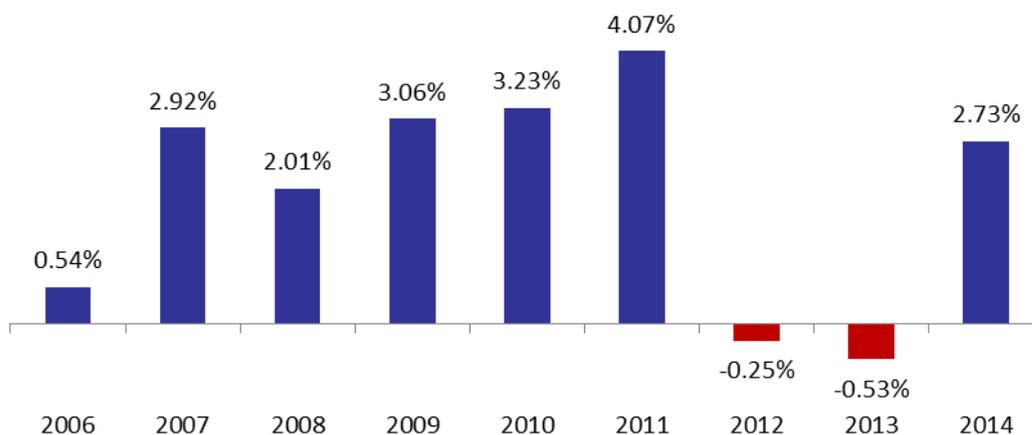
The period 2011-2014 draws a stark contrast with the period 2007-2010 with the debt-to-GDP ratio climbing from 132% in 2011 to 140% in 2014. Real GDP growth tumbled from 8.0% in 2010 to 2.0% in 2011 as Syrian spillovers from the Syrian crisis took a heavy toll on the Lebanese economy. The fiscal discipline deteriorated especially with 2012 marking the first time in around ten years that Lebanon registers a primary deficit. Like previous years, transfers to the inefficient EDL (Electricité du Liban) and wages and salaries of public sector employees grasped the lion share of government spending. However, the novelty about the year 2012 was the approval of the salary increase for public sector employees between which inflated government spending even more.

Historical Evolution of Lebanon's Debt to GDP Ratio



Source: Association of Lebanese Banks, Blominvest

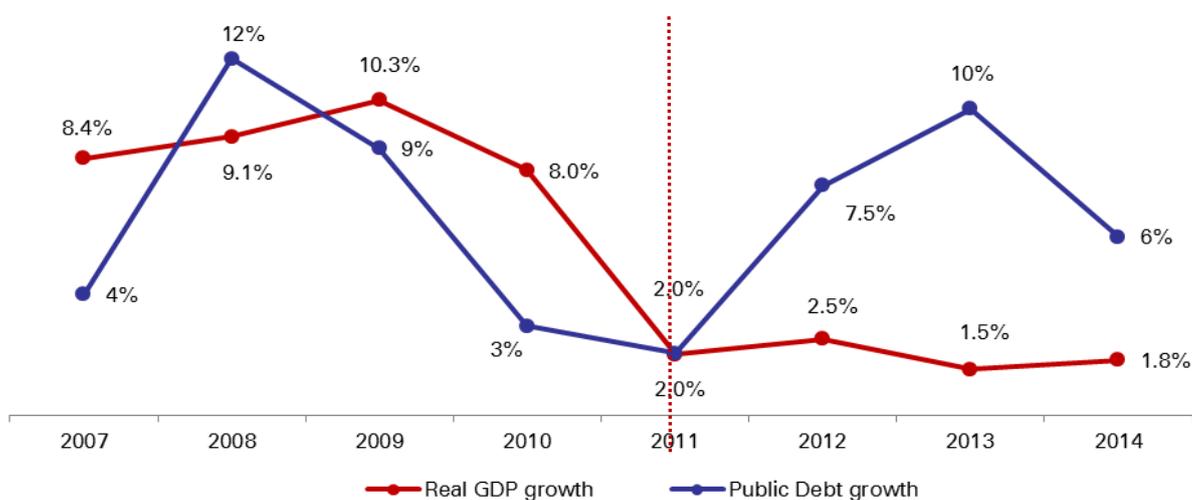
Evolution of Lebanon's Primary Balance , in % of GDP



Source: Ministry of Finance

Growth Rate of Debt versus Growth Rate of GDP

As of 2011, the growth in public debt has exceeded the growth in real GDP



Source: ABL, Blominvest

Now that the evolution of public debt has been outlined, a forward-looking view on the future of Lebanon's public debt is essential for steering policy actions and much needed reforms. However, before detailing the different possible scenarios for the future of Lebanon's public debt, a more in-depth look into the definition of debt sustainability and the determinants of public debt is important.

A certain level of debt is deemed sustainable if its share in the country's GDP remains stable or declines. In other words, a country's debt is sustainable if it can be reimbursed and if no further accumulation takes place.

The level of debt is dependant on many factors:

- Effective Interest Rate on Debt:
- Overall Fiscal Balance and Primary Balance
- Real GDP Growth
- GDP deflator

Effective interest rates on debt in Lebanon are dependant to a large extent on country risk and international interest rates. Intuitively, the higher the interest rates, the higher the due interest payments and the higher the debt burden.

The fiscal position of the country is inextricably linked to the level of debt. If the country is facing a fiscal deficit, it is bound to cover its shortage by resorting to more debt. If fiscal imbalances are not corrected, this virtuous indebtedness cycle can be a major threat to the health of the economy.

Real GDP growth is linked to the level of debt through various channels. From a general standpoint, a robust GDP growth means that the country has created enough resources to finance its needs and pay back its dues.

Below are different scenarios with different assumptions directly impacting the debt to GDP ratio. These scenarios will allow us to conclude which conditions need to be met in order for the debt to GDP ratio to be sustainable.

Baseline Status Quo Scenario

The baseline status-quo scenario assumes that no reforms or policy changes will take place and economic parameters will continue to grow in the same trend as the one seen in 2014. Therefore, real GDP growth is assumed to remain subdued at 2.0% across the forecast period of 2015-2020 while nominal GDP growth is estimated to remain at 5% across the period. On the fiscal front, government revenues and expenditures are assumed to grow by 5% across the chosen period, a growth rate deduced from the nominal and real GDP growth.

Debt has been calculated based upon the following formula: $D_t = D_{t-1} + D_{t-1}r_t - PSt + SDIt$

D_t = Debt at time t

D_{t-1} = Debt at time t-1

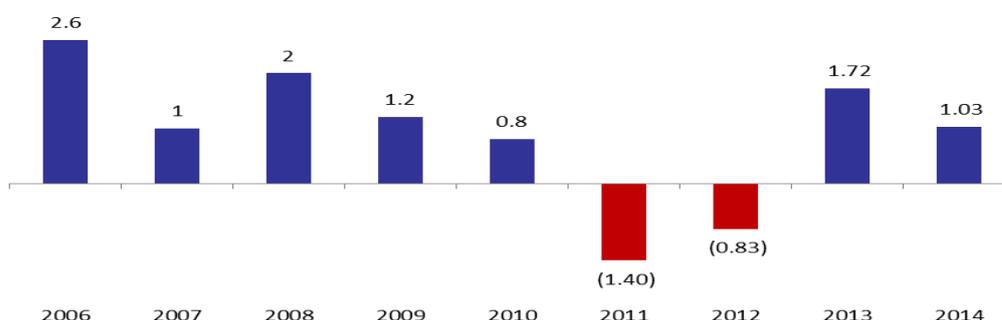
$D_{t-1}r_t$ = Interest Payments

PSt = Primary Surplus/ Deficit at time t

SDIt = Surplus in Debt Issuance and Arrears at time t

The surplus in debt issuance and arrears indicates the additional debt that the government issues on top of the amount needed to finance the deficit and the existing debt. We assumed this variable to stand at \$300M across the period 2015-2020. We held a conservative assumption on this variable especially that it fluctuated quite greatly in the past as shown in the graph below:

Surplus in Debt Issuance (In \$B)



Source: Blominvest Bank Research Department

"It is worth mentioning that the slight drop in the debt to GDP ratio in 2012 to 131% as seen in the graph on page 2 came about as the surplus in debt issuance during that year was negative"

Taking into account the surplus in debt issuance and arrears, which are payments that should have been settled by the government at an earlier stage, inflates the overall level of debt but gives a view on the real and comprehensive debt burden that should be borne by the Lebanese government. The SDI and arrears add more pressure on the public finances to be healthy in order to cover the debt payments inclusive of the SDI and arrears.

The effective interest rate on debt was obtained by dividing the debt service over government debt. Since interest rates in Lebanon are affected by movements in US interest rates and since the Federal Reserve is expected to increase its rates after it halted its quantitative easing, we assume interest rates would increase by:

- 50 basis points (bps) in 2016
- 75 bps in 2017
- 75 bps in 2018

And then stabilize in 2019 and 2020.

Under our baseline scenario, the public finances remain weak. In fact, government spending continues to outweigh government revenues. It is worth noting that government revenues are bound to remain subdued as slow growth implies weak consumption and as weak consumption implies weak tax revenues which constitute 63% of total revenues for Lebanon's treasury. Moreover, it is worth highlighting that the government expenditures are steered towards two components: Transfers to EDL and the salaries & wages of public sector employees, which are not added-value generators and therefore fail to boost economic growth in later stages. Had the expenditures been poured into efficient, reward-oriented investments, the government could have created potential for future economic growth and therefore for a more robust fiscal position and a lighter debt burden. As this is not the case in our baseline scenario, the fiscal deficit is widening across 2015-2020 and the primary balance is either in the red or is even insufficient to cover the debt service.

Weak growth, fiscal deficit, primary deficit and/or shortage and rising interest rates surely put the government debt on an unsustainable path. In fact, under our baseline scenario, the overall debt grows excessively large in comparison to the size of the economy with the debt to GDP ratio surging from 140% in 2014 to 163% in 2020.

Best Case Scenario

In the best case scenario, our assumptions are based on conditions that the Lebanese economy should meet in order to put government debt on a sustainable path.

Real GDP growth is supposed to break the 2.00% threshold by 2017 and to stabilize at 3.50% in the period 2018-2020. Consequently, the share of government revenues in GDP rises to 23% in 2016-2017 and to 23.5% in 2018-2020. Meanwhile, the share of government expenditures in GDP drops to 29%. This allows the fiscal deficit to shrink gradually across the five year forecast period and allows the primary balance to regain positive ground as of 2016. Since the level of public debt in Lebanon remains relatively high, even under our most optimistic assumptions, the primary balance still does not cover the entire debt service but rather a portion of the debt service.

With higher economic growth and a sounder fiscal position, the condition for debt sustainability is indeed met. It is worth noting that in this scenario, the increase in interest rates and therefore in the debt burden is still factored in, but the improvement in growth and in the fiscal standing compensate this increase and allow for the government debt to go on a downward path falling from 140% in 2014 to 135% in 2020.

However, the debt to GDP ratio falling to 135% is still an insufficient reduction. More fiscal efforts should be laid down to reduce the debt to GDP ratio below 110% by 2020. This could be achieved through a booming economy, like the one we witnessed during 2007-2010, or through fiscal adjustment efforts. The former is difficult to achieve especially as the turmoil in the region does not seem to be ending in the near future. However, improving infrastructure through public private partnerships and changing regulations to make them more business-friendly can boost growth in addition to the fact that if serious steps towards oil mining are taken, investors' expectations will shift and economic growth prospects will become positive.

The simulation of our best case scenario in order to obtain a debt to GDP ratio that is below 110% showed that:

- If no changes occur on the fiscal front, real GDP growth should range between 6.5% and 9% during the period 2016-2020
- If changes in real GDP growth, in the GDP deflator and in fiscal revenues are combined, real GDP growth would have to reach 6% in 2019 and 2020, the GDP deflator would slightly rise to 4% since growth can exercise slight inflationary pressures, and government revenues would have to increase from 23% of GDP in 2014 to 25% in 2020.

Worst Case Scenario

Under the worst case scenario, growth is assumed to be strained further as it slips below the 2% threshold and as it stabilizes at 1% in the period 2016-2020.

The worst case scenario also assumes that the government's expenditures will be further strained by the approval of the \$1.2B salary scale for public sector employees. We assumed that this additional expense will go into effect gradually: the government expenditures have been inflated by \$400M/year in the 2016-2018 period. The share of government expenditures in GDP increases gradually from 29% in 2014 to 34% in 2020. Since this is a worst case scenario, we assumed that no revenue measures have been incorporated to mitigate the higher public spending. Therefore the deterioration in the fiscal balance and the primary balance is amplified and so is the unsustainability of public debt. The debt to GDP ratio surges from 140% in 2014 to 179% in 2020.

The combination of further fiscal strain without compensating measures and weak growth is the scenario that endangers the sustainability of public debt the most. By the year 2020, the debt to GDP ratio would have reached 179%, rendering the risk of default, which has so far never materialized in Lebanon, imminent and rendering a downgrade in the sovereign risk rating inevitable.

Annex – Scenarios

Debt Service	Debt (t-1) * interest rate on debt at time t						
Effective Interest Rate on Debt	Debt service over government debt						
Government Debt	$D_t = D_{t-1} + D_{t-1}r_t - PS_t + SDI_t$						
Baseline Status Quo Scenario							
in millions of USD	2014	2015	2016	2017	2018	2019	2020
Nominal GDP	47,843	50,459	53,012	55,694	58,512	61,473	64,584
Real GDP Growth	1.80%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
GDP Deflator	3.40%	3.40%	3.00%	3.00%	3.00%	3.00%	3.00%
Government Revenues	10,879	10,371	10,890	11,434	12,006	12,606	13,236
Government Expenditures	13,952	15,497	16,272	17,085	17,940	18,837	19,779
Overall Fiscal Balance	-3,073	(5,126)	(5,382)	(5,651)	(5,934)	(6,231)	(6,542)
Primary Balance	1,307	(760)	(301)	(172)	639	1,563	1,805
Surplus in Debt Issuance and Arrears		300	300	300	300	300	300
Debt Service	4,380	4,366	5,082	5,479	6,573	7,793	8,348
Effective Interest Rate on Debt		6.50%	7.0%	7.75%	8.50%	8.50%	8.50%
Government Debt	67,161	72,587	78,269	84,807	91,677	98,207	105,050
Government Debt in % of GDP	140%	144%	148%	152%	157%	160%	163%
Government Revenues in % of GDP	23%	21%	21%	21%	21%	21%	20%
Government Expenditures in % of GDP	29%	31%	31%	31%	31%	31%	31%
Overall Fiscal Balance in % of GDP	-6%	-10%	-10%	-10%	-10%	-10%	-10%
Primary Balance in % of GDP	3%	-2%	-0.6%	-0.3%	1.1%	2.5%	2.8%
Debt Service in % of GDP	9%	9%	10%	10%	11%	13%	13%

Debt Sustainability Analysis for Lebanon 2015-2020

Best Case Scenario in millions of USD	2014	2015	2016	2017	2018	2019	2020
Nominal GDP	47,843	50,459	53,012	56,240	59,955	63,915	68,137
Real GDP Growth	1.80%	2.00%	2.00%	3.00%	3.50%	3.50%	3.50%
GDP Deflator	3.40%	3.40%	3.00%	3.00%	3.00%	3.00%	3.00%
Government Revenues	10,879	10,371	12,134	13,105	14,088	15,003	15,979
Government Expenditures	13,952	15,497	15,636	16,418	17,239	18,446	19,553
Overall Fiscal Balance	-3,073	(5,126)	(3,502)	(3,314)	(3,152)	(3,443)	(3,574)
Primary Balance	1,307	(760)	1,579	2,034	3,094	3,752	3,938
Surplus in Debt Issuance and Arrears		300	300	300	300	300	300
Debt Service	4,380	4,366	5,082	5,348	6,245	7,194	7,512
Effective Interest Rate on Debt		6.50%	7.0%	7.75%	8.50%	8.50%	8.50%
Government Debt	67,161	72,587	76,389	80,576	84,631	88,373	92,247
Government Debt in % of GDP	140%	144%	144%	143%	141%	138%	135%
Government Revenues in % of GDP	23%	21%	23%	23%	23.5%	23.5%	23.5%
Government Expenditures in % of GDP	29%	31%	29%	29%	29%	29%	29%
Overall Fiscal Balance in % of GDP	-6%	-10%	-7%	-6%	-5%	-5%	-5%
Primary Balance in % of GDP	3%	-2%	3.0%	3.6%	5.2%	5.9%	5.8%
Debt Service in % of GDP	9%	9%	10%	10%	10%	11%	11%

Debt Sustainability Analysis for Lebanon 2015-2020

Worst Case Scenario

in millions of USD

	2014	2015	2016	2017	2018	2019	2020
Nominal GDP	47,843	50,459	52,492	54,608	56,808	59,098	61,479
Real GDP Growth	1.80%	2.00%	1.00%	1.00%	1.00%	1.00%	1.00%
GDP Deflator	3.40%	3.40%	3.00%	3.00%	3.00%	3.00%	3.00%
Government Revenues	10,879	10,371	10,890	11,434	12,006	12,606	13,236
Government Expenditures	13,952	15,497	16,672	17,905	19,201	20,161	21,169
Overall Fiscal Balance	-3,073	(5,126)	(5,782)	(6,471)	(7,195)	(7,555)	(7,932)
Primary Balance	1,307	(760)	(701)	(964)	(527)	451	740
Surplus in Debt Issuance and Arrears		300	300	300	300	300	300
Debt Service	4,380	4,366	5,082	5,507	6,668	8,005	8,672
Effective Interest Rate on Debt		6.50%	7.0%	7.75%	8.50%	8.50%	8.50%
Government Debt	67,161	72,587	78,669	86,030	94,171	102,025	110,257
Government Debt in % of GDP	140%	144%	150%	158%	166%	173%	179%
Government Revenues in % of GDP	23%	21%	21%	21%	21%	21%	22%
Government Expenditures in % of GDP	29%	31%	32%	33%	34%	34%	34%
Overall Fiscal Balance in % of GDP	-6%	-10%	-11%	-12%	-13%	-13%	-13%
Primary Balance in % of GDP	3%	-2%	-1.3%	-1.8%	-0.9%	0.8%	1.2%
Debt Service in % of GDP	9%	9%	10%	10%	12%	14%	14%

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