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### Contact Information

Head of Research: Ali Bolbol

[ali.bolbol@blominvestbank.com](mailto:ali.bolbol@blominvestbank.com)

Without doubt, the most widely watched economic indicator in Lebanon these days is BDL' s foreign assets. The reason used to be that it reflected BDL' s ability to support the fixed exchange rate; but nowadays it simply reflects BDL' s ability to finance the trade deficit and to subsidize essential goods. However, though this variable is understandably important, the more crucial variable to watch is net foreign assets. This is because such a variable takes into account foreign liabilities as well foreign assets and it captures the net foreign assets position for the whole banking system.

Perhaps more importantly, a rigorous interpretation of balance of payments accounting implies that the change in net foreign assets is actually equal to the current account balance. In other words, if a country runs a \$15 billion current account deficit, it has to borrow exactly \$15 billion from abroad (or draw down reserves) to finance this deficit and, therefore, the country's net foreign asset position falls by \$15 billion. This interpretation is also essential for two reasons: first, it can be used to assess the sustainability of current account deficits; second, and by implication, it can be used to indicate the extent of the country' s overvalued currency.

And it is these two essential reasons that we want to investigate for Lebanon in this note. As is well known, Lebanon followed a fixed and single exchange rate regime from 1997 to 2019, where the exchange rate was set at around 1,500 LBP to the USD. Equally well known is that the current account deficits that Lebanon has consistently experienced were primarily caused by chronic trade deficits, irrespective of the sizable remittances that the country has frequently enjoyed. To check for current account sustainability and exchange rate overvaluation, given the above two known features of Lebanon' s external position, we have to work with the

following net foreign assets model (for those not so arithmetically inclined, jump from equation (1) to equation (5)).

If the current account balance is CA and net foreign assets are NFA, then the change in NFA is equal to CA in time  $t$ , or:

$$(1) \quad \Delta NFA_t = CA_t$$

Given that the current account in Lebanon is primarily equal to the sum of the trade balance and net investment income and remittances (current transfers), then equation (1) after expanding  $\Delta NFA_t$  becomes:

$$(2) \quad NFA_t - NFA_{t-1} - i \cdot NFA_{t-1} - RMT_t = TB_t$$

Where  $i \cdot NFA_{t-1}$  is equal to net investment income made in time  $t$  on  $NFA_{t-1}$  at interest rate  $i$ ;  $RMT_t$  is remittances in time  $t$ ; and  $TB$  is trade balance in time  $t$ ; dividing equation (2) by gross domestic product  $GDP_t$  and regrouping terms, we arrive at:

$$(3) \quad NFA_t/GDP_t - NFA_{t-1}/GDP_{t-1} \cdot GDP_{t-1}/GDP_t \cdot (1+i) - RMT_t/GDP_t = TB_t/GDP_t$$

Note that  $GDP_t = GDP_{t-1} (1+g)$ , where  $g$  is the *nominal* growth rate of GDP; in addition, if we express in lower case the variables as ratios of GDP; then equation (3) becomes:

$$(4) \quad nfa_t - nfa_{t-1} (1+i)/(1+g) - rmt_t = tb_t$$

If the current account is sustainable, then  $\Delta NFA_t = 0$  and as a result  $nfa_t = nfa_{t-1}$ . Hence, equation (4) translates to:

$$(5) \quad nfa (g-i)/(1+g) - rmt = tb$$

Equation (5) is very interesting because it determines the trade balance that is consistent with sustainable NFA (as ratios of GDP), given remittances, interest rates, and the growth of the economy. Note also that the trade balance is decreasing in these three variables, in the sense that higher interest income, remittances, and growth encourage trade deficits, for given NFA. To see how this formulation applies to Lebanon, we need to obtain the respective data for the variables and replace them in equation (5) to assess the sustainable or viable position of Lebanon's external sector.

**Table 1**

\$ Bn	Goods	Services	TB	NFA	NII	RMT	GDP
2002	-4.79	1.06	-3.73	10.3	-0.859	2.5	19.1
2003	-4.92	2.96	-1.96	14.5	-3.71	4.7	19.8
2004	-6.63	1.45	-5.18	14.8	-0.564	5.6	20.9
2005	-6.53	2.94	-3.59	16.1	-0.134	4.9	21.3
2006	6.12	2.84	8.96	20.1	0.233	5.2	22.1
2007	-7.88	2.76	-5.12	24.1	0.595	5.8	24.8
2008	-11.15	4.06	-7.09	28	-0.183	7.2	29.1
2009	-11.18	2.53	-8.65	37.9	-0.359	7.6	35.4
2010	-12.51	3.62	-8.89	44.1	-0.511	6.9	38.4
2011	-14.03	6.41	-7.62	43.4	-0.277	6.8	39.9
2012	-15.41	3.51	-11.9	42.7	-0.114	6.7	44.1
2013	-16.06	2.72	-13.34	37.5	-0.514	7.6	46.9
2014	-15.89	1.49	-14.4	35.6	-0.669	7.2	48.1
2015	-13.58	2.15	-11.43	30.9	-0.737	7.5	49.9
2016	-13.99	1.89	-12.1	32.1	-0.849	7.6	51.2
2017	-14.39	1.27	-13.12	33.9	-0.081	7.1	53.1
2018	-15.06	1.44	-13.62	28.7	-0.783	7	54.9
2019	-13.38	0.434	-12.946	26.6	-1.31	7.4	51.9
<b>Average</b>	<b>-10.63</b>	<b>2.53</b>	<b>-8.10</b>	<b>28.96</b>	<b>-0.60</b>	<b>6.41</b>	<b>37.27</b>
H1 2020	-2.95	-0.182	-3.132	25	-0.58	2.95	16
2020	-5.9	-0.364	-6.264	17.9	-1.16	6.9	32.1

**Source: BDL;WB**

Table 2	g	TB/GDP	NFA/GDP	NII/NFA	RMT/GDP	NEER
2002		-0.195	0.539	-0.083	0.131	128.72
2003	0.037	-0.099	0.732	-0.256	0.237	115.35
2004	0.056	-0.248	0.708	-0.038	0.268	107.78
2005	0.019	-0.169	0.756	-0.008	0.230	106.99
2006	0.038	0.405	0.910	0.012	0.235	106.43
2007	0.122	-0.206	0.972	0.025	0.234	100.00
2008	0.173	-0.244	0.962	-0.007	0.247	96.16
2009	0.216	-0.244	1.071	-0.009	0.215	101.34
2010	0.085	-0.232	1.148	-0.012	0.180	102.13
2011	0.039	-0.191	1.088	-0.006	0.170	97.94
2012	0.105	-0.270	0.968	-0.003	0.152	103.63
2013	0.063	-0.284	0.800	-0.014	0.162	104.67
2014	0.026	-0.299	0.740	-0.019	0.150	106.61
2015	0.037	-0.229	0.619	-0.024	0.150	122.23
2016	0.026	-0.236	0.627	-0.026	0.148	124.27
2017	0.037	-0.247	0.638	-0.002	0.134	125.92
2018	0.034	-0.248	0.523	-0.027	0.128	123.55
2019	-0.055	-0.249	0.513	-0.049	0.143	128.64
<b>Average</b>	<b>0.062</b>	<b>-0.194</b>	<b>0.795</b>	<b>-0.030</b>	<b>0.172</b>	<b>111.24</b>
H1 2020						
2020	-0.382	-0.195	0.558	-0.065	0.215	

**Source:** BDL;WB

Tables 1 and 2 display the behavior of the variables constituting equation (5) from 2002 till 2019, the time period over which the full data set is available. Notice from the tables that throughout the period the trade balance in goods and services was in deficit -- especially in goods while services remained in surplus -- averaging - \$8.1 billion. All trade deficits, net foreign assets, and GDP growth seem to have increased noticeably in 2008 onward but to fall hard starting in 2014, especially NFA; only remittances seemed to have maintained their decent level, averaging \$6.41 billion. As important, net investment income, NII, was negative throughout the period, averaging -\$600 million, and indicating that Lebanon *payed higher interest on its foreign liabilities than it had earned on its foreign assets. Moreover, this net interest  $i = NII/NFA$ , was at -3% on average during the period.*

Also from the tables, we see that on average nfa was 79.5%; rmt was 17.2%; g was 6.2%; and i was -3%. So if we assume that net foreign assets as a ratio of GDP was at the *sustainable average level of 79.5% during the*

*period*, then what should have been the average ratio of trade deficits to GDP that would have maintained that (given  $g$ ,  $i$ , and  $rmt$ )? Plugging the values of these variables in equation (5), *we find that the warranted trade balance (deficit) ratio should have been -10.3%; whereas in reality it was -19.4%. In other words, trade deficits that were almost twice than what was required rendered the external sector unsustainable and facilitated the hemorrhage in NFA.* Equally important, the main reason behind that outcome was *overvalued exchange rates*. As can be seen from table 2, the index for nominal effective exchange rate NEER averaged 111.24 during the period, and it had increased sharply since 2012 to reach close to 129 by 2019!

We can also venture to check external sector unsustainability in 2020. We have data for most of the variables till H1 2020 (except NFA for full 2020), but if we extrapolate the values for these variables till end 2020, we can find the following:  $nfa$  at 55.8%;  $rmt$  at 21.5%;  $g$  at -38.2%; and  $i$  at -6.5%. If we replace these values in equation (5), we find that the *warranted trade deficit ratio that would ensure sustainability should be -50.1%; whereas in approximate reality it was only -19.5%. What this result indicates is that the trade deficit ratio was less by more than half than what was needed in 2020.* As interesting, and in counter symmetry, this also implies that what primarily caused such an outcome was *undervalued exchange rates*.

Lastly, in conclusion, the above analysis can help us approximate the sustainable or equilibrium level of the nominal exchange rate for Lebanon. If the official rate of 1,500 LBP for the USD in 2002-2019 implied an overvalued exchange rate and a trade deficit ratio that was twice what is warranted; and if the parallel market rate in 2020 finished the year at 8,500 LBP for the USD but produced a trade deficit that was less than what is needed by more than half; then we can perhaps reasonably but tentatively deduce that the approximate *level for the equilibrium exchange rate should be somewhere in the middle, but a bit tilted towards the official rate, or roughly at about 4,500 LBP for the USD.*

**For your Queries:**

**BLOMINVEST BANK** s.a.l.

Research Department

Bab Idriss, Weygand Str.

POBOX 11-1540 Riad El Soloh

Beirut 1107 2080 Lebanon

Research Department

Tel: +961 1 991 784

[research@blominvestbank.com](mailto:research@blominvestbank.com)

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