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As if the fact that Lebanon's current economic crisis that is considered one of the worst three the world has seen in the last 150 years is not enough, the country has additionally tarnished its image by being among the very few countries in the world which have done absolutely nothing to rectify the crisis after more than three years since its inception. We all know the political-economy arguments that induce such an outcome, mainly: the capture of the state by a political elite that won't cede to economic reforms in the fear that it will lose its privileges and its hold on power; the refusal of traditional interest groups like trade unions and associations who are largely anathema to structural change; and, perhaps more important, the influence of an "armed resistance" which is most happy with maintaining and defending the status-quo. But are these factors enough to explain the complete inaction by the government, especially after the disastrous consequences exemplified by the exchange losing more than 96% of its value, multi-faceted poverty exceeding 70%, and per-capita income dropping by more than 60%<sup>1</sup>? That is not to say these factors are unimportant or even decisive, but perhaps they lack a solid economic argument as to why the Lebanese have not been forceful in undertaking economic reforms and turning their economy around.

What I would like to do in this note is to provide a tentative economic argument towards that end. This argument is borrowed from the new field of Behavioral Economics which stresses that people's economic behavior is not as rational as standard economic theory presumes<sup>2</sup>. To elaborate, we all know that economic reform and structural change always involve losses in the immediate-to-short run but pay-offs in the medium-to-long run. The fact that Lebanon has not undertaken these reforms yet could mean that the Lebanese weigh immediate costs more and delayed benefits less. In economic terms, the Lebanese overly discount the future and are biased towards the present; another way of saying this is that if time preferences are present-biased then discount rates are irrationally high; which also makes time discounting and present-time preferences two sides of the same coin. As a

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1 The poverty figure is from ESCWA. The per-capita figures are from the World Bank; to wit, it is estimated that per-capita income has fallen from \$13,500 to \$5,500 from 2018 to 2021. The crisis was made more acute by the Covid lockdowns between 2020 and 2021 and the port of Beirut explosion in August 2020.

2 In the behavioral economics literature, studies are usually done on individuals and groups, but in this note I attempt to project it at the country level.

simple example, if the immediate cost of an action is six units of value and the delayed benefit is 8 units in one year, but the tendency to devalue the future makes delayed benefits worth 4 units now, then no action will be undertaken because it involves a net loss of 2 units; equally important, it will imply a discount rate of 100%, needlessly too high. Another important consequence of when cost is immediate and benefit is delayed is the tendency to procrastinate – perhaps the Lebanese want to be prudent, they just do not want to do it right now<sup>3</sup>.

But why do people and the Lebanese in this case, behave in this manner? The most convincing answers are that they are risk averse, in the sense that they discount gains much more than losses; they are wary of uncertainty; and they don't like to trust because it is a form of risk that makes one vulnerable to broken promises<sup>4</sup>. More concretely, it seems that the Lebanese are not willing to pay the upfront adjustment costs arising from reforms because they are not sure they will be implemented, and even if implemented they are not sure whether they will produce the desired outcomes. Perhaps as important, they seem to be not so sure as well whether they will get their deposits back in the future, or whether any future oil and gas revenues will not be wasted, and as a result they seem to be discounting these quite steeply; otherwise, why not incur the cost of adjustment now and reap all these benefits later?.

An important question, of course, is how do we know empirically that the Lebanese reveal present-time preference and discount at high rates? To the best of my knowledge, there are no studies done on Lebanon or the Lebanese to directly test these attributes, but I am going to provide two ad-hoc and indirect tests. The first one is based on the fact that one consequence of steep time discounting is the tendency to consume now and get immediate payoffs while the future payoffs from savings are delayed or disregarded (severely discounted). If we look at the table in the Appendix, we see that throughout the 2010-2020 periods domestic savings were negative. Granted the big falls in 2019-2020 were due to crashing income because of the crisis, but the 2010-2018 figures point to the fact that the Lebanese did not only exhibit low savings but they have actually dis-saved or have consumed more than their domestic income -- a clear sign of time preference biased heavily towards the present. The second test deal with a rough estimate of the discount rate for depositors. Depositors are currently allowed to exchange their USD deposits at 8,000 LBP at a time when the market exchange rate is 40,000 LBP, which implies a haircut of 80% (or deposits being at 20% of their original value). Given that the standard financial reform plan promises to return deposits in 10 years, and given that the value of USD deposits is about \$100 billion, then time discounting implies the following:

$$(1) 20 = 100/(1 + r)^{10}$$

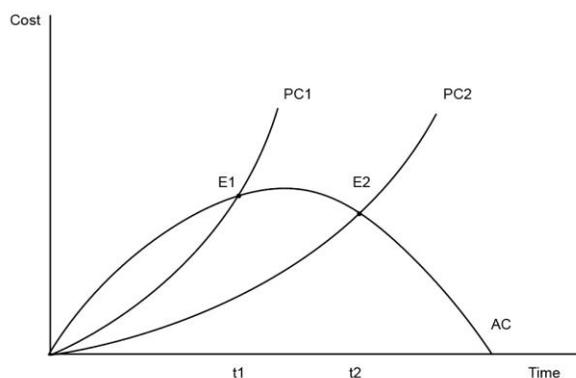
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3 See: O' Donoghue, T. and Rabin, M. 1999. "Doing it Now or Later" , American economic Review, Vol. 89, No. 1.

4 On more of these reasons, see: Fredrick, S. et.al. 2002. "Time Discounting and Time Preferences: A Critical Review" , Journal of Economic Literature, Vol. XL, June; and Lambert, G. 2006. "The Marketplace of Perceptions" , Harvard Magazine, March-April.

From equation (1) we find, based on the present haircut value to the \$100 billion in deposits, that the discount rate  $r$  is 17.5% -- quite a high rate by the reported international evidence<sup>5</sup>. And at this rate, more important, it seems that depositors are resigned to discount heavily their future USD deposits<sup>6</sup>.

The above has demonstrated that the Lebanese value notably the present; and their experience so far have shown that they have shunned away from paying the immediate and short-run costs associated with adjustments to reforms. This also means that they are procrastinating and postponing what rationally needs to be done now so as to resolve the economic crisis. But the thing to remember is that procrastination is not cost free – it involves increasing positive costs that arise from economic inaction and indolence. To introduce this valid procrastination cost into the picture, I am going to depart from the time-discounting model utilized above, and rely on a novel graphical analysis<sup>7</sup>.



In the graph above, the concave curve AC reflects the adjustment cost arising from stabilization and structural reforms. This cost first rises as the reforms bite; then falls as they start to take root and the economy adjusts nicely to them; and lastly it hits zero as the economy reaches steady growth. For Lebanon, the adjustment costs to the crisis emanate from three main sources: fiscal adjustments that involve restructuring a bloated public sector and inefficient public enterprises<sup>8</sup>; financial adjustments that involve reorganizing a crowded and mostly insolvent banking sector and a highly stressed Central Bank<sup>9</sup>; and exchange rate adjustments that involve currency depreciations and the move to a more flexible regime. Of course, we know none of these adjustments was undertaken – except

5 See: Fredrick, S. et.al. 2002. "Time Discounting and Time Preferences: A Critical Review" , Journal of Economic Literature, Vol. XL, June

6 This seems to be the case despite all the hot-air promises from politicians that all deposits will be returned; or even the promises from the Government' s Financial Plan that at least \$100,000 of deposits will be definitely returned.

7 A close but different analysis appears in: Bresser-Periara, L.C. and Abud, J. 1997. "Net and Total Transition Costs: The Timing of Economic Reform" , World Development, Vol. 25, No. 6.

8 Of course, there are also governance reforms. But such reforms need lots of time because they not only require change of policies but – more importantly -- change of culture as well.

9 There is an umbilical cord that ties the fate of BDL with banks, and vice versa, in that banks have deposited more than \$80 billion with BDL but BDL has spent more than \$60 billion of them, mostly on unsustainable fiscal expenditures. This gap at BDL represents the crux of the financial crisis.

partially for the last one – perhaps because of the behavioral economic reasons outlined above. As a result, the economy procrastinated but, as I said earlier, procrastination is costly. This cost is reflected by the convex curve PC in the graph and it is upward sloping as this cost will increasingly rise with time. In the case of Lebanon, this cost arises also for three main reasons: the loss of BDL FX reserves due to subsidies and the financing of trade deficits, especially given the halt in private capital flows; the attrition and deterioration to institutional structures (judicial, financial, infrastructural, educational...) and to the investment and business climate; and, the additional inflation and loss of output and employment, plus the devastating brain drain.

As important, rational economic policy and practice implies the economy should be undertaking reforms and should be riding the AC curve; and though adjustments costs will be positive initially, these costs will evaporate later in the medium-to-long term and will ultimately be out-weighted by the accumulated benefits. However, if irrationality prevails, then no reforms will be implemented and the economy will ride the procrastinating curve PC1. Though initially the procrastination cost will be less than the adjustment cost, this reprieve will be short-lived as the economy will soon hit E1 in time t1 where the procrastination cost becomes equal to the adjustment cost; as a result, procrastination should stop and a reform program should get underway. If this does not happen and the economy insists on being irrationally suicidal, then it will operate beyond point E1 where procrastination cost will surpass adjustment cost, turning the economy into a basket case and the country into a failed state.

It is not unreasonable to assume that the Lebanese economy was approaching E1 in the fall of 2021. But at that time three “favorable” developments happened going forward: first, BDL stopped most of its subsidy program and turned into an active buyer of USD in the FX market such that by the Fall of 2022 its FX reserves actually started increasing, in addition to introducing in December 2021 the Sayrafa platform on which people can buy limited USD FX at a rate of 8000-10,000 LBP below market rate<sup>10</sup>; second, all Covid lockdowns were terminated and the economy opened up and got some breathing space; and, third, expatriate transfers and (more so) tourism got up and going again. These developments have naturally helped the economy and its procrastinating capacity; in terms of the above graph, they caused a rightward shift in the PC curve to PC2 such that the new critical point where procrastinating cost equals adjustment cost is at E2, corresponding to time t2, thus allowing the economy to procrastinate longer. In all likelihood, the crisis-ridden Lebanese economy is now operating between times t1 and t2, muddling through without any reforms and, unfortunately, continuing largely with “business as usual” . As such, the economy will be accumulating losses, but with no reform actions to produce future economic benefits that would counteract these losses and more. And unless and until the critical point E2 is reached and rationality prevails then, which could be a long way to go, we expect the economy on the transition to E2 to stay reform-less and to remain in the pits with nothing

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<sup>10</sup> In October 2019, liquid FX reserves stood at about \$31 billion but have consistently fallen to about \$ 9.8 billion by September 2022; however, by mid November 2022 they rose to \$ 10.3 billion.

pulling it out. It is interesting to add that E2 is drawn to meet AC at its downward sloping segment or when adjustment cost starts to fall. This is because, by then (at t2), it is possible that most of the exchange rate adjustments and some of the banking restructuring have been achieved on their own i.e. not policy-induced, in addition to reductions in the balance of payment deficits because of the lower income and exchange rates. Note, however, that point E2 could end up instead on the rising segment of AC, depending on the size of the PC shift and/or the concavity of AC.

So what to do? The behavioral economics literature argues that in a case like the above, commitment strategies have to be devised to “nudge” or induce people to overcome their present bias and their tendency to procrastinate. In fact, there are currently two such strategies making the rounds in Lebanon. The first is a staff-level agreement with the IMF, and if (and that is a big if!) successful it will almost guarantee financial assistance of \$14 billion -- \$3 billion from the IMF and \$11 billion from the Cedre Conference – not to mention a better-functioning and a growth-oriented economy. Though this program could lock-in future benefits and it could have these benefits discounted at less, it nevertheless does little to ameliorate the upfront adjustment costs. So far, very limited effort has been done towards upholding the agreement, as the country is still struggling to approve its pre-conditions! The second strategy is a proposal to earmark – by law if necessary – any future oil and gas revenues to pay back depositors their USD deposits; and it would be best in this respect if this strategy is made conditional on implementing a reform program so as to entice people to accept the upfront adjustment cost. Though credible and very viable, this strategy has sadly not yet been adopted.

It seems, we are left then with a conundrum. As long as point E2 and beyond is not reached, Lebanese politicians, being by no means even your average statesmen, will find it perhaps rational and in their self-interest not to favor reforms. And if my analysis were correct, people will irrationally go along with them, and both will be in sync together regarding the crisis and the needed reforms. But the end result will not be pretty, as they will go on procrastinating and muddling through till -- you guessed it -- “Godot” finally shows up!.

#### Appendix:

From the national income accounts, we have:

$$GDP = C + I + X - M$$

Where GDP is gross domestic income or product, C is private and public consumption expenditure, I is private and public investment expenditure, X and M are respectively exports and imports of goods and services. And as such NX is net exports or the trade balance. Equation (1) can be written as:

$$GDP - C - I = NX$$

Since  $GDP - C - I$  is equal to domestic income minus domestic expenditures which in turn is equal to domestic savings S, then equation (2) becomes:

$$S - I = NX$$

Equation (3) postulates that if domestic savings are negative, or positive but less than domestic investment (i.e. people and government are high on consumption), then the trade balance or NX will be negative or in deficit; and vice versa. Below are the figures for each variable in equation (3) from 2010 to 2020 in trillion LBP:

| T<br>LBP | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  | 2019  | 2020  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| NX       | -14.5 | -17.7 | -20.5 | -23.2 | -23.4 | -19.2 | -18.7 | -19.6 | -22.1 | -17.3 | -29.8 |
| I        | 14.4  | 16.1  | 16.4  | 19.5  | 18.1  | 16.7  | 17.8  | 17.4  | 18.6  | 9.8   | 9.1   |
| S        | -0.1  | -1.6  | -4.1  | -3.7  | -5.3  | -2.5  | -0.9  | -2.2  | -3.5  | -7.5  | -20.7 |

Source: CAS

As we can see from the table above, domestic savings have been negative throughout the period, or the Lebanese have been dis-savers.

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