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*This spotlight is written in memory of Professor Samih Antoine Azar, a remarkable economist and an excellent contributor to the Blog*

| yr      | g<br>(%) | r<br>(%) | GDP<br>(Tn LBP) | I<br>(Tn LBP) | CA<br>(Tn LBP) | S<br>(Tn LBP) | s     | c    | rs/g  | rc/g  | (rs+rc) |
|---------|----------|----------|-----------------|---------------|----------------|---------------|-------|------|-------|-------|---------|
| 2004    | 6.7      | 5.4      | 31.9            | 7.4           | 6.6            | 0.8           | 0.03  | 0.21 | 0.02  | 0.17  | 0.19    |
| 2005    | 2.7      | 9.13     | 32.4            | 7.5           | 4.1            | 3.4           | 0.10  | 0.13 | 0.35  | 0.43  | 0.78    |
| 2006    | 1.5      | 3.44     | 33.2            | 6.8           | 1.7            | 5.1           | 0.15  | 0.05 | 0.35  | 0.12  | 0.47    |
| 2007    | 9.3      | 3.46     | 37.4            | 9.1           | 2.4            | 6.7           | 0.18  | 0.06 | 0.07  | 0.02  | 0.09    |
| 2008    | 9.1      | -3.44    | 43.9            | 12.3          | 6.2            | 6.1           | 0.14  | 0.14 | -0.05 | -0.05 | -0.11   |
| 2009    | 10.2     | 5.79     | 53.4            | 14.4          | 4.5            | 9.9           | 0.19  | 0.08 | 0.11  | 0.05  | 0.15    |
| 2010    | 8        | 1.97     | 57.9            | 14.5          | 11.3           | 3.2           | 0.06  | 0.20 | 0.01  | 0.05  | 0.06    |
| 2011    | 0.9      | 0.63     | 60.2            | 16.2          | 8.3            | 7.9           | 0.13  | 0.14 | 0.09  | 0.10  | 0.19    |
| 2012    | 2.6      | -1.11    | 66.4            | 16.5          | 15.5           | 1             | 0.02  | 0.23 | -0.01 | -0.10 | -0.11   |
| 2013    | 3.8      | -0.06    | 70.7            | 19.5          | 17.9           | 1.6           | 0.02  | 0.25 | 0.00  | 0.00  | 0.00    |
| 2014    | 2.5      | 4.4      | 72.5            | 18.1          | 18.9           | -0.8          | -0.01 | 0.26 | -0.02 | 0.46  | 0.44    |
| 2015    | 0.5      | 9.34     | 75.3            | 16.7          | 12.8           | 3.9           | 0.05  | 0.17 | 0.97  | 3.18  | 4.14    |
| 2016    | 1.6      | 6.37     | 77.1            | 17.8          | 15.7           | 2.1           | 0.03  | 0.20 | 0.11  | 0.81  | 0.92    |
| 2017    | 0.9      | 1.17     | 79.9            | 17.4          | 18.2           | -0.8          | -0.01 | 0.23 | -0.01 | 0.30  | 0.28    |
| 2018    | -1.9     | 1.03     | 82.8            | 18.6          | 20             | -1.4          | -0.02 | 0.24 | 0.01  | -0.13 | -0.12   |
| 2019    | -6.9     | 5.9      | 80.2            | 9.9           | 16.9           | -7            | -0.09 | 0.21 | 0.07  | -0.18 | -0.11   |
| average | 3.2      | 3.4      | 59.7            | 13.9          | 11.3           | 2.6           | 0.06  | 0.18 | 0.13  | 0.32  | 0.45    |

Source: CAS; IMF; and author's calculations

In his seminal book, *Capital in the 21<sup>st</sup> Century*, Thomas Piketty postulated a 'golden rule' for the 21<sup>st</sup> century:  $r > g$ , where  $r$  is the real rate of interest and  $g$  is the real growth of GDP or income. An important corollary of this rule is that there will be a tendency for *inequality to rise* as capital income will tend to increase at the rate of interest,  $r$ , while national income will increase at the rate  $g$ . And as such the share of capital income will rise

at the expense of the share of labor. According to Piketty, this has not always been the case. For mostly 'Western' economies, the capital share increased from at least the French revolution in 1789, but then it fell from about 1914 to the early 1980s, but to rise again since then and hence into the 21<sup>st</sup> century. We will not go through the reasons behind these movements for the capital income share, as our focus is on Lebanon, but suffice it to say that Piketty's conception of capital is comprehensive, constituting all non-human wealth that includes real capital, financial capital, and property, which in turn earn respectively profits, interest, and rent.

In the context of Lebanon, the aim of this spotlight is not that ambitious, primarily for data limitations, not to mention the fact that the country has only been independent since 1943. More specifically, data limitations mean that no *national income* data are available for Lebanon (i.e. for profits, interest, rent, and wage), and what exists are national accounts data for expenditure and sectoral value added, but are only available from 2004 to 2021. So, to arrive at an estimate for the capital income share, we will, first, focus on the period 2004 to 2019 (i.e. excluding the troublesome crisis years); second, utilize the available national expenditure accounts (GDP, investment, and savings data) and two important and congenial analytical relations.

We will start with these two (slightly technical) analytical relations. First, the capital income share can be defined as:

$$(1) \text{ Capital Income Share} = rK/Y$$

Where, K and Y are real capital and GDP respectively. In steady state equilibrium, the capital output ratio K/Y is equal to the incremental capital output ratio  $\Delta K/\Delta Y$  (where  $\Delta$  is the change or increment)<sup>1</sup>. Hence (1) becomes:

$$(2) \text{ Capital Income Share} = r\Delta K/\Delta Y$$

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<sup>1</sup> In mathematical terms, when the average is constant (K/Y), then it is equal to the marginal or incremental ( $\Delta K/\Delta Y$ ).

But since  $\Delta K = I$ , where  $I$  is Investment or the change in real capital including housing as defined by the economic literature (not entirely as defined by Piketty). If we replace  $\Delta K$  by  $I$  and divide (2) by  $Y$ , we get:

$$(3) \text{ Capital Income Share} = r (I/Y)/(\Delta Y/Y)$$

The term  $\Delta Y/Y$  is nothing but the rate of growth of real GDP,  $g$ . As a result, (3) becomes:

$$(4) \text{ Capital Income Share} = r(I/Y)/g$$

*From (4), we get our first analytical relation, which defines the capital income share as equal to  $r$  multiplied by the investment ratio (investment to GDP ratio) and divided by the growth rate of real GDP.*

The second analytical relation is very relevant to Lebanon. That is because *Lebanon has consistently suffered from current account (CA) deficits because of its perennial trade deficits* – we simply import too much goods!. Fundamentally, this expresses our *second analytical relation as in equation (5) below:*

$$(5) I = S + CA$$

Where,  $S$  is domestic savings and  $CA$  is the current account deficit. Equation (5) is very crucial as it says *that investment  $I$  is financed from domestic savings  $S$  and from foreign savings which are equal in magnitude to the current account deficit  $CA$* . Why? This is because the balance of payments has to always be balanced, which means that the current account deficit has to be covered by *capital inflows from abroad which simply represent foreign savings*<sup>2</sup>. Note that if consumption were to

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<sup>2</sup> In the balance of payments, the capital account plus the current account plus the change in BDL foreign reserves have to add to zero. If the current account deficit is equal to the capital account surplus, then there will be no change in BDL foreign reserves; if the capital account surplus is less, then the change in BDL foreign reserves will be positive, and it will be recorded as a negative foreign asset, or as a positive foreign liability just like a capital inflow.

increase, which translates to a *reduction in domestic savings*  $S$ , then for investment  $I$  to stay the same, then the *current account deficit*  $CA$  will have to rise. If we replace equation (5) in (4), we get:

$$(6) \text{ Capital Income Share} = r (S/Y + CA/Y)/g$$

Let  $s$  be the savings ratio  $S/Y$  and  $c$  be the current account deficit ratio  $CA/Y$ . As such, (6) becomes:

$$(7) \text{ Capital income Share} = r(s + c)/g = rs/g + rc/g$$

Equation (7) splits capital income share into two: the share that accrues to capital generated from domestic savings  $rs/g$  and the share that accrues to capital from foreign savings  $rc/g$ <sup>3</sup>. Note that for most countries  $rc/g$  is zero or very small over the medium-to-long run because current account deficits are usually countered by surpluses over time so they wash out; but not in Lebanon, as we alluded to earlier.

The table above presents the relevant data and calculations that relate to equation (7). More importantly, given the above analysis and the numbers arrived at in the table, we can deduce the following:

- 1) The average capital income share stood at 45%. It is above the world average of 38%, but that is because average real interest  $r$  is (slightly) above average real GDP growth  $g$ , at 3.4% compared to 3.2%. This is in agreement with Piketty's 'golden rule', as it implies a relatively higher capital income share.
- 2) Another important reason for the relatively higher capital share -- property and real estate being part of investments  $I$  -- is that during the studied period the banking sector extended \$20 billion (30% of total loans) towards subsidized housing loans to residents and expatriates alike,

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<sup>3</sup> The nominal interest rate used is the average interest rate on LBP deposits and the real interest rate is derived by subtracting from the former the relevant CPI inflation rate of Lebanon. Note that deposits rates are very indicative in Lebanon before the crisis as deposits stood at more than 320% of GDP.

funding in the process around 200,000 housing units. So although the capital income share is higher, *it is paradoxically so because of the residential investments directed to mostly the lower half of the income distribution*, helping to meet an essential social need.

3) As important, with the foreign savings ratio  $c$  three times the domestic savings ratio  $s$ , it is no wonder that the capital income share from foreign savings  $rc/g$  stands at 32%, whereas the capital income share from domestic savings  $rs/g$  is only 13%. But before we jump into conclusions claiming 'foreign exploitation', keep in mind that a big part of these foreign savings are actually from non-resident and expatriate Lebanese towards financial (e.g. deposits, bonds) and real estate (e.g. housing, land) investments. So, we can relax, as the capital income shares are all largely within the 'wider, borderless Lebanese family'.

4) The flip side of an average capital income share of 45% is that the average *labor income share is 55%, which is lower than the world average of 62%*. But this result has to be tempered by two considerations: first, the subsidized and large ownership of housing that accrued mostly to the middle and lower income classes; second, the relatively higher wages for expatriate Lebanese (otherwise, why do they bother to leave!), which partly found their way back to the country through investments that benefited all, directly or indirectly.

Lastly, we would like to conclude with three observations:

First, the fact that subsidized housing played a decent double role in increasing relatively the capital income share but serving a crucial 'redistributive purpose', is all due to the banking sector and the indispensable role that it plays in the economy. So any plan that will be underway to restructure Lebanese banks and to close the financial gap has to offer, as a result, a fair solution to the financial crisis that has the viability and the vital, inclusive interests of banks in mind.

Second, in a lot of ways, there are clearly two 'Lebanons', one domestic and one expatriate, as we have always known. But the point here is that a

notable reason behind Lebanon's recurring and huge current account deficits is that they are fed by expatriates' capital and investments. This means that an important way to curtail trade and current account deficits is to limit expatriation – clearly a 'catch 22' situation!. But the best way around this situation is to build a well-governed, well-diversified, and a progressive economy; and perhaps we have the best chance to start that now with the new presidency and the newly formed but capable government.

Third, there remains the question – since the study period finished in 2019 – of what has happened to the income share during the (ongoing) crisis years? We can only venture a possible outcome that is predicated on two opposing tendencies. The first is that the capital income share should fall because of the destruction of deposits and properties – that is the 'quantity' effect (lower  $K$ ). The second is that the capital share should rise because, with the reduction in capital, the marginal productivity of capital or the return on capital should rise – that is the 'price' effect (higher  $r$ ). Although initial, anecdotal evidence shows that the 'quantity' effect might dominate, which effect will actually prevail will have to wait for the crisis to end and for future research to find out.

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