The Big Mac Index and Lebanese Real Exchange Rates: Where Do We Stand?

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The nominal exchange rate as commonly known is the price of one currency in terms of another. It’s usually expressed as the domestic price of the foreign currency. So if it costs 89,500 LBP to buy 1 USD, from a Lebanese perspective the nominal rate is – you guessed it – 89,500 LBP per USD[1]. But the nominal exchange rate isn’t the whole story, as the Lebanese person or firm buying another currency (USD) is interested primarily in what can be bought with it. That’s where the real exchange rate (RER) comes in. It seeks to measure the value of a country’s goods against those of another country, or a group of countries or the rest of the world, at the prevailing nominal exchange rate.

The real exchange rate between two currencies is the product of the reciprocal of the nominal exchange rate (the LBP cost of 1 USD) and the ratio of prices between the two countries. The core equation is RER = P/eP*, where e is the nominal USD/LBP exchange rate, P* is

[1] Alternatively from a US perspective, it can be expressed as 0.000011 LBP/USD, or what it would cost in USD to buy 1 LBP.

the average price of a good in the US, and P is the average price of the good in Lebanon[2].

One can measure the real exchange rate between the two countries in terms of a single representative good -- say the Big Mac, the McDonald' s sandwich of which a virtually identical version is sold in many countries (popularized by the Economist Magazine as the Big Mac Index). If the real exchange rate is 1, the burger would cost the same in the United States as in Lebanon, when the price is expressed in a common currency.

So let us see what this Big Mac index implies for Lebanon. As we observed above, the nominal exchange rate e is 89,500 USD/LBP; and anecdotal evidence reveals that the price of a Big Mac in the US P* is 6 USD whereas the price of a Big Mac P in Lebanon is 480,000 LBP. Hence, RER can be calculated as:

RER = 480,000/(6 x 89,500)

RER = 0.9

With RER at 0.9, this would mean that the Big Mac costs 10% less in Lebanon than in the US or at 5.3 USD (480,000/89,500), suggesting that the LBP is 10% undervalued relative to the USD. Another way of seeing this is as follows: assume that the nominal exchange rate is 80,000 USD/LBP, an appreciation of 10% in the LBP, then from the

[2] Notice that RER appreciates or gets overvalued when domestic prices P go up and/or the exchange rate e appreciates (e is lower) and/or foreign prices P* fall.

equation above RER would be 1 and the price of a Big Mac in Lebanon in USD would be exactly 6 USD, same as in the US. And at this nominal exchange rate the LBP would be neither overvalued nor undervalued, and prices would be equivalent based on the purchasing power parity.

But how would this adjustment come about? Theoretically, if the real exchange rate is misaligned, there will be pressure on the nominal exchange rate to adjust, because the same good can be purchased more cheaply in one country than in the other. Put simply, it would make economic sense to acquire LBP, use them to buy Big Macs in Lebanon, and then sell them in the US for the higher price at 6 USD. In taking advantage of such price differentials (arbitrage), demand for LBP rises and the nominal exchange rate improves in the process, until the price of big Macs in Lebanon and the United States is the same and the RER is returned to 1.

The only problem with the above analysis is that recent evidence by the World Bank has shown that the Lebanese real exchange rate is now overvalued by about 30% since 1/2010 and by 50% since 5/2023[3]. How can this be true? What explanations can be put forward to reconcile the two pieces of evidence? In this respect, we

[3] World Bank, Lebanese Economic Monitor: Turning the Tide?, June 2025; Said, M. "From Theory to Practice: When Currency Depreciations Doesn't Boost Exports – the Case of Lebanon", Blominvest Blog, Economic Digest, July 9, 2025.

propose three such explanations with descending order of importance.

First, concerning the Big Mac index, McDonald's uses different commercial strategies which can result in huge price differences for a product. Overall, the price of a Big Mac will be a reflection of its local production and delivery cost, the cost of advertising, and most importantly what the local market will bear – quite different from country to country, and not all a reflection of relative currency values. As such, in some markets, a high-volume and low-margin approach makes most sense to maximize profit, while in others a higher margin will generate more profit. It seems that the former strategy is followed in Lebanon, especially given the very tough competition in the food and restaurant market.

Second, in the real world, there are many 'costs' that get in the way of a straight price comparison -- such as transportation cost, trade barriers, and consumption preferences. In addition, not all goods in a given market basket are tradable and subject to international competition. Non-tradable, such as real estate and personal services, face minimal international price competition, and their prices can differ widely. In this sense, economic theory suggests, and data support, that much of the RER variations across countries could be accounted for by fluctuations in non-tradable prices, including in this case a country like Lebanon whose non-tradable or services sector is more than 75% of the economy.

Third, for the most part, economists and policymakers are more interested in the real effective exchange rate (REER) when measuring a currency's overall alignment. The REER is an average of the bilateral RERs between the country and each of its trading partners, weighted by the respective trade shares of each partner. Because it is an average, a country's REER may be overvalued (display upward misalignment) when its currency is *more overvalued relative to one or more trading partners than it is undervalued relative to others*[4]. And that could be the case in Lebanon (the evidence from the World Bank cited earlier is for REER), given that its four major trade groups carry four different currencies: the USD for the US and the Arab world (who mostly peg to the USD), the Swiss Franc for Switzerland, the Euro for Europe, and the Yuan for China.

That said, why the above analysis can be considered important? It is widely believed that overvalued REER, since at least 2010, was one of the major reasons behind the Lebanese crisis – besides unsustainable fiscal policy and endemic corruption. It is also believed that once Lebanon has passed the hump relating to the sordid business of Hezbollah's disarmament, it has to focus on

[4] Catao, L. "Real Exchange Rates: What Money Can Buy", IMF Finance & Development Magazine, September 2016.

economic and financial reforms, one crucial part of which is the choice of an exchange rate regime, as the exchange rate is the most important price in a small open economy, for it is essential to ensure monetary stability, trade competitiveness, and adequate foreign reserves. As such, this should optimally involve a REER that is in equilibrium. But that is not easy, since estimating equilibrium REERs can be difficult because prices are somewhat sticky in the short run and the nominal exchange rate is not. So REERs typically display considerable short-run volatility in response to news and noisy trading, and it’s not surprising that many market participants and policymakers get things wrong -- sometimes very wrong. As important, we saw also that not all REER fluctuations should be interpreted as indications of the exchange rate being out of whack, since deviations in REERs don’t necessarily indicate fundamental misalignment. All that makes it doubly hard to come up with the right REER and the nominal exchange rate that maintains it, so as the economy does not repeat the misalignment mistakes of the first two decades of the 2000s. And to succeed in that, it perhaps needs all the luck it can get!

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