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THE DOLLARIZATION CURSE

Hard Peg choices to cure the currency

ABOUT THE AUTHOR

Layal Mansour holds a Ph.D in Macroeconomics from University Lumière Lyon -2France, specialized in monetary and financial economics in dollarized, emerging and developing countries. She also accomplished one year of Post doctorate research in Financial Economics at the American University of Beirut.

Her research papers are focused on monetary policy, exchange rate, dollarization, financial crises, geopolitical risks and time series analysis and they are published in reputable academic journals. Her papers were presented in several international conferences such as the American Economic Association (ASSA), the Western Economic Association International (WEAI), the World Bank MENA seminar series in Washington DC-USA, the UN-ESCWA-Lebanon and others.

Layal Mansour was the leader to construct a financial stress index for Lebanon in 2018 that reveals all hidden information about the Lebanese financial market such as the banking sector, the stock market, and the exchange rate & debt markets. She constructed for Turkey as well as for Lebanon the financial stress index that includes dollarization rate.

She is currently teaching economics at the Lebanese American University in Beirut-Lebanon (AACSB University) and the University Saint Joseph, and she is a Guest Speaker at George Washington University-USA, every Summer since 2016. Prior to that, from 2009 to 2011, she taught several courses in economics at University Lyon 1, University Lyon 2, and University Lyon -3 France.
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EXECUTIVE SUMMARY

Lebanon is one of the most highly dollarized countries in the world. The experience of the past two years of its multi-tiered economic crisis – already notorious as a crisis of historic proportions – leaves no doubt that any rescue attempt undertaken at this critical junction will need to hinge upon a solution to the problem of the Lebanese lira and its explosive depreciation over the past two years. It is a survival issue to design the exchange rate regime at the greatest possible speed and with the greatest possible diligence.

In choosing the exchange rate regime, the main economic factors to consider are factors such as dollarization, government temptation to inflate (which is in line with the prediction of political economy theories), and exposure to exchange rate risks. Considering the implications of Lebanon's extreme dollarization, which not only exceeds today a rate of 80 percent, but which also has for several decades been rooted in this country, is of utmost importance. Any exit strategy that seeks resolution of Lebanon's economic crisis underutilization of a soft pegged arrangement or flexible exchange rate regime will indubitably lead to a more severe financial crisis that could last forever, unless the country adopts a hard peg as a "normal next step following dollarization" [92].

The present report incorporates and builds upon economic-empirical research that economists, including scientists at the International Monetary Fund (IMF), have undertaken on exchange rate regimes, forms, and effects of each currency regime type. However, it is not a mere paper in the field of theoretical-academic economics as it takes into account the globally unique, institutional and political specificities of Lebanon in the past 50 years. In the first part of this paper, I discuss the pertinent aspects of dollarization, which plays a decisive but rarely discussed role in the genesis of the current crisis. This is followed by an examination of different de-dollarization scenarios and exchange rate regime options in part two and my arguments for a hard peg last resort solution in part three. In the fourth part of this project, I played the devil advocate to ask critical questions that I have encountered in discussions of the currency crisis and in addressing the hard peg as last resort solution for Lebanon.

The conclusion presents economic and behavioral arguments in condensed reiteration. In sum, this report represents a plea to urgently institute the most responsible currency regime for the sake of Lebanon. It aims to spread awareness of how incompatible and dangerous it could be for Lebanon to de-dollarize by adopting a floating exchange rate regime, as it is suggested by the IMF. The report stresses upon adopting a currency regime of a hard peg, and more precisely the currency board as the solution that best fits Lebanon's dollarized economy, advocating for adoption of a currency board as the first step towards economic reforms and recovery.
Layal Mansour, PhD

[1] *In his economic study, Hussain [8] exposes a summary of results of several previous studies that investigate the relation between corruption and the exchange rate regime.*

GENERAL INTRODUCTION

The diagnostic of Lebanon financial crisis reveals that this crisis was born four decades earlier under the name of "unofficial dollarization". Accordingly, the current phenomena of exorbitant and unabating inflation, high poverty rate, banking sector solvency problem, depletion of foreign reserves, multiple currency rate etc. are not the main economic problems but rather the expected and unavoidable consequences of dollarization.

The rate of dollarization expresses the extent of the economic agents' preferences to hold foreign currency (cash and/or deposit) instead of local currency, because it provides trust, confidence about future purchasing power and stability [20]. In other words, the rate of dollarization expresses the rate of local currency rejection by economic agents. In Lebanon, the drift into dollarization does back to the 1980s. Ever since becoming one of the world's most dollarized economies, the dollarization rate of Lebanon has been around 70 percent and has exceeded lately 80 percent.

Unfortunately, dollarization does not remain an isolated factor of finance but affects all sectors: It poses a challenge to the pursuit of a coherent and independent monetary policy" [28], and increases the likelihood of falling into a dollarization trap at the slightest information asymmetry of uncertainty [37], it is a cause of downgrades by credit rating agencies and makes a country's banking sector vulnerable and exposed to asset/liability currency mismatch.

Moreover, dollarization doesn't persist in isolation but travels in tandem with its inseparable siblings: corruption and weak financial institutions.

Economic and empirical studies have confirmed that dollarization, accompanied by weak financial institution and corruption, necessitate adopting a pegged (not flexible) exchange rate regime, in order to avoid exchange rate volatility that could be derived from external shock [10]. Alas, the catch-22 of this scenario is that a pegged exchange rate regime cannot remain sustainable under persistent dollarization and continually growing corruption.

Like a dormant disease, the dollarization combo (pegged regime and corruption) will sooner or later but with certainty become malignant and trigger a multidimensional financial crisis [15], [16] [17].

In fact, the pegged currency regime along with weak financial institutions and an overall bad economic environment would lead to increased corruption. [6], [7]. Yet, vice versa corruption would entice further dollarization and so on, [8[1]] [9] because when the economic agents hedge Lebanese local currency risks with foreign currencies, they show less interest in monitoring internal politics.

Rather than prescribing temporary relieves by providing loans or grants to extend its expiry date, Lebanon is in dire need to address its economic problems at the epicenter which is the triad of exchange rate regime-dollarization-corruption.

The IMF has expressed several times its willingness to assist Lebanon with its conventional austerity program which consists of imposing dollar deposit conversion and currency rate unification along with de-dollarizing by moving to a flexible exchange rate regime (manage float or free float)[2].

Paradoxically, the IMF is strongly aware that a very highly dollarized economy, such as Lebanon, must be analyzed separately and differently to non-dollarized ones.

The dollarization phenomenon doesn't mingle well with most (if not all) common economic theories, principles, and rules; especially it does not respond well to prescribed cures in the monetary and financial markets. Moreover, the IMF has recognized through its economic and empirical studies that nothing can be more dangerous for a dollarized country than letting it adopt a floating exchange rate regime (even managed float): The higher the dollarization rate is, the higher the "fear of floating" is expressed and the lower the degree of floating the currency regime is tolerated.

An IMF paper has even assessed Lebanon's "hysteresis effect" in 1994 [25]. The "hysteresis" effect" states that people who become greatly accustomed to use of dollars (or other foreign currencies) to protect themselves against possible future inflation, could reach a level of being "addicted to dollars". Hence, it becomes difficult and even impossible for the authorities to force people to give up dollars and use their local currency even if inflation drops and economic conditions improve.

[2] Additionally, the IMF plan emphasizes on the prerequisite and conditional measures such as:
-i- designing the fiscal consolidation measures by cutting the public wage bill, cutting social spending, and by privatizing state assets and essential services.
-ii- urging the increase of indirect taxes such as VAT in addition to other regressive taxes.

Effectively, Lebanon was already at that time seen as being persistent in its dollarization and hostile towards its local currency. In the post-conflict economic reconstruction challenges that the country was coping with in the early 1990s, this state of hysteresis was expected to last for at least a further five years following economic flourishing.

Nowadays, after about half a century of being highly dollarized, a smooth transition of Lebanon to a flexible exchange rate regime is inconceivable. It would be more relevant to officialize dollarization instead. In fact, officializing dollarization was even recommended in 1994 in the IMF working paper [25].

What then about adoption of a floating exchange rate regime as the way forward after the heavy shocks of the past two years? It appears highly premature, to say the least. Even Milton Friedman, the "Guru" of the monetarist school and flexible currency regime, firmly rejected flexible exchange rate regimes for weak -emerging-developing-dollarized- countries. Friedman emphasized that currency board, or what he called a 'unified currency' regime is preferable instead [5].

In the case of Lebanon, the high vollarization rate does not only reflect the poor institutional quality that international and local observers unequivocally identify as massive impediment to any economic recovery, but it also indicates the unwillingness of policymakers to effectively engage in corruption fighting and increase/impose trust and confidence on the local currency. Accordingly, adopting a floating exchange rate regime would achieve nothing but encourage the central bank with its discretionary power to continually print money inefficiently in order to finance budget deficit and expenses, thus, to deteriorate more the current economic situation. In consequence of the recently witnessed economic, institutional, and political failures, a hard peg for Lebanon must be urgently considered as the remedy for the predominant factor in the economic weakness: dollarization rate, the currency crisis, central bank discretionary power and central bank intimate relationship with politicians.

A hard peg regime, notably a currency board, consists of abolishing completely the central bank's discretionary power i.e., the central bank monetary policy of defining the interest rate (Money Supply) or acting as a lender of last resort for banks in trouble [93], with a near immediate effect of building strong trust and confidence in the "new" local currency. The currency board is economically characterized by an automatic currency convertibility and an immediate transition to a negligible inflation rate that reflects stable-fixed exchange rate regime not subject to depreciation or devaluation.

A law proposal that urges Lebanon to adopt a Currency Board Arrangement (CBA) has been presented to the Lebanese Parliament in June 2020[3]. However, this draft law and the entire concept of CBA has frequently been rejected by politicians, which is logical and expected for a system impaired by a culture of corruption since CBA is supposed to impose discipline and put an end to corruption. Unexpectedly, however, the CBA is being rejected by many political activists, lawyers, journalists, and finance experts who operate on the assumption that a CBA is a central bank that adopts a soft peg exchange rate regime, quite similar to the pre-crisis one. This, clearly mistaken assumption, is reflected in the fact that multiple questions have been raised rhetorically and speculated upon by these stakeholders in the debate over the past two years, but generally without the offering of clear answers by these debaters. This line of stakeholder questions and opinions is answered in the Frequently Asked Questions section on "How What, Why and When" in this report.

The remainder of the report is structured as follows:
Section 1 diagnoses dollarization and its economic consequences in Lebanon as the epicenter of the current financial crisis.

Section 2 examines all possible exchange rate regimes and proceeds by eliminating the ones incompatible with the economic situation in Lebanon: the flexible and the soft peg exchange rate regime.

Section 3 confirms that the most appropriate exchange rate regime for Lebanon is the remaining one: the hard peg. The section elaborates on the prudence of selecting the currency board option over full dollarization.

Section 4, as mentioned above, develops, justifies, and answers to the most frequently asked questions related to the effectiveness, costs, risks, limitations, bank activities, business cycles of a possible currency board in Lebanon.

The report closes with a conclusion and a policy recommendations urging Lebanese leaders to reject flexible exchange rate propositions and to commit to adopting the currency board regime as a first step towards economic reforms.

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[3] *On the 19th of June 2020, a law proposal urging Lebanon to adopt a currency board was officially submitted to the Lebanese Parliament in June (N2020/967°) by Layal Mansour (the author) and the former MP Paula Yacoubian.*

PART I-
Diagnosing Lebanon Dollarization & Currency Crisis

Diagnostics of Lebanon financial crisis reveals that Lebanon has for more than 40 years been suffering from a chronic illness called “unofficial dollarization”. Unfortunately, dollarization affects not merely the realms of money and finance but all sectors of the economy due to the contagion factor of network externalities: It poses a challenge to the pursuit of a coherent and independent monetary policy [2]; it increases the likelihood of springing a dollarization trap at the confrontation with uncertainty or the slightest information asymmetry [3]; it triggers credit downgrades by rating agencies, and induces banking sector vulnerability and exposure to asset/liability currency mismatches. Moreover, dollarization doesn’t manifest as a mono-nuclear economic disease but interacts with two inseparable viral strains of ill behavior: rising of corruption and degrading of financial institutions. The lower the institutional integrity of a country is (evidenced as lack of transparency, loss of confidence and high prevalence of corruption), the higher the dollarization rate tends to be [10] and vice versa, to an extent that the improvement in the structural rules and macroeconomic environment in a country infected with dollarization could lower the dollarization rate by up to ten percent. Together, dollarization and its relatives make it imperative to impose strict measures regarding the exchange rate regime, forcing severe remedial moves towards pegged solutions, fixed and more fixed [4].

1.1 Dollarization Epidemic in Lebanon

In 1992, Lebanon worked extensively on promoting credibility and stability of its local currency. Stabilization of the Lebanese lira was a precondition for attracting investments and rebuilding the country after 17 years of internal war. The path to reconstruction was opened by political agreements and the agreement on a new government in autumn of 1992, which led to a rapid calming of exchange rate volatility. To reliably avert excessive price volatility and attract foreign capital, the central bank of Lebanon (BDL) decided to adopt a stabilization policy: the soft peg exchange rate regime. Officially adopted in 1997, the peg exchange rate regime defined a narrow band where one US dollar would trade for 1,500-1,515 Lebanese Pound (LBP). Authorities haven’t taken any measures to prevent “unofficial dollarization”, but rather have implicitly encouraged it in order to attract international funds inflows i.e., foreign investments and deposits. The rationale of such a step commonly is the understanding that economic agents, under circumstances where they do not trust their local currency and fear inflation /future devaluation (like was in previous years), prefer to operate with a foreign currency, notably the US dollar or the euro (cash and/or deposit). The foreign currency is supposed to provide better purchasing power than the national currency and more stability in terms of currency value [1]. There are several types of dollarization. The main ones used in economics are the following:

a- The partial dollarization (also described as unofficial dollarization, de-facto dollarization, dollarized payment system, or currency payment/substitution)

It consists of using a foreign currency, or several foreign currencies, as a medium of exchange for cash transactions, demand deposits or reserves at the banks and the central bank. Since the 1970s, the term Dollarization has become interchangeable with currency substitution/demand, or partial dollarization, or unofficial dollarization, or de facto dollarization. The term “Unofficial” does not denote circulation of the foreign currency as “illegal” but simply indicates that the foreign currency is not the official or de-jure local currency supplied by the domestic central bank.

The ratios of dollar to domestic currency in resident and non-resident bank deposits and other financial assets, aka alternative assets, calculated by taking the deposit in foreign currency to total deposit ratio, are the most common tools used for measurement of dollarization in a partially dollarized economy. These ratios indicate what residents hold in foreign currency assets or liability.

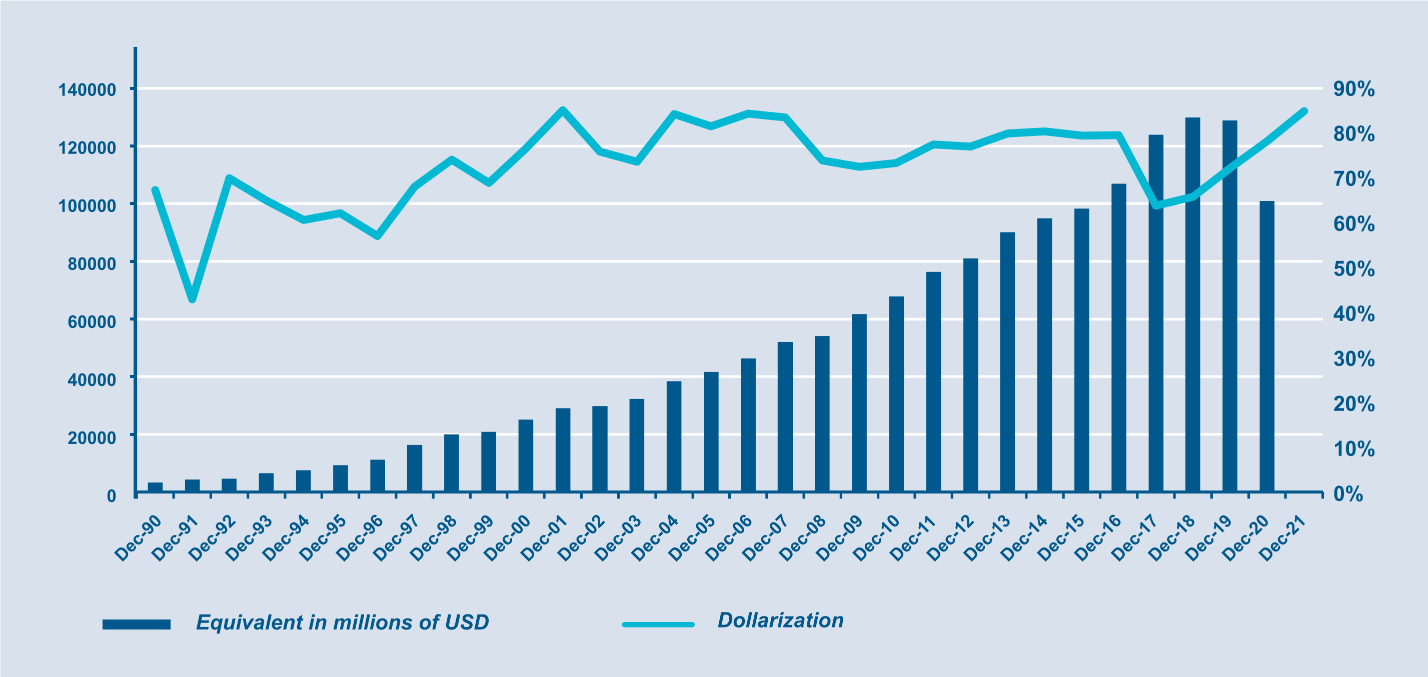
b- The full/official/de jure dollarization or the real dollarization index

A system of full dollarization comes into existence when a national government designates a foreign currency (such as the dollar or euro) as the nation’s legal tender. This system requires that the government officially and with constitutional consent gives up its national currency and relinquishes monetary autonomy (as well as redefines the role of its central bank). Hence, the formal de-jure prices and wages in the national economy are denominated in foreign currency, such as dollars or euro.

Side note: If a country gives up its local currency officially and adopts the euro, it is technically said to be dollarized, not euroized. However, the term euroization and euroized has recently become more familiar and used in several economic studies.

In addition to its post-conflict reconstruction and development in the 1990s along with a stable local currency (pegged since 1997), Lebanon benefited from two remarkable and exceptional opportunities in comparison to neighboring countries: -i- The "unofficial dollarization" or the total right to hold foreign currencies as a substitute of the national currency. -ii- The exceptional bank secrecy law, No. 1/1956 that was inspired by the Swiss banking system.
The secrecy law prohibits banks in Lebanon to breaching information about their clients such as their name or their funds to anyone whether it is a private individual or a public authority. It also prohibits any current or former central bank employee, in any capacity, from breaching the secrecy established by the law. All the factors have played a key role in attracting foreign inflows. As shown in figure 1, banks deposits in foreign currency increased more than 30 folds in three decades and entrenched the image of a solvent and flourishing banking sector.

Figure 1: Deposit in foreign currencies and dollarization rate for Lebanon



Source: Author's elaboration from BDL data

The unofficial dollarization attracted and accelerated the international trade flows. It was perceived as an opportunity by foreign banks to start operating domestically or resume operations in Lebanon after having withdrawn during the previous years of armed internal conflict. Globally acting banks such as HSBC, BNP Paribas, ABN AMRO, and others, ventured into the Lebanese market in that phase[4].

The bank secrecy law, from a different perspective, could easily encourage and protect funds generated from illegal activities such as terrorism, money laundering, embezzlement. insider trading, and corruption operations. Unfortunately, the law has always been employed as a scapegoat to avoid cooperating with all types of BDL investigation or audit. Indeed, it was the main obstacle for Alvarez and Marshall to proceed with BDL forensic audit.

[4] *For their withdrawals from the Lebanese market in later years, international regulations on risk-weighted capital allocations were stated by several foreign banks*

1.2 Dollarization, peg, and corruption in Lebanon: A Chronic Illness

Because "there is no single currency regime that is right for all countries or all times" [14], every country has to adopt the exchange rate regime that is coherent with its financial policies, supports the capital mobility of the economy, and reflects the quality of the financial institutions. Monetary policy and the exchange rate regime must be able to manage the inflation level, business cycles, internal and external shocks, price and wage flexibility, and the monetary authority's independence [15, 16]. Particularly the risk of inflation or inflationary pressures constitute significant cost with regard to adoption of floating exchange rate regimes in developing countries [17].

Unofficial dollarization, corruption, and weak financial institutions interlink in a vicious cycle (figure 2 below) that is almost unbreakable. They address the need of adopting a fixed exchange rate regime to avoid exchange rate volatility that is derived from external shock or instability. In line with this need for stability and credibility, fixing the exchange rate with a peg regime could be the first step on a long journey to economic health in Lebanon as a heavily and deeply dollarized country that lacks transparency and accountability.

Figure 2: Corruption, Peg and Dollarization vicious circle

Source: Author's elaboration

• Corruption and Peg

It has been demonstrated that countries with a peg currency regime along with a vulnerable financial market and uncertain overall economic growth are breeding grounds for corruption [8]. Inversely, corruption and real exchange rate regime are tightly interlaced [9]. In their vicious interrelation, dollarization will instigate more corruption and corruption will deepen dollarization [18].

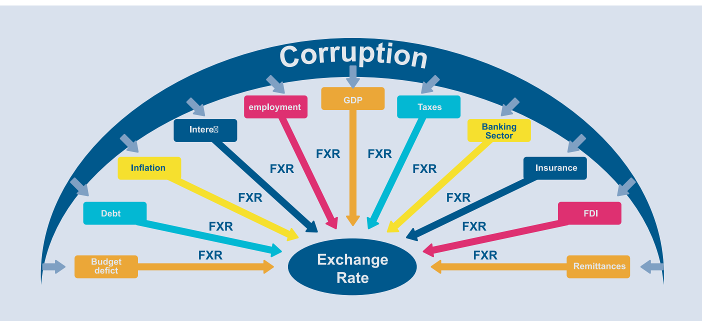
• Peg and Dollarization

The lower the institutional integrity of a country is (lack of transparency, loss of confidence and high corruption), the higher the dollarization rate tends to be [10], and vice versa. This role of institutional quality is so high that the improvement in the structural rules and macroeconomic environment could decrease the dollarization rate by up to ten percent. Additionally, it was verified that the higher the dollarization rate is, the more fixed the currency tends/has to be, which is in line with the predicted theoretical effect of currency substitution [4].

• Corruption and Financial Crisis

In Lebanon, corruption has infected national/governmental policy which has been identified under the textbook definition of corruption as abuse of public power or authority for private gains [19], [20]. In the perception of Lebanese citizens, increasingly poor governance has been expressed in form of arbitrary government regulations and willful deviations from the rule of law. Alas, in this sense Lebanon obviously was not able to evade the rule, demonstrated by macroeconomic indicators from many other countries, that poor governance in public sector greatly increases the likelihood of a future financial crisis [21, 22]. As shown in figure 3, corruption can affect the exchange rate directly through the foreign reserves depletion channel and indirectly by negatively influencing economic variables such as tax compliance, economic growth, and discipline in setting of the state budget [23].

Figure 3: Corruption Channel's Transmission



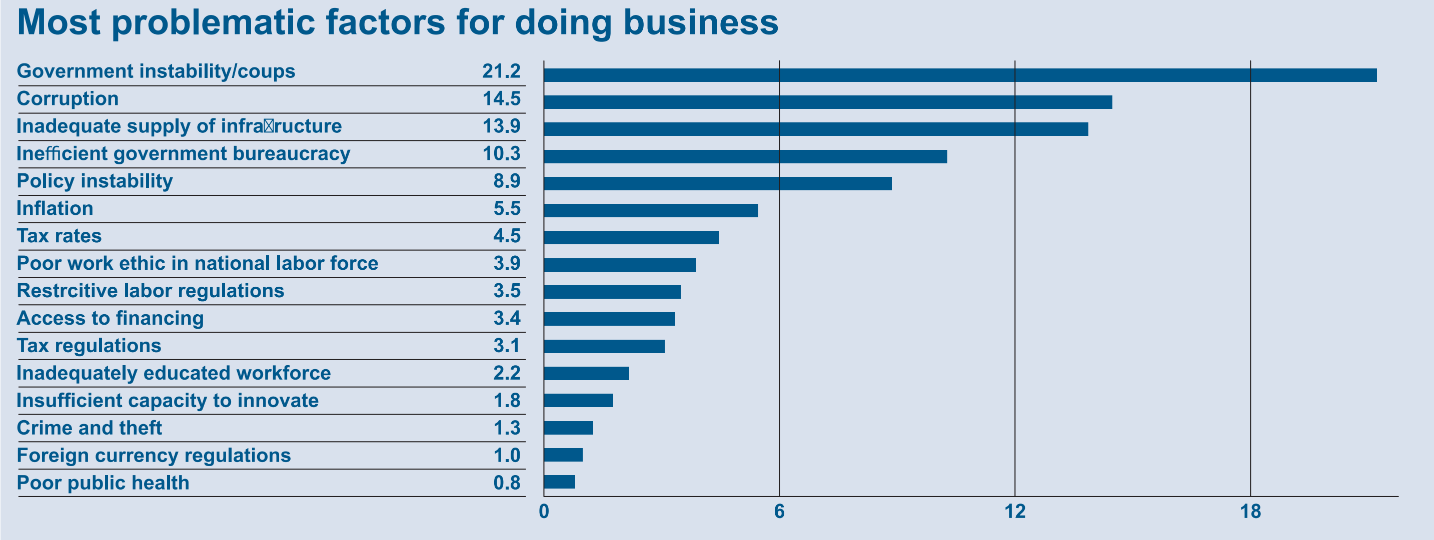
Source: Author's elaboration

It can also significantly affect the composition of capital inflows into the banking sector in a way to trigger a currency crisis [5]. Corruption will furthermore contribute to making a country hostile to Foreign Direct Investment (FDI) and financial market actors such as insurance companies; it can even deter tourism, and negatively impact the trade balance (Export and Import) [24].

With a total debt exceeding 190 percent of GDP in 2019 and with a yearly debt service of nearly five billion dollars, one would expect an outstanding quality of public service. Indeed, Lebanon is a country that is living beyond its means. It is today literally deprived of public transportation, electricity supply, and water.

For decades, Lebanon was attached to an image of high corruption, as expressed for example by scores below 3.9 out of 7 in the World Economic Forum's Global Competitiveness Index (figure 4). Lebanon, ranked as the 149th least corrupt country out of 180 in the 2020 GCI, in 2018 was ranked in positions 105, 133, 109 and 124, respectively, in the GCI categories of macroeconomic environment, labor market efficiency and institution levels. Pensions and wage payments of public servants have long been included in the driving forces of public debt and public sector wage scales and staffing levels in some ministries were not long ago boosted ahead of elections. Lebanon's is ranked in the GCI as more corrupt than Bangladesh, Angola, and Uganda, and has the same rank as Iran, Nigeria, Mozambique, and Cameroon.

Figure 4: Most Problematic Factors for Doing Business

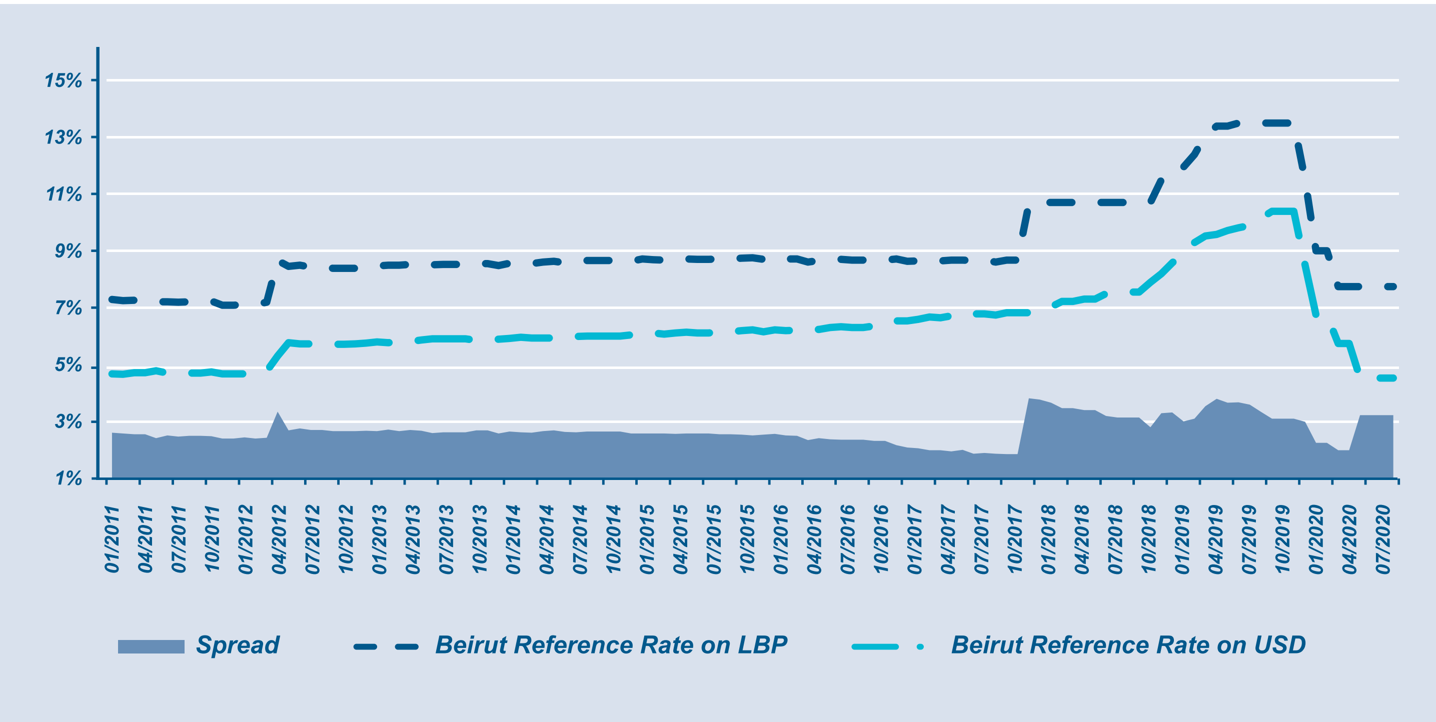


Source: World Economic Forum Survey 2017

1.3. Dollarization & Ineffective Central Bank Monetary Policy

Dollarization is a double-edged sword: in one hand it provides "insurance" against a national currency's possible future devaluation, but in another hand, it has critical economic implications. It entails a significant danger of rendering a central bank's role ineffective [25]: *"The phenomenon of dollarization poses a challenge to the pursuit of a coherent and independent monetary policy"* [2].
The weak institutional quality in Lebanon fostered by corruption and embellished by low restrictions on the movement of capital, has reduced the cost of transactions carried out in US dollars and boosted the foreign currency circulation. Accepting USD circulation as a mean of payment is nothing other than an indirect consent to give up monetary policy. In fact, in an economy invaded by USD, a central bank's interest rate decisions in local currency have a reduced ability to affect money demand (that is mainly in foreign currencies).
Interest rates in local currency do not fluctuate upon request of the local economic conditions but rather follow the US ones, majorated by at least 200 points (figure 5) in order to attract more LBP deposits and evidently to offset the risk premium that the local currency holds. The high interest rates on bank deposits encouraged a rentier economy that disincentivized investment.

Figure 5: Beirut Reference Rate on LBP, USD and interest rate spread



Source: Author´s Elaboration from Brite-Beirut Blom Invest

Figure 5 exposes Beirut Reference rate (BRR) on dollar and on LBP. BRR expresses the increasing discrepancy between the international rates and the situation of risks in the Beirut market and the unrealistic continuity of the adoption of LIBOR – i.e. the lending rate between the banks in the London Market – as a benchmark for local interests, the Board of Directors of Association of Banks in Lebanon (ABL). It is employed as a reference rate in the fiduciary contract instead of LIBOR[5]

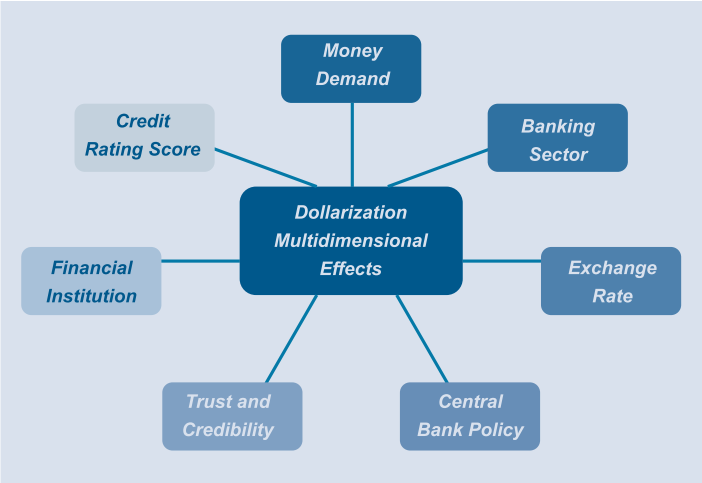
[5] *Source : Brite-Blom Invest / https://brite.blominvestbank.com/series/Beirut-Reference-Rate-on-LBP-17248*

As a result of this inherent limitation of effectively shaping monetary policy, BDL has become unable to control inflation, not even under the narrow definition of money, such as the monetary base or reserve money. Thus, money supply is not set by domestic monetary authorities but, rather, by the behavior of agents holding foreign and domestic-currency denominated assets.
A macro-econometric framework study on Lebanon, found that the BDL effectively doesn't seem to have significant impact, neither on its money supply nor on its interest rates [32].
In fact, the Consumer Price Index (CPI) was found to be negatively related with the money supply/money in circulation and positively related with the lending interest rate. Due to the very high dollarization rate in Lebanon, the M2 in LBP does not reflect at all the money supply; thus, money supply can't be seen as a relevant variable for measuring the variation of the M2.
As for the lending interest rate, monetary authorities appear to have completely given up on using it as an instrument for controlling the CPI, since the lending interest rate is directly related to the US interest rate.

The study deduces that the main trigger of the increase of CPI is the economic growth rather than the money supply, which confirms the importance of fixing the exchange rate to maintain price stability if an expansion of money supply is not followed by GDP growth.

Figure 6, shows the ineffectiveness of the central bank in controlling the overall financial and monetary system, in a dollarized economy.

Figure 6: Multidimensional effects of Dollarization



Source: Author´s Elaboration

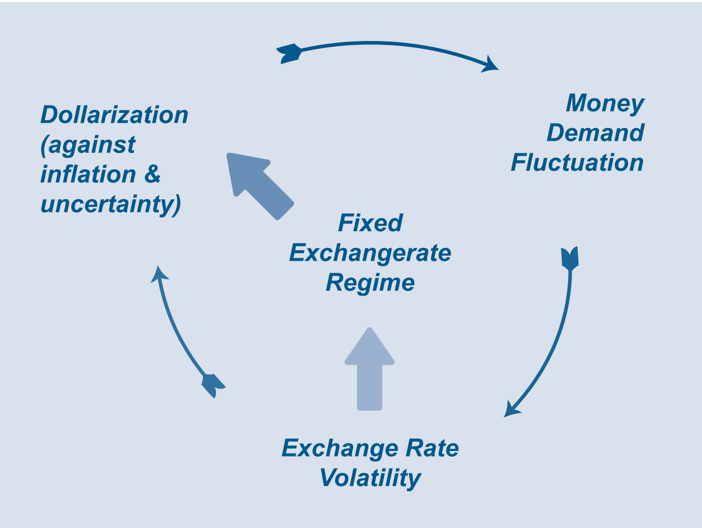
IMF studies that focus on banking crises in dollarized countries, emphasize how monetary policy tools are ineffective even in addressing bank runs [26], [27].

Furthermore, the higher the dollarization rate, the more restraint the ability to save the economy from a bank run or to provide a credible blanket guarantee for foreign currency deposits.

IMF research studies also show that in partially dollarized economies, lender-of-last-resort facilities in domestic monetary base are relatively smaller when compared with non-dollarized economies. This particular weakness in central bank capacity may contribute to very fast and high domestic liquidity expansion and an even faster collapse of the exchange rate.

The money demand fluctuation that results from easy and cheap conversion of local currency to foreign ones causes further deleterious impact. It increases the exchange rate volatility, which in turn makes the economy vulnerable and prone to severe financial crisis if depreciation occurs (figure 7); that is unless the exchange rate regime does not allow the currency to depreciate [28], [29]), or the country adopts a fixed exchange rate regime to mitigate or avoid probable currency crises [30].

Figure 7: Impact of Dollarization on the Exchange Rate



Source: Authors Elaboration

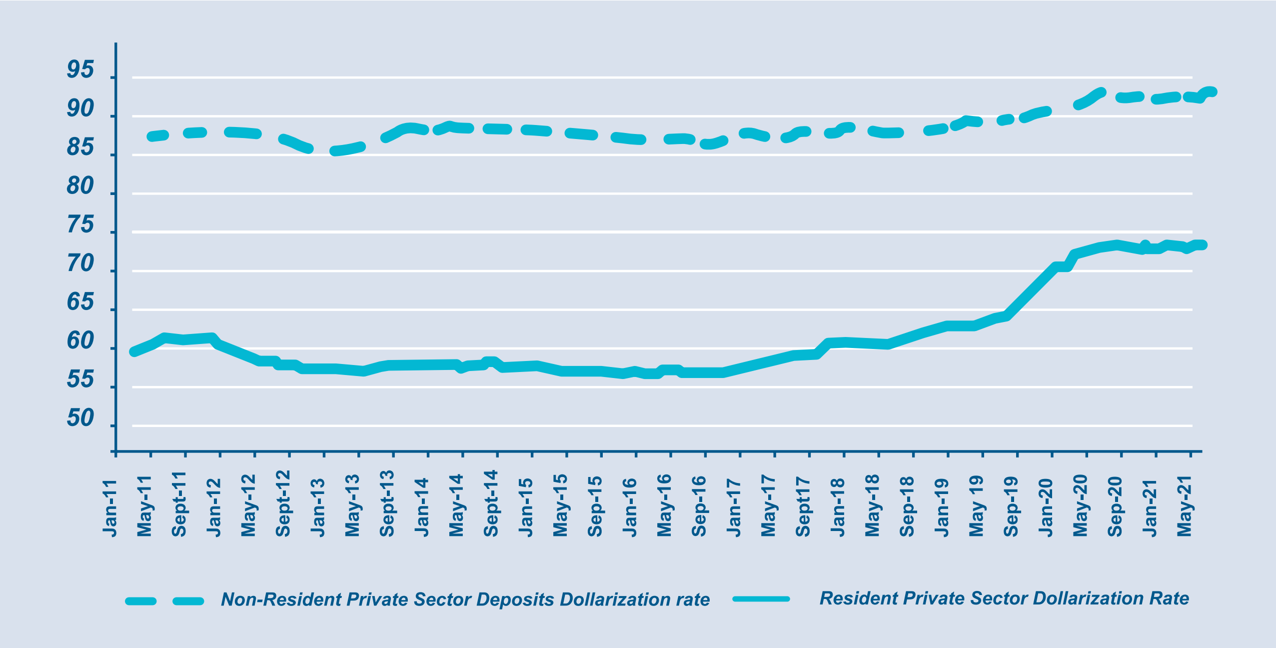
According to the IMF country report for Lebanon in 2017, every one percent increase in demand of dollar is equivalent to a 3.7 percent drop of BDL foreign reserves [31].

This equivalency explains the role of dollarization in triggering a currency crisis by depleting foreign reserves, as well as the need to maintain a fixed currency regime. This disproportionate impact of dollar demand also explains why the BDL had to prioritize providing enough foreign reserves, no matter the costs or consequences.

1.4. Dollarization and Money Demand: An Early Warning Indicator

Under Lebanon's long-standing soft peg regime, the 1,500 LBP to the dollar rule of thumb ratio was the only one that the economic agents in Lebanon have been using in all their lives until the start of 2020. The lira and dollar were used exchangeable and without difference in transaction costs outside of public sector dealings; pricings and transactions on big-ticket items such as cars and real estate were commonly denominated in US dollars rather than in LBP. It is thus not surprising that the dollar deposits of residents and nonresidents exceed 70 and 90 percent of total deposits (figure 8).

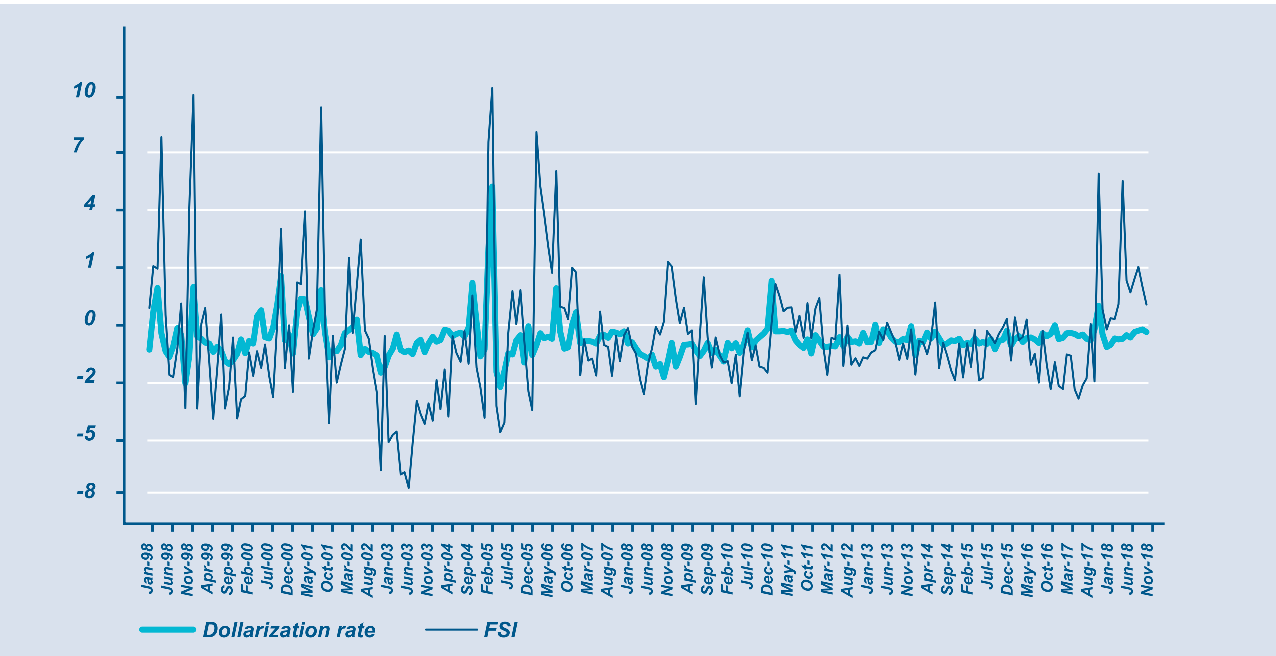
Figure 8: Private Banks: Private Sector Dollarization (in percentage)



Source: Author´s Elaboration from BdL Data

The possibility of a prompt conversion of currencies during stressful periods is per se an Early Warning Indicator (EWI): a higher rate of dollarization is considered as indicating a lower confidence towards the local currency relatively to the foreign currency, and a lower rate regarded as the opposite.
Dollarization rate seems to fluctuate with the Financial Stress Index (FSI) for Lebanon (figure 9). Working with the dollarization rate as an EWI revealing stress, fear, and panic in the overall financial market, the FSI proves its ability of pointing out even stress events that largely remained hidden from the public eye. A similar exercise was elaborated for Turkey in 2019.
The FSI for Turkey that includes dollarization rate revealed a currency crisis that has effectively started in January 2014 [121].
Consistent with extensive studies of mimetic behavior during financial crisis, [33] [33] the FSI is positively correlated with several EWI. However, changes in the dollarization rate consistently show the highest positive correlation [34], indicating that the higher the dollarization rate, the greater the likelihood that the slightest uncertainty or discovery of information asymmetry by the market participants will trigger the dollarization trap [3].

Figure 9: The percentage change of the dollarization rate (Normalized, standard deviation = 1)



Source: Layal Mansour Ishrakieh Leila Dagher and Sadika El Hariri [36, 38]

At the slightest uncertainty and confrontation with information asymmetry, where panic and stress are suffused in the air, economic agents will rush to convert their financial assets from local currency holdings (even if these locally denominated assets comprise the minority of their holdings) to more secure foreign ones. Consistent with this observation, the FSI for Lebanon leapt up to a ten-year record when Prime Minister Saad Hariri ambiguously announced during a visit to Saudi Arabia that he was stepping downs.

Graphical analysis of the FSI shows that dollarization rate fluctuations in Lebanon appear strong enough to allow detection of the vast majority of financial stress events over the past two decades; the FSI serves as tool for mining information about the riskiness of the economic outlooks as delivered by credit rating downgrades or direct central bank interventions[6].
In fact, downgrades by credit rating agency negatively affect liquidity in the economy (the impact is greater for downgrades than for upgrades) [35]. However, dollarization rate fluctuations reveal stronger variations in response to political and geopolitical tensions than to economic pressures, which means that Lebanese agents appear to be more sensitive to political tensions than to actions by monetary authorities or to rating adjustments. Economic agents express their uncertainty in the market by withdrawing their deposits, undertaking the proverbial "flight to safety," or by converting financial holdings from the local currency to foreign ones. As a result, even slight ménages panics, political shocks and panic scenarios, easily spread across the whole banking system [36]. Graphical analysis was empirical verified in 2021 [37], where geopolitical risks (Israeli threats) show being strong enough to negatively affect the Lebanese financial market through depleting BDL foreign reserves.

1.5.Dollarization in the Banking Sector: The Crisis Accelerator

Several studies have found that the money demand in foreign currencies in dollarized countries is highly correlated with sudden-stop and systemic crises [38], [39], [40]. It exposes the money market to risks and systemic crisis at even the slightest shock. In fact, a country that uses multiple currencies reduces or eliminate the costs of switching from the national currency to a foreign one. Consequently, the demand for a store of value (one of the core functions of money) in a dollarized economy can be expected to be highly responsive to a monetary expansion or to a change in the exchange rate. In other words, as dollarization deepens, the elasticity of the inflation rate to a monetary expansion increases significantly, thus making it impossible for the monetary authority to appropriately control inflation [41]. Interestingly, the opposite direction is valid too: the reduction in the rate of money growth would have a stronger stabilizing effect in a dollarized economy than in a non-dollarized one.

Therefore, the inflation impact of monetary shocks should be stronger in dollarized economies, which in turn results in a high fluctuation in money demand. This high degree of demand fluctuation will in turn increase exchange rate volatility [42], especially during stress periods (if the exchange rate regime does not repress this volatility with legal measures).

When banks provide loans denominated in foreign currency, they generate additional sources of currency depreciation risk in the financial system. If any depreciation occurs, the local producers with loans in US dollars but have revenues in domestic currency must pay their debt that have become very expensive. In Lebanon, the loans in USD exceed deposits in foreign currencies.

In fact, banks were granting FX loans to residents and nonresident. More precisely, the loans granted to Lebanese agents residing abroad were exclusively in US dollar. Thus, an upsurge of Non-Performing Loans (NPL) is then to be expected, along with a weaker financial positioning of producers and banks. Table 1 exhibits that in July 2020, one fifth of the total loans were defaulted and that nonperforming loans ratio increased by about 75 percent from 2019 to 2020.

Table 1:The Nonperforming Loans Ratio for Lebanon

Non-performing Loan per year	2019 -July	2020 -July
Non-performing Loan	11.6%	20.29%
Non-Performing Loan growth rate	28.745%	74.91%

Source: IMF Data

These outcomes of increased non-performing loans ratio and constricted financial strength will occur irrespective of eventual impacts of mismatched maturities of deposits and loans in foreign currencies that constitute one more source of vulnerability for the financial system. Additionally, dollarization may have an impact on credit risk if corporates that borrowed in US dollars are unable to generate earnings in US dollars or other hard currencies. The assessment of the degree of additional risk is difficult. Supervisors may therefore not be able to assess clearly whether a bank is illiquid or insolvent, complicating decisions about liquidity support and bank resolution.

[6] In May 2008, February 2011, May 2012, November 2013, December 2014, September 2015) and even central bank tools in increasing deb or assuring financial engineering operations; while dollarization rate fails to provide similar information However, both FSI and dollarization rate appear to respond to political uncertainty (January 2011 February 2015, 2014-2016) and geopolitical trouble (April and October 2000, April 2001, and July 2006, February 2005, November 2017).

Even if Lebanese economic agents had only the possibility to deposit in foreign currencies, without getting loans in foreign currencies, a currency depreciation risk would also exist. It would result from the currency mismatch of bank assets and liabilities if the recipients of dollar loans themselves have substantial currency mismatches. Thus, besides the limits of monetary policy created by dollarization, dollarization also complicates processes of providing fiscal support for bank restructuring. Funds needed to for a bank recapitalization program are likely to be committed in foreign currency to avoid asset/liability currency mismatches, which is paradoxical since obtaining of such funds will increase public debt in foreign currency [43], [44] .

1.6. Dollarizing Public Debt: The Original Sin

Not only the private sector operates with foreign currencies, but the government also can dollarize its debt when it fails to borrow funds (acquire additional debt) in local currency. In fact, when the country fails to borrow in its national currency, it will borrow in foreign currency. Dollarizing debt enables the Lebanese government to project sovereign financial credibility by appearing to never devaluate its national currency in money creation to fill budgetary gaps, cover fiscal deficits, or to promote exports [46]. However, the economic consequences are intolerable.
They are incompatible with fiscal diligence and so risky that sovereign debt in foreign currency has been known as *"original Sin[7]"* [28] [47].
In the sense of submitting to the temptation of this original fiscal sin, Lebanon has recently found itself to be in an extremely rare if not globally unique position of reaching a total public debt to GDP ratio greater than 175 percent in 2019 and 170 percent in 2020, with more than 40 percent denominated in foreign currencies[8] (figure 10).

Figure 10: Government Debt Decomposition[9]

Source: Author's Elaboration form World Bank, IMF and BDL Data.

On the Lebanese stage, intimate relation between BDL and commercial banks as shown in Figure 10, enhanced random foreign debt instruments. The latter could not be sustainable once the path of financial engineering was set foot on. In case of capital flight, the central bank was practically condemned to withdraw dollars from depositors and expose the whole banking sector to a severe crisis. More precisely, when the debt burden becomes heavier, it threatens the solvency of banks [10] which makes the banking sector more fragile and exposes the whole economy to severe financial crisis if LBP depreciation occurs [51], [52] [53]; If one sector crashes, the others will crash too.

Debt and more precisely debt in foreign currencies and sovereign defaults have in the past nearly 80 years since the establishment of the World Bank and IMF been major causes of national economic shocks and devastations. They disrupted nations in Latin America and have been the main causes of the Asian financial crisis of 1997, especially engulfing countries that adopted a more or less flexible exchange rate. Hence, the series of crises at the end of the 1990s and early 2000s was defined as "foreign debt crisis years" [46], [48], [49] and [50].

The fundamental severity of the government debt dollarization risk is recognized by the credit rating agencies on the international capital market [25]. A dollarized country is regarded by rating agencies as carrying a higher sovereign risk. The economic risk of countries that approach international capital markets while being characterized by foreign currency debt is expressed through the relative lower scores that these countries receive from the rating agencies.

Lebanon has constantly obtained lower scores (non-investment and speculative grades) on international markets from the ratings agencies S&P, Moody's Agency and Fitch when comparing to neighboring countries such as Egypt, Jordan, and Morocco. Credit rating agencies help in reducing the information asymmetry between lenders, investors, and issuers about the credit worthiness of companies.
Accordingly, to improve its image, to build confidence among residents and international investors in order to attract investment inflows, Lebanon needs to upgrade its scores and start successful IMF commitment on an economic reform plan [35].

[7] Until 2005 definition of "original sin" has been modified several times by Eishengreen and Hausmann with other authors and it now associated to dollarized countries with foreign liabilities. Eichengreen et al. (2007).
[8] According to IMF- Executive Board Concludes- Article IV for Lebanon, 2019.
[9] Local banks were holding about 70% of total EB. When the monetary authority announced the payment of foreign EU bonders, Lebanese Banks unsure of repayment, have offloaded their EU to foreign investors that are willing to take more risks for high returns, such as Ashmore Group Plc. (according to JPMorgan Chase & Co. analysts, published by Bloomberg in January 2020). Consequently, foreign investors are estimated to hold between 50% to 70% of total EB, (The portion, share, is subject to big discrepancy. Some references say that they hold 70%, others say they do not hold more than 40%)/ Those operations have created panic to Lebanese monetary authorities, who are asking Lebanese banks to buy back bonds to regain the majority of votes in restructuring talks. Indeed, Lebanon needs the approval of 75 percent of EB holders of each series to agree on restructuring terms. In November 2019, Domestic banks could hold 0.7bn $ of the EB maturing in 2020. This assumes the BDL does not hold any of these bonds, and that Bloomberg foreign holdings data is accurate.

The high dollarization rate in Lebanon does not only reflect the poor institution quality, but it also indicates the policymakers' "unwillingness" to pursue reforms that will penalize graft and illicit wealth acquisition, and in general bolster corruption fighting in order to increase/impose trust and confidence on the local currency. In fact, according to anti-corruption campaigners [10], measurable progress in upgrading the institutional quality, enforce structural rules and improve the macroeconomic environment may weaken the dollarization rate up to 10 percent (and vice versa).

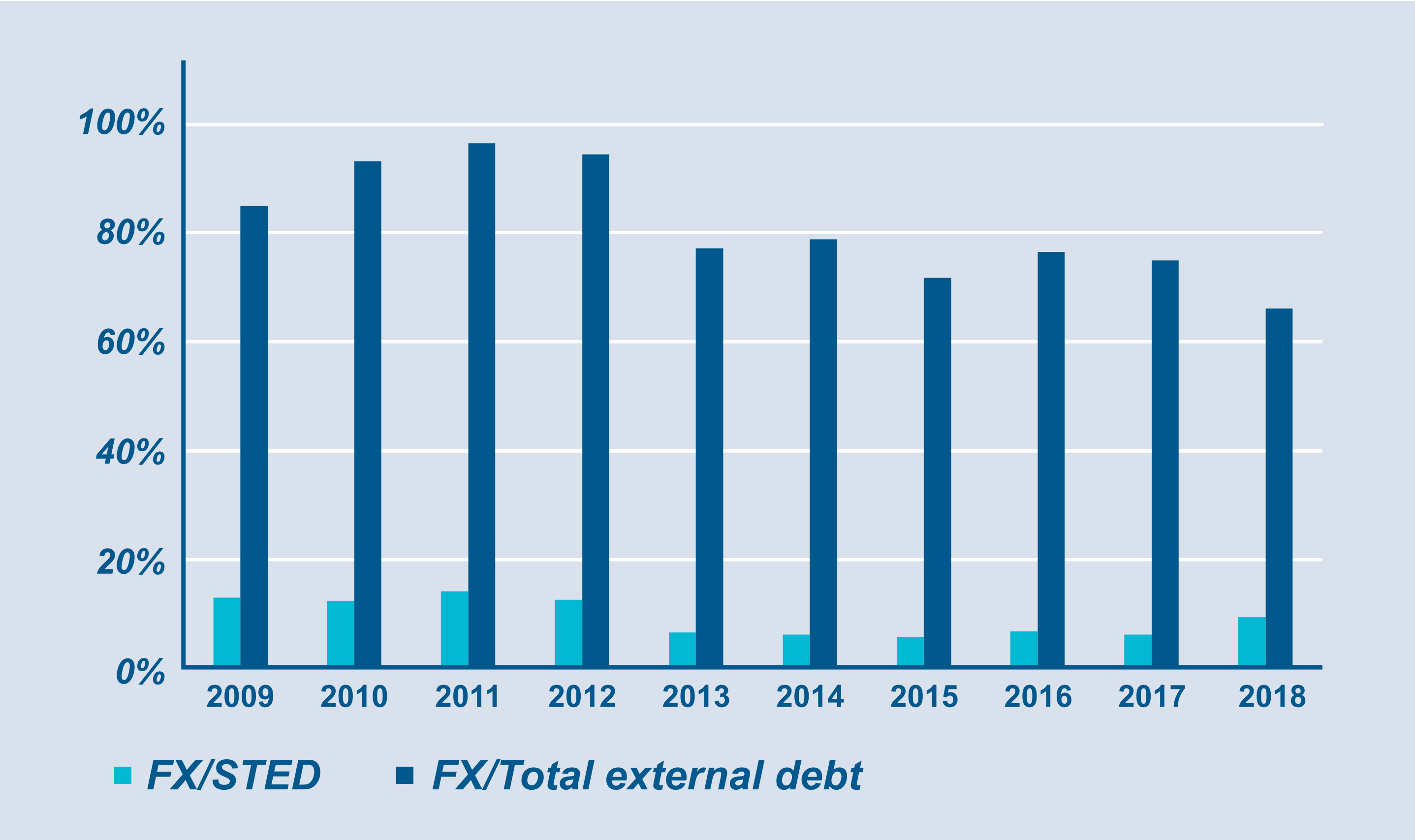
Consequent to all above observations, it must be stated that the rise of the dollarization rate in the public and the private sector destabilizes the financial system of a country [10], [45] and exposes the whole economy to external shock risks. A very highly dollarized country is more likely to experience systemic risks along with a growing balance sheet disequilibrium. Without proper attention of the monetary authorities, the situation can rapidly deteriorate into a "snowball" effect and lead to rapid rise of toxicity in the assets held by banks.

1.7 BDL foreign Reserves' Fake/Wrong News in Dollarized Countries

Throughout the years, Lebanon's central banks was showing off the high level of FX (Foreign Reserves) under its management by using the traditional ratio in assessing the adequate required reserves. However, if one accepts that the traditional capital adequacy ratio is deficient for the assessment of a dollarized economy and if one shifts to using the appropriate ratio measurement for a dollarized country, one cannot fail to discover that Lebanon was effectively for years exposed to currency crisis.
The importance of assessing the level of FX for their adequacy against sudden stop, has been investigated extensively in a series of IMF studies (2012, 2013, 2015 and 2016) and by several economists [54], [55], [56], [39], [57], [40] . Accordingly, the IMF today regards adequacy of FX reserves as one of the most insightful EWI for a country's vulnerability. In assessing the adequacy of foreign reserves, the following ratios are examined:
• FX to Gross Domestic Product Ratio.
• FX to Broad Money Ratio.
• FX to Import Ratio.
• FX to Short-term External Debt Ratio.
- FX/GDP: The FX to Gross Domestic Product (GDP) ratio is considered a general measurement with a little theoretical or empirical backing, usually used as a scaling factor for cross-country analysis.
- FX/M2: The FX to broad money (typically M2) ratio is usually informative for countries with a large banking sector and very open capital accounts. FX/M2 can be useful to capture capital flight risks since many recent capital account crises have been accompanied by outflows of residents' deposits. (The upper end of a prudent range for FX holdings is typically set at 20 percent).
- FX/IM: The FX to Import ratio, also called Import Cover ratio, might be an informative measurement of adequacy for countries with less open capital accounts. The ratio focuses on the duration of import activity that FX can cover in case a shock occurs (typically 3 months of Import).
- FX/STED: The FX to (STED) Short-Term External Debt ratio, better known as Guidotti-Greenspan Rule, remains the "rule of thumb" to guide reserve adequacy since 2009. FX level should cover hundred percent of short-term external debt.

The Guidotti-Greenspan ratio became an indicator of crisis risk that is the most widely used in the literature as standard of FX adequacy in indebted countries. FX to External Debt (ED) ratio and FX/STED ratio are represented in figure 11.

Figure 11: Foreign Reserves to Short Term External Debt Ratio



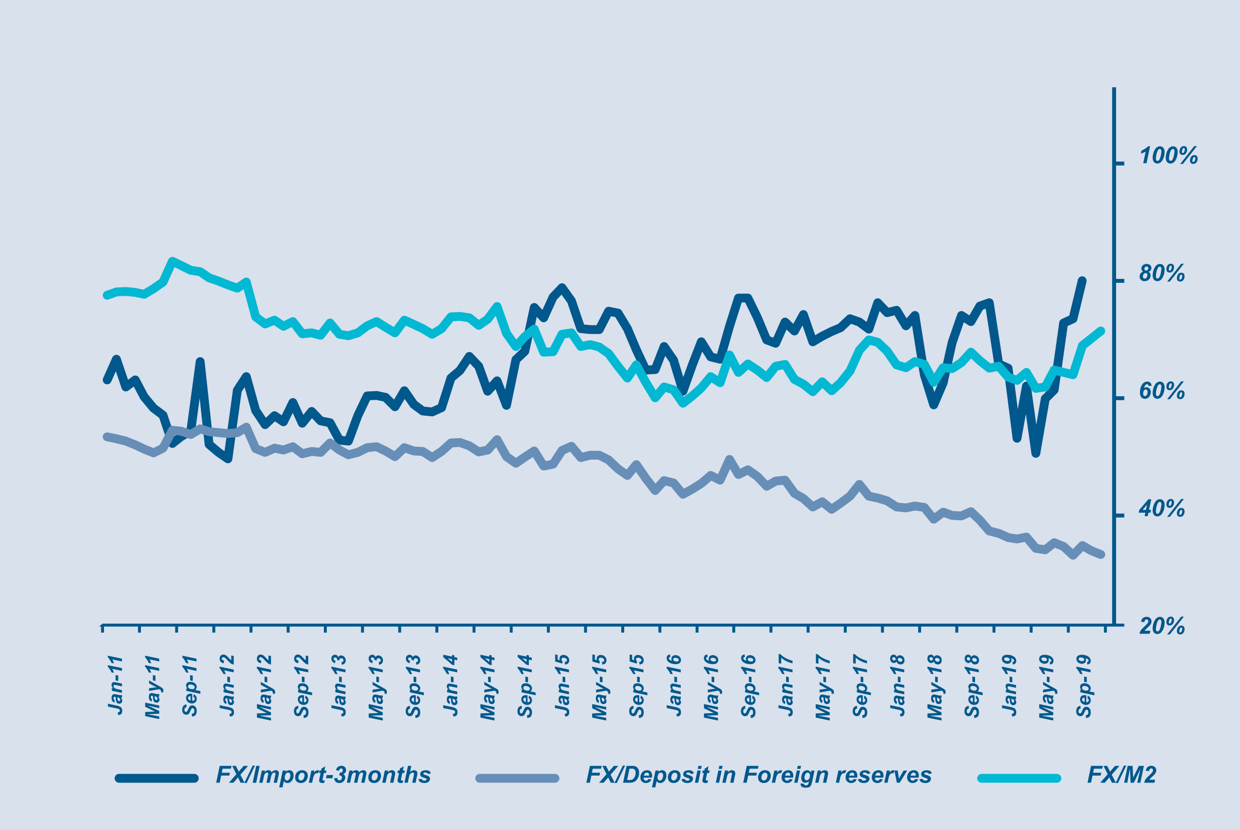
Source: Author's Elaboration form World Bank, IMF and BDL Data.

Figure 11 shows that BDL holds eight to sixteen times more foreign reserves than short-term external debt, implying that BDL is positioned far away from possible financial/currency crisis.

Similarly, in figure 12, the indicators FX/Import-3months and FX/M2 indicate that BDL FX are beyond the minimum required level.

Interestingly, in a highly dollarized country, the assessment of central bank foreign reserves is different because dollarization "absorbs" foreign reserves.
In Lebanon, *"a common shock to bank liquidity, leading to a demand for foreign currency, could result in a drop in international reserves (1 percent of deposits are equivalent to 3.7 percent of reserves)"* [31].
In other words, since in a dollarized country, the money demand in foreign currency is highly correlated with sudden stops and systemic crises [58], [39], [38], another better assessment of FX adequacy level can be undertaken: the ratio of FX to Deposit in FX [59] (figure 12).

Figure 12: Foreign Reserves to Import (3 months), Deposit in Foreign Currency and M2.



Author's Elaboration from BDL Data

Figure 12 illustrates the adequate FX level to total deposit in foreign reserves, the best measurement for a dollarized country.
BDL has for several years held foreign reserves below 50 percent of total FX deposits (and the ratio has been decreasing over the last five years).

We conclude that while BDL was spreading positive news and exposing previous adequate FX level showing that BDL holds excess of reserves, BDL was effectively risky. The appropriate FX required level of holding FX was not attainable.

PART II-
POSSIBLE SCENARIOS OF DE-DOLLARIZING LEBANON

The conventional IMF austerity program obliges a government to: -i- design and implement fiscal consolidation measures such as cutting the public wage bill, cutting social spending, and privatizing state assets and essential services. -ii- increase indirect taxes such as VAT in addition to other regressive taxes. -iii- enhance the reduction of trade tariffs; -iv-move to a more flexible labor market, and importantly, -v- adopt a flexible exchange rate regime (managed a float or free float, thus, to accept sharp local currency devaluation and interest rate jump.

Currency rates unification under a broken soft peg regime, is usually achieved either by adopting a floating exchange rate regime, or by adopting a hard peg regime: by *"bi-polar disorder"*; putting a part the soft peg regime. It is unfortunately followed by a relatively sharp devaluation. The chosen exchange rate must be compatible with the fiscal deficit, debt, the money supply growth rate, the rate of dollarization and other parameters [60].

Imposition of a floating currency regime upon Lebanon, along with Lirafication (recall that foreign currency deposits constitute more than 75 percent of total deposits) will invariably be followed by a crash of LBP and an interest rate upsurge, thus, a higher debt service.
As poverty prolongs and more people are getting poorer under those conditions, pressures related to health and education access will consistently increase and could have dangerous social impacts. Starting in 2013, the IMF has incorporated flexibility in its lending frameworks and began offering lending options better tailored to a borrowing country's debt. Nevertheless, in negotiating agreements with governments it remains the IMF's objective to remove foreign exchange restrictions and work towards the floating exchange rate regime in all countries, dollarized countries included.

The elasticity of the inflation rate to monetary expansion increases significantly as dollarization deepens, [61, 62], making it impossible for the monetary authority to appropriately control inflation. Interestingly, these findings could be interpreted positively, to imply that a reduction in the rate of money growth would have an increased stabilization effect.

2.1 Multiple/Dual Currency Rates in Lebanon: A Symptom, not a Problem

The Multiple Currency Rates' (MCR) phenomenon that grew in Lebanon since 2020, is not purely a problem per se but rather considered as symptom of an auto-immune reaction against being obliged to use a rejected and untruthful Lebanese Pound. It was also boosted by different imports rates to subsidize key imports (table 2), which reflects inappropriate fiscal and monetary policies as well as the lack of credibility of de jure exchange rate policy given the level of foreign reserves.

MCR is not a Lebanese phenomenon. Incidents of multiple exchange rates were widespread in the 1980s and 90s, during the era of foreign exchange debt crisis. It appears during currency crises in dollarized countries where the central bank benefits from its ultimate discretionary power to "prescribe" several currency rates. It is thus associated with fixed (or tightly managed) exchange rate regimes where the official exchange rate deviates from the market exchange rates (an exchange rate premium exists); or both.
Nowadays, in 2021, the IMF lists many countries where a dual/multiple exchange rate practice is in existence. These countries are most probably dollarized and enduring a currency crisis such as: Myanmar, Nigeria, Papua New Guinea, Mongolia, Guinea, Burundi, Armenia, The Bahamas, Eritrea, Ghana, Iran, Iraq, São Tomé and Príncipe, South Sudan, Sudan, Syria, Tajikistan, Trinidad, Ukraine, and Venezuela and Lebanon.

Since the beginning of the current financial crisis in Lebanon in 2019-2020, more than five currency rates had existed for a time or have been applied up to the third quarter of 2021 (only few different rates continued to be considered since October 2021). Table 2 illustrates some of the multiple exchange rates determined by the monetary authority, BDL, through circulars.

Remark: The market rate determined by the exchange offices, although by some descriptions and vernacular called "black market", is better described as parallel market. It is not a black market where such exchange actions are vigorously prosecuted and harshly sanctioned (as for example in the countries of the Soviet bloc until the 1990s) but rather the market that provides the "unofficial" rate in an "unofficially" dollarized country. The parallel market rate can even be considered as a semiofficial rate since the monetary authority refers to it (circu1ar No.159), and as it is broadly and openly used as the benchmark by economic agents on all levels.

Table 2: Multiple Exchange Rates in Lebanon (sample)

1) USD/LBP 1507.5: Official-BDL Exchange: USD/LBP 1507.5
This rate nominally still exists but is no longer used in the market, except by the Lebanese Government for official transactions and payment where dollar conversion is done at the rate. Additionally, debt in foreign currencies of economic agents is reimbursed at the rate. At that rate, some products and commodities were subsidized for about two years up to different calendar dates in 2021. (Fuel for EDL, gas, other fuel, diesel, medication/supplies and wheat).
2) USD/LBP: Market/exchange offices ± 28000 in December 2021
The Market/Exchange office rate is known colloquially as the rate of the black market, informal market or even "illegal market". However, the author insists that a designation of "parallel market rate" or "market/exchange offices rate" is more objective in a highly dollarized country, where dollar in circulation has never been prohibited. The factual use of the parallel market rate has been demonstrated repeatedly by attempts of Lebanese authorities to penalize currency exchangers that were using the informal rate, and also shut down websites and mobile apps that provide information on the parallel market rate, but to no avail.
3) USD/LBP 3900: Rate of USD Deposit' Cash Withdrawals
In April 2020, BDL has issued a circular No.151, which requires banks to convert dollar deposits at LBP at 3900 pounds upon request of depositors for the following twelve months. This rate remains the most used in Lebanon by firms, universities, and others. Additionally, the basket of goods and essential items was subsidized at this rate until mid- 2021. The decision has been prolonged until end of 2021.Note: BDL deflected requests voiced in summer and autumn of 2021 to adjust this rate.
4) USD/LBP 6240: Not valid any longer
This rate was applied for humanitarian aid when the World Bank in early 2021 transferred 246 million USD to Lebanon for the purpose of supporting the most vulnerable families after the government had cut subsidies on fuel, medicine, flour, and some other food items. The 6240 rate has also been applied to U.N. agencies, such as the World Food Program and UN Refugee Agency, at the beginning 2022. However, the rate has been disregarded by most international NGOs. Although the rate offers transaction options that are far better than the 3900 rate, the value of aid converted at this rate was exposed to continual evaporation, given daily appreciations of the dollar under the parallel market rate.
5) USD/LBP 12000: Continually updated and hit 19000 in November-December 2021
In 2021, BDL established a new currency platform under the name of Sayrafa and set the exchange rate of the Lebanese pound against the U.S. dollar at 12,000 LBP/USD on this platform. Businesses (producers, exporters) can officially purchase dollar on the Sayrafa platform. At time of its launching, the dollar rate in the market/exchange offices was above 15000 LBP, which then was the historic high. Importation costs of medical supplies and medical drugs and some other basic necessities were initially subsidized via this platform. Around the third quarter of 2021, subsidies have been withdrawn from all products except fuel.
6) USD/LBP 8000: Rate of USD Deposit' Cash Withdrawal
In December 2021, BDL has issued a circular No.601, which requires banks to convert dollar deposits at LBP at 8000 pounds upon request of depositors. This circular is the updated "continuity" of circular 151.

Source: BDL and Ministry of Trade circulars and World Bank notes.

MCR rates usually tend to provoke distortions by manipulating relative prices in the economy and open opportunities for rent-seeking behavior for those who have access to preferential rates. For instance, in Lebanon, dual currency rates with large differences in exchange rates between the market parallel rate and the subsidized rates have enhanced cross-border smuggling and reinforced a real black market where subsidized goods were hoarded or illegally sold at excessive profit margins to Lebanese or smuggled to Syria.

The central bank spent approximately 10 billion USD on subsidies in 2020 and 2021, but some 75 percent of these subsidies have been misallocated and abused[10] by traders and economic agents who smuggled the subsidized goods (mostly fuel but also medications) to Syria through uncontrolled borders[11]. Eliminating dual exchange rates thereby would lead to a more efficient application of market-driven relative prices to allocate resources in the economy[12].

[10] On December 17, 2021, Mikati the prime minister stated on CNN
[11] The borders for smuggling were facilitated and organized by Hezbollah supporters to assist Syrian political regime.
[12] https://blogs.worldbank.org/allaboutfinance/what-countries-need-consider-when-dual-exchange-rates-are-problem

In one example, the difference between the volume of oil imported to Lebanon and the quantity offered in the market was calculated by Mohamad Basbouss, an MP of the Progressive Socialist Party. By his calculation, the smuggling of fuel to Syria amounted to about 850 million USD and that of Diesel fuel to around 490 million USD.

If one were to ask why efforts to curb and ultimately eliminate such hemorrhage of scarce hard currency by smuggling of voluminous products such as fuels, it has to be recalled that decision makers in a corrupt country with a high exposure to dollarization are beneficiaries of corruption and dollarization and thus have no interest to abolish the current system and to promote unification of exchange rates.
They might pay lip service to the combating of smuggling or corruption in general, but to the contrary of most such promises, they may tend to maintain the inefficient system.

Like every economic program in Lebanon that is not well controlled and made transparent, the use of subsidies for importation of vital goods and commodities has been abused. After depletion of foreign reserves at BDL by more than 10 billion USD of import subsidies, and at the point when BDL was approaching the mandatory minimum foreign reserves level of 17.5 billion USD, the central bank couldn't but roll back on some subsidized medicines and remove subsidies on remaining products. Being cash-strapped in a country where financial inflows have evaporated along with trust in banking and governmental institutions, it was only a matter of time before the central bank would reach that threshold. As a result, residents lost all choices but to pay for imported products, such as fuel and unsubsidized medicines but also all other goods including many staple foods, the full price determined by the parallel market rate.

Moving from multiple currency rates to exchange rates unification require first to pass by painful devaluation.

2.2 Lirafication with IMF Scenario: A Big-Bang Devaluation

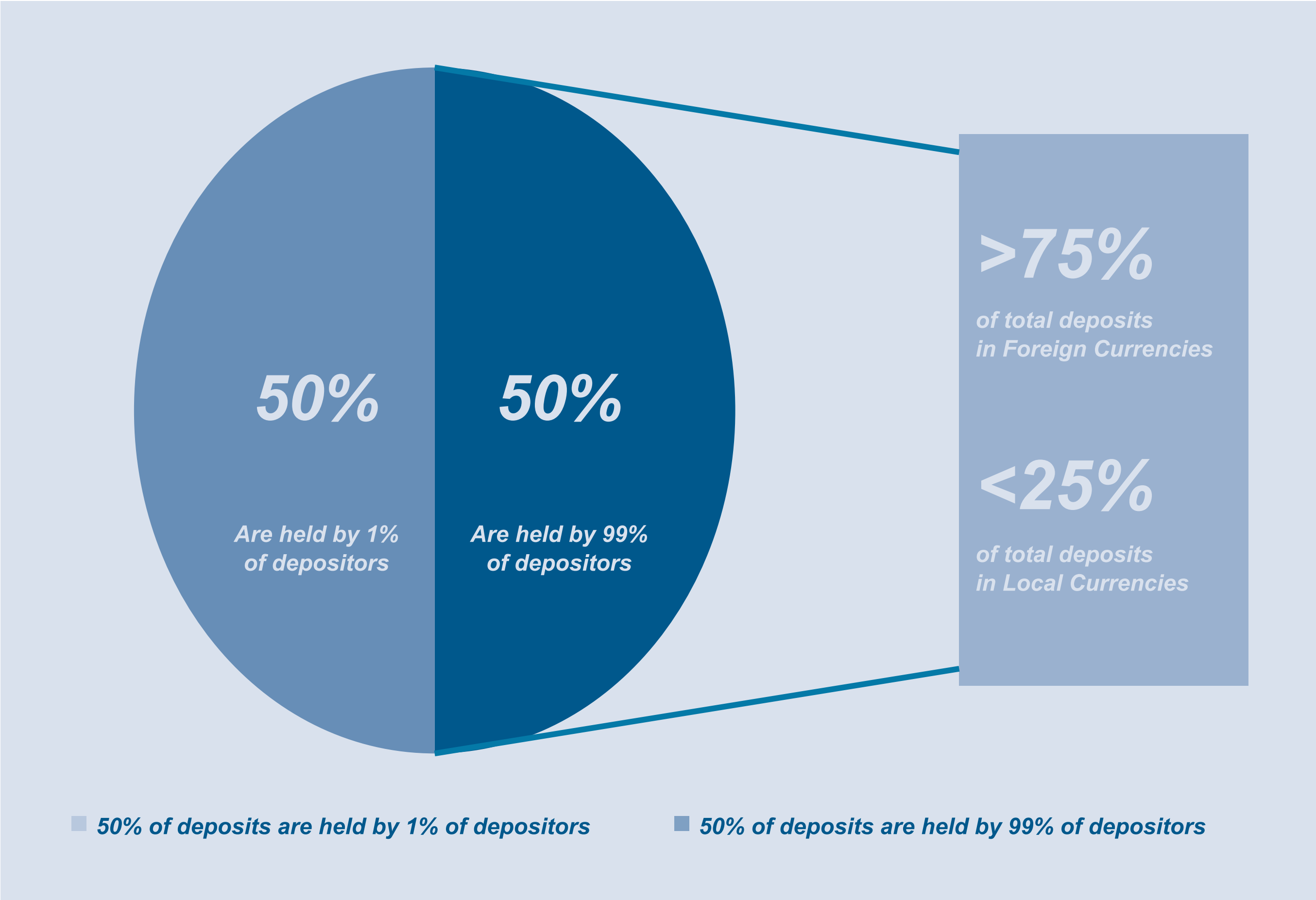
According to a World Bank economic study, unifying the exchange rate gap requires authorities to devaluate by adopting one of the following two approaches:
-i- gradual devaluation method where devaluation is gradual and credible, or the
-ii- big bang devaluation approach which consists of doing a large one-off devaluation [122].

Gradual devaluation: Theoretically gradual devaluation seems to be run smoothly since it is supposed to trigger incremental changes in relative prices. This could be beneficiary for a country like Lebanon, whose import share of domestic consumption is large and whose sovereign debt in foreign currency is also remarkable.
However, in practice, it would be difficult to manage speculative attacks due to further depreciation expectations of economic agents. As a result, worse currency and banking crisis will then occur. Gradual devaluation with manageable devaluation pressure could have positive economic outcomes if the economy holds relatively sufficient FX reserves.
However, a country in crisis (lack of credibility, transparency, and governance) will not be able to proceed successfully with a credible gradual exchange rate path.

Big-bang devaluation: IMF economic reform plan usually consider the big-bang devaluation in assisting countries in difficulties. Big-bang devaluation could change the trade track since exports become cheaper and exports more expensive. As for Lebanon relying mainly on import for all types of good, a big-bang devaluation will lead to spikes in import prices, particularly food, which could lead to severe social implications. Moreover, being highly indebted in foreign currencies (previously in figure 10), Lebanon will have to deal with a heavier debt weight- debt service if sharp big-bang devaluation occurs. Without losing of sight the "currency mismatch" at private banks whose liabilities are heavily denominated in foreign currencies, the banking crisis could deepen further.

The Lebanese banking sector represents a particular case where more than 75 percent of bank deposits are denominated in foreign currencies (figure 13). Imposing a flexible exchange rate regime along with forcing conversion of dollar deposits to local currency at a rate below the market rate, is simply equivalent to converting 75 percent of banks deposits. As a result, almost the entire population will be hurt, but disproportionately so, with the greatest impact falling upon the low- and middle-income classes.

Figure 13: Private Banks' Deposits Decomposition



Source: Author's Elaboration from IMF Data 2017

> One percent only of depositors hold/held around 50 percent of total deposits in private banks. In other words, 99 percent of depositors possess(ed) about 50 percent of deposits.
> Among the remaining 99 percent of depositors, 91 percent own(ed) less than 100.000 USD, while the other 9 percent own more.
> Among those who own(ed) more than 100.000 USD, there are 34 persons (mainly politicians) that own more than 10 million USD, and another 69 own between 50 million and 100 million USD (According to Al Akhbar Newspaper, Mohamad Zbeeb, Feb 12,2020)

It serves therefore to remember the following: As Lirafication is unequivocally followed by a currency value crash along with an interest rate upsurge, its consequences are a higher debt services and an overall worse economic and social condition. In fact, as mentioned in "Subsidy reform Note (the World Bank, December 2020), the inflationary effects are highly regressive factors, most gravely affecting the poor and middle class. The individuals and families in these disadvantaged population groups are already meeting great and increasing difficulties, if not finding it impossible, to access to food, healthcare, and other basic services.

Shortage in foreign reserves at the central bank has already led Lebanon's commercial banks to run out of money in foreign reserves, which has made people furious.

Figure 14a: Photo taken in January 2020, showing protesting depositors trying to break in a bank

Source: Ramzi El Hage, Nidaa El Watan Newspapers

In fact, when people get used to holding foreign currencies for the purpose of protecting their assets against probable future high inflation and depreciation, they become: "addicted to dollar" [66], [53]. Trying to remove the dollars from them while at the same time imposing discretionary capital controls, will increase stress, panic, and violence, which in return tends to trigger a more accelerated and exaggerated currency crisis (figure 14).

Since the liquidity drainage has become undeniable and banks started restricting people's access to their funds, depositors who depend on their savings held at Lebanese banks have had no choice but to withdraw their dollar deposits in local currency at a lower rate than the market rate: unofficial haircut.

Figure 14b: Photo taken in January 2020, showing protesting depositors trying to break in a bank

Source: Ramzi El Hage, Nidaa El Watan Newspapers

At the time of writing in late 2021, depositors receive less than 20 percent of the parallel market value when withdrawing funds: the haircut exceeds 80 percent.

However, other large disparities in the composition of banks' depositor base illustrate which groups of the Lebanese population have no other recourse than relying on emptying comparatively small accounts at the expense of exorbitant losses to their savings. Depositors have since the imposition of a unilateral halt on dollar withdrawals by banks had no choice but to withdraw their dollar deposits in LBP (at a rate of USD/LBP 3900 between April 2020 and December 2021), as stated in circular 151 of April 12, 2020.

If they desired or needed to reconvert the withdrawn amounts back to cash dollars, they would then proceed to purchase these dollars from exchange offices at the wildly fluctuating but overall relentlessly appreciating market rate where one dollar sold for up to 27,000 LBP just before BDL elevated the conversion rate of "old" dollar accounts to 8,000 LBP, meaning that the amount of lira required for purchase of 1 dollar over a period of 20 months was ballooning by factors of three, four, or five. Thus, an indirect and coercive haircut was executed at a rate exceeding 80 percent.

Other measures were taken by the central bank's governor, under the circulars No. 158 and 597 (June 8 and September 29, 2021), enhancing more the official practice of multiple currency rates. The circulars state that depositors of foreign currencies (under certain conditions) are allowed to withdraw from their FX deposits, $400 in USD and $400 in LBP at a rate USD/LBP 12000.

Figure 15:Photo taken in June 18-2020 in front of an exchange office

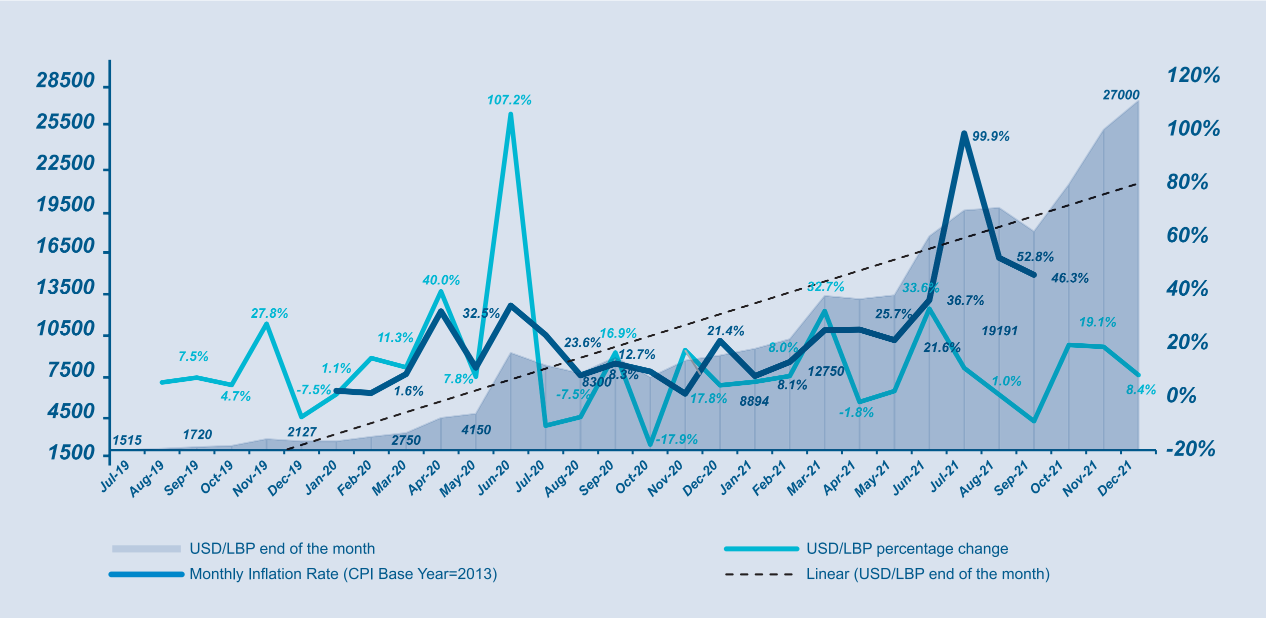
Source: Mustapha Jamal El Dine - Al Modon Newspaper

In 2019, when banks were restricting the withdrawal of dollars to one hundred USD (or similar amounts that could be different from one bank and one customer account to the other) per week, the Lebanese people, "addicted to dollars" by years of their dollarized existence, were seen waiting in line for sometimes a dozen hours just to receive this $100 banknote.

Such a phenomenon is common to societies in all dollarized countries, as soon as their addiction to dollars is triggered; this frenzied competition for dollars ensues at the slightest restriction on foreign currencies (figure 15).

Under this collective economic behavior and the rates of LBP depreciation in the parallel market and the annual rate of inflation have not mellowed in the least. Already in September 2021 a Bloomberg story noted that Lebanon's annual rate of inflation was higher than that of Zimbabwe and Venezuela, but much more shockingly, episodes of hyperinflation at more than 50 percent monthly price increases have reemerged in the latter portion of 2021 (figure 16). Thus, any decision of forcing Lirafication will boost the inflation further.

Figure 16: USD/LBP Parallel Market, Exchange Rate Fluctuation (%) and Monthly Inflation Rate



Source: Exchange Rate from Lirarate.org and CPI base 2013 from CAS

Indeed, as mentioned by World Bank [63], the inflationary effects are highly regressive factors and affect mainly the poor and middle class that have already difficulty to access food, healthcare, education and other basic services.
Already in April 2021, before forcing conversion and with informally severe capital controls having been adopted by Lebanese banks for almost six months, economic regressions revealed, according to the World Bank, a coefficient of 0.8 for the impact of growth in the currency in circulation on inflation[13].
Not only does the inflation rate to monetary expansion increase significantly as dollarization deepens [61, 62], but also, if further inflation and more devaluation are anticipated, then, dollarization will predominate again and even at a higher rate [64].

The IMF assumes that the country can slightly improve the Current Account imbalance by devaluing the LBP, on the pretentious notion that decreasing imports and promoting exports will make Lebanon more competitive in export markets, as if this country, with its economic environment that has for the past 30 years been steeped in imports and over-consumption as well as recently deprived of basic necessities and manufacturing infrastructure, could be competitive in the manner of countries such as Egypt-Brazil, and South Korea (Box 1).
Milton Friedman is a prominent critic but certainly not the only economist who has blamed the IMF for crises in nations around the globe and for being unable to suggest the best-suited program to each country turning to it for urgent economic assistance.

Box.1: Lebanon Abominable Infrastructur Conditions

Knowing that Lebanon has recently been literally stripped of basic services such as health, transportation, electricity, and education, only exacerbates the disadvantage of the long-standing fact that this is one of the worst countries in the world when it comes to ease of "Doing Business". In the World Bank's eponymous annual report (2019 edition), Lebanon is ranked 142nd among 190 countries.
Lebanon is far away from benefiting as much as would be needed from its scattered comparative advantages in sectors such as agriculture and agro-industry (oil, wine, spices, jams) and artisanal production by small enterprises and craftsmen/craftswomen (attire, cutlery, soap).
Accordingly, the IMF must exercise great prudence to not bet on positive outcomes on basis of Lirafication. It has to consider that the poorer and unequal a country gets, the more vulnerable it is to further increases in the poverty rate and inequality.
It has to be taken into serious consideration that Lebanon has already suffered two years of massive GDP contractions with escalating inequalities and growing multi-dimensional poverty before an IMF agreement is concluded for Lebanon. Income inequality tends to increase by an average of 6.5% per year over the three years after the implementation of an IMF program [65]. For instance, in Egypt, the poverty rate increased by more than 5% each year after the government's agreement to IMF assistance in 2016 (before Covid-19). Similarly problematic experiences with IMF programs were seen in Vietnam, Sudan, Congo, Iraq, and Afghanistan, which couldn't continue successfully implementing the prescribed measures by the IMF program.
It must further be remembered that during the Asian Crisis of the late 1990s, national currencies depreciated or were devalued, and stock markets crashed in Singapore, Thailand, South Korea, Philippines, Malaysia, Hong Kong, and Indonesia. Instead of suggesting debt rescheduling, the IMF then advocated for countries to accept high interest rates along with a tight fiscal consolidation (cut public expenditures). Consequently, the whole East Asian region witnessed widespread recession, unemployment, and economic contraction.

[13] *https://thedocs.worldbank.org/en/doc/a3d1489dafa646ee90f5a19abd950cab-0280012021/original/9-mpo-sm21-lebanon-lbn-kcm.pdf*

2.3 Forcing Lirafication in Dollarized Lebanon: Hysteresis Effect

Dollarization hysteresis or hysteresis effect on financial dollarization is an economics phenomenon that was empirically examined in recent decades [11], [67] [68] and [69]. It consists of including in an econometric model of the money demand function, the maximum past depreciation rate, so-called ratchet variable. When seen manifested in dollarization context, hysteresis can be perceived as a monetary bias expressing the downward stickiness of the depreciation experience.
The statistical measurements of the hysteresis effect and the significance of the ratchet variable reflect how a temporarily high level of depreciation can persist over long periods of time in the memories of economic agents [70], [71] , [72], [73] and influence their behaviors. In effect, the hysteresis effect shows that the dollarization rate increases with exchange rate depreciation or inflation, however, it does not necessarily decrease if inflation declines or if the exchange rate remains constant. The presence of network effects in dollarized economies causes hysteresis in money demand; specifically, temporary changes in expected inflation may permanently affect the degree of dollarization and money velocity [74].

Accordingly, even the slightest occurrence of inflation in Lebanon, a highly dollarized country, tends to have more persistent effects on money velocity than in non-dollarized economies [74]. In consequence of the hysteresis effect, it serves to remember this: "The demand for foreign currency rises when the local currency depreciates, but falls by a lesser extent when the local currency appreciates" [68].
Like the hysteresis effects observed in Russia, [75], [76] and Cambodia, [43], countries whose dollarization rates continued to increase even after years of subdued inflation rates, the dollarization rate in Lebanon continued to be high and trend upward after exchange rate stabilization in the 1990s [123].
It did so even when Lebanon was flourishing with an annual growth rate above six percent. This illustrates well how deeply ingrained the hysteresis effect In Lebanon has become.

The main advantage of a big-bang devaluation states that one-off devaluation does not reinforce expectations for further rounds of depreciations[14] . However, negative consequences of *"network externalities in dollarized hysteresis driven to dollar"* could outweigh the expected positive outcomes.

The IMF is highly aware of the reaction of a society or country that is addicted to dollars. IMF scholars have investigated "Network Externality in Dollarized Hysteresis", which confirms how persistent the addiction to the dollar is, and inversely, how difficult it is to suddenly de-dollarize a country.
According to these studies, the higher an economic agent's benefit from receiving foreign currency as means of payment by another economic agent, the more the network externalities solidify. As result of this, in a given trade network, the value of holding dollars for each member of the network will increase, irrespective of the depreciation rate or other rate of return considerations. This elaboration on the presence of the Network Externality in Dollarization Hysteresis [75] explains why countries continue to excessively use foreign currency even when the country experiences a stable economic and monetary period.

The network externality consists of admitting that long-term effects on expectations seem to play a role, The hysteresis effect and the presence of a ratchet variable in Lebanon were econometrically verified and proven in 1994 in an IMF-[11] working paper titled: "Dollarization in Lebanon". The study at the time (still before the formalization of the soft peg regime) reveals difficulties for the households to switch between the local and foreign currency, as represented by the large, estimated coefficient for the lagged dependent variable, and voluntary de-dollarization is slowed down by the presence of a strong ratchet effect, which lasts about five years.

It is important to admit in all considerations on the stabilization of the exchange rate regime in Lebanon that network externalities, which are entrenched in the Lebanese economic structure, are likely to have long-term effects on expectations, as the IMF already observed in 1994 data from the 80s. For local observers it goes without saying that Lebanese economic agents got used to dollars more than 40 years ago, and thus, in the case of Lebanon, a decision of currency devaluation, which is not derived from fundamental disequilibrium, will be ineffective. Inflation could persist.

It seems obvious that Lebanon's hysteresis effect could escalate as result of exchange rate stabilization efforts under which monetary policy that closely targets the real exchange rate, stimulates dollarization.
Moreover, given that dollarization is deeply engrained in Lebanon's economic fabric, the expectation of future and lasting inflation would amplify unhealthy practices of exchange controls and multiple exchange rates. It is thus impossible to change the dollar rate policy without appropriate adjustments through internal economic policy changes, and more importantly, without a complete overhaul of the national economic paradigm or a reset of key macroeconomic drivers.

Any devaluation method towards exchange rates unification, without taking into account the exchange rate regime that is compatible with the macroeconomic fundamentals of Lebanon, and if it is not boosted by in a broader economic reform package, will probably not succeed.

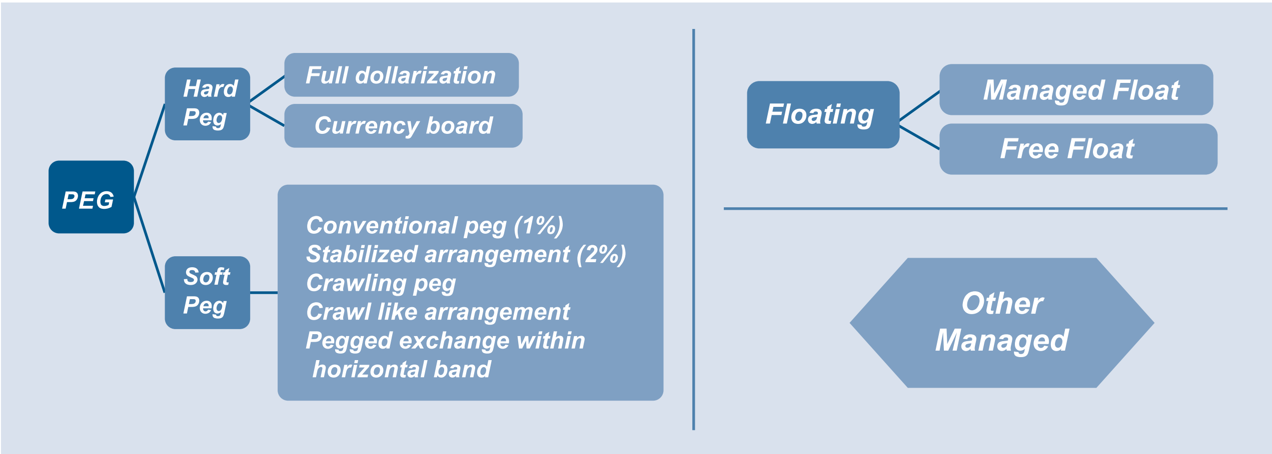
[14] *Katseli 1988, Inn "Geiger, Michael; Nguyen, Ha; Nguyen, Houng. 2018. Gradual Versus Big-Bang Devaluations: An Empirical Analysis. MTI Discussion Paper,no. 8;. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/30918 License: CC BY 3.0 IGO."*

2.4 Verifying Possible Exchange Rate Regimes

Since 2015, the recommendations issued by the IMF as result of periodic Article IV consultations have urged Lebanon to adopt a floating currency regime (a recommendation that the IMF gave also to all other countries in crisis) as a crucial and immediately needed conventional austerity reform measure. On the other hand, the IMF recognizes that there is no universally correct exchange rate regime [77] and several IMF studies have proven how monetary policy can practically complex and conventional austerity ineffective in a dollarized country: *"The phenomenon of dollarization poses a challenge to the pursuit of a coherent and independent monetary policy".*
Moreover, factors such as dollarization, government temptation to inflate, and exposure to exchange rate risks are the main indicators that one has to consider when choosing the exchange rate regime [122]. These variables are responsible of spreading the "fear of floating" to emerging and developing countries and at the same time are reasons why such countries, at extraordinary times of dealing with economic distress such as represented by the Covid pandemic but also in the face of "normal" economic challenges, have continually demonstrated a tendency of turning to harder pegs and more stable, fixed exchange rate regimes rather than universally embracing floating exchange rates.

Among countless models for exchange rate regimes that fit to countries' subtly differing economic, political and social systems and realities, there are three exchange rate families: hard peg, soft peg and flexible (figure 17).

Figure 17: Types of Currency Regimes - Annual Report on exchange arrangements and Exchange restrictrictions 2020



Source: Author's Elaboration from IMF Classification

Remark: Hard peg also includes Monetary Union aka currency union. It consists of a group of countries that adopt a common currency such as the Euro under the Economic and Monetary Union (EMU) or the USD under the Eastern Caribbean Central Bank (ECCB).
Because economists unanimously agree on that "there is no single currency regime that is right for all countries or all times" [14], the appropriate exchange rate regime for any one country has to be tailored in a way to be a good fit to its internal economic characteristics, such as: the financial openness; the capital mobility of the economy; the inflation level; the internal and external chocks; the price and wage flexibility, and the competence of the monetary authority [16] [15].
Choosing the suitable exchange rate regime is not an easy task, it must -1- on the one hand, be compatible with the internal economic conditions of the country and -2- on the other hand, respect the limits that the Mundell Trilemma imposes. This economic paradigm, aka "impossible trilemma" and "impossible trinity", is widely regarded as *"The guide of the political structure"* [78, 79].

2.5 Rejecting The IMF Suggestion of Flexible Exchange Rate Regime

Throughout decades, it has been demonstrated economically and empirically that nothing can be more disastrous for a dollarized country than letting it adopt a floating exchange rate regime [80], [10] and [81]. Economists [30] [82] agree that many economic outcomes are to be expected when adopting a flexible exchange rate regime and state that flexible exchange rate regimes are always desirable for countries -- except for dollarized countries, lest they will end up with interminable financial crisis [83].
Even the monetarist Milton Friedman, the *"guru"* of the flexible currency regime and the advocate of free market, has rejected floating currency regimes in emerging and developing countries; stipulating that flexible rate is only the second-best solution for emerging and developing economies. Instead, he emphasized on another solution as preferable in those countries: the currency board, or what he called a 'unified currency' regime. Friedman explicitly defended the 'unified currency" solution as a regime under which a poor country affixes its currency value *irrevocably* to that of an advanced nation.

A- Free Float in Lebanon: Mission Impossible

Floating, *aka* free float or clean float aims to let the currency rate to be freely determined by the market power (without central bank intervention in keeping the value of the national currency stable). For a free float to work, the economy must be experiencing strong accountability, inflation stability and systemically aspire to promoting increased financial openness. In line with these economic and systemic preconditions, countries that have adopted the free float exchange rate regime are the most developed/ industrialized countries (G10 or OECD) such as Canada, Australia, USA, Japan, Israel, Russia, UK and European countries, Norway, Sweden, United Kingdom, United States, and then (Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Portugal, Slovak Rep., Slovenia, Spain) among others. Notably not included among countries with free float regimes are some upper-income countries whose per-capita wealth puts them in the top tier of rich countries in the world.

Even Gulf countries, Oman, Qatar, Saudi Arabia, United Arab Emirates, that is wealthy economies most of which are oil exporters that enjoy substantial earnings in foreign currencies and have Sovereign Wealth Fund (SWF) with world-leading levels of financial wealth, have all adopted a peg currency regime, reflecting the fact that their financial institutions lack transparency and credibility, in addition to their internal laws that require improvement comparing to those of industrial countries.

B- Managed Float in Lebanon: Fear of Floating Expected

Emerging countries who have been looking to close ranks with developed markets or join the clubs of upper-income countries by opening their financial markets, have adopted regimes of dirty-float or managed float, meaning a exchange rate regime that is *"not totally pegged, not totally free capital mobility, not totally monetary independence"*. It is a float exchange rate regime with frequent official central bank interventions that are made possible by those central banks hoarding excessive foreign reserves to hedge against future shocks.

In fact, as explained by the IMF-[27], the least fluctuations in this exchange rate under a managed float would translate into severe balance sheet problems for borrowers with liabilities in foreign currency and income in the local currency.

Accordingly, banks will suffer in case of exchange rate distortions under a dirty float, even if their portfolio has a notionally matched currency position. Moreover, it has been verified by economists and admitted by several IMF studies that there is a strong positive correlation between "fear of floating" and movements in the dollarization rate. The higher the dollarization rate, the higher the "fear of floating" is expressed and the lower will be the degree to which fluctuations of exchange rate under this nominally floating currency regime are de-facto tolerated. [84] [85] [86].

Surprisingly, numerous countries that committed de jure to adoption of a floating exchange rate regime are de facto practicing different regimes. Table 3 lists emerging countries whose central banks practice a de factor exchange rate regime that is different from their de jure one.

Remark: In assessing empirically/econometrically the effectiveness of the exchange rate regime, the de facto regime is decisive since it expresses the central bank's actual behavior and decisions rather than official action [89], [90].

Table 3: Countries with de facto exchange rate regime different to their de jure one: AREAER -2018 and 2020

Country	De Jure Arrangement	De Facto Peg Arrangement	Country	De Jure Arrangement	De Facto Peg Arrangement
Angola	Floating	Crawl-Like	Afghanistan	Floating	Other Managed
Armenia	Free Floating	Crawl-Like	Myanmar	Floating	Other Managed
Cambodia	Managed float	Crawl-Like	Sierra Leone	Floating	Other Managed
Congo DR	floating	Crawl-Like	The Gambia	Floating	Other Managed
Costa Rica	Free float	Crawl-Like	China	Managed Float	Other Managed
Egypt	Floating	Crawl-Like	Argentina	Floating	Other Managed
Guinea	Managed float	Crawl-Like	Kenya	Floating	Other Managed
Malawi	Floating	Crawl-Like	Venezuela	Floating	Other Managed
Romania	Managed float	Crawl-Like	Syria	Floating	Other Managed
Sri Lanka	Free floating	Crawl-Like	Somalia	Floating	Other Managed
Tanzania	Free floating	Stabilized	Pakistan	Floating	Other Managed
Ethiopia	Managed Float	Crawl-Like	South Sudan	Floating	Other Managed
Bangladesh	Floating	Crawl-Like Arrangement	Zimbabwe	Floating	Other Managed
Singapore	Floating	Crawl-Like Arrangement	Sierra Leone	Floating	Other Managed

Source: AREAER -IMF 2018 and 2020

[15] *Annual Report on exchange arrangements and Exchange restrictrictions 2020*

Emerging countries do not appear able to float their local currency because they risk excessive exchange rate volatility. So far, only the largest developing economies, with relatively advanced financial systems, such as South Korea and Brazil have attempted floating.
Even Egypt, China, and Singapore have not been able to float their currencies and have sought recourse in de-facto peg regimes, in order to hedge against any recurrences of extreme exchange rate volatility. Yet, any dirty float regime requires the respective country to acquire levels of transparency, credibility, accountability, developed legal framework, non-dollarized financial market, sustainable debt to GDP, inflation targeting or controllable inflation, political and geopolitical stability etc.

The needed minimum levels of institutional development and economic maturity are not given in all emerging countries, whose costs of capital and levels of investment could be severely affected if they do not try to limit the volatility of their exchange rate [87].
Some economists suggest that countries which claim to have floating exchange rates but do not respect it in practice, mustn't be counted as countries that have moved away from a peg regime [88]. Since countries hanker after fixed exchange rates for good reasons, they would be well advised to adopt a pegged exchange rate regime.

If Lebanon welcomes the de jure float currency regime (free or managed float), its willingness to adopt a de facto soft peg currency regime must implicitly be assumed, which means that it is bound to pursue a practice similar to the previous years, in which crucial monetary policy actions have contributed to the derailing of the economy; arguably the system has been corrupted by discretionary power of the central bank.

The hoarding of foreign reserves is not limited to allowing the countries to attain simultaneously a degree of flexibility vis-a-vis each of the Mundell Trilemma goals, consistent with the internal developed level of each country [91] [92] [93], [94]. This practice of hoarding also functions as auto-insurance against external shocks or cushion for mitigating effects of financial crisis.
Consequently, any country that highly expresses the fear of floating by the fact of extreme accumulation of foreign reserves, experiences "psychological impact" [91] derived from the "fear losing foreign reserves". Hence, the country becomes obsessive of holding excessively "too much of good thing" [54] 2007; [95] to protect itself against shocks such as sudden stop; however, the "too much of good thing" doesn't seem strong enough to avoid a currency crisis if the country is dollarized or is highly indebted in foreign currency.

For instance, after the Bretton Wood Collapse, Singapore has moved from a currency board arrangement- "Board of Commissioners of currency Singapore (BCCS)- established in 1967 to continue the currency board system that had been operating since the British colonial days, to a de jure floating exchange rate regime. However, the monetary authority of Singapore is holding foreign reserves backing about 100 percent money base. A central bank with flexible exchange rate regime doesn't usually back total M0 with foreign reserves. It is a central bank that "behaves" like a currency board.

In sum, the deleterious effects of foreign debt or dollarization are so perilous, they outweigh all possible beneficial outcomes that could occur from a potential float currency regime or financial openness [46], [96], which makes it unreasonable for Lebanon to adopt the "dirty" float as its currency regime.

2.6 Moving from Soft Peg

"Unless the disinflation country adopts a hard peg, it has to consider the problem of an exit strategy from its pegged arrangement" [97].

The IMF's study of exit strategies from soft pegs [98] has shown that such an exit is best undertaken when the currency is strong, something which is quite likely to happen if stabilization of the currency has been successful over a sustained period and thus the country is gaining credibility and capital inflows expand. This was the pattern for instance in Poland and Israel, where the exchange rate band was widened as pressure for appreciation mounted.

However, the political economy of moving away from a peg, even in this case, is complicated: when the currency is strong, the authorities generally see no reason to move off the peg; when it is weak, they argue that devaluation or a widening of the band under pressure would be counterproductive. And the longer the peg continues, the more the dangers grow that are associated with soft pegs. In some cases, in which disinflation countries' currencies crashed, the IMF had previously been pushing unsuccessfully for greater exchange rate flexibility.

2.7 De-Dollarizing with Less Pain

To end unofficial dollarization, the IMF-[27] and [10] in collaboration with many aforementioned economists suggest to either de-dollarize the economy or to apply the hard peg, which means implementing one of two solutions (almost irrevocably): full/official dollarization or establishing a currency board arrangement.

Table 4 below exhibits the degree of dollarization of several countries during the 1980s and 90s, measured with an index developed by Reinhart, Rogoff and Savastano [53]. Lebanon has since these times been listed among the "very highly dollarized" countries in the world. Notably in this context, an IMF study in 1995 measured the degree of dollarization of "unofficial dollarized countries" by assessing the ratio of foreign currency deposits to M2 or M3. Interestingly, a dollarization rate that exceeds 30 percent is "highly" dollarized" where 16 percent and below are moderately dollarized.

Table 4: The degree of Dollarization in dollarized countries during the 80s and 90s.

	COUNTRY
VERY HIGHLY DOLLARIZED	Ecuador, Bolivia, Lao, Uruguay, Argentina, Bulgaria, Nicaragua, Sao Tomé & Principe, Angola, Peru, Cambodia, Paraguay, Guinea-Bissau, Lebanon, Zambia, Mozambique.
HIGHLY DOLLARIZED	Bosnia & Herzegovina, Ghana, Honduras, Jordan, Tajikistan, Turkey, Congo DR, Croatia, Guinea, Indonesia, Malawi, Sierra Leone, Tanzania, Yemen, Costa Rica, Bahrain, Côte d'Ivoire, Jamaica, Moldova, Philippines, Armenia, Turkmenistan, Belarus, El Salvador, Estonia, Georgia, Hungary, Pakistan, Thailand, Uganda.
MODERATELY DOLLARIZED	Egypt, Israel, Latvia, Lithuania, Macedonia, Papua New Guinea, Chile, Romania, St Kitts and Nevis, Ukraine, Brazil, Czechs Republic, Haiti Guatemala, Poland, Honk Kong, Kazakhstan, Mauritius, Trinidad and Tobago, United Arab Emirates, Venezuela, Albania, Colombia, Mexico, Solomon Islands, Uzbekistan, Slovenia, Saudi Arabia, South Korea.
DOLLARIZED	Kuwait, China, Fiji, Netherlands, Antilles, Singapore, South Africa, Taiwan, Oman.

Source: Reinhart, Rogoff [53], in Addicted to Dollars.

Among eleven major exchange-rate based stabilizations since the late 1980s, four countries (Argentina, 1991; Estonia, 1992; Lithuania, 1994; and Bulgaria, 1997) have entered currency board agreements and desinflated successfully. The other seven countries undertook steep devaluations or introduced crawling bands, which in many cases have widened over time.
The disinflations of three countries. (Mexico, 1994; Russia, 1998; and Brazil, 1999) ended in a currency crash, though in each case low inflation was preserved or rapidly regained [99].

A- Observations on countries in the dollarized and moderately dollarized categories and examination of De-Dollarization Strategies, such as Prohibiting Dollar in Circulation

De-Dollarization, Prohibiting Dollar in Circulation -> Had narrow escapes
In summary, it can be said that most countries shown in the dollarized and moderately dollarized categories of above table, had narrow escapes from the dollarization curse. Because of the complexity of the de-dollarization process and the need to adhere to long-lasting and strict procedures, very few countries did proceed successfully by de-dollarizing. These are countries such as Chile, Israel, Vietnam, Russia, and Egypt among which Israel is considered to be the most successful example of de-dollarization. Starting from the 1980s, a time at which hyperinflation and fiscal deficits had pushed its dollarization rate above 70 percent, Israel succeeded in dropping the dollarization rate to around 10 percent (in 2005), by following a slow de-dollarization program with macro-fiscal stabilization and disinflation as well as restriction on foreign credits.
Similarly, Egypt could remarkably decrease the dollarization rate that was around 55 percent in early 1990s.
Other nations, including Arab countries such as the United Arab Emirates, Saudi Arabia, Egypt, Oman, and Kuwait, which were ranked in table 4 above among the "dollarized" or "moderately dollarized", have taken strict precautionary measures to de-dollarize. Such decisions of choosing precautionary de-dollarization have in fact been congruent with political/national identity views held in many countries whose ruling authorities view the displacement of domestic currency as a loss of sovereignty; consequently, one could observe that in many jurisdictions the use of foreign currencies for cash transactions was discouraged or prohibited outright and deposits and loans at banks have also been restricted.

In several states of the region, the purchase or foreign currencies can only be executed under certain conditions or at official places such as banks, or specific exchange offices at airports etc. For instance, in Tunisia, Morocco, Egypt or Syria, the penalty of holding foreign currencies could vary from one to ten years in jail; in the extreme case of Iraq, possession of foreign currency was at one time punishable by death.
As for countries such as Peru and Bolivia, they experienced unsuccessful attempts of forcing de-dollarization outcomes. Both countries have suffered capital flight and have seen their dollarization rates ballooning to reach 90 percent,
rather than decreasing.

B- The unfortunate experiences of Very Highly Dollarized Countries

1. None of the countries in the "very highly dollarized" category could escape a future crisis.

2. None of the "very highly dollarized" countries succeeded in ending unofficial dollarization by de-dollarizing.

3. All of the "very highly dollarized" countries who adopted a hard peg regime, could end unofficial dollarization and reverse the inflation rate. The countries which did not move to a hard peg regime, have had to live continually with currency crises, devaluations and high inflation rates.

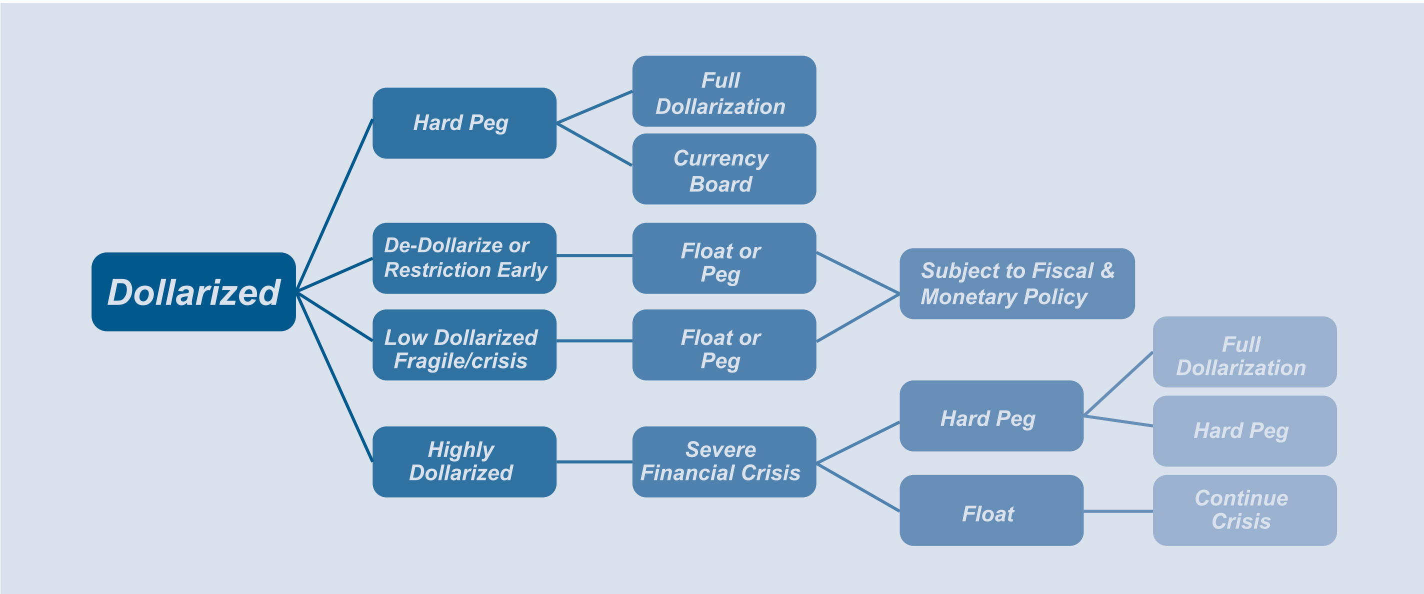
Lebanon is not an exception. It has always been very highly dollarized. Accordingly, to end dollarization, Lebanon has to proceed with adoption of a hard peg rather than attempting to de-dollarize.
It is currently too late for that. De-dollarization was an option that could have been considered as the next step to take (after the achieved agreements on internal security, development and reconstruction) in the 90s; the path to take now is the path from informal dollarization to official use of the foreign currency in all transactions [100].

C- Hard Peg > The rescue program for hopeless case

According to the hysteresis concept, very highly dollarized countries cannot restore credibility of their national currencies. In line with this paradigm, Ecuador, El Salvador, Marshall Islands, Micronesia, Palau, Panama, Timor-Leste, Kosovo, Montenegro, San Marino, Kiribati, Nauru, and Tuvalu have become fully dollarized.
Other countries such as Bermuda, Cayman Island, Estonia, Falkland Island, Gibraltar, Macau, Djibouti, Hong Kong, Antigua and Barbuda, Argentina, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Bosnia and Herzegovina, Bulgaria, and Brunei Darussalam, Bahrain, Singapore, have or temporarily had (don't have any longer) adopted a currency board arrangement.

Figure 18 summarizes how moderately dollarized countries could successfully end dollarization thanks to a de-dollarization program or by reinforcing strict legal frameworks against foreign currency in circulation.

Figure 18:The possible limited future tracks of a dollarized country



Source: Reinhart, Rogoff [53], in Addicted to Dollars.

Saying it bluntly, all of the very highly dollarized countries, that is 100 percent of the countries included in this bracket in the table 4 above, have faced a severe currency crisis, or several such crises in series.
The preferential path is the one welcoming the hard peg exchange rate regime: Full dollarization or currency board.

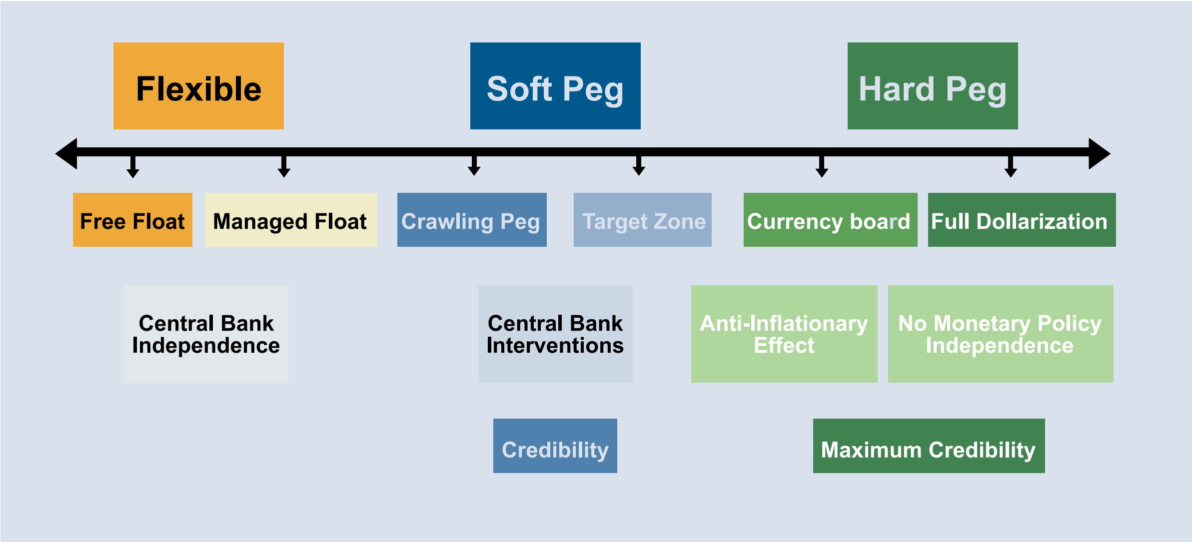
PART III-
CALL FOR HARD PEG FOR LEBANON

Soft pegs are crisis-prone and not viable over long periods. This is primarily due to the logic of the impossible trinity. Yet, if one thinks of the soft peg as the middle-of-the road choice in exchange rate management, the move away from this, presumably low-risk, central option leads in one direction (the path of the hard peg) towards currency boards, dollarization, or currency unions, and in the other, presumably more liberal, go with the market logic, direction towards a variety of floating rate arrangements, including managed floating.

In reality, given those divergent directions, the choice between a hard peg and floating depends in part on the characteristics of the economy, and in part on its inflationary history. The choice of a hard peg makes sense for countries with a long history of monetary instability.

When dollarization is the epicenter of a currency/financialcrisis, nothing can calm the "addicted to dollars" agents as well as proposing a credible currency to them as a remedy or even a cure. As shown in figure 19, the maximum of credibility is provided by the hard peg.

Figure 19: Credibility and Central Bank independence by Type of Exchange rate Regime



Source: Author's elaboration

Remark: Hard peg also includes Monetary Union aka currency union. It consists of a group of countries that adopt a common currency such as the Euro under the Economic and Monetary Union (EMU) or the USD under the Eastern Caribbean Central Bank (ECCB)[16].

Hard pegs, found at the credulous end of the independence to credibility scale, usually go hand in hand with sound fiscal and structural policies and low inflation. However, the central bank in a country with a hard exchange rate peg has no independent monetary policy because it has no exchange rate to adjust, and its interest rates are tied to those of the anchor-currency country.

This may allow the country to reduce the risk premium attached to its international borrowing. Therefore, hard peg economies commonly enjoy a higher level of confidence among international investors, lower interest rate spreads on their international borrowing, reduced fiscal costs, and increased investment and growth. In the following, the two hard peg options of full dollarization and currency boards will be examined.

> Full/Official Dollarization:
It is a complete monetary union between one country (usually a small country in terms of population and GDP) and an economically strong foreign partner country from which the smaller country imports the partner country's currency, by making the foreign currency full legal tender. Under full dollarization, there is no domestic currency other than the imported one, therefore, no risk of currency crises. As a result, the domestic interest rate structure tends to be similar to the one prevailing in the wider monetary area. By virtue of their small size, officially dollarized economies are highly open. Most have convertibility for current account transactions, few or no restrictions on capital account transactions, and transactions for external payments are relatively free.

[16] The CFA - Franc of the Financial Community of Africa, originally Franc of the French Colonies in a fixed currency to EURO (previously French Franc) between a group of African countries such as Cameroon, Central African Republic, Chad, republic of Congo (ex-Congo- Brazzaville), Equatorial Guinea and Gabon. The central bank that issues CFA is not a currency board, it doesn't hold foreign reserves (euro) equal to 100 percent money base. The central bank that issues CFA is required to hold 20 percent only of the liabilities on demand. CFA was devaluated two times, in 1948 and 1994

> ***Currency Board***

The currency board agreement (CBA) is an exchange rate regime, usually/preferable based on a long-term explicit legal commitment that entails several elements, the topmost of which is a fixed exchange rate between a country's currency and an anchor currency that assures automatic convertibility. This is combined with restrictions of the issuing authority, meaning restrictions against printing new money unless it is fully backed by the foreign currency. An IMF working paper emphasizes, with a currency board in place, the central bank can no longer serve as a lender of last resort for banks in trouble [13].

3.1 Similarities between Currency Board and Full Dollarization

Full dollarization and currency board have some identical features but also major differences.

Legal Mandate: The full dollarization requires the legally mandated use of another country's currency. The currency board necessitates a legal mandate which requires the central bank to keep foreign assets at least equal level to the local currency in circulation.

No Lender of Last Resort: Both regimes operate without the country's central bank having the ability to act as lender of last resort.

Credibility: Both exchange rate regimes provide the maximum credibility since they remove the central bank's monetary policy as well as its discretionary power. The currency board cannot be manipulated by politicians, in other words.

Loss of Monetary Independence: A country that adopts the hard peg gives up control of its monetary policy. Hard peg consists of maintaining s fixed exchange rate by abolishing completely the central bank's discretionary power as well as its power to set monetary policy by defining the interest rate (Money Supply) or acting as a lender of last resort.

Fiscal Discipline: Hard pegs are supposed to improve fiscal discipline and enhance the ability of authorities to collect and deploy taxes efficiently due to the removal of inflationary finance options (state cannot borrow to finance the budget deficit).

Economic adjustment: Under both systems, the economy deals with external shocks through factor and product markets with the help of the financial system, rather than by adjusting exchange rates.

Interest Rate: The credibility of a country with hard peg regime is expressed economically by a lower interest rate, with a negligible or almost negligible premium versus the anchor country. In the case of a full dollarization, the country 's currency is nothing but the foreign one. For instance, if Lebanon becomes fully dollarized, its official local currency will be the US dollar. Currency is thus supplied, in form of USD, by the Federal Reserve. If Lebanon were to apply the currency board that is anchored on the US dollar, the interest rate spread between the local currency and US dollar would be minimal since the local currency will be fully backed by dollars and limited in its amount to the equivalent of its hard currency stock, meaning the local currency, which might be re-launched under a name other than either Lebanese lira or Lebanese pound, will be convertible at any moment, which massively reduces the risk premium of future inflation and devaluation.

Credit rating: Countries under a hard peg regime, associated with lower risk, tend to receive higher grades by the credit rating agencies [25].

Inflows and Growth: The high credibility of the hard peg regime and removal of risk for a sudden and sharp devaluation of the country's exchange rate will, along with a low interest rate, function as the main forces to attract foreign direct investment (FDI) and other investment inflows, which in turn are bound to generate employment and economic growth.

Stability and Expectation: Countries with hard peg regimes tend to maintain their exchange rate policies unchanged for long periods, unless their economies undergo large structural changes that result in an exit from the CBA or full dollarization. The generally long duration of hard peg regimes provides a higher degree of certainty in pricing of international transactions. However, official dollarization holds an advantage of greater permanence over a currency board.

3.2 Difference between Full Dollarization and Currency Board

Local Currency: Under a regime of full dollarization, the domestic legal tender is the foreign currency (for example the dollar or the euro). Under the currency board regime, the country has its own currency, which however mirrors the foreign anchor currency since entering a CBA absolutely requires giving up monetary policy independence and fully backing liabilities with reserves in the anchor currency.

Seigniorage: Under the full dollarization, the government gives up the profit that it could generate from issuing new currency by totally replacing the domestic currency with a foreign one. Such profit from issuing currency, aka seigniorage, derives from the difference between the face value of freshly printed banknotes and their production costs. As the sole authority that controls the printing of US dollars, the United States collects all seigniorage income on the US dollar. Seigniorage thus is the most visible and quantifiable element in the cost-benefit calculus of full dollarization. In rare cases, a dollarized country can recapture seigniorage under a formula (see box 2 for a formula designed in the United States) or an agreement as was entered by countries in Southern Africa in context of the region's historically rooted common monetary area.

Dollarization's credibility: Full dollarization is nearly irreversible. And yet for some countries under specific circumstances, the irreversibility could come at a very high cost.

The argument favoring dollarization when compared to a currency board solution turns on an appraisal of the gains from dollarization that would be obtained in capital markets, versus seigniorage costs and the value of retaining the option of changing the exchange rate in extremis by retaining a national currency.

BOX 2: Sharing Seigniorage: The Case of the US Joint Economic Committee (2000)[17]

Seigniorage is the most visible and quantifiable element in the cost-benefit calculus of full dollarization. Therefore, sharing of seigniorage proceeds is likely to figure prominently in any discussion of prospective projects for full dollarization, one prominent example being Argentina in the late 20th century. Hence, it is useful to compare the CMA arrangement with the current proposals for Argentina and the United States. Also, it is important to consider the implications of the International Monetary Stability Act (S.1879, H.R. 3493), a bill on seigniorage sharing introduced in November 1999 by Senator Connie Mack, chairman of the Joint Economic Committee, and Representative Paul Ryan. The United States Joint Economic Committee (2000) proposed a simple formula for sharing revenues from seigniorage as follows:

Dollarized country's share of net seigniorage =
{[total average dollar monetary base over the period
× average interest rate on 90-day Treasury bills during the period]
− net costs of operating the Federal Reserve}
× dollarized country's share of total dollar monetary base
× proportion of seigniorage revenue that the United States pays, where net seigniorage is simply the difference between the revenue from issuing currency (gross seigniorage) and the costs of printing notes and minting coins and the related staff costs of the Federal Reserve System.

3.3 Hard Peg for Lebanon: Currency Board vs. Full Dollarization

Although currency board and full dollarization seems to be analogues in many cases full dollarization meets rejection from authorities as well as economists.

Personally, I (the author) prefer full dollarization, once and for all, on grounds that it conceptually represents a radical, extremely credible, and more importantly, irreversible arrangement. This is simply because reversing dollarization is much more difficult than modifying or unilaterally abandoning a CBA. Lebanon needs a currency system that eliminates the risk of a sudden sharp devaluation of the country's exchange rate. Yet, because of the serious constraints that application of full dollarization is bound to face in Lebanon, I advocate taking recourse to its twin: The orthodox currency board.

As outlined above in broad strokes and as pointed out in IMF studies, the orthodox currency board can be regarded as being similar to official dollarization in terms or providing sufficient credibility and enabling reduction of inflation [102].

The fully dollarized countries are either tiny (microstates or islands) such as Kiribati, Marshall, Palau or Andorra, Cyprus Northern, Greenland and Vatican City, or countries that share common historical, geographical, or cultural features with the anchor country, such as Ecuador, El Salvador, and Panama.
However, even in small countries (and assuredly in large, populous nations), national authorities view the displacement of domestic currency as a loss of sovereignty, which is rarely reversible.

[17] *Inn bogetic 101.Bogetic, Z., Official dollarization: Current experiences and issues. Cato J., 2000. 20: p. 179.*

Lebanon, although it is perceived as one of the world's smaller sovereign states (ranked 161st in terms of size among 195 nations) and not very old in terms of statehood, is uniquely positioned in history, culture, and geography. It is an Arab country, located in the Middle East, but has for centuries fulfilled bridge functions between cultures and continents. Its official language is Arabic, but many Lebanese are bi, tri, or multi-lingual. Lebanon comprises 17 officially recognized religious communities, is embedded into a region of immense religious and cultural diversity, and modern Lebanon is surrounded by countries where a single religion predominates. Moreover, and importantly for all discussions touching upon the issue of sovereignty (including the monetary one) in the context of cultural belonging and exposure to foreign interests, a mindset of "anti-imperialism" still dominates popular sentiments and conversations (box 3).

Thus, replacing the Lebanese national currency, which has endeared itself with tremendous symbolic power to the otherwise diverse social and ethnic groups and religious communities in the country and even the vast "Lebanese diaspora" around the world, with the – very familiar currency of parallel use over the past decades – United States Dollar, will be a most daring endeavor. Similarly daring will be imposition of a CBA, were it to be promoted among the economically and financially surprisingly literate Lebanese economic agents from the retail and informal souq level up to the level of the largest corporations and financial intermediaries and commercial banks.

BOX 3: When Imperialism-Ideology Anti IMF Outweighs Economic Purposes

Already in 2020, after Lebanon had defaulted on foreign debt, and even before meeting the IMF team for future technical or financial assistance, the Hezbollah organization, whose strong presence of the past 39 years and political representation in parliament was retched up by several important notches in the past ten years to a dominant role not only in the nation's territories marked by Shia religious affiliations, has shown absolute rejection of imported "Western" solutions and expressed extreme hostility towards the IMF. Disregarding whether Lebanon's economy would require and probably benefit from IMF economic assistance, a political force and society-shaping organization thus rejected the very idea of an IMF Agreement for what many in Lebanon, including the author, see as ideological reasons and purposes.

The ideological angle and slogan under which countries such as Iran, Venezuela and the quasi-state of Hezbollah-dominated territory in Lebanon accuse the IMF and the World Bank, deriding them as "mechanisms of American imperialism", is that these global powers exploit small countries in their striving for worldwide, secular preeminence.

These opponents of global influence seeking (notwithstanding that they themselves often perceived as aggressive seekers of political and economic power) consider the principles, policies and operations of the IMF are strongly favoring the interests of rich countries, on the reasoning that the IMF is dominated by the "rich countries' club" and more precisely by the United States which has veto powers in many global decision making processes and enjoys superior voting (16.5 percent share) in the IMF.

Also, it deserves to be noted in this context that criticism of the IMF and its role in the clubs of rich and powerful countries is rooted in ideological traditions dating back to the competition between the superpowers of the 20th century but also is found in positions of top economists.

As far back as the 1960s, Friedman associated IMF interventions and conditionality with undemocratic characteristics under political intentions to changing "nationalist" countries to "internationalist" ones. *"Without an explicit political decision, a country should, in effect, give extensive power over its economic policy to specific governmental officials of other countries, in whose selection its own people have to say, direct or indirect."* [12].

The rationale for a hard peg regime on one side can be argued for on basis of the absolute need to fulfill the main functions of money, which are store of value, unit of account, and medium of exchange. But beyond this utilitarian dimension, the issue of Lebanon's national currency is and must be expected to remain critical and challenging to the sovereignty image. Accordingly, the decision of fully dollarizing a country, which in all cases has to be initiated from multiple angles and must impede on many sensitivities, under the specificities of Lebanon, which today also include a deep distrust of all political institutions, powers, and individual politicians, will in all likelihood have to incorporate supra-political and cultural perspectives in addition to political and economic considerations and the need for credibility and stability of the currency, even if political considerations might outweigh purely economic ones [102].

Given that the currency board and full dollarization provide maximum credibility (as shown previously figure 19) but differ in that the CBA works without totally sacrificing the national currency (although it requires giving up the central bank), the author maintains that both choices for a hard peg regime should remain on the table 4 and advocates for an urgent prioritizing of the hard peg discussion under consideration of the important non-economic factors touched upon in this paper.

3.4 The Law Proposal Calling for a Currency Board in Lebanon

In June 2020, Layal Mansour (the Author) has presented (to parliament and to the public) a law proposal that urges Lebanon to transform BDL to an orthodox currency board arrangement as an first step towards economic reforms and recovery (figure 20).
Currency Board Arrangements have been often suggested to both prevent instability and reestablish currency credibility during a currency crisis. It is usually chosen as part of a structural adjustment program in economies in chaos.

Figure 20: Law proposal of the currency board regime

الجمهورية اللبنانية - مجلس النواب
الادارة المشتركة
تاريخ الورود
الرقم

إقتراح قانون إعتماد نظام صندوق تثبيت القطع Currency Board

المادة 1:

لغايات تطبيق أحكام هذا القانون، يكون للعبارات والمصطلحات التالية أينما وردت في هذا القانون المعاني المدرجة في هذه التعاريف:

المصرف أو المصرف المركزي: مصرف لبنان المركزي

المجلس: هو المجلس المركزي المنصوص عنه في المادة 28 من قانون النقد والتسليف

الصندوق أو صندوق تثبيت القطع: هو الصندوق بالعملة الأجنبية الذي يديره المصرف المركزي، ويتكون من الموجودات بالعملة الأجنبية ومن الذهب القابل للتداول تعادل بصورة دائمة قيمة 100% على الأقل من حجم الكتلة النقدية بالليرة اللبنانية المتداولة في السوق.

Adopted by then-MP Paula Yacoubian, the draft law proposing the CBA solution has been officially submitted according to the constitutional stipulations for presenting a legal draft and registered under the number 967/2020. Draft law 967/2020 suggests transforming the central bank to a currency board, or more precisely to an orthodox currency board.
This means that rather than requiring the creation of a new institution with the sole authority of a currency board, the draft law calls for modifying BDL's role and competencies.

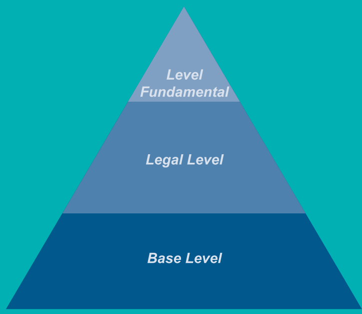
This draft was legally elaborated by Ahmad Ichrakieh (professor of law) and Wael Hammam (Attorney at law). The law proposal can be accessed, in its original Arabic, on the website https://paulayacoubian.com/page.php?id=6

Yacoubian's and Mansour's intent in presenting the law proposal was to elaborate and expand on the CBA in two additional legal drafts, after negotiating with authorities about details related to the currency board's development and application (see next section). Here the author notes that the currency board usually has to be enacted not only in tandem with addressing legitimate political and possibly constitutional concerns but also in the presence of corruption and political self-interests.

Therefore, and because it requires a strong commitment to fiscal and political discipline, the currency board's affirmation has to be legislative. Strong legislation will be the sole avenue that can be pursued in order to deliver the full credibility and continuity that underlies and justifies a currency board. In fact, norms or laws in Lebanon can be modified if and only if the newly adopted law will respect the parameters set forth in Kelsen's pyramid to replace or modify the existent one (box 4). Since the Code of Money and Credit is a law, it can be modified or canceled only through legislative processes at the level of determination of the legal norm, or at the higher decision making of constitutional rank and validity.
Worth to remember from this section: The Law Proposal emphasizes transforming the Central Bank of Lebanon to a Currency Board rather than establishing a new entity. Differences between establishing of a currency board and transforming BDL to currency board are elaborated upon in the FAQ section 4.

Figure 20: Press Conference in June 2020, announcing the Law Proposal Elaboration of the Currency Board Regime

BOX 4: Kelsen's Pyramid



Kelsen's Pyramid shows the hierarchy of laws and regulations. It states that norms of a lower rank cannot contradict those of a higher rank. This means that one norm always prevails over another. The pyramid is divided into three levels:
1st: The fundamental level in which the constitution is found, is the supreme norm of a state. All other norms are derived from and subsidiary to the fundamental level of norms. Norms on the fundamental level are the basis of validity of all the other norms/
2d: The legal level is the layer where we find the organic and special laws, followed by the ordinary laws and decrees of law, and the sub-legal level where we find the regulations and below these the ordinances.
3d: At the basis level of the pyramid, we encounter judgments, sentences, and regulations. It is to be noted that the pyramid at the basis level is wider than at the upper levels, which means that there is a greater number of legal norms.

The implementation of a currency board requires close coordination among the concerned authorities, meaning the leaders of the government, the ministry of finance and the central bank. Cooperation with the ministry of justice or other agencies is also needed. Alas, politicians in this country have tended over the past two years to continually criticize the CBA with irrelevant, misleading, and patently wrong arguments, with some local politicians, who lack knowledge on this complex issue, even resorting to information obtained from unofficial and inaccurate sites that at best provide a broad definition of currency board.

Rejection, populist opposition and erroneous opinations vis-à-vis currency board matters was somehow to be expected, since in a corruption infested country like Lebanon, decision makers are beneficiaries of the system. More precisely, the Lebanese decision makers who ex officio have the greatest involvement with the CBA project, have nothing to gain from a hard peg regime and have taken no actions and demonstrated no credible ambitions towards abolishing the central bank's discretionary power.

3.5 Verifying Prerequisite Lebanon's Economic Conditions

"In the midst of a banking crisis and entering a period of hyperinflation, support for the government was declining and popular protest calling for new elections was widespread. In view of the failure of the country›s earlier stabilization programs, a perception was developing that, to be credible, a renewed stabilization attempt would require a visible, rule-based system, such as a currency board. Nevertheless, the economic and financial problems confronting seemed insurmountable at first".

The paragraph reads like a description of the current situation in Lebanon. Yet, it was published in 1999 [103] in an IMF magazine[18] to describe Bulgaria's economic context during the period preceding this country's decision to adopt a Currency Board.

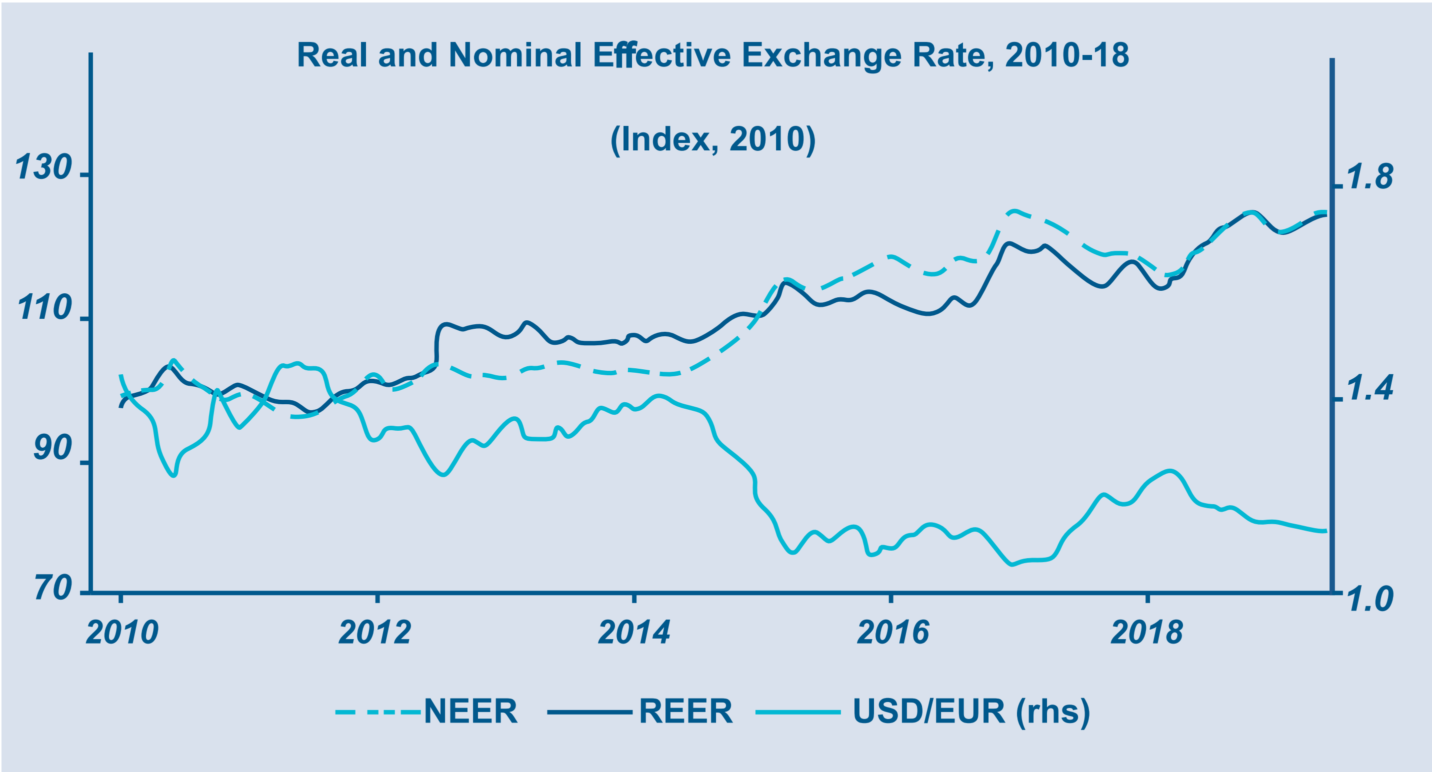
"Inflation reached 2000 percent due to the rapid acceleration of inflation included liquidity injections to support the country's weakening banking system. Out of ten state banks, which accounted for more than 80 percent of banking sector assets, nine had negative capital, and more than half of the state banks' portfolios were nonperforming. Half of the private banks, including the country's largest and best known, were also technically bankrupt. The central bank depleted its international reserves; remaining reserves covered less than two months of imports".

Here again, what could be an apt elaboration on the economic and banking performance in Lebanon in 2021 the quoted paragraph explores the depth of Bulgaria's twin crises, just prior to entering a CBA.

i. Currency Crash

By all appearances and official assurances by highest central bank officials in Lebanon, the official LBP/USD exchange rate hovering around 1507:1 was not only historically stable but also going to remain so. However, analyses by the Bank of America Merrill Lynch and Bloomberg revealed that BDL was maintaining an overvalued exchange rate as FX assets were smaller than FX liabilities.
According to concluding statements to IMF Article IV consultations in 2019, the Nominal and Real Effective Exchange rate (NEER and REER) were in truth overvalued significantly (figure 21). The REER had, up to the time of the Article IV report, appreciated over 30 percent from lows in 2018, a magnitude that is consistent with the increased domestic inflation rates in Lebanon in the year that followed and also with the appreciation of the nominal effective exchange rate.

Figure 21:The NEER and REER to Lebanon in IMF Article IV-2019



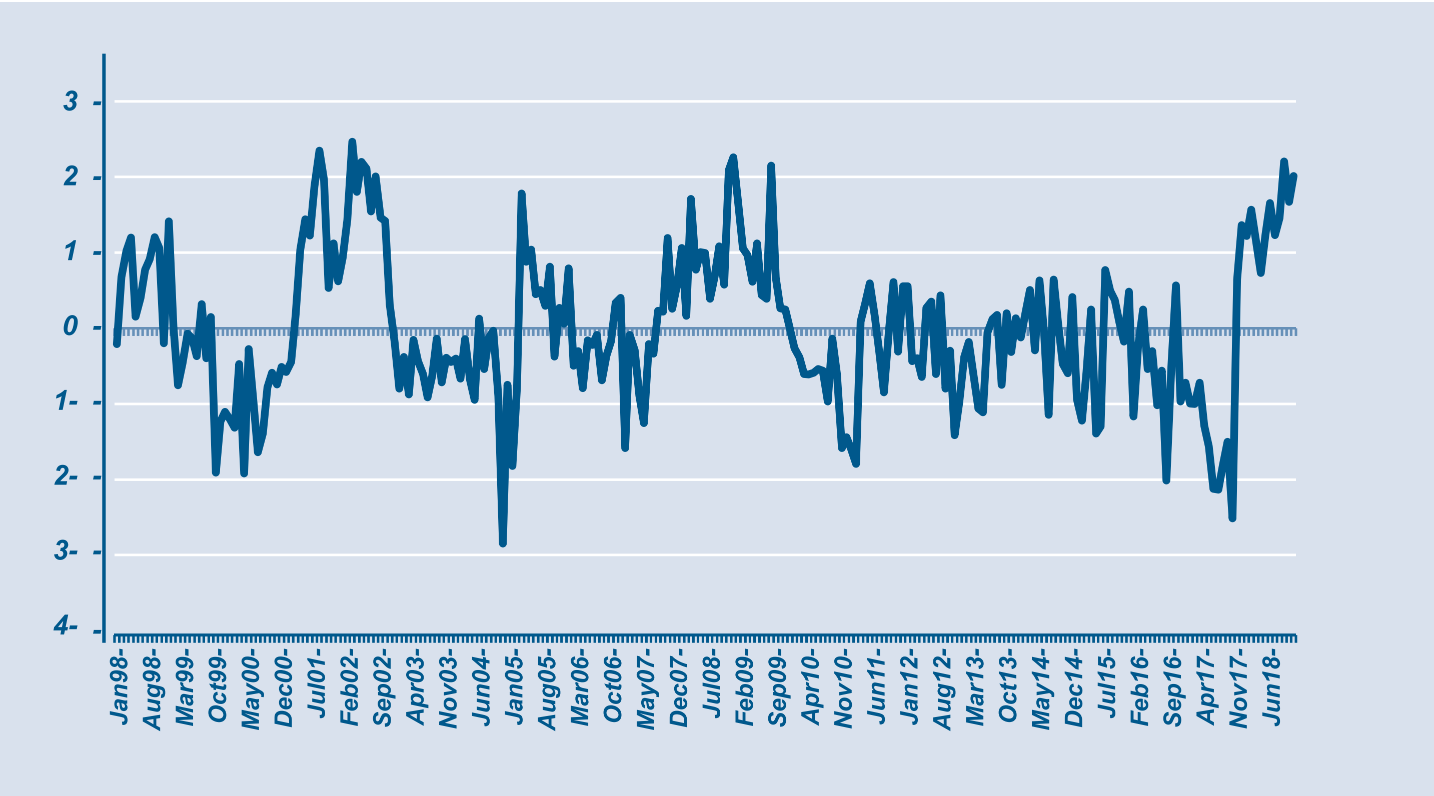
Source: Information notice system and IMF staff calculations

[18] *Finance and Development, a quarterly magazine of the IMF, in September 1999n Volume 36, Number 3.*

The highly negative net foreign assets position, with high levels of short-term debt, suggested at the time that the external sustainability approach would be the most relevant measure for Lebanon. It implied a 50 percent overvaluation if net foreign assets were to be stabilized at the 2018 level of -128 percent of GDP. Furthermore, the exchange rate overvaluation would be at a level of 66 percent if the net foreign assets were to be brought down to -100 percent of GDP by 2024.
With the current account approach being applied, a real exchange rate gap of 63 percent was estimated for 2018 (compared to 45 percent estimated in 2017).

The Exchange Rate Market Pressure (EMPI) is regarded by economists[19] as an early warning indicator of impending currency crises and gauge of the severity of an expected crisis. In most countries, the shocks to monetary policy affect EMPI in such ways that tightening of money reduces the pressure. Figure 22 below shows the EMPI for Lebanon, which is measured quantitatively by constructing a statistic index from observed changes in exchange rate, foreign reserves of the central bank, and, in some cases, the short-term interest rate differential [104].

Figure 22:The Exchange Rate market pressure for Lebanon from Jan 1998 to Nov 2018



Source: Mansour - lCharkieh - 2021

A value of EMPI exceeding one indicates that the exchange rate is under pressure and thus could trigger a financial crisis; and that vice versa a financial shock could trigger a currency crisis. The EMPI for Lebanon shows that, although the BDL-led financial engineering operations in 2016 and 2017 were costly, they have promoted stability for a while (this is represented by a dip in the pressure into negative territory). Yet, financial tools are ineffective in the long run if they are not followed by economic reforms.

In Sum, all of the indicators such as change in dollarization rate, FSI, REER and EMPI reveal that since 2018, the overall financial market of Lebanon has followed an increasing trend, thus signaling a crisis to be approaching in a time of the absence of all other available instruments that could have mitigated exchange rate pressures, such as foreign debt, grants by Gulf countries, tourist inflows etc.

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[19] For more details, please see 37.The Impact of Israeli and Saudi Arabian Geopolitical Risks on the Lebanese Financial Market. Journal of Risk and Financial Management, 2021. 14(3): p. 94.
And 34.Ishrakieh, L.M., L. Dagher, and S. El Hariri, Not the usual suspects: Critical indicators in a dollarized country's Financial Stress Index. Finance Research Letters, 2020. 32: p. 101175. et al (2020).

3.6 Uncontrollable Inflation and Incompetent politicians

Instead of taking immediate vigorous actions against corruption to remold the negative image of the economy as was recommended [105], all along the 26 past months, policymakers in Lebanon have proven their incompetence to attenuate the financial crisis' severity by measures such as limiting the increase of money supply (the printing of money) or by taking strict measures to rein in and reduce government expenses. Politicians have met numerous times but only succeeded to discuss the economic crisis.
In fact, instead of collaborating/negotiating with the IMF on an economic reform plan commitment to rescue Lebanon, decision makers for more than 18 months preferred to subsidize imports of basic necessities such as fuel, wheat, medicine, and a staple food basket, at a cost of about $437 million every month[20].

The ministry of trade in cooperation with the BDL were able to provide households with basic products at the previously prevalent peg currency rate of 1,507 LBP to USD, although knowing that the USD/LBP market price was gradually appreciating and hit 25000 (by November 2021). Moreover, the undesirable practice of a currency regime of multiple exchange rates proved to be a strong stimulus for outbound cross-border smuggling and strengthened black market structures. Expectedly, of approximately 10 billion USD spent on subsidies in 2020 and 2021, around 75 percent were misused by traders or left the country as smuggled products, without any serious effort by politicians to control/stop smuggling.

The various parties concerned with the crisis, namely the banking sector, the central bank, and the government, have struggled even when it came to acknowledge the responsibility for the current crisis. The indifference of political groups sitting at the government – which are most of the political parties that have representation in parliament and the Council of Minister – towards the crisis has contributed massively to its aggravation. Table 5 exhibits a snapshot of the corrosion of Lebanon's economy in 2020 and 2021 up to the month of November.

Table 5: The deterioration of the economic conditions in Lebanon from 2020 to 2021

Economic Indicators	January 2020	Oct-Nov 2021	Percentage change
Exchange rate USD/LBP	≈2200	25000	≈+1036%
Minimum wage (in USD)	≈ 306	≈27	≈ -91%
Poverty rate	≈ 28%	≈55%	≈ +100%
Currency in Circulation M0 (Bill LBP)	≈ 4600	≈37992	≈ +725%
Inflation Rate (CPI Base 2013)	≈120	≈613	≈ +410%
Price of Fuel (one tank)/Minimum Wage	≈4%	≈46%	≈ +900%
Market Price of Fuel (per tank in LBP)	≈ 26000	≈320000	≈ +1130%
Foreign Reserves included Required Reserves ≈14 (Bill USD)	≈ 39.7	≈ +14.2	≈ -54%
BDL Foreign Reserves excluded Required Reserves	≈ +21.5	≈ +0.2	≈ -99%
Birth Rate per 1000 people (UN-WPP)	17.3	16.9	≈ -2.4%
GDP percentage change (previous year)	-21%	-10%	

Source: Author's elaboration from BDL, World Bank and IMF data

In the first quarter of 2021, Lebanon's crisis was cited as being among the top three most severe financial crisis in the world in the last 150 years. By September of 2021, Lebanon's inflation has surpassed the inflation rate of Zimbabwe and Venezuela (Bloomberg Analysis).

On the other hand, in May 2021, S&P Dow Jones Indices, the division of ratings agency S&P Global that creates stock market indexes, has launched a consultation exercise on removing Lebanese shares from several of its indexes as a result of the country's worst economic crisis in decades. S&P DJI proposed to remove index constituents domiciled in Lebanon from the S&P Pan Arab Indices," and to reclassify Lebanon from a frontier market to a stand-alone market, and consequently remove all constituents from the S&P Frontier BMI and related sub-indices." After a, in itself catastrophic, delay of forming a new Council of Ministers for more than one year since the previous government resigned in response to the August 4, 2020, Beirut Port explosion, government officials reengaged in discussions with the IMF.

Up to the moment of this report's completion in December 2021, however, Lebanon's representatives have not been able to deliver credible news on successful negotiations with the IMF that would allow for a clear picture of intended agreements with regard to the currency situation, and other key aspects of the needed Lebanese commitment under of technical/financial assistance.
Whatever criticism of past or present IMF Agreements and policies one might espouse, and there can be numerous: it is outrageous that in a country like Lebanon politicians and policymakers at time of this writing employ criticism of IMF policies as mere tools to instigate hostility towards the IMF.

It is morally perverse and socially and economically impossible to perpetuate the culture of corruption in this country by having representatives of the corrupt system reject and block a negotiated agreement with the IMF, or carry out any type of economic reform, for the self-interested purpose of avoiding being held accountable or face future controls and reforms, or become the subjects of judicial investigations, audits, public inquiries, and other lawful measures.

[20] *According to the World Bank, Lebanon Subsidy Reform, December 2020.*

3.7 Policymakers' Moral hazard: Responsible of the Banking Crisis.

Although the trajectory of the country's public debt has been calamitous since the post-conflict reconstruction started in the early 1990s in a political and financial environment that was increasingly infected with corruption, Lebanon has recently found itself in a position so extremely rare if not unique in the world. It has seen a total public debt / GDP ratio greater than 170 percent in the last two years with more than 40 percent of its debt being denominated in foreign currencies.
Furthermore, banks that were the main buyers of public debt in addition to being the predominant source of private sector finance and investment in absence of corporate bonds (previously in figure 10), were found holding about 60 percent[21] of the government's total debt, similarly to ratios seen in the poorest African countries (IMF, 2017).
This ratio indicates that the central bank and the ministry of finance depend to varying but high degrees on individual banks or the banking sector in its entirely.
To say it more precisely, the tight "business-financial-debt" relation between the government and banks has improved the negotiation powers of banks vis-à-vis monetary authorities, thus encouraging unethical behavior such as discrimination, favoritism, clientelism and moral hazard.

It was inevitable in this overall system that the higher the dependency between the BDL and banks, the more extreme the consequences would be for the whole economy if a financial crisis occurs: If one sector crashes, the others crash too. Indeed, economic studies revealed that the financial sector was vulnerable, although private sector banks might reap exaggerated benefits from the high returns they achieved by buying government debt, to a potential crowding out effect through accumulation of more domestic debt [106].
After the immense shock of the liquidity crunch and severe banking crisis of late 2019, at the end of which many depositors have lost about 90 percent of their savings, people preferred to rely on cash money (withdrawn from their accounts in the early phase of the crash, received from abroad or earned as cash) and store this cash "under the mattress". At one point during the crisis, the governor of BDL governor stated that the cash dollar money in circulation was estimated at around ten billion USD however this estimation was presented with no scientific proof or verifiable data reference.

Corruption and Conflict of Interest: Most of, if not all private sector banks in Lebanon are politically exposed, partially owned by or otherwise linked (by board positions etcetera) to politicians and policy makers (both former and current ministers or members of parliament). Conflicts of interest and moral hazard behavior is an obvious factor in the relations between the banking sector (the main lender) and the government (the borrower and banks owners). Hence, the government is not obliged or inclined to decrease public deficit or avoid debt increase through reduction of state expenditures or improving tax collection. On the contrary, policy makers in such a corruption-prone system will provoke deficit growth (by wasteful spending) and approve public borrowing (from themselves) at a high interest rate. Yet, it was to their advantage that Lebanon was mired in what has been repeatedly called "the Ponzi Scheme (box5).

BOX 5: BDL-Banking Sector's Ponzi Scheme by James Rickards[22].

BDL was the main actor in Lebanon's Ponzi scheme. Such schemes can continue indefinitely as long as the new cash entering the scheme is greater than the demand for cash by the victims.
When the scheme is run by a government or central bank, the unraveling can be postponed with capital controls, account freezes, and false declarations, but the relief is temporary. The end is the same. Lebanon's Ponzi scheme included the following participants: The "suckers" who lost money are the people of Lebanon, the Lebanese diaspora, external creditors, bank depositors, and businesses that relied on the banking system for commercial credit and international trade finance. The "winners" were bankers and elites who made windfall profits from the BDL's financial engineering or were able to move dollars offshore before capital controls were imposed. Other winners include property developers who used cheap loans and hard currency from the commercial banks to develop apartments and luxury properties sold to individuals, corporations, and property managers. One other winner was Hezbollah, which used the banking system for multibillion-dollar money laundering schemes and terrorism finance.

Random discretionary Behavior, Violations of Laws & Discretionary Capital Control: To efficiently control the foreign reserves in the central bank and to limit capital outflows, a capital controls law would have to be introduced and made applicable immediately upon the emergence of the crisis. Alas, the banking sector has never behaved so insolent and arrogant towards its clients as it did start towards the end of 2019. In the November 2019 to March 2020 period, banks began applying de facto restrictions on depositor activities that amounted to unregulated/unofficial and discretionary capital controls. Until December 2021, the government has failed to adopt a capital controls law. However, since October 27, 2019, BDL has promulgated decisions/circulars in 13 circulars[23] that are not all respected by banks. In a press briefing in July 2021, the IMF has admonished the ineffectiveness of the capital control mechanisms two years after the financial crisis had started. A capital control law is still needed and required in conjunction with an eventual IMF Agreement to guarantee nondiscriminatory treatment of depositors in the future. A capital controls law is vital, regardless of the question if and when any agreement with the IMF will be concluded.

[21] Local banks were holding about 70% of total EB. When the monetary authority announced the payment of foreign EU bonders, Lebanese Banks unsure of repayment, have offloaded their EU to foreign investors that are willing to take more risks for high returns, such as Ashmore Group Plc. (according to JPMorgan Chase & Co. analysts, published by Bloomberg in January 2020). Consequently, foreign investors are estimated to hold between 50% to 70% of total EB, (The portion, share, is subject to big discrepancy. Some references say that they hold 70%, others say they do not hold more than 40%)/ Those operations have created panic to Lebanese monetary authorities, who are asking Lebanese banks to buy back bonds to regain the majority of votes in restructuring talks. Indeed, Lebanon needs the approval of 75 percent of EB holders of each series to agree on restructuring terms. In November 2019, Domestic banks could hold 0.7bn $ of the EB maturing in 2020. This assumes the BDL does not hold any of these bonds, and that Bloomberg foreign holdings data is accurate.

[22] By James Rickards: Anatomy of a financial colapse, Foundation for Defense of Democracies, August 2020

[23] BDL official site on https://www.bdl.gov.lb/circulars/index/5/33/0/Basic-Circulars.html

PART IV-
4. FAQS: WHAT? WHERE? HOW? WHY? WHEN? WHAT IF? WHO?

The most frequently asked questions or critics, related to the effectiveness, costs, risks, limitations, bank activities, business cycles of a possible currency board in Lebanon, as well as their answers are the following:

4.1 Why is Hard Peg-Currency Board inescapable for Lebanon?

When a country has demonstrated, throughout years, simultaneously the following economic features, it is understood that a Hard Peg regime in general, or a currency board agreement (CBA) in the case of Lebanon, has become inevitable. The country is:

I. A country is highly dollarized or very highly dollarized > No trust, no Confidence

Loss of trust and confidence towards the national currency accompanies dollarization. It will result in widespread rejection of holding this currency as a store of value. The higher the rate of the dollarization is, the lower is the likelihood of the national currency's acceptance in place of one's dollarized holdings or of a move to a de-dollarized scenario with an in comparison to dollarization more flexible exchange rate regime. The fear of floating, which manifests itself in a highly dollarized country, has been proven in empirical studies which covered multiple currency experiences of dollarized countries.

This phenomenon has been acknowledged in many case studies as having produced severe negative effects in all the studied cases.

II. The society is addicted to dollar > It moves from hysteretic to hysteresis

Lebanon has shown a high rate of dollarization over many years; the high dollarization has even persisted after successful stabilization periods and multi-year economic growth, in econometric confirmation of the hysteresis effect and the presence of the ratchet variable. Econometric proof of the hysteresis effect is one of the most important arguments in support of a hard peg for Lebanon. The first study of the phenomenon in Lebanon in fact dates from back in 1994 when an IMF research paper presented evidence for hysteresis effect existing in Lebanon. De facto dollarization of the economy has imposed itself so strongly that official dollarization would only institutionalize what has become a fact. However, a currency board could be more suitable for Lebanon (see section 2.3)

III. BDL monetary policy has become limited to money printing > Inflation booster

The central bank of Lebanon has no independence in terms of monetary policy choices that are appropriate for Lebanon. In a highly dollarized country, the central bank's effectiveness is extremely limited. The only thing BDL can really do is to print money and to count on the monetary illusion, which means pretending that there is an increase of wage, albeit the increase of money supply in a "no-trust" economy equates to nothing but an increase of the rate of inflation (see section 1.3).

IV. In a highly corrupt country, no trust can be built through central bank discretionary power or in continued presence of such power

A currency board is never appropriate for a systemically transparent country with developed economy. Such a country can rely on the market power to adjust any economic disequilibrium and its central bank can also be efficient in adjusting the interest rate up or down in order to manage the inflation rate, help accelerate economic growth or decelerate worrying economic trends. Currency board is vital (meaning it is a last resort and as such inevitable) for countries that lack governance, values, strong and independent legal frameworks. It appears indeed inescapable for those all too familiar cases where countries whose citizens are deprived of their democratic participation in day-to-day governance by politicians who always promise and never deliver, face institutions that have lost any sense of responsibility, and have rulers who evade accountability and have zero will of ever enacting structural economic reforms.

V. Lebanon's Services share of GDP exceeds 80percent

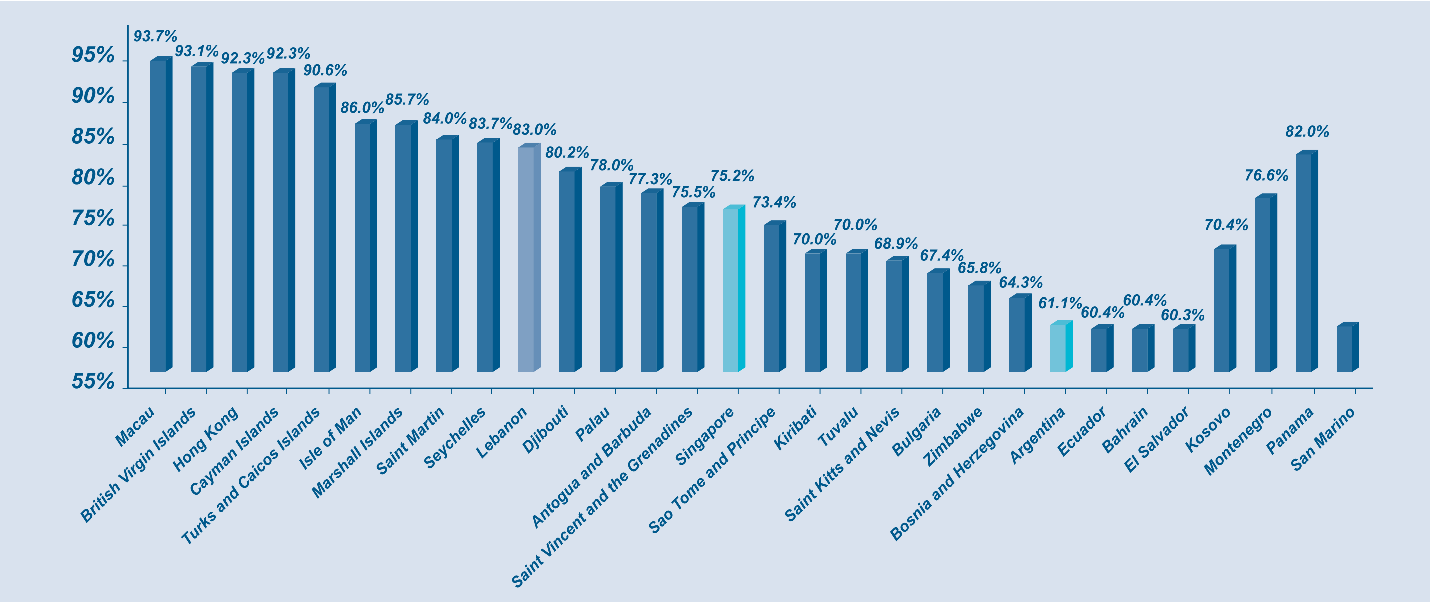
Countries with strong exportation could achieve positive outcomes in form of extra comparative advantage in international markets if their currency depreciates or is kept at competitive levels by central bank interventions.

In Lebanon, the unofficial dollarization and entrenched soft peg have translated into the opposite, and instead of developing exports, the services sectors have expanded so that the contribution of services to GDP in Lebanon exceeds 80 percent. In other words, given that industrial and agriculture together do not even account for 20 percent of the GDP. Lebanon cannot count on being an exporter country. Therefore, the Lebanese economic context requires currency stability, more so than almost any other country. In this context it is worth pointing out that 100 percent of the countries operating under a currency board or full dollarization agreement have services sectors whose share to national GDP ranges at or above 60 percent (figure 23), even former currency board countries such as Argentina and Singapore.

VI. Country under political/geopolitical instability in addition to an overall economic collapse

Lebanon has always been subject to politcal instability and geopolitical tenisions

Figure 23: Services Sector to GDP for countries under a hard peg regime.



Source: Authors's Elaboration from The World Factbook and from Statistica.com

4.2 Response to the allegation that the currency board fits for other countries but not for Lebanon

No matter the "Nationality or Culture" of Lebanon, table 6 shows that CBA has been implemented in Asian, Baltic, African, Arab and Latin American Countries. Lebanon is in very similar circumstances as countries that previously adopted CBA in term of:
• Geopolitical tensions: Lebanon is continually undergoing conflict with the region due to Hezbollah dominance in Lebanon. Hezbollah is officially considered a terrorist militia-group by more than 66 countries.
• Political instability: Lebanese politicians are undergoing sanctions under Magnitsky act and OFAC for being corrupt and/or facilitating in Hezbollah activities.
• High level of unofficial dollarization: The dollarization rate is around 80 percent.
• Economic Collapse: The monthly inflation rate has latelyrecently exceeded 50 percent. the local currency has lost more than 90 percent of its value. Banks are illiquid and insolvent.

Table 6: Political and Economic characteristics of Countries under CBA (A sample of countries)

Country	population	Year of starting CBA	Anchor currency	Share of Services Sector/GDP	Inflation Rate (pre- CBA)	Interest rate (pre- CBA)	Dollarization rate pre-CBA	Geography
Argentina economic characteristics were basically fragile: hyperinflation, banks collapse and dollarization rate that exceeds 50%. These characteristics made Argentina fragile unable to face when Mexican crisis.								
Argentina	37 MIL	1991	USD	61%	3046.09%	1389% in March 1990	Around 48%	Latin American Country
Bosna was establishing a new rate, after being separated from (Ex) Yugoslavia. The separation preceded by war								
Bosnia	3.8 MIL	1997	EURO	64%	/	/	Around 86%	Eastern European
Bulgaria had a disastrous financial crisis, even more severe than Lebanon's one. Most of the banks collapsed inflation rate hit one thousand percent.								
Bulgaria	7.8 MIL	1997	EURO	67%	1057%	1162% in October 1996	Around 54%	Eastern European
Estonia was part of the Soviet Union until 1991. At the independence, "establishing a new state", Estonia adopted the CBA to provide maximum truth and stability of its currency.								
Estonia	1.4 MIL	1992	EURO	66%	MORE THAN 100%	/	Around 30%	Baltic
Lithuania was part of the Soviet Union. After declaring its independence in March 1990. but the State has officially been recognized in October 1992. The establishment of an independent new state								
Lithuania	3.6 MIL	1994	USD	67%	410%	/	63%	Baltic
Hong-Kong is a special administrative region of China. The critical status required effort on maintaining a fixed exchange rate regime with CBA to provide future currency stability and credibility.								
Hong-Kong	7.1 MIL	1983	USD	92%	11%	/	In 1990 around 60%	Eastern Asia
Djibouti is an African-Arab country (It is a member of the Arab Ligue), it was highly dollarized: It had suffered from ethnic and violence (small civil war) in 1949								
Djibouti	450	1949	French Franc then USD	81%	/	/	/	African Arab Country

Source: Author's Elaboration form World Bank Data, Central Bank of Each country, and Reinhart 2004.

Table 6 shows that Currency Board is not determined by location on a particular continent, or language, or ethnic group or territory size or population, but rather critical economic conditions such as uncontrollable inflation (hyperinflation), banks collapse and very high dollarization rate and high services sector to GDP ratio. It also considers complicated geopolitical, political context mainly related to territory separation or war. The countries under currency board regime are in appearance different (historical and geographical), however the common denominator is complex political and/or economic context.
Refer to the previous question 4.1 for further details.

4.3 What is the Difference between Establishing a Currency Board and Transforming the Central Bank to a Currency Board?

In French, the Currency Board is called "Caisse d'Emission", which is literally "Fund Issuer". The law proposal of 2020 (the author's and Paula Yacoubian's proposal) has shed light on the benefits of adopting the concept of "Fund Issuer" for Lebanon, which is nothing but currency board. However, the concept, referenced by using the French term, offers psychological added value as it clarifies what a currency board solution does not stand for, specifically a corrupt image, and weak sovereignty.

Figure 24: Specimen of old currencies

Psychological perception: Lebanese economic agents are emotionally attached to their central bank and its importance as symbol of sovereignty (not to the central bank currency), despite the latest severe currency crisis. In this context, it is important to remember that, between the 1910s and Lebanon's independence, banknotes issued for this country were bearing the issuer imprints "Banks of Syria and Lebanon" or "Bank of Syria and Grand Lebanon". Following independence, the banknotes of Lebanon were issued by "Banque du Liban" (BDL). This historic fact, of BDL becoming a symbol of independence. is important for economists and authorities to take into consideration.

A transformation of BDL into a currency board will impact its role and powers but not its function as important symbol. Psychologically and morally, however, the act of eliminating BDL could be interpreted as violation of Lebanon independence.

Sovereignty: The Code of Money and Credit (CMC) in Lebanon says explicitly that BDL entails the function of "fund issuer" for purposes that are mandated very similarly as the obligations of a currency board but under more flexible conditions: In practice, according to CMC, BDL has to keep 30 percent of M2 and 50 percent of M0 (as key parameters for the money supply and the currency in circulation) backed by foreign currencies. The Law proposal preserves the Arabic terminology of "fund issuer" (which is like the French one that already exists) but suggests a modification of BDL's role by imposing foreign currency backing at the level of at least 100 percent (around 110 percent) of the currency in circulation, bringing BDL in line with the currency board principles. Other modifications of the Code are also suggested so that BDL will fulfill the role of a currency board.

Corrupt Image: The term "board" in its Arabic translation and common usage in Lebanon represents a problem because of connotations of corruption. In Lebanon, nothing can be more corrupt than a "board" (مجلس). People are used to a scenario where the Lebanese government would establish boards such as the Council of Development and Reconstruction which is by its Arabic name called Board of Development and Reconstruction (مجلس الانماء والاعمار). Similarly, what is called the Council of South in its English rendition, Arabic says Board of South (مجلس الجنوب). Accordingly, Lebanese people have expressed instinctive hostility to the idea of another "board", a "currency board", as they were bound to perceive the designation as board concealing another new arrangement for more corruption and less regulation or control. "Board" in Arabic has become in the conscience of every single Lebanese a byword for an institution for corrupt authorities to waste money with impunity.

This is the reason why the 2020 law proposal resorts to the term Fund issuer (صندوق تثبيت القطع).

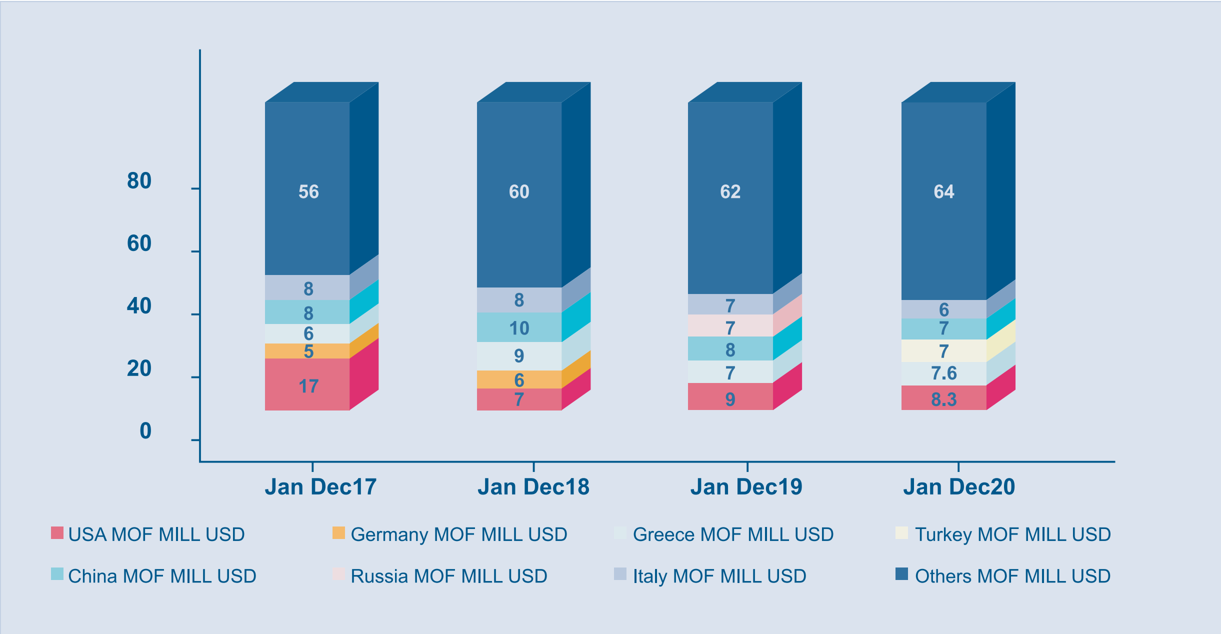
Also notably in this regard is that most countries in adopting a currency board by law [107], have not labeled them literally currency board but have kept the central bank designation and changed his institution's power to become de facto a currency board while using legal terminology such as:
• Convertibility Law for Argentina (LC) in 1991,
• Law on the Central Bank of Bosnia and Herzegovina (CBBH) in 1997,
• Law on Bulgarian National Bank (LBNB) in 1997,
• Law of the Republic of Estonia on the security for Estonian Kroon (LRESEK) in 1994.

Compared to other obstacles and rejections of the currency board solution, the above factors of psychological perception, sovereignty and corrupt image are the easiest to address.
In fact, Lebanese authorities are resistant to an arrangement that will by law discipline the behavior of the authorities and limit the extent of discretionary power. Moreover, the currency board imposes/obliges the highest level of transparency and visibility. Consistently, the law proposal of the currency board has mentioned the obligatory to issue, on weekly basis, a report describing every single operation and changes that took place.

4.4 What is the Anchor Currency and How Can a Country Obtain it to Start?

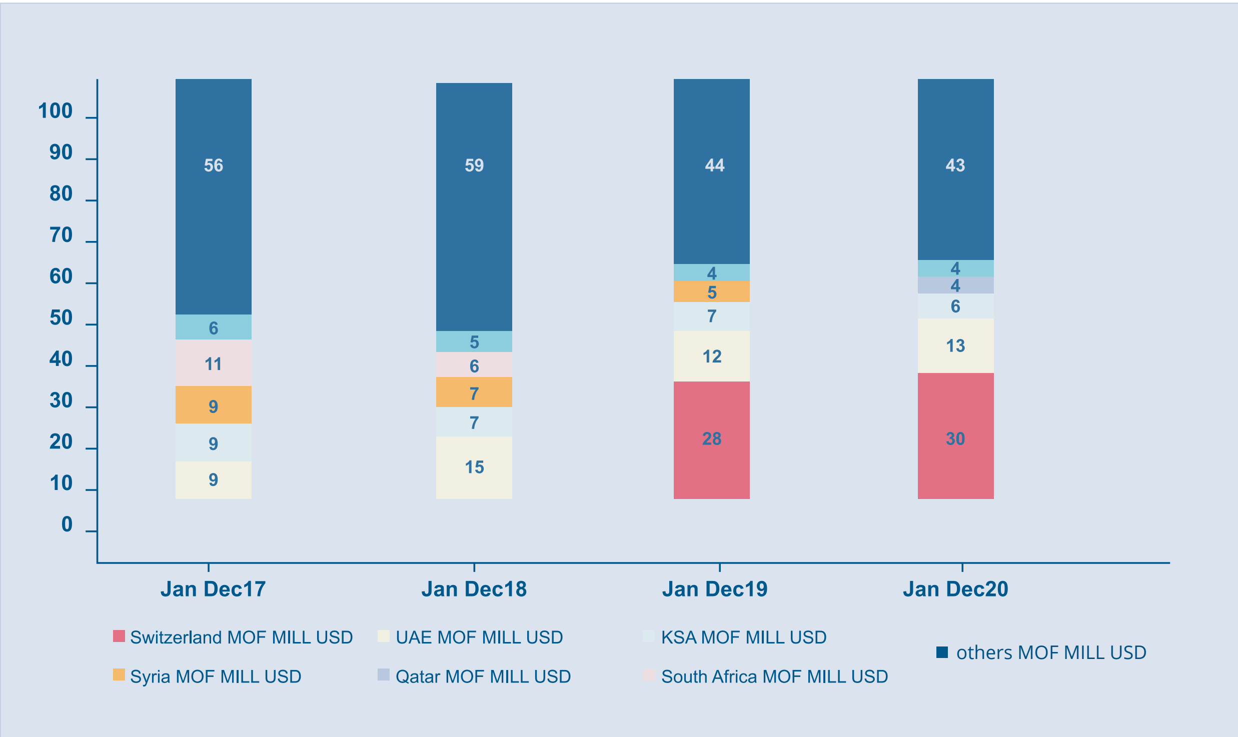
A currency board agreement (CBA) must invoke a tie between the national currency and a credible foreign anchor currency. For partnering with a strong economy in a CBA, the authorities in the recipient country usually choose the anchor currency that plays the largest role in terms of trade flows, imports, exports, and debt. Figure 25 and figure 26 below show import and export volume of Lebanon per country. Most of these transactions are realized in US dollars (including non-US countries). Foreign debt is also mainly denominated in USD. An IMF Paper on Policy Analysis and Assessment (1997) explains how to make a currency board operational. It states that choosing the currency of the dominant trading partner is advisable in most cases and requires important analyses. However, it is also mentioned in this paper that dollarization could be an argument in favor of the US dollar even for country whose trade is not predominately denominated in the US dollar.
Since Lebanon is very highly dollarized as a country whose currency substitution according to every entity and economic agent is the U.S Dollar, the default foreign currency choice for Lebanon is the US Dollar until proven otherwise.

Figure 25: Import Decomposition by Country (in %)



Source: Author's Elaboration from Ministrry of Finance Data

Figure 26: Export Decomposition by Country (in %)



Source: Author's Elaboration from Ministrry of Finance Data

4.5 What to name the New National Currency and how to segment it into different units?

Once a hard peg association is embarked upon, a well-chosen new name of a new currency plays an important psychological role. In one example to take cautionary lessons from, Zimbabwe has several times changed its currency labels without ever seeing positive outcomes of naming exercises; instead, the Zimbabwean currency by any name was experiencing one crash after another. Consistently, Zimbabwe has seen its economy grow and achieved an immediate drop of its inflation rate only when it fully dollarized where its currency was named Zimbabwe Dollar.

Under the reasoning that the national currency of Lebanon should not be aligned with the term lira or pound (which carry historic connotations to the ages of colonialism and memories of imperialism), an option would be to combine a decidedly Lebanon-affine term with the term dollar that has been the de-facto currency of choice of Lebanese economic agents for half a century. In this sense, giving the national currency a new name like Cedar Dollar, or Phoenicia Dollar or Byblos Dollar could have a positive impact and evoke the location and identity of Lebanon. In this example, the term "dollar" follows upon "Cedar" or "Phoenicia" or Byblos, not dominating but confirming the credibility and strength derived from the USD.

In setting the value units for a new national currency under a CBA, authorities will be well advised to consider equating a "round" number of the old national currency to the newly fixed currency. The numbers are usually easy to mentally calculate on basis of a factor such as 50 or 100 or 1000. For instance, one Lebanese "Cedar Dollar" can be the equivalent of 20,000, 50,000, 100,000 or 150,000 LBP. The new banknotes and coins issued under the CBA become then the legal tender for payment of taxes and private debts.

Remark: The 2020 Law proposal did not mention any of the above suggestions for naming the new Lebanese currency, because, as mentioned earlier, the law proposal was supposed to be expanded upon in two additional drafts presenting, among other things, details about the name, rate, and required level of foreign reserves.

As for the currency rate under the CBA, determining of the correct rate is crucial as precondition for implementation of the currency board. The exchange rate could be calculated broadly by estimating the equivalence of foreign reserves and monetary liabilities. In other words, the rate would correspond to how much monetary liabilities are backed by foreign reserves[24].

The domestic monetary liabilities under a CBA envelop in almost all cases only M0 in addition to about 10 percent of foreign deposits. In other words, a currency board's reserves are equal to 100 percent or slightly more of M0, which is defined as the notes and coins in circulation as set by law. This constitutes the whole difference between the central bank and a currency board.
The decision and calculation of amounts and assured backing are done case by case.

A simplified simulation of a Currency Board in Lebanon: In below example, the currency board is a monetary authority that issues note, and coins "Cedar Dollar" represented by ₵. We consider also that the foreign currency is the USD.

The relation between foreign reserves and the exchange rate is found in the formula:

Foreign Reserves = ((M0 + ≈ 10% Foreign Deposit))/ Exchange Rate

IMPORTANT REMARK: The following example is a simple simulation that does not take into account the "remaining" amount of FX deposits in the banks.
It should be noted that the full evaluation of the banking sector, the distribution of the banks and government losses, haircut percentage, depositors tors' losses are all calculated and treated separately in a different report or document by professionals and experts, in other reports,not in this report.
The present report does not admit any of the accounting approaches to be implemented in adopting or not a currency board. Numbers are not representative nor officially admitted by the monetary authorities or any of the policy. To know how foreign reserves can be obtained, please refer to question 4.13.
The report stresses only on the importance of adopting a hard peg regime in Lebanon and exposes arguments showing the incompatibility of Lebanon to pursue a flexible exchange rate regime.

[24]Yet, the problem remains on defining foreign reserves because foreign reserves can be Gross or Net or include or exclude borrowing from the IMF or other long-term debt.

Assume that (according to BDL statistics in August 2021), the foreign reserves level in the central bank is about 14.2 billion USD and M0, the coins and notes in circulation, amount to 40,000 billion LBP. The deposits in foreign currency are estimated at about 70 billion dollars. Assume that the authority wants to fix the exchange rate at 20,000, then applying the formula[25] above. The foreign reserves level is then required to be around 9 billion USD like it is shown in table 7 below.
The side note: Cash dollar money in circulation has during the crisis been estimated by the Governor of the Central Bank-Riad Salameh, at around 10 billion dollars. However, this estimation was presented with no scientific proof or data reference.

Table 7: Exchange rate simulations (simplifies assumptions).

The USD/LBP new fixed rate	Level of foreign reserves needed to fix the rate at the level desired	Foreign reserves in billions of dollars
10000 LBP	11000000000	11 $ bill
15000 LBP	9666666667	9.667 $ bill
20000 LBP	9000000000	9 $ bill
25000 LBP	8600000000	8.6 $ bill
35000 LBP	8142857143	8.142 $ bill
40000 LBP	8000000000	8 $ bill
50000 LBP	7800000000	7.8$ bill
60000 LBP	7666666667	7.66 $ bill
70000 LBP	7571428571	7.571 $ bill
100000 LBP	7400000000	7.4 $ bill

If, per our example, every 20,000 LBP will be replaced by 1 Cedar dollar, any economic agent who was remunerated with 2 million LBP per month, will now be compensated for his/her work with 100 Cedar dollars, which means she/he will be earning 100 USD dollars. The currency board puts a stop to the fall in purchasing power that is generated by the central bank's money printing. The CBA offers a stable currency with no devaluation or inflation in the future.

4.6 How does an "Orthodox" Currency Board relate to commercial banks?

A currency board is not a central bank! A currency board is a monetary authority that issues notes and coins which are convertible into the US dollar (the reserve or anchor currency) at a fixed rate on demand. An orthodox currency board or a "fund issuer" does not convert local deposits denominated in the national currency into the reserve currency without a fee, in order to avoid sinking again into dollarization.

By having access to a strong currency and because of removal of the discretionary power of the central bank, the economic agents are supposed to have less appetite for converting their financial assets, which are backed fully by the anchor currency, into foreign holdings denominated in the anchor currency itself.

Because an "Orthodox" currency board foregoes all the discretionary power of a central bank, the money supply is determined by the market forces and not by an ineffective central bank monetary policy. Since under currency board the central bank's power of acting as lender of last resort disappears, the banking sector is forced to be highly prudent; it will be less inclined to assume risky behaviors and is intended to be more productive, transparent and competitive.

- An orthodox currency board has no discretion in monetary policy: market forces alone determine the money supply. An orthodox currency board does not accept deposits
- The currency board cannot print money and create inflation to finance the government.
- The government can finance its spending only by taxing or borrowing,
- The IMF defines the currency board as monetary authority that can no longer serve as a lender of last resort for banks in trouble.
- The currency board ensures to 100 percent the coverage and convertibility of its notes and coins but is not responsible for converting money created in the banking system.
- There are no restrictions (unlimited convertibility exists) on current-account transactions such as buying and selling goods and services, or on the capital-account transactions such as buying and selling financial assets, such as foreign bonds.

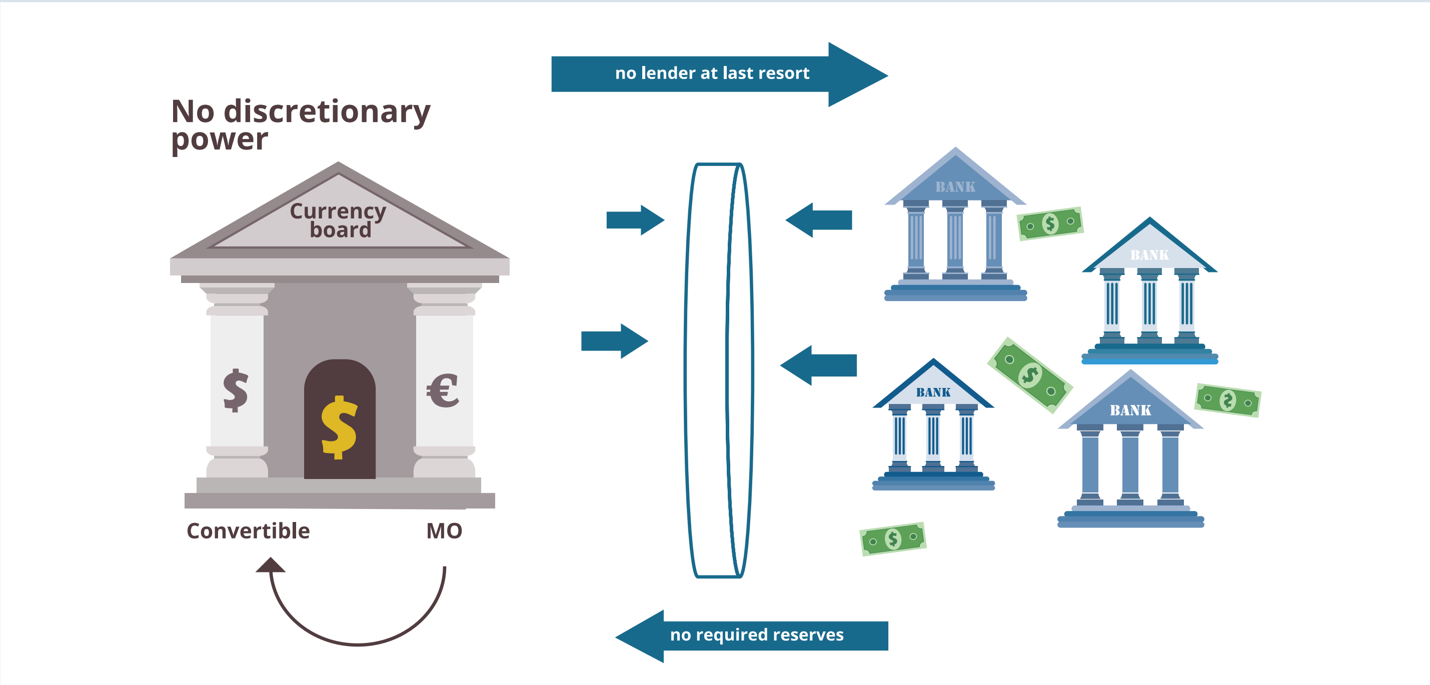
Seigniorage Profit: Unlike in a system of full dollarization where foregoing of seigniorage income is the most quantifiable loss [126], seigniorage profit under a currency board can be generated from the difference between the interest earned by the currency board on its reserve assets and the expenses incurred from issuing notes in circulation.
The currency board remits to the government all profits beyond what it needs to cover its expenses and to maintain its reserves at the level set by law. Moreover, under a currency board, the demand for national currency will increase which enhances the probability of increasing seigniorage profit. According to Hanke (2015), the notes and coins in circulation under the issuing authority of the currency board will probably equal at least 3 per cent of GDP within three years after the currency board is first implemented [112].

[25] 40000000000000 + (7000000000*20000) / 20000 ≈ 9 bln Dollar.

4.7 How do Banks Provide Loans under a Currency Board System?

Unlike a central bank, an "orthodox" currency board does not lend or finance the national government, companies, or domestic banks. Moreover, the currency board does not accept deposits from the banking sector such as the required/obligatory reserves that are common in a "traditional" central bank reserve system. Under a currency board system, Cedar dollars can be issued (printed) if and only if an equivalent amount in foreign currencies is held by the currency board, notably in USD. Figure 27 shows the relation between the currency board and the banking sector. The banks work independently from the currency board.

Figure 27: The Typical relation between the Currency Board and the Banks

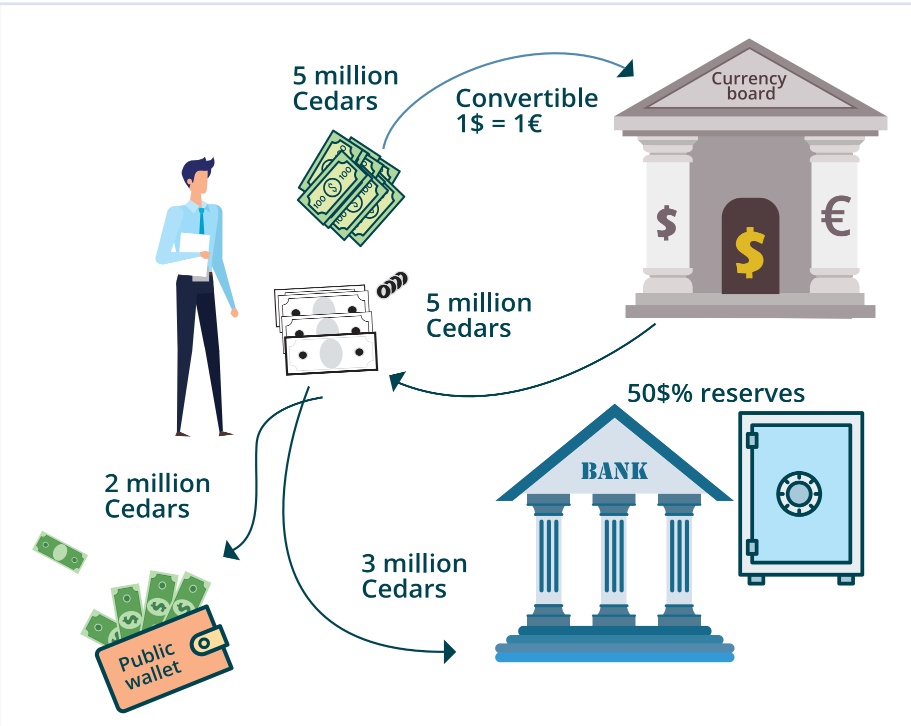


Source: Author's Elaboration

As figure 27 shows, the currency board backs mainly M0 (unlike a central bank that backs M2). Also different to their behavior in a traditional financial system, commercial banks do not deposit any type of reserves at a CBA; therefore, the currency board is not responsible of providing banks with any line of credit or even supervision.

For instance, assume that Lebanon is under a currency board system and that a foreign investor is seeking to invest five million dollars in Lebanon. Once having decided on the FDI, the foreign investor needs to purchase machines and equipment, to recruit labor and to pay for daily purchases. The investor has to hold Cedar dollars for his daily transactions. He will exchange five million US dollars for five million Cedars, in accordance with the fix rate estimated above: One cedar per one dollar. The five million Cedars held by the investor constitute the currency board's liabilities (convertible upon demand to dollars) figure28.

Figure 28:Banking system operations: Simplified example



Source: Author's Elaboration

Assume that 2 million Cedars issued by the currency board will be in circulation as they are used for transactions by economic agents while the remaining 3 million are deposited in the commercial bank. The 3 million Cedars can therefore become the commercial bank's deposits and used with the standard money multiplier to lend money and create deposits on basis of the standard money multiplier. As in all functioning banking systems, the banks must satisfy the daily cash withdrawals demanded by their depositors.

Assume that the fraction of banks 'cash reserves is 50 percent of deposits, which means that the bank uses half their cash in creation of loans and retains reserves, equivalent to 1.5 million Cedars.
This remaining 1.5 million Cedars stay in the bank's vaults. The bank profits can be lent by opening account against which borrowers can issue checks for up to 1.5 million Cedars.
The money creation under the money multiplier (equals two) can increase the total deposit in the commercial banks to 6 million Cedars (we consider easy examples with easy numbers without taxes or interests just for simplicity).

The cash reserves can satisfy 50 percent of the 6 million, which is 3 million Cedars. Accordingly, if all the depositors run to withdraw all their money, the financial system would not be able to satisfy the demand for 6 million in cash but only 3 million. For more details, see [108].
Under a Currency Board system, the monetary base (M0) has 100 percent coverage with foreign reserves, but broader measures of the money supply such as M1 (currency in circulation plus demand deposits) or M2 (currency in circulation plus demand deposits plus time deposits) do not.

Money Creation by banks under a currency board system:
The money created by the private sector banks from deposits is not backed by the currency board. In fact, only the notes and the coins issued by the currency board are fully backed by USD or convertible but not the "banking private money", meaning money created in the banking system. Because the currency board is backing the M0, it does not exchange bank issued checks for reserve currency.
A check holder who wants to exchange his check to foreign currency has first to exchange his "banking private money" issued by banks to Cedars (notes and coins). Then, with his cash Cedars, he can go to the Lebanon currency board and convert his Cedars on demand payable dollars at a rate 1 to 1 (in our example).

Recall here that under the CBA and in our example, the money issued is fully backed by foreign reserves.
CBA issues notes and coins such as Cedar dollars at the fixed rate (1 cedar dollar = 1 US dollar in our example) only after having received foreign currencies.
Performance, transparency, and responsibility of banks will remarkably improve because they must make their own credit policies and decide how much "banking private money" to create in absence of the moral hazard that can arise when banks are in positions of counting on the central bank to bail them out as lender of last resort. Since the currency board system considers money created in the banking system (which is the majority of money) to be "banking private money", the currency board will not act as the lender of last resort; thus it will not assist banks that run into liquidity problems or provide banks with any lines of credit. Bank failures under orthodox currency board systems have been rare; bank failures that occurred in a few cases under currency board systems were mainly related to the problems that existed at those banks when they were operating under central bank supervision prior to launch of the CBA.

In sum, empirical research has investigated The performance of the banking system and the economic activity under the currency board in different types of economy was investigated in empirical research [109]. Results show that only vulnerable dollarized countries, meaning countries which failed to create credible image and currency stability, can benefit remarkably from adoption of a CBA. For countries with initial better economic conditions, the currency board is not the best arrangement. Bank failures have been rare in orthodox currency board systems [112]. Fixed exchange rates anchored to a reserve currency have encouraged foreign commercial banks, especially those based in the reserve country, to establish branches in the junior CBA partner country. Only some small commercial banks have failed in orthodox currency board systems with relatively tiny losses.

4.8 How does Currency Board Operate during Recession? By Devaluation?

No one can deny the business cycle linkage between the country under hard peg and the anchor country.
Accordingly, under a hard peg, the interest rates are typically subject to change in consent with the foreign anchor one. Unlike under a floating exchange rate regime where the country's interest rate moves in accordance with the domestic economic needs, with a hard peg regime, Lebanon will forego monetary policy and be unable to provoke inflation by increasing money supply and thereby stimulate future economic growth during recession. Instead, economic adjustment can be achieved only through wage and price adjustments, which can be both slower and more painful.

It can also increase taxes. There are other methods that inflation targeting for influencing the economy as is the evidence shows of most countries that had to take recourse to techniques other than provoking inflation[26].

[26] Printing money and creating inflation to boost the economy is not more conceived in economics under the spread of inflation targeting. Even during the Covid-19 financial crisis, USA and Europe had to increase taxes to offset their expenses.v

An orthodox CBA usually entails an emergency fund into which excess foreign currencies are placed so that they can be used in emergency or for lending to foreign countries with the highest credit rating. The currency board works similarly to the gold standard, but with the difference that gold in a gold-based system plays the role of foreign reserves. Therefore, in a recession, the currency board will have to reduce the notes in circulation. Assume that reserves drop by 1 million dollars, accordingly the money base has to be reduced by 1 million Cedar dollars (in our example, 1 USD = 1 Cedar Dollar).

The currency board ensures that the proportion of base money to reserves remains constant and that the currency remains stable during an eventual recession. Given that the proportion of base money to foreign reserves will at all times be equal, the fixed exchange rate means that the currency board can always buy back the base money without loss.

The impossibility to devalue the currency during recession may be seen in very rare and severe circumstances.
Under less extreme conditions, the lack of flexibility is beneficial rather than costly. It translates into better performance of banks, lower inflation, and higher economic growth [110], [111] and [112]. It must be noted here that the currency board is being suggested to Lebanon, not to Germany or Japan. This is to say that it is recommended to a country that has never been operating properly with its central bank monetary policy. As this paper elaborated previously, Lebanon is a country whose unofficial dollarization exceeds 75 percent. Thus, taking the final step to organize, regulate and implement a hard peg regime through the currency board will be relatively easy, smooth, and more importantly, it will respond to the needs of every Lebanese economic agent.

4.9 How can Currency Board Operate under Political & Geopolitical Risks?

Being the author of this appeal, I have to confess that objectively nothing is more challenging than advocating for a psychologically challenging but scientifically compelling solution that will position Lebanon on a virtuous economic path without fueling over-expectations for a painless and fast economic recovery at a time the country is experiencing political instability and geopolitical troubles.

Geopolitical tensions that impact Lebanon: Geopolitical risks are powerful enough to destabilize Lebanon financial market and cause economic recession within six months, as it has been been empirically verified [37] . However, the same study that underscored the country's geopolitical vulnerability also zoomed in on the roles of the central bank's foreign reserves and immense unofficial dollarization rate in transmitting high geopolitical tensions to Lebanon's financial markets and economic activity. Therefore, separating out or insulating the exchange rate market could generate beneficial economic outcomes or at least lead to less bad consequences if any geopolitical pressures occur. In other words, a currency board arrangement could be a minimax solution by helping to minimize the loss generated from unavoidable geopolitical risk. In practical terms, the CBA would mitigate some external political and economic risks for a currency crash or hyperinflation.

Although CBAs have existed as far back as the 19th century during the British colonial rule in many countries, the usage of the CBA had its peak in the World War II when "relatively weak countries" had been caught up in the war. By nature, and definition, even if it cannot eliminate them, the currency board reduces and mitigates the risks that result from external shocks such as war. For instance, El Salvador first started to think of a hard peg- and currency board after a civil war in combination with post-conflict misalignment of the real exchange rate had caused its currency to crash.

To avoid future depreciation after two decades of conflict and economic pain, El Salvador decided to adopt the extreme hard peg solution, which is the full dollarization; however, it took a few years to convince politicians and to officially move to full dollarization in 1999.
Similarly, Bosnia and Herzegovina were not only suffering from economic imbalance or inflation, but they were ensnared in a war that had destroyed the economy and burdened the political-economic system with two entities and four de-facto circulating currencies. Despite the challenging political and economic conditions, Bosnia and Herzegovina chose a CBA to guarantee currency stability while moving from war to peacetime, from planned to market economy, and from being part of the former Republic of Yugoslavia to independent statehood [113]. As the evidence shows, the currency board decreased the inflation to 3 and 2 percent in the period following its establishment.

Political instability: It is not the political instability per se that could hinder a country's adoption of a CBA, since, as mentioned above, many currency board arrangements have been established during times of war. However, the irresponsible behavior of the political leaders and their indifference towards any type of reforms generally make the IMF and other international organization reluctant to recommend a CBA to a distressed country. This reluctance is somehow expectable in case of Lebanon. Although this country is very highly dollarized and thus an obvious candidate for a hard peg solution, and the strong caveats (that seem to exist in the views of the IMF on Lebanon) would be that a high dollarization rate not only reflects the poor institutional quality (and viable, transparent institutions are preconditions for successful reforms and hard peg discipline), but also indicates the absence of political will or even "anti-will" rejection of urgent corruption fighting by policymakers. One must remember that corruption fighting is an integral need in order to increase/impose trust and confidence in the exchange rate regime and the national currency.

After Mexico's "tequila crisis" of 1994, many Mexican and foreign figures debated suggestions for establishment of a currency board system or adoption of full dollarization. However, the suggestion has not been considered seriously by the authorities, which failed to produce a coherent program to cut public spending, to privatize and deregulate its economy.
Similarly, at the time of the East Asian crisis, Indonesia desired to establish the currency board arrangement in 1998, after having floated its currency one year earlier and having subsequently suffered from severe currency depreciation. However, the IMF was firmly opposed to the proposal because of Indonesia's acute political instability[27].

[27] *notably, it has been alleged by the then-advisor of Indonesia's president Suharto, Steven Hanke, that the hidden driver of the IMF's rejection of a CBA for Indonesia was political desire originating in Washington DC*

As for Bulgaria, the IMF approved a currency board solution when (and only when) a new government took office in Spring 1997; however, the implementation process in this case was long because of the political and technical uncertainties that resulted from the country's political problems. The implementation of the CBA included a full evaluation of the banking sector that was required to minimize the potential disruptions from an unexpected worsening of the banking crisis ([114].

Summing up the complex question about the feasibility of a CBA or full dollarization solution for Lebanon, despite the political and geopolitical turbulences that have hit the country so frequently over the 101 years of statehood, an orthodox currency board (better than full dollarization) has the potential to help mitigate the undeniable risks that stem from the country's high exposure to geopolitical factors.
Despite such circumstances and external pressures that will surely peak time and again, a CBA will keep working independently from political self-interest and corruption. By its very design, the CBA does not finance any government projects, which somewhat restrains vulnerability of the government to external pressures and certainly limits the potential for graft, illicit enrichment, and embezzlement of the people's money. All wasting of public money will be seriously curbed in addition to the fact that the CBA will disable any attempt by any authority to print money or "issue Cedars" without holding the equivalent amount in foreign reserves. Foreign investments could be attracted by new economic conditions of currency stability, no probable future inflation or devaluation, and low interest rates "mirroring' the rates prevailing on the US dollar. As a final bonus, Lebanon under a CBA will be able to counterbalance or outbalance the existing geopolitical risk of its location by the fact that a foreign investor can benefit from the overabundance and high quality of skilled labor[28] that has become relatively cheap. Amidst a country with improved stability and reasonable CBA vaccination against rapid outbreaks of geopolitical fevers, investors can expect Lebanon in coming economic cycles to provide better productivity at lower cost.

Worth to remember: The hard peg regime is applicable and suggested as a last resort remedy for severe currency crisis, however, sometimes political considerations outweigh purely economic ones. It was stated by the IMF in 1994: *"In view of the evidence provided in this paper, should Lebanon try to de-dollarize its economy? And if so, how could such a policy look like? The answer to the first question is of largely political nature"* [14]

4.10 Can USA Economic Recession be Transmitted to Lebanon?

A hard peg does not imply that the "junior partner" country and the (much stronger) anchor country will persistently have the same inflation rate or interest rate. In fact, high economic growth in the junior partner country is followed by higher increase in its consumer price index and inflationary pressures that are greater than average when compared with the anchor country, and vice versa, countries with modest economic growth experience lower increases in the inflation rate.- [102]. But when the anchor country-USA increases the interest rate to respond to the internal economic need, Lebanon will follow the trend which is not necessarily beneficial, and which can cause recession. However, recession under a currency board will not be translated by currency devaluation: for more details, refer to question 4.8.

4.11 Who Will Monitor Currency Board's Laws and Regulations?

Any system called currency board has to strictly abide by the rule of fully backing the currency in circulation by foreign currencies. If the authority entrusted with issuing currency departs from this rule, whether by engineering a contraction or an expansion of the currency in circulation, then the exchange rate system is not a currency board, but a central bank. All questions relating to the supervision of a CBA have to respect this baseline truth that a currency board that is competently managed, cannot lead to a devaluation or crash.
There are cautionary examples that warrant the question: who monitors and secures its adherence to rules and regulations, starting with the fundamental rule stated above.

Argentina, for example, has started applying the currency board and quickly became one of the most successful growth economies in the world. However, few years later, Argentina had de facto shifted away from backing its currency to 100 percent with foreign reserves, to a "convertibility" regime (notably allowing deviations from orthodox CBA discipline), effectively resembling that of Lebanon's central bank system. The expanding imbalance between assets and liabilities invariably culminated in a severe, and expected, financial crash. In this sense, Lebanon has traveled along a somehow parallel track as Argentina has. Both monetary authorities have printed money / issued coins and notes that have not totally been backed by foreign currency reserves. As a result, both underwent depreciation. However, the lesson that needs to be taken from these parallel experiences of otherwise very different national economies is that an "orthodox strict currency board is most needed in countries whose financial institutions are weak.
Furthermore, studies suggest that currency boards should be run by "foreign directors appointed by commercial banks" or by the IMF and imply that a currency board can even be located abroad [112], as demonstrated in the case of Montenegro where the board is located in Switzerland.
Furthermore, a non-national was appointed by the IMF in 1997 as the first Governor of the Central Bank of Bosnia and Herzegovina (for a six-year term) to launch a currency board regime, in order to top up credibility for a new country arising from ashes (Article VII of the Constitution of Bosnia and Herzegovina). It is challenging to convince Lebanese households and politicians of the idea that the local monetary authority should be supervised and controlled by foreigners. However, it happened smoothly and successfully in Bosnia.

[27] notably, it has been alleged by the then-advisor of Indonesia's president Suharto, Steven Hanke, that the hidden driver of the IMF's rejection of a CBA for Indonesia was political desire originating in Washington DC

4.12 Why Did Currency Board Cause Currency Crash to Argentina?

After Argentina adopted the CBA, it has significantly flourished. T The country's GDP increased by 10 and 5 percent, respectively, in the next four years. Inflation was negligible and the budget deficit was adjusted. However, increasingly, Argentina did not respect the strict rule of a CBA. It applied only what it called the convertibility system, rather than adhering to an orthodox CBA, using a monetary strategy similar to the case of Lebanon, where the notes and coins were not fully backed by foreign reserves. When a monetary authority creates/prints money that is not backed by reserves, then the country risks uncontrollable depreciation of its currency, like happened in Lebanon, and sets itself up to tumble into the endless crisis, as shown by Argentina. Please refer to the previous question 4.11.

4.13 Cost of Obtaining Initial Foreign Reserves

When a country does not have enough foreign reserves to start the currency board, wouldn't the procurement of initial foreign reserves stock add indirect costs? If the country lacks the credit to borrow the reserves, it would be forced to accumulate them through current account surpluses, which is not the case for Lebanon. Practically, a country has recourse to several techniques to secure backing of sufficient money supply with foreign reserves, among which the most common one is the following: lease out government property for fully convertible foreign reserves.

This method is a frequent common operation used in the Lebanese public sector (municipalities, ministries). In practice, and in contravention of (politicized first-world) dogmas preaching the need for ex-ante foreign reserves, holding of insufficient foreign reserves was not an obstacle against establishment of currency boards in the recent and more remote past. Like Bulgaria did in 1997, for example, it is possible for the potential currency board to accumulate foreign reserves by borrowing from the IMF or a similar organization. The loan can actually be fully reimbursed over a few years, thanks to the profits that a currency board will generate from seigniorage and from the rapid growth. Bulgaria has welcomed the CBA with 800 million dollars of foreign reserves only (less than one billion dollars), and one year later, the foreign reserves has jumped to six billion dollars, thus 7 to 8 folds.

Remark worth remembering: *Once the currency board is established, it is not allowed for the currency board to borrow. A one-time loan obtained by a country during the establishment phase of the currency board represents a viable option, but the arrangement of this credit taking will be the last permissible occurrence of foreign hard currency borrowing.*

Privatization - partial privatization, decentralization, or BOT of Public Sectors:
Privatization is an inevitable path for Lebanon although one that is extremely bad reputed and an option that in the past, notably the post-conflict reconstruction phase but also later on, has been firmly rejected by public opinion and populist voices. Because the Lebanese government is the monopolist that holds most assets, private wealth would be inadequate for simple and direct acquisition of a significant public asset. Even if single investors or privately owned local conglomerates might be eager to take over a state asset, permitting such an acquisition could lead to giveaways of state assets to a tiny segment of the population (or foreign buyers). However, the IMF has elaborated on a whole catalog of methods for achieving not socially harmful privatization in transition economies [115].

The thorny debate over the pros and cons of privatization in Lebanon goes back to 1981 when the World Bank observed the incurring of substantial financial losses in the Lebanese utility sector due to "theft of electricity from (EDL) through illegal connections and unbilled consumers" [116]. The siphoning of electricity by ways of theft and corruption meant that, with the normal power line losses at about 12 percent of produced electricity, only about 54 percent of the energy generated and purchased by EDL was billed to consumers.

It has been proven that the poor quality of electricity supply hurts economic activity. As countless economic agents and private households in Lebanon know all too well, economic growth tends to slow down or even contract as soon as the supply of electricity experiences frequent interruptions or becomes too expensive. Anyone in the world who cares to inquire about obstacles to productivity and impediments to the quality of life in Lebanon, will discover in less than 30 seconds that electricity ranks as the most binding constraint in doing business in Lebanon (Please refer to section 1.2).

According to the World Bank's 2013/14 Enterprise Survey, more than 55 percent of Lebanese firm's name electricity as a major constraint to business operations and competitiveness. In the World Economic Forum's Global Competitiveness Index (for 2017, but the country's GCI rankings in other years are generally abysmal), Lebanon scores as the fourth worst country in the world in terms of quality of electricity supply in 2017 ahead of Yemen, Nigeria, and Haiti.

What is sadly ironic in this context was the long-term combination or overly poor quality and excessive public cost of electricity supply even before the 2021 economic crisis triggered a full crash of the public power generation and grid. The cost of state subsidies for fuels used to generate electricity had exceeded 40 billion USD (the equivalent of 90 percent of average annual yearly real GDP) throughout the years. However, Lebanon in the 2000s and 2010s did still not benefit from a consistent public electricity supply of 12-hour energy per day. The public power utility EDL has the image of being the most corrupt state-owned entity in a country where corruption permeates all administrative agencies and state-owned enterprises. Most devastatingly, EDL's legendary ineffectiveness has over many long years been politically tolerated, despite the three main drawbacks of its operation that have heavily contributed to the national economic crisis: capacity that was way below demand; exorbitant losses related to non-collecting of bills; and tariff subsidies which imposed a heavy burden on the government budget.

In 2019, IMF Article IV consultations with Lebanon vehemently recommended that authorities should improve the legal and institutional arrangements for the management of fiscal implications of public-private partnerships (PPPs), starting with the EDL. In fact, the IMF noted at the time (but not for the first time) that increasing of the electricity supply to 24/7 would eliminate one of the biggest constraints to doing business in Lebanon, in addition to having positive effects on income distribution, the balance of payments, the environment, and the fiscal deficit.
With or without currency board, privatization of EDL remains on the top of priorities as a first step in implementation of reforms. This privatization of one entity could reduce/stop money wastage and help reallocate resources to low cost and renewable energy, which in turn will lead to better quality of the electricity supply, thus, improving both business climate and social welfare.

Other public sector entities can also be partially privatized, or decentralized, or reinvented as build-operate-transfer (BOT) and similar PPP ventures. Sectors to which this possibility applies are vital sectors providing public goods, such as telecommunication, transportation, education, and health. Privatization outcomes in terms of quality and cost in addition to innovation and recruitment are all related to anti-corruption reforms and better governance. The legal framework also needs to support private investments as well as PPPS. Alas, such laws are still missing, outdated, or inapplicable. Lebanon must revise its investment law, develop regulations needed to implement its PPP law, flesh out other policies, and power up regulatory bodies that could mitigate dangers and resolve issues related to well-known privatization pitfalls such as market concentration and anti-competitive practices.

4.14 Is Peg Exchange Rate Regime responsible of the Current Crisis?

It is not the peg exchange rate regime that has triggered the current financial crisis in Lebanon. On the contrary, the peg regime in a dollarized country provides currency stability and supports economic growth by ensuring stability, credibility, and sustainability of the local currency value. However, the rise of the dollarization rate in the public and the private sector destabilizes the financial system of a country [10], [45] ,and exposes the whole economy to external shock risks. A peg exchange rate regime cannot be sustainable under persistent dollarization and continually growing corruption. A very highly dollarized country is more likely to sooner or later experience systemic risks along with a more profound balance sheet disequilibrium.

Without proper attention by the monetary authorities, such a situation can rapidly deteriorate by way of a “snowball” effect and lead to rapid rise of toxicity in the assets held by banks.

4.15 Does a Soft Peg Exchange Rate Regime always end with Currency Crisis?

It was stated in 2001 that “unless the disinflation country adopts a hard peg, it has to consider the problem of an exit strategy from its pegged arrangement” [97]. The IMF’s study of exit strategies from peg regimes has shown that an exit is best undertaken when the currency is strong, something which is quite likely to happen as the stabilization gains credibility, and capital inflows expand [98]. This was the pattern for instance in Poland and Israel, where the exchange rate band was widened as pressure for appreciation mounted. However, the political economy of moving away from a peg, even in this case of favorable economic conditions, is complicated: when the currency is strong, the authorities generally see no reason to move off the peg; when it is weak, they argue that devaluation or a widening of the band under pressure would be counterproductive. And the longer the peg continues, the more grow the dangers associated with soft pegs. In some cases, in which disinflation countries’ currencies crashed, the IMF had been pushing unsuccessfully for greater exchange rate flexibility.

4.16 What about Liquidating Gold?

In 2021, Lebanon’s gold reserves which are held at the central bank and have been partially moved to the USA in the 1990s, are estimated at 286.83 metric tons in the last quester of 2021, worth nearly 17 billion USD. In terms of its gold, Lebanon is ranked the 18th largest holder of reserves worldwide[29] . Despite populist views and unprofessional statements circulating among people and economic experts which claim that Lebanon’s gold reserves could be used as collateral to attract money and inject such funds easily into Lebanon’s local market, gold is neither a fully liquid no fully illiquid asset. It is not the same as central bank foreign reserve and even different of sovereign wealth fund. Liquidating gold remains a complicated task and resorting to gold reserves is an unconventional method to cover economic failure. Even Argentina couldn’t’ liquidate its gold reserve despite its ongoing financial crisis. Similarly for Turkey, it could only change the location of the gold from USA to Europe for political purposes without liquidating them.

In Lebanon, accessing the gold reserves also raises issues of being immune against legal actions since it is possessed by the BDL not by the Lebanese government. In fact, the US sovereign Immunities Act states that the property of foreign central bank or monetary authority shall be immune from attachment and execution, unless its immunity has been explicitly waived. Consistently, the Lebanese law 42 of 1986 has forbidden the trading or selling of gold reserves held at BDL.

In order to understand the difficulty of using a sovereign country’s gold reserves, it is worth to recall that under the Jamaica Accords of 1976, countries rescinded the option of converting national currency to gold. Instead, a country can either peg currency to another currency as reserve currency (usually the dollar), to a basket or currencies (several foreign currencies) or simply allow it to float and let its value be determined by demand and supply.

4.17 Why is IMF against Currency Board in Lebanon?

I as the author of this paper will argue that in principle, the IMF cannot oppose the currency board concept or absolutely reject its application in Lebanon, because every argument and proof provided in this report defends currency board or full dollarization as the appropriate methods for solving a serious currency problem in a very highly dollarized country extensively referred to IMF studies, analyses, and findings. All references and quoted IMF sources can be accessed by interested Lebanese citizens, economists, government negotiators and decision makers, and, of course, IMF team leaders and members.

However, the IMF could easily justify a stand of opposing the currency board and reject the CBA option in negotiations with the Lebanese side if the suggestion does not come from the Lebanese negotiators with clear vows of support from the relevant politicians, from members of parliament up. The currency board will not be viable in absence of high motivation, sufficient political will, and strong national commitment to discipline and economic reforms.

Although it seems a no-brainer to assume that corrupt political actors would fail to vigorously endorse a CBA proposal or rally behind any public good that will curb their ability of chasing self-interests and illicit financial gains with impunity the obvious lack of enthusiasm and seriousness in the Lebanese political system could be interpreted, and rightly so, as warning sign that it would be too dangerous to implement CBA in such circumstances. Based on this logic, this paper surmises four reasons for IMF reluctance to pursue a CBA in negotiations with the Lebanese government:

I. Political reason

It was stated by the IMF ii 1994, [14]: “In view of the evidence provided in this paper, should Lebanon try to de-dollarize its economy? And if so, how could such a policy look like?
The answer to the first question is of largely political nature”.

II. Political leaders’ indifference and irresponsibility

III. The informal sector in Lebanon
Albeit impossible to measure exactly, is assumed to exceed exceeds 40 and 58 percent respectively in the industry sector and commerce sector, and hits 90 percent, 80 percent, and 70 percent respectively in the agriculture[30], construction and transport sector according to CAS, ILO, Ministry of Health, Lebanese Customs, FAO (2017). The causality between the informal market and the corruption is obvious.
The Informal market is always associating with tax evasion (VAT, corporate and income taxes). It was estimated to 10 percent of GDP in 2017[31] and a highly ranked Tax Evasion Index of 0.69 as estimated by Hong Vo et al., (2020) [123]. The financial illegal market is so huge that no one can estimate the informal flows of dollars circulating in Lebanon.

Even worse, these illegal financial flows must be seen as being mainly controlled or sponsored by the Hezbollah-Iran axis and their allies.

This strength of informality is also an economic barrier to the CBA, which requires monitoring the inflows of dollars in order to estimate the money base to be supplied in return.

IV. The absence of motivation for serious cooperation: No concessional program soon.
The success of the IMF assistance programs is not guaranteed, and programs may negatively affect economic growth, increase poverty, rise inequality, and hurt social welfare either temporarily for several years or by causing delayed/long-lasting repercussions.
In fact, although IMF programs employ relatively standardized procedures in all countries where they are implemented, economic consequences can differ immensely.

Countries usually start negotiating restructuring debt or have recourse to fresh dollars injections many months before a predicted currency problem. Under the current government (strongly, although implicitly, influenced by Hezbollah,), neither the IMF nor the Gulf Cooperation Council (GCC) are willing to provide Lebanon with financial assistance without imminent political changes. The more time the government wastes without initiating any economic reforms, the less successful the economic outcomes of both reforms and any official assistance packages are expected to be.

The success of an IMF program depends for example on the type of country in terms of its economic structure and income level, such as industrialized countries (IC), Low Income Countries (LIC), Emerging Countries (EC), or Middle-Income Countries (MIC) [124]. However, economic outcomes further vary depending on whether the program is concessional or non-concessional [117].
Even economists belonging to Keynesian and neoclassical schools of thought express varying opinions about the economic consequences of fiscal consolidation. For instance, according to Keynesian theory, it is always complicated to reduce a government deficit without instigating another economic problem, such as a recession. Under one neoclassical hypothesis, however, a smaller budget deficit could nurture expectations of lower inflation, which in return reduce the risk of an eventual future government debt depreciation, thus, reduce interest rates, IMF-[125].

If neoclassical thoughts are true and if reducing the budget deficit doesn’t cause economic recession, then decision makers/policymakers in deficit countries are supposed to welcome IMF assistance. Yet, in corrupt countries like Lebanon, the issue of contention might not at all be an honest search for the best suited assistance program.

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[29] According to gold.org
[30] Source: CAS, ILO, Ministry of Health, Lebanese Customs, FAO, expert interviews, in Lebanon economic vision (Full report) 2017
[31] Blom Research Report, 2017

In Lebanon, criticism of the IMF is employed in the stirring of hostility against the organization and the solutions that it offers originates from politicians/policymakers who have been culpable of driving their economy to a non-preceded depth of despair, The motivation behind the seeding of harmful doubts of a proposed negotiation, let alone package, is not based in Keynesian, neoclassical, libertarian, or any other economic school of thought but only in the school of unbridled self-interest and pursued by their political or politicized instigators for the purpose of avoiding getting exposed to imposed future control, reforms or investigations, audits, inquiries, and other inconveniences.

Although many factors, such as the aforementioned intermediating effect of debt, ability to complete an assistance program and size of an IMF program, have to be considered in projecting the success of Lebanon's journey with the IMF, the one factor that predictably will have the greatest differentiating impact is the distinction between a concessional and non-concessional program (BOX 6). It is the single factor that most affects the economic outcomes, especially in Middle-Income Countries (MIC) and Low Income Countries (LIC) [117].

BOX 5: THREE CONCESSIONAL PROGRAMS

Over the years the Fund has sought to fulfill its mandate through a range of lending facilities to which low-income countries can turn when they have a balance of payments need.
The institutional details of these facilities have been modified fairly often, with the latest changes having been made in 2010. At the time, the Fund abandoned its Poverty Reduction and Growth Facility (PRGF), which itself had earlier replaced the Enhanced Structural Adjustment Facility (ESAF), and established a Poverty Reduction and Growth Trust with three concessional lending windows: The Extended Credit Facility (ECF), the Standby Credit Facility (SCF) and the Rapid Credit Facility (RCF). The details of these facilities maybe found in Bird and Rowlands [117]. However, in spite of the institutional changes, the basic objective remains much as it was before: the IMF aims to bring about macroeconomic stabilization and structural reform in order to facilitate economic growth against the background of a sustainable balance of payment. The IMF's mandate, as presented in its Articles of Agreement, directs the Fund to help bring about balance of payments adjustment without the need for countries to use measures that are 'destructive of national prosperity'. Economic growth is a key component in achieving prosperity and sustained development.

Countries that have successfully restructured debts without missing payments to creditors were more likely to avoid or at least mitigate costly output losses and banking crises. According to IMF, [118], even if sovereign's debt has fallen into arrears or even if some countries have no choice but to default, an immediate start of positive negotiations with creditors produces the best chance for advantageous outcomes when a debtor country unilaterally suspends payments. Lebanon could thus minimize the costs of its March 2020 default by rapidly reaching a restructuring agreement. Sadly, since March 2020 (until time of this paper's completion in December 2021), Lebanon has failed in reaching any agreement with creditors or in securing a clear and positive stance with the IMF to start implementing the austerity plan.

4.18 Can Depositors Get Back their Deposits from Banks?

Two types of reforms, currency reform and banking reform, are listed in an IMF economic report titled "Dealing with Banking Crises in Dollarized Economies". The currency reform will furthermore enact one of these three strategies: full dollarization or currency board arrangement or forcing de-dollarization.

As for the banking reform, the IMF requires immediate imposition of legal capital controls (that was expected to be done in Lebanon in October 2019) to protect depositors, then to take direct measures to provide emergency liquidity, and thirdly administrative measures thus the proposed best course of action is to provide broad liability guarantees to strengthen depositor confidence, to implement restrictions on the availability of deposits (administrative measures) if necessary to avoid uncontrollable runs, identify the causes of the crisis and announce immediate steps to address these causes.

Measures directly aimed at assuring the liquidity of banks (or restricting the outflows of deposits) stem runs. Once emergency liquidity is being provided, a credible blanket guarantee, backed by sufficient reserves, can play a crucial role in averting bank runs. Where a blanket guarantee cannot be given for all bank liabilities, restrictions on deposit withdrawals may be necessary as a last resort. To limit the loss of confidence associated with deposit restrictions and to minimize disruption to the payments system, transaction accounts should remain liquid. Effective supervision—especially a good off-site system—can help the authorities to focus their assistance on viable core banks within a comprehensive bank restructuring strategy.

4.19 What are the Risks and the Limitations of a Currency Board in Lebanon?

Like any policy decision, there are several costs and benefits. The costs are mainly:

Stock cost: This is the cost of buying back the existent LBP money stock held by the public and banks.

Cost/Risks of Currency Board Exit: Unlike the full dollarization that is practically for life, the currency board can be abandoned. Rumors related to a probable the currency board exit, could push investors to take their capital out of the country. Even if there is a commitment from the government to keep the currency board or when transformation of the central bank to a currency board is coupled with a promise to not abandon it in the near future, a CBA still can be abandoned; in some cases of weakening of a currency board, the practice can replace the currency board with what is de facto a central bank. This is what happened in Argentina.
After a very good performance, Argentina pretended it can easily go back to a central bank system, but its decision was premature. Once it behaved like a central bank (like Lebanon), Argentina faced a financial crisis with no end.

The risk of a premature exit from the currency board is the main reason why, I, the author of this paper, *prefer full dollarization to currency board, despite all the sovereignty issues that arise when a full dollarization process is initiated (loss of independent monetary and exchange policies, loss of seigniorage revenues) and despite other psychological and political acceptance barriers that accompany full dollarization, especially in an Arabic-Middle East country.*

Consistently, appointing foreign currency board experts from the IMF or similar international organization to monitor, regulate and manage the currency board could be a most credible step and signal Lebanon's serious commitment to make a currency board succeed.

Bank Run Risk: Bank runs are less frequent and severe under a central bank system. This is mainly because under a CBA, the banks cannot have recourse to short term debt from the central banks. Consequently, with a CBA in place, an essentially solvent bank will immediately crash when it develops short-term liquidity problems, unlike under a central bank system where the bank has the possibility to be obtain help from the central bank. Commercial banks have a natural interest to work properly in order to build a strong trust and confidence. In fact, deposits and the banking system are literally running on the confidence of depositors.
When the confidence is broken and when panic and stress are spread rapidly, depositors will run to withdraw their deposits even in non-risky banks. As a result, all the banking sectors could become risky.

Temporary Psychological costs: The currency board is never suggested in a transparent, strong, economy that has a credible stable currency and adheres to an inflation targeting policy. A currency board usually is instituted in a weak economy with heavily damaged or destroyed systemic trust following a financial crisis, currency crash or a banking collapse.

It can also be implemented in a "new country", meaning a nation that ascended to independence after a war and therefore decided to immediately link its local currency to a strong, trusted one.

Accordingly, the currency board in many cases is conceived and born in crisis and aims to stop the free fall of a country and then start the economic recovery. The currency board is not a magical "rewind" button that takes the country back in the time to pre-crisis conditions. Therefore, the country has to expect a difficult starting period, with low income, probable further currency devaluation, deposit haircut and other harsh austerity measures.

But on the upside, the currency board effectively guarantees that the country will never again suffer similar purchasing power loss or hyperinflation and provides a faster recovery than other economic rescue or revitalization systems can offer. A currency board is not a panacea and has never been a panacea. It is the first step in addressing the currency crisis and laying the foundation for stability.

One-Time Legal and Financial Expenses: There are some technical costs in implementing and operating the currency board. These costs are known as "one-time costs" and in the case of a currency board adoption and reissuing of a new national currency in Lebanon would include costs such as: the costs of converting prices, computer programs, cash registers and vending machines from the previous national currency to, for example, the Cedar dollar. In addition to these costs there will be legal and financial costs due to the need to revise contracts.

A cost but also a benefit: Giving up Monetary Policy: Under a currency board arrangement, it is not possible to use financial policies to adjust domestic interest or exchange rates and to promote future economic growth. Giving up monetary policy is generally seen as a drawback; however, for highly dollarized countries, it can be a worthy goal or objective to attain, on basis of reasoning that the banking collapse and currency crash were caused by the monetary policy itself. As a result, the currency board should not be seen as painful or real loss for a country like Lebanon, but a goal finally achieved. Revert to the section 3.5 to an elaboration on how monetary authorities in this country were responsible for the creation of uncontrollable inflation, inefficient policies such asborrowing or printing money, and the Ponzi scheme.

As a reminder of the cost of this entire system during the time when it was seemingly operating satisfactorily, Lebanon
monthly interest to banks on their stock of foreign certificate of deposits, foreign required reserves ratios and excess foreign deposits held at the BDL (although interest were likely paid semi-annually) was estimated to 0.4 billion USD or a US$4.3 billion annually (IMF 2019).

4.20 Is Lebanon currently considering a hard peg?

Before full dollarization, there is a way for the government to test whether the domestic currency is as well liked as they think: The government offers government workers their fixed wages in US dollars at today's exchange rate.
Consistently, on December 16, 2021, BDL has issued circular No.16 stating that public servants will earn their December salary "only December" in dollar banknotes. The circular also states that it will pay all its expenses in US dollars at the sayrafa rate" which is very close to the market rate for the next 15 days of December.
Although in terms of numbers, the monthly salaries of employees do not reach 300 dollars anymore, even for a judge or a university professor, the appetite for dollars was remarkable. Many employees had to wait hours and hours for their monthly salary that is 80 dollars and below. The banks in Lebanon have witnessed on the 23rd and 24th of December a crowd of people trying to push each other to be served and many were willing to wait for hours to get their dollar. It should be noted that since the dollar rate earned is below the parallel market rate, the government servant has the opportunity to sell the dollars at the exchange offices and make a profit of about 3000 Lebanese pounds per dollar (about 1/9 of one dollar).
The circular 161 could be interpreted in the following ways:

> The government wants to test the water and see the reaction of the public if in the near in the future it announces its willingness to adopt a hard peg regime.

> The government wants to limit its local currency money printing by providing citizen foreign currencies. Knowing that such a process cannot last for long since BDL is basically short in dollars. One can wonder from where BDL got his dollars.

> The government had recourse to a decision without any economic basics or rules and by coincidence one could interpret it as a test step before a probable official dollarization.

> The government wants to absorb anger of Lebanese people in December, just before the holiday by offering them a "dose" of dollar addiction that can calm their anger.

> It could also be a game of data. Since the end of December is the most important month in in terms of data to be considered in most economic studies and analyses, compressing money supply in December could lead to less negative interpretation in data analysis for the upcoming year 2022.

Nevertheless, it is worth asking whether Lebanon is going to witness a Full dollarization or a currency board in 2022?

Conclusion

Calling for a hard peg regime for Lebanon, notably a currency board, is not a Lebanese economist's favorite dream regime, an act of promising a panacea for our many economic ills. Advocating for such a regime means firstly to be aware that "no single currency regime [is] correct for all countries and all times" [14]. Secondly it means admitting that our country, beloved by many of us despite and above anything, is a patient in need of a very intrusive monetary therapy if it is not to become a hopeless case of a permanently failing economy.

A developed and transparent country should never consider a hard peg regime, since it will never provide a healthy society with better growth or stability. Moreover, not all countries that are suffering from a financial crisis along with inflation or banking crisis are best advised to consider a hard peg regime. Currency board or full dollarization are nothing less than financial surgery, a remedy that the patient country has no choice but to take recourse to after trying in vain, and throughout many painful years, all imaginable monetary/fiscal policies and reforms of a more conventional type.

Even Turkey, an important country in our region whose dollarization rate hovers around 40 percent and that is currently enduring a severe financial crisis, should not necessarily consider a hard peg regime. Turkey's infrastructure, financial institutions, services quality, and maturity of the judiciary are at levels of health that elevate the country above and beyond hard peg suggestions. It satisfies all requirements for addressing its currency crisis by adoption of a strict economic reform program along with political changes.

As for Lebanon, it doesn't even have the political nervous system and the institutional skeleton around which to shape the urgently required monetary and fiscal policies or any conventional economic reform program. Instead of being provided with solutions to its immense economic crisis in the past two years, Lebanese society has become more and more deprived of access to fundamentals: water and electricity, health, and education.

The currency board project will continue to face many obstacles prior to its establishment in Lebanon. It requires first that the Lebanese authorities recognize and admit officially that they have failed over years to govern this country, or at least openly confess that they could not protect their national currency's image and value.

The currency board regime is not a panacea or even an easy cure that can promise taking the country to financial heaven or open economic paradise, but it can significantly improve the quality of the national currency and guarantee putting a definite end to currency depreciation. Some economists interpret it as a loss of monetary policy – given that adoption of the currency board will, among other things, terminate the central bank's role of being the lender of last resort. However, all evidence today shows that this partial amputation of an institutional finger will effectively benefit Lebanon by providing better credibility, growth and above average monetary and inflation performances [112]. Under a conversion to a currency board entity, the Banque du Liban, becoming a "former central bank", cannot print money and create inflation to finance its corrupt government's public deficit.
The upside of this cannot be emphasized enough: The currency board is a commitment to follow a strict discipline reform program where the government can finance its spending only by improving collection, efficiency, and justice of taxation and by collecting seigniorage profit generated by economic activity and growth.

This report does not suggest one possible, recommended policy that aims to improve the productivity of Lebanese economic agents enough so that they can compete in the arena of G20 economies after a couple of years. The report highlights that it is too late for Lebanon to consider an economic reform program without surgically excising the central bank's discretionary power. It stresses on the impossibility for Lebanon – *a very highly dollarized country that is undergoing simultaneously a currency crisis and collapse of its banking sector accompanied by hyperinflation and a chronic deficiency of trust in the local currency* – to envisage recovery with a soft peg or a flexible exchange rate regime.

Lebanon economic agents are currently bearing the consequences of the fact that their leaders have resisted over decades to even consider following the IMF's 1994 suggestion of moving to full dollarization .Some have profited from such policy but the many have been victims of an exchange rate-based stabilization monetary policy, a peg currency regime that targets real exchange rate and stimulates dollarization [61], but at the critical social and economic expense of allowing for and nurturing the debilitating cancer of corruption.

It is time to save Lebanon by ordering a radical hard peg treatment rather than prescribing simple analgesic medications to temporary hide symptoms. No responsible economist would recommend exposing a weakened patient country – and Lebanon is seriously weakened when compared to all its economic indicators of a few years ago – to such an incisive treatment as is represented by a hard peg. However, when the country has a history of addiction to unofficial dollarization and its economic heartbeat has deteriorated to a critical level of GDP contractions and hyperinflation, emergency, and surgical measures such as amputating the central bank's monetary policy fingers become a national survival duty.

In line with this duty and the present dire emergency, Lebanon's authorities need to reject all suggestions of floating the currency but rather have to negotiate with the IMF for an assistance and reform package on basis of adopting a fixed exchange rate regime, the only monetary platform that can by design mitigate or avoid eventual severe currency crises that derive from money demand (M3) and exchange rate fluctuations [30].

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