ASYMMETRIC RIVALRIES:
THE CASE OF LEBANON'S FINANCIAL CRISIS

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Abstract: *Unlike mainstream explanations, this paper is less concerned with the causes of the financial crisis in Lebanon as much as it raises the problem of adverse relationships between institutions of money creation and destruction. The analysis builds on the theoretical approach of mimetic rivalries and applies tools from graphical models in games theory. It aims to study the sensitivity of solvency constraints to explain asymmetric relationships. The applied case of Lebanon shows two relevant results (1) asymmetric relationships between economic agents and (2) top-down dynamics of money creation and destruction. These findings imply an institutional model of extractive economic policy dominated by strategies of vindication and rivalry.*

Keywords: *Money creation; Parity; Lending capacity; Redistribution; Rivalries*
JEL: *B59; C73; E42; E52; E60*

1. Introduction

The standard literature on the Lebanese monetary crisis explains market dynamics driven by a reversal of capital flows. The discourse on liquidity shortages supposedly justifies banking practices of rationing withdrawals on foreign currency denominated deposits; a situation that led to bank runs, discounts and the suspension of asset convertibility. Analysis of current account dynamics served as a pretext for the Government to declare default on Eurobonds. Beyond the merits of causal and normative studies of the Lebanese monetary crisis, this paper raises the question of ensuing channels of wealth distribution. The problem of this paper is therefore strictly framed to provide an outline for understanding antagonistic relationships that govern institutions of money creation and destruction. The baseline analytic approach aims as such to explain instruments and dynamics that govern such relationships.

The analysis falls within the institutional governance approach of the monetary regime. The theoretical framework is grounded on the theory of "mimetic rivalries" as proposed by Aglietta et Orléan (1982). A simplified top-down standard model – *i.e.* hierarchical system of monetary institutions – is applied to the Lebanese case. The model borrows heavily from the Regulation school and graph theory respectively (Aglietta et al., 2016, p. 90; Kearns et al, 2001). It is however less inclined on institutionalism as it incorporates graph theory analysis in concurrence with the monetary approach to the balance of payments. Specifically, the study aims to provide an interpretation of monetary policy problems ensuing from solvency constraints and

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antagonistic interests between institutions of money creation – *i.e.* (1) the Treasury for issuing sovereign debt; (2) the Central Bank for issuing the monetary base and (3) the banking system issuing credit and broad money.

This paper is organized as follows: the following section presents a bird's eye overview of the literature on the Lebanese currency crisis. It proposes a classification of normative and positive contributions to make the distinction between theoretical and applied work. Section 3 describes the baseline theoretical framework of the regulation school (Aglietta & Orléan, 1982). It depicts the institutional model, the system of ensuing relationships, and the analytical model adapted from graph theory. Section 4 presents the applied case of Lebanon. It describes the data set, conveys results captured by using graph theory, and concludes with a discussion and analysis of the findings which show asymmetric relationships between institutions of money creation. The paper concludes in section 5 by exploring implications on monetary policy, social redistribution, institutional strategies and international relations.

2. A bird's eye view of the literature

To put the problem into perspective it may be useful to give a quick overview of the literature on the Lebanese currency crisis, which may be classified under two methodological perspectives with overlaps in between: (1) normative approaches and (2) positive analyses. The formers mostly advocate a currency board regime and explain the currency crisis by the exposure of the financial sector to sovereign debt. The second group is mostly empirical. The latter studies are grounded, either on data analysis or a historical approach to institutional theory. They mostly explain the crisis by external deficits and debt sustainability.

In essence, normative proposals promote a currency board regime (Hanke, 2020; Böwer, 2021). Within this framework, the empirical analyses of Mansour-Ishrakieh (2022), corroborates that a Lebanese currency board would automatically sterilize risks associated with dollarization. Studies in economic history recommend on the other hand a restructuring of public administrations. Gaspard (2020) appeals to a minarchist governance model centered on the State's sovereignty. On the other end of the spectrum, Dagher (2022) advocates a Weberian model based on the rationalization of the civil service to restore confidence in state institutions. Farah and Maucourant (2022), observe a breakdown of State credibility. They conclude that patronage policies are used as a tool in defense of social classes.

Positive approaches seek to explain the fundamental causes of the Lebanese crisis. The empirical method is dominant. The toolbox is mostly grounded on statistics, econometrics, and data analysis. The findings of Neaime (2004) and Dakhlallah (2020) show the risks associated with the prevalence of expansionary fiscal policies. Dakhlallah (2020) concludes that political authorities have compromised their fiscal solvency by assuming risks of short-term macroeconomic imbalances in order to achieve Budget objectives in the medium and long term. Balance sheet analyses of the Central Bank (Nenovsky and Chobanov, 2020; Bitar, 2021) conclude that seigniorage operations were the cause of the banking crisis. On the topic of these operations, Nenovsky and Chobanov (2020) caution that discretionary policies of money

creation undermine the solvency of the money supply and constitutes the foundations of the parity crisis.

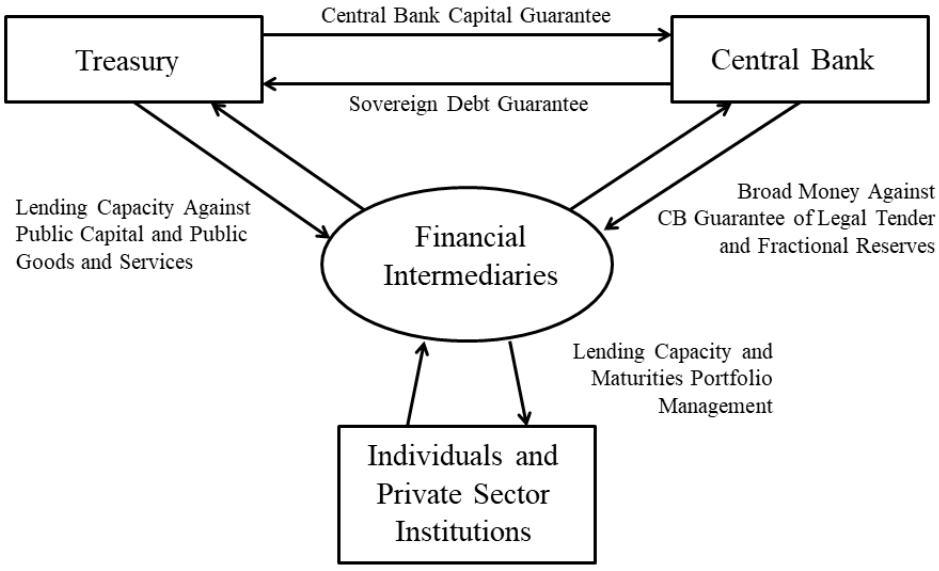
Finally, Salem's (2012) geopolitical analysis warned in 2012 that the Syrian crisis would have spillover effects on the banking sector in Lebanon. This analysis explores the doctrine of monetary sovereignty adopted by the U.S. Treasury. It projects that a potential banking panic would lead to a public debt crisis and an ensuing collapse of economic activity. Such foundational geopolitical events set off a wave of incentives for the reversal of capital flows which were observed soon after at the regional level.

3. Theoretical Framework

To study Institutions of money creation and destruction, the analysis is grounded on the approach of the regulation school (Aglietta & Orléan, 1982). According to this theoretical body of studies, rivalries between agents are mimicked – they are copied, and then mitigated by legitimate institutions that enforce sovereign action and social mediation. The "norm" which revolves around institutions of wealth redistribution, constitutes a body of conventions and regulations governing standards of repayment and enforcing the convertibility of the sovereign currency to liquidate obligations.

Institutions of money creation and redistribution may be represented by the following simplified model (Figure 1) which is adapted in our case to study the hierarchy and regulation order in Lebanon.

Figure 1. Simplified Top-Down Model



Source: (Aglietta et al., 2016, p. 90).

In a state of equilibrium, financial institutions and monetary authorities act as intermediaries to offset deficits and sterilize surpluses that are subject to the solvency constraints of the different

agents. This implies that imbalances are compensated by the capacity of the economy to finance deficits, which leads to a problem of social redistribution of wealth and assets, and which in turn are subject to risk aversion constraints.

Grounded on the theoretical framework proposed by Aglietta & Orléan (1982), the model may be represented by the following system of equations:

$$C(G) = f(BD) \quad (1)$$

$$C(M) = f(R + DA) \quad (2)$$

$$C(F) = f(TB + EB + I + L) \quad (3)$$

Where $C(G)$ is the solvency constraint of the Government. It is a function of the sustainability of the budget deficit BD which solvency is largely determined by the service of sovereign debt whether external TB or domestic TB. The solvency constraint of the monetary authorities $C(M)$ is given by currency reserves R and domestic assets DA. The solvency constraint of financial intermediaries $C(F)$ is determined by liquidity L, the sovereign debt portfolio which is a fraction of $(EB + TB)$ and domestic lending I.

To achieve equilibrium, financial institutions and monetary authorities act as intermediaries to offset deficits and sterilize surpluses that are subject to the solvency constraints of the different agents. Given n agents $n = \{G; M; F\}$; this implies that imbalances of agent $C(i)$ are compensated by the aggregate solvency constraint of other agents $C(n - i)$.

$$\sum C(i) = 0 \quad (4)$$

Provided that solvency constraints are price dependent, the budget deficit is financed by creating demand deposits. The "double convention" (*Ibid*, p. 61) verifies the identity between the money supply and assets.

$$M \equiv A \quad (5)$$

Provided that currency reserves are classified under Central Bank assets, the solution of the system is given by the monetary approach to the balance of payments:

$$\Delta Mt = \Delta Rt + \Delta DAt \quad (6)$$

System imbalances imply institutional rivalries that indicate a process of redistribution. A representation of the system may be given in graph game theory (Kearns et al, 2001) by the pair $(G; \mathcal{M})$, where $G(v, \varepsilon, A)$ is a directed weighted graph on n vertices; v is the set of vertices representing each agent $v = \{G; \mathcal{M}; F\}$. A is the set of weights assigned for each directed edge $\varepsilon = \{j, k\}$. Let $i \in \mathbb{N} | \ i = \{1, \dots n\}$; $\mathcal{M}$ is a set of n payoff matrices $\boldsymbol{\mathcal{M}_i}$ called the local game matrices. Player n is represented by a vertex labeled n in G. The set A is given by the following combinations:

$$A = \{C(G)/C(M), C(G)/C(F), C(M)/C(F), C(M)/C(G), C(F)/C(G), C(F)/C(M)\} \quad (7)$$

The rivalry interpretation (Aglietta & Orléan, 1982) is an optimization problem between liquidity and obligations. Each agent seeks to minimize his payoff function given the strategies of other agents. When the system does not cleared external imbalances accumulate, and the graphical game representation is skewed towards agents with dominant strategies.

4. The case of Lebanon's financial crisis

4.1.Data set

The data set is sampled over a period of four fiscal years, spanning from 2018 to 2021 – *i.e.* a symmetrical distribution around the starting date of the currency peg crisis. This is deliberate by design to avoid normalizing the downturn. The sample size consists of 48 observations across three institutional bodies: the Budget and Debt Service of the Treasury, the Central Bank's balance sheet and the aggregate balance sheet of financial intermediaries. The source of the data set is in the official figures of the Treasury and the Central Bank[2]. The current value of the Treasury and Central Bank's figures, is converted into US dollars at market rates published in newspapers. Deposits in foreign currencies are classified in a distinct category of Broad Money according to the Central Bank's statistics. Bank loans and deposits in foreign currencies are corrected for exchange rate discrimination and discounts on liquidation of bank deposits and other assets according to Central Bank circulars[3].

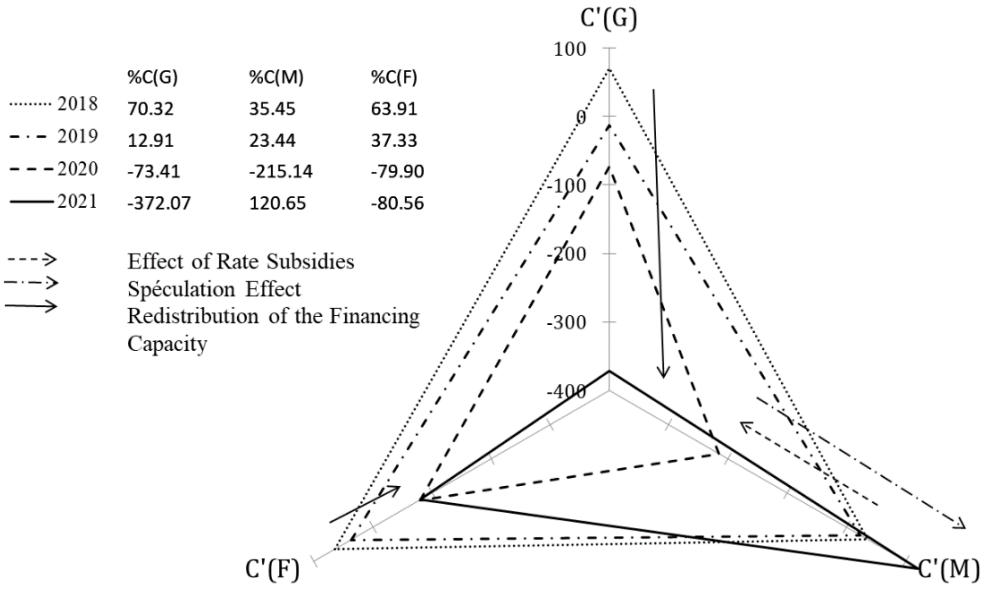
4.2. Results

By applying the model $(G; \mathcal{M})$ to the data set, the results show asymmetric relationships between agents of money creation. Figure 2 shows skewed results with drastically devalued budget deficits at the expense of the financing capacity of the economy and the guarantee of the legal tender.

[2] *cf.* The official figures of the Banque du Liban data for Central Bank and Financial Sector balance sheets: https://bdl.gov.lb/webroot/statistics/ and the Treasury data source: http://www.finance.gov.lb/en-us/Finance/EDS/FP.

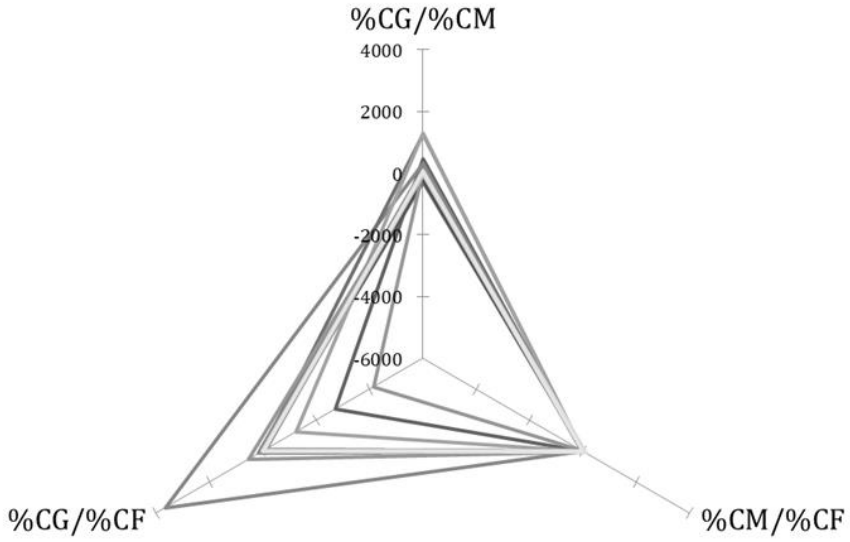
[3] *cf.* https://www.bdl.gov.lb/basiccirculars.php.

Figure 2. Yearly rate of change of solvency constraints



Given the fall of the parity the sensitivity of the fiscal policy substantially overweighs those pertaining to the currency guarantee and to the financing capacity of the financial intermediaries. Figure 3 shows asymmetric sensitivities substantially skewed towards the dominant strategy of the Government. The latter in essence imposes regulations and norms to finance Treasury spending. This strategy comes at the price of draining the financing capacity of the economy. It is enforced either through issuing public debt or by wealth redistribution through an inflationary tax ensuing from exchange rate discrimination.

Figure 3. Model Sensitivity Analysis



These results show a dynamic shift between public deficit, national savings and currency reserves. By the end of 2021, the reversal of the budget deficit in real terms goes from a 70% increase to a surplus of 372%. As the deficit is financed by savings and seigniorage operations, a greater sensitivity of the Treasury's solvency to the financing capacity of the economy is observed in Figure 3.

4.3. Discussion

The asymmetry of rivalry relationships highlights the polarization of interests based on the redistribution of wealth among the three institutions of money creation. To grasp the extent of this asymmetry, let us consider at first the annual evolution of solvency constraints. Figure 2 shows the Treasury's vested interests in devaluing the parity and discounting securities. This is the natural outcome of the extractive model of State finances, which typically are the largest debtors. After adjusting for price levels and asset discounts, a reversal in the Budget Deficit stands-out by shifting towards a surplus in 2020. By 2021, the surplus increased by 372% in real terms. On the other hand, the financing capacity of the economy is undermined. Starting early in 2020, it went through an 80% decrease. This adds up to a cumulative rate of 96% over two consecutive years. The asymmetry of solvency relationships reveals the dominant strategy of the Treasury. Figure 3 shows that the sensitivity of the public deficit is more than proportional to that of the financing capacity of the economy. This indicates a state of near complete destruction of net national savings that are extracted by the system of hierarchical rivalries.

The relationship between the Central Bank and the Treasury is no less antagonistic. After financing off-budget expenses from discretionary resources at the disposal of the Central Bank, the Government's recovery plan decided to default on Eurobonds and refused to honor its commitments including those due to the Central Bank. The plan (Lebanese Government, 2020) reveals "losses" accumulated by the BDL due to the "restructuring" of public debt. It recommends filling the gap in seigniorage operations by a contribution from bank deposits, thus completely depleting net national savings (Gaspard, 2020). In reality, the Central Bank maintains a guarantee on liquidities for over a 100% of the narrow money supply. This has been the case even after subsidy policies depleted foreign currency reserves – policies that were at the root of hoarding and market shortages. By end 2022, the gold coverage warranted an exchange rate of 3,675 LBP/USD of the monetary base[4]. This amounts to one-tenth of the market exchange rate and one-eighth of the interbank rate. On the other hand the gold coverage warrants a rate of 13,147 L.L./USD to guarantee M4 money supply including M2, deposits in foreign currency M3 and treasury bonds M4 according to BDL classification. The magnitude of the spread with market rates (Hanke, 2002) may be strictly interpreted as a speculative strategy adopted by the monetary authorities.

The Central Bank's speculative policy and the ensuing tightening of liquidity triggered a bank run. Because of the reversal of capital flows, commercial banks failed to bridge the deficit in

[4] *i.e.* currency in circulation plus demand deposits.

their net foreign assets and so were unable to liquidate deposits held by the monetary authorities (Gaspard, 2020). This led to rationing of foreign currency withdrawals and the suspension of the convertibility of deposits in foreign currencies. The weakened confidence signaled creditors to adopt a strategy of defection towards the legal tender. It amplified interests in cashing out on assets, hoarding and the conversion into safer assets. The dollarization dynamics thus reflect the fragility of institutions of money creation (*Ibid*). It triggered a banking panic, and led to the depletion of the financing capacity of the economy.

5. Conclusion

This study builds on the theoretical framework of the regulation school to identify antagonistic rivalries between institutions of money creation and destruction. The model implies the paradigm of the monetary approach to the balance of payments, that if of debt sustainability, bank runs and speculative attack models. The decision-making problem of each agent highlights the role of rivalries and antagonistic relationships in monetary theory. Using the data of the Lebanese case, sensitivity analysis implies social redistribution at the expense of the capacity of the economy to finance productive capital. The model shows asymmetric relationships between institutions of money creation it explains a crowding-out effect which improves substantially the constraint of public finances at the expense of the financing capacity of the economy.

In conclusion, the findings suggest a feedback loop effect that is characteristic of the antagonistic relationships among Lebanese institutions of money creation. On the one hand, mimicked rivalries are channeled through bottom-up dynamics. The vindictive strategy of defaulting on asset convertibility, spreads from the banking sector to the Treasury's policy. On the other hand, the dominant strategy is hierarchical. Faced with the public debt crisis and the monetary crisis, the State's interests imply credit redistribution. Public institutions are thus the primary source of antagonistic relations diffused in a cascade rippling effect. At the core of the diffusion process is the discretionary policy of the Central Bank, which redistributes deficits. The speculative strategy pursued by the Lebanese Central Bank, whether declared conscientious, or else the consequence of administrative dysfunction, negligence, or incompetence, is essentially a devaluation-based redistribution policy that eludes democratic institutional governance. It describes a dynamic of polarization between the issuing institutions, and in essence, represents an extractive model of national savings, that destroys the financing capacity of the economy, which is the case of a "predatory state" (Galbraith, 2008) of national wealth exploitation.

Despite specificities typical of Lebanese institutions, the currency crisis cannot be conceived independently of the global context. Similar trends are observed in almost every emerging economy. Indeed, there is much diversity because of institutional specificities proper to every country. A common thread may be drawn however on the magnitude of public debt in foreign currencies, which has reached an unprecedented level on a global scale. Such is also the case with the reversal of capital flows. These dynamics are often explained by the Fed’s tapering policy. A policy shift, that was identified since 2016 (Aglietta & Coudert, 2014). The

liquidation of carry trades and the reversal of capital flows in emerging markets put financial pressures on the service of sovereign debts. The "monetary sovereignty doctrine" on the other hand raises the question of legitimacy in money creation. It bears directly to the relationship between savings and scriptural money creation, which leads to the logic of institutions as both creators and destroyers of money on a global scale.

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