

RESEARCH ARTICLE



Credit Interest Rates, GDP Growth, and the Efficiency and Stability of Commercial Banks in Lebanon: A Conceptual Analysis of Macro-Financial Transmission under Sovereign Distress

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ABSTRACT

This study examines the role of women in peacebuilding in Lebanon, The stability and efficiency of commercial banking systems are closely linked to macroeconomic conditions, particularly interest rate dynamics and economic growth. In Lebanon, the financial crisis that emerged in 2019 exposed profound structural weaknesses in a banking model characterized by excessive sovereign debt exposure, prolonged exchange-rate rigidity, and dependence on deposit-driven funding. These developments transformed a sector previously regarded as financially resilient into one experiencing severe liquidity shortages, depositor restrictions, and a systemic loss of confidence. While previous studies have examined the determinants of bank profitability, financial stability, and sovereign risk independently, relatively limited attention has been devoted to understanding how these factors interact within economies experiencing simultaneous banking, sovereign, and currency crises.

This study develops a conceptual framework explaining the transmission mechanisms through which credit interest rates and gross domestic product (GDP) growth influence banking efficiency and financial stability in Lebanon. Rather than employing econometric estimation under conditions of distorted financial reporting and multiple exchange-rate practices, the study adopts a descriptive analytical approach to synthesize contemporary banking theory, macro-financial literature, and institutional evidence. The analysis demonstrates that interest rates may enhance short-term profitability under stable macroeconomic conditions but become destabilizing when accompanied by declining economic activity, deteriorating sovereign creditworthiness, and weakening depositor confidence. Likewise, sustained GDP growth strengthens banking performance by improving credit demand, asset quality, and repayment capacity, whereas economic contraction amplifies systemic banking risks.

The paper contributes to the literature by distinguishing accounting profitability from genuine intermediation efficiency and by extending the sovereign-bank nexus framework to economies in which sovereign financing dominates commercial banking activities. The findings suggest that banking-sector recovery requires coordinated reforms involving fiscal consolidation, sovereign debt restructuring, monetary stabilization, governance improvements, and renewed support for productive private-sector lending.

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1. Introduction

Commercial banks perform a fundamental role within modern economies by mobilizing savings, allocating financial resources, facilitating investment, and supporting sustainable economic development. Their ability to perform these functions efficiently depends not only on internal managerial decisions but also on the broader macroeconomic environment in which they operate. Variables such as interest rates, economic growth, inflation, and fiscal stability directly influence banks' profitability, liquidity, asset quality, and overall resilience against financial shocks (Mishkin, 2019).

Among these macroeconomic variables, credit interest rates and GDP growth represent two of the most influential determinants of banking performance. Lending interest rates affect banks' net interest margins, borrowing costs, loan demand, and credit risk, while economic growth determines household income, corporate profitability, investment opportunities, and borrowers' repayment capacity (Adrian & Liang, 2018). Under stable economic conditions, moderate interest rates and sustained economic growth generally strengthen banking performance by encouraging productive lending and reducing default risk. Conversely, prolonged economic contraction combined with elevated borrowing costs may significantly weaken bank balance sheets through declining credit demand, increasing non-performing loans, and deteriorating financial confidence (Berger & Bouwman, 2017).

Extensive academic literature has examined the determinants of bank profitability, financial intermediation, and banking stability. The classical theory of financial intermediation emphasizes that banks create economic value by transforming liquid deposits into productive investments while simultaneously managing liquidity and credit risk (Diamond & Dybvig, 1983). More recent studies have expanded this perspective by demonstrating that liquidity creation and financial stability remain central functions of commercial banks, particularly during periods of macroeconomic stress (Berger & Bouwman, 2017). Nevertheless, relatively few studies investigate how interest-rate policy and economic growth interact in banking systems characterized by exceptionally high sovereign exposure and prolonged macroeconomic instability, such as Lebanon.

Existing empirical research generally assumes stable institutional environments, reliable accounting standards, and transparent financial reporting. These assumptions are difficult to sustain in the Lebanese context because the banking crisis has been accompanied by multiple exchange-rate regimes, incomplete recognition of banking losses, capital restrictions, and significant uncertainty regarding asset valuation (IMF, 2019; World Bank, 2021). Under such circumstances, conventional empirical models may provide misleading estimates of banking performance, supporting the need for a conceptual analytical framework capable of identifying the principal transmission mechanisms linking macroeconomic variables to banking-sector outcomes.

Accordingly, this study develops an integrated conceptual framework examining how credit interest rates and GDP growth influence banking efficiency and financial stability through their effects on borrowing costs, lending activity, repayment capacity, loan quality, and depositor confidence. Attention is devoted to the moderating roles of sovereign debt, inflation, exchange-rate instability, and political uncertainty. Furthermore, the study argues that banking efficiency should not be evaluated exclusively through accounting profitability indicators such as return on assets (ROA) and return on equity (ROE). Sustainable banking efficiency also requires productive financial intermediation, prudent risk management, institutional credibility, and resilience against macroeconomic shocks (Mishkin, 2019; Berger & Bouwman, 2017).

The Lebanese experience provides a valuable opportunity to extend contemporary banking theory because it demonstrates how apparently profitable banking systems may accumulate systemic vulnerabilities over prolonged periods before collapsing once macroeconomic confidence deteriorates. By integrating macroeconomic determinants, financial intermediation theory, and the sovereign-bank nexus, this study contributes to a broader understanding of banking resilience in emerging economies facing sovereign debt crises and prolonged macroeconomic instability (Adrian & Liang, 2018; World Bank, 2020).

1.1. Research gap

Three well-developed bodies of scholarship bear on the problem, and each explains part of it. First, the empirical literature on the macroeconomic determinants of bank performance in emerging markets establishes, with broad agreement, that output growth improves profitability and asset quality, while the effects of inflation and interest rates are conditional and contested (Smith et al., 2018; Lee & Zhang, 2017). Second, the theory of financial intermediation explains why deposit-funded banks are inherently fragile: they transform liquid liabilities into illiquid assets and therefore depend on depositor confidence, so that runs can be self-fulfilling even for solvent institutions (Diamond & Dybvig, 1983; Berger & Bouwman, 2021). Third, the sovereign-bank nexus literature—developed largely after the euro-area crisis—shows how bank holdings of government debt create a feedback loop in which fiscal distress weakens banks and bank distress weakens the sovereign (World Bank, 2021; International Monetary Fund, 2023).

What existing work does not adequately explain is the configuration these strands assume in Lebanon. The determinants literature treats interest rates and growth as exogenous background conditions against which banks optimize; it has little to say about settings in which interest rates are themselves policy instruments deployed to attract deposits, defend a currency peg, and finance the state. The fragility literature models runs on banks whose assets are private loans; it does not examine systems in which the

run, the sovereign default, and the currency collapse are three faces of a single balance sheet. The nexus literature, for its part, typically studies economies where sovereign exposure is one portfolio choice among many; it has not fully theorized cases in which sovereign financing is the business model, so that the nexus is constitutive rather than incidental. Finally, most studies take profitability as a sufficient proxy for efficiency, leaving unexplained how a banking sector can appear efficient for two decades while accumulating the conditions of its own instability.

Lebanon is therefore a theoretically strategic case rather than merely a dramatic one. It presents extreme values on every variable of interest—interest rates far above regional norms, prolonged stagnation followed by one of the sharpest peacetime contractions on record, sovereign exposure that dominated bank assets, and a simultaneous triple crisis of state, currency, and banks (World Bank, 2020). Extreme cases of this kind expose transmission mechanisms that remain muted, and therefore hard to observe, in more moderate environments. Studying Lebanon consequently does more than document a national tragedy; it stress-tests the boundary conditions of banking and macro-financial theory.

1.2. Contribution and structure

The article makes three contributions. Conceptually, it constructs an integrative framework that links credit interest rates and GDP growth to banking efficiency and banking stability through explicit transmission mechanisms—borrowing cost, credit demand, loan quality, net interest margins, and repayment capacity—while modeling sovereign debt, inflation, exchange-rate rigidity, and political instability as moderating conditions. Theoretically, it distinguishes accounting efficiency from intermediation efficiency and shows that the two can diverge for a sustained period, a distinction that reframes how the sovereign-bank nexus should be read in state-financing banking systems. Analytically, it converts the Lebanese experience into a set of propositions that specify when interest rates support and when they undermine banking outcomes, providing a structured agenda for subsequent empirical testing once reliable post-crisis data become available.

The argument proceeds as follows. Section 2 states the research problem, questions, and objectives, and Section 3 establishes significance and scope. Section 4 justifies the descriptive-analytical methodology. Section 5 reconstructs the historical and macroeconomic background analytically rather than chronologically. Section 6 synthesizes the literature around three unresolved debates, and Section 7 presents the conceptual framework and propositions. Section 8 analyzes the transmission mechanisms in the Lebanese setting, Section 9 states the findings, Section 10 derives policy implications, Section 11 acknowledges limitations, and Section 12 concludes.

2. Research Problem, Questions, and Objectives

The research problem arises from the need to explain how macroeconomic deterioration destabilizes a banking sector that was deeply implicated in financing public debt and sustaining the monetary regime. Before the crisis, high interest rates served to attract deposits, defend the currency peg, and preserve confidence. The same rates, however, raised borrowing costs for the private sector and drew banks toward high-yield sovereign and central-bank exposure rather than diversified productive lending. As growth weakened and public debt expanded, the foundations of banking profitability grew correspondingly fragile: income depended on the solvency of a state whose solvency depended on continued bank financing.

After 2019, the interaction between rates and growth turned openly destructive. Economic contraction reduced borrowers' repayment capacity and demand for credit; informal capital controls and deposit restrictions corroded confidence; the sovereign default of March 2020 and the collapse of the pound saturated balance sheets with valuation uncertainty. In such an environment, the efficiency and stability of commercial banks cannot be evaluated apart from the macro-financial structure in which they were embedded.

Because the article is conceptual, its questions concern mechanisms rather than coefficients. The central question is: through what mechanisms, and under what macro-financial conditions, do credit interest rates and GDP growth shape the efficiency and stability of commercial banks in Lebanon? Four subsidiary questions follow. First, through which channels do credit interest rates affect profitability, lending efficiency, and asset quality? Second, how do growth and contraction transmit to loan demand, repayment capacity, and stability? Third, how do sovereign debt, inflation, and political instability condition—amplify or attenuate—these relationships? Fourth, what does the resulting framework imply for the design and sequencing of reform?

Accordingly, the study pursues six objectives:

1. examine the mechanisms through which credit interest rates affect the operational efficiency and profitability of Lebanese commercial banks;
2. evaluate how credit interest rates bear on banking-sector stability, particularly via loan quality, liquidity, and default risk;
3. analyze how GDP growth and contraction transmit to performance indicators such as return on assets, return on equity, lending activity, and asset quality;
4. explain how sovereign debt, inflation, exchange-rate instability, and political uncertainty intensify banking-sector vulnerabilities;
5. construct a conceptual framework, with testable propositions, linking macro-financial variables to banking efficiency and stability in the Lebanese case;

6. derive policy recommendations that situate banking recovery within a broader macroeconomic reform framework.

3. Significance and Scope of the Study

The significance of the research is academic, policy-oriented, and practical. Academically, it contributes to the literature on the macroeconomic determinants of banking performance in emerging and crisis-affected economies. International research generally finds that economic growth improves bank profitability and asset quality, while high inflation, unstable interest rates, and sovereign-risk exposure weaken stability (Smith et al., 2018; Lee & Zhang, 2017). The Lebanese case sharpens this literature because the sector's exposure to sovereign debt and monetary operations made the relationship between macro-financial variables and banking outcomes unusually direct—and because the collapse demonstrates that these relationships can invert: variables that appear performance-enhancing in normal samples became destabilizing once the underlying model lost credibility.

From a policy perspective, the analysis matters because the banking collapse has affected savings, investment, credit, public trust, and the state's capacity to finance recovery. Losses were not confined to bank shareholders; they fell on depositors, firms, and workers, and they continue to constrain reconstruction. Understanding the macro-financial drivers of banking instability is therefore a precondition for designing reforms that address structural sources of fragility rather than their symptoms. For bank managers and financial stakeholders, the analysis exposes the limits of strategies built mainly on wide interest margins and sovereign exposure: profitability recorded during periods of financial expansion can be deeply misleading when it rests on weak macroeconomic foundations.

The scope is limited to commercial banks operating in Lebanon. The analytical period extends from the post-war reconstruction phase of the early 1990s to the crisis that became explicit after 2019 and the sovereign default of 2020. Credit interest rates and GDP growth serve as the principal independent variables; sovereign debt, inflation, political instability, and exchange-rate conditions are treated as moderating or contextual variables; and the dependent variables are banking efficiency and banking stability, understood through indicators such as ROA, ROE, lending efficiency, liquidity, asset quality, capital resilience, and depositor confidence.

4. Methodology and Analytical Approach

4.1. Rationale for a conceptual, descriptive-analytical design

A descriptive-analytical methodology is adopted deliberately, not by default. Three considerations justify the choice. First, the object of inquiry is a set of transmission mechanisms—how interest rates and growth propagate through bank balance sheets and

behavior—rather than the magnitude of average effects; mechanism identification is a task for theoretical synthesis before it is a task for estimation. Second, the Lebanese measurement environment is presently unsuitable for credible econometrics: the coexistence of multiple exchange rates, incomplete loss recognition, frozen deposits, and inflation-distorted financial statements means that any regression on post-2019 balance-sheet data would rest on valuations that banks, regulators, and auditors themselves have not agreed upon. Running such models would create an appearance of precision that the underlying data cannot support. Third, conceptual papers perform a distinct scholarly function: they organize fragmented findings, resolve or sharpen theoretical disagreements, and generate propositions that discipline subsequent empirical work. The present article is offered in that spirit, and no claim to new econometric testing is made.

4.2. Selection and treatment of literature

The literature was assembled from four bodies of work chosen for their bearing on the framework's components: (i) the theory of financial intermediation and bank fragility, which grounds the dependent variables; (ii) monetary and interest-rate theory, which grounds the first independent variable; (iii) empirical research on the macroeconomic determinants of bank performance in emerging markets, which grounds the second; and (iv) the sovereign-risk and financial-stability literature, which grounds the moderating variables. These are complemented by institutional and documentary sources—reports of the International Monetary Fund, the World Bank, Banque du Liban, the Bank for International Settlements, and the Association of Banks in Lebanon—together with Lebanese academic scholarship, which supply the case evidence. Sources were selected for direct relevance to the variables under study, for coverage of crisis-affected and emerging economies, and for their standing in the respective debates; the review is integrative rather than systematic, and no claim of exhaustive coverage is made.

4.3. Case selection: why Lebanon

Within case-based reasoning, Lebanon functions as an extreme and revelatory case. The variables of interest take values rarely observed together—deposit rates far above international benchmarks, sovereign and central-bank claims dominating bank assets, a two-decade currency peg, and a contraction the World Bank ranked among the most severe globally since the mid-nineteenth century (World Bank, 2020). Extreme cases are analytically valuable precisely because they magnify mechanisms that operate weakly elsewhere: the conditionality of interest-rate effects, the divergence of accounting profitability from intermediation efficiency, and the transformation of the sovereign-bank nexus from a portfolio linkage into a systemic architecture. Findings from such a

case do not generalize statistically, but they generalize theoretically, by specifying conditions under which established relationships hold, weaken, or invert.

4.4. Analytical procedure

The analysis proceeds through mechanism-based reasoning conducted in three iterative steps. The descriptive step reconstructs the defining features of the Lebanese banking model—the peg, deposit-based financing, public-debt exposure, and the sequence of shocks—so that the institutional preconditions of each mechanism are explicit. The analytical step traces, for each independent variable, the channel through which it reaches each dependent variable (margins, loan demand, default risk, liquidity, asset quality, solvency expectations, and confidence), specifying the macro-financial conditions under which the channel's sign changes. The synthetic step integrates these channel-level results into a single framework and expresses them as propositions. Throughout, the argument moves back and forth between theory and Lebanese evidence: theory identifies candidate mechanisms; the case shows which mechanisms dominated, when, and why.

Banking efficiency is treated as the ability of banks to transform resources into profitable and productive financial services with limited waste and acceptable risk; banking stability as the ability to remain solvent, liquid, trusted, and resilient under macroeconomic stress. Table 1 summarizes the operational meaning of the variables.

Table 1. Operational definition of the variables

Variable type	Variable	Operational meaning in this study
Dependent	Banking efficiency	ROA, ROE, lending efficiency, cost management, and productive credit allocation.
Dependent	Banking stability	Liquidity, asset quality, capital resilience, depositor confidence, and systemic-risk resistance.
Independent	Credit interest rates	Rates charged on loans and credit products, including the spread between lending and deposit rates.
Independent	GDP growth rate	Annual expansion or contraction of economic activity affecting credit demand and repayment capacity.
Moderating / contextual	Sovereign debt	Government debt burden and bank exposure to public-sector and central-bank risk.
Moderating / contextual	Inflation, exchange-rate conditions, political stability	Macroeconomic and institutional conditions affecting confidence, real values, and financial decisions.

5. Historical and Macroeconomic Background of the Lebanese Banking Sector

The modern Lebanese banking sector developed within a post-war economic model that depended on services, remittances, real-estate activity, foreign-currency inflows, and confidence in the banking system. Commercial banks became major holders of

public debt and central participants in monetary stabilization. The fixed exchange rate introduced in the late 1990s suppressed currency volatility and sustained confidence for a period, but it committed the system to a permanent requirement: continuous foreign-currency inflows, obtainable only so long as depositors believed in the peg and in the banks that defended it (Banque du Liban, 2022; International Monetary Fund, 2019). The background that follows is therefore read analytically—each episode is treated as evidence about how the model's dependence on confidence, inflows, and sovereign financing evolved—rather than as chronology for its own sake.

5.1. Key macroeconomic turning points

Post-war reconstruction expanded the demand for financing and allowed banks to grow their deposit base, but it also welded financial expansion to public borrowing: the sector's growth and the state's indebtedness were two entries in the same ledger. The 1997 peg reduced exchange-rate risk and encouraged dollar inflows, yet its stabilizing effect was purchased with interest rates high enough to keep those inflows coming—an early sign that rates in Lebanon priced confidence rather than credit risk alone. The Paris donor conferences bought time without altering the structural imbalance between public spending, debt servicing, and productive growth; in the framework's terms, they replenished the confidence variable while leaving the transmission mechanisms untouched.

The assassination of Prime Minister Rafik Hariri in 2005, the 2006 war, and the regional instability that followed 2011 weakened tourism, investment, and trade, lowering growth and raising risk in the commerce, construction, and services sectors on which loan portfolios depended. The 2008 global financial crisis, often cited as proof of Lebanese exceptionalism because local banks escaped largely unscathed, is better interpreted the other way around: apparent resilience reflected limited exposure to international toxic assets combined with deepening reliance on domestic sovereign and central-bank instruments. The sector avoided imported fragility by accumulating home-grown fragility—a substitution that flattered short-run indicators while concentrating risk on a single obligor, the Lebanese state.

The CEDRE conference of 2018 offered conditional confidence—international support in exchange for reform—and the widening gap between promised and delivered reform converted that offer into a credibility test the state visibly failed. The October 2019 uprising then exposed the accumulated social, fiscal, and institutional tensions inside the model. Bank closures, withdrawal limits, and informal capital controls transformed a macroeconomic crisis into a rupture of the depositor-bank relationship, and the sovereign default of March 2020 confirmed that the state, the central bank, and the commercial banks constituted a single loss-distribution problem. Read together, these turning points establish the premise on which the rest of the analysis builds: in

Lebanon, interest rates were not merely market prices but instruments for retaining deposits, defending the currency regime, and financing the state, while GDP growth was not merely an output statistic but the real economy's capacity to sustain credit, repayment, and confidence. The simultaneous weakening of both variables therefore struck banks through several channels at once.

5.2. Current macroeconomic constraints

The present situation is constrained by the absence of full loss recognition, persistent legal uncertainty, weak credit activity, and incomplete normalization of monetary conditions. The coexistence of multiple exchange-rate practices during the crisis created accounting distortions and complicated the valuation of assets and liabilities—an especially serious problem in a highly dollarized system, where nominal values can mislead entirely depending on the conversion rate assumed. This constraint matters analytically as well as practically: it is one reason the article's methodology is conceptual rather than econometric.

A second constraint is the weakness of the productive economy. Even a technically restructured banking sector would remain inefficient in the substantive sense if firms cannot invest, households cannot save, and sectors cannot generate stable cash flows. Banking reform must therefore connect to a development strategy for productive sectors, exports, employment, and formal financial activity; otherwise banks may resume balance-sheet activity without recovering their intermediation function—repeating, in miniature, the pre-crisis divergence between accounting performance and economic contribution.

The third constraint is confidence itself. Depositors, investors, and borrowers require credible rules before they return to normal banking relationships, and credibility cannot be declared; it must be built through enforceable legal frameworks, transparent treatment of deposits, credible supervision, and predictable monetary policy. The crisis damaged trust at the level of daily banking practice, and restoring that trust is as important as repairing capital ratios, because banks operate on confidence before they operate on accounting figures.

6. Theoretical Framework and Literature Review

Rather than surveying contributions author by author, this section organizes the literature into four strands, identifies where they agree and where they conflict, and isolates three unresolved debates that the Lebanese case speaks to directly.

6.1. Financial intermediation and bank fragility

The foundational strand explains commercial banks as intermediaries that collect deposits and allocate credit, contributing to development when they transform savings

into productive investment while managing risk. The same maturity transformation that makes banks useful makes them fragile: because liquid liabilities fund illiquid assets, banks depend on depositor confidence, and a run can be self-fulfilling even against an institution that is fundamentally solvent (Diamond & Dybvig, 1983). Subsequent work extends this insight to liquidity creation as the core banking output and links it to monetary policy and crisis dynamics (Berger & Bouwman, 2021). Two implications matter here. First, stability is partly a property of beliefs, not only of balance sheets, which is why the analysis treats confidence as an outcome variable rather than an assumption. Second, the theory was developed for banks whose assets are private loans; how fragility operates when the dominant asset is a claim on the sovereign—so that the run, the default, and the currency crisis share one balance sheet—remains undertheorized. That is the configuration Lebanon presents.

6.2. Interest rates: the income view versus the risk view

On the effects of lending rates, the literature divides into two positions that are often left implicit. The income view holds that higher credit rates widen net interest margins and strengthen profitability, provided funding costs lag and borrowers keep repaying; it underlies much of the determinants literature and, in practice, underpinned the Lebanese strategy of attracting deposits with high yields. The risk view, rooted in monetary theory and in analyses of financial conditions, replies that when rates are high because of inflation, sovereign risk, or eroding confidence, they compress credit demand, raise default probabilities, and induce adverse selection among borrowers, so that the marginal loan is made to the borrower least able to repay (Mishkin, 2019; Adrian & Liang, 2023). The two views are not contradictory so much as conditional on the macro-financial regime: the income effect dominates while growth and confidence hold; the risk effect dominates once they do not. Where exactly the regime switches, and what governs the switch, is the first unresolved debate—and the Lebanese trajectory, in which an income-generating rate structure became a solvency-destroying one within months, offers unusually sharp evidence on it.

6.3. Growth and the macroeconomic determinants of bank performance

The empirical determinants literature yields its strongest consensus on output: GDP growth is positively associated with profitability, asset quality, and stability, because expansion strengthens borrower cash flows, credit demand, and repayment (Smith et al., 2018; Lee & Zhang, 2017). Disagreement concentrates on the nominal variables—inflation and interest rates—whose estimated effects vary in sign and size across samples, suggesting that their impact is mediated by institutional context rather than uniform. A further limitation cuts deeper: this literature almost universally measures performance through profitability ratios, implicitly equating profitability with

efficiency. Whether that equation holds is the second unresolved debate. A bank can report strong ROA while allocating credit away from production and toward a fragile sovereign; the reported efficiency is then an accounting artifact. Pre-crisis Lebanon is close to a limiting case of this divergence, which is why the framework below carries efficiency and stability as distinct dependent variables and distinguishes accounting efficiency from intermediation efficiency.

6.4. The sovereign-bank nexus, institutions, and the Lebanese scholarship

The financial-stability strand emphasizes that banking stability depends on systemic conditions—sovereign debt, monetary credibility, institutional quality—beyond individual bank management. Where banks hold large public-debt portfolios, sovereign and banking risk intertwine: fiscal deterioration damages bank assets, while bank weakness restricts credit and undermines recovery (World Bank, 2021; International Monetary Fund, 2023). Macroeconomic-policy scholarship after the global financial crisis reinforces the point that stabilization frameworks neglecting financial structure invite instability (Blanchard & Summers, 2020), and institutional economics adds that the quality of governance determines whether crises are resolved or perpetuated (Acemoglu & Robinson, 2021). Lebanese scholarship supplies the case-specific mechanics: the political economy of public debt and the post-war monetary model (Chaaban, 2018; Dagher, 2018), banking pricing behavior and efficiency (Zaarour, El-Khoury, & Moussawi, 2017), the sector's entanglement with public finance (Salti & Chaaban, 2021, 2022), and its resilience—or apparent resilience—through political shocks (Abou Zahr, Haddad, & Nassar, 2021). The third unresolved debate lives in this strand: the direction of causality within the nexus. Euro-area accounts typically run from weak banks to weak sovereigns or vice versa; the Lebanese literature suggests instead a co-constituted structure in which state, central bank, and commercial banks financed one another by design, making the question of which side infected the other partly misconceived.

6.5. Synthesis and the position of this article

Across the four strands, three points command agreement: growth improves banking performance; high and volatile rates can flatter income while corroding asset quality; and macro-financial effects on banks are mediated by institutions, sovereign exposure, and confidence. Three questions remain open: where the interest-rate regime switch occurs, whether profitability can proxy efficiency, and how the sovereign-bank nexus behaves when it is constitutive rather than incidental. The present article positions itself at the intersection of these open questions. It takes the mechanisms identified separately by each strand, integrates them into one framework, and uses the Lebanese case to specify the conditions under which the consensus relationships invert. In doing so it

treats the case not as an application of existing theory but as a source of theoretical refinement.

7. Conceptual Framework and Propositions

The framework, presented in Figure 1, links the two independent variables to the two dependent variables through five transmission mechanisms, with four moderating conditions acting on the transmission layer. Credit interest rates enter through the cost of credit, loan demand, interest margins, and borrowers' debt-service burden; GDP growth enters through household income, business revenue, investment demand, and repayment capacity. Neither variable operates in isolation: sovereign debt exposure, inflation and currency depreciation, political instability, and the credibility of the exchange-rate regime determine whether a given rate level or growth rate stabilizes or destabilizes the system. A feedback channel closes the loop, since credit conditions in turn influence growth and confidence.

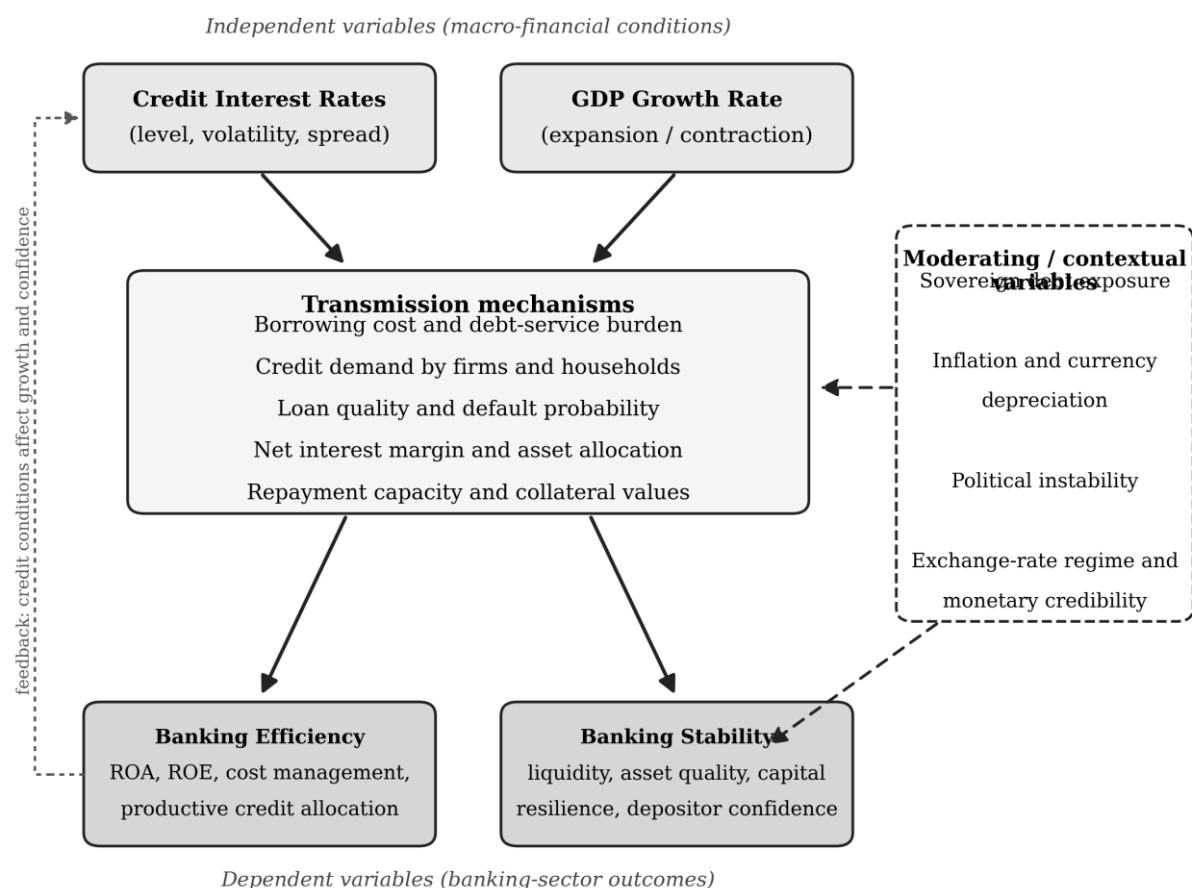


Figure 1. Conceptual framework: macro-financial transmission to banking efficiency and stability. Solid arrows denote direct transmission; dashed arrows denote moderating effects; the dotted loop denotes feedback from banking outcomes to growth and confidence

Reading the figure from top to bottom: in a benign regime, moderate lending rates generate interest income and discipline credit allocation, while growth expands the pool of viable borrowers—both dependent variables improve together. The framework's central claim is that the moderating layer can reverse the signs. When rates are high because they compensate for sovereign risk, inflation, or confidence loss—rather than pricing productive credit—the income effect is progressively offset by falling demand, rising defaults, and a reallocation of bank assets toward the sovereign. When growth turns to contraction, the same mechanisms operate in reverse and reinforce one another: weaker repayment capacity degrades loan quality, degraded loan quality restricts credit, and restricted credit deepens the contraction. In Lebanon, high interest rates served deposit attraction, exchange-rate defense, and sovereign financing rather than productive allocation, which is precisely the configuration in which the framework predicts efficiency and stability will first diverge and then jointly collapse.

Because the design is conceptual, the framework is expressed as propositions rather than statistical hypotheses. Each proposition specifies a mechanism and its conditioning environment, and each is falsifiable in principle once reliable data permit testing:

- **P1.** The effect of credit interest rates on banking efficiency is conditional: higher rates raise nominal profitability in the short run, but they reduce intermediation efficiency when they reflect macroeconomic risk and confidence premia rather than the pricing of productive credit.
- **P2.** High and volatile credit interest rates undermine banking stability when they coincide with weak growth and heavy sovereign exposure, because default and confidence effects come to dominate margin effects.
- **P3.** GDP growth is positively associated with both banking efficiency and banking stability through credit demand, repayment capacity, and collateral values; contraction reverses these channels and can convert ordinary credit risk into systemic risk.
- **P4.** Sovereign debt exposure, inflation, currency depreciation, and political instability moderate the relationships in P1-P3, amplifying the destabilizing effects of high rates and weak growth.
- **P5.** Where banks, the state, and the central bank are jointly exposed, banking recovery requires coordinated banking, fiscal, monetary, legal, and institutional reform; bank-level measures alone cannot restore either efficiency or stability.

8. Analysis and Discussion

8.1. Credit interest rates and banking efficiency

Credit interest rates reach banking efficiency through profitability, operating behavior, loan demand, and asset allocation. In the short run, higher lending rates can

raise net interest income and support ROA and ROE, particularly where deposits are attracted at lower cost and lent at wider margins. In Lebanon, however, the high-rate environment was inseparable from macroeconomic risk and from the imperative of attracting foreign-currency deposits. The income generated under that model was fragile by construction: it depended on continued confidence and inflows rather than on a broad base of productive credit. This is the first sense in which P1's conditionality bites—the same rate structure that produced income also produced dependence.

High rates simultaneously priced much of the private sector out of credit. Firms facing prohibitive borrowing costs postponed investment or turned to informal finance; households avoided consumption loans or carried debt-service burdens their incomes could not sustain. As demand for viable loans contracted, banks became progressively less able to perform their intermediation function even while their income statements improved—apparent profitability with declining productive efficiency. Sovereign exposure reinforced the drift: government and central-bank instruments offered yields no private borrower could match, so the rational bank-level response was to shrink the developmental side of the balance sheet. The efficiency that resulted was therefore narrow, accounting-based, and structurally hostage to sovereign solvency, which is why the framework insists on distinguishing accounting efficiency from intermediation efficiency rather than treating profitability as a sufficient statistic.

8.2. Credit interest rates and banking stability

The stability effect of credit rates is dual, exactly as the income-risk debate in Section 6.2 anticipates. Moderate, well-calibrated rates support risk pricing and preserve income. Excessively high or volatile rates raise borrowers' debt-service burdens, suppress demand, and increase default probability—and in a shrinking economy borrowers fail not because loans were badly underwritten but because income, revenue, and purchasing power have collapsed around them. Default risk migrates from the underwriting decision to the macroeconomic regime, beyond any individual bank's control.

Lebanon traces the full arc of this duality. For years, high rates preserved confidence in deposits and in the peg; once confidence cracked, the identical instrument became destabilizing, because the yields on offer now signaled distress rather than reward. Deposit restrictions, currency depreciation, and sovereign default then destroyed expectations about liquidity and solvency, and no feasible rate could re-attract funding whose withdrawal was driven by fear of confiscation rather than by return comparisons. The episode also exposes the institutional face of stability: banks operate on trust that deposits are accessible and legally protected. Informal capital controls after 2019—applied without statutory basis and unevenly across depositors—may have slowed liquidity outflows, but they converted a liquidity problem into a legitimacy problem.

Stability, the case shows, is not only a balance-sheet property; it is a legal and social relationship that, once broken, technical solvency measures alone cannot repair.

8.3. GDP growth and banking efficiency

Growth underwrites banking efficiency by expanding the real economy from which sustainable bank income must ultimately derive. When output grows, firms demand financing for production, trade, and investment; households earn and repay; banks can expand lending while holding asset quality. Profitability earned in such an environment reflects intermediation rather than sovereign dependence—the benign configuration of the framework in which the two faces of efficiency coincide.

Lebanon's growth model foreclosed that configuration. Activity depended on capital inflows, real estate, services, remittances, and confidence-sensitive sectors, so the productive base was too narrow to supply banks with a deep population of creditworthy borrowers even before the crisis. Efficiency in the substantive sense was therefore constrained from the asset side: banks could not lend productively at scale to an economy that generated few productive projects, which made the sovereign's yields doubly attractive and deepened the allocation bias described in 8.1. The post-2019 contraction then removed both the demand side and the repayment side of banking simultaneously—firms lost sales, households lost purchasing power, investment collapsed—confirming the framework's feedback channel: banking recovery is impossible without economic recovery, and the converse holds as well.

8.4. GDP growth and banking stability

Growth stabilizes banking through the same channels by which it enhances efficiency, plus one more: the fiscal channel. Expansion improves borrower income and collateral values, reducing non-performing loans; it also strengthens government revenue, easing sovereign risk and thereby the value of banks' sovereign claims. Contraction reverses every term at once—repayment capacity, collateral, state revenue, and confidence—which is why the Lebanese collapse propagated so fast. Falling GDP degraded private loan books and sovereign exposures simultaneously, producing the feedback loop the framework highlights: weak growth damages banks, weak banks restrict credit, and restricted credit deepens the slump.

The loop carries a direct design implication. Recapitalizing banks without restoring productive sectors leaves the system fragile, because the new capital would sit against the same narrow asset base; stimulating growth without functioning banks starves recovery of credit. Reform must therefore operate on both sides of the loop, reconnecting banking with productive investment, small and medium enterprises, exports, and employment—an implication developed in Section 10.

8.5. Sovereign debt, inflation, and political instability

Sovereign debt is the pivotal moderating variable. Because commercial banks were deeply exposed to the state and the central bank, fiscal deterioration translated directly into balance-sheet deterioration; the state depended on banks for financing, and banks depended on the state and central bank for returns. This is the co-constituted nexus identified in Section 6.4: not a linkage between two separable sectors but a single financing architecture. Once sovereign debt became unsustainable, the question was never whether banks would be affected but only how losses would be distributed among the state, the central bank, bank shareholders, and depositors—a distributional question that remains politically unresolved and that explains much of the reform paralysis.

Inflation and currency depreciation acted as epistemic as well as economic moderators. Beyond eroding purchasing power, they corrupted the information system on which banking depends: multiple exchange rates and dollarized deposits made financial statements ambiguous, asset valuations contestable, and indicator comparisons unreliable, so that even well-intentioned supervision lacked a stable factual basis. Political instability then multiplied every weakness. Reforms stalled, legal frameworks remained uncertain, and depositors had no assurance that losses would be allocated transparently; international institutions, for their part, conditioned support on commitments the political system could not credibly make. Instability thus operated not as one more shock but as a discount factor applied to all proposed remedies, degrading the expected value of every technical measure before implementation.

8.6. Integrated discussion: the transmission mechanisms and the theory they test

Assembling the channels yields a clear division between direct and indirect mechanisms. The direct mechanism of interest rates runs through margins and loan pricing: higher rates earn more per loan while repayment continues. The indirect mechanism runs through borrower selection and allocation: high rates shrink the population of viable borrowers, raise debt-service pressure, and pull lending away from production. In a crisis economy the indirect mechanism dominates the direct one—this is the regime switch that Section 6.2 identified as the literature's first open question, and the Lebanese sequence dates it precisely: the switch occurred when rates stopped compensating depositors for time and began compensating them for fear.

Growth operates more diffusely, conditioning the entire environment—firm revenue, household wages, state revenue, and, critically, expectations. When firms expect growth, they borrow and invest; when households expect stability, they deposit; when the state expects revenue, sovereign risk recedes. Expectations are the connective tissue between the framework's layers, which is why Diamond and Dybvig's (1983) insight that stability rests on beliefs extends here beyond the classic run: in Lebanon the run was rational,

because the assets backing deposits were claims on an insolvent sovereign, so no equilibrium of pure confidence remained available. The case thus both confirms bank-fragility theory and marks its boundary—confidence sustains banking only while the underlying asset structure can bear it.

During the crisis, the two variables interacted multiplicatively rather than additively. High rates lost their confidence-preserving power because weak growth had hollowed out the economy's capacity to carry debt; weak growth made sovereign debt unsustainable, which struck the banks holding it; the resulting bank distress restricted credit and deepened the contraction. No single-variable account survives this evidence, and neither does any single-instrument reform: recapitalization without sovereign clarity, monetary stabilization without fiscal reform, or growth policy without functioning banks each fails on the same systemic logic. The correct interpretation—and the paper's core analytical claim—is that the banking sector cannot be stabilized unless the macro-financial and institutional structure around it is stabilized.

8.7. Banking efficiency versus banking stability

The distinction between efficiency and stability, introduced conceptually in Section 6.3, now acquires its full analytical weight. Efficiency concerns how well banks convert resources into income, credit, and economic support; stability concerns whether they remain liquid, solvent, trusted, and resilient under stress. The Lebanese model demonstrates that a sector can score well on the first, narrowly measured, while silently failing the second: before 2019, banks reported profits and nominal liquidity, attracted deposits, and expanded balance sheets on sovereign and central-bank yields, yet each unit of that apparent efficiency added exposure to a deteriorating obligor. Accounting profitability and systemic fragility rose together—the decoupling the framework predicts when the moderating layer turns adverse.

The theoretical consequence is that profitability-based performance measurement, standard in the determinants literature, is not merely incomplete for state-financing banking systems; it is directionally misleading, because the activities that maximize measured efficiency are the same activities that manufacture instability. Stability requires diversified assets, credible regulation, bounded sovereign exposure, adequate liquidity, and legally protected deposits—conditions invisible in ROA. The practical consequence follows for reform: a restructured sector must not aim simply to reopen services and restore nominal profits, but to rebuild intermediation capacity, protect depositors, and cap sovereign dependence, combining efficiency with stability rather than purchasing one at the price of the other.

9. Findings

The analysis supports six findings. Each is stated with its interpretation, its theoretical implication, and its specific relevance for Lebanon.

Finding 1 — Interest-rate effects on efficiency are regime-dependent. Result: credit interest rates raise nominal profitability in the short run but weaken intermediation efficiency when they suppress loan demand, inflate debt-service burdens, and pull assets toward the sovereign. Interpretation: the income and risk views of lending rates are both correct, each within its regime; the moderating environment determines which dominates. Theoretical implication: interest-rate coefficients in determinants studies should be modeled as conditional on sovereign exposure and confidence, not as structural constants. Relevance for Lebanon: the high-rate strategy that built the sector's income base was simultaneously dismantling its intermediation base (supports P1).

Finding 2 — High rates destabilize under weak growth and high sovereign exposure. Result: in a low-growth, high-debt environment, elevated rates raise default risk, degrade asset quality, and erode confidence, and their stabilizing function disappears once the macro model loses credibility. Interpretation: rates defend stability only while they price time rather than fear. Theoretical implication: the regime switch between the income and risk effects is endogenous to sovereign credibility—an addition to the financial-conditions literature. Relevance for Lebanon: no feasible rate could halt withdrawals after 2019 because the motive for withdrawal was expropriation risk, not yield (supports P2).

Finding 3 — Growth is the binding constraint on both banking outcomes. Result: GDP growth improves credit demand, repayment capacity, profitability, asset quality, and depositor confidence; contraction reverses all of these and is most dangerous where sovereign exposure is already high. Interpretation: the consensus growth finding of the determinants literature survives the Lebanese stress test, and gains force from it. Theoretical implication: growth belongs in stability models not only as a covariate but as the variable that activates or deactivates the other channels. Relevance for Lebanon: banking recovery is unattainable without economic recovery, and vice versa (supports P3).

Finding 4 — The sovereign-bank nexus in Lebanon was constitutive, not incidental. Result: bank exposure to public debt and central-bank operations made banking stability a direct function of state solvency and monetary credibility. Interpretation: state, central bank, and banks formed one financing architecture, so the euro-area question of which sector infected the other is partly misconceived here. Theoretical implication: nexus models should distinguish portfolio-linkage systems from state-financing systems, whose crisis dynamics and resolution requirements differ.

Relevance for Lebanon: loss allocation among the three balance sheets is the unavoidable core of any reform (supports P4 and P5).

Finding 5 — Inflation, depreciation, and multiple exchange rates destroyed the information basis of banking. Result: nominal indicators lost comparability, valuations became contestable, and the trust relationship between banks and depositors deteriorated further. Interpretation: these moderators act epistemically—they degrade the measurement system itself—not only economically. Theoretical implication: financial-stability analysis should treat indicator reliability as endogenous to the crisis, a point with direct methodological consequences for empirical work on crisis economies. Relevance for Lebanon: transparent loss recognition is a precondition for any credible restructuring (supports P4).

Finding 6 — Political instability functions as a multiplier on all other risks. Result: delayed reform, legal uncertainty, and unallocated losses magnified every economic weakness and reduced the credibility of every technical remedy. Interpretation: institutional trust is a production input for reform, not a by-product of it. Theoretical implication: institutional quality enters the framework as a moderator of policy effectiveness, consistent with the institutional-economics strand. Relevance for Lebanon: banking reform cannot be separated from fiscal reform, debt restructuring, monetary stabilization, depositor protection, and governance (supports P5).

10. Policy Implications and Recommendations

The findings imply that Lebanon requires a comprehensive macro-financial reform strategy rather than isolated bank-level corrections. Banking restructuring cannot succeed while sovereign debt remains unresolved; monetary stabilization cannot be credible while fiscal policy generates unsustainable deficits; depositor protection cannot be meaningful without transparent loss recognition and a legal framework that allocates losses fairly and predictably. Each implication follows directly from the propositions: because the crisis mechanisms are interlocking (P4, P5), the remedies must be sequenced and interlocking as well.

10.1. Reform sequencing

Sequence matters because a fragmented process generates fresh uncertainty: bank restructuring without sovereign-debt restructuring leaves balance sheets indeterminate; monetary stabilization without fiscal reform remains exposed to renewed pressure; depositor protection without loss recognition creates promises that cannot be honored. A realistic sequence begins with transparent diagnosis—the size of losses, the condition of bank balance sheets, the state's repayment capacity, and the central bank's obligations must be established and disclosed. This stage is political and legal as much as technical,

because it defines the basis for burden sharing; it should be public enough to restore confidence and detailed enough to guide bank-by-bank decisions.

The second stage is legal and institutional: capital controls, bank resolution, depositor treatment, and governance standards must be placed within a clear statutory framework that defines rights, priorities, restrictions, appeal mechanisms, and responsibilities, and that ends unequal treatment among depositors. The third stage is financial: banks are recapitalized, merged, resolved, or restructured according to viability, with viable institutions held to stronger governance and disclosure standards and non-viable ones resolved rather than preserved through opaque measures that shift risk to depositors or taxpayers. The final stage is developmental: once stabilized, banks are steered toward financing productive sectors under upgraded risk-management standards.

10.2. Governance and institutional credibility

Governance is not an adjunct to banking reform; it is the condition of its success. The crisis destroyed trust in part because depositors did not receive clear, equal, legally grounded treatment, and investors could not rely on financial statements, regulation, or judicial decisions. Rebuilding credibility requires transparent disclosure of exposures, related-party transactions, risk concentration, and provisioning; credible supervision with enforcement; and supervisory limits that prevent banks from reconstituting the very sovereign concentration that produced the collapse—supported by stress testing, realistic valuation, and conservative liquidity and capital reporting. It also requires a fair depositor framework that distinguishes small savers, household savings, commercial operating accounts, and large sophisticated accounts, avoids arbitrary treatment, and communicates a credible recovery timeline. Such clarity does not eliminate losses, but it converts them from an open-ended threat into a bounded, rule-governed process—the difference on which the return of trust depends.

10.3. Reorientation toward productive intermediation

A central lesson of the case is that a banking sector can be large without being developmentally efficient. Balance-sheet expansion built on sovereign financing and deposit attraction does not constitute intermediation. Restoring the developmental role requires banks to evaluate firms, finance investment and working capital, and allocate credit toward activities that raise output, exports, employment, and innovation—gradually, after stabilization, and with stronger rather than looser risk management: sectoral credit policies, sound collateral evaluation, realistic foreign-exchange risk assessment, and SME lending confined to viable business conditions. Public policy can support the shift through the business environment, credit-information systems, and contract enforcement. The relationship between banking recovery and growth is circular but can be made constructively so: reform should break the negative cycle of weak banks

and weak growth and replace it with a positive cycle of trust, credit, investment, and output.

These priorities translate into eight recommendations:

1. Adopt a comprehensive banking restructuring plan that recognizes losses transparently and allocates them according to a clear legal hierarchy, protecting small depositors to the greatest extent possible.
2. Restructure sovereign debt within a credible macroeconomic framework, since banking stability cannot be restored while public debt remains unsustainable.
3. Unify exchange-rate practices and rebuild monetary credibility through inflation control, transparent central-bank operations, and limits on quasi-fiscal interventions.
4. Establish a formal capital-control and deposit-recovery framework that reduces arbitrariness, protects confidence, and differentiates small, medium, and large deposits.
5. Strengthen supervision, governance standards, risk disclosure, stress testing, and accountability to prevent the reaccumulation of hidden systemic risk.
6. Reorient banks toward productive intermediation—viable firms, SMEs, export-oriented activity, and employment-generating sectors.
7. Link banking reform to broader recovery: fiscal reform, public-sector governance, anti-corruption measures, and investment in productive capacity.
8. Preserve coherent sequencing: diagnosis first, legal framework second, financial restructuring third, developmental reorientation fourth.

11. Limitations and Future Research

Four limitations bound the analysis, and each defines a research direction. First, the design is conceptual: conclusions derive from theoretical synthesis and case analysis, not from new econometric testing. Once loss recognition and exchange-rate unification restore data reliability, the propositions invite testing on a panel of Lebanese commercial banks—relating credit rates and GDP growth to ROA, ROE, non-performing loans, liquidity ratios, and capital adequacy, with sovereign exposure and institutional indicators as moderators, in direct correspondence with P1-P4.

Second, the data problem is itself substantive. Multiple exchange rates, deposit restrictions, and inflation have degraded the comparability of financial statements, so future empirical work must treat valuation assumptions and deflation methods as research design choices, not technicalities; Finding 5 suggests that studies ignoring this will produce artifacts. Third, the focus on commercial banks leaves adjacent questions open: comparisons with other financial institutions, heterogeneity across bank size classes, depositor behavior, litigation, and the social consequences of deposit restrictions would extend the framework from macro-financial variables to institutional and

distributional outcomes. Fourth, the post-restructuring regime remains unobserved. The relationships theorized here may shift after debt restructuring, recapitalization, and monetary normalization, and longitudinal research will be required to establish whether reform actually restores the sector's capacity to finance growth—an ideal setting, incidentally, for observing the interest-rate regime switch of P1 and P2 operating in reverse.

12. Conclusion

The article set out to explain, conceptually, how credit interest rates and GDP growth shape the efficiency and stability of commercial banks in Lebanon. Its central conclusion is that these variables operated not as external conditions but as core determinants of the sector's trajectory, and that their effects were governed—ultimately reversed—by a moderating structure of sovereign exposure, inflation, exchange-rate rigidity, and political instability.

The theoretical contribution is threefold. The framework specifies the conditions under which the income effect of lending rates gives way to the risk effect, locating the regime switch in sovereign credibility rather than in rate levels alone. It separates accounting efficiency from intermediation efficiency and shows that profitability-based measurement is directionally misleading in state-financing banking systems. And it distinguishes constitutive from incidental forms of the sovereign-bank nexus, arguing that crisis dynamics and resolution requirements differ fundamentally between the two—an extension of a literature built largely on euro-area experience.

The practical contribution lies in what the analysis tells bank managers, supervisors, and analysts about performance measurement and risk: indicators earned on sovereign yield during a confidence boom carry no information about resilience, and risk that appears to originate in underwriting may in fact originate in the macro-financial regime. The policy contribution is a sequenced reform architecture—transparent diagnosis, statutory frameworks for resolution and depositor treatment, viability-based financial restructuring, and developmental reorientation—derived from the finding that interlocking crisis mechanisms defeat any single-instrument remedy.

Future research should test the propositions empirically once valuation and data problems are resolved, extend the analysis to non-bank institutions and to depositor behavior, and follow the post-restructuring regime longitudinally. The larger stake is clear: whether Lebanese banks can move from financing the state to financing the economy—mobilizing savings, allocating credit productively, and supporting sustainable development—will determine not only the sector's recovery but the country's.

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Ethical approval

Ethical approval was not required for this study because it is a conceptual and descriptive-analytical article based exclusively on previously published academic literature, institutional reports, and publicly available documentary sources. The study did not involve human participants, animals, personal data, interviews, surveys, or experimental procedures.

Author contributions

Aghiad Mohamad Adnan Dandachi was solely responsible for the conceptualization of the study, literature review, methodology, development of the conceptual framework, analysis and interpretation, preparation of the original manuscript, and revision and approval of the final version.

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Data Availability Statement

No new empirical data were generated or analyzed in this study. The article is based on published academic literature, publicly available institutional reports, and documentary sources cited in the reference list. Accordingly, data sharing is not applicable to this article.

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