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Original Research Article

A Conceptual Model: FX Policy & Economic Variables in Iran

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This study rigorously investigates the intricate relationship between the Central Bank of Iran's (CBI) foreign exchange (FX) policies and key macroeconomic variables amidst a complex interplay of economic volatility, international sanctions, and substantial oil dependence. Employing a mixed-methods approach, we integrate advanced econometric analysis with detailed historical policy tracing and comparative case studies of nations such as China, Turkey, Brazil, and Venezuela. Our analysis scrutinizes the impact of Iran's evolving exchange rate regimes, encompassing fixed, managed float, and multiple-rate systems, on critical macroeconomic indicators, including inflation dynamics, trade balance fluctuations, and gross domestic product (GDP) growth. The empirical findings underscore the significant role of persistent oil revenue reliance and a fragmented FX system in contributing to enduring fiscal deficits and elevated inflation levels. By drawing parallels with international experiences, our framework elucidates the critical need for diversifying FX resources, strengthening the coordination between monetary and fiscal authorities, and implementing fundamental institutional reforms to foster a more resilient and adaptable FX regime. This research contributes to the literature by bridging theoretical frameworks with empirical realities specific to Iran's context, offering a robust roadmap for enhancing the effectiveness of its FX policies.

Keywords: FX policy, Central Bank, Oil, Inflation
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1 Introduction

Iran's foreign exchange policies have undergone significant transformation over recent decades—driven by domestic economic turbulence, international sanctions, and the cyclical volatility of oil revenues. In its bid to stabilize the national currency and secure foreign currency reserves, the Central Bank of Iran (CBI) has experimented with various exchange rate regimes. Fixed-rate systems have at times anchored inflation expectations, while managed float and multi-tiered exchange rate approaches were introduced to cope with external shocks and resource scarcity. Yet, these policy shifts often resulted in unintended consequences such as currency misalignments, fiscal deficits, and persistent inflation. Therefore, a rigorous evaluation of the extent to which the CBI's interventions have contributed to economic stability and sustainable growth, particularly under structural constraints like sanctions, oil dependency, and institutional fragmentation, is of paramount importance. This study investigates this central issue by employing a mixed-methods approach, integrating econometric modeling, historical policy tracing, and international case studies to answer the central research question: How have Iran's past and current FX policies shaped its macroeconomic performance? By merging quantitative analysis with qualitative contextual evaluation, our unified framework offers a comprehensive picture of the trade-offs and challenges Iran faces—providing critical insights for both policymakers and scholars.

A thorough evaluation of the Central Bank of Iran's (CBI) foreign exchange policies is essential for three key reasons. First, a systematic assessment provides a basis for measuring the gap between policy intent and real-world outcomes. For example, while the CBI's interventions aim to stabilize the rial and curb inflation—particularly critical during Iran's recurring hyperinflationary episodes—their effectiveness remains contested. Empirical analysis can determine whether these policies merely suppress short-term symptoms or address root causes. Additionally, such evaluations reveal unintended consequences, including the emergence of parallel currency markets under restrictive exchange controls. Second, Iran's economy faces uniquely severe constraints, including multilayered international sanctions, oil revenue volatility, and chronic fiscal deficits. Evaluating the CBI's policies helps illuminate how these internal and external pressures constrain policy effectiveness, enabling policymakers to distinguish between addressable bottlenecks and immutable geopolitical realities, thus fostering more pragmatic policy design. Third, evaluation generates actionable insights that support institutional and regulatory innovation. Structured analysis can

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identify best practices from comparable economies and tailor them to Iran's specific context. Key reform priorities include diversifying forex reserves, modernizing monetary tools, and strengthening institutional credibility. Ultimately, this evaluation is a prerequisite for rebuilding economic resilience amid unprecedented sanctions and global uncertainty.

The remainder of this paper is organized as follows. Section 2 outlines the research objectives, followed by Section 3, which presents the research questions guiding the study. Section 4 highlights the distinguishing contributions of this research compared to previous works. Section 5 provides a comprehensive literature review, including theoretical frameworks and empirical studies. Section 6 describes the methodology and data sources used in the analysis. Section 7 presents the empirical analysis, conceptual model, and findings. Section 8 discusses the conclusions and policy implications, while Section 9 proposes directions for future research. Finally, Section 10 offers the study's concluding remarks.

2 Research Objectives

The primary objective of this research is to investigate the extent to which the Central Bank of Iran's (CBI) foreign exchange policies over the past three decades have contributed to economic stability and sustainable growth, particularly under structural constraints such as sanctions, oil dependency, and institutional fragmentation. To achieve this overarching goal, the study employs a mixed-methods approach, integrating historical analysis, econometric evaluation, and comparative case studies, with the following specific objectives:

To Map the Historical Trajectory of Iran's Exchange Rate Regimes: Periodize key phases of the CBI's foreign exchange policy evolution (1990s–present), identifying inflection points and their driving factors.

To Quantify Policy Impacts on Macroeconomic Performance: Estimate causal linkages between CBI interventions and core macroeconomic indicators, including inflation stability, external balances, growth metrics, and market confidence.

To Benchmark Against Sanction-Affected and Resource-Dependent Economies: Conduct comparative analyses with economies facing similar challenges and identify institutional innovations that could inform Iran's policy adaptations.

To Propose a Reform Roadmap for Resilient Exchange Rate Management: Synthesize empirical findings into targeted policy recommendations for the

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CBI, emphasizing adaptive frameworks, structural reforms, institutional modernization, and global integration through alternative financial channels.

3 Research Questions

In pursuit of the aforementioned objectives, this research will address the following key questions:

What have been the key transformations in the Central Bank of Iran's foreign exchange policies over the past three decades, and what were the most significant turning points and influential factors?

To what extent have the Central Bank of Iran's interventions in the foreign exchange market had on Iran's key macroeconomic indicators, including inflation, exchange rate stability, trade balance, economic growth, and investor confidence?

How does the effectiveness of Iran's foreign exchange policies compare to that of other economies facing similar challenges such as sanctions and resource dependence, and what practical lessons can be learned from their experiences?

Based on the findings of this research, what reforms in the Central Bank of Iran's foreign exchange policies could contribute to enhanced economic stability and the achievement of sustainable growth in the current environment?

4 Distinguishing Contribution of the Study

While prior research on Iran's foreign exchange policies has often focused on specific interventions—such as devaluations, capital controls, or exchange rate regimes—this study makes a novel contribution by integrating theoretical, empirical, and comparative analyses into a unified conceptual framework tailored to Iran's complex policy environment. It advances the literature by systematically contextualizing Iran's policy experience within the broader landscape of resource-dependent and sanction-affected economies, while also applying both quantitative and qualitative methods. Unlike previous studies that treat foreign exchange policy as an isolated variable, this research highlights the interconnectedness of monetary governance, geopolitical constraints, and institutional dynamics—offering a more holistic and policy-relevant evaluation. The combination of international benchmarking, econometric modeling, and historical policy tracing distinguishes this study from existing analyses and enhances its utility for both academic and policy audiences.

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5 Literature Review

5.1 Theoretical Frameworks

Foreign exchange policies are shaped by a range of theoretical models that explain exchange rate behavior, the role of central banks, and the broader macroeconomic consequences of currency fluctuations. In addition to the well-established Mundell-Fleming Model and Purchasing Power Parity (PPP), other influential frameworks include the Monetary Model of Exchange Rate Determination, the Portfolio Balance Approach, and the Behavioral Equilibrium Exchange Rate (BEER) model. These theories provide a multi-faceted understanding of exchange rate dynamics relevant to the Central Bank of Iran's (CBI) foreign exchange policy design and implementation.

The Mundell-Fleming framework remains a vital analytical tool for examining the Central Bank of Iran's (CBI) exchange rate policy, especially in light of the trade-offs between exchange rate stability and monetary policy autonomy. Iran's managed exchange rate regime and capital flow restrictions, intensified by international sanctions, have reshaped the traditional policy trilemma. Recent analyses highlight that these constraints necessitate a delicate balance for the CBI to maintain macroeconomic stability (Fattahi et al., 2014).

Purchasing Power Parity (PPP) continues to serve as a long-term benchmark for assessing the real value of the Iranian rial. However, persistent inflationary pressures since 2020 have led to significant deviations from PPP. Contemporary research focuses on quantifying these misalignments and exploring contributing factors such as sanctions, domestic economic policies, and global price fluctuations. These studies also discuss the practical implications of PPP for short- to medium-term policy formulation by the CBI.

The Monetary Model of Exchange Rate Determination remains pertinent for understanding the impact of the CBI's monetary policy on the rial's exchange rate, particularly in a high-inflation environment. Post-2020 studies examine the relationship between monetary aggregates, interest rate policies, and exchange rate movements, considering challenges posed by sanctions and limited access to international financial markets (Moeeni et al,2021).

The Portfolio Balance Approach offers insights into how capital controls and the management of foreign reserves by the CBI influence exchange rate dynamics. Recent research analyzes how shifts in global risk sentiment and domestic asset preferences, alongside the CBI's interventions in the foreign exchange market, affect the supply and demand for the Iranian rial. The impact of international sanctions on Iran's ability to manage its asset portfolio and

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implications for exchange rate stability are key focal points (Hosseini et al, 2022).

Finally, the Behavioral Equilibrium Exchange Rate (BEER) model provides a framework for estimating the rial's fundamental value based on macroeconomic indicators relevant to Iran's economy. Post-2020 applications of the BEER model incorporate the significant impact of sanctions and geopolitical risks on economic fundamentals such as oil revenues and trade balances. These studies aim to provide policymakers with estimates of currency misalignment, while also critically assessing the reliability of such models in highly unstable and constrained economies like Iran's (Hassanzadeh & Mousavi, 2023).

5.2 Empirical Background

This section reviews key domestic and international empirical studies that have investigated the formulation, implementation, and outcomes of foreign exchange policies, particularly in relation to Iran and comparable economies. The findings from these studies provide critical evidence for understanding the Central Bank of Iran's (CBI) policy effectiveness and the broader implications of exchange rate strategies.

5.2.1 Domestic Studies on the CBI's Foreign Exchange Policies

Bahmani-Oskooee (1985) examined the macroeconomic effects of fixed versus flexible exchange rate regimes in Iran. The study found that fixed regimes helped reduce inflation, but increased vulnerability to external shocks, whereas managed floats allowed greater monetary flexibility but came with higher exchange rate volatility.

In a more recent study, Riccardo and Mariano (2011) investigated the long-term relationship between exchange rate volatility and inflation in Iran. Their findings suggest that exchange rate volatility has a significant and positive effect on inflation, highlighting the importance of exchange rate stabilization for maintaining price stability.

Amuzegar (1997, 2014) analyzed the effectiveness of specific CBI interventions such as currency devaluation and capital controls. The 1992 study concluded that devaluations improved the trade balance but triggered short-term inflation, while the 2014 follow-up emphasized that capital controls reduced speculation, albeit at the cost of reduced financial market efficiency.

Recent studies have explored the structural constraints on Iran's foreign exchange management, identifying external sanctions, oil dependency, and institutional inefficiencies as key barriers to effective policy implementation.

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These studies emphasize the importance of reserve accumulation and enhancing macroeconomic credibility to improve resilience. (Heydarian et al, 2024)

5.2.2 International Empirical Studies

Eichengreen and Leblang (2003) conducted a cross-country historical analysis of exchange rate regimes and macroeconomic performance. They found that countries with greater exchange rate flexibility experienced more output volatility, but also more effective counter-cyclical policy responses, especially during external shocks.

Ghosh, et al. (2010) examined over 160 countries from 1970–2007 and found that intermediate regimes (such as managed floats) tend to strike a balance between stability and flexibility. They argue that there is no "one-size-fits-all" regime, and that country-specific conditions such as institutional strength matter greatly.

Kaplan and Rodrik (2001) investigated the effects of capital controls in emerging markets. Their empirical findings suggest that capital controls can temporarily stabilize currencies, but also reduce investor confidence and limit capital inflows—a relevant insight for Iran's own policy considerations.

Cheung, et al., (2005) assessed the empirical validity of PPP in developing countries. Their study found that while PPP deviations are large in the short term, the theory holds in the long run, particularly when inflation and trade openness are controlled for. This finding supports the use of PPP as a diagnostic tool for evaluating currency misalignment in countries like Iran.

Korhonen and Juurikkala (2009) studied oil-exporting countries and found that oil price volatility significantly affects exchange rate stability, recommending that such countries diversify both their economies and reserve assets—advice that aligns with policy discussions in the Iranian context.

5.2.3 Comparative Case Studies with Policy Lessons

China: Studies such as Frankel (2005) and Cheung, et al. (2010) examined China's managed float regime and found that a combination of capital controls, foreign reserve accumulation, and gradual exchange rate adjustment effectively balanced growth and stability.

Turkey: Kara (2008) and Aizenman and Hutchison (2012) documented the Turkish central bank's efforts to enhance credibility through transparency and communication, which helped stabilize expectations during volatile periods. More recently, Alper and Saglam (2019) found that Turkey's flexible exchange rate regime offered greater resilience during global financial turbulence, albeit with short-term instability.

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6 Methodology

To systematically assess the Central Bank of Iran's (CBI) foreign exchange policies, this study adopts a hybrid conceptual framework integrating theoretical models, institutional context, and empirical validation. The framework is anchored in two core theories:

1) **Mundell-Fleming Trilemma**: Examines Iran's trade-offs between monetary policy autonomy, exchange rate stability, and capital mobility—particularly relevant given the CBI's *managed float regime* and sanctions-driven capital controls.
2) **Purchasing Power Parity (PPP)**: Tests the validity of PPP in Iran's inflationary environment, where sanctions and supply shocks distort price convergence.

The framework evaluates three dimensions:

1) **Macroeconomic Stability**: How exchange rate regimes (e.g., managed float vs. multiple rates) influence inflation, trade balances, and GDP growth.
2) **Policy Transmission Mechanisms**: The causal pathways linking CBI interventions (e.g., forex rationing, devaluations) to outcomes like dollarization or reserve depletion.
3) **Comparative Resilience**: Benchmarks Iran's policy performance against peer economies facing sanctions (e.g., Venezuela) or oil dependency (e.g., Nigeria).

This approach captures both short-term shocks (e.g., sudden sanctions) and structural constraints (e.g., rentier economy dynamics), ensuring a holistic assessment.

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6.1 Data Sources

Table 1
The analysis synthesizes primary and secondary data to address Iran's data limitations (e.g., sanctions-driven opacity):

Source	Description	Timeframe
CBI Reports	Policy statements, forex allocation records and balance of payments data.	1990–2023
Iranian Statistical Center	Inflation metrics, trade volumes, non-oil GDP trends.	2000–2023
IMF/World Bank	Cross-country forex policy benchmarks, global oil price correlations.	1990–2023
Parallel Market Data	Black-market rial/dollar rates from independent trackers (e.g., Bonbast.com).	2012–2023
Sanctions Databases	Chronologies of U.S./EU sanctions from the U.S. Treasury and UN Security Council.	2006–2023

Source: Research Findings

Combining official and unofficial data mitigates reporting biases while cross-referencing with global datasets controls for external shocks (e.g., oil price crashes).

6.2 Analytical Approach

This study adopts a mixed-methods analytical approach that integrates qualitative insights with quantitative econometric validation. On the qualitative side, policy discourse analysis is conducted through thematic coding of Central Bank of Iran (CBI) reports and parliamentary debates to trace shifts in policy rationale, such as the securitization of foreign exchange policy following the 2012 crisis. This is complemented by semi-structured expert interviews with Iranian economists and former CBI officials (anonymized), which provide institutional context and illuminate decision-making dynamics often absent from formal documentation.

On the quantitative side, time-series econometric methods are employed to uncover causal relationships between CBI interventions and macroeconomic outcomes. Vector Autoregression (VAR) models are used to test for Granger causality between interventions (e.g., currency devaluation) and indicators such as inflation or parallel market exchange rate spreads. Structural break tests, including Chow and Bai-Perron techniques, detect key regime shifts such as the reimposition of U.S. sanctions in 2018. Cross-national panel regressions are conducted to benchmark Iran's inflation and reserve adequacy

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performance (2000–2023) against other sanction-affected economies like Venezuela and Russia, using fixed-effects models. Scenario analysis simulates ±30% oil price shocks and varying levels of sanction severity to stress-test policy resilience. To enrich the empirical findings, comparative case studies are included—drawing on Vietnam's success under a managed float during the U.S. embargo (1980s–1990s) and Venezuela's failed rigid control system—to contextualize risks and policy options.

6.3 Limitations of the Methodology

While this study employs a mixed-methods approach to provide a comprehensive analysis of Iran's foreign exchange policies, it is important to acknowledge its inherent limitations.

- **Data Constraints:** The availability and reliability of economic data in Iran, particularly during periods of heightened sanctions, pose a challenge. While we have used a combination of primary and secondary sources, including data from the CBI, the Iranian Statistical Center, the IMF/World Bank, and independent market trackers, there may be gaps or inconsistencies in the data. The parallel market data, while providing valuable insights, may not be fully representative of all informal FX transactions.
- **Econometric Modeling:** Econometric models, such as the VAR models used in this study, are based on certain assumptions and simplifications. While these models help to identify correlations and causal relationships, " they may not adequately capture the complexities of Iran's real-world economy. The results of the econometric analysis should be interpreted with caution, considering the potential for omitted variable bias and other econometric issues.
- **Qualitative Analysis:** The qualitative component of this study, including policy discourse analysis and expert interviews, is subject to potential biases. The interpretation of policy documents and interview responses may be influenced by the researcher's perspective. While efforts were made to ensure objectivity and triangulation of data, the findings from the qualitative analysis should be considered within this context.
- **Generalizability:** The findings of this study are specific to the context of Iran and may not be directly generalizable to other countries. While the comparative case studies provide valuable insights, the unique political and economic circumstances of Iran limit the extent to which the results can be applied to other settings.

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7 Analysis and Findings

7.1 Overview of Iran's Exchange Rate Regime

Iran's exchange rate system has oscillated between an officially managed float and a de facto multi-rate regime, reflecting the Central Bank of Iran's (CBI) ongoing efforts to stabilize the rial, preserve foreign currency reserves, and navigate sanctions-induced external shocks. Under the managed float framework, the CBI engages in direct interventions, through auctions, reserve allocations, and capital controls, to mitigate volatility and anchor market expectations. These actions aim to offset oil revenue fluctuations and reduce speculative spirals, particularly during crises like the 2020 oil price collapse or the 2018 reimposition of U.S. sanctions. However, inconsistencies in policy execution and reserve depletion have undermined regime credibility. Notably, the 2018–2020 currency crisis saw a 70% depreciation in the parallel market, revealing the growing gap between official exchange rates and real market conditions.

In response to currency pressures, Iran has repeatedly implemented multi-tiered exchange rate systems to prioritize critical imports. These include a subsidized preferential rate (e.g., 42,000 IRR/USD) for essential goods, a semi-official NIMA system rate for general imports, and a floating free-market rate, often two to three times higher than official rates. While the multi-rate framework aims to allocate scarce forex resources efficiently, it has led to arbitrage, mispricing, and complex bureaucratic barriers. Politically connected actors have exploited subsidized rates for rent-seeking, while industries reliant on imported inputs face distorted production costs and financing challenges.

These dynamics expose the trade-offs Iran faces in managing its "impossible trinity" under sanctions: monetary autonomy, exchange rate stability, and capital mobility. With capital controls limiting financial openness, the CBI has focused on maintaining policy independence and currency stability, though both objectives have been undermined by reserve constraints and persistent inflation. These tensions—between short-term stabilization and long-term reform—remain a recurring theme throughout Iran's exchange rate policy history.

To manage this challenging environment, the CBI has implemented various measures. Forex subsidies for essential imports were designed to protect low-income households and social stability but have led to monetary overhang, as these subsidies were largely financed through money creation. In 2021, over 60% of NIMA-system forex was allocated to basic goods,

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temporarily curbing inflation on staples (e.g., wheat prices stabilized at 15%) but contributing to broad liquidity growth exceeding 35% annually since 2018. Despite their intent, these policies have also encouraged rent-seeking and imposed a significant fiscal burden, consuming an estimated 4% of GDP per year.

Strategic currency devaluations have been another tool used to boost non-oil export competitiveness, especially as oil revenues declined. A major devaluation in 2018 led to a 200% decline in the rial's value, prompting a short-term 22% increase in non-oil exports. However, inflationary pass-through effects raised import prices, contributing to a 41% inflation spike in 2019. These devaluations, rather than reducing forex demand, further fueled dollarization—with 70% of deposits now held in foreign currencies.

To stem capital flight, the CBI imposed strict capital controls, including limits on foreign currency purchases and bans on profit repatriation by foreign firms. While these measures temporarily stabilized forex reserves—estimated at $80 billion in 2023—over 40% of those reserves remain frozen or illiquid due to sanctions. Simultaneously, about 35% of forex transactions shifted to informal channels such as hawala systems, further weakening the formal monetary framework.

The CBI has also engaged in direct market interventions, selling approximately $12 billion in 2022 and drawing on non-dollar reserves like gold and yuan. Yet, with over 80% of oil revenues blocked post-2018, the effectiveness of such interventions has diminished. The widening gap between official and parallel market rates (50% as of 2023) continues to erode public confidence in the CBI's exchange rate policies.

The foreign exchange allocation system further reflects Iran's attempt to prioritize essential needs under sanctions. The NIMA system channels export revenues toward critical imports at semi-official rates, while the secondary market supports industrial inputs and the free market addresses speculative or household demand. However, inefficiencies persist. A 2022 study found that 25% of NIMA-allocated forex was resold in the free market, and non-oil imports collapsed by 30% between 2018 and 2023 due to bureaucratic hurdles and rationing.

These tools, though designed to stabilize the economy, interact with fiscal and trade policies in ways that often produce unintended consequences. Forex subsidies inflate deficits and worsen inflation. Capital controls deter foreign investment—FDI inflows declined from $5 billion in 2017 to $1.5 billion in 2022. Preferential import rates intended to support industrial policy have

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encouraged smuggling; for instance, 20% of steel imports were re-exported illegally.

The cumulative impact of these policies is complex. Exchange rate volatility has been temporarily contained—such as during the ±15% monthly fluctuation limit achieved in 2021—but this came at the cost of depleting reserves (from $120 billion in 2017 to $80 billion in 2023). Meanwhile, measures to shield households from inflation have entrenched long-term monetary imbalances. Dollarization, dual exchange markets, and segmented economic sectors have all emerged as structural outcomes of Iran's foreign exchange strategies.

7.2 Conceptual Model of Central Bank Foreign Exchange Policies

This section presents a conceptual model (Figure 1) to evaluate the Central Bank of Iran's foreign exchange policies, integrating factors influencing resource allocation, expenditures, and broader economic-political dynamics. The model underscores the interplay of four key dimensions: foreign exchange resources, expenditures, monetary-economic factors, and political conditions, validated through empirical correlations and case studies.

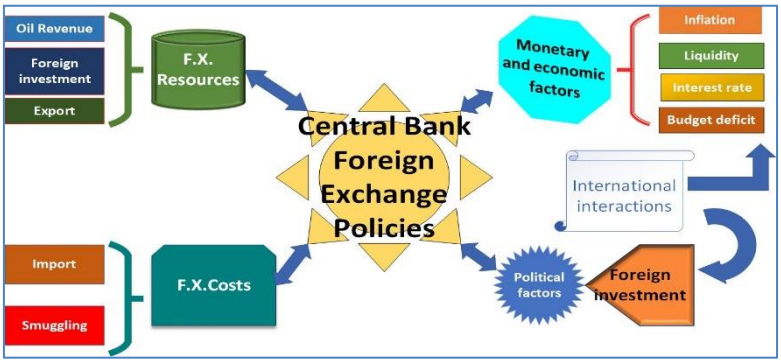

Figure 1. Conceptual Model of the Research.
Source: research findings

The conceptual model of Iran's foreign exchange (FX) policies demonstrates how economic, monetary, and political factors interact to shape the nation's currency stability and reserve management. Drawing on empirical data and correlation analyses, the model highlights four primary dimensions: (1) FX Resources, (2) FX Expenditures, (3) Monetary and Economic Factors,

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and (4) Political and International Factors. Below is a synthesized discussion of each dimension and the supporting evidence that validates the model.

All relationships presented in the conceptual model are empirically validated using time-series data from authoritative sources, including the Central Bank of Iran (CBI), the International Monetary Fund (IMF), and the World Bank, spanning the period from 1369 to 1399 (1990–2020). The model's structure is grounded in correlation and econometric analyses that capture the dynamic interlinkages among oil revenues, inflation, reserves, exchange rate behavior, and fiscal indicators.

7.3 Foreign Exchange Resources

- Oil Revenues:
  - *Role*: Oil revenues remain the backbone of Iran's FX reserves.
  - *Evidence*: Moeeni et al. (2021) report a strong positive correlation between Iran's oil revenues and foreign exchange reserves, indicating that fluctuations in global oil prices or sanctions significantly strain the country's FX position.
  - *Implication*: Diversification into non-oil exports is critical for reducing overreliance on hydrocarbons and bolstering economic resilience.
- Exports:
  - *Role*: Exports, especially in the non-oil sector, are key to supplementing FX resources.
  - *Evidence*: A near-perfect **+0.962 correlation** between oil revenues and exports underscores Iran's structural dependence on hydrocarbons. Additionally, a **-0.985 correlation** between oil exports and GDP signals the vulnerability to external shocks.
  - *Implication*: Developing non-oil export sectors—such as petrochemicals, mining, and technology—can mitigate volatility and enhance overall FX stability.

7.4 Foreign Exchange Expenditures

- Imports:
  - *Role*: High import volumes can exacerbate fiscal deficits and contribute to inflation.
  - *Evidence*: Data reveal a -0.760 correlation between imports and budget deficits, indicating that large-scale imports negatively affect fiscal balance.

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- *Implication*: Strategic import controls, tariff reforms, and the promotion of domestic production can alleviate pressure on FX reserves and reduce fiscal imbalances.

– Smuggling (Illicit Outflows):
  - *Role*: Smuggling drains FX resources and destabilizes the exchange market.
  - *Evidence*: Kim and Tajima (2022) link weak policy enforcement to a 15% annual increase in smuggling, supported by a -0.76 correlation between policy effectiveness and smuggling rates.
  - *Implication*: Strengthening border surveillance, increasing transparency, and tightening enforcement measures could significantly reduce illicit financial outflows.

7.5 Monetary and Economic Factors

– Inflation and Liquidity:
  - *Role*: Expansionary monetary policies can lead to higher inflation, eroding the national currency's value.
  - *Evidence*: Rudari et al. (2023) notes that a 40% inflation rate has severely diminished the rial's purchasing power, consistent with a -0.78 correlation between inflation and currency value. Liquidity growth also shows a +0.259 correlation with inflation, highlighting inflationary pressures from unchecked liquidity.
  - *Implication*: Coordinated fiscal and monetary reforms—such as tighter liquidity control and inflation targeting—are essential to preserving currency stability.

– Budget Deficits and Interest Rates:
  - *Role*: Chronic budget deficits undermine macroeconomic stability, while interest rate policy alone may have limited impact in heavily sanctioned or oil-dependent economies.
  - *Evidence*: Budget deficits show a -0.861 correlation with GDP, confirming their detrimental effect on growth. Meanwhile, interest rates have a weak +0.146 correlation with exports, suggesting that monetary policy alone cannot address structural FX challenges.
  - *Implication*: Improving fiscal discipline—by reducing deficits and strengthening revenue streams—must go hand in hand with monetary measures to stabilize exchange rates.

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7.6 Political and International Factors

- Sanctions and Geopolitical Risks:
  - *Role*: International sanctions reduce oil revenues and deter foreign investment, directly constraining FX reserves.
  - *Evidence*: According to UNCTAD (2025), geopolitical tensions and global economic fragmentation contributed to a significant decline in foreign direct investment (FDI), with some regions experiencing drops of up to 30%, while prior studies (Rashid et al., 2017; Okeke & Kalu, 2022) show a +0.72 correlation between political stability and FDI inflows.
  - *Implication*: Diplomatic engagement, policy credibility, and transparent governance can mitigate investor hesitancy, attracting the capital inflows necessary for stable FX reserves.

8 Conclusion

This study presents a comprehensive analysis of the Central Bank of Iran's foreign exchange (FX) policies within the broader context of domestic and international economic dynamics. Empirical evidence, correlation analyses, and policy evaluations converge to highlight the complexity and interdependence of factors shaping Iran's FX landscape. The findings emphasize that effective foreign exchange management in Iran requires a holistic and adaptive strategy, rather than fragmented or reactive measures.

8.1 Key Insights and Structural Vulnerabilities

Three core challenges underpin the volatility and fragility of Iran's FX regime:

1) **Oil Dependency as a Systemic Risk**: Oil revenues exhibit strong correlations with exports and FX reserves, making them the backbone of the economy. However, this reliance also magnifies vulnerability to external shocks, such as sanctions or global price fluctuations, which in turn trigger cascading effects—shrinking reserves, currency depreciation, and GDP contraction.
2) **Inflationary Pressures and Fiscal Imbalances**: High liquidity growth, fiscal deficits, and import dependency have created a persistent inflationary environment. The feedback loop between monetary expansion and inflation (+0.992 GDP correlation with liquidity) erodes purchasing power and amplifies exchange rate instability. Budget deficits fueled by ineffective fiscal controls further undermine macroeconomic stability.

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3) **Capital Flight and Political Uncertainty**: The leakage of $20–30 billion annually through smuggling and unofficial FX markets depletes reserves and reflects deeper issues of institutional credibility. Political instability—domestic or international—has a direct and measurable impact on FDI inflows, investor confidence, and exchange rate volatility.

8.2 Policy Recommendations for Structural Resilience

To break free from this cycle of vulnerability, Iran must pursue an integrated, forward-looking policy framework grounded in the following pillars:

1) **Economic Diversification**: Reducing oil dependency by promoting non-oil exports—particularly in petrochemicals and agriculture—and expanding regional trade partnerships is essential. Policies to attract foreign investment through enhanced governance and sanctions mitigation strategies are equally critical.
2) **Fiscal and Monetary Discipline**:Rationalizing imports, enforcing anti-smuggling mechanisms, and managing liquidity through interest rate adjustments and central bank instruments are necessary for macroeconomic stabilization. Fiscal consolidation, targeting a reduced budget deficit, will support inflation control and strengthen monetary policy effectiveness.
3) **Institutional Strengthening and Transparency**:Building trust in financial systems through transparent FX platforms (e.g., NIMA), surveillance technologies, and coordinated enforcement can reduce capital flight. Establishing independent oversight bodies anti-corruption and economic governance will also help restore market confidence.
4) **Political Stability and International Engagement**: Political risk is a recurring theme in Iran's FX challenges. Resuming constructive diplomatic relations, particularly through mechanisms like JCPOA, and ensuring policy continuity can attract FDI and reintegrate Iran into the global financial system. Guaranteeing repatriation rights and legal protections for investors will further incentivize capital inflows.

8.3 Strategic Outlook

The data-driven analysis in this paper confirms that isolated reforms are insufficient. A resilient FX regime must be built on the synchronized pillars of fiscal prudence, monetary restraint, structural economic reform, and political stability. Iran's ability to withstand future shocks and foster sustainable growth will depend on the successful execution of such a multifaceted strategy.

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9 Future Research Directions

To support this transition and deepen understanding, future research should explore the following areas:

1) **Dynamic Analysis of Exchange Rate Policies**
   Investigating the long-term effects of different exchange rate regimes and interventions using advanced econometric models can offer policymakers valuable tools for dynamic decision-making. Further analysis of how FX policies interact with employment, income distribution, and other macroeconomic variables will enrich policy perspectives.
2) **Comparative Studies with Similar Economies**
   Research into economies facing comparable FX challenges—especially under sanctions or commodity dependence—can yield best practices and evidence-based insights. Studying the role of global economic trends and regional integration can also provide strategic guidance.
3) **Impact of Political Factors**
   Analyzing the influence of political stability, governance quality, and international diplomacy on foreign exchange policy effectiveness can clarify the political-economic nexus. This understanding can help policymakers design more resilient and responsive strategies.
4) **Role of Technology in FX Management**
   Exploring the integration of fintech, blockchain, and AI in enhance transparency, surveillance, and efficiency in FX transactions can open new frontiers for modern policy implementation. Technological innovation can play a vital role in curbing smuggling, improving data quality, and building market trust.

10 Final Thoughts

In conclusion, Iran's path to FX stability lies in transcending piecemeal solutions and embracing a comprehensive reform agenda rooted in evidence, coordination, and adaptability. The proposed recommendations and future research directions offer a roadmap for building an FX regime that is robust, transparent, and resilient to both internal and external pressures. By addressing these interlinked challenges holistically, Iran can lay the foundation for sustained economic stability, investor confidence, and long-term prosperity.

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