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The Impact of Currency Suppression (Springback Pressure) on Exchange Rate Overshooting in Iran

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ABSTRACT

This study examines the consequences of currency suppression policies on exchange rate overshootings (EROs) in Iran, focusing on the country's exchange rate trajectory from 1959 to 2022. An Autoregressive Distributed Lag (ARDL) econometric model—covering short-run, long-run, and error-correction dynamics—is used to estimate the relationships among key variables, including monetary shocks, national output, fiscal policy, oil shocks, terms of trade, the openness index, and the inflation-exchange rate growth gap (used as a proxy for suppression). Findings indicate that while suppression may temporarily stabilize the currency, it leads to pressure accumulation—akin to a springback effect—that triggers sharp and abrupt EROs, especially under depleted reserves and mounting distortions. Persisting with fixed administrative rates increases economical uncertainty, weakens long-term investment incentives, raises inflation expectations, and undermines productive and export capacities. Limited openness index—particularly restrictions on trade and capital flows—has intensified the negative impacts of currency suppression by weakening market adjustment to external shocks. The study concludes that current policies require urgent reassessment. A transition to a managed floating regime, alongside greater central bank independence, increased policy transparency, structural production reforms, and reduced fiscal reliance on foreign exchange revenues, is essential. These reforms would promote sustainable exchange rate stability and enhance Iran's resilience to domestic and external economic shocks.

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1. Introduction

The exchange rate, which reflects the relative value of a country's national currency against those of other nations, is one of the most critical economic variables—particularly in the context of Iran's economy, where oil export revenues comprise a major share of foreign income and remain under the control of the state. As such, the exchange rate plays a pivotal role in shaping economic performance. It influences exports and imports, adjusts the trade balance and the balance of payments, and determines the international competitiveness of domestic producers. These dynamics, in turn, affect national production levels and employment. Moreover, the exchange rate exhibits a high degree of correlation with inflation, amplifying its significance for both policymakers and the public. For these reasons, the exchange rate stands as a central variable in Iran's political economy. The theory of exchange rate overshooting (ERO) was first introduced by Dornbusch (1982), who argued that targeting the real exchange rate influences both output and price stability through two main channels. On one hand, stabilizing the nominal and real exchange rates contributes to aggregate demand stability; on the other, the exchange rate affects price levels through the supply side—due to the effect of nominal exchange rate on prices via imported intermediate goods. In essence, Dornbusch maintained that adhering to an exchange rate rule can stabilize output while potentially undermining price stability.

One of the most significant factors contributing to EROs is the phenomenon of currency suppression, also referred to in this study as springback pressure. Iranian policymakers, aiming to create a predictable economic environment conducive to investment, have historically attempted to restrain exchange rate growth from keeping pace with inflation. While intended to stabilize the currency, these policies have often backfired—accumulating pressure on the exchange rate that eventually erupts in sharp devaluations, akin to the sudden release of a compressed spring. This study investigates the impact of such suppression mechanisms on exchange rate

volatility and sudden EROs. After identifying key determinants of exchange rate fluctuations—including the springback effect—the paper estimates a relevant econometric model, analyzes and interprets its results, and offers policy recommendations to mitigate the adverse consequences of EROs on economic sectors, investment, and production. In this study, after collecting quarterly data for the period 1959–2022, the stationarity of the variables was tested. Given the presence of both stationary (I(0)) and non-stationary (I(1)) variables in the model, as well as the results of the bounds test and the endogeneity test of the independent variables, a short-run, long-run, and error correction (ECM) version of the ARDL model was estimated and analyzed. The research consists of the following sections: Introduction, Theoretical Literature, Empirical Background, Research Methodology, Results Analysis, and Conclusion and Recommendations.

2. Theoretical Literature

In theoretical economics, the real exchange rate is often defined as the relative price of tradable goods compared with non-tradable goods. However, in most empirical studies, it is instead interpreted through the lens of Purchasing Power Parity (PPP), which describes the real exchange rate as the nominal exchange rate adjusted for the ratio of foreign to domestic price indices. The PPP framework is generally divided into two main versions: absolute PPP and relative PPP. The absolute form assumes frictionless international trade—meaning that domestic prices should equal foreign prices multiplied by the nominal exchange rate, expressed as:

$$E_t = p_t - p_t^* \quad (1)$$

where E_t is the logarithm of the nominal exchange rate (i.e., units of domestic currency per unit of foreign currency), p_t is the log of domestic prices, and p_t^* is the log of foreign prices. The second type, relative PPP,

presents a weaker version of the theory, positing that the exchange rate is a constant proportion of the ratio of domestic to foreign prices:

$$E_t = \alpha + p_t - p_t^* \quad (2)$$

Many economists, including MacDonald (2002), support this relative version—often referred to as the weak form of PPP—arguing that it holds in the long run and provides robust predictive power for the real exchange rate. Taylor (2002), for instance, using 100 years of data from over 20 countries, found empirical support for the long-run validity of relative PPP. Under the PPP framework, the real exchange rate in logarithmic terms q_t is defined as:

$$q_t = E_t - p_t + p_t^* \quad (3)$$

where p_t denotes the logarithm of the domestic general price index, p_t^* is the logarithm of the foreign general price index, and E_t represents the logarithm of the nominal exchange rate (the amount of domestic currency per unit of foreign currency). The price index for each country can be decomposed into a weighted average of tradable and non-tradable goods:

$$p_t = (1 - a)\, p_t^T + a p_t^{NT} \quad (4)$$

where p_t^T and p_t^{NT} are respectively the log price indices of tradable and non-tradable goods, and $(1 - a)$ and a are respectively their weights in the foreign country's price index basket.

Similarly, the foreign price index is expressed as:

$$p_t^* = (1 - b)\, p_t^{T^*} + b\, p_t^{NT^*} \quad (5)$$

where b and $(1 - b)$ represent the weights of non-tradable and tradable goods, respectively, in the foreign country's price index. By substituting the above relationships into Equation (3), the logarithm of the real exchange rate can be decomposed as follows:

$$q_t = \left(E_t + p_t^{T^*} - p_t^T\right) + b\left(p_t^{NT^*} - p_t^{T^*}\right) - a\left(p_t^{NT} - p_t^T\right) \quad (6)$$

By summarizing the above relationship, we have:

$$q_t = q_t^T + z_t \quad (7)$$

where $q_t^T = \left(E_t + p_t^{T^*} - p_t^T\right)$ denotes the real exchange rate based on the price index of tradable goods in the two countries, and $z_t = b\left(p_t^{NT^*} - p_t^{T^*}\right) - a\left(p_t^{NT} - p_t^T\right)$ represents the relative price differential between non-tradable and tradable goods in the two countries. This decomposition reveals that real exchange rate fluctuations stem from two main sources:

1. The relative prices of tradable goods between countries.
2. The relative price differential between non-tradable and tradable goods across countries.

Within this theoretical framework, assuming that purchasing power parity (PPP) holds in the long run, fluctuations in the real exchange rate are mainly attributed to differences in the relative price movements of tradable and non-tradable goods (Balassa, 1964; Samuelson, 1964).

In contrast, during periods when short-term deviations from PPP arise, nominal disturbances can generate fluctuations in the real exchange rate. Therefore, sticky-price exchange rate frameworks—like the Dornbusch model—are often considered more suitable for interpreting movements in the real exchange rate.

2-1. Determinants of EROs

Several macroeconomic variables contribute to exchange rate disequilibrium and the emergence of exchange rate overshooting (EROs). Among these are money supply, monetary disturbances, gross domestic product (GDP), terms of trade, oil revenues, government expenditure, trade openness, and the divergence between exchange rate and inflation growth rates—considered in

this study as an indicator of currency suppression. All of these variables are incorporated here as potential determinants of EROs. From a policy standpoint, the consequences of monetary disturbances can be examined within both stable and floating currency systems. Under a fixed exchange framework, an expansionary action—such as the central bank's acquisition of government bonds—drives domestic interest rates below those prevailing internationally. This differential triggers capital outflows, increasing the appetite for foreign money and generating upward pressure on the currency's value. To maintain the established parity, the monetary authority intervenes by offloading part of its foreign reserves. Such intervention tightens liquidity in the domestic market, restoring the balance of interest rates. Therefore, within fixed-rate systems, the stimulative effect of monetary expansion tends to be offset, as the loss of reserves counteracts the initial monetary easing. Under a flexible exchange rate system, however, expansionary monetary actions increase liquidity and affect expectations regarding future prices. The ensuing appreciation of the domestic currency discourages imports and stimulates exports, shifting the IS curve outward until domestic and world interest rates converge. At the new equilibrium, output expands while the interest rate remains stable. In this setting, balance is reestablished through adjustments in both output and money demand, while currency movements ensure equilibrium in the goods market (Krugman, Obstfeld, and Melitz, 2015). Earlier interpretations of balance-of-payments movements and exchange rate patterns—exemplified by the elasticity and absorption frameworks—mainly focused on real-side factors while considering monetary determinants. This viewpoint underwent a transformation toward the end of the 1960s, following the emergence of the monetary theory of the balance of payments. According to this view, a payments deficit arises when the supply of money exceeds its demand. Under a fixed exchange rate, such excess liquidity induces capital outflows; conversely, excess money demand results in capital inflows. These flows automatically correct imbalances by removing surpluses or deficits. In a flexible exchange rate context, an excess money

supply triggers depreciation of the domestic currency, reducing domestic prices and restoring external balance. Conversely, when money demand surpasses supply, currency appreciation generates a surplus, again reestablishing equilibrium (Taghavi and Mohammadi, 2011). Thus, any sustained deviation from market equilibrium inevitably manifests as an exchange rate adjustment (ERO). Fiscal policy is another critical factor influencing exchange rate dynamics. Changes in taxation and government spending alter aggregate demand, output composition, and income distribution. By managing fiscal instruments, policymakers aim to direct economic activity. The impact of increased public expenditure on the real exchange rate can be examined through two distinct channels:

1- When higher government spending targets tradable goods, internal balance remains relatively stable, but the trade balance deteriorates. This deterioration induces an upward adjustment in the nominal exchange rate, which translates into real appreciation. As the domestic currency strengthens, private consumption of tradable goods declines, partially mitigating the imbalance. However, this effect is often insufficient in economies with large public sectors, so greater spending on tradables generally induces an upward adjustment in the real exchange rate (Miyamoto, W. (2019)).

2- When fiscal allocations are predominantly channeled toward non-tradable sectors, relative valuations within the domestic economy shift, causing prices of non-tradable goods and services to escalate and the real value of the domestic currency to strengthen (Habermeier and Mesquita, 1999). The ensuing increase in non-tradable prices can suppress private absorption, thereby mitigating the overall expansionary impact. Accordingly, the eventual direction of real exchange rate movements—whether toward appreciation or depreciation—hinges on the relative magnitude and structural composition of aggregate demand. Oil revenues and oil price fluctuations also play a major role in shaping EROs. A rise in oil prices and corresponding revenue inflows expands liquidity and

purchasing power, boosting aggregate demand and domestic price levels. This process tends to reduce the real exchange rate. Additionally, larger oil revenues strengthen foreign reserves and increase the availability of foreign exchange, further appreciating the domestic currency (Khataie et al 2007). Changes in oil prices affect both oil-exporting and oil-importing economies through multiple channels. For importers, higher oil prices increase production costs—since oil is a key input—and reduce disposable income, thereby dampening consumption and investment. In contrast, for exporters, oil price hikes generate higher revenues that stimulate both production and demand. Given the significance of oil in these economies, such shocks generally enhance total output (Ebrahimi, 2011).

2-2. Theoretical Foundations of Financial (Currency) Repression

The term financial repression was initially coined by McKinnon (1973), who characterized it in the following manner:

In a financially repressed system, activities such as imports, the export of mineral resources, subsidized industrial products, operations of large multinational corporations, various government institutions, and even extraordinary fiscal deficits of the state absorb the limited financial resources derived from bank deposits. Consequently, other economic sectors must rely on insufficient resources provided by moneylenders, pawnbrokers, and cooperatives.

According to McKinnon's framework:

1. The government attains low-cost—or nearly costless—financing of its fiscal deficits by maintaining elevated money supply ratios, enforcing statutory reserve requirements, and mandating that the banking sector hold a portion of its assets in cash and government securities.
2. Since the state cannot easily access financing through the private sector under such mechanisms, the incentive to develop private bond markets or equivalent financial instruments diminishes.

3. To avoid competition with public sector funds channeled through private means—and to promote low-yielding investments—the government imposes interest rate ceilings on the banking system.

Denizer and Gueorguiev, 1998).conceptualize financial repression as an array of formal policy measures, regulatory limitations, and informal governmental interventions that collectively constrain the functioning of the financial sector. These mechanisms distort fundamental financial indicators—most notably interest and exchange rates—by diverting them from their market-determined equilibrium values, thereby undermining both the allocative efficiency and overall performance of financial intermediaries. The main tools of financial repression typically include elevated reserve requirements and administratively suppressed interest rates, reflecting a situation characterized by low returns on financial assets and high liquidity reserves. When effectively applied, these measures stimulate credit demand while simultaneously discouraging household and institutional savings. According to Stefano (2003), financial repression comprises a wide array of both domestic and external regulatory measures. On the domestic front, these policies include credit ceilings, interest rate controls, directed credit programs, high reserve requirements, elevated liquidity-to-deposit ratios (LDRs), and limitations on financial investments. External components consist of exclusionary policies, quantitative restrictions, and discriminatory taxation applied to holders of foreign financial assets. The primary objective of domestic financial repression policies is to lower real interest rates or even render them negative. Although such policies are often portrayed by governments as instruments for promoting economic growth, in practice they function mainly as mechanisms for financing fiscal deficits. Drawing on these definitions, financial repression can be understood as a condition in which the government enacts restrictive financial regulations that channel the resources of financial intermediaries at subsidized rates toward selected activities, fiscal deficit financing, and public institutions. This redirection undermines the optimal allocation of resources based on market-determined prices. In

essence, financial repression arises when the government inhibits the financial sector from functioning according to market logic and instead enforces non-price-based resource allocation. Since the foreign exchange market is a subset of the broader financial system, the government may intervene by setting or influencing the exchange rate. Such interference distorts the natural dynamics of the market. In contrast, if the government refrains from intervening—either through direct currency sales or other mechanisms—the exchange rate can adjust in tandem with inflation. However, due to persistent state intervention, the currency market in Iran has become subject to repression, causing the exchange rate to deviate from its equilibrium level. Over time, this leads to abrupt, sharp increases in the exchange rate—similar to a spring suddenly released under pressure. Accordingly, this study uses the term "springback pressure" as a conceptual proxy for currency suppression.

3. Literature Review

Nakhjavani (1993) interpreted exchange-rate behavior as the result of market-based interactions between foreign-currency supply and demand, with equilibrium established at their intersection point. Extending beyond traditional trade flows of exports and imports, he emphasized a range of additional determinants influencing exchange-rate fluctuations— including variations in relative price levels, interest-rate spreads, income dynamics, shifts in foreign investor perceptions, macroeconomic policy interventions in both the monetary and fiscal domains, and the underlying configuration of international trade. He also argued that policy instruments (for example, anti-inflation measures, and incentives to boost domestic production, and import controls) can affect exchange-rate behavior, although his empirical treatment of state intervention was limited. In an empirical study of Iran's parallel market spanning 1966–1995, Taghavi (1997) identified a set of determinants for the informal exchange rate. His analysis pointed to oil receipts, non-oil export performance, import volumes, the consumer-price index, national output, money supply, and the official exchange rate as important explanatory

variables, thereby highlighting the joint role of domestic and external factors. Sharifzadeh and Haghighat (2005) applied cointegration and time-series techniques (including Engle–Granger and Johansen procedures) on data from 1961–2000 to probe Iran's exchange-rate determinants. Their empirical evidence contradicted standard monetary predictions: money-supply growth did not show a reliable statistical association with exchange-rate movements, and both monetary theories and PPP appeared inapplicable in that context. While interest rates and government spending tended to place upward pressure on the exchange rate, the effects of oil prices, private investment, and GNI were mixed and sometimes inconsistent, reflecting Iran's particular economic structure. Sabbagh-Kermani and Shaghaghi-Shahri (2005) found that increases in budget deficits, improvements in terms of trade, and money supply expansion raised the real exchange rate, whereas higher import tariffs, growth in net foreign assets, and rising oil prices reduced it — underlining the notable influence of fiscal policy and external receipts on Iran's real exchange-rate dynamics. Najafi and Barghandan (2009) reported that government expenditure, in the short term,, capital inflows, and oil revenues tend to depress the real exchange rate, while openness raises it; their long-run estimates, however, indicated negative long-run effects for government spending, capital inflows, oil revenues and terms of trade, with global real interest rates and openness exerting positive long-term pressure. JalaeiEsfandabadi et al. (2010), using a monetary overshooting specification and neural networks, showed that monetary shocks can produce exchange-rate surges above equilibrium, and that such surges grow with greater exchange-rate flexibility. Research on financial repression by Taghavi and Shahvardiyani (2010) emphasized the need for careful measurement of repression indicators and concluded that stronger state intervention in financial markets is associated with weaker growth outcomes, suggesting an inverse relationship between financial repression and economic development. Applying the monetary approach to Iran's external sector, Taghavi and Mohammadi (2011) obtained monetary-model coefficients with expected

signs and statistical significance, yet noted that some core theoretical assumptions were not satisfied, which limited the model's full explanatory power; however, the monetary interpretation of balance-of-payments dynamics proved more robust. Using fuzzy-regression methods for 2002–2010, Asgharpour et al. (2013) reported public expenditure and economic productivity growth tended to raise the real exchange rate, whereas oil prices, currency-in-circulation, and trade-policy variables had negative or ambiguous impacts — the latter two estimated as interval effects because of imprecision. Sepahvand et al. (2014) found that, over the long run, GDP reduces the exchange rate while money supply and imports push it upward; interest rates and exports were statistically insignificant, but economic shocks exhibited a positive effect. Given the high long-run money-supply elasticity, they suggested contractionary monetary policy as a stabilizing avenue. Manafi Anvar et al. (2015), utilizing a Vector Autoregression (VAR) model covering the 1979–2013 period, identified that oil revenues, monetary expansion, and real output exerted positive short-term impacts on the real exchange rate, whereas fiscal imbalances produced a negative short-run effect. Over the longer horizon, both oil income and budgetary deficits were associated with a decline in the real exchange rate, while money supply and GDP maintained positive correlations. A sustained appreciation of the real exchange rate—accompanied by currency depreciation—was further linked to a deterioration in external competitiveness. Moayeri et al. (2016) incorporated identified monetary shocks (via HP filtering) into extended Solow-type production functions and panel estimations, finding that monetary EROs negatively affected major Iranian economic sectors between 1989 and 2012. Bordbar et al. (2019) used a panel of Iran and selected OECD countries (1991–2012) to compare drivers of exchange-rate overshootings. Their results suggested divergent patterns: in oil-importing economies government spending, expectations, and both monetary and oil shocks amplified EROs, whereas for oil-exporting countries balance-of-payments positions and oil shocks had an attenuating effect.

Abdi Seyedkalaei (2020) applied system GMM to assess how financial repression influences bank profitability in Iran (2011–2017), finding a small but statistically meaningful negative effect of repression on bank profit margins — driven by lower deposit accumulation and reduced lending capacity. Aghamiri et al. (2021), adopting a post-Keynesian lens and VAR analysis for 1971–2019, identified three long-run relationships at conventional significance levels and highlighted the price level, net exports, and interest rates as principal contributors to Iran's exchange-rate increases, stressing the importance of demand-side forces and structural features. Goodarzi Farahani and Adeli (2022), using quarterly data (1989–2020) and GMM together with HP-filtered ERO measures, found that monetary policy actions tend to amplify EROs — particularly under floating regimes — while output gaps dampen and inflation deviations amplify real-exchange-rate departures. Shojaei et al. (2023) combined GARCH modeling and simultaneous-equation systems for 1988–2018 to show that exchange-rate volatility disproportionately harms industry and mining, and that overall volatility reduces aggregate growth especially in sectors dependent on imported inputs. Cross-country and historical studies further document heterogeneous determinants of real-exchange-rate behavior. Stockman (1988) stressed the regime-dependence of real-rate variability, with floating systems exhibiting stronger effects; Levin (1987) used Dornbusch-style logic to link policy-induced trade delays to EROs; Edwards (1989) explored fundamentals driving official–parallel deviations and growth consequences in developing countries. Country studies — e.g., Zettelmeyer (2003) for Chile–U.S., and Nguyen (2007) for Vietnam — generally find that trade performance, public consumption and investment, and interest-rate shifts are important drivers, though outcomes vary by institutional context and model choice. Reexaminations of overshooting theory (Herault et al., 2004; Tu and Feng, 2009) and empirical applications (Bjørnland, 2009; Wang, 2013; Chaudhuri et al., 2016) reaffirm that nominal interest differentials, price stickiness and openness jointly determine short- and long-run exchange-rate dynamics, while recent empirical contributions from MENA and other regions (Ahmed, 2020;

Seddiqhi et al., 2023; Ben Ali, 2024; Nour and Fahmy, 2024; Ibrahim et al., 2024) and country-level ARDL/ECM studies (Mave, 2020; Alkazemi, 2024; Souza et al., 2024) continue to emphasize a mix of monetary, structural and external drivers — notably money supply, openness, oil revenues, government debt and terms of trade — with the sign and magnitude of these effects depending on whether a country exports or imports commodities, its policy regime, and the timeframe considered.

4. Research Method

4-1. Currency Suppression Variable

The term "financial repression" has been employed in the literature by McKinnon and Shaw (1973), McKinnon (1981, 1990), Hoslag and Ko (1999), Denizer et al. (1998), Roubini and Sala (1999), Kletzer and Kohil (2001), Battilossi (2003), Gupta (2005), Lardy (2008), Singh (2008), Du, Lu, and Tao (2008), He and Torui (2009), and Gupta and Ziramata (2010). Financial repression denotes a framework of formally instituted policies, legal provisions, regulatory measures, and informal governmental interventions that constrain the financial system by distorting key financial variables—such as interest and exchange rates—away from their market-determined equilibrium levels. Such distortions hinder financial institutions from functioning efficiently and utilizing their full operational capacity (Denizer et al., 1998). Opposite to the notion of financial repression is financial development, which entails the provision of necessary infrastructure enabling financial variables to move toward their equilibrium levels and has a direct relationship with economic growth. Thus, financial development implies non-intervention by the government and the establishment of infrastructure conducive to economic growth. Conversely, financial repression signifies government intervention—either by ignoring existing rules and regulations or by instituting new ones—to exert greater control over financial markets. Such interventions include creating barriers to foreign exchange supply or demand or any measures preventing market forces from reaching equilibrium values for financial

variables. Any restrictions imposed on the legal reserve ratio, liquidity held by the government, bond issuance, tax rates, interest rates, mandatory credit allocations, exchange rates, and capital accounts contribute to financial repression. Gupta (2005) highlights that, akin to interest rate repression—where the government sets an interest rate ceiling different from the market equilibrium—exchange rate repression constitutes a key component of financial repression by similarly distorting a crucial financial variable. According to the flexible-price monetary theory—a monetary model with flexible exchange rates based on three principles: PPP, money supply, and money demand—the following relationship holds (Cassel, 1918; Dornbusch, 1976; Taghavi et al., 2011; Khajeh Mohammadi and Mani, 2020):

$$R_t = (M - M^*)(t) - \alpha(Y - Y^*)(t) + \beta(r - r^*)(t) \qquad (8)$$

where R_t, M_t, Y_t and r_t represent the exchange rate, money supply, national output, and domestic interest rate for Iran, respectively, and variables with an asterisk (*) correspond to the foreign country (the United States). Neglecting interest rate growth and output growth—given their minimal changes compared to domestic money supply growth—and considering the proportional relationship between money supply growth and inflation (price index growth), studies by Lucas (1980), Benati (2005), and Surico (2008) demonstrate long-run comovements between money supply growth and inflation. Therefore, exchange rate growth can be considered proportional to the inflation rate. If the government intervenes in the foreign exchange market to prevent exchange rate growth from matching inflation, this results in financial repression, more precisely currency suppression. This condition generates a springback pressure on the exchange rate, which accumulates over several years and ultimately leads to a sudden and sharp overshooting in the exchange rate, often described in economic literature as a currency shock. Based on these considerations, the currency suppression index (springback pressure) for Iran is defined as follows:

Cumulative Exchange Rate Growth - Cumulative Inflation Growth = Currency Suppression

$$\mathrm{CSt} = \mathrm{lnrinflation(t)} - \mathrm{lnrexchange(t)} \quad (9)$$

$$\mathrm{lnrinflation(t)} = \ln\left(\frac{\mathrm{inflation(t)}}{\mathrm{inflation(1959)}}\right) \quad (10)$$

$$\mathrm{lnrexchang(t)} = \ln\left(\frac{\mathrm{exchange(t)}}{\mathrm{exchange(1959)}}\right) \quad (11)$$

Where inflation (t) denotes the price index in year t, inflation(1959) is the price index in 1959, exchange(t) represents the exchange rate in year t, and exchange(1959) is the exchange rate in 1959. Given that the base year for logarithmic calculation of accumulated growth is 1959, when inflation growth equals exchange rate growth, no currency suppression exists. However, when inflation growth exceeds exchange rate growth, springback pressure increases, indicating currency suppression. Since the foreign exchange market is a type of financial market where the government can intervene by setting or influencing the exchange rate, government interference distorts the free foreign exchange market. If the government refrains from intervention, the exchange rate can grow in line with inflation. Thus, government intervention in Iran's foreign exchange market causes the exchange rate to deviate from equilibrium, accumulating pressures that eventually cause abrupt EROs akin to a released spring. Therefore, this study uses the term springback pressure as synonymous with currency suppression.

4-2. ERO Variable

Within Dornbusch's analytical framework, the phenomenon of exchange-rate overshooting emerges in a small open economy that features perfect capital mobility, a flexible exchange-rate system, and short-run price stickiness in the goods market. When the central bank implements an unanticipated monetary expansion, domestic interest rates fall, causing an immediate and excessive appreciation of the nominal exchange rate beyond its long-run equilibrium

level. Subsequently, as prices in the goods sector adjust upward, the real money surplus dissipates, leading interest rates and the exchange rate to move downward. In the end, the exchange rate settles at a new equilibrium that remains higher than its level prior to the monetary expansion. Hence, whenever the exchange rate experiences a sudden growth exceeding that of the money supply, an ERO occurs. The overshooting index is defined as:

Cumulative Liquidity Growth - Cumulative Exchange Rate Growth = ERO

$$\mathrm{Erj(t)} = \mathrm{lnrexchange(t)} - \mathrm{lnrmoney(t)} \quad (12)$$

$$\mathrm{lnrmoney(t)} = \ln\left(\frac{\mathrm{money(t)}}{\mathrm{money(1959)}}\right) \quad (13)$$

$$\mathrm{lnrexchange(t)} = \ln\left(\frac{\mathrm{exchange(t)}}{\mathrm{exchange(1959)}}\right) \quad (14)$$

Where money (t) denotes the money supply in year t, and money is the money supply in the base year 1997; exchange(t) represents the exchange rate in year t, and exchange(1959) is the exchange rate in 1959. The base year for calculating cumulative growth in logarithmic form is 1959. According to the economic literature in the field of international trade and previous empirical studies—such as Goldberg and Klein (1997), Frankel (2007), Ben et al. (2010), multiple factors influence the exchange rate and EROs. The main factors include interest rates, net exports, inflation, money supply, gold prices, budget deficits, GDP, foreign investment, external debt, foreign reserves, terms of trade, oil exports, government expenditure, openness index, and financial development or repression. Mathematically, the exchange rate can be represented as a function of these underlying variables. Since exchange rate control is considered a manifestation of financial repression—an element that runs counter to financial development—this research includes currency suppression as a principal indicator of financial repression influencing exchange rate dynamics..

5. Results Analysis

5-1- Determining the Research Model

5-1-1- Testing the Stationarity of Variables

Examining the stationarity of time series variables is a crucial prerequisite in econometric studies, as non-stationary variables can be permanently affected by random shocks. In other words, if a shock impacts a non-stationary variable, the level of that variable deviates persistently from its long-term trajectory and does not revert to its original path. This characteristic is commonly observed in many macroeconomic data series, particularly those exhibiting trends. If variables are non-stationary, conventional methods such as Ordinary Least Squares (OLS) regression can yield misleading results, as the t and F test statistics may not be valid, potentially leading to spurious regression outcomes (Noferesti, 1999).

Before proceeding with model estimation, it is crucial to verify the stationarity properties of the variables. To accomplish this, the Augmented Dickey–Fuller (ADF) test is employed to determine the presence of unit roots within the time series. In this context, the null hypothesis assumes that a unit root exists—implying non-stationarity—while the alternative hypothesis suggests stationarity of the series. The empirical findings derived from these unit-root tests are presented in Table 1.

Table 1. Assessment of Variable Stationarity Using the Augmented Dickey–Fuller (ADF) Test

Variable	Test Statistic	Significance Level	Test Result
ERO	-0.2393	0.92	Non-stationary
Currecy Suppression	-3.7821	0.0087	Stationary
Money Supply	-2.15	0.2254	Non-stationary
GDP at Constant Prices	0.42	0.6703	Non-stationary
Terms of Trade	-1.84	0.3530	Non-stationary
Oil Exports	-1.86	0.3439	Non-stationary
Government Expenditure	-1.16	0.6794	Non-stationary
Openness index	-1.74	0.4011	Non-stationary

Source: Research findings

According to the unit root test results, the currency suppression variable is stationary, whereas the other variables are non-stationary. When a shock occurs to any of the non-stationary variables in this study, their values do not revert to long-term equilibrium and exhibit unstable behavior. Given the coexistence of stationary and non-stationary variables in the present research, and to avoid spurious regression while selecting an appropriate model, endogeneity tests and the ARDL bounds test were subsequently applied.

5-1-2. Examination of Endogeneity

A fundamental aspect of regression analysis concerns the exogeneity of the explanatory variables. When an explanatory variable exhibits a significant correlation with the model's disturbance term, it is deemed endogenous. In the presence of endogeneity, applying Ordinary Least Squares (OLS) within a single-equation specification yields biased and inconsistent parameter estimates.To address this concern, formal endogeneity diagnostics are conducted. In these tests, the null hypothesis posits that the variable is exogenous, whereas rejection of the null indicates endogeneity. When the associated p-value is greater than 0.05, the null cannot be rejected, suggesting that the variable is exogenous. The corresponding test results for the model's variables are summarized in Table 2.

Table 2. Endogeneity test of model variables (Durbin-Wu-Hausman Test)

Variable	Test Statistic	Probability Level (p-value)	Test Result (Null Hypothesis: Endogeneity)
Currency Suppression	14.12	0.0022	Rejected
Money Supply	9.35	0.0022	Rejected
GDP at Constant Prices	20.96	0.0000	Rejected
Terms of Trade	28.15	0.0000	Rejected
Oil Exports	31.75	0.0000	Rejected
Government Expenditure	12.85	0.0003	Rejected
Openness index	10.10	0.0015	Rejected

Source: Research findings

5-1-3. The Research Model

Drawing upon a range of empirical studies that investigate the determinants of exchange rate movements in Iran—spanning Post-Keynesian analyses, assessments of parallel-market exchange rate spreads, real exchange rate behavior, general price dynamics, exchange rate pass-through (ERPT) mechanisms, evaluations of exchange rate misalignment and its implications for growth, and the effects of financial repression and macroeconomic development on banking sector profitability—the evidence highlights several key explanatory variables. Among the most influential are interest rates, trade balance (net exports), gross domestic product (GDP), financial repression, consumer price index (CPI), money supply, fiscal deficits, real investment, external indebtedness, foreign reserves, terms of trade, oil export revenues, government expenditure, and the degree of economic openness. In this study, considering the focus on EROs and their determinants, the currency suppression variable—derived from financial repression indices—is included as a key explanatory factor for EROs. After estimating and evaluating various model specifications, the final research model is specified as follows:

$$Erj_t = f(CS_t.\, m_t.\, gdp_t.\, tot_t.\, exo_t.\, g_t.\, open_t) \quad (15)$$

$$Erj_t = a0 + a1Cs_t + a2m_t + a3gdp_t + a4tot_t + a5exo_t + a6g_t + a7open_t \quad (16)$$

Where:

- Erj_t: Exchange rate overshooting (ERO)
- CS_t: Currency suppression
- m_t: Money supply
- gdp_t: GDP at constant prices
- tot_t: Terms of trade
- exo_t: Oil exports
- g_t: Government expenditures at constant prices
- $open_t$: Openness index

The ERO serves as an index for measuring sudden fluctuations in the exchange rate and the gap between the growth rates of the exchange rate and money supply. Currency suppression arises from policies that prevent the exchange rate from adjusting freely according to market forces, and it is conceptually represented by the gap between exchange rate growth and inflation growth. The terms of trade refer to the ratio of exports to imports, indicating the country's export capacity and foreign exchange–earning potential. The degree of economic openness reflects the share of exports and imports in total economic output and illustrates the extent of integration with the global economy. To assess the impact of currency suppression on EROs, the model is first introduced and subsequently estimated using appropriate econometric methods. Since the model contains a mix of I(0) and I(1) variables and, based on the endogeneity test results, the variables are not endogenous, the ARDL model was selected as the appropriate specification following the Bounds test.

5-2-Interpretation of Estimation Results

5-2-1. Classical Assumptions

Prior to interpreting the model estimation results, classical assumption tests and structural stability checks are conducted to ensure the validity of the regression model.

5-2-1-1-. Residuals Normality Test

The findings from the residual normality examination are presented in Table 3.

Table 3. Residuals Normality Test

Jarque-Bera Test Statistic	Significance Level	Test Result
15.10	0.0005	Rejected

Source: Research findings

The results indicate that the assumption of normality is rejected, implying that the residuals do not conform to a normal distribution..

5-2-1-2. Residual Autocorrelation Test

As reported in the table below, the results of the residual autocorrelation test confirm the null hypothesis, indicating the absence of serial correlation among the residuals.

Table 4. Residual Autocorrelation Test

Test Statistic (F)	Significance Level	Test Result
1.89	0.1719	Accepted

Source: Research findings

5-2-1-3. Residual Heteroskedasticity Test

The outcomes of the heteroskedasticity diagnostic, summarized in the following table, confirm the null hypothesis of homoskedasticity, suggesting that the residuals exhibit constant variance with no signs of heteroskedasticity.

Table 5. Residual Heteroskedasticity Test

Test Statistic (F)	Significance Level	Test Result
0.018	0.8937	Accepted

Source: Research findings

5-2-1-4 Structural Stability Test (CUSUM)

The structural stability of the estimated model is examined through the CUSUM (Cumulative Sum) test, which is derived from the cumulative behavior of the model's residuals. The corresponding figure illustrates the evolution of cumulative residuals over time together with the 95% confidence limits. A crossing of the cumulative sum line beyond these critical bounds would indicate structural instability. In contrast, the plotted CUSUM line remains entirely within the confidence bands, implying that the model parameters are structurally stable throughout the sample period.

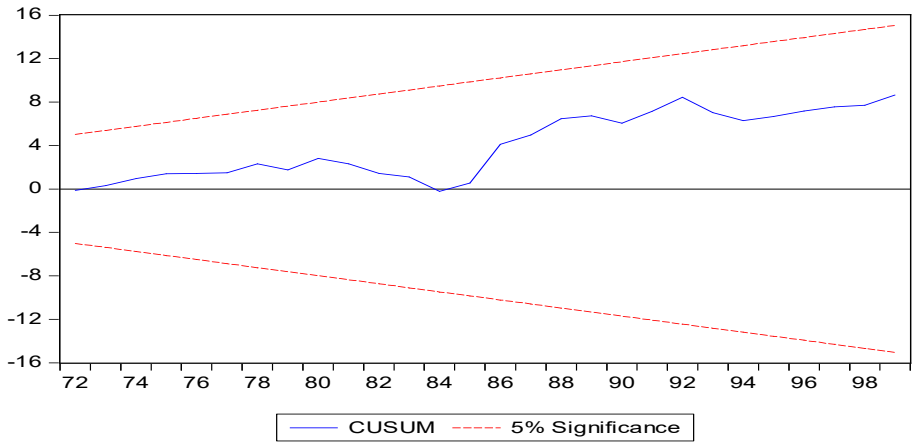

Fig 1. Structural Stability Test (CUSUM)

Source: Research findings

5-2-2- Interpretation of Estimation Results

To apply the ARDL and ECM models for estimation, the appropriate lags for the model variables must be determined based on the Akaike Information Criterion (AIC). This procedure was carried out using EViews software, and the results are presented below.

a. Estimation of the Short-Run ARDL Model

The coefficients of the ARDL model were estimated using the time-series data for the model variables over the period 1959–2022. According to the AIC, the optimal lag structure was determined to be ARDL(1,1,2,3,3,4,4,4) with an AIC value of 6.93. The estimation results are summarized in Table (6) below.

Table 6. Estimated coefficients of the model

Row	Variable	Coefficients	Significance Level
1	ERO(-1)	0.508679	0.0003
2	CS	-0.722541	0.0000
3	CS(-1)	0.459538	0.0035
4	M	0.000011	0.0357

Row	Variable	Coefficients	Significance Level
5	M(-1)	-0.000021	0.0645
6	M(-2)	0.000007	0.2915
7	GDP	0.000025	0.2077
8	GDP(-1)	-0.00356	0.1833
9	GDP(-2)	0.000020	0.4479
10	GDP(-3)	-0.000049	0.0399
11	TOT	0.038415	0.5193
12	TOT(-1)	-0.038759	0.6261
13	TOT(-2)	-0.003073	0.9679
14	TOT(-3)	-0.108965	0.0836
15	EXO	-0.000038	0.7867
16	EXO(-1)	-0.000154	0.3569
17	EXO(-2)	0.05044	0.7930
18	EXO(-3)	-0.000031	0.8725
19	EXO(-4)	0.000332	0.0465
20	G	-0.005875	0.0001
21	G(-1)	-0.000064	0.9631
22	G(-2)	-0.000247	0.8502
23	G(-3)	0.002362	0.0741
24	G(-4)	-0.004328	0.0012
25	OPEN	0.506821	0.0832
26	OPEN(-1)	-0.061363	0.8744
27	OPEN(-2)	0.140771	0.6983
28	OPEN(-3)	-0.800195	0.0334
29	OPEN(-4)	0.917721	0.0059
30	C	-6.944959	0.5481

Source: Research findings

The effects of explanatory variables on the dependent variable in the ARDL model can be categorized into two types: immediate (contemporaneous) effects and lagged effects. **Immediate Effect:** This refers to the influence of the explanatory variable in the current period (t) on the dependent variable in the same period(t). In other words, the changes (derivative) of the dependent variable y_t with respect to the changes (derivative) of the explanatory variable x_{it}—where i denotes the number of

explanatory variables—represents the immediate effect.

Lagged Effect: This refers to the influence of the explanatory variable from one or two or k previous periods $(t - k)$ on the dependent variable in the current period (t). That is, the derivative of the dependent variable y_t with respect to the explanatory variable x_{t-K} captures the lagged effect. The coefficient of EROs from the previous period is estimated at 0.5087, suggesting that a one percent increase in the previous period's currency shock leads to a 0.5087 percent increase in the current period's currency shock. Thus, a portion of the increase in EROs in the current period stems from changes in explanatory variables via the channel of lagged EROs. The results illustrate the dynamic behavior of the ERO variable. Whenever any of the independent variables in the model induce changes in the ERO, part of these effects—due to the dynamic structure—carry over into the following period, thereby contributing to further increases in the EROs. Currency suppression exhibits both immediate and lagged effects on EROs. In other words, an increase (or decrease) in currency suppression partly affects EROs immediately and partly with a delay (in subsequent periods). The immediate and lagged effects of currency suppression on EROs are estimated at -0.7225 and 0.4595, respectively. These results indicate the following:

First, as expected, the immediate effect is stronger than the lagged effect. Second, while the immediate effect is negative, the lagged effect is positive. This suggests that greater currency suppression—where policymakers artificially constrain exchange rate movements through market intervention—leads to a decrease in EROs during the same period. In other words, intensifying suppression policies mitigates currency volatility in the short run. However, despite the policymaker's ability to restrain EROs through suppression in the current period, the foreign exchange market reacts to such interventions with a delay, eventually neutralizing a significant portion of their effects. This phenomenon, akin to the "springback pressure" mechanism, implies that suppressed tension in the spring is eventually released, exerting upward pressure on the exchange rate. Specifically, a one percent increase in

suppression leads to a 0.7225 percent decrease in the current period's ERO, but in the subsequent period, part of this suppression backfires, increasing the ERO by 0.4595 percent. Money supply, like currency suppression, has both immediate and lagged effects on EROs. Therefore, an increase (or decrease) in money supply partially affects EROs in the same period and partially in subsequent periods. The immediate and lagged effects of money supply on EROs are estimated at 0.000011 and -0.000021, respectively. Hence, money supply growth initially contributes to heightened EROs, while a portion of its impact is transferred to the next period. However, unlike the immediate effect, the lagged impact of money supply growth tends to reduce the magnitude of EROs, thereby moderating excessive fluctuations in the foreign exchange market. This moderating effect helps prevent extreme volatility and turbulence in the currency market. The immediate effect of real GDP (at constant prices) on EROs is statistically insignificant. Only the lagged effect (from three periods prior) shows significance. Specifically, an increase in real GDP at constant prices affects EROs with a three-period delay—as expected due to the strengthening of the national currency—is negative and estimated at -0.000049. In practical terms, a one-unit increase in real GDP (three periods ago) results in a one percent decrease in the current period's ERO. The results also indicate that the positive impact of national output growth (RGDP) is transmitted slowly to the ERO variable; therefore, the stabilizing influence of economic growth appears with a time lag.Similar to the GDP, the immediate effect of the terms of trade is not statistically significant; only its lagged effect (three periods earlier) is significant in explaining EROs. Specifically, an improvement in the terms of trade, with a delay of three periods, influences monetary-driven exchange rate surges. As expected—due to increased exports followed by higher foreign exchange supply—this effect is negative and equals 0.11.

Although the immediate effect of oil exports—due to an increase in foreign exchange supply—is expectedly negative, it is statistically insignificant in the current period. In contrast, the lagged effect (from four periods prior) is

significant. An increase in oil exports affects EROs after four periods, largely due to the surge in imports enabled by accumulated reserves from previous oil export growth. The estimated coefficient is 0.00033, implying that each additional unit increase in oil exports eventually leads to a 0.00033 percent rise in EROs. Despite the fact that a large share of Iran's foreign exchange resources during the study period originated from oil exports, the inefficient management of these resources prevented oil revenue increases from achieving timely stabilization of the ERO. Over time, the accumulation of mismanaged inflows instead contributed to further escalation of EROs.

Real government expenditures, akin to currency suppression and money supply, exert both immediate and lagged effects on EROs and are among the key influencing variables. Thus, any increase (or decrease) in government expenditure affects EROs both contemporaneously in the current period and with a delay in the next periods. The immediate effect is estimated at -0.0059, while the lagged effects (from three and four periods prior) are 0.0024 and -0.0043, respectively. The openness index also exerts both immediate and lagged effects on EROs. Accordingly, changes in openness influence EROs in both the current and subsequent periods. The immediate effect is positive and estimated at 0.51, as expected. The lagged effects (from three and four periods prior) are -0.80 and 0.92, respectively. This indicates that during periods of more liberal trade policies, EROs were relatively higher. However, due to the negative lagged effect from three periods prior, part of the ERO associated with increased openness is eventually neutralized and moderated. Moreover, the findings reveal that the government's foreign trade promotion policies during the period under study were ineffective. They failed to provide the necessary conditions for exchange market stability and, in most cases, contributed to greater EROs.

b. Estimation of the Long-Run ARDL Model

To verify the existence of a long-run relationship among the model's variables, the bounds test was employed. The results are summarized in Table (7).

Table 7. The results of bounds test

Test Statistic	I(0) Critical Value (1%)	I(1) Critical Value (1%)	Result
4.86	2.73	3.90	Reject Null Hypothesis: Long-run relationship exists

Source: Research findings

Since the calculated F-statistic (4.86) exceeds the critical values of I(0) and I(1) at the 1% level, the null hypothesis of no long-run relationship is rejected. Thus, a long-run cointegration relationship exists among the variables, some of which are integrated of order zero I(0) and others of order one I(1). The estimated long-run ARDL model results are presented in Table (8).

Table 8. Long-Run ARDL Estimation Results

Row	Coefficients	Coefficient Value	Probability Level
1	CS	-0.535298	0.0504
2	M	-0.000005	0.1329
3	Rgdp	-0.000080	0.0043
4	Tot	-0.228735	0.0270
5	Exo	0.000330	0.3555
6	Rg	-0.016592	0.0010
7	Open	1.432374	0.0714
8	C	-14.13529	0.5525

Source: Research findings

In the long-run model, the effect of an explanatory variable on the dependent variable is known as the long-run effect. Specifically, in an ARDL model, if the lagged values of both the explanatory variables and the dependent variable are replaced by their current values—a substitution justified by the fact that the current and lagged values of a variable are equal in the long-run steady state—we derive the long-run model. Consequently, the current period values of all variables are present in this resulting model. As

expected, in the long run, the effect of currency suppression on EROs is negative—a one-unit increase in currency suppression reduces EROs by approximately 0.5353 units. However, since the lagged term of the suppression variable is not present in the long-run model, the springback pressure phenomenon—where accumulated pressure leads to a sudden surge in the exchange rate in subsequent periods—cannot be observed here. In this period, the long-run relationship between real GDP and the ERO is inverse, as robust GDP growth strengthens the national currency and moderates exchange rate increases through price stabilization and lower inflation. Similarly, the terms of trade variable exhibits a negative relationship with the ERO in the long run, consistent with the idea that stronger export performance and higher foreign exchange earnings help stabilize the currency. Government expenditures also show a negative long-run effect. By contrast, the degree of economic openness exerts a positive long-run effect on exchange rate shocks, as the expansion of trade and foreign transactions increases the demand for foreign currencies.

c. Estimation of the Error Correction Model (ECM)

To examine the short-run dynamics and the speed of adjustment toward long-run equilibrium among the model's variables, the error correction model (ECM) was estimated. The results are presented in Table (9).

Table 9. Error Correction Model (ECM) Estimation Results

Row	Coefficients	Coefficient Value	Probability Level (P-value)
1	D(CS)	-0.722541	0.0000
2	D(m)	-0.000012	0.0036
3	D(m(-1))	-0.000007	0.1674
4	D(rgdp)	0.000025	0.0855
5	D(rgdp(-1))	0.000029	0.0833
6	D(rgdp(-2))	0.000049	0.0050
7	D(tot)	0.038415	0.3712
8	D(tot(-1))	0.112039	0.0274

Row	Coefficients	Coefficient Value	Probability Level (P-value)
9	D(tot(-2))	0.108965	0.0221
10	D(exo)	-0.000039	0.6960
11	D(exo(-1))	-0.000355	0.0028
12	D(exo(-2))	-0.000301	0.0227
13	D(exo(-3))	-0.000332	0.0091
14	D(rg)	-0.005875	0.0000
15	D(rg(-1))	0.002213	0.0486
16	D(rg(-2))	0.001966	0.0617
17	D(rg(-3))	0.004328	0.0001
18	D(open)	0.506821	0.0105
19	D(open(-1))	-0.258297	0.2385
20	D(open(-2))	-0.117526	0.5504
21	D(open(-3))	-0.917721	0.0003
22	CointEq(-1)	-0.491321	0.0000

Source: Research findings

As shown, the error correction term (CointEq(-1)) is negative and statistically significant, with a coefficient of -0.49, indicating a relatively high speed of adjustment. This means that approximately 49% of short-run disequilibria in the ERO variable are corrected in each subsequent period. In other words, the system requires roughly two periods to fully adjust to long-run equilibrium following a policy change or a shock to the independent variables.

6-Conclusion and recommendations

This research explores the nexus between exchange rate suppression strategies and exchange rate overshooting (EROs) in Iran over the 1959–2022 period. Utilizing the ARDL econometric framework allows for a nuanced examination of the differentiated impacts of these policies across various economic dimensions. The empirical evidence suggests that interventions aimed at maintaining exchange rate stability—mainly through administrative control and restriction of the currency market—have temporarily mitigated exchange rate fluctuations. However, such interventions have simultaneously

fostered the buildup of underlying market tensions that, over time, surface as sharp and accelerated episodes of overshooting, a phenomenon often described in the literature as "springback pressure."

Historical data analysis and model outcomes reveal a statistically significant relationship between currency suppression and heightened exchange rate volatility. This relationship has been exacerbated by the widening gap between exchange rate growth and inflation, such that in periods where this gap increased, substantial EROs occurred. Furthermore, the continued implementation of suppression policies has depleted the country's foreign exchange reserves; consequently, the Central Bank's ability to influence or stabilize the currency market becomes significantly constrained. These constraints foster conditions that make fixed exchange rate arrangements increasingly unsustainable. Under such circumstances, the market typically undergoes a rapid adjustment toward a new equilibrium level, often characterized by abrupt and sizable escalations in the exchange rate. One of the central findings of this research is that currency suppression has not served as an effective instrument for inflation control or industrial support. On the contrary, it has exacerbated economic uncertainty. This uncertainty has, in practice, eroded investor confidence—both domestic and foreign—and reduced the willingness to undertake long-term investments. Consequently, not only have the original objectives of exchange rate stabilization failed to materialize, but also the broader economy has incurred substantial macroeconomic costs, including lower economic growth, heightened inflation expectations, and increased vulnerability to external shocks. The overall analysis suggests that reforming exchange rate policy and moving away from a suppressive approach is imperative. Achieving sustainable stability in the currency market requires acknowledging that the exchange rate must reflect underlying economic fundamentals, such as inflation levels, productivity, and the trade balance. Empirical evidence from international experiences indicates that economies operating under flexible exchange rate arrangements—when supported by sound fiscal stabilization frameworks—tend to achieve more

sustainable macroeconomic balance and enhanced currency market resilience compared with those relying on rigid or artificially pegged systems.. Thus, instead of treating exchange rate stabilization as a fixed policy goal, it should be regarded as a flexible instrument serving broader economic objectives.

In conclusion, the findings of this study serve as a cautionary message to Iranian economic policymakers: the continuation of past policies is likely to result in recurrent and destabilizing currency crises. Without structural reforms in exchange rate policy—particularly those aimed at enhancing transparency, eliminating multiple exchange rates, and strengthening the foundations of production and export—EROs will persist as a recurring and destructive phenomenon in Iran's economy.

Drawing on the study's findings, it is advised that economic authorities avoid administratively driven or restrictive interventions in exchange rate determination. Rather, adopting a managed-float regime anchored in underlying macroeconomic fundamentals would be more effective. Strengthening Central Bank autonomy, enhancing policy transparency, accumulating foreign reserves during oil-revenue booms, and broadening the composition of foreign-currency inflows can facilitate smoother exchange rate adjustments and reduce the likelihood of exchange rate overshooting (EROs). Moreover, implementing structural reforms in the production and trade sectors—together with curbing fiscal dependence on foreign exchange earnings—constitutes a vital step toward lowering the economy's exposure to exchange rate volatility and fostering long-term stability in the currency market.

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