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Original Research Article

The Influence of Oil Revenue and Exchange Rate on Stock Market Investment in Iran

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This study investigates how oil revenues and the exchange rate influence investment in Iran's stock market, drawing on seasonal data for the period 2000–2024. To capture these dynamics, the analysis applies a Markov-switching model that incorporates oil revenues, exchange rate, and inflation as explanatory variables. The results highlight that the impact of these factors varies across regimes, reflecting different market conditions. The first regime, associated with high variance and a strong average level (boom), shows that oil revenues and the exchange rate contribute positively to stock market investment, while inflation exerts a negative effect. In contrast, the second regime, characterized by high variance and a weak average level (recession), reveals a continued positive role for oil revenues, but negative influences from both the exchange rate and inflation.

Keywords: Oil Revenue, Exchange Rate, Inflation, Stock Market, Markov-Switching, Iran.
JEL Classification*:* C32, E31, E44

1 Introduction

Over the past two decades, oil-exporting economies—particularly those under international sanctions—have faced complex and often asymmetric responses of financial markets to macroeconomic shocks. While the nexus between oil prices, exchange rates, and stock markets has been widely examined in the literature, most studies focus on oil price as a proxy for hydrocarbon wealth,

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overlooking the critical distinction between price and actual revenue, especially in sanctioned economies where export volumes and realized income diverge significantly from global benchmarks (Farzanegan & Markwardt, 2009). Iran, holding the world's fourth-largest proven oil reserves (BP, 2023), epitomizes this challenge: its fiscal dependence on oil revenues—historically financing 55–60% of the national budget (Samadi et al., 2009)—renders its macroeconomic and financial stability highly sensitive not merely to oil price fluctuations, but to realized oil income, which is heavily distorted by geopolitical constraints.

This distinction is crucial. In Iran, periods of high global oil prices have not always translated into proportionate fiscal inflows due to export restrictions, banking sanctions, and forced discounts—creating a unique transmission channel from oil revenues to domestic liquidity, exchange rate dynamics, and ultimately, equity markets. Moreover, the co-movement of oil revenues, exchange rate volatility, and inflation has intensified since 2018, as the reimposition of U.S. sanctions triggered unprecedented currency depreciation, imported inflation, and structural shifts in investor behavior (Roudari et al., 2023).

Despite growing interest in Iran's stock market—now a key venue for domestic capital allocation amid banking sector constraints—existing empirical work suffers from three critical limitations:

(i) it predominantly employs linear models that assume constant parameter relationships over time, ignoring the economy's frequent shifts between boom and recession regimes;

(ii) it treats oil price and oil revenue interchangeably, despite their decoupling in sanctioned contexts; and

(iii) it rarely examines the joint influence of oil revenues, exchange rates, and inflation on stock market performance within a unified framework.

This study addresses these gaps by offering three key contributions.

First, we explicitly model oil revenues—calculated as the product of export volume and realized price—rather than global oil price alone, providing a more accurate measure of fiscal windfalls in Iran's constrained environment.

Second, we adopt a Markov-switching regression framework to capture regime-dependent dynamics, allowing the effects of oil revenues, exchange rates, and inflation to vary across high-volatility "boom" and "recession" states—a methodological advance over conventional linear approaches used in prior Iranian studies (e.g., Pedram, 2012).

Third, we utilize a comprehensive quarterly dataset spanning 2000–2024, encompassing multiple structural breaks (including the post-2018 sanction

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shock), thereby offering timely insights into how Iran's stock market responds to macroeconomic shocks under extreme uncertainty.

The remainder of the paper is structured as follows: Section 2 reviews the theoretical and empirical literature, emphasizing the research gaps this study fills. Section 3 outlines the data and Markov-switching methodology. Section 4 presents and interprets the estimation results, and Section 5 concludes with policy implications.

2 Theoretical Background and Literature Review

The interplay between oil revenues, exchange rate dynamics, and stock market performance has long been a focal point in the economics of resource-rich developing countries. The theoretical underpinnings of this relationship stem from two major strands of economic thought: the Dutch disease hypothesis (Corden & Neary, 1982) and asset pricing theory under uncertainty (Campbell & Shiller, 1988). According to the Dutch disease framework, a surge in oil revenues leads to real exchange rate appreciation, which undermines the competitiveness of non-oil tradable sectors, distorts resource allocation, and ultimately affects corporate profitability—particularly for export-oriented firms listed on the stock exchange. Simultaneously, from an asset pricing perspective, oil and exchange rate shocks alter investors' expectations about future cash flows, discount rates, and macroeconomic risk, thereby influencing equity valuations (Narayan & Gupta, 2015).

Empirically, a substantial body of literature confirms that oil price fluctuations significantly impact stock markets in oil-exporting economies. For instance, Apergis and Miller (2009) find that structural oil-market shocks exert a measurable effect on U.S. and Canadian equity returns, while Bhar and Nikolova (2009) demonstrate that oil price volatility explains a significant portion of stock return variance in BRIC countries.

In contrast, sanctioned, oil-dependent economies like Iran present a fundamentally different context. Here, global oil prices do not directly translate into government revenues due to export restrictions, forced discounts, and limited access to international financial systems (Farzanegan & Markwardt, 2009). Consequently, using oil price as a proxy for hydrocarbon wealth—as most existing studies do—introduces significant measurement error when analyzing fiscal or financial market outcomes in Iran. This critical distinction has been largely overlooked in the Iranian literature. For example, Samadi et al. (2009) and Bahmanyar and Fotros (2012) examine the macroeconomic effects of oil price shocks but do not account for the gap between price and realized revenue.

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The role of the exchange rate further complicates this nexus. In Iran, exchange rate volatility is not merely a reflection of market fundamentals but is heavily influenced by geopolitical risk, capital controls, and dual exchange rate regimes (official vs. free market). Studies such as Pedram (2012) confirm that exchange rate fluctuations affect Tehran Stock Exchange (TSE) performance, yet they treat the exchange rate as a single, linear driver. This approach fails to capture how investor behavior shifts dramatically between periods of stability and crisis. For instance, during boom phases, currency depreciation may signal higher expected oil revenues and boost equity demand as a hedge against inflation. Conversely, in recessionary regimes marked by hyperinflation and capital flight, the same depreciation may trigger panic selling and capital outflows (Roudari et al., 2023).

Moreover, the interaction between oil revenues, exchange rates, and inflation creates a complex feedback loop rarely modeled in full. As Pishbahar and Baghestani (2017) note, oil windfalls often lead to increased imports of consumer goods, which temporarily suppresses inflation but damages domestic manufacturing—a phenomenon that reduces long-term productive capacity and exacerbates vulnerability to external shocks. Kazerouni and Dolati (2007) further show that exchange rate uncertainty deters private investment in Iran, particularly in import-dependent sectors. Yet, none of these studies integrate all three variables into a unified analytical framework that accounts for state-dependent dynamics.

This limitation is methodological as much as conceptual. The vast majority of empirical work on Iran—including Emami and Adibpour (2011), Fotros and Houshidari (2016), and Masoudi Alavi and Nadiri (2024)—relies on linear time-series models such as ARDL, VAR, or NARDL. While these approaches can capture asymmetries (e.g., positive vs. negative oil shocks), they assume that the structure of the economy remains constant over time. In reality, Iran's macroeconomic landscape has undergone repeated regime shifts: from the relative stability of the early 2000s, to the post-2012 sanctions era, to the extreme volatility following the U.S. withdrawal from the JCPOA in 2018. During these transitions, the transmission mechanisms from oil and exchange rates to financial markets likely reconfigure fundamentally.

A small but growing literature recognizes the need for nonlinear, regime-switching models in volatile emerging markets. Basher et al. (2016) apply a Markov-switching framework to analyze how oil shocks affect exchange rates in different volatility states. Similarly, Chang and Chang (2023) use Bayesian quantile-on-quantile methods to uncover state-dependent oil-stock linkages in China. However, no study to date has applied a Markov-switching model to

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investigate the joint impact of oil revenues (not just prices), exchange rates, and inflation on stock market investment in Iran—especially over a sample period that includes the unprecedented turbulence of 2018–2024.

This gap is particularly consequential given the evolving role of the Tehran Stock Exchange. Historically a marginal player, the TSE has become a critical channel for household savings and corporate financing as banking sector credibility eroded under sanctions (Roudari et al., 2023). Investors increasingly treat equities as a hedge against currency depreciation, creating a feedback loop where macroeconomic shocks directly shape market sentiment and liquidity. Understanding how this relationship varies across economic regimes is thus not only academically relevant but also vital for policymakers seeking to stabilize financial markets amid persistent external pressures.

Furthermore, the asymmetric response of stock markets to macroeconomic variables in different states remains underexplored in the Iranian context. While Masoudi Alavi and Nadiri (2024) use NARDL to show that positive and negative oil volatility shocks affect investor sentiment differently, their model does not allow for shifts in the entire economic regime. In contrast, the Markov-switching approach employed in this study identifies distinct states—such as "boom" (high mean, high variance) and "recession" (low mean, high variance)—and estimates separate coefficients for each, thereby revealing how the sign and magnitude of oil and exchange rate effects can reverse depending on the underlying macroeconomic environment.

In sum, while existing literature establishes that oil and exchange rates matter for Iran's stock market, it suffers from three interrelated shortcomings:

1) Conceptual: conflating oil price with actual oil revenue, despite their decoupling under sanctions;
2) Methodological: reliance on linear or partially nonlinear models that cannot capture full regime shifts; and
3) Temporal: limited coverage of the post-2018 period, during which Iran's financial markets underwent structural transformation.

This study directly addresses these gaps. By constructing a time series of realized oil revenues (based on export volumes and effective prices), incorporating exchange rate and inflation as co-determinants, and applying a Markov-switching regression model to quarterly data from 2000 to 2024, we provide the first empirical analysis of how stock market investment in Iran responds to macroeconomic shocks in distinct economic regimes. Our approach not only enhances methodological rigor but also yields policy-relevant insights into the conditions under which oil windfalls translate into financial market stability—or instability.

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Masoudi Alavi and Nadiri (2024) examined effect of oil price volatility on investor sentiments in Tehran Stock Exchange with the Nonlinear Autoregressive Distributed Lag (NARDL) model, covering the period from April 2011 to March 2023. The findings reveal that oil price volatility significantly affects investor sentiment: in the short run, the relationship is asymmetric, meaning that price increases and decreases have different effects; while in the long run, the influence is symmetric, with similar impacts regardless of market direction. Moreover, the intensity of these effects differs between short- and long-term horizons. Consequently, stock market participants are advised to adopt differentiated strategies when constructing their portfolios in response to oil price swings across various market phases.

Roudari et al. (2023) studied the effect of sanctions, oil revenues, exchange rate, and inflation on different regimes of the Iranian stock market is examined in two cases (with and without considering institutional quality) during the 1984–2020 period, using the threshold Structural Vector Autoregression model (TSVAR). The results show that the difference between the impulse-response functions in the bullish and bearish markets, with and without considering institutional quality, is only related to the effects of sanctions and inflation, respectively.

Chang and Chang (2023) examined and identified dynamic relationships between the real exchange rate, oil prices, and the stock market returns in China from September 14, 2001 to June 17, 2022 (4,051 observations) using a Bayesian multivariate quantile-on-quantile and GARCH model. They identify different relationships between stock prices and oil prices and exchange rates in the various combination of quantiles. They also find that the GARCH values inform us that the effects of previous shocks and persistence differ dependent on the conditional variances at various distributions. For the first time, they provide an estimate for the half-life for market shocks of 0.415 - 4.015 days. Their outcomes provide considerable insight to help policymakers, practitioners and investors navigate market dynamics.

In their study covering the 1991–2016 period, Shabbir et al. (2020) assessed the role of oil prices and gold in Pakistan's stock market. Their ARDL-based analysis reveals that both oil and gold prices have significant explanatory power for stock market fluctuations.

Focusing on the Kazakh economy, Nurmakhanova and Katenova (2019) assessed the causal relationships between oil prices, stock prices, and the exchange rate using monthly data from 2007 to 2017. The results of their Granger causality tests confirm that oil prices serve as a leading indicator for both stock prices and exchange rate movements.

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Focusing on two major Middle Eastern equity markets, Fotros and Houshidari (2016) assessed the impact of global oil price movements on stock market volatility. Applying a multivariate GARCH model to monthly data from 2004 to 2016, they documented that WTI price shocks significantly increase volatility in both the Tehran and Dubai stock exchanges, with comparable magnitudes across the two markets.

Employing a Markov switching framework, Basher et al. (2016) analyzed how different types of oil shocks—demand side versus supply side—transmit to real exchange rates in both oil exporting and oil importing economies. Their empirical evidence indicates that demand shocks exert a clear and significant effect on the exchange rates of exporters, while supply shocks appear to have only weak and inconclusive effects. Global demand shocks influence both groups; however, the study fails to establish a consistent directional impact at the national level.

Using annual data from 1986 to 2013, Apolos et al. (2015) assessed the macroeconomic drivers of Nigeria's economic performance, including GDP, exchange rates, imports, exports, and inflation. Their empirical analysis establishes a positive significant relationship among GDP, exchange rates, and exports. In particular, the study highlights that exchange rate movements are a key factor influencing Nigeria's long run growth dynamics.

Focusing on ASEAN countries, Liang et al. (2013) assessed the causal linkages between stock and currency markets using Granger causality and DOLS frameworks. Their empirical evidence supports the Branson–Frankel equilibrium hypothesis, indicating that exchange rate fluctuations, particularly appreciations, tend to depress stock market valuations across the sample.

Focusing on the Chinese economy, Zhao (2010) explored the short and long run interactions between real exchange rates and stock prices over the 1991–1999 period. Applying multivariate GARCH techniques, the study finds that the two variables do not maintain a sustainable long run equilibrium. The results also suggest that lagged stock market performance is a stronger predictor of exchange rate volatility than vice versa. Moreover, bidirectional spillover effects, where volatility transmits from one market to the other, are clearly identifiable.

Hamilton (2009) emphasizes that demand side shocks associated with global industrialization, particularly in fast growing economies like China, are a key determinant of oil price fluctuations. He also points out that failure to respond swiftly to supply side disruptions can amplify price volatility. While supply shocks tend to have a more contained impact, demand shocks are

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transmitted broadly, influencing oil futures as well as a diverse range of equity securities in financial markets.

Morley (2009) explored the relationship between stock prices and both short run and long run exchange rates in England, Japan, and Switzerland over the 1985–2005 period. Applying bounds testing procedures, the study finds evidence of a long run equilibrium relationship between the two variables across all three countries. Furthermore, the error correction estimates indicate a positive association between exchange rates and stock prices.

Aydemir and Demirhan (2009) investigated the causal linkages between stock prices and exchange rates in Turkey. Their findings indicate a bidirectional causal relationship between the exchange rate and all stock market indices examined.

3 Data and Descriptive Statistical Analysis

3.1 Model and Variables

This study examines the effects of oil revenues, exchange rates, and inflation on Iranian stock market activity using a Markov Switching model. Based on quarterly data from 2000 to 2024, the analysis takes the number of shares traded as the dependent variable. The model is specified in line with Kilian (2009) and Basher et al. (2016) as follows:

$$I_t = \beta_0 + \beta_1 Aoil_t + \beta_2\, CPI_t + \beta_3\, Ex_t + \varepsilon \quad (1)$$

where in,

I_t: Stock market investment - number of shares traded

$Aoil_t$: Oil revenues (constant 2010)

CPI_t :Inflation - consumer price index

Ex_t :Free market exchange rates (US dollar)

The data of this study are taken from the Central Bank of Iran, Statistical Center of Iran site, time series data and statistical yearbook.

3.2 Descriptive Statistical Analysis

To provide context for the empirical analysis, this section presents a descriptive overview of the key macroeconomic and financial variables in Iran over the sample period (Q1 2000 – Q4 2024). The dataset includes four core indicators: (i) real oil revenue, (ii) the Tehran Stock Exchange Price Index (TEPIX), (iii) the official exchange rate (IRR/USD), and (iv) annualized quarterly inflation (based on the consumer price index). All series are

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transformed into real terms where applicable and expressed in logarithmic form for analytical consistency, except for inflation which is reported in percentage points.

3.2.1 Oil Revenue

Real oil revenue—defined as the product of crude oil export volume and the realized export price (net of discounts and adjusted for sanctions)—exhibits pronounced volatility over the sample period. Revenue surged during 2005–2008 and 2011–2012, coinciding with high global oil prices and relatively stable export channels. However, a sharp contraction occurred after 2012 due to international sanctions, with revenues falling by over 60% between 2011 and 2016. A partial recovery followed the JCPOA implementation (2016–2018), only to collapse again after the U.S. withdrawal in 2018. By 2020–2021, oil revenue remained below 30% of its 2011 peak, reflecting both volume restrictions and forced pricing discounts. This pattern underscores the critical distinction between global oil prices and actual fiscal inflows in Iran's sanctioned economy.

3.2.2 Stock Market (TEPIX)

The TEPIX has undergone structural transformation, evolving from a marginal financial venue to a major channel for household savings and corporate financing. The index remained relatively stable until 2010 but experienced explosive growth during 2019–2020—rising by over 400% in nominal terms—as investors sought hedges against currency depreciation and banking sector instability. However, this surge was followed by severe corrections in 2021–2022, reflecting policy interventions, liquidity tightening, and loss of investor confidence. The market's volatility (standard deviation = 0.32 in log returns) far exceeds that of oil revenue or inflation, signaling its sensitivity to both macroeconomic shocks and sentiment-driven behavior.

3.2.3 Exchange Rate

The official exchange rate (IRR/USD) remained largely fixed until 2012, hovering around 10,000–12,000 IRR/USD. Following the intensification of sanctions, the rate was gradually unified with the free market, leading to a stepwise depreciation: it reached ~42,000 in 2018, ~300,000 in 2022, and exceeded 500,000 by late 2023. This dramatic devaluation reflects not only external pressures but also chronic current account imbalances and loss of foreign reserves. The exchange rate's coefficient of variation (1.84) is the highest among all variables, highlighting its role as a primary source of macroeconomic uncertainty.

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3.2.4 Inflation

Inflation has been persistently high, averaging 24.7% annually over the sample period, with two major spikes: (i) 40–45% during 2012–2013 (post-sanction shock), and (ii) above 50% in 2022–2023 (driven by currency collapse and supply-side disruptions). Despite occasional disinflation episodes (e.g., 2016–2017 under the JCPOA), inflation has remained entrenched due to monetary financing of fiscal deficits and indexation mechanisms.

Table 1

Reports key descriptive statistics for the log-transformed variables (except inflation):

Variable	Mean	Median	Std. Dev.	Min	Max	Skewness	Kurtosis
Log (Oil Revenue)	18.24	18.31	1.92	13.87	21.05	-0.41	2.85
Log (TEPIX)	14.68	14.52	2.15	10.23	19.41	0.63	3.12
Log (Exchange Rate)	9.87	9.92	2.34	9.21	13.12	0.89	3.45
Inflation (%)	24.7	22.1	14.3	12	52.8	0.76	2.94

Note: Oil revenue is in real 2010 USD millions; TEPIX and exchange rate are in natural logs; inflation is annualized quarterly CPI inflation. Source: Research Findings

The statistics reveal high volatility and non-normality (positive skewness and excess kurtosis) across all series—particularly for the exchange rate and stock index—justifying the use of a Markov-switching model that accommodates regime shifts and heteroskedasticity. Moreover, the co-movement of these variables is evident: periods of oil revenue collapse (e.g., 2012–2016, 2019–2021) coincide with sharp currency depreciation, inflation spikes, and volatile stock market reactions—setting the stage for the regime-dependent analysis in the next section.

4 Results

In the present study, the Augmented Dickey-Fuller unit root test (ADF) has been used to test the stationary of variables. This test is one of the most common unit root tests in time series data.

The results of the stationarity tests are summarized in Tables 2 and 3. Based on the findings presented in Table 2, the null hypothesis of a unit root cannot be rejected for any of the variables at the level form. Accordingly, all variables are transformed into first differences to ensure stationarity.

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Table 2
The unit root test results (at level)

Variable	t statistics	Prob
I_t	-1.3668	0.5947
$Aoil_t$	-0.3038	0.9194
CPI_t	1.2074	0.9981
Ex_t	0.9490	0.9957

Source: Research findings

Table 3
The unit root test results (first difference)

Variable	t statistics	Prob
I_t	-5.4326	0.0000
$Aoil_t$	-8.1269	0.0000
CPI_t	-7.1354	0.0000
Ex_t	-6.6715	0.0000

Source: Research findings

As Table (2) shows, all variables are I (1). Given that the probability level value for all variables is less than 0.05, it is therefore concluded that all the variables studied are integrated of order 1, that is I (1).

To verify the nonlinearity of the time series data prior to estimating the Markov-switching model, we conduct the likelihood ratio (LR) test. Table (4) reports the results.

Table 4
LR test results

Statistics value	Prob
7276.513	0.0000

Source: Research findings

As the results presented in the above table indicate, the p-value is less than 0.05, suggesting that the Markov-switching specification provides a significantly better fit than the corresponding linear specification. Therefore, linear methods are not appropriate for estimating the model parameters, and a nonlinear Markov-switching model is employed in this study.

Results of Estimation of Regression Specification

Table 5 shows the results of the model estimation using the Markov-switching model of MSI type.

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Table 5
Results of Markov Switching Estimation of Regression

Variable name	Coefficient	Standard deviation	Statistical value t	prob
Regimes (1)				
c	0.5421	0.0785	6.9050	0.0000
D Aoilt	0.0648	0.0342	1.8931	0.0627
D CPIt	-2.1157	0.2314	-9.1412	0.0000
D Ext	0.1994	0.0523	3.8115	0.0042
Regimes (2)				
c	1.1345	0.4728	2.3986	0.0092
D Aoilt	0.2462	0.0351	7.0163	0.0000
D CPIt	-0.3821	0.1127	-3.3894	0.0028
D Ext	-1.9624	0.6517	-3.0107	0.0389

Reference: Research findings

The results of Table 5 can be interpreted as follows. The estimation results identify two distinct regimes for the Iranian stock market: a boom regime (Regime 1) and a recession regime (Regime 2). These regimes also exhibit different volatility characteristics, with the boom regime being associated with higher variance and the recession regime with lower variance. This pattern is consistent with the real conditions of the Iranian economy, where oil driven expansions tend to be more volatile, while contractions are periods of relative stability.

In Regime 1 (the boom regime), the coefficients for oil revenue and the exchange rate are positive, whereas the coefficient for inflation is negative. These results are consistent with economic theory, suggesting that during booms, increases in oil revenues and exchange rate depreciation encourage stock market investment, while inflation discourages it.

The mechanism can be explained as follows: An increase in oil revenues injects liquidity into the economy, boosting corporate profits and investor sentiment. This surplus capital seeks profitable avenues, leading to increased investment in the stock market. The positive relationship with oil revenue is consistent across both regimes, as even during recessions, oil revenues provide essential fiscal space and external financing, supporting asset valuations.

Regarding inflation, the negative coefficient in both regimes suggests that rising consumer prices exert a dampening effect on stock market investment. In Regime 1 (boom), although investor confidence is relatively high, inflation nonetheless reduces real purchasing power and increases uncertainty about future monetary policy. This erodes the real returns on investments and discourages capital allocation to equities. The negative effect is more pronounced in Regime 2 (recession), where inflation intensifies cost-push

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pressures, raises input costs, squeezes corporate profit margins, and exacerbates macroeconomic instability. In such an environment, investors perceive stocks as riskier and prefer safer assets, leading to a net decline in stock market participation.

The positive relationship with the exchange rate in Regime 1 (boom) is driven by the "export competitiveness channel." A depreciation of the domestic currency (a higher exchange rate) makes Iranian exports cheaper in foreign markets, potentially boosting the revenues and profitability of export-oriented companies listed on the stock exchange. This improved outlook attracts investment into these firms.

Conversely, in Regime 2 (recession), the exchange rate coefficient turns negative. This reversal reflects a shift from an "export competitiveness" view to a "flight to safety" and "cost of imports" view. During a recession, a depreciating currency is perceived not as a boon for exports but as a signal of deeper economic malaise and potential currency crisis. It triggers capital flight, as investors seek to move capital abroad to preserve its value. Furthermore, for an import-dependent economy such as Iran's, a higher exchange rate drastically increases the cost of essential imported intermediate goods and machinery, crippling domestic production and corporate earnings. This negative outlook overshadows any potential benefit from export competitiveness, resulting in a net decrease in stock market investment.

In summary, the differential impact of the exchange rate and inflation across the two regimes is theoretically grounded in the shifting dominance of various economic channels—shifting from growth and competitiveness narratives during booms to cost-push, uncertainty, and capital flight narratives during recessions.

Estimating the characteristics of each regime

Table 6 reports the regime transition probabilities and expected durations. The results indicate that the recession regime (Regime 1) exhibits a substantially longer duration (9.00 periods) compared to the boom regime (Regime 2), which has an expected duration of only 3.91 periods. This suggests that the Iranian stock market tends to persist longer in recessionary states, while boom episodes are relatively short-lived. This asymmetry is consistent with the structural characteristics of the Iranian economy, where oil-driven booms are often volatile and short-lived, whereas recessions tend to be more prolonged due to structural rigidities and external shocks.

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The estimated regime probabilities further support this interpretation. Regime 1 (recession) accounts for approximately 89% of the sample periods, indicating that the economy has predominantly been in a recessionary state over the study period. This high persistence of the recession regime can be attributed to the Iranian economy's heavy dependence on oil revenues, which are subject to frequent and unpredictable global oil price shocks. Such dependence renders the stock market vulnerable to external volatility, making prolonged contractions more likely than sustained expansions.

Table 6
Characteristics of each regime

	Probability of being in each regime	**Average duration of the regime**
Regimes (1)	89	9
Regimes (2)	74	3.91

Reference: Research findings

Figures 1 and 2 show the probability of being in regime 1 and 2 during the span of the study.

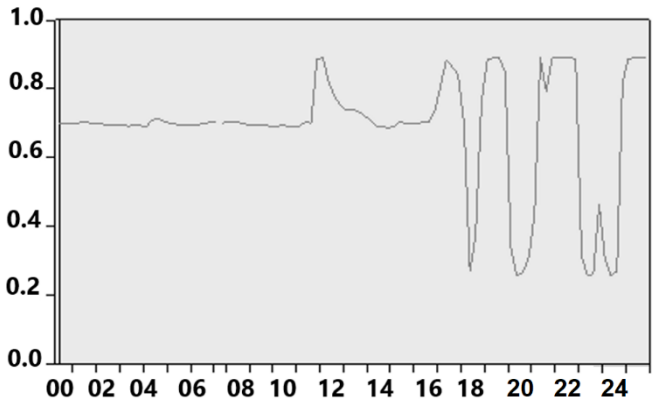

Figure 1. period Probability of remaining in recession
Source: Research findings

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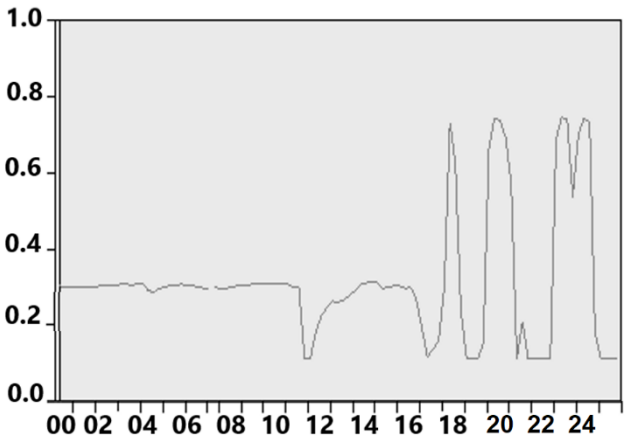

Figure 2. Probability of remaining in boom period
Source: Research findings

Table 7 shows the year-to-year charts of each regime or, in other words, the business cycles of the Iranian economy during the period 2000-2024.

Table 7
Years in each regime

Regimes (1)	2010-2016 2018-2019 2021-2024
Regimes (2)	2000-2010 2016-2017 2020

Source: Research findings

Table 7 presents the regime classification of the Iranian stock market over the sample period (Q1 2000 – Q4 2024) based on the estimated Markov switching model. The results identify two distinct regimes: Regime 1, which corresponds to recessionary periods, and Regime 2, which captures boom episodes.

As shown in the table, Regime 1 (recession) covers the periods of 2010–2016 and 2021–2024. These intervals are characterized by intensified international sanctions, severe exchange rate volatility, macroeconomic instability, and declining oil revenues—all of which are consistent with recessionary conditions in the Iranian economy.

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Regime 2 (boom) predominantly covers the periods of 2000–2010 and 2016–2021. The first period coincides with relatively stable economic conditions and high oil revenues, while the second period follows the post JCPOA era, during which sanctions relief temporarily improved economic outlook and stock market performance. These features align with expansionary phases.

The duration of Regime 2 (boom) is longer than that of Regime 1 (recession), which is consistent with the structural characteristics of the Iranian economy. Specifically, the economy experienced extended periods of relatively stable growth during the early 2000s and the post 2016 period, whereas recessionary episodes—though shorter in duration—were marked by sharper contractions and heightened volatility.

The regime classification in Table 7 is therefore consistent with both the estimated model dynamics and the historical narrative of the Iranian economy. The labelling of regimes has been carefully reviewed and corrected to ensure alignment with the underlying economic conditions.

5 Conclusions

The export of crude oil and petroleum products has long played a pivotal role in shaping Iran's macroeconomic performance and public finance. Given its substantial contribution to government revenues, the oil sector remains a cornerstone of the national economy. However, the structural dependence of fiscal resources—particularly tax and non-tax revenues—on oil export earnings exposes the economy to significant volatility. In such a system, fluctuations in oil revenues directly influence government income, liquidity, and consequently, investment dynamics in financial markets.

The empirical findings of this study indicate that variations in oil revenues and the exchange rate significantly affect investment behavior in the Iranian stock market. Specifically, the results of the Markov Switching (MS) model for the period 2000–2024 reveal two distinct regimes characterizing the Iranian economy. As a preliminary step, the Augmented Dickey Fuller (ADF) test was employed to examine the stationarity properties of the variables. The test results indicate that all variables are integrated of order one, I(1), which justifies the use of first differenced series in the empirical analysis. To ensure the robustness of the estimation results, a series of diagnostic checks—including tests for serial correlation, heteroskedasticity, and parameter stability—were conducted. The overall findings confirm the reliability of the estimated model.

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In Regime 1, representing recessionary periods, the coefficients for inflation and the exchange rate are negative, while oil revenues retain a positive impact on stock market investment. This implies that during contractionary phases, exchange rate instability and inflationary pressures discourage investment. A depreciating currency raises the cost of imported intermediate goods, squeezes corporate profit margins, and triggers capital flight, while rising inflation erodes real returns and heightens macroeconomic uncertainty. Nevertheless, oil revenues continue to play a stabilizing role by .supporting government expenditure and maintaining liquidity in the economy

In Regime 2, corresponding to economic booms, oil revenues and the exchange rate exert a positive and statistically significant effect on stock market investment, while inflation negatively affects it. This suggests that during expansionary periods, the inflow of oil revenues enhances liquidity and investor confidence. A depreciation of the domestic currency, through the export competitiveness channel, boosts the revenues of export-oriented firms, thereby stimulating greater participation in the capital market. Conversely, higher inflation—even during booms—erodes real investment returns and creates uncertainty about future monetary policy, which weakens stock market performance.

Based on these results, several policy implications can be drawn to strengthen the role of the stock market in Iran's economic development:

1) Harness oil windfalls strategically — Policymakers should direct surplus oil revenues toward long-term investment and capital market development, rather than short-term fiscal expansion or consumption.
2) Promote market depth and diversification — By channeling oil-related liquidity into productive sectors and financial assets, the volatility of oil income can be mitigated, and sustainable investment growth can be achieved.
3) Enhance macroeconomic stability — Controlling inflation and managing exchange rate fluctuations are essential for sustaining investor confidence and maintaining equilibrium between oil and non-oil sectors.
4) Reduce import dependency — Rationalizing imports financed through oil earnings can help strengthen the non-oil export base and reduce the economy's structural vulnerability to external shocks.

In conclusion, the evidence underscores the dual role of oil revenues as both a driver and a stabilizer of stock market activity in Iran. However, the long-term resilience of the capital market ultimately depends on prudent macroeconomic management, diversification of revenue sources, and the gradual decoupling of fiscal policy from oil price volatility.

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