

The Relationship between Exchange Rate Systems, Financial Market Performance, and Capital Flows in the Algerian Economy: An Analytical Study for the Period 2000-2024

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Abstract

This study examines the impact of exchange rate regimes in Algeria on the performance of financial markets and capital flows during the period from 2000 to 2024. It employs a descriptive-analytical approach, supported by the analysis of a range of relevant economic and financial indicators, to assess the implications of the exchange rate regime's evolution on financial stability and the attractiveness of the Algerian economy for investment.

The findings demonstrate that the Algerian economy remains heavily dependent on oil price fluctuations, which are the primary determinant of foreign exchange reserve levels and monetary stability. Periods of high oil prices contributed to exchange rate stability and a relative improvement in the performance of financial markets. Conversely, the sharp decline in oil prices during the period 2014–2016 widened the gap between official and parallel exchange rates and increased exchange rate volatility, negatively impacting the attractiveness of foreign investment and capital flows. The study also reveals that the significant rise in oil prices during 2022, amidst the Russian-Ukrainian conflict, did not translate into a noticeable increase in foreign capital inflows. This suggests that the limited flow of these capitals is not solely due to circumstantial factors, but reflects deeper structural and institutional challenges. Therefore, the study emphasizes the need for comprehensive institutional and financial reforms, and for developing foreign exchange and financial markets to enhance their efficiency and increase their capacity to attract foreign capital sustainably.

Keywords : Exchange rate – Exchange rate regimes – Financial markets – Capital flows – Foreign direct investment – Algerian economy – Oil price volatility.

Introduction

Exchange rate regimes are among the most important macroeconomic determinants affecting the stability of a national economy. They are closely linked to monetary policy, the balance of payments, and the confidence of both domestic and foreign investors. The choice of a fixed, flexible, or mixed exchange rate regime not only affects the stability of the national currency but also the performance of financial markets and capital flows into the economy, particularly in developing countries that rely heavily on primary resources to finance their budgets.

The exchange rate is of particular importance to the Algerian economy, which has been dependent on oil price fluctuations for decades, given its status as a major source of foreign currency. The reliance of external revenues on hydrocarbons has made the exchange rate a key instrument for achieving macroeconomic equilibrium and a sensitive indicator of global market volatility. Between 2000 and 2024, Algeria experienced significant fluctuations in oil price levels, which directly impacted the value of the dinar, the stability of financial markets, and the flow of foreign direct investment and portfolio investments.

Research Problem

The Algerian economy is heavily dependent on the hydrocarbon sector, and fluctuations in oil prices have exposed the fragility of the exchange rate regime and the weakness of financial markets, thereby constraining capital inflows. Accordingly, the main research question is formulated as follows:

To what extent have the exchange rate regimes implemented in Algeria during the period 2000–2024 affected the performance of financial markets and capital flows?

Research Hypotheses

Hypothesis 1: A stable exchange rate regime contributes to improving financial market performance by reducing exchange rate risk and enhancing investor confidence.

Hypothesis 2: A wider gap between the official and parallel exchange rates weakens foreign capital inflows and increases financial market volatility.

Hypothesis 3: Oil price booms contribute to strengthening foreign exchange reserves and enhancing monetary stability; however, they are insufficient to attract sustainable capital inflows without comprehensive structural reforms.

Hypothesis 4: Algeria's reliance on a managed (or quasi-managed) exchange rate regime has reduced the effectiveness of monetary policy and weakened the economy's resilience to external shocks.

Significance of the Study

- This study is significant because it analyzes the dynamic relationship between exchange rate regimes, financial market performance, and capital flows in Algeria during a period characterized by significant fluctuations in oil prices.
- It highlights the vulnerability of the Algerian economy to external shocks resulting from its heavy dependence on hydrocarbons and the limited diversification of its sources of income.
- It contributes to a better understanding of the role played by the gap between the official and parallel exchange rates in influencing foreign investment and capital inflows.
- It provides both academic and practical insights that can support the formulation of monetary and financial policies aimed at enhancing economic stability and attracting sustainable foreign investment.

Study Objectives:

- To analyze the evolution of exchange rate regimes in Algeria between 2000 and 2024 and their relationship to key economic variables;
- To measure the impact of exchange rate fluctuations on the performance of Algerian financial markets;
- To examine the relationship between the exchange rate and foreign capital inflows;
- To clarify the role of oil price volatility in shaping the relationship between exchange rates and financial markets;
- To propose practical recommendations for improving the effectiveness of the exchange rate system in supporting financial markets and attracting capital.

Theoretical Aspect

1. Definition of Exchange Rates and Their Systems

A. Definition of Exchange Rates

The exchange rate is the price at which a local currency is exchanged for a foreign currency. This rate is a pivotal tool in the monetary and financial system, as it determines the competitiveness of local goods and services in international markets. It also affects domestic price levels and the external balance of the economy. (Boualsouf, 2014, p. 205)

The exchange rate is considered one of the most important economic indicators reflecting the strength or weakness of the national economy and its ability to achieve financial and monetary stability.

B- Exchange Rate Systems

Economic literature has identified three main exchange rate systems, ranked according to the degree of intervention by monetary authorities in determining its value:

1- Fixed Exchange Rate System

A fixed exchange rate system is based on pegging the national currency to a strong foreign currency (such as the US dollar or the euro) or to a group of major currencies. This peg creates a degree of stability in the value of the national currency, making it easier for economic actors to predict costs and profits in international transactions. (Mansouri, 2016, p. 178)

However, this system makes the national economy vulnerable to fluctuations in the pegged currency. For example, if the dollar appreciates, the value of the local currency pegged to it also increases, even if the domestic economic situation does not justify such an increase. Furthermore, the central bank loses a significant portion of its monetary sovereignty because it is obligated to defend the fixed rate regardless of the circumstances, which depletes foreign exchange reserves. (Krugman & Obstfeld, 2018) Several developing countries have resorted to this system to achieve stability and attract foreign direct investment, but many have faced severe crises due to external pressures and the difficulty of sustaining the fixed rate.

2- The Flexible (Floating) Exchange Rate System

In this system, the exchange rate is determined by the forces of supply and demand in the foreign exchange market, i.e., according to the volume of exports and imports, investment flows, and capital movements. (Krugman & Obstfeld, 2018) The main advantage of this system is that it reflects the reality of the economy in real time. Any deficit in the trade balance or balance of payments leads to a depreciation of the currency, while a surplus leads to an appreciation. This system also gives central banks considerable flexibility in using monetary policy tools, such as interest rates, to combat inflation or recession.

However, the main disadvantage of the flexible exchange rate system is the sharp fluctuations that exchange rates may experience, especially in fragile economies or those dependent on primary exports such as oil and gas. These fluctuations lead to high risks for foreign investors and increase uncertainty.

3- Managed Exchange Rate System

A managed exchange rate system, or "managed float," is a compromise between stability and flexibility. In this system, the exchange rate is allowed a margin of freedom to be determined by market forces, but the central bank intervenes when necessary, using its foreign exchange reserves or other tools, to prevent a sharp collapse or excessive appreciation. (Krugman & Obstfeld, 2018) This system requires substantial foreign currency reserves so that the central bank can intervene in the event of external shocks such as a decline in oil prices or capital outflows. This system also allows for absorbing some market fluctuations while maintaining a minimum level of stability to attract investment and protect citizens' purchasing power.

C. The Algerian Experience (2000-2024)

- Algeria officially adopted a managed exchange rate system at the beginning of its economic reforms in the 1990s, and this system remains in effect today.
- The Bank of Algeria sets a daily official exchange rate for the dinar against the dollar and the euro, establishing a band that allows it to fluctuate up and down, and intervenes in the event of any significant deviation.
- Due to its heavy reliance on oil exports, the dinar has remained indirectly linked to oil prices. Whenever the price of Brent crude falls on global markets, the dinar comes under strong downward pressure.
- One of the most significant weaknesses of the managed exchange rate system in Algeria is the existence of a parallel exchange market, which the central bank has been unable to eliminate despite its repeated interventions. This gap between the official and parallel rates (sometimes exceeding 50%) reflects the ineffectiveness of monetary policy in meeting the real demand for foreign currency.
- This situation has negatively impacted the performance of financial markets, as investors prefer to trade in the parallel market rather than the official market, thus reducing the attractiveness of the Algerian economy for foreign direct investment. (Gray, 2021, pp. 8-33)

The Relationship Between Exchange Rates and Financial Markets

1. Volatility

Exchange rate volatility is defined as rapid and sudden changes in the value of a national currency against foreign currencies, whether upward or downward. This volatility is not merely a slight change in prices, but is often sharp, creating uncertainty in financial markets, which is reflected in the behavior of both domestic and foreign investors.

2. Increased Investment Risk

When the value of the local currency fluctuates, it becomes more difficult for investors to determine the true return on their investments, especially if these investments depend on future cash flows in the local currency. For example, a foreign investor who puts their money into local bonds or stocks may realize nominal profits, but if the currency's value falls sharply, their profits will be eroded when converted back to their home currency. This risk is called exchange rate risk.

3. Impact on Financial Asset Prices

Exchange rate volatility often leads to asset repricing in the market. For example, if the national currency weakens, the stock prices of exporting companies may rise (because their exports become more competitive), while the value of the stocks of importing companies, which are affected by higher raw material costs, may fall. This imbalance creates additional volatility in the stock market, increasing its instability.

3. Effects on Macroeconomic Stability

Sharp exchange rate fluctuations can be transmitted from financial markets to the real sector through multiple channels:

- Higher inflation rates due to increased import prices;
- Reduced competitiveness if fluctuations are unexpected or excessive;
- Increased external debt burdens denominated in dollars or euros when the local currency depreciates;
- These combined effects can lead to a general crisis of confidence in the national economy, as investors perceive the national currency and financial markets as unsafe. (Krugman & Obstfeld, 2018, pp. 410-418)

2. Exchange Rate Stability and Its Role in Enhancing the Attractiveness of Financial Markets

Exchange rate stability is considered one of the most important pillars of macroeconomic stability and a pivotal element in determining the attractiveness of any economy to both domestic and foreign investors. The exchange rate is not merely a technical mechanism for pricing currencies, but a key indicator of the strength of the economy and the confidence of its stakeholders.

a. Stability as a Confidence Factor in the National Economy

When the national currency is stable against foreign currencies, it sends a strong signal to the markets that the economy enjoys a degree of fiscal and monetary discipline. This increases confidence in its ability to meet future obligations. Foreign investors do not only consider potential profits in the market, but are primarily concerned with their ability to recover their capital and returns without losses resulting from currency devaluation.

Conversely, continuous volatility or a sharp decline in the value of the currency is usually interpreted as a sign of economic or political weakness, prompting investors to reassess the risks of their investments and, in many cases, decide to withdraw from the market.

b. Predicting Investment Returns

One of the most important advantages of exchange rate stability is that it allows investors – especially in financial markets (stock exchanges, bonds, debt instruments) – to accurately calculate future cash flows.

Foreign investors who invest in government bonds or local company shares are concerned with the real return after conversion to their home currency (dollars, euros, etc.).

If the exchange rate is volatile, any profits realized in the local currency may evaporate upon conversion due to currency depreciation.

In a stable exchange rate, however, the ability to predict net returns becomes clearer, which encourages long-term capital inflows rather than short-term investments and speculation.

C. Reducing Investment Risks in Developing Countries

Developing countries are often classified as high-risk economies due to their fragile production structures and weak financial institutions. In such contexts, exchange rate stability becomes an important compensatory factor that reduces the overall level of risk.

Investors entering an emerging market know that the infrastructure may be underdeveloped and that there are bureaucratic and legal challenges. However, a relatively stable national currency balances the picture and makes the investment environment less risky.

Therefore, many central banks in developing countries resort to interventionist policies (such as pegging the currency or managing a limited fluctuation band) to reassure investors and protect financial markets from external shocks.

D. Central Bank Intervention and its Impact on Financial Stability

Achieving exchange rate stability does not always occur automatically. It often requires intervention by central banks through monetary policy tools, such as:

- Direct intervention in the foreign exchange market by buying or selling currencies;
- Using interest rates as a means of absorbing pressure on the currency;
- Managing international reserves to ensure intervention when needed. (Gray, 2021)

This intervention serves a dual purpose:

- Reassuring investors that the central bank is capable of maintaining market equilibrium;
- Protecting domestic financial markets from the transmission of external shocks (such as declining oil prices or global financial crises).

3. Liquidity

Liquidity in financial markets refers to the ability to convert financial assets (such as stocks and bonds) into cash quickly and with minimal loss in value. It is a crucial element of market efficiency, facilitating buying and selling and increasing the attractiveness of the stock exchange to investors. The exchange rate plays a pivotal role in influencing liquidity, either by stimulating or weakening it.

The impact of exchange rate stability on liquidity:

When the exchange rate is stable, investors are confident that their investments will not be exposed to sudden risks resulting from currency devaluation. This stability increases daily trading activity, leading to higher liquidity in the financial market. The greater the confidence in the currency's value, the more willing traders are to convert their savings into investments in stocks or bonds instead of holding cash.

The Impact of Exchange Rate Volatility on Liquidity:

In an environment characterized by high exchange rate volatility, liquidity levels typically decline. This is because investors are reluctant to buy and sell due to fears of currency devaluation. Even if there is a desire to invest, the supply and demand gap widens, making the sale of stocks or bonds more difficult and slower. For example, in emerging markets experiencing sharp exchange rate fluctuations, stock exchanges suffer from lower liquidity compared to developed markets.

Implications for Foreign Investors:

Foreign investors pay particular attention to liquidity because they need assurance of being able to enter and exit the market at any time. If the local market is pegged to a volatile or illiquid currency, it becomes unattractive for long-term foreign investment. This is why financial markets in countries with stable monetary policies (such as currency pegs to the dollar or euro) tend to have higher liquidity, as they provide a "safe exit" for investors.

The central bank plays an indirect role in influencing liquidity through exchange rate management. If it intervenes to maintain the currency's value, it enhances investor confidence, which increases trading volume and raises liquidity levels. However, if it fails to do so, markets suffer from a contraction in transaction volumes and a decrease in liquidity. (Mishkin, 2019, pp. 415-418)

The Impact of the Exchange Rate on Financial Markets and Attracting Foreign Capital

The exchange rate is one of the most important economic determinants affecting the movement of financial markets. It forms the link between the monetary and financial sectors and is considered a sensitive indicator of the confidence of both domestic and foreign investors in the national economy. The relationship between exchange rate volatility, stability, and financial liquidity directly impacts a country's ability to attract or repel foreign capital. This ultimately determines the volume of international investments and capital flows within both emerging and developed markets.

1. Exchange Rate Volatility and its Impact on Foreign Capital Flows

Sharp fluctuations in exchange rates typically lead to uncertainty for foreign investors. An investor placing funds in a market seeks predictable returns, but the volatility of the local currency exposes them to additional risks known as exchange risk. For example, an investor might achieve a high return on their stocks, but lose a significant portion of it when converting profits into a strong foreign currency due to the depreciation of the local currency.

Experience has shown that increased exchange rate volatility is accompanied by an outflow of hot money seeking quick profits, which weakens the local stock exchange and leads to a decrease in liquidity. (Calvo, Leiderman, & Reinhart, pp. 108–151)

2. Exchange Rate Stability as an Attractive Factor for Foreign Investment

Exchange rate stability provides a more secure investment environment, as it assures foreign investors that the real value of their capital and profits will not be eroded by sharp currency depreciation. Stability also reflects the strength of monetary policy and the efficiency of the central bank in managing reserves, which raises the economy's rating in the eyes of international institutions.

Stability contributes to the flow of long-term investments, such as foreign direct investment (FDI), as investors seek a predictable and stable environment in the long term. Therefore, markets that have adopted stable exchange rate systems (such as pegging the currency to a basket of currencies or following a managed float system) have been able to attract significant foreign investment compared to countries with fragile systems (Dornbusch, Fischer, & Startz, 2018, pp. 495-497)

3. Financial Liquidity and its Role in Attracting Foreign Capital

Liquidity is a crucial element in the decision of foreign investors, who always seek the ability to enter and exit the market without incurring significant losses. If the market suffers from weak liquidity due to exchange rate fluctuations or a lack of confidence, this creates a barrier to foreign investment.

However, when the exchange rate is stable and liquidity levels are high, the market becomes more attractive because it allows investors to trade their assets quickly and at a low cost. Thus, liquidity is not only a result of exchange rate stability but also a key driver for attracting foreign capital. (Calvo, Leiderman, & Reinhart, p. 254)

4. The Role of Three Factors in Determining Foreign Capital Flows

- In a volatile market: Liquidity weakens, risks increase, and investors withdraw their funds in search of more stable markets;
- In a stable market: Liquidity improves, risks decrease, and foreign investors are more inclined to invest in either the stock market or long-term projects;
- In a collapse: Loss of control over the exchange rate leads to what is known as capital flight, where investment flows decline en masse, exacerbating the economic crisis.

1. The Evolution of Exchange Rate Policy in Algeria

Since 1995, Algeria has transitioned to a managed float exchange rate system, where the dinar's exchange rate is primarily determined by market forces of supply and demand for foreign currencies. The Bank of Algeria remains a key player, intervening as needed to correct imbalances, usually within a narrow band not exceeding $\pm 2\%$ (Waini&Benabdel Fatah, 2024, p. 12). The main objective of adopting this system was to achieve greater flexibility compared to the previously fixed exchange rate system and to enable the economy to better absorb external shocks, especially given Algeria's heavy reliance on oil and gas revenues, which constitute the primary source of foreign currency.

However, this shift failed to achieve the desired long-term stability, given the national economy's reliance on a single-export hydrocarbon sector. This made the dinar's value closely tied to global oil prices. During periods of high oil prices (2005–2008 and 2010–2013), the dinar managed to maintain a relatively stable rate, supported by strong inflows of foreign currency. But with the collapse of oil prices in mid-2014, the dinar lost a significant portion of its value against the dollar and the euro, with the exchange rate rising from around 79 dinars to the dollar in 2013 to over 100 dinars to the dollar in 2016. These pressures intensified during the COVID-19 pandemic in 2020, when international markets experienced a sharp decline in global energy demand. This impacted Algeria's export revenues and, consequently, its foreign exchange reserves, which dwindled alarmingly. This situation forced the monetary authorities to allow a further depreciation of the dinar, exceeding 20% in a short period, which eroded citizens' purchasing power due to rising prices. Prices, especially for imported goods, have contributed to significant inflation levels.

This pattern of dinar volatility reflects the limited effectiveness of the managed floating exchange rate system in Algeria. The central bank finds itself compelled to resort to currency devaluation in every crisis to maintain macroeconomic stability and limit the depletion of reserves. However, this comes at the expense of socio-economic stability, through increased import costs, higher inflationary pressures, and a decline in investor confidence. (Sari & Saidani, 2021, p. 31) Furthermore, weak economic diversification and the contraction of non-hydrocarbon exports have left the dinar without a self-correcting mechanism within the managed floating exchange rate system. Instead of serving as a tool to enhance the competitiveness of non-oil exports, the exchange rate has remained merely a reflection of global oil price fluctuations. This has made the Algerian economy vulnerable to external shocks, as the exchange rate is directly affected by any disruption in oil markets, which quickly translates into pressure on the trade balance, higher inflation, and a decline in the attractiveness of foreign direct investment.

2. The gap between the official and parallel exchange rates and its impact on the economy

One of the most prominent structural features of the exchange market in Algeria is the existence of a strong parallel market that has established itself as an actual component of the exchange movement, as it has become a primary channel for obtaining hard currency, especially in light of the restrictions imposed on imports and transfers through official channels. This market is not merely a result of an increasing demand for foreign currency, but rather a reflection of structural imbalances in the national financial and banking system, where banks have been unable to meet the needs of individuals and institutions for hard currency, which has opened the door for the growing expansion of the black market. Studies indicate that the price gap between the official and parallel markets has ranged between 20% and 30% during the past two decades, which has made dealing through the informal market more attractive for citizens and importers alike. (Si Mohamed and Bouthelja, 2021, page 128)

This situation has negatively impacted monetary policy, as the Bank of Algeria has lost its full ability to control the money supply and liquidity. The parallel market has led to the creation of parallel channels for monetary trading outside the official system, which has contributed to the diversion of financial flows from banking channels to the black market. As a result, a considerable portion of national liquidity has become outside banking supervision, which has reduced the efficiency of monetary policy tools, especially with regard to sterilizing the money supply and controlling inflation rates (Derdouri and Laghliti, 2017, page 139).

This gap has also contributed to the growing dominance of the informal market in the economy, which has become an alternative venue for conducting major transactions, including unauthorized imports and illicit transfers linked to cross-border smuggling. This growth has led many economic actors to lose confidence in the

formal banking system and resort to the parallel market to meet their foreign currency needs more quickly and flexibly, even at the cost of higher prices and legal risks.

The danger of this phenomenon lies in the fact that it has weakened the attractiveness of banks as a primary source of foreign currency, thus reducing the effectiveness of official channels in absorbing the demand for hard currency. This has increased pressure on official foreign exchange reserves, particularly during periods of sharp decline in oil prices. Therefore, the parallel market is no longer merely a secondary economic phenomenon, but has become a major factor threatening macroeconomic stability by fueling speculation and smuggling, undermining the effectiveness of economic and financial reforms, and even hindering the state's efforts to combat inflation and maintain the value of the dinar.

3. The State of Financial Markets (Weak Stock Exchange, Banking Sector Dominance)

Despite being established more than two decades ago, the Algiers Stock Exchange still reflects the image of an emerging financial market with limited depth and liquidity. Its activity remains very weak compared to financial markets in other emerging countries, and even some emerging African markets. Since its inception in 1997, it has attracted only a handful of public and private institutions, and trading has remained confined to a limited number of stocks and bonds that do not reflect the true size of the national economy. This situation has rendered the stock exchange more of a formal instrument than an effective mechanism for mobilizing savings and financing investment.

Conversely, the banking sector continues to play a pivotal role in financing the national economy. Most economic actors—whether producers or service providers—rely on bank loans as their primary source of funding, given the absence of an active stock market that provides alternative investment and financing options. This banking dominance reflects a structural imbalance in the financial system. Modern economies typically rely on diversifying funding sources between banks and financial markets to distribute risk and ensure greater flexibility for economic activity. The weakness of the Algerian stock market stems from several objective factors, most notably:

- A lack of economic diversification, as the national economy remains overly reliant on the oil and gas sector, limiting the emergence of large productive and service-oriented companies capable of listing on the stock exchange;
- Weak financial and accounting transparency among Algerian companies, many of which refrain from disclosing their financial data to external shareholders for fear of disclosure or the stringent oversight imposed by listing requirements;
- The gap between official policies and market realities. While reforms are constantly proposed to strengthen the financial market at both the legal and regulatory levels, these reforms remain largely unimplemented due to a lack of incentives to attract both institutions and investors;
- Low financial literacy among individuals and institutions, with savers preferring to invest in real estate, gold, or even the parallel currency market, rather than resorting to official financial instruments. (Nour Eddine, 2008, p. 185)

These factors combined have prevented the Algerian stock exchange from fulfilling its natural role in mobilizing national savings and channeling them into productive investments, and have even weakened its contribution to economic development. They have also deprived the economy of an effective tool for risk distribution and diversifying funding sources, contributing to a continued near-total dependence on the banking system. This places immense pressure on banks and increases the vulnerability of the financial system to shocks.

4. The Evolution of Foreign Direct Investment (FDI) Flows and Their Relationship to Exchange Rate Fluctuations and Oil Prices

Algeria experienced sharp fluctuations in foreign direct investment (FDI) flows during the period 2000–2024. This reflects the fragility of the national economic structure and its strong dependence on oil price volatility. Statistics show that FDI flows increased during the oil boom periods (2005–2008 and 2010–2013), as the rise in oil revenues contributed to strengthening foreign exchange reserves and improving macroeconomic indicators. This created a more attractive environment for foreign investors, particularly in the energy, infrastructure, and telecommunications sectors. Several major projects—such as gas pipeline expansion and oil field development—also benefited from significant foreign investment during this period.

However, this dynamic was not sustainable. With the collapse of oil prices in 2014, foreign capital inflows declined significantly due to dwindling foreign exchange reserves and the depreciation of the Algerian dinar against major currencies. These developments weakened investor confidence in the stability of the economic and financial environment and increased the risk of capital flight. Furthermore, exchange rate volatility raised the cost of foreign investment and made investors more cautious about entering the Algerian market.

In addition to the oil factor, Algeria faced other challenges that hindered its ability to attract sustainable foreign investment, most notably:

- A lack of economic diversification, with most investments remaining concentrated in the hydrocarbons sector, dominated by national companies (primarily Sonatrach), while the industrial, agricultural, and service sectors contributed little.
- An unstable legislative and legal framework, particularly with the adoption of the 51/49 rule, which mandated that foreign investors have an Algerian partner as the majority owner. This posed an obstacle to major investments outside the hydrocarbons sector.
- Weak financial infrastructure and bureaucratic red tape, which increased investment costs and limited flexibility.
- A political climate characterized by a prolonged period of instability, especially after 2019, which in turn influenced the decisions of foreign investors. (Shabana, 2018, page 133)

Consequently, the Algerian economy has remained captive to oil revenues and exchange rate fluctuations over the last two decades. It has been unable to transform foreign investment into an effective tool for supporting economic diversification and building a competitive production base. This situation has led to continued dependence on the hydrocarbons sector, with foreign investment having a weak impact on overall growth and job creation. This underscores the urgent need for deep structural reforms aimed at improving the business climate and expanding the base of sectors capable of attracting foreign capital.

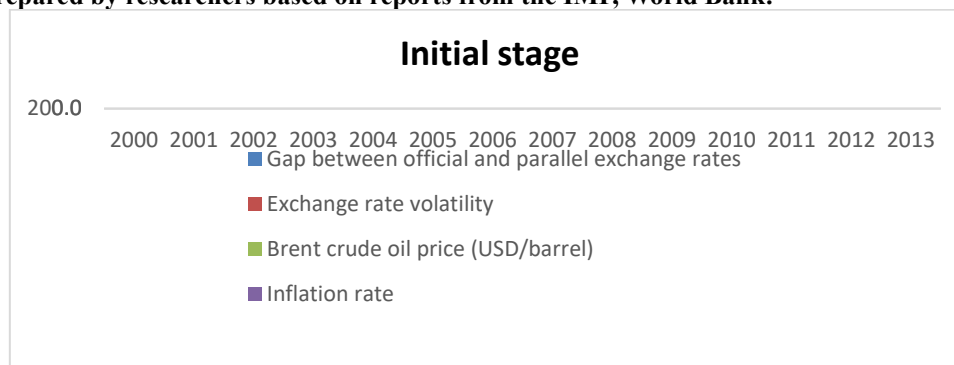
Third Axis: The Applied Aspect

First Period: Initial Phase (2000–2008, 2010–2013)

Year	Gap between official and parallel exchange rates	Exchange rate volatility	Brent crude oil price (USD/barrel)	Inflation rate	Foreign direct investment (% of GDP)
2000	10,0	2,0	37,15	2,0	0,5
2001	12,9	2,5	32,4	2,4	0,6
2002	15,8	3,1	33,65	2,8	0,8
2003	18,8	3,6	39,99	3,3	0,9
2004	21,7	4,2	55,63	3,7	1,1
2005	24,6	4,7	70,9	4,1	1,2
2006	27,5	5,3	78,11	4,5	1,4
2007	30,4	5,8	99,04	4,9	1,5
2008	33,3	6,3	147,16	5,3	1,7
2009	36,3	6,9	81,93	5,8	1,8
2010	39,2	7,4	92,01	6,2	2,0
2011	42,1	8,0	114,78	6,6	2,1
2012	45,0	8,5	110,55	7,0	2,3

2013	47,9	9,0	112,22	7,4	2,4
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Source: Prepared by researchers based on reports from the IMF, World Bank.



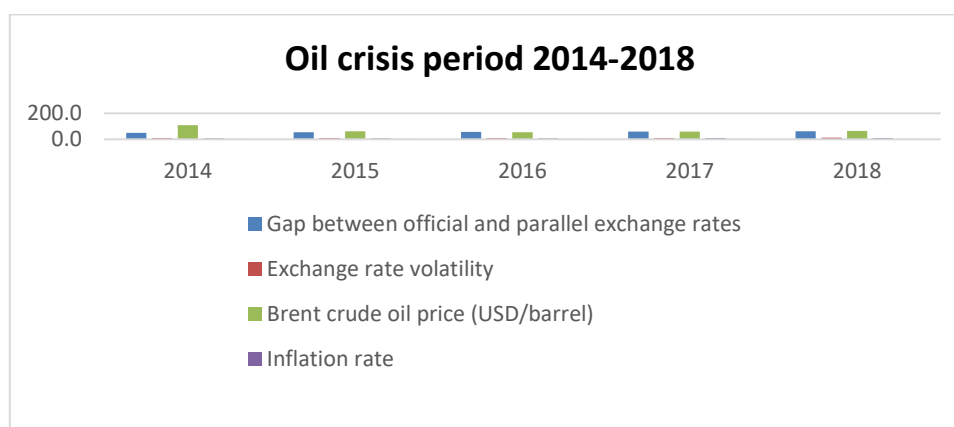
Source: Prepared by researchers based on the results of the table above.

Analysis: During the first period (2000-2008, then 2010-2013), the Brent crude oil price curve followed a strong upward trajectory, particularly between 2003 and 2008. This was reflected positively in foreign direct investment (FDI) inflows (as a percentage of GDP), which improved compared to the beginning of the decade. This reflects investor confidence in the Algerian economic environment, bolstered by abundant oil revenues. Although a structural imbalance occurred in 2009 as a result of the global financial crisis, with oil prices declining and investment flows slowing, the curve quickly resumed its upward trend as oil prices rebounded during the 2010-2013 period. Meanwhile, the gap between the official and parallel exchange rates, as well as exchange rate volatility, remained at relatively moderate levels. At this stage, these factors did not exert significant pressure on the investment climate, which explains their relatively minor negative impact compared to the positive effect of oil prices. Thus, it appears that foreign direct investment during this period was primarily linked to oil dynamics rather than monetary and exchange market factors.

Second period: The oil crisis 2014–2018

Year	Gap between official and parallel exchange rates	Exchange rate volatility	Brent crude oil price (USD/barrel)	Inflation rate	Foreign direct investment (% of GDP)
2014	50.8	9.6	107.67	7.8	2.5
2015	53.8	10.1	62.55	8.3	2.7
2016	56.7	10.7	54.48	8.7	2.8
2017	59.6	11.2	59.05	9.1	3.0
2018	62.5	11.8	64.56	9.5	3.1

Source: Prepared by researchers based on reports from the IMF, World Bank.



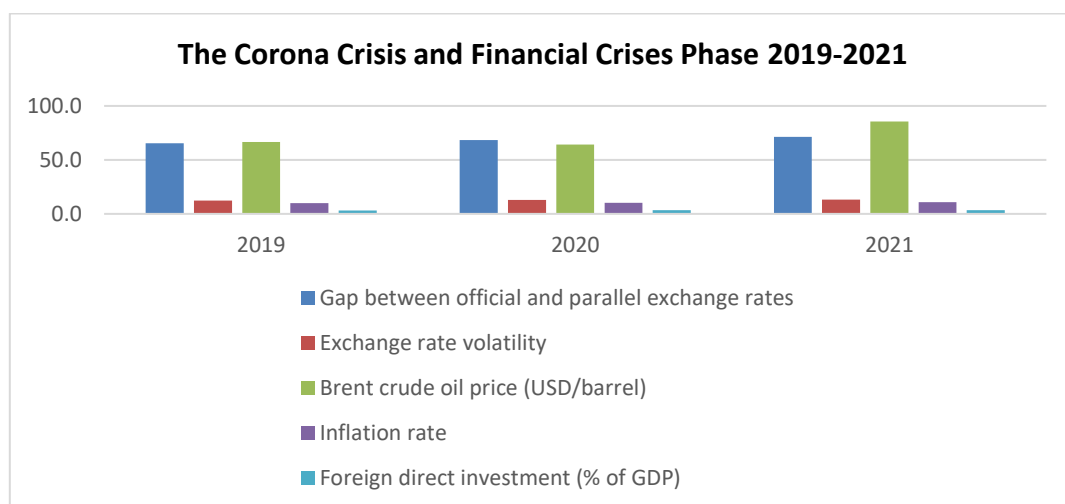
Source: Prepared by researchers based on the results of the table above.

During this period, Brent crude oil prices experienced a sharp decline between 2014 and 2016 as a result of the global oil price crisis. This was directly reflected in foreign direct investment (FDI), which fell significantly compared to pre-crisis levels. Investor confidence in the Algerian economy's ability to maintain project financing through oil revenues diminished. Despite a relative improvement in Brent prices during 2017-2018, FDI levels did not return to their previous high levels, reflecting the continued impact of the oil shock. Conversely, a new and more pronounced factor emerged compared to the first phase: the widening gap between the official and parallel exchange rates and increased exchange rate volatility. This further burdened the investment climate by amplifying monetary and financial risks. Consequently, a clear positive relationship emerged in this phase between Brent price movements and FDI, countered by a clear inverse relationship between exchange rate volatility and the gap, on the one hand, and investment flows, on the other. A major structural shift occurred in 2014-2015, representing a negative turning point in the trajectory of the relationship.

Third period: 2019-2021, the stage of the Corona crisis and financial crises 2019-2021

Year	Gap between official and parallel exchange rates	Exchange rate volatility	Brent crude oil price (USD/barrel)	Inflation rate	Foreign direct investment (% of GDP)
2019	65.4	12.3	66.6	9.9	3.3
2020	68.3	12.8	64.31	10.3	3.4
2021	71.3	13.4	85.46	10.8	3.6

Source: Prepared by researchers based on reports from the IMF, World Bank.



Source: Prepared by researchers based on the results of the table above.

Analysis:

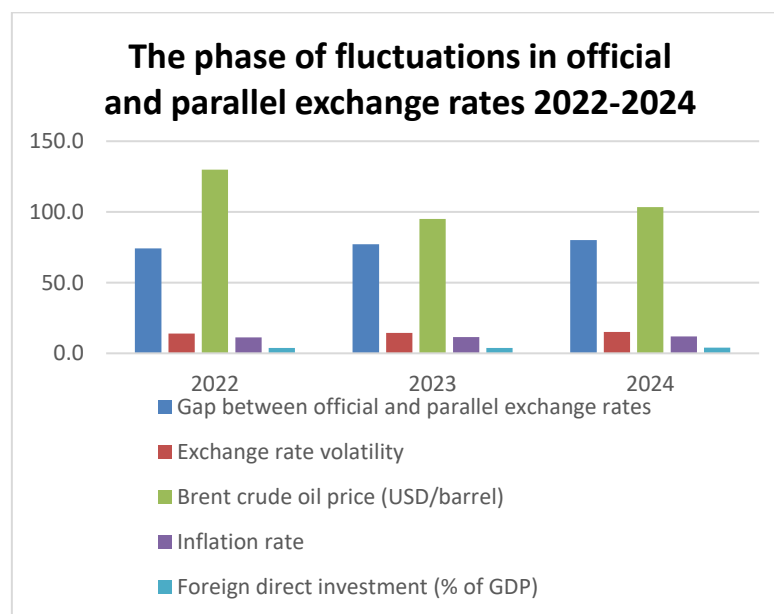
The curve shows a slight decline in the price of Brent crude in 2020 due to the repercussions of the COVID-19 pandemic and the global lockdown, before experiencing a sharp rise in 2021 with the return of economic activity and increased demand. However, this improvement was not reflected in the gap between the official and parallel market exchange rates, which remained large since 2019 and continued to widen. This reveals a structural imbalance in the foreign exchange market and the difficulty of transferring oil revenues to the domestic market. Exchange rate volatility also increased gradually over the past three years, although it remained at moderate levels, reflecting the fragility of confidence in the local currency and the growing influence of the parallel market. As for the inflation rate, it remained relatively stable with a slight upward bias in 2021, indicating a

partial transmission of parallel market pressures and increased domestic demand to prices. Finally, foreign direct investment remained weak and almost stable, showing no reaction to rising oil prices, indicating that institutional constraints and instability in the exchange market were a major obstacle to attracting foreign capital, so foreign investment remained limited even during periods of improved oil indicators.

Fourth period: The phase of fluctuations in official and parallel exchange rates 2022-2024

Year	Gap between official and parallel exchange rates	Exchange rate volatility	Brent crude oil price (USD/barrel)	Inflation rate	Foreign direct investment (% of GDP)
2022	74.2	13.9	129.79	11.2	3.7
2023	77.1	14.5	95.03	11.6	3.9
2024	80.0	15.0	103.4	12.0	4.0

Source: Prepared by researchers based on reports from the IMF, World Bank.



Source: Prepared by researchers based on the results of the table above.

Analysis:

During this period, despite the significant rise in Brent crude prices following the outbreak of the Russian-Ukrainian war, which should have positively impacted the attractiveness of the Algerian economy, foreign direct investment (FDI) inflows did not experience a substantial increase commensurate with the price shock. The improvement remained relatively limited. This is attributed to structural constraints in the macroeconomic environment, most notably the marked widening gap between the official and parallel exchange rates during this period, coupled with continued high exchange rate volatility, which increased investor uncertainty. Furthermore, higher inflation compared to the beginning of the decade eroded purchasing power and increased operating costs, placing additional pressure on the business environment. Therefore, it is clear that the impact of higher oil prices at this stage was largely limited by monetary and inflationary factors, such that foreign investment remained well below the potential that could have been realized thanks to the recovery in Brent crude prices.

- High oil prices, particularly between 2003 and 2008, led to substantial fiscal surpluses that enabled the Algerian government to increase public spending and infrastructure investment. This was a key factor in attracting foreign investors. Even with the 2009 crisis, oil prices recovered quickly, maintaining investor confidence.
- Strong oil revenues boosted foreign exchange reserves and reduced the need for external borrowing. The exchange rate remained relatively stable, and the gap with the parallel market narrowed, mitigating monetary risks.
- The collapse in oil prices (2014–2016) represented a significant negative shock, reducing fiscal resources and weakening the attractiveness of the Algerian market. Despite some subsequent improvement (2017–2018), investment inflows remained weak.
- The gap between the official and parallel exchange rates widened, and exchange rate volatility increased, raising transaction costs and increasing monetary uncertainty. These factors created exchange rate risks that discouraged investors from entering an unstable environment. • Despite the recovery in oil prices after 2020, foreign direct investment (FDI) remained virtually stagnant. This reflects the fact that the problem has become institutional rather than circumstantial, meaning that oil abundance alone is no longer sufficient to attract investment.
- The widening and persistent gap between the official and parallel markets, coupled with exchange rate volatility, has been a major obstacle to capital inflows. While inflation has remained at moderate levels, the increasing reliance on the parallel market has exposed the fragility of the monetary system.
- The surge in oil prices to record highs should have led to an investment boom, but this did not materialize, reflecting the fact that domestic macroeconomic factors have become the primary driver of FDI.
- Relatively high inflation, the widening gap between the official and parallel markets, and continued exchange rate volatility have eroded the returns on any foreign investment and increased operational risks. In other words, the massive oil revenues have not translated into financial stability.

Conclusion:

The Algerian economy remains heavily dependent on the volatility of oil prices. Oil price booms have impacted the performance of financial markets and investor confidence, which has generally improved during periods of abundance. Conversely, periods of price collapse have exposed the fragility of the monetary and financial system and its limited capacity to absorb external shocks. The sharp decline in oil prices between 2014 and 2016 led to a significant decrease in foreign exchange reserves and a widening gap between official and parallel exchange rates. This exacerbated uncertainty and increased investment risks. Exchange rate volatility also increased during the same period, negatively impacting the attractiveness of foreign direct investment and short-term capital inflows. Investors faced an environment characterized by volatile monetary policies and a lack of clarity regarding currency stability prospects. The findings confirm that even with the relative recovery in oil prices in 2022 as a result of the shock of the Russian-Ukrainian war, Algeria did not experience a significant surge in capital inflows. This indicates that the impact of oil prices alone is no longer sufficient to attract investment, and that the challenge has become structural in nature. The inefficiency of financial markets, the slow pace of monetary system reforms, and the persistent discrepancies between official and parallel market exchange rates all necessitate a comprehensive review of economic policies to ensure the sustainability of capital flows.

The analysis revealed several key findings, including:

- A strong correlation exists between oil prices and foreign capital inflows, highlighting the continued reliance on rentierism;
- Exchange rate stability between 2000 and 2013 helped mitigate risks; however, the gap between the official and parallel markets widened sharply after 2014;
- The limited depth of Algerian financial markets hinders their ability to effectively absorb shocks or attract long-term financing;

- Relatively high inflation and the expansion of the informal economy have exacerbated the fragility of the investment climate;

- The relative improvement in some years has not been sufficient to attract stable inflows, confirming that the problem is structural rather than circumstantial.

Based on the above, the study recommends the following:

- Adopting a gradual reform of the exchange rate system that balances flexibility and stability and reduces the gap with the parallel market;

- Strengthening the independence of the central bank and developing its tools to limit exchange rate volatility and speculation;

- Activating Algerian financial markets as a mechanism for mobilizing domestic savings and attracting foreign investment;

- Improving the business environment

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