MACROECONOMIC DETERMINANTS OF VIETNAM'S BALANCE OF PAYMENTS: AN EMPIRICAL ANALYSIS FROM 2008 TO 2023

- MSc. MY HANH DUONG*
- H-ANH NGUYEN*
- HIEN T NGUYEN*

This study investigates the drivers of Vietnam's Balance of Payments (BOP). From 2008 to 2023, as Vietnam became more globally connected, we've seen how key economic players -interest rates, trade balance, foreign direct investment (FDI), and the consumer price index (CPI) - have influenced its financial standing. We aim to clearly show how these factors impact the BOP's ups and downs, especially with increasing trade and external shocks. We analyzed quarterly data from the International Monetary Fund and Vietnam's General Statistics Office to develop our model. Utilising STATA software, we derived several notable results: although our model is statistically significant (F-statistic = 8.51; p-value < 0.05), indicating a valid relationship, it accounts for approximately 37.4% of the variation in the Balance of Payments (R^2 = 0.3739). This suggests that additional factors influence the outcome. Among the economic indicators examined, only the balance of trade (BOT) demonstrated a significant impact on the Balance of Payments, exhibiting a positive and robust association (coefficient = 0.66391; p-value = 0.001). This implies that a one-unit increase in the trade balance corresponds to an approximate increase of 0.66 units in the Balance of Payments. Conversely, interest rates, foreign direct investment (FDI), and the Consumer Price Index (CPI) did not show statistically significant effects during the period under review. These findings highlight the pivotal role of trade efficiency in enhancing Vietnam's Balance of Payments. To promote macroeconomic stability and sustainable growth, policy measures should prioritise increasing exports, managing imports effectively, and maintaining a stable trade environment.

Key words: Balance of Payment (BOP), Balance of Trade (BOT), FDI, CPI, Interest Rates.

Các yếu tố vĩ mô quyết định cán cân thanh toán của Việt Nam: Phân tích thực nghiệm từ năm 2008 đến 2023

Nghiên cứu này tìm hiểu các yếu tố thúc đẩy cán cân thanh toán (BOP) của Việt Nam. Từ năm 2008 đến 2023, trong bối cảnh Việt Nam ngày càng hội nhập sâu rộng hơn với nền kinh tế toàn cầu, chúng ta đã chứng kiến cách các yếu tố kinh tế chủ chốt như lãi suất, cán cân thương mại, đầu tư trực tiếp nước ngoài (FDI) và chỉ số giá tiêu dùng (CPI) tác động đến tình hình tài chính của quốc gia. Mục tiêu của chúng tôi là làm rõ cách các yếu tố này ảnh hưởng đến sự lên xuống của BOP, đặc biệt là trong bối cảnh thương mại tăng trưởng và những cú sốc từ bên ngoài. Chúng tôi đã phân tích dữ liệu hằng quý từ Quỹ Tiền tệ Quốc tế (IMF) và Tổng cục Thống kê Việt Nam để xây dựng mô hình. Sử dụng phần mềm STATA, tác giả đã thu được một số kết quả đáng chú ý. Mặc dù mô hình này có ý nghĩa thống kê (F-statistic = 8.51; p-value < 0.05), cho thấy một mối quan hệ hợp lệ, nhưng nó chỉ giải thích được khoảng 37.4% sự thay đổi của Cán cân thanh toán (R^2 = 0.3739). Điều này cho thấy rằng có nhiều yếu tố khác cũng ảnh hưởng đến kết quả. Trong số các chỉ số kinh tế được xem xét, chỉ có cán cân thương mại (BOT) thể hiện tác động đáng kể lên

*International School – Vietnam National University

cán cân thanh toán, với mối quan hệ tích cực và mạnh mẽ (hệ số = 0.66391; p-value = 0.001). Điều này ngụ ý rằng khi cán cân thương mại tăng một đơn vị, cán cân thanh toán sẽ tăng khoảng 0.66 đơn vị. Ngược lại, lãi suất, đầu tư trực tiếp nước ngoài (FDI) và Chỉ số giá tiêu dùng (CPI) không cho thấy tác động có ý nghĩa thống kê trong giai đoạn được khảo sát. Những phát hiện này nhấn mạnh vai trò then chốt của hiệu quả thương mại trong việc cải thiện cán cân thanh toán của Việt Nam. Để thúc đẩy ổn định kinh tế vĩ mô và tăng trưởng bền vững, các chính sách nên ưu tiên tăng cường xuất khẩu, quản lý nhập khẩu một cách hiệu quả và duy trì một môi trường thương mại ổn định.

Từ khóa: Cán cân thanh toán (BOP), Cán cân thương mại (BOT), Đầu tư trực tiếp nước ngoài (FDI), Chỉ số giá tiêu dùng (CPI), Lãi suất.

1. Introduction

Vietnam's economic progress, significantly boosted by global integration and free trade agreements, has impacted key macroeconomic indicators like interest rates, trade balance, FDI, and CPI. However, ongoing global volatility from the pandemic, geopolitical instability, and economic risks pose challenges, particularly in maintaining a stable Balance of Payments (BOP) [1]. While Vietnam has achieved a trade surplus, often driven by the FDI sector, and effectively manages CPI and interest rates for stability, a more selective FDI approach focusing on technology transfer and stronger domestic linkages is needed.

In the current global context, where economic shocks are occurring more frequently and trade between countries is a matter of concern, reassessing the relationship between macroeconomic variables and the Balance of Payments has become particularly necessary. This study focuses on analyzing the impact of four macroeconomic factors – including the balance of trade (BOT), foreign direct investment (FDI), consumer price index (CPI) and interest rates – on Vietnam's Balance of Payments during the period 2008–2023. The objective of the study is to determine the impact of economic factors on the fluctuations of the balance of payments. Unlike previous studies such as those by Nguyen Van Song [2] or Nguyen Duc Trung and Le Hoang Anh [3], this research utilizes a long and updated data series, in the context of significant global fluctuations such as the financial crisis, the COVID-19 pandemic, and geopolitical tensions. The exploitation of such a 16-year-long data series not only clarifies the relationship between macroeconomic variables and the balance of payments but also reflects the sustainability of the influencing factors under the constantly changing economic environment. From an academic perspective, the research contributes to reinforcing and expanding the theory on factors affecting the Balance of Payments, especially in the context of developing economies like Vietnam, which are highly open and significantly influenced by the international market. In practical terms, the research results provide a basis for policymakers to develop appropriate macroeconomic management measures, contributing to stabilizing the balance of payments, controlling external risks and promoting sustainable growth.

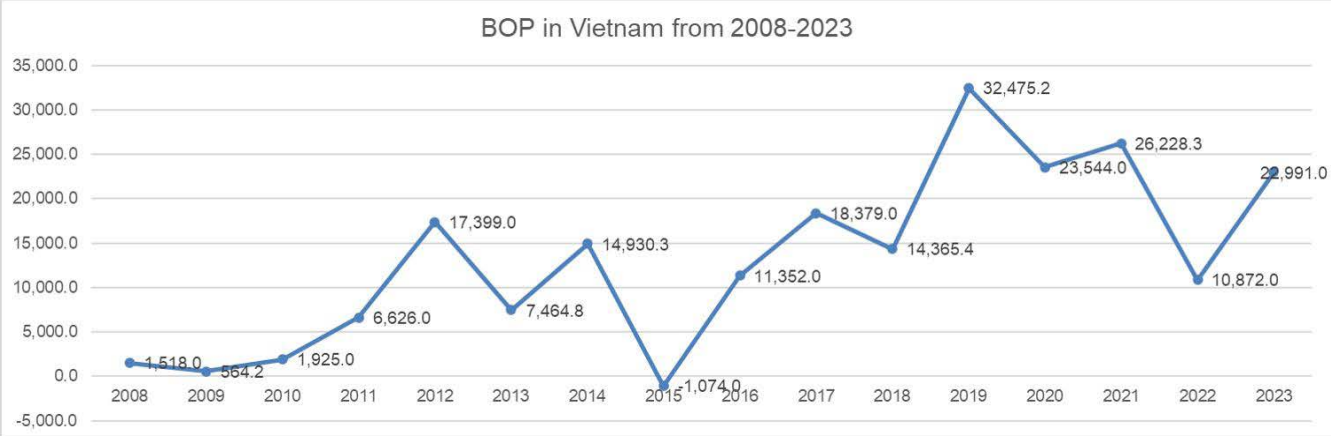
The study uses the OLS regression model to examine the impact of macroeconomic indicators on Vietnam's balance of payments from 2008-2023. Secondary data from the International Monetary Fund (IMF) and the General Statistics Office of Vietnam will be collected quarterly. The model will assess the impact of each factor on the Balance of Payments, identifying the main factors and their influence on fluctuations. From there, the research will provide necessary proposals and policy measures based on the analysis results, including interest rate control, implementing effective FDI attraction policies and enhancing the quality of risk management, in order to ensure the sustainability and stability of Vietnam's balance of payments.

2. Literature review

2.1. Status of Vietnam's Balance of Payments

The balance of payments is a systematic summary and compilation of all monetary transactions between residents of one country and residents of another country, as reported by each country over a specific period [4]. In the past two decades, thanks to reform and open-door policies, Vietnam has transformed from a poor, backward, and closed-off country into a bright spot in the region and the world. Since then, the Vietnamese economy has become dynamic and deeply integrated into the regional and global economy, while also developing strong relationships in all aspects, especially in the economic field, with other countries [5]. However, the process of integration and market opening has also brought disadvantages to the Vietnamese economy due to the impact of economic fluctuations from the countries with which Vietnam has cooperative relations. One of the notable disadvantages is the imbalance in the balance of payments, primarily due to the current account deficit. The imbalance in the balance of payments not only reflects dependence on exports and foreign capital flows but also indicates the vulnerability of the Vietnamese economy to external shocks such as financial crises, global commodity price fluctuations, or changes in monetary policies from major economies [6]. Therefore, the study and analysis of the balance of payments have become particularly important in the context of Vietnam's economy. This is not only a tool for reflecting the current state of foreign economic relations but also a basis for assessing the level of macroeconomic stability, thereby supporting the formulation of appropriate policies to maintain sustainable growth.

Figure 1: Developments in Vietnam's balance of payments during the period 2008-2023 (million USD)



Vietnam's balance of payments generally shows a surplus trend from 2008 to 2023. In 2008, despite being heavily affected by the global economic crisis and recession, the balance of payments still recorded a surplus of over 1,500 million USD [7]. From then until 2012, the balance of payments recorded a record surplus of over 17,000 million USD amidst a global economic downturn, and it wasn't until five years later, in 2017, that it could be surpassed. From 2012 to 2023, the balance of payments was almost always in surplus, especially in 2019, when it increased nearly 1.8 times compared to the previous record in 2017. Moreover, in the context of the COVID-19 pandemic severely impacting the Vietnamese economy, the balance of payments still recorded a significant surplus thanks to large goods exports, helping Vietnam achieve a trade surplus of 1.29 billion USD in 2021, and stable FDI inflows helped Vietnam enter the top 20 countries in the world in attracting FDI for the first

time in 2020 [8, 9]. However, in 2015, the balance of payments recorded a deficit of over 1,000 million USD due to falling oil prices leading to a decrease in export commodity prices and the impact of the global trade downturn along with instability in the international financial market [10].

2.2. Theoretical model

2.2.1. Monetary approach to balance of payment

The monetary approach to the balance of payments is a theoretical framework that posits any imbalance in the balance of payments reflects an imbalance in the domestic monetary market, originating from the work of J. Polak and promoted by the International Monetary Fund. This method assumes that the demand for money is stable and linked to income, and that the money supply is controlled exogenously by monetary authorities [11]. Imbalances occur when excess money supply or demand affects secondary accounts such as the trade balance and capital account [12]. The core mechanism of the monetary approach to the balance of payments is the reserve adjustment process, in which changes in international reserves play a central role in addressing balance of payments issues. Therefore, persistent deficits or surpluses are seen as symptoms of a fundamental imbalance in monetary policy rather than structural or trade-related issues [13].

2.2.2. Purchasing Power Parity Theory

Purchasing power parity (PPP) asserts that an equilibrium exchange rate exists when the purchasing power of each nation's currencies is equal [14]. When applied to the aggregate economy, this theory is based on the expansion and transformation of the "law of one price," which states that price differences for identical goods across markets create opportunities for arbitrage, ultimately leading to price convergence [15, 16]. Additionally, the exchange rate must adjust to the purchasing power parity level due to the actions of importers and exporters seeking profit. Therefore, it can be concluded that the purchasing power parity theory is based on current account transactions because those actions are recorded in the current account of a country's balance of payments.

2.3. Empirical review and hypothesis development

Many academic studies have examined the factors influencing the Balance of Payments, thereby providing important insights into the mechanisms of operation as well as the practical applications of the Balance of Payments in the context of the global economy. The study of Osoro Kennedy [17] indicates that indicators such as exchange rates, FDI, economic growth, relative income and the trade balance all have a positive impact on Kenya's balance of payments.

Studies in Vietnam mainly focus on the relationship between the current account and other macroeconomic indicators. For example, Nguyen Duc Trung and Le Hoang Anh [3] found evidence that the current account has a positive impact on economic growth, both in the short term and long term, with FDI playing an important role in this relationship. This finding was supported through a situational analysis combined with empirical research using the Vector Error Correction Model. Nguyen Van Song [2] used a mathematical model to analyze the state of the balance of payments and the impact of three main factors (bank interest rates, domestic commodity prices, and exchange rates) on the balance of payments and national income. The research results show that the balance of payments plays an important role in national income and foreign exchange reserves. Nguyen Thi Vu Ha [18] studied the impact of international integration from the time Vietnam joined the WTO until 2017, pointing out that trade liberalization significantly affects the components of the BOP. In her 2022 study, she argued that the surplus in the current account mainly comes from the trade balance, while the financial account primarily benefits from FDI inflows. The study also emphasizes the

role of the Balance of Payments in improving the external position and suggests increasing private investment.

Based on previous studies, it can be seen that the impact of economic indicators on Vietnam's balance of payments has not been thoroughly researched, despite Vietnam's balance of payments continuously recording surpluses in recent years. The trade balance is one of the key components of the current account and therefore directly affects the balance of payments [1]. When exports exceed imports, a trade surplus will contribute to increasing foreign exchange reserves, improving foreign currency reserves, and increasing the net value of the current account. Foreign Direct Investment (FDI) is also considered an important source of capital for the balance of payments, not only increasing financial account revenues but also boosting exports through enhanced production capacity and technology transfer [19]. On the contrary, the Consumer Price Index (CPI) – which represents the level of inflation – when the CPI rises, domestic goods prices also increase, reducing the competitiveness of exports while increasing the demand for cheaper imported goods from abroad, thereby worsening the trade balance and negatively affecting the balance of payments [20, 21]. High interest rates (IR) can attract short-term capital but simultaneously increase production costs and put pressure on the domestic currency to appreciate, negatively affecting exports. If interest rates are too low, capital flows may exit the economy, causing an imbalance in the financial account [22, 23]. Therefore, under unstable conditions, Interest Rates tends to negatively affect the Balance of Payments. From there, we propose the following hypotheses:

Hypothesis 1: The balance of trade has a significantly positive impact on the balance of payments.

Hypothesis 2: Foreign Direct Investment has a significantly positive impact on the Balance of Payments.

Hypothesis 3: The Consumer Price Index has a significant negative impact on the Balance of Payments.

Hypothesis 4: Interest rates have a significantly negative impact on the Balance of Payments.

3. Research methodology

3.1. Data collection

This study aims to analyze the relationship and impact of economic indicators on Vietnam's Balance of Payments from 2008 to 2023. Macroeconomic indicators such as interest rates, trade surplus, CPI, and FDI were chosen because they represent the overall economic situation of Vietnam and were collected quarterly from 2008 to 2023, allowing for the analysis of trends, relationships between indicators and recent economic fluctuations. To ensure the availability and high reliability of the data, we have chosen to collect secondary data from official sources such as the General Statistics Office of Vietnam and the International Monetary Fund.

Vietnam's balance of payments data has been collected quarterly from 2008 to 2023 following the International Monetary Fund's Balance of Payments Manual. The data is segmented into two main accounts: the current account, which records the flow of goods, services and income between Vietnamese residents and foreign entities, and the capital and financial account, which tracks changes in asset ownership and liabilities. Fluctuations in the balance of payments reflect Vietnam's external economic conditions, indicating its attractiveness to international capital flows and its capacity to maintain financial stability amid global economic volatility. Data sources include import and export figures from the General Department of Vietnam Customs, remittance data from private and state channels, and information on foreign direct investment and foreign debt repayments from relevant ministries and sectors. Prior to 2004, the State Bank of Vietnam primarily compiled the

data based on monthly reports from commercial banks. However, this approach was limited due to the cash-based nature of the Vietnamese economy. To enhance comprehensiveness and accuracy, the General Statistics Office has implemented additional surveys to gather data from a broader range of sources, including businesses and economic organizations. These efforts ensure that the balance of payments data aligns with international standards for reliability and consistency.

3.2. Data Analysis Techniques

This study employs various statistical techniques, including trend analysis, descriptive statistics, regression analysis, and a correlation matrix, to examine the relationships between independent variables and the Balance of Payments. Descriptive statistics provide a comprehensive understanding of the dataset by identifying patterns, trends and essential characteristics. The Durbin-Watson test analyses linear relationships among successive residuals in regression analysis to identify autocorrelation. The Breusch-Pagan test assesses heteroskedasticity (unequal variance) in a dataset by conducting an Ordinary Least Squares (OLS) regression without the assumption of constant variance. A Variance Inflation Factor (VIF) value exceeding 5 or 10 indicates serious multicollinearity, while a Variance Inflation Factor (VIF) greater than 5 indicates a potential multicollinearity issue among the variables.

The study employs the Ordinary Least Squares (OLS) linear regression model to assess the extent to which the selected independent variables influence the dependent variable. The regression method is chosen due to its advantages, including sufficiency, least variance, best linear unbiased estimator (BLU), least mean square error (MSE), and effectiveness. The regression model is structured as follows:

$$BOP_t = \beta_0 + \beta_1 IR + \beta_2 FDI + \beta_3 CPI + \beta_4 BOT + \varepsilon_t$$

Where,

β_0 = Constant

BOP = Balance of Payments

IR = Interest rate

CPI = Consumer Price Index

FDI = Foreign Direct Investment

BOT = Balance of Trade

ε = Error Term

4. Data analysis and findings

4.1. Descriptive statistics

Table 1: Descriptive statistics

Variable	Obs	Mean	Std. dev.Min	Min Max	Max
IR	62	7.318548	2.904268	4	15
FDI	64	3079.016	1095.51	1154	5830
CPI	64	142.3366	29.55091	78.47	186.19
BOT	64	490.9531	3629.473	-8408	10786
BOP	64	3262.769	3770.502	-5233	12968.2

The descriptive statistics reveal considerable variability in the Balance of Payments and Trade Balance. Specifically, Balance of Payments exhibits a standard deviation of 3,770.502, which exceeds its mean value of 3,262.769, yielding a coefficient of variation (CV) of approximately 1.16. A coefficient of variation greater than 1 typically indicates high relative dispersion,

suggesting that Vietnam's Balance of Payments experienced substantial fluctuations over the study period. Similarly, the balance of trade has a mean of 490.9531 and a standard deviation of 3,629.473, leading to an even higher coefficient of variation of approximately 7.39, indicating a wide dispersion of the data and significant discrepancies in the observations. Both variables not only have a large gap between the minimum and maximum values but also have a significant negative minimum value and a significant positive maximum value. This shows that there were times when Vietnam had a large trade surplus, but there were also periods of significant trade deficits. In contrast, Foreign Direct Investment (FDI) displays relatively more stability. With a standard deviation of 1,095.51 and a mean of 3,079.016, the coefficient of variation is approximately 0.36, indicating low relative variability. This suggests that FDI inflows remained relatively steady. The interest rate maintains a relatively stable average of 7.318548 and a lower standard deviation of 2.904268, leading to a coefficient of variation of 0.40, which is less than 1. This suggests that Vietnam maintained a moderately flexible yet stable interest rate policy over the period. Meanwhile, the Consumer Price Index (CPI) has an average of 142.3366 with a standard deviation of 29.55091 (coefficient of variation ≈ 0.21), reflects relatively low inflation volatility, reflecting relatively well-controlled inflation and highlighting price stability within a range of 78.47 to 186.19.

4.2 Correlation Matrix (Pearson correlation matrix)

Table 2: Correlation matrix

	IR	FDI	CPI	BOT	BOP
IR	1				
FDI	-0.5731	1			
CPI	-0.6811	0.7797	1		
BOT	-0.5333	0.7175	0.7849	1	
BOP	-0.2855	0.4396	0.4656	0.6093	1

The three indicators, including FDI, CPI, and balance of trade, all have a correlation with Balance of Payments, with correlation coefficients of 0.4396, 0.4656, and 0.6093 respectively, indicating that these three indicators have a positive relationship with the balance of payments. With a correlation coefficient of 0.7175, FDI also has a positive correlation with balance of trade, suggesting that foreign direct investment may play an important role in improving the trade balance. Additionally, the CPI has a strong correlation with balance of trade and FDI, indicating a connection between the consumer price index and international economic activities, with correlation coefficients of 0.7849 and 0.7797, respectively. Conversely, Interest Rates has an inverse relationship with most variables, especially with CPI, FDI, and balance of trade, with correlation coefficients of -0.6811, -0.5731, and -0.5333 respectively, indicating that interest rates can negatively affect inflation and trade surplus.

4.3 Durbin-Watson d-statistic

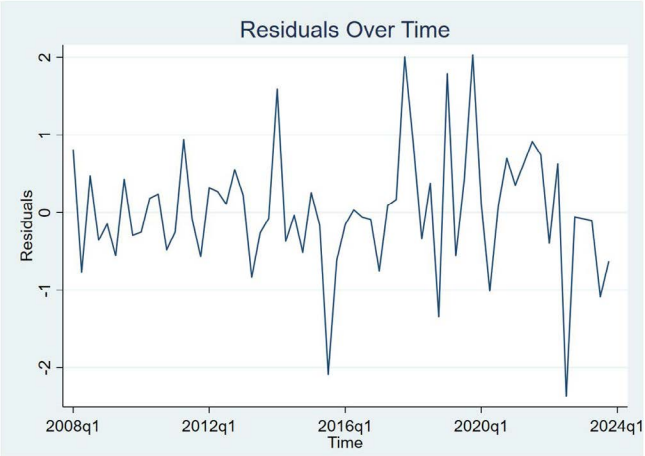
Table 3: Durbin-Watson d-statistic

Durbin–Watson d-statistic(5,62) = 2.061408

In this scenario, the R-squared value (0.3739) is less than the Durbin-Watson statistic (2.061408), indicating that the data series exhibits stationarity. Stationarity is an essential feature in time series analysis, as it guarantees that statistical properties like mean and variance, among other statistical characteristics, stay constant over time. This is an important factor in time series analysis, helping to ensure the stability of the regression model. As a result, hypothesis testing and forecasting can yield more reliable results.

The model's residuals are shown on a graph.

Figure 4: Residual in a graph



The plotted data points represented in the graph do not appear to indicate a distinct upward or downward trend. Instead, they display irregular variability, with certain points rising while others fall. These erratic variations imply that the residual differences between observed values and values predicted by a model might be characteristic of either a stationary process or white noise. In these scenarios, the residuals do not follow any predictable pattern, indicating that the model has effectively captured all the underlying structure in the data, and the remaining variations are completely random.

4.4. Breusch-Pagan Test for Residuals

To test for heteroskedasticity in the residuals of the regression model, the Breusch-Pagan/ Cook-Weisberg test was conducted. The null hypothesis (H0) states that the residuals have constant variance (homoscedasticity), while the alternative hypothesis (H1) suggests Residuals are heteroskedastic.

Table 4: Breusch-Pagan test

Breusch-Pagan/ Cook-Weisberg test for heteroskedasticity	
Chi2 (1)	3.68
Prob> Chi2	0.0550

The test result provides a chi-square statistic of 3.68 with a p-value of 0.0550. Since the p-value is slightly above the standard significance level of 0.05, we are unable to reject the null hypothesis at the 5% level. This indicates that there is no strong statistical evidence of heteroskedasticity in the model, meaning the variance of the residuals appears to be relatively constant.

4.5. Multicollinearity test

To assess the presence of multicollinearity in the regression model, the Variance Inflation Factor (VIF) analysis was performed. Variance Inflation Factor (VIF) measures how much the variance of an estimated regression coefficient increases due to collinearity with other independent variables.

Table 5: VIF Test

Variable	VIF	1/VIF
CPI	4.2	0.238149
BOT	2.82	0.355202
FDI	2.78	0.359732
IR	1.88	0.531169
Mean VIF	2.92	

The results show that the highest Variance Inflation Factor (VIF) value is 4.2 (for CPI). If the Variance Inflation Factor (VIF) value is higher than 5, it suggests that there may be problems with multicollinearity in the model. Since all Variance Inflation Factor (VIF) values are below the commonly used threshold of 5, there is no strong indication of multicollinearity in the model.

4.6. OLS Regression Results

The study uses OLS linear regression conducted on 62 observations with 4 independent variables including Interest Rates, foreign direct investment (FDI), consumer price index (CPI), and balance of trade (BOT). The F-statistic value = 8.51 with a p-value = 0.000 indicates that the model is statistically significant. However, the value = 0.3739 indicates that the independent variables in the analysis have a limited explanatory power, with the model explaining only about 37.39% of the variation in the balance of payments. This suggests that there are still many other factors not included in the model that could affect the Balance of Payments.

Source	SS	df	MS
Model	23.2959436	4	5.8239859
Residual	39.0146389	57	0.68446735
Total	62.3105825	61	1.02148496

Number of obs	=	62
F(4, 57)	=	8.51
Prob > F	=	0
R-squared	=	0.3739
Adj R-squared	=	0.3299
Root MSE	=	0.82733

Table 6: OLS regression results

BOP	Coefficient	Std. err.	t	P>t	[95% conf.	interval]
IR	0.0606664	0.1453434	0.42	0.678	-0.2303788	0.3517115
FDI	0.0332868	0.1752455	0.19	0.85	-0.3176362	0.3842099
CPI	-0.0108127	0.2185211	-0.05	0.961	-0.4483937	0.4267684
BOT	0.6391308	0.1795818	3.56	0.001	0.2795244	0.9987373
_cons	-0.0193844	0.1053459	0.18	0.855	-0.230336	0.1915671

The regression results show that the interest rate has a positive relationship with the balance of payments, with a coefficient value of 0.0606664. The Balance of Payments is predicted to increase by 6.06664% for each 1% increase in the Interest Rates. With a p-value of 0.678, the observed relationship is not statistically significant, indicating that there may not be a statistically significant relationship between Interest Rates and Balance of Payments. Similarly, both FDI have a small positive relationship with Balance of Payments and CPI have a small negative relationship with The Balance of Payments, but neither is statistically significant based on p-values of 0.961 and 0.850, respectively. These results indicate that there is no clear evidence of a relationship between interest rates, FDI, or CPI, and Balance of Payments during the study period. Only the balance of trade (BOT) has a positive and statistically significant impact on the Balance of Payments. Specifically, the regression coefficient of balance of trade is 0.66391, indicating that an estimated increase of 66.391% in Balance of Payments results from a 1% increase in balance of trade. With a p-value of 0.001, at a 5% significance level, this positive relationship is statistically significant.

Table 7: Summary of Hypotheses Testing Results for the Balance of Payments

Hypotheses for Balance of Payments	Result	Conclusion
H1: Balance of trade has a significantly positive impact on the Balance of Payments.	Accepted	We accept the null hypothesis. (significant level at 5%)

H2: Foreign Direct Investment (FDI) has a significantly positive impact on the Balance of Payments.	Rejected	We reject the null hypothesis. (significant level at 5%)
H3: Consumer Price Index (CPI) has a significant negative impact on the Balance of Payments.	Rejected	We reject the null hypothesis. (significant level at 5%)
H4: Interest rates (IR) have a significantly negative impact on the Balance of Payments.	Rejected	We reject the null hypothesis. (significant level at 5%)

5. Conclusion

5.1. Conclusions

This study aims to analyze the relationship between Vietnam's Balance of Payments and key macroeconomic indicators, including the balance of trade (BOT), foreign direct investment (FDI), consumer price index (CPI), and interest rates (IR) during the period from 2008 to 2023. To ensure the accuracy and robustness of the results, various statistical tests were conducted. The Durbin-Watson statistic suggested that no severe autocorrelation issues were present in the model. The Breusch-Pagan test confirmed that heteroskedasticity was not a significant issue in the model. Additionally, the Variance Inflation Factor (VIF) test showed no multicollinearity concerns.

The results of the OLS regression indicate that among the variables, including the balance of trade, foreign direct investment, interest rates, and the consumer price index, the balance of trade has a positive and significant impact on Vietnam's balance of payments. This shows that the expansion of Vietnam's economy and balance of payments are positively and significantly influenced by the balance of trade. Interest rates and foreign direct investment have a positive but not significant impact on Vietnam's balance of payments, indicating that changes in them do not significantly affect the balance of payments. Additionally, the Consumer Price Index (CPI) has a negative but statistically insignificant relationship with the balance of payments, implying that inflationary pressures do not have a significant direct impact on Vietnam's external balance.

5.2. Policy Recommendations

The main takeaway from this research is that the effective execution of government policies plays a crucial role in shaping the economy of a country. It emphasizes the importance of the government continuing to promote exports by supporting domestic businesses, especially in sectors with high competitive advantages such as the export of agricultural products, seafood, and processed and manufactured industrial goods of Vietnam, as the trade balance plays a crucial role in determining the balance of payments, with the proportion of export value of processed and manufactured industrial goods increasing from 53.6% of total export turnover in 2010 to 85.2% in 2020. Along with that, reducing dependence on a few major partners by diversifying export markets, beyond the three main partners of China, the United States, and South Korea-who currently account for over 50% of total export turnover-will help minimize vulnerability to external factors and diversify export markets. Expanding into ASEAN, EU, and African markets through free trade agreements like European-Vietnam Free Trade Agreement (EVFTA) and Regional Comprehensive Economic Partnership (RCEP) is a viable direction [24].

At the same time, the government needs to issue regulations and recommendations to enhance the quality control of imported goods

in accordance with World Trade Organization standards. This helps eliminate non-essential items that do not meet standards, prevents Vietnam from becoming a technological dumping ground, and is also a necessary measure to improve the trade balance. Additionally, by creating an investment environment, diversifying FDI sources, and simplifying administrative procedures to attract high-quality capital flows, we can optimize foreign direct investment (FDI). The government also needs to ensure the maintenance of stable interest rates to regulate the market, avoiding excessive fluctuations that could affect capital flows. Combine the reasonable use of price policy tools to control the Consumer Price Index (CPI), limit price manipulation that destabilizes the economy, and affect business operations and economic growth [25].❑

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