



Vietnam's Economy and the Balance of Payment: An Empirical Analysis of Macroeconomic Factors, 2008 - 2023

Phuong T Nguyen¹, My-Hanh Duong^{2*}, H-Anh Nguyen¹, Hien T Nguyen¹

¹ International School, Vietnam National University, Hanoi, Vietnam

² CY Tech, France

*Corresponding author: dhanh0111@gmail.com

Abstract

Research purpose: *This study investigates the influence of economic factors on Vietnam's Balance of Payments (BOP) from 2008 to 2023. The economic indicators in the study include interest rates, trade balance, foreign direct investment (FDI), and consumer price index (CPI), which are used to determine the extent to which they affect the fluctuations of the BOP.*

Research motivation: *This study is driven by economic changes and challenges from external shocks as Vietnam becomes increasingly deeply integrated into the global economy. Investigating the relationship between macroeconomic factors and the balance of payments helps provide a basis for policymakers to develop appropriate macroeconomic management measures, contributing to the stability of the balance of payments and sustainable economic development.*

Research design, approach, and method: *We applied various statistical tools and techniques to examine the relationship between interest rates, trade balance, foreign direct investment, consumer price index and the balance of payments (BOP), followed by building and running a regression model using STATA software to test the model's suitability and analyze the results.*

Main findings: *The findings show that the model is statistically significant (F -statistic value = 8.51; p -value < 0.05), but the model's capability is not high ($R^2 = 0.3739$), indicating that the model only explains a portion of the variation in the dependent variable. Among the four independent variables, only the trade balance (BOT) has a positive and statistically significant impact on the BOP (coefficient = 0.66391; p -value = 0.001), while interest rates, FDI, and CPI do not show statistical significance during the study period.*

Practical/ managerial implications: *The findings underscore the pivotal role of trade efficiency in strengthening the balance of payments, reflecting its broader significance for economic resilience and structural stability. Policies should focus on stable trade strategies that boost exports, reduce import dependence, and ensure a steady trade environment to promote macroeconomic stability and sustainable growth.*

Keywords: *Balance of Payment (BOP), Balance of Trade (BOT), FDI, CPI, Interest Rates.*

1. INTRODUCTION

The process of becoming deeply integrated with the world and the region, along with joining international organisations, has helped Vietnam achieve significant economic progress in the new and volatile global context (Nguyen Manh Hung, 2021). Joining international economic organizations and participating in free trade agreements have gradually helped Vietnam enhance its competitiveness, attract foreign investment, and expand its import-export markets, thereby significantly altering macroeconomic indicators such as interest rates, trade balance, foreign direct investment (FDI), and consumer price index (CPI) (Phuong Thao, 2022). However, in the context of a world constantly fluctuating due to factors such as the Covid-19 pandemic, geopolitical instability from armed conflicts and trade wars, as well as global economic risks, the Vietnamese economy also faces significant challenges, particularly in ensuring a sustainable balance of payments (BOP). This means that financial and monetary policies need to be adjusted to respond promptly to global changes, ensuring consistency and flexibility in these policies and minimizing the economy's vulnerability to external shocks. A sustainable balance of payments not only demonstrates a country's ability to meet its foreign exchange obligations with other nations but also reflects its economic standing in the international arena, helping to strengthen economic sovereignty and contribute to long-term economic development goals (Đỗ Đức Bình & Ngô Thị Tuyết Mai, 2019).

Macroeconomic indicators such as the trade balance, foreign direct investment (FDI), consumer price index (CPI), and interest rates are important tools in formulating and adjusting economic policies in Vietnam. These indicators not only reflect the health of the economy but also assist policymakers in making appropriate decisions in a volatile global context. In recent years, Vietnam has maintained a trade surplus, especially with the United States and the EU, contributing to the improvement of the current account balance and increasing foreign exchange reserves (Nso, 2023). However, export activities still heavily rely on the FDI sector and imported raw materials, indicating the need to develop the domestic supporting industry. FDI plays an important role as a growth driver, especially in the processing and manufacturing sectors. Vietnam strongly attracts this capital flow thanks to low labor costs, a favorable geographical location, and incentive policies. However, FDI is currently mainly concentrated in labor-intensive sectors with little linkage to domestic enterprises. This requires a more selective FDI attraction policy, focusing on technology transfer and enhancing the capacity of domestic enterprises (Ngoc Khanh, 2016). CPI is a tool for monitoring inflation and the purchasing power of the domestic currency. In the context of price volatility and global geopolitical risks, controlling inflation below the 4% threshold set by the Government is a key factor in maintaining macroeconomic stability. In addition, interest rates are managed flexibly to balance exchange rate stability, investment stimulation, and inflation control (Sbv, 2023). The balance of payments (BOP) comprehensively reflects the economic relationship between Vietnam and the world. Maintaining a stable balance of payments not only strengthens foreign exchange reserves but also mitigates systemic financial risks and enhances the credibility of macroeconomic management (José Antonio Ocampo, 2016). Accordingly, external stability should be pursued through strategies that enhance long-term structural competitiveness, rather than relying solely on short-term corrective measures (Woocheol Lee, 2021). This implies that policies must focus on building resilient export capacities, improving the efficiency of resource allocation, and fostering innovation-driven growth, thereby ensuring that the external sector remains robust even amid global economic fluctuations. In doing so, the balance of payments is transformed from a reactive indicator of vulnerability into a proactive foundation for sustainable economic development.

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 (BOP) 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 (BOP) 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 \(2020\)](#) or [Nguyen Duc Trung and Le Hoang Anh \(2021\)](#), 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 BOP, 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.

This study uses macroeconomic indicators, including interest rates, trade balance, FDI, and CPI to study economic impacts on Vietnam's balance of payments (BOP) during the period 2008-2023. Secondary data will be collected quarterly from the International Monetary Fund (IMF) and the General Statistics Office of Vietnam, and used to run regressions on STATA software to determine the relationship between these factors and the balance of payments. The regression model will allow for the assessment of the impact level of each factor on the BOP, thereby identifying the main factors and their influence on the fluctuations of the balance of payments throughout the study period. 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.

The research paper will include 5 chapters as follows: Chapter 1 will present an overview of Vietnam's economic situation, the necessity of studying the impact of economic indicators on Vietnam's balance of payments (BOP), and the research objectives. Chapter 2, the theoretical overview, will assess the BOP situation in Vietnam, analyze the factors affecting BOP such as interest rates, trade balance, FDI, and CPI, while also reviewing the relevant theoretical models and identifying research gaps. The research methodology will be presented in chapter 3 to describe the regression method, the process of collecting and analyzing data from the International Monetary Fund (IMF) and the General Statistics Office of Vietnam during the period from 2008 to 2023. In chapter 4, data analysis and research results will present the findings from the regression model, clarifying the impact of macroeconomic factors on the BOP and drawing conclusions from the data. Finally, chapter 5, conclusion, will summarize the findings, provide policy recommendations, and highlight the limitations of the study, as well as suggest directions for future research.

2. LITERATURE REVIEW

2.1 BOP in Vietnam

The balance of payments (BOP) 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 ([Richmond Akwasi Atuahene, 2024](#)). 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 ([Nguyen Duc Kien, 2021](#)). 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 ([Hansjörg Herr et al., 2016](#)). 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 ([Tony Ng, 2020](#)). One of the notable disadvantages is the imbalance in the balance of payments ([Hoang The Thoa, 2008](#)). 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 ([Finn Tarp & Philip Abbott, 2011](#)). Although in recent years Vietnam has achieved a relatively stable trade surplus and attracted a significant amount of foreign direct investment (FDI), its balance of payments remains unsustainable ([Hoang The Thoa, 2008](#)). 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.

Financial policy and monetary policy are two important tools that have a direct impact on a country's balance of payments ([Hoang The Thoa, 2008](#)). When a balance of payments deficit occurs, governments often implement fiscal policies such as reducing public spending and increasing tax rates to limit imports and decrease domestic aggregate demand, thereby contributing to short-term balance improvement. Simultaneously, monetary policy is adjusted thru raising the discount rate to reduce the money supply in the economy, leading to higher market interest rates, aiming to control domestic investment and consumption to decrease investment, while also attracting foreign investment capital and foreign currency, helping to increase foreign exchange reserves and improve the balance of payments.

In the context of emerging economic volatility, the Vietnamese economy has undergone significant transformations due to a series of important historical events during the period 2008-2023. The economic landscape of Vietnam began in 2008 when the global financial crisis shook economies worldwide, and Vietnam was not spared from the impacts of this. The economic growth rate has significantly declined, raising concerns about the stability, resilience, and long-term growth prospects of the economy ([Pham Sy & Tran Thanh, 2024](#)). In addition, the European sovereign debt crisis that began in the latter half of 2009 brought difficulties and challenges to Vietnam ([Nguyen Anh Tuan & Nguyen Linh, 2014](#)). In order to protect the economy, recovery efforts were initiated by the Vietnamese government in 2009, including flexible fiscal and monetary policies, the implementation of stimulus packages for production and consumption, interest rate support, the use of tax reduction, deferral, and exemption measures, and the launch of the campaign for Vietnamese people to prioritize

using Vietnamese products ([Manh Hung & Thanh Ha, 2009](#)). These policies increased inflation and altered trade flows, directly impacting the BOP ([Nguyen Ngoc Thanh, 2001](#)). The result of these efforts has been to ensure macroeconomic stability, maintain an appropriate growth rate, keep inflation at only one-third of the 2008 level, and help the country overcome difficulties in the context of a severe global economic recession and crisis.

By 2010, Vietnam's economy gradually recovered and grew at a fairly high rate, surpassing the set targets, primarily driven by positive changes in exports and imports ([Nguyen Ngoc, 2022](#)). Since then, it has helped Vietnam achieve its greatest success by becoming a middle-income country ([Javier Revilla Diez, 2016](#)). The manufacturing sector has also been emphasized, creating a favorable environment and strong investments to promote socio-economic development, ensure social security, and enhance social welfare ([Nhat Mai, 2022a](#)). However, this growth faced challenges in 2011 when inflationary pressures began to rise due to increases in commodity prices, raw materials, and gold ([Vu Lien Son, 2011](#)). To respond, the government implemented a series of measures to curb inflation, including tightening monetary policy and applying price control measures, leading to high interest rates ([Nguyen Thu Kim & Junichi Hirata; Le Thanh Tung, 2021](#)). The increase in interest rates can lead businesses and individuals to reduce investment and consumption, while also attracting more foreign investment and boosting exports. From there, it directly affects the balance of payments ([Zaid Alazaki & Nuh Okumus, 2024](#)). Thus, the fluctuations in interest rates and investment not only reflect the macroeconomic situation but also highlight the important role of economic policy in directing capital flows, balancing imports and exports, and stabilizing the balance of payments during difficult periods.

In the period from 2012 to 2015, with the goal of transitioning towards a market economy, opening up for trade and investment with the world, it was necessary to adjust policies directly impacting and related to FDI to leverage the country's advantages, especially given the tense situation in the East Sea ([Phuong Lan, 2016](#)). Recognizing the importance of FDI as a catalyst for growth, Vietnam has implemented reforms to improve the business environment, making it an increasingly attractive destination for international investors ([Dao Duc, 2023](#)). These adjustments help enhance access to international capital and boost exports, thereby influencing the overall structure of the balance of payments ([Manuel Fernandez et al., 2020](#)). In 2016, Vietnam made significant progress by signing the Trans-Pacific Partnership (TPP), a new-generation free trade agreement ([Ngo Van Vu, 2019](#)). This agreement has opened up opportunities for deeper integration into the global value chain, boosting economic growth, improving the business environment, and enhancing the competitiveness of domestic enterprises. 2017 was a year that witnessed a significant increase in exports, helping to considerably improve the trade balance and contributing to a healthier balance of payments ([Nhat Mai, 2022b](#)).

The Vietnamese economy continued to grow strongly in 2018 and 2019, thanks to stable macroeconomic conditions, controlled inflation, and improved social welfare ([Nguyen Nga, 2021](#)). However, geopolitical issues have caused instability in the global trade system, affecting investor sentiment and trade momentum due to escalating trade tensions between the United States and China ([Xinwei Feng, 2023](#)). The year 2020 witnessed an unprecedented event due to the Covid-19 pandemic, which disrupted international trade supply chains and severely impacted foreign direct investment flows ([Malgorzata Jaworek et al., 2020](#)). Moving into the period of 2021 and 2022, the Vietnamese government focused on pandemic prevention and economic recovery by reforming and opening up the economy, along with investing in advanced medical technology for epidemic prevention, supporting employment, aiding business recovery, and developing infrastructure ([Nguyen Thi, 2022](#)). Along with

that, there is a strong push to modernize institutions, improve governance, enhance transparency and accountability within the administrative apparatus, aiming to boost economic resilience and support sustainable development strategies (Tu Thi Thoa & Nguyen Duc Cuong, 2024). In recent years, Vietnam continues to assert its position as an attractive investment destination, with significant achievements including elevating its relationship with the United States to a comprehensive strategic partnership, further catalyzing a new wave of investment in the semiconductor industry (Tran Thi Bich, 2019). In order to maximize the country's advantages, the Vietnamese government has focused on innovation, infrastructure development, and strategic reforms, strengthening its position in the Southeast Asian region (Mark Beeson & Hung Pham, 2012).

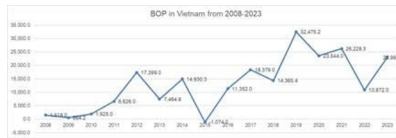


Figure 1: Developments in Vietnam's balance of payments during the period 2008-2023 (million USD) (Source: Author's calculation)

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 (The Ministry Of Finance, 2018). 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 (The Ministry Of Finance, 2021; Nguyen Bich Lam, 2021). 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 (Gsov, 2015).



Figure 2: Developments in Vietnam's current account during the period 2005-2023 (million USD) (Source: Author's calculation)

For five consecutive years from 2005 to 2010, the current account continuously recorded deficits, placing a burden on Vietnam's overall balance, especially during the financial crisis in 2008, which saw a deficit of over 10,800 million USD, equivalent to 11.9% of GDP. This stems from macroeconomic imbalances and Vietnam's accession

to the WTO, which caused external shocks to have a strong and rapid impact on the domestic economy, increasing the current account deficit as well as capital flow. The current account marked a positive turnaround in 2011 when Vietnam recorded a small surplus of approximately 236 million USD for the first time, thanks to the recovery of exports. In the period from 2012 to 2019, the current account balance showed a tendency to improve, continuously recording surpluses except in 2015 and 2017. This has created favorable conditions for business operations, boosted exports, and contributed to economic development. After reaching a peak in 2020 with a value of 15.1 billion USD, the current account once again reversed direction and recorded a deficit of nearly 4.63 billion USD due to a high deficit in the services balance and a decline in remittances in the first two years of the pandemic (2021 - 2022). However, the deficit in 2021 was just an exception as the current account quickly recovered with a surplus in 2022 and reached another record value of 25.1 billion USD in 2023, reflecting the strong recovery of the economy after the difficult period caused by the COVID-19 pandemic.

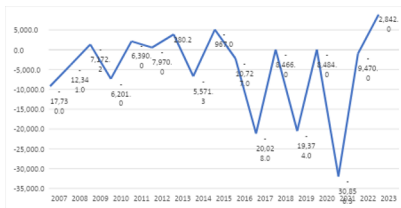


Figure 3: Developments in Vietnam's financial account during the period 2008-2023 (million USD) (Source: Author's calculation)

In the period from 2008 to 2023, Vietnam's financial balance mainly recorded a deficit, with a surplus only in 2013 and 10 years later in 2023. The reason is that due to the policy of opening up the financial services market after integration, Vietnam received a large amount of FPI capital, reaching its peak in 2007 (approximately 6.24 billion USD). However, along with the financial crisis, the significant withdrawal phenomenon in the following years reduced the scale of capital inflows into Vietnam, causing a financial balance deficit. Especially during the period 2020-2021, the COVID-19 pandemic had a negative impact on the economy, leading to a deficit of over 20 billion USD in 2021.

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 ([Mariam Elhaddadi & Mohamed Karim, 2017](#)). Imbalances occur when excess money supply or demand affects secondary accounts such as the trade balance and capital account ([Gary A. Craig, 1981](#)). 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 ([Giancarlo Gandolfo, 2016](#)).

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 ([Alan M. Taylor & Mark P. Taylor, 2004](#)). 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 ([Steve Suranovic, 2010](#); [Qiannan Wang et al., 2023](#)). 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 affecting the balance of payments (BOP), providing important insights into the mechanisms and practical applications of BOP in the context of the global economy. Some foreign research papers related to this topic include [Mungami Eddie Simiyu \(2012\)](#) study on the effects of exchange rate liberalization on the balance of payment of a developing country: a case of Kenya. In this study, [Mungami Eddie Simiyu \(2012\)](#) argues that by effectively navigating the allocation of economic resources, the exchange rate plays a crucial role in ensuring a country's economy remains competitive in the international market, thereby strengthening the nation's competitive advantage in global trade. The research results indicate that although it does not impact the current account or reduce the trade deficit, the liberalization of the exchange rate has improved the overall balance of payments. Furthermore, the export sales of companies are negatively affected by significant exchange rate fluctuations, making business planning difficult and increasing financial risks.

In addition to exchange rates, FDI also has a positive impact on BOP in both developed and developing countries thanks to advantages such as technology spillovers, support for human resource development, and enhanced business development as announced by [Kurtishi-Kastrati Selma \(2013\)](#). Not only do the countries receiving the investment benefit from the inflow of capital, but FDI can also contribute to improving the BOP through the current account, replacing imported goods and services. Other studies, such as the research publications by [Robert Mudida \(2012\)](#) and [Osoro Kennedy \(2013\)](#), also indicate that indicators such as exchange rates, foreign direct investment, economic growth, relative income, and the trade balance positively affect Kenya's BOP. [Funda H Sezgin and Nesli Nazik Özkan \(2015\)](#) applied econometric methods to analyze the relationship between BOP and FDI in Turkey, and the results showed that BOP is not affected by FDI.

Vietnamese research papers on BOP or indicators affecting BOP in Vietnam are still quite rare. The studies often focus on the relationship between the current account balance and other macroeconomic indicators. For example, [Nguyen Duc Trung and Le Hoang Anh \(2021\)](#) found evidence that the current account balance has a positive impact on economic growth in both the short and long term, with the important role of FDI in this relationship through the analysis of the situation, combined with empirical research on the relationship between the current account balance and economic growth in Vietnam using the VECM model. [Nguyen Van Song \(2020\)](#) used a mathematical model to analyze the states of the BOP 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 BOP plays an important role in national income and foreign exchange reserves. Meanwhile, ([Tran Thi Cam Tu, 2018](#)) expanded the analysis by examining the impact of the

components in the BoP on the state budget balance in 10 developing countries in Asia. in Asia. Using the generalized least squares (GLS) method, the author concludes that the balance of the current account and FDI have a positive impact on the state budget balance, meaning that when these two factors increase, the budget situation also improves. improve.

[Nguyen Thi Vu Ha \(2022\)](#) approached the issue through qualitative research, examining the impact of the integration process since Vietnam joined the WTO until 2017, thereby concluding that trade liberalization significantly affects the components of the BOP. In her 2022 study on surpluses in the balance of payment of Vietnam and recommendations, she found that the surplus in Vietnam's current account was mainly due to the surplus in the trade balance, while the surplus in the financial account was primarily because Vietnam had attracted a large amount of FDI into the country. At the same time, it affirms that Vietnam's external position has been enhanced due to the surplus in the BOP and recommends that Vietnam should consider further supporting and improving private investment.

Based on previous studies, it can be seen that the impact of economic indicators on Vietnam's balance of payments (BOP) has not been extensively researched, despite the fact that Vietnam's balance of payments has continuously recorded surpluses in recent years and has begun to influence the economy. In the context of an increasingly volatile global economy, studying the relationship between macroeconomic indicators and the balance of payments (BOP) is of significant importance for assessing a country's financial stability and formulating foreign economic policies. Especially for Vietnam – an economy with a high degree of openness and deep integration into the global economy – clarifying the factors affecting the BOP is necessary to support the effective formulation of macroeconomic policies. The balance of trade (BOT) is one of the key components of the current account and thus directly affects the BOP ([Nguyen Thi Vu Ha, 2022](#)). When exports exceed imports, a trade surplus will contribute to increasing foreign currency reserves, improving foreign exchange reserves, and increasing the net value of the current account ([Puti Nuraini, 2019](#); [Sandeep Patalay, 2019](#)). This means that BOT has the potential to positively impact the BOP, especially in export-oriented economies like Vietnam. Foreign Direct Investment (FDI) is also considered an important source of capital for the balance of payments. FDI not only helps increase revenue from the financial account but also indirectly boosts exports, improves the trade balance through increased production capacity and technology transfer ([Kenichi Ohno, 2008](#); [Dinh Viet Tuan et al., 2017](#)). At the same time, FDI contributes to stabilizing the labor market and improving productivity, thereby creating a positive impact on the BOP in the long term ([Galina Hale & Mingzhi Xu, 2016](#)). The Consumer Price Index (CPI) – which represents the level of inflation – can negatively affect the balance of payments. When the CPI rises, the prices of domestic goods also increase, reducing the competitiveness of exported goods while simultaneously boosting the demand for cheaper imported goods from abroad ([Imran Choudhry et al., 2015](#); [Md Ariful Islam, 2013](#)). The consequence is a deteriorating trade balance, leading to a decline in the current account and negatively impacting the BOP ([Nepal Pramshu et al., 2024](#)). Interest rates (IR) are a monetary policy tool that strongly affects international capital flows and exchange rates. High interest rates can attract short-term capital flows from abroad, but they also increase the cost of capital for domestic businesses, making it difficult for production and export investments ([Sergey Drobyshevskiy et al., 2018](#)). Additionally, high interest rates can put pressure on the exchange rate, causing the domestic currency to appreciate and making exported goods less competitive ([Pamormmast Chayongkan et al., 2013](#); [Viktoria Hnatkovska et al., 2013](#)). On the contrary, if interest rates are too low, capital flows may exit the

economy, causing an imbalance in the financial account (Marcus H Miller & Lei Zhang, 2006). Therefore, under unstable conditions, IR tends to negatively affect the BOP. From there, we propose the following hypotheses:

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

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

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

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

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 (BOP) 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 (BOP). 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 a regression without the assumption of constant

variance. A VIF value exceeding 5 or 10 indicates serious multicollinearity, while a VIF greater than 5 indicates a potential multicollinearity issue among the variables.

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

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

Table 1: Descriptive analysis (Source: Author's calculation)

The descriptive statistics reveal considerable variability in the Balance of Payments (BOP) and Trade Balance (BOT). Specifically, BOP 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 CV greater than 1 typically indicates high relative dispersion, suggesting that Vietnam's BOP experienced substantial fluctuations over the study period. Similarly, the BOT has a mean of 490.9531 and a standard deviation of 3,629.473, leading to an even higher CV 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 CV 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 CV 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 ($CV \approx 0.21$), reflecting 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)

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

Table 2: Correlation matrix (Source: Author's calculation)

The three indicators, including FDI, CPI, and BOT, all have a correlation with BOP, 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 BOT, suggesting that foreign direct investment may play an important role in improving the trade balance. Additionally, the CPI has a strong correlation with BOT 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, IR (Interest Rate) has an inverse relationship with most variables, especially with CPI, FDI, and BOT, 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 (Source: Author's calculation)

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

The Durbin-Watson statistic for the model is 2.061408, which is very close to the benchmark value of 2 and falls within the safe range of 1.5 to 2.5. This indicates that there is no significant autocorrelation in the residuals. In

other words, the absence of autocorrelation implies that the model’s estimators remain unbiased and efficient, thereby enhancing the reliability of the regression results.

The model's residuals are shown on a graph.

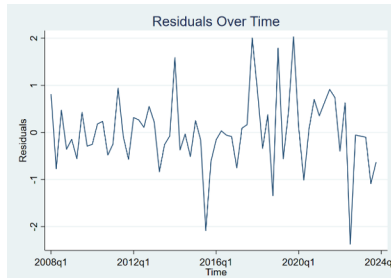


Figure 4: Residual in a graph (Source: Author's calculation)

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 implies 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 (H_0) states that the residuals have constant variance (homoscedasticity), while the alternative hypothesis (H_1) suggests Residuals are heteroskedastic.

Table 4: Breusch-Pagan test (Source: Author's calculation)

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. VIF measures how much the variance of an estimated regression coefficient increases due to collinearity with other independent variables.

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	

Table 5: VIF Test (Source: Author's calculation)

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

4.6 Regression Results

The study uses the regression conducted on 62 observations with 4 independent variables including interest rate (IR), 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 (BOP). This suggests that there are still many other factors not included in the model that could affect the BOP.

Table 6: Regression results (Source: Author's calculation)

Source	SS	df	MS	Number of obs = 62	
				F(4, 57)	= 8.51
Model	23.29594	4	5.8239	Prob > F	= 0
Residual	39.01463	57	0.6844	R-squared =	0.3739
				Adj R-squared =	0.3299
Total	62.31058	61	1.0214	Root MSE	= 0.82733
BOP	Coefficient	Std. err.	t	P>t	[95% conf. interval]
IR	0.0606	0.1453434	0.42	0.678	-0.23037 0.3517
FDI	0.0332	0.1752455	0.19	0.85	-0.31763 0.3842

CPI	-0.0108	0.2185211	-0.05	0.961	-0.44839	0.4267
BOT	0.6391	0.1795818	3.56	0.001	0.27952	0.9987
_cons	-0.0193	0.1053459	0.18	0.855	-0.23033	0.1915

The regression results indicate a positive relationship between the interest rate and the balance of payments, with a coefficient value of 0.0606664. The BOP is predicted to increase by 6.06664% for each 1% increase in the IR. 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 IR and BOP. Similarly, both FDI have a small positive relationship with BOP, and CPI have a small negative relationship with BOP, 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, CPI and BOP during the study period. Only the balance of trade (BOT) has a positive and statistically significant impact on the BOP. Specifically, the regression coefficient of BOT is 0.66391, indicating that an estimated 66.391% increase in BOP results from a 1% increase in BOT. With a p-value of 0.001, at a 5% significance level, this positive relationship is statistically significant.

Hypotheses for BOP	Result	Conclusion
H1: Balance of trade (BOT) has a significantly positive impact on the balance of payments (BOP).	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 (BOP).	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 (BOP).	Rejected	We reject the null hypothesis. (significant level at 5%)
H4: Interest rates (IR) have a significantly negative impact on the Balance of Payments (BOP).	Rejected	We reject the null hypothesis. (significant level at 5%)

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

5. CONCLUSION

5.1 Conclusions

This study examines the economic effects on Vietnam's balance of payments (BOP) from 2008 to 2023 using macroeconomic indicators such as interest rates, trade balance, foreign direct investment, and CPI. 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 regression's findings show that the balance of trade (BOT) remained the only factor with a statistically significant and positive effect on the BOP. This shows that Vietnam's export capacity and the ability to maintain a trade balance play a central role in sustaining a surplus in the balance of payments (BOP) and mitigating the impact of external shocks. Even in the context of Covid-19, the balance of payments consistently remained in surplus. In 2020, Vietnam's total export-import turnover reached USD 545.36 billion, of which exports accounted for USD 282.66 billion, representing 51.8% of the total trade structure. In 2021 and the first ten months of 2022, export turnover continued to increase by 19% and 16% compared to the same periods, respectively. The trade surplus contributed to keeping the balance of payments in surplus throughout the pandemic, supporting macroeconomic stability, stabilizing the monetary market, and increasing foreign exchange reserves. 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 emphasises the importance of the government continuing to promote exports by supporting domestic businesses, especially in sectors with high competitive advantages, 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 minimise vulnerability to external factors and diversify export markets. Expanding into ASEAN, EU, and African markets through free trade agreements, such as the European-Vietnam Free Trade Agreement and the Regional Comprehensive Economic Partnership, is a viable direction ([Hoang Duc Than et al., 2024](#)).

In parallel with this orientation, the Government of Vietnam has been prioritizing the development of high-tech industries, semiconductors, and renewable energy, gradually reducing reliance on traditional labour-intensive sectors. To achieve this long-term objective, policies have been introduced to invest in education in science, technology, engineering, and mathematics (STEM), as well as to provide financial support for students in science and technology fields ([My Quyen, 2025](#)). This structural solution not only contributes to improving the quality of human resources but also ensures that Vietnam can participate more deeply in higher value-added stages of global production chains.

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 (Thuy Quyen, 2021).

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