

Official development assistance and economic growth: a revisited analysis in a transition economy

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Abstract

Purpose – This study investigates the short-term and long-term effects of official development assistance (ODA) on Vietnam's economic growth (EG).

Design/methodology/approach – This study employs an Autoregressive Distributed Lag (ARDL) model, which was developed by Pesaran *et al.* (2001). The data used in this study consist of annual series of EG, ODA, foreign direct investment (FDI), gross savings on GDP, institutional quality index and financial development (FD) index of Vietnam for the period from 1986 to 2022.

Findings – The empirical results obtained from the ARDL bounds testing model confirm that ODA has a significantly negative effect on the EG of Vietnam in the short run, but it has a significantly positive impact on the growth in the long run. Specifically, in the short run, a 1% increase in ODA is contemporaneously associated with a 0.070% decrease in Vietnam's EG. However, in the long run, a 1% increase in ODA leads to a 0.071% increase in EG.

Practical implications – To maximize the long-term benefits of ODA, Vietnamese policymakers should continue prioritizing ODA allocation toward foundational sectors, particularly infrastructure development, human capital, technology and digital transformation. These investments provide the necessary platform for innovation and efficiency, essential elements of endogenous growth.

Originality/value – By focusing on Vietnam, a transition economy undergoing rapid development since the Doi Moi, the study provides unique insights into the varied effects of ODA on EG in the short term and long term.

Keywords Economic growth, ODA, Vietnam

Paper type Research article

1. Introduction

Official development assistance (ODA) refers to government aid intended to support the economic development and well-being of developing nations. The role of ODA in fostering economic growth (EG) is complicated, and it has been a subject of extensive debate and analysis during the last few decades. Many researchers asserted that ODA has positive effects on EG (Chenery and Strout, 1966; Lucas, 1988; Gomanee *et al.*, 2005; Refaai and Sameti, 2015; Azam and Feng, 2022; Wehncke *et al.*, 2023; Edo *et al.*, 2023), while others reported a negative impact of ODA on EG (Mallik, 2008; Liew *et al.*, 2012; Zardoub and Sboui, 2023). The literature reveals that the impact of ODA on EG is mixed as it varies based on the types of aid, policy environment and institutional quality of recipient countries.

Given the current volatility in the global economy and the recent re-evaluation of aid commitments by major donor nations, particularly following President Trump's decision to reduce ODA to developing economies, the necessity of accurately assessing the true impact of

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ODA has become increasingly critical. In this context, the issue of aid effectiveness has gained renewed relevance as fluctuations in donor policies and funding priorities have created significant uncertainty for recipient countries. Consequently, conducting rigorous empirical research to examine the real economic effects of ODA is now more essential than ever. Such research not only contributes to the academic understanding of aid-growth dynamics but also provides vital evidence to inform policymakers in designing effective aid strategies and ensuring the efficient allocation of limited international development resources.

In 1986, Vietnam initiated a comprehensive economic reform program known as Doi Moi, shifting the economy from a centrally planned system to a market-oriented one. It transformed Vietnam into one of Southeast Asia's most dynamic and rapidly developing economies. In fact, Vietnam's average EG for the period from 1986 to 2022 is 6.45% (the World Bank [WB]). This impressive EG has been driven by various factors, including extensive reforms, strategic investments and substantial ODA. Although the impact of ODA on EG has been substantially discovered in developing countries, very little has been known about this impact on Vietnam's economy. Specifically, [Nguyen \(2020\)](#) investigated the effects of foreign direct investment (FDI), foreign aid and exports on EG in Vietnam and found that foreign aid has a positive effect on Vietnam's EG. However, this study covers a short period (1997–2018), which could not adequately capture long-term trends that may influence the estimated results. In addition, using an ordinary least square (OLS) model without testing for stationarity of variables, the results could be unreliable. In a recent study, [Truong et al. \(2025\)](#) examined separately the effects of bilateral and multilateral ODA on Vietnam's EG. This begs the question of how aggregate ODA has contributed to Vietnam's impressive economic performance. Therefore, the objective of this study is to enrich the literature by exploring the short-term and long-term effects of ODA on Vietnam's EG.

The study contributes to both theoretical understanding and practical policymaking regarding the effects of ODA on EG in a transitional economy. Vietnam is an interesting case for a distinctive study of the effect of ODA on EG because its economy has been in the transition period with rapid EG. Besides, Vietnam has adopted the socialist-oriented market economy model characterized by its own unique institutions and policies. By focusing specifically on Vietnam, the study highlights how unique institutional and economic contexts influence the effectiveness of ODA. This context-specific analysis addresses a gap in the literature, which has often generalized findings across diverse developing countries without considering the transitional phase of economies. In addition, the study contributes to the ongoing debate regarding the mixed effects of ODA on EG. This study provides empirical evidence that ODA has a short-term negative impact on Vietnam's EG while demonstrating a long-term positive effect. This duality enriches the understanding of how ODA functions in different temporal contexts. Moreover, while [Truong et al. \(2025\)](#) investigated the effects of bilateral and multilateral ODA separately on Vietnam's EG, this study explores the impact of aggregate ODA on the EG. Investigating aggregate ODA provides a more integrated perspective, enhancing the understanding of its overall impact on Vietnam's EG and facilitating more effective policymaking and resource management. Furthermore, addressing the limitations of [Nguyen \(2020\)](#), this study utilizes an extensive dataset covering the entire transition period between 1986 and 2022, enabling an in-depth examination of both the short-run and long-run impact of ODA on EG. Therefore, understanding the impact of ODA on EG in Vietnam offers valuable insights into how Vietnam can utilize ODA more effectively to foster sustainable EG. The study suggests that improving institutional frameworks and governance can mitigate the short-term negative effects of ODA, supporting long-term growth. This contribution is crucial for policymakers in Vietnam and similar transition economies.

The remainder of the paper is structured as follows. [Section 2](#) reviews the literature, while [Section 3](#) describes the data and research methodology. [Section 4](#) contains the findings and discussions. Finally, the conclusions of the study are presented in [Section 5](#).

2. Literature review

Theoretical frameworks highlight the potential for ODA to support EG but also caution against potential negative effects like dependency and misallocation of resources. The two-gap model, introduced by [Chenery and Strout \(1966\)](#), suggests that developing economies have to deal with two main gaps: the savings–investment gap and the foreign exchange gap. Therefore, foreign aid can promote EG through bridging these gaps. Vietnam has faced low domestic savings, limiting its ability to invest in infrastructure, education and technology. Therefore, ODA has played an important role in bridging this gap by providing the necessary funds for investment. In addition, ODA has also helped Vietnam address its foreign exchange constraints. By funding projects that enhance exports or improve productivity in key sectors, ODA reduces dependency on imports and strengthens the trade balance. Additionally, endogenous growth theory states that internal factors, such as human capital, innovation and knowledge, play a pivotal role in driving EG ([Romer, 1986](#); [Lucas, 1988](#)). ODA can enhance growth by funding education, research and development, and technology transfer, which contribute to enhancing returns to scale and long-term growth. In Vietnam, ODA has impacted EG through several channels. First, ODA has funded education and training programs, improving labor skills and productivity. A more skilled workforce enhances innovation and economic output, which is a fundamental principle of endogenous growth theory. Second, investments in infrastructure funded by ODA have reduced transaction costs and improved connectivity. This fosters a more favorable environment for businesses and attracts FDI, contributing to EG. Finally, ODA usually comes with technical assistance and expertise, facilitating technology transfer to local industries. Technology transfer promotes higher productivity and innovation, essential elements for endogenous growth. There are some critical intermediary channels influencing the impact of ODA on EG. [Burnside and Dollar \(2000\)](#) argued that the effect of ODA on EG depends on policy and institutional environment quality in each country. High institutional quality enhances the effectiveness of ODA by ensuring that resources are used efficiently and transparently. Conversely, weak institutions can lead to corruption, misallocation of resources and inefficiencies, diminishing the potential benefits of ODA. Moreover, moral hazard theory suggests that ODA can lead to potential negative consequences when recipient countries or their governments behave differently because the aid they receive shields them from the full repercussions of their actions. In addition, the public choice theory posits that the effectiveness of aid can be influenced by how political leaders in recipient countries allocate aid resources. ODA might be diverted to projects that serve political interests rather than economic efficiency. Therefore, when a recipient country lacks sufficient institutional quality, administrative efficiency, or project implementation capability, large inflows of ODA may create implementation delays and inefficient allocation of resources that temporarily suppress growth before long-term benefits appear ([Burnside and Dollar, 2000](#); [Heller, 2005](#)). Based on these theories, it is expected that ODA has a negative effect on Vietnam's EG in the short term, but it contributes positively to growth in the long term.

Empirically, the impact of ODA on EG has been substantially determined in developing countries during the past few decades. However, empirical results of these studies have not been consensus. Based on empirical findings, studies in this field can be classified into three categories. The first category is that ODA has positive effects on EG. Specifically, [Dalggaard *et al.* \(2004\)](#) explored the association between ODA and EG in developing countries, focusing on empirical evidence to understand how ODA influences EG of recipient nations. The main finding of the study is that ODA has a positive impact on EG. However, the magnitude of the effect is influenced by climate-related circumstances. In addition, [Azam and Feng \(2022\)](#) examined how foreign aid impacts EG in developing countries. This study found mixed results regarding the effect of foreign aid across income groups of countries. Specifically, foreign aid fosters EG only in lower middle-income countries but has a detrimental effect in low-income and upper middle-income countries. However, the study does not clearly explain why foreign aid is effective in lower middle-income countries but not in others. In Africa, [Gomanee *et al.*](#)

(2005) determined the impact of ODA on EG for 25 Sub-Saharan African countries and reported that ODA has a significantly positive impact on EG. Although the study considers investment as a key transmission mechanism, it does not sufficiently explore other potential mechanisms, such as human capital development or institutional quality, which can also mediate the effects of ODA. In Asia, Refaei and Sameti (2015) estimated the impact of ODA on EG in Iran during the period from 1980 to 2012. Using various econometric techniques, including canonical cointegration regression, fully modified ordinary least squares and dynamic ordinary least squares, they found a significantly positive effect of ODA on EG in the long term. Besides, Galiani *et al.* (2017) examined the impact of foreign aid on EG using a quasi-experimental design focused on the income threshold set by the International Development Association (IDA) for aid eligibility. The findings confirmed that foreign aid has a significantly positive effect on EG. While the paper identifies investment as a key channel through which aid affects growth, it provides limited exploration of other potential mechanisms, such as governance quality, institutional capacity, or economic policy reforms that might mediate aid effectiveness. Nguyen (2020) investigated the effects of FDI, foreign aid and exports on EG in Vietnam and found that foreign aid has a positive effect on Vietnam's EG. However, this study covers a short period (1997–2018), which could not adequately capture long-term trends that may influence the estimate results. In addition, using an OLS model without testing for stationarity of variables, the results could be unreliable.

In contrast to the first category, some researchers found a negative effect of ODA on EG. Mallik (2008) utilized the cointegration technique to examine the long-term association between ODA and EG in the six poorest African countries and found that ODA is negatively associated with EG in the long term for all countries, except Togo. However, this study did not investigate the underlying reasons for the negative effect of ODA on EG. Similarly, Liew *et al.* (2012) estimated the effect of ODA on EG in five East African countries. Their empirical findings also confirm that ODA has a significantly negative impact on EG. However, this study only examines the short-term effect of ODA on EG and does not consider the long-term effect.

The third category includes studies that show mixed results. Some studies have argued that the effect of ODA on EG varies depending on types of aid, institutional quality and governance quality in the recipient country. One of the earliest and most influential studies on this topic was carried out by Burnside and Dollar (2000). Using an extensive dataset of 56 developing countries covering the period of 1970–1993, they documented that ODA has a positive influence on EG, but the impact is conditional on the economic policy quality of the recipient nation. Specifically, ODA is more effective at promoting EG in nations that have good policies. In countries with poor policy environments, the effect of ODA on EG is negligible or even negative. However, Easterly (2003) argued that the findings of Burnside and Dollar (2000) lack robust validation from subsequent analyses, thereby casting doubt on their general applicability. In addition, Driffield and Jones (2013) determined the effects of ODA, FDI and migrant remittances on EG in developing economies. The researchers reported that ODA has a negative effect on EG when the interaction terms are not considered. However, when accounting for the bureaucratic quality factor, the positive effect of ODA on EG becomes more pronounced and statistically significant. Moreover, Ram (2003) examined the role of ODA, distinguishing between bilateral and multilateral ODA, on EG of 56 developing nations and concluded that bilateral ODA has a positive impact on EG while multilateral ODA negatively influences the growth. This evidence implies that bilateral ODA, due to better understanding and fewer conditions, might be more effectively utilized by recipient nations. Especially, Yew and Lau (2018) reported a U-shaped relationship between ODA and EG of 95 developing economies. In addition, this study suggests that to maximize the positive effects of foreign aid, it is crucial to focus on strengthening the legal framework in these countries.

Another strand of the ODA literature examines the effects of sector-specific aid. Specifically, Lee *et al.* (2019) investigated the impact of ODA on human development, particularly EG and living standards, across 15 Asian countries from 2006 to 2016. This study documented that ODA has a positive impact on human development measured by the human

development index (HDI). In addition, by disaggregating total ODA into economic and social sectors, the study found that specific programs of public service, medical care and welfare are more likely to be effective than total aid in improving the HDI in recipient countries. In addition, [Olanrele and Awode \(2020\)](#) explored the impact of development aid on human capital development in Nigeria, specifically focusing on health and education sectors. The findings of the study indicate that health aid significantly increases life expectancy in Nigeria. However, education aid has an adverse effect on primary school enrollment. Moreover, [Botting et al. \(2010\)](#) examined the relationship between designated foreign aid for water and sanitation and its effects on improving access to water and sanitation, as well as its impact on reducing infant and child mortality rates in low-income countries. The researchers found that while water and sanitation designated ODA has a significantly positive impact on access to improved water sources, it generally has no effect on access to sanitation. In addition, countries that achieved substantial gains in sanitation were found to be 8 to 9 times more likely to have greater reductions in infant and child mortality rates, indicating a strong link between improved sanitation and better child health outcomes. In another aspect, [Chatterjee and Turnovsky \(2007\)](#) explored the effects of foreign aid on EG in small open economies, emphasizing the roles of labor supply, public capital and the specific nature of aid in shaping macroeconomic outcomes. The study highlighted that a flexible labor supply plays a significant role in shaping the impact of foreign aid on EG. In addition, the study documented that tied aid generally produces more long-term growth effects compared to untied aid. Moreover, tied aid can worsen the government's intertemporal fiscal balance, while untied aid consistently improves it.

To address the endogeneity issue that may arise in OLS or fixed effects/random effects models, some studies have employed the generalized method of moments (GMM) approach to investigate the impact of ODA on EG. Specifically, [Benmamoun and Lehnert \(2013\)](#) examined the impact of FDI, ODA and international remittances on EG of low-income countries. Using panel data from 1990 to 2006 and employing the GMM approach, the researchers found that ODA has a significantly positive effect on EG of low-income countries. In addition, the study reported that international remittances significantly contribute more to EG than FDI or ODA. The limitation of this study is that while governance was included as a variable, the authors did not investigate its moderation effects on ODA and FDI, given that weak governance can undermine the effectiveness of foreign capital. Similarly, [Edo et al. \(2023\)](#) employed the GMM approach to examine how different types of ODA impact EG for Sub-Saharan African economies. The researchers found positive effects of both bilateral and multilateral ODA on EG, but their effects vary based on how they are administered and utilized. Specifically, bilateral aid has a more pronounced impact than multilateral aid. In addition, [Zardoub and Sboui \(2023\)](#) determined the effects of FDI, remittances and ODA on EG of 41 developing countries from 1990 to 2016. In contrast to [Benmamoun and Lehnert \(2013\)](#) and [Edo et al. \(2023\)](#), this study documented a significantly negative influence of ODA on EG. However, FDI has no significant impact on EG. Moreover, [Cao and Du \(2024\)](#) investigated the effect of US aid on EG in recipient countries and focused on the moderating role of institutional quality and absorptive capacity in shaping this relationship. The findings indicate that U.S. aid has a U-shaped relationship with EG, while military aid shows a positive linear relationship. Besides, this study reported that the institutional quality of the recipient country negatively moderates the relationship between U.S. aid and EG, whereas the recipient's absorptive capacity positively moderates this relationship. Furthermore, to overcome data limitations, such as small sample sizes and the stationarity of time series, while enabling simultaneous estimation of long-run and short-run effects within a single model, some empirical studies have employed the Autoregressive Distributed Lag (ARDL) approach to examine the impact of ODA on EG. [Wehncke et al. \(2023\)](#) employed an ARDL method to determine the relationships between ODA, FDI and EG for 20 African countries. This study documented that ODA is positively associated with EG in the long run. However, the study does not account for the moderating role of factors such as political stability,

institutional quality and macroeconomic policies that could influence the relationship between ODA and EG. Recently, [Truong et al. \(2025\)](#) investigated the short-term and long-term effects of bilateral and multilateral ODA separately on Vietnam's EG. The results derived from the ARDL approach confirmed that in the short term, bilateral ODA has a significant positive effect on EG while multilateral ODA has a significant negative influence on EG. However, in the long term both bilateral and multilateral ODA have no impact on EG.

Regarding the effect of institutional quality on economic development, [Acemoglu and Robinson \(2010\)](#) argued that differences in economic institutions, shaped by political processes and power distributions, are the primary reasons for varying levels of economic development among countries. By highlighting successful institutional reforms in countries such as Botswana and South Korea, they concluded that political transitions can enhance economic outcomes when they align with the broader interests of society. In addition, [Acemoglu and Robinson \(2012\)](#) asserted that the primary drivers of prosperity and poverty are political and economic institutions rather than geography, culture or other factors. Besides, many empirical studies documented that institutional quality is positively associated with EG in developing countries. Specifically, [Tran et al. \(2021\)](#) examined the effect of institutional quality on EG for 48 countries in Asia during the period from 2005 to 2018 and found that institutional quality has a positive impact on EG. This study particularly uncovered that in lower-income countries, higher-quality institutions are more effective at promoting EG compared to higher-income countries. [Mehmood et al. \(2023\)](#) also found evidence that institutional quality positively impacts EG by using a sample of six countries in South Asia over the period from 2002 to 2018. However, the research period is relatively short, so it may not adequately capture the long-term effect of institutional quality on EG. Additionally, [Gasimov et al. \(2023\)](#) explored the impact of institutional quality on EG of former Soviet Union countries from 1996 to 2021. The study identified a U-shaped relationship between institutional quality and EG for four out of six dimensions, indicating that as institutional quality improves, EG initially declines before eventually increasing. Also in transition economies, [Liko \(2024\)](#) investigated the relationship between institutional quality and EG in eight Balkan countries from 2000 to 2022. The study found a significant positive relationship between institutional quality and EG, indicating that better governance can lead to higher economic performance. In Vietnam, [Bon \(2019\)](#) determined how variations in institutional quality influence the effectiveness of FDI in promoting EG across different provinces. This study effectively demonstrated the significant role of institutional quality in mediating the relationship between FDI and EG in Vietnam. Specifically, provinces with better governance and regulatory frameworks experience a stronger positive impact of FDI on EG.

In summary, the literature on the impact of ODA on EG remains inconclusive. Specifically, some studies reported the positive impact of ODA on EG, while others found the negative or mixed effects of ODA on EG. The varying effects of ODA on EG could depend on types of aid, quality of institutions, quality of governance and political and economic contexts in the recipient country. Although the impact of ODA on EG has been extensively studied in developing countries, current literature has a specific gap regarding the effect of ODA on EG for Vietnam, a transition economy. It is important to note that Vietnam has adopted the socialist-oriented market economy model and has been in the transition period with rapid EG characterized by its own unique institutions and policies. Therefore, investigating the impact of ODA on Vietnam's EG provides valuable insights for policymakers, international donors and other transition countries. In the context of a transition economy, it is expected that ODA has a negative effect on Vietnam's EG in the short term due to challenges in absorbing and managing large capital inflows. Many ODA-funded projects in Vietnam, especially in infrastructure, education and health, require complex procedures, long preparation times and coordination between multiple agencies ([Kimura, 2023](#)). These delays can lead to slow disbursement of funds, meaning that ODA inflows do not immediately translate into productive investment or output growth. However, in the long term, ODA support reforms in governance, regulatory frameworks and institutions, making the business environment more

conducive to growth (World Bank, 2021). Improved governance can enhance the efficiency and effectiveness of public spending and economic management. In addition, ODA often includes technical assistance and training programs that help transfer technology and knowledge to the local workforce. Therefore, it can enhance skills and efficiency in various sectors of the economy (Romer, 1986; Lucas, 1988). Moreover, by targeting poverty reduction and social development, ODA helps improve living standards and economic opportunities for the poor (Narayan and Singh, 2024). This can lead to increased consumption and demand within the economy, further driving growth. Therefore, it is hypothesized that ODA has an adverse impact on Vietnam's EG in the short term, but a positive effect in the long term.

3. Data and methodology

3.1 Data

This study employs annual series of EG, ODA, FDI, gross savings on GDP, institutional quality index and financial development (FD) index of Vietnam for the period from 1986 to 2022. The EG, ODA, FDI, gross savings on GDP and institutional quality index were collected from the WB, while the FD index was obtained from the International Monetary Fund (IMF). Table 1 provides definitions and measurements of the studied variables.

3.2 Research methodology

To estimate the impact of ODA on EG of Vietnam, this study employs the following baseline regression model:

$$EG_t = \beta_0 + \beta_1 LNODA_t + \beta_2 LNFDI_t + \beta_3 SAV_t + \beta_4 IQ_t + \beta_5 FD_t + \varepsilon_t \quad (1)$$

where

- (1) EG: Economic growth of Vietnam (%)
- (2) LNODA: Natural logarithm of Vietnam's ODA inflows
- (3) LNFDI: Natural logarithm of Vietnam's FDI inflows
- (4) SAV: Gross savings on Vietnam's GDP (%)
- (5) IQ: Institutional quality index of Vietnam (%)
- (6) FD: Financial development index of Vietnam (%)

This study applies the ARDL technique developed by Pesaran *et al.* (2001) to estimate the short-run and long-run impacts of ODA on the EG. The ARDL model offers several advantages over other co-integration methods. First, this model is generally more reliable and robust compared to other models for studies with a limited number of observations like our study (Truong *et al.*, 2024). Second, an error correction model (ECM) can be obtained from the ARDL approach, enabling the simultaneous estimation of both long-run and short-run effects

Table 1. Definitions and measurements of the variables

Variables	Definition	Measurement
EG	Vietnam's annual economic growth	Percent (%)
ODA	Vietnam's annual ODA inflows	USD
FDI	Vietnam's annual FDI inflows	USD
SAV	Vietnam's annual gross savings on GDP	Percent (%)
IQ	Vietnam's institutional quality index	Percent (%)
FD	Vietnam's financial development index	Score

of explanatory variables on the dependent variable. Third, the method does not require all variables under study to have the same order of integration. Instead, it just needs that the integration order of all studied variables be less than 2.

3.2.1 Unit root tests. As previously stated, the ARDL approach does not require all variables in the model to have the same order of integration, but it stipulates that the integration order of all studied variables does not exceed 1. Therefore, unit root tests should be conducted prior to carrying out the bounds test. The Augmented Dickey-Fuller (ADF) and Phillips–Perron unit root tests were applied in this study.

3.2.2 ARDL bound test. The bound test is employed to detect the long-term equilibrium relationship among the variables in the model. Specifically, the ARDL bound test takes the following equation:

$$\begin{aligned} \Delta EG_t = & \beta_0 + \sum_{i=1}^{q_1} \beta_{1i} \Delta EG_{t-i} + \sum_{i=0}^{q_2} \beta_{2i} \Delta LNODA_{t-i} + \sum_{i=0}^{q_3} \beta_{3i} \Delta LNFDI_{t-i} + \sum_{i=0}^{q_4} \beta_{4i} \Delta SAV_{t-i} + \sum_{i=0}^{q_5} \beta_{5i} \Delta IQ_{t-i} \\ & + \sum_{i=0}^{q_6} \beta_{6i} \Delta FD_{t-i} + \delta_1 EG_{t-1} + \delta_2 LNODA_{t-1} + \delta_3 LNFDI_{t-1} + \delta_4 SAV_{t-1} + \delta_5 IQ_{t-1} + \delta_6 FD_{t-1} + \varepsilon_t \end{aligned} \quad (2)$$

Δ indicates the first difference of the studied variables. The null hypothesis (H_0) of the bound test is that there is no co-integration in the long-run among variables. The null hypothesis is rejected if the computed F-statistic exceeds the critical value of the given significance levels, meaning that there is a long-run relationship among the variables in the model. Once cointegration exists across the variables, the short-term and long-term effects of ODA on the EG are estimated by [equation \(3\)](#) and [\(4\)](#), respectively.

$$\begin{aligned} \Delta EG_t = & \beta_0 + \sum_{i=1}^{q_1} \beta_{1i} \Delta EG_{t-i} + \sum_{i=0}^{q_2} \beta_{2i} \Delta LNODA_{t-i} + \sum_{i=0}^{q_3} \beta_{3i} \Delta LNFDI_{t-i} + \sum_{i=0}^{q_4} \beta_{4i} \Delta SAV_{t-i} + \\ & + \sum_{i=0}^{q_5} \beta_{5i} \Delta IQ_{t-i} + \sum_{i=0}^{q_6} \beta_{6i} \Delta FD_{t-i} + \delta ECM_{t-1} + \varepsilon_t \end{aligned} \quad (3)$$

$$\begin{aligned} EG_t = & \varphi_0 + \sum_{i=1}^{q_1} \varphi_{1i} EG_{t-i} + \sum_{i=0}^{q_2} \varphi_{2i} LNODA_{t-i} + \sum_{i=0}^{q_3} \varphi_{3i} LNFDI_{t-i} + \sum_{i=0}^{q_4} \varphi_{4i} SAV_{t-i} + \sum_{i=0}^{q_5} \varphi_{5i} IQ_{t-i} \\ & + \sum_{i=0}^{q_6} \varphi_{6i} FD_{t-i} + \varepsilon_t \end{aligned} \quad (4)$$

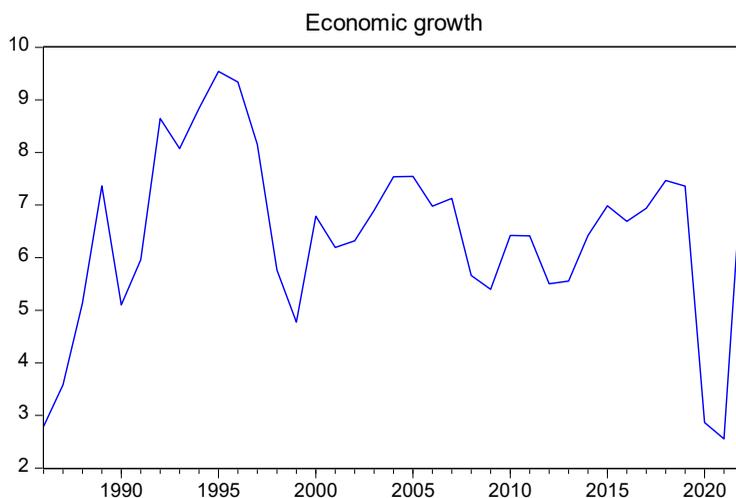
4. Results and discussion

4.1 Descriptive statistics of the sample

Vietnam has experienced impressive EG since 1986, following the introduction of the Doi Moi (renovation). In fact, it is observed from [Table 2](#) that the mean of Vietnam’s EG from 1986 to 2022 is 6.45%. The EG of Vietnam from 1986 to 2022 can be analyzed by dividing the period into several sub-periods, reflecting significant policy changes, economic reforms and global events. Specifically, [Figure 1](#) shows that EG was modest for the period from 1986 to 1990 as the country transitioned. The average GDP growth rate is 4.79% during this period, primarily due to agricultural reforms, which increased productivity. The EG accelerated during this period from 1991 to 1997, with an average annual rate of 8.36%. In this period, the country experienced significant FDI, particularly in manufacturing and exports, leading to industrial growth and job creation. The EG is stable for the period from 1998 to 2007. The average EG for this period is 6.59%. The global financial crisis in 2008 affected many economies, including Vietnam, leading to slower EG. GDP growth over the period from 2008 to 2012 slowed to 5.88% per year. The crisis highlighted vulnerabilities in the banking sector and led to increased

Table 2. Descriptive statistics of the sample

Variables	Minimum	Mean	Maximum	Standard deviation
EG (%)	2.55	6.45	9.54	1.70
ODA (million USD)	48.92	1485.32	4215.62	1186.10
FDI (million USD)	0.04	5677.55	17900.00	5798.15
Gross savings on GDP (%)	2.91	24.93	35.77	10.25
IQ (%)	22.70	30.32	42.86	4.98
FD (score)	0.211	0.347	0.458	0.052

**Figure 1.** Vietnam's EG (%) for the period of 1986–2022

inflation. Following the crisis, Vietnam focused on improving its economic resilience and sustainability by implementing policies to enhance productivity, innovation and infrastructure development. As a result, the average growth rate for the period from 2013 to 2029 is 6.77% annually. The COVID-19 pandemic posed significant challenges, impacting various sectors, particularly tourism and services. Consequently, GDP growth slowed to 2.87% and 2.55% in 2020 and 2021, respectively. However, recovery began in 2022, with growth rebounding to 8.12% as the economy adapted to new conditions.

In addition, the statistics presented in [Table 2](#) reveal that the average ODA over the sample period is 1,485 million USD. Moreover, [Table 2](#) shows that the ODA fluctuated significantly from 1986 to 2022, from 48.92 million USD to 4215.62 million USD, with the standard deviation of 1186.10. Besides, [Figure 2](#) shows that ODA inflows began to rise significantly as Vietnam opened up to international assistance. This increase was largely driven by the need for infrastructure development, healthcare and education reform. However, it has continuously decreased for the period from 2015 to 2022 due to the country's graduation from high-concessional ODA. Vietnam has transitioned to a lower-middle-income country. As a result, it is seen as less reliant on ODA compared to its earlier stages of development, leading donors to reduce their financial assistance. In addition, the COVID-19 pandemic led to a global

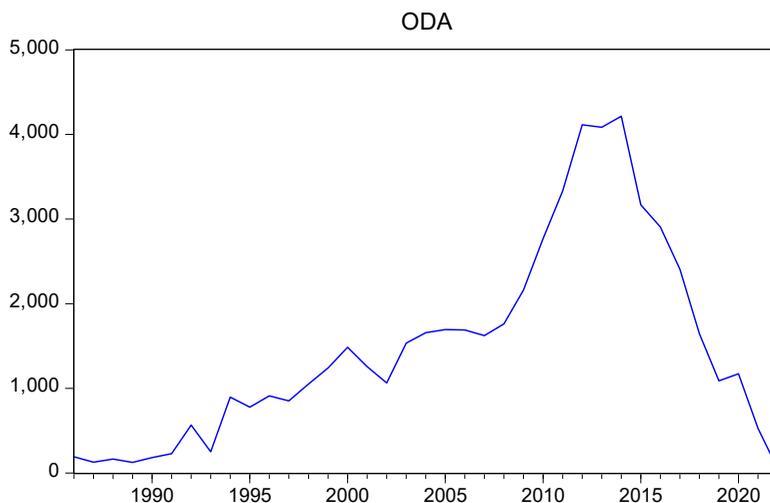


Figure 2. Vietnam's ODA (million USD) for the period of 1986–2022

economic downturn, causing many donor countries to re-evaluate their ODA commitments and prioritize domestic needs. This has resulted in a tightening of ODA budgets worldwide.

Moreover, [Table 2](#) indicates that the average FDI inflow during the period from 1986 to 2022 is USD 5677.55 million. Specifically, Vietnam's FDI inflows from 1986 to 1993 were relatively modest, averaging only USD 247.20 million annually. It has significantly increased since the lifting of the U.S. trade embargo against Vietnam, from USD 1944.52 million in 1994 to 16,120.00 million in 2019. In addition, [Table 2](#) shows that the average of Vietnam's gross savings on GDP for the period from 1986 to 2022 is 24.93%. This rate reflects a solid capacity for domestic investment, which can promote EG and development. Moreover, it is observed from [Table 2](#) that the average of Vietnam's institutional quality index over the period from 1986 to 2022 is 30.32%, suggesting that Vietnam's institutions have room for improvements to enhance EG and investor confidence. Finally, statistics presented in [Table 2](#) reveal that the mean of the FD index for the sample period is 0.347. Vietnam's FD Index experienced significant growth between 1992 and 2009, starting at the lowest of 0.211 in 1992 and reaching the highest of 0.458 in 2009. Vietnam's FD Index has generally been higher than the global average (0.239 in 2021 – the WB), indicating relatively strong FD compared to many other countries. Furthermore, the correlation among variables in the model shown in [Table 3](#) indicates a mix of weak and moderate correlations, with a notable strong correlation between FDI and IQ.

4.2 The results of unit root tests

As previously mentioned, before performing the ARDL bound test for cointegration, the unit root test must be conducted to determine whether the variables in the model are stationary as a required condition. The results of ADF and Phillips–Perron unit root tests for both cases with and without time trends are presented in [Table 4](#). The results derived from the tests consistently confirm that the EG, LNFDI and FD variables are stationary at the level. Moreover, [Table 4](#) shows that the LNODA, SAV and IQ variables are nonstationary at the level, but their first differences are stationary, implying that these variables are integrated of order 1. The results suggest that the studied variables fulfill the bounds test requirements.

Table 3. Matrix of correlations of the variables

Variable	EG	LNODA	LNFDI	SAV	IQ	FD
EG	1.000					
LNODA	-0.122	1.000				
LNFDI	-0.232	0.002	1.000			
SAV	-0.269	0.146	0.236	1.000		
IQ	0.278	-0.208	0.795	0.239	1.000	
FD	-0.193	0.087	0.529	0.199	0.295	1.000

Table 4. Results of unit root tests

Variables	ADF unit root test		Phillips-Perron unit root test	
	Constant	Constant and linear trend	Constant	Constant and linear trend
<i>EG</i>				
Level	-2.93*	-3.80**	-3.61**	-3.60**
<i>LNODA</i>				
Level	-0.88	2.15	-0.95	5.57
First difference	-3.80***	-5.01***	-4.30***	-5.00***
<i>LNFDI</i>				
Level	-5.81***	-7.16***	-6.68***	-6.87***
<i>SAV</i>				
Level	-3.59**	-3.40*	-2.76*	-2.49
First difference	-3.73***	-3.81**	-3.75***	-3.83***
<i>IQ</i>				
Level	-0.99	-2.44	-0.99	-2.51
First difference	-4.98***	-4.88***	-5.02***	-4.97***
<i>FD</i>				
Level	-3.18**	-3.23*	-3.18**	-3.23*

Note(s): ***, ** and * indicate significance at 1%, 5% and 10% levels, respectively

4.3 The results of ARDL bound test

It is noted that based on the Akaike Information Criterion (AIC), the most suitable model for the bounds test is ARDL (1, 2, 1, 1, 2, 2). The bounds test results presented in [Table 5](#) indicate that the null hypothesis of no co-integration in the long run among variables is rejected at the significance of the of 1% level. With this evidence, the ARDL model is used to examine the short-run and long-run effects of ODA on Vietnam's EG.

4.4 Short-run and long-run impacts of ODA on EG of Vietnam

[Table 6](#) shows the findings of short-run and long-run impacts of ODA and other explanatory variables on EG obtained from the ARDL approach. In the short run, ODA has a contemporaneously negative effect on the EG at the significant level of 1%. Specifically, a 1% increase in ODA immediately results in a 0.070% decrease in the EG. This finding is partly consistent with recent empirical findings of [Truong et al. \(2025\)](#). Specifically, [Truong et al. \(2025\)](#) found that multilateral ODA has a significantly negative effect on Vietnam's EG in the short term. In the long-run, the findings presented in [Table 6](#) reveal that ODA has a positive

Table 5. The results of bounds test

Model	k	F-statistic	Significance level	Critical value I(0)	I(1)
ARDL (1, 2, 1, 1, 2, 2)	5	5.70***	5% 1%	2.62 3.41	3.79 4.68

Note(s): k represents the number of explanatory variables. *** represents significance level of 1%

Table 6. Estimated results of the ARDL model

Variables	Coefficients	t-statistics
<i>Panel A: Short-run estimates</i>		
$\Delta LNODA$	-7.005	-4.20***
$\Delta LNODA(-1)$	-7.1970	-2.01*
$\Delta LNFDI$	-1.6980	-0.60
ΔSAV	0.0961	0.72
ΔIQ	0.2008	1.76
$\Delta IQ(-1)$	0.1559	1.14
ΔFD	4.2951	0.71
$\Delta FD(-1)$	-8.4731	-0.97
$ECM(-1)$	-0.8422	-3.28***
<i>Panel B: Long-run estimates</i>		
Constant	-13.5898	-1.11
LNODA	7.1371	3.03***
LNFDI	-5.4374	-2.20*
SAV	-0.0668	-0.68
IQ	-0.0896	-0.46
FD	29.6409	2.24**

Note(s): ***, ** and * represent significance at 1%, 5% and 10% levels, respectively

impact on the EG with the statistical significance level of 1%. Specifically, a 1% increase in ODA is associated with a 0.071% rise in the EG. This evidence is in line with the previous findings of [Dalgaard et al. \(2004\)](#), [Azam and Feng \(2022\)](#), [Gomanee et al. \(2005\)](#), [Wehncke et al. \(2023\)](#), [Refaei and Sameti \(2015\)](#) and [Edo et al. \(2023\)](#). This evidence suggests that in the context of transition economies, ODA has played an important role in providing the necessary initial capital to launch a country onto a path of self-sustained growth by addressing multiple constraints simultaneously, such as infrastructure development, human capital development and health.

Additionally, the empirical findings reveal that in the long run, FDI has a significantly negative effect on Vietnam's EG at the 10% level. This finding aligns with previous findings of [Le et al. \(2022\)](#) and [Nguyen \(2022\)](#) for Vietnam. FDI obviously offers a rapid influx of jobs, capital, technology and export capacity that drives Vietnam's short-term EG. The long-term negative effect of FDI on Vietnam's EG can be attributed to several factors specific to Vietnam's economic and institutional context. First, the implementation of the first Law on Foreign Investment issued in 1987 has proven to be ineffective ([Nguyen, 2022](#)). As a result, many FDI projects are not aligned with development planning, causing the results of technology transfer and management experience to not meet expectations. Second, an excessive reliance on foreign capital can create dependency, hindering the development of domestic industries, entrepreneurial capacity and indigenous innovation–

elements highlighted by the endogenous growth theory as essential for long-term development.

Moreover, the results reported in Table 6 confirm that in the long term, FD has a significantly positive impact on EG. Specifically, a 1% increase in the FD index is associated with a 0.296% increase in EG. The results of this study align with the findings of Uddin *et al.* (2013), Durusu-Ciftci *et al.* (2017) and Nguyen *et al.* (2022). FD has a multifaceted positive impact on Vietnam' EG. First, FD enhances access to capital for businesses and entrepreneurs. With more financial institutions and instruments available, firms can secure loans and investments, enabling them to expand operations and innovate. Second, as the financial market develops, resources are allocated more efficiently. Financial institutions assess the creditworthiness of borrowers, ensuring that funds flow to the most productive sectors. This leads to better investment decisions and higher returns on investment. Third, FD supports international trade by providing necessary financing and risk management tools. This helps Vietnamese businesses engage in global markets, enhancing export opportunities and attracting FDI.

Furthermore, the results derived from the ARDL model indicate that in the short run, SAV has a significantly positive effect on the EG with a 1-year lag, but it has no impact on the EG in the long term. According to classical economic theories proposed by Harrod (1939), Domar (1946) and Solow (1956), higher savings result in increased investment, which boosts capital formation and promotes long-term EG. However, there are several factors that can explain why savings have not directly translated into Vietnam's EG. First, it is noted that the potential of domestic savings to foster EG critically depends on their efficient allocation into productive investments. However, in the case of Vietnam, a substantial portion of domestic savings may not be directed towards productive investments. Inefficient capital allocation can lead to low returns on investments. Second, Vietnam's banking sector has faced challenges, including non-performing loans and limited access to financing for small and medium enterprises. This may limit the effective use of savings for growth. Besides, the results confirm that institutional quality has no significant effects on EG in either the short run or long run.

Finally, Table 6 shows that the estimated coefficient for the error-correction terms is -0.8422 , indicating that 84.22% of the movements into disequilibrium in the current year are adjusted back to the long-term equilibrium in the next year. The high adjustment speed indicates that the system rapidly returns to the long-run equilibrium following a short-run disturbance.

4.5 Diagnostics and structural stability tests

In this study, we used the Breusch–Godfrey test for serial correlation and the autoregressive conditional heteroskedasticity (ARCH) test for heteroscedasticity. The results shown in Table 7 confirm that there is no serial correlation among the model's residuals. Additionally, the results of the ARCH test confirm that the residuals are homoscedastic. These findings confirm the validity and reliability of the study's results.

Since the approach employed in this study is sensitive to structural breaks, it is necessary to check the stability of the coefficients in the long term. We examined the long-term stability of

Table 7. Results of the diagnostic tests

Diagnostic tests	Statistics	<i>p</i> -value	Conclusions
Breusch–Godfrey test for autocorrelation <i>H0: No serial correlation</i>	0.495	0.489	<i>H0</i> is accepted
ARCH test for heteroskedasticity <i>H0: No ARCH effects</i>	2.697	0.135	<i>H0</i> is accepted

the coefficients by using the cumulative sum of the recursive residuals (CUSUM) and the cumulative sum of squared recursive residuals (CUSUMSQ) tests developed by [Brown et al. \(1975\)](#). The results of these tests are shown in [Figures 3 and 4](#). It is observed from these figures that the model is stable over the studied period.

5. Conclusions

This study is devoted to investigating the short-run and long-run effects of ODA on Vietnam's EG over the transitional period from 1986 to 2022. The results derived from the ARDL model

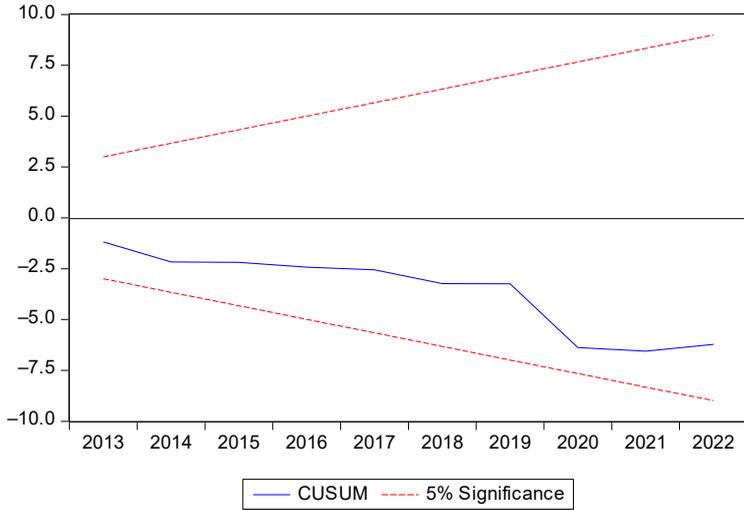


Figure 3. Plots of CUSUM

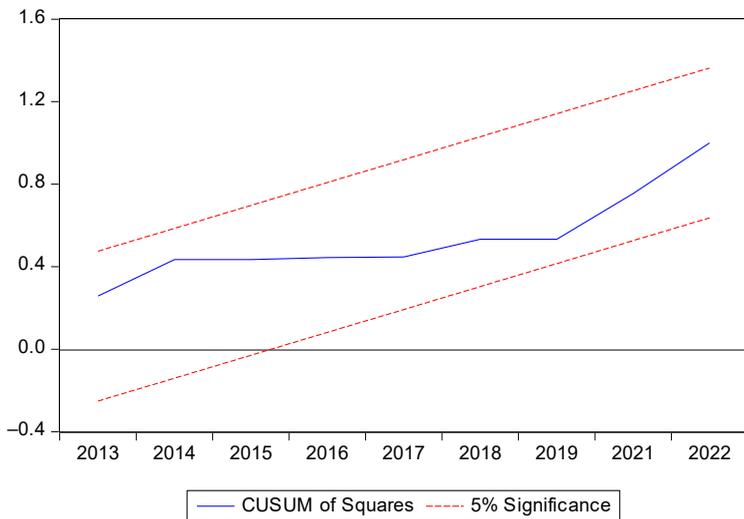


Figure 4. Plots of CUSUM squares

reveal that in the short run, ODA has a significantly negative effect on EG. However, in the long run, ODA inflows have a significantly positive impact on Vietnam's EG. In addition, the results of the ECM indicate that 84.22% of the movements into disequilibrium in the previous year are corrected back to the long-term equilibrium in the present year. This evidence indicates that ODA has worked well in Vietnam. The positive impact of ODA on Vietnam's EG in the long run suggests that ODA plays a crucial role in providing the initial capital needed to set the country on a path of self-sustained growth. It addresses multiple constraints simultaneously, including infrastructure development, human capital development and public health care services. Moreover, the empirical findings reveal that in the long run, FDI has a significantly negative effect on Vietnam's EG, while FD has a significantly positive impact on EG.

The findings suggest several policy implications for Vietnamese policymakers to improve the effectiveness of ODA and promote sustainable EG. In the short term, the negative effect of ODA on Vietnam's EG suggests that while foreign aid remains an important development resource for the country, its immediate effectiveness is constrained by structural and institutional factors. One key reason for short-term inefficiency is slow ODA disbursement due to complex administrative procedures and overlapping authority among government bodies. Therefore, Vietnamese policymakers should simplify approval processes, decentralize decision-making and improve inter-agency coordination to accelerate project implementation. In addition, strategic phasing of disbursements based on project readiness can help mitigate temporary growth drags caused by bureaucratic bottlenecks or implementation delays, while integrating ODA into development plans that emphasize self-reliance can reduce the risk of aid dependency. In addition, to maximize these long-term benefits, Vietnamese policymakers should continue prioritizing ODA allocation toward foundational sectors – particularly infrastructure development, human capital, technology and digital transformation. These investments provide the necessary platform for innovation and efficiency, essential elements of endogenous growth.

While this study has enhanced our understanding of the effects of ODA on economic development in a transitional economy, it has some limitations that should be resolved in future empirical research. First, the study only examines the effect of aggregate ODA on Vietnam's EG, while bilateral and multilateral ODA could have different roles in driving EG in Vietnam. Therefore, future research could focus on the effects of bilateral and multilateral ODA on EG separately. Second, due to limitations of the data, this study explores the effect of ODA on the EG without considering the moderating influence of institutional quality and public governance variables on the relationship between ODA and the EG. High institutional quality enhances the effectiveness of ODA by ensuring that funds are used efficiently and allocated to impactful projects. In addition, institutional quality helps mitigate corruption and mismanagement, which can otherwise undermine the benefits of ODA. Therefore, institutional quality can serve as a crucial moderator, enhancing the positive effects of ODA on Vietnam's EG by improving implementation, accountability and stability. With this limitation, future studies on the effect of ODA on EG could focus on the moderating impact of these variables.

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Further reading

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