International Institute of Social Studies

Government Transparency, Foreign Direct Investment, and Tax Revenue:
Direct and Indirect Effects in the Case of Vietnam

A Research Paper presented by:

Tran Anh Dung

in partial fulfilment of the requirements for obtaining the degree of

MASTER OF ARTS IN DEVELOPMENT STUDIES

Major:

Economics of Development (ECD)

Specialization:

Econometric Analysis of Development Policies

Members of the Examining Committee:

Dr. Zemzem Shigute Shuka
Prof. Nguyen Trong Hoai

The Hague, The Netherlands
December 2025
[Word count: 15895]

Acknowledgement

First of all, I would like to express my deepest gratitude to my supervisor, Dr. Zemzem Shigute Shuka, and to my reader, Prof. Nguyen Trong Hoai, for their guidance, constructive feedback, and constant encouragement were invaluable at every stage of this investigation. Their expertise and suggestions not only shaped the direction of this work, but also strengthened my own academic growth.

I also extend my appreciation to the faculty and staff of ISS and VNP for providing a stimulating learning environment and the resources necessary for my research. Special thanks go to my peer reviewers, Ms Khuyen Vuong and Mr Nguyen Khoi Nguyen, for their insightful discussion and feedback on my work. Thanks go to my classmates, colleagues, and friends, whose insightful talks, support, and companionship made this journey both enriching and memorable.

I am deeply grateful to my family for their unwavering love, patience, and belief in me. Their continuous encouragement has been the foundation for my motivation and perseverance.

Finally, I acknowledge all individuals and institutions who contributed—directly or indirectly—to the completion of this thesis. This achievement would not have been possible without your support.

Abstract

This paper examines the effect of government transparency on attracting Foreign Direct Investment capital inflows and its indirect effect on government budget revenue. Grounded in Public Finance Theory, this research addresses a critical question: Can the use of government openness as a meta-public good enhance the capital inflows, which leads to a return in fiscal capacity? Using a provincial-level dataset and employing a dynamic Two-Step System Generalised Method of Moments to address potential endogeneity, the analysis reveals two key findings. Firstly, transparency acts as a significant tool to attract FDI inflows, as it reduces total registered capital, thereby filtering out speculative or rent-seeking investments. Secondly, the fiscal benefits of transparency are not primarily mediated by foreign investments but likely operate through broader channels and enhanced domestic capacity. The conclusion is that transparency is an essential meta-public good and crucial to the efficiency of the government's allocation and stabilisation functions. Policymakers can consider this as a strategic and cost-effective alternative to traditional incentives to promote sustainable economic development for Vietnam.

Relevance to Development Studies

In the modern world, foreign investment is one of the most critical sources of development, especially in developing countries. It not only fills the demand of capital, which can not be covered by local resources, but also goes together with additional positive spillover effects from technology transition and job creation. However, in addition to tax incentives and attractive policies, there were only a limited number of tools to control and attract more capital inflows for the host country.

This paper makes a significant contribution to Development Studies by demonstrating how institutional quality works as a fundamental driver for sustainable economic development. Using transparency as a "meta-public good", the results of this research aim to prove that government openness can be one of the cost-effective factors that stimulate foreign investments. Additionally, by examining further implications of transparency, it illustrates how government characteristics can lead to fiscal budget accumulation.

By considering this paper as a reference point in the Vietnam context, it pivots governance reforms away from costly fiscal incentives. In addition, other developing countries with high trade surpluses can also follow this approach, highlighting a development pathway that is economically productive and institutionally resilient.

Key Concept: Foreign Direct Investment, Government Transparency, Tax Revenue, Provincial Budget, Governance Quality.

Contents

List of Figures

List of Tables

1 Introduction

In today's interconnected global landscape, Foreign Direct Investment (FDI) represents a critical element influencing the economic development of nations. Beyond merely serving as a business mechanism for multinational corporations to augment profits, FDI constitutes a vital source of capital that facilitates and expedites national growth through diverse economic activities. Consequently, this form of capital inflow is essential for enhancing both government revenue and social welfare. According to data from the Ministry of Planning and Investment in Vietnam, by the end of 2024, foreign investment in the Vietnamese market reached 38.23 billion USD, with an accumulated registered capital of 502.8 billion USD. Moreover, FDI projects generated 25.35 billion USD, reflecting a 9.4% increase from the same period in 2023, and have become a significant component of Vietnam's government tax revenue. Additionally, foreign investment has a beneficial impact on the host country's infrastructure and technological advancement through spill-over effects. This suggests that policymakers should prioritise these sectors as integral components of a successful development strategy.

To maintain the attraction of FDI inflow, all factors that affect investors' investment decisions must be considered. Some articles focus on economic development as a key factor in attracting more FDI inflow (Canh et al. 2019, Nguyen et al. 2014, Anh Ngoc & Thang 2007), the mechanism is based on the idea that countries with higher economic development attract more FDI inflow, and the trade flow depends on the difference in the level of development between the host and home countries. Other factors include the development of infrastructure, the characteristics of human capital, and financial capabilities (Edmund et al. 2015, Anh Ngoc & Thang 2007). Between developing countries, these factors have bidirectional influences on the abilities of countries to attract cross-border capital. In one way, countries with lower development of human capital can benefit from investment in labour-intensive industries due to low-wage workers and labour abundance. On the other hand, corporations that focus on technology-intensive production need a higher quality environment with a more skilled labour force. It not only reduces the cost for training skilled labourers but also benefits from the potential local market with higher personal income. In addition to that, one of the most important things that impacts the investment decision of foreign investors is the stability and support of the host country government. Without it, investors cannot accurately plan for their investment profit and potential loss, leading to unstable conditions and causing them to withdraw their investment due to loss-aversion behaviour.

To mitigate potential risk and create a more stable environment for investors, one of the leading causes that needs to be addressed is the information asymmetry between the government and corporations. Following a working paper by Baldwin (2016) on global trade and industrialisation, he explained how information transmission between countries expands opportunities and shapes trade flow across borders. Furthermore, the role of social media platforms is a key channel to spread information across borders and change the investment behavior of investors and firms. In the same vein, several working papers have also emphasised the value of transparent information in changing the quality of the business environment and its impact on the firm's performance. In recent years, many researchers and institutions have considered, researched and practised the role of information transparency (Edmund et al. 2015, Binh & Giai 2022, Farzanegan & Fereidouni 2014, Canh et al. 2019). The 2021 Recommendation on Transparency and Procedural Fairness in Competition Law Enforcement by OECD is the first guideline aimed at creating a transparent and fair business environment for operations across borders. By establishing a clear legal framework, this guideline provides governments with a solid foundation for fair, transparent competition law enforcement worldwide. Through the lens of government transparency, the business environment of a country becomes more transparent and predictable, leading to an attractive long-term investment base based on stable business conditions. Moreover, government

transparency is also a proxy of institutional quality. It is not only about the government's anti-corruption efforts, but also about the predictability of future planning, access to information, clear regulations, and fair implementation of laws. This role of transparency is an important mediation factor in reducing information asymmetry and costs for foreign corporations, thereby mitigating uncertainty risk and encouraging cross-border investment inflows.

In the context of Vietnam, where the economy is heavily dependent on foreign investment and international trade, this is an optimal case for this examination. Understanding this potential pathway is a major objective to achieve further economic growth and lead to a sustainable fiscal budget. However, there is a scarcity of research that examines the relationship between transparency, FDI, and tax revenue within a country. This study contributes by examining these dynamic relationships at the provincial level in Vietnam, where the province's characteristics vary across provinces. Using the Budget Finance Theory, this paper aims to address these gaps and answer the critical question of whether FDI serves as a transmission channel through which transparency indirectly influences tax revenue within a country. The question can be specified into two research questions that this paper aims to address:

- What is the direct effect of government transparency on FDI attraction, measured through the number of FDI projects and their total value?

- How does the causal relationship between government transparency and total tax revenue manifest, particularly with FDI as a mediating factor?

This study pursues two main objectives to address these research questions. Firstly, this paper re-examines the direct effect of government transparency on FDI attraction through the number of FDI projects and the total value. By quantifying the impact of government openness on provincial FDI attraction, this study provides a robust test of previous empirical evidence and broadens theoretical knowledge of how the quality of institutions affects foreign investment within a developing country. Secondly, the causal relationship between government transparency and total tax revenue, with FDI as a mediating role, will be investigated to measure the indirect effect of transparency. This objective is the key contribution of this paper to the literature gap in public finance theory, where the role of institutional quality is underestimated and receives little research attention. Moreover, this shows that the benefits of good governance have measurable implications for a government's fiscal health, which, in turn, directly impacts social benefits through progressive outcomes. Policymakers can rely on the results for long-term planning, with the aim of attracting new FDI inflows while meeting social needs using surplus fiscal capacity. This can create a more sustainable economic development and social wellness.

Within the country context, this research will use an unbalanced panel dataset of 63 provinces in Vietnam from 2017 to 2023. One of the main expected issues when analysing the dynamic relationship between FDI, transparency, and government tax revenue is the endogeneity bias from the reversal causality of the lag variable. To address these issues, this paper primarily employs the two-step systems-GMM method, incorporating an external instrument variable for political stability and corruption. The organisation of this research paper is divided into five chapters. The first chapter is the introduction about the context, problem statement, and motivation to do this research. The research questions and objectives are followed by the results that this paper aims to achieve. The second chapter provides the theoretical framework and empirical evidence from previous research, revealing the gaps that this paper seeks to address. Chapter three gives a definition and statistical summary of the variables in the dataset, followed by the empirical model, methodology, and treatment of endogeneity problems. The regression results and conclusion, along with the discussion, will be delivered in chapters four and five, respectively.

2 Literature Review

This chapter aims to review the theoretical foundation of Public Finance Theory by Musgrave (1959) as a framework to analyse the link between FDI and government budget, and how government transparency takes part in and supports this relationship. The second section of this chapter focuses on the empirical studies linking transparency, FDI and tax revenue, summarising the effects of transparency on FDI, tax revenue, and the mechanisms between these elements.

2.1 Theoretical Framework

This section focuses on the key framework of this paper, the Public Finance Theory by Musgrave (1959), to analyse the role of government transparency in attracting foreign investment and its impact on government budget revenue. To achieve this objective, the definition and functions of government financing systems will be presented. Follow that, the effect of overseas capital on government reserves can be demonstrated, highlighting the role of government openness in this relationship.

Published for the first time in 1959, the Theory of Public Finance textbook by Musgrave has been one of the widely used frameworks that describes the role, functions and interactions of government in economic systems. In this book, author has mentioned the role of government financing as an sectors in economics systems, interacting with the private and other public sectors through several instruments such as taxation, expenditure, policies and regulations. The ideal role of public financial systems focus on three key functions or "branches: the Allocation branch, the Distribution branch, and the Stabilisation branch. These branches illustrate the group of tools and activities that the government uses to interact with society to secure individual satisfaction and provide distributive justice with a budget constraint.

Firstly, the Allocation branch focuses on the satisfaction of individuals with public goods, which cannot be traditionally satisfied through the market system. In the market systems, the mechanism is well-suited for the consumption of private goods, meaning that it is based on the exchange and trade-off of personal preferences and their constraints. In other words, private goods only benefit the purchaser and exclude other individuals in society. On the other hand, public goods aim to help the whole society, meaning that the purchase of one participation does not affect the consumption of different people. Due to the difference in exchange between public and private goods, the government need to step in and untangle the situation of the market systems. This branch aims to achieve a higher level of efficient provision for public goods and address these market issues. Secondly, the Distribution branch participates in achieving a socially desirable distribution of income and wealth through tax and transfer policies. After reaching the optimal efficient use of resources on the Allocation branch, one of the main concerned problems is that the fairness of distribution across individuals. An efficient economic condition only happens when the position of one individual is improved without worsening the position of other people. Through the tax-transfer scheme and policies, the redistribution process can be implemented to provide a minimum standard of living for society, especially those at the bottom of the scale. To manage the role of government in the Allocation and Distribution branch, the government uses the Stabilisation branch to maintain macroeconomic stability, including the employment rate and price stability. Using monetary and fiscal instruments, the government's main objective is to control the level of aggregate demand through employment and prices, resulting in a controllable rate of economic growth.

This framework is not only a description of government functions but also a theoretical view of how nations should operate to maximise social welfare. For the purpose of this study, this classical framework will be adapted to analyse the relationship between government transparency, foreign

direct investment, and tax revenue as visualised in the conceptual model (Figure 2.1) below. This adaptation model is created based on the basic model of the Agency Theory, where the government acts as an agent for the principal, who is the citizenry.
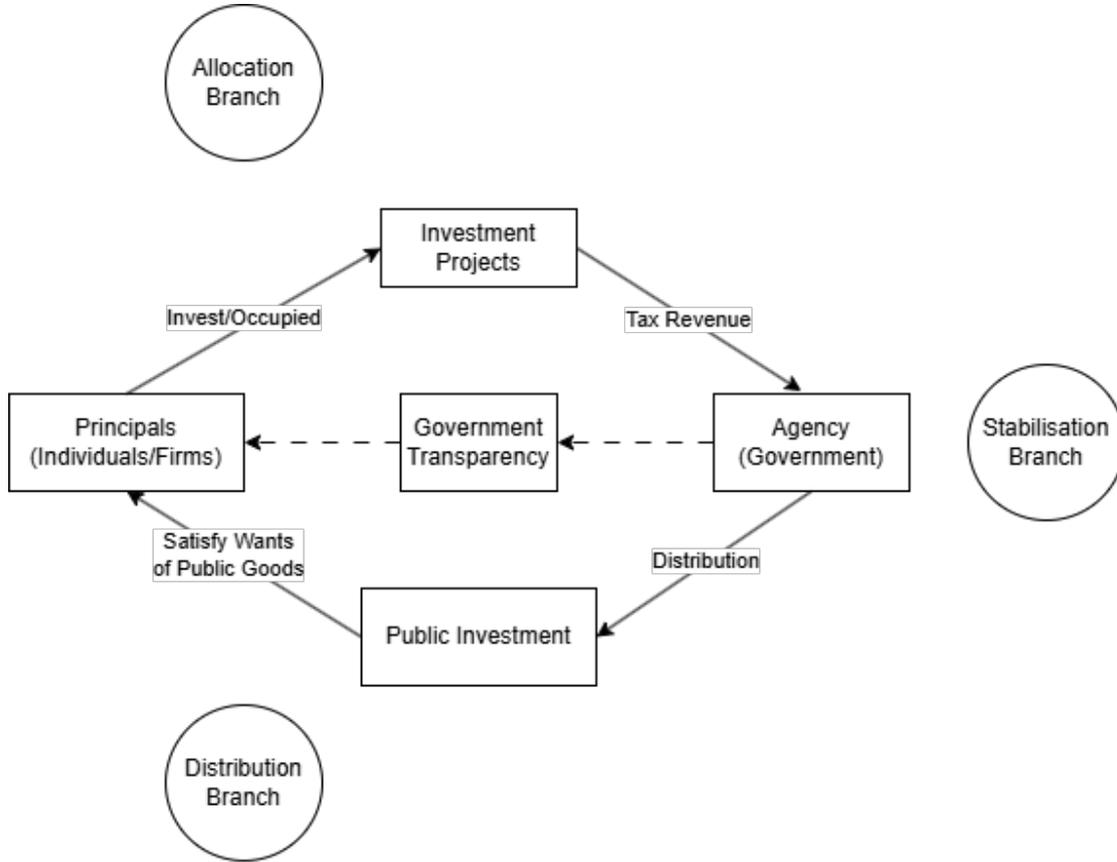
Figure 2.1: Conceptual Framework between Government, Social and Transparency

In this framework, the Allocation branch addresses market failures and provides public goods and services that the market only partially fulfils or does not fulfil at all. The transparency of government in this framework is like a foundational meta-public good, representing the governance characteristics that enhance the efficiency of other public goods and the performance of the overall market system. Transparency is defined as the availability of comprehensive information on government activities, rules, decisions, and policies. The role of transparency on the Allocation branch aims to improve a critical market failure: information asymmetry.

In the context of investment, the information asymmetry between the government (the agent) and private sector investors (the principals) creates significant barriers due to uncertainty and unobservable risk. For private investors, in addition to preferences for expected revenue when investing in a host country, they also demand other market factors such as human capital, infrastructure development, financial depth, and government stability. The role of government stability, as an attribute for proof of safety and accessibility, is a key factor in addressing the uncertainty risk for foreign investors. Foreign investors, operating in an environment of inherent uncertainty, require safety for their capital. Government transparency mitigates the political

and regulatory risks by making government policies clear with predictable actions. Furthermore, when laws, regulations, and informations are more intelligible, firms can streamline the process when entering the host countries, leading to a reduction in transaction costs of doing business. In addition to that, a higher level of transparency also mitigates government corruption and inefficiency by exposing corrupt practices and ensuring that public goods function as intended. Therefore, through the lens of the Allocation branch, government transparency is a critical input that enhances the efficiency of the entire economic system. By providing this meta-public good, the government directly fulfills the allocation functions and makes the national economy more attractive with foreign investments

Foreign Direct Investment is a key variable in the stabilisation function of the government. Unlike other types of investments, which are usually short-term, FDI typically represents a long-term commitment with fixed capital, offering a higher level of stable investments. It directly contributes to capital formation, job creation, and technology spillover in host countries, resulting in achievable objectives for the stabilisation of high employment and economic growth. Through stabilisation tools like fiscal and monetary policies, the government not only attracts foreign investment with tax incentives but also reinvests it into the economy by distributing it to public investment goods. The distribution functions represent the fiscal social contract, which the principals consent to pay taxes in exchange for public goods and fair governance. By taking part in the distribution functions of government as a meta-public good, transparency fosters trust in government. If principals can see and understand government activities through the lens of openness, they are more likely to recognise their legitimacy and expect this to be evidence of a stable and healthy government. This is especially important for foreign firms assessing the long-term stability and fairness of the host country's business environment. The conceptual models show a critical link between these main factors, illustrating a bilateral causal relationship between FDI and government budget revenue. Transparency serves as the bridge between FDI and the government, enhancing the efficiency of this connection and acting as a key mediator of this positive feedback loop.

This paper focus on the allocation and stabilisation function of government, in which transparency directly attracts FDI and indirectly impacts the government budget financing through the value of FDI investments and projects. By examining the role of transparency in this relationship, this paper aims to address theoretical gaps in the allocation function that stem from information asymmetry between the government and society. Furthermore, by using the provincial-level dataset of Vietnam, the strength of the critical links in this theoretical chain also be tested on the local government context. This finding can serve as an expansion and refinement of the application of Public Finance theory at the meso-economic level. In the next section, empirical evidence on causal inference between FDI and government will be introduced. Then, the role of transparency to identify the empirical gaps that this research aims to address will be highlighted.

2.2   Empirical Evidence

This section focuses on the empirical evidence of the elusive link between foreign direct investment, economic growth, and its impact on government revenue. From these connections, the role of government transparency will be analysed in the following subsection to define the details of its implications for FDI attraction and how it enhances fiscal outcomes.

2.2.1   FDI, Economic Growth and Government Revenue

In this subsection, this paper focuses on analysing the causal relationship between foreign direct investment and its key role as a driver of economic growth and tax revenue. The objective

of this part is to identify the key mechanism that forms the backbone of this paper, constructing the mediator role of FDI on government budget revenue. Most of the empirical evidences illustrates the Foreign Direct Investment are the critical engine for economic development to achieve successful development strategy. In the theoretical framework of the endogenous growth model, the internal factors support the success of economic development are human capital, financial accumulation, technological and capital assets. However, Foreign Direct Investment take part in as a key external driver for competitiveness and economic development, especially at developing countries.

Research about the effect of FDI on host countries economies has a long history. While much of the literature shows the elusive effect of FDI on economic development, only certain papers have identified that the positive FDI impacts are consistent with "conditionality". The first detailed studies of these issues were conducted by Borensztein et al. (1998), when they tested the effects of FDI on economic growth from industrial to developing countries. The main findings indicate the undoubtable role of FDI in technology transmission and its contribution to growth, compared with local firms. However, to achieve the benefits of FDI, the host economy must reach a certain threshold of absorptive capability, which relies on the human capital factor. In the same vein, Alfaro et al. (2003, 2010) have pointed out the ambiguous impacts of FDI alone on economic growth. Without the minimum requirements of development for financial markets, the investments from external factors to host economies are doubtful and underestimated. In a large longitudinal study, Bénétrix et al. (2023) re-investigated the elusive link between FDI and economic growth of developing and emerging economies. By reviewing the relationship between them over time, they have illustrated the fluctuation of external capital to the development of host countries, particularly before and after the 1990s. The main finding of the paper is aligned with previous research about the host countries "conditionality", with the FDI only have positive impact for countries with sufficiently level of quality labour force or development of financial sectors. However, in the post-1990s, this pattern flips when the positive impacts of FDI were extend to average countries. In contrast, these countries' economies with high level of education or financial depth received negative implications from FDI. Its key contribution has achieved the rise of Global Value Chains (GVC) since the 1990 as a primary driver of this change. The authors argue that GVC have reconfigured the global production, allowing multinational firms to expand their business on more diverse economic environments with lower requirements on the labour force and financial development quality. However, even under the lower requirement for absorptive capacities, the positive effect of FDI on economic growth can be ambiguous. While lowering the barrier of cross-border investment, the issues of unstable and confounding risks of developing countries due to information asymmetry are still existed. This part informs the research by explaining the dynamic impact of FDI and how its requirement can relates to the effect of transparency on FDI and tax revenue

By drawing on the concept of "conditionality" of FDI, Bruno et al. (2018) analyse the impacts of FDI on both firms and countries in emerging markets. The authors find outs that FDI mostly have positive effects to emerging host economies. By using the meta-regression-analysis technique with unique dataset collected from micro and macro level, the findings not only accumulate for national effects of FDI but also indicate the impact of spillover effect between firms. While both effects are positive and statically significant, the magnitude of impact of spillover effects on the firm-to-firm level is relatively small when compared with the country-level effects by six times. To explain this variance in economic levels, one critical point is that the extent of FDI spillovers depends on countries' characteristics and backgrounds. Despite higher returns in developing countries due to differences in advanced technology and production costs, there are still other constraints, such as institutional inefficiencies, infrastructure shortages, and pervasive rent-seeking. These issues reveal a crucial unanswered question about the role and mechanisms

of government that can effectively impact the efficiency of FDI. This tangled question is the key gap that this paper aims to fill in the empirical evidence of FDI impacts to host countries. By proposing government transparency as a meta-public good, which can be a proxy for institutional quality, the potential impact of FDI on economic growth can be better realised and converted into tangible fiscal gains for host countries.

To better understand how foreign investment contribute to host countries' budget revenue, a recent study by Gaspareniene et al. (2022) have investigated the effect on 28 EU countries in 21 years. Using the data of FDI inward and outward, the core results of the paper challenge the traditional view that attracting FDI is always fiscally beneficial. The positive impact of FDI outflows is confirmed authors hypothesis about the positive effects due to exports promoting, repatriation of profits along with society impacts on job creation and wage effects. On the other hands, the inward FDI has a small negative magnitude to tax revenue, attributed to the tax incentives policies and profit shifting mechanism of foreign firms. About the institutional quality, using the Corruption Perception Index as a proxy and control variables, the results are statistically insignificant. This control variable has a limitation in that the index's characteristics primarily focus on corruption in government. It illustrates only a part of institutional quality, which can lead to insignificant effects due to the absence of other factors, such as government transparency and policy implications. In the same vein, Nguyen et al. (2014) constructed a theoretical model to investigate the effect of FDI on the host country through its impact on corporate tax revenue. By using a simplified model of host developing countries with a two-industry setting, the findings demonstrate that the effects of FDI on tax revenue are ambiguous and depend on the balance of factors of competition effects, demand creation effects, technological spillovers, and technological transfer costs. Furthermore, the study concludes that the net fiscal benefit of FDI is not automatic and hinges on the absorptive capacity and incentive policy of the host countries. This view is supported by Arif (2019) with his thesis on the impact of greenfield and brownfield FDI on different types of tax revenue. Using panel data from 92 countries, both developed and developing, over 16 years, the results indicate a significant positive impact of FDI net inflows on total tax revenue and factor tax revenue, including corporate tax, individual tax, and VAT, in developing countries. Furthermore, controlling for the financial market development level and the government's corruption index indicates a significant impact on tax revenue, verifying the existence of "conditionality" requirements for FDI attraction. In addition to that, the study addresses endogeneity concerns using the instrumental variable approach using the Political Stability and Absence of Violence of the government, which can be an effective way to account for the reversal causality problems.

In conclusion, these studies show that FDI has an inadequate impact on the economic development and government budget of host countries. By reviewing the longitudinal history of FDI and developing economies, the overall impacts align with Musgrave's framework, where FDI directly expands economic activity and stimulates the tax base and revenue collection. The concept of "conditionality" regarding absorptive capacity and its impact on FDI inflows reveals potential empirical gaps regarding the role of government transparency. Unlike most of the previous papers that treat governance as a background variable, this paper aims to bring institutional quality as a key driver in the centre of the mechanism. Transparency in this situation can be seen as a mediator that mitigates the negative channels of unfair competition while amplifying the positive effects through information symmetry mechanisms. It is essential evidence that contributes directly to the body of existing literature on Public Finance theory, thereby amplifying the practice of new meta-public goods on public operations. The following sections focus on the definition of government transparency, its measurement, and its impact on practical implementation.

2.2.2   The Role of Government Transparency

This subsection focuses on explaining the role of government transparency, which enhances the allocative efficiency and stability of the host country economy, on the dynamic relationship between FDI, economic performance, and budget revenue. Through the mechanism of reducing information asymmetry and stabilising a fair business environment, the transparency of government is a functional component that enhances the efficiency of FDI inflows to the whole economy. Moving from the theoretical principle to empirical testing, this section investigates how a meta-public good can be defined and measured in practice. Moreover, after reviewing the common metrics used in literature, this section will examine some key empirical studies that demonstrate the significant role of transparency as a key variable in shaping economic relationships, especially those related to investment and budget revenue.

The standard definition of government transparency is the openness of government in the availability and accessibility of data and information. According to the OECD Recommendation on Open Government (2017), the role of government transparency is accumulated of "clear, complete, timely, reliable, and relevant public sector data and information". These functions of transparency are directly linked to the allocative function by providing investors with data on regulation and public services, and to the stabilisation function by ensuring the predictability of rules and fiscal data. In addition, transparency is particularly important in the global business context, where competition law, policies, and procedures play a major role in shaping the efficiency of cross-border investment. To evaluate for the transparency of public information, the OECD Public Integrity Indicators have measured the quality of the regulatory framework (*de jure*) and the practical implementation (*de facto*). While the former measures the responsibility and timely of establishing public information, the latter criteria cover the quantity and quality of public information with its impacts on social and economic benefits. This means that higher transparency of public information reflects a general view of government quality on how it reduces the issues of information asymmetry. Moreover, the openness of government illustrates a proxy for absorptive capacity of the economy, lowering the "conditionality" of foreign investment and increasing the attractiveness with investors.

Extensive research has shown that government quality is mostly measured through perception-based surveys such as the Worldwide Governance Indicators (WGI) and the Corruption Perceptions Index (CPI). While both of them indicate the quality of government as an outcome of transparency, they use different methodologies and data sources, leading to diverse quality measurements due to their objectives. Introduced since the early 1990s, the Corruption Perception Index by Transparency International is one of the leading indicators measuring the corruption level across countries. Using data sources from 12 different institutions, their objectives are to reveal the perception of firms and experts on corruption in the public sector and strive for transparency and accountability at all levels of society. In the same vein, the Worldwide Governance Indicators of World Bank Group indicate the traits for good governance in a broader view of multiple aspects. Based on a database of more than 30 institutions, the WGI focus on reports on perceptions of revelant dimensions of governance, such as accountability, government stability and effectiveness, quality of regulation and law, and government efforts on corruption control. The indicators reflect the diverse view of government quality and the perceptions of the details on several aspects on government activity. Despite their broad view of cross-country comparison, this can be too broad and insufficient information for sub-national analysis. In this paper about the Vietnam meso-economy context, Vietnam's Provincial Competitiveness Index (PCI) will be used as a proxy for government transparency from the firm's perception. Conducting from 10 sub-indices reflecting an overview of local institutions' quality, this composite index perfectly captures the business environments' allocative efficiency and stability.

In the context of Vietnam' provincial level, the first detailed study of determinants of FDI impacts was conducted by Anh Ngoc & Thang (2007). Using a spatial distribution analysis across provinces, this article aims to highlight the factors that impact the cumulative FDI capital of provinces from 1988 to 2005. The key findings illustrate a significant positive impact of market, labour, and infrastructure factors to FDI attraction. However, when using the PCI as an indicator for local governance factors, these is no statistically significant results of it to the number of projects and value of FDI. The explanation for this phenomenon can come from two main reasons: the stage of development and measurement issues due to the aggregation of PCI. In the early stage of investment, investors might tolerate lower transparency for a higher return due to the rent-seeking and profit-shifting phenomenon. However, at a particular stage of market development, transparency becomes critical to ensure fair market competitiveness. The latter reasons can be explained by the use of PCI in the regression analysis. Due to using the overall index of PCI, the effect of specific aspect of transparency that matter most to investors might be masked, leading to lower magnitude and insignificant results. Based on these findings, an examination was conducted about the determinants of FDI in the southern central coast region of Vietnam Hoang et al. (2021). A deep dive into a specific region reveals vertical FDI with the same patterns at the national and regional levels, but with lower magnitudes of nuance. When examine the instituonal quality factors, a major update of this paper is that using the nine sub-indices of FDI instead of the overall composite PCI. The results are highly specific, with Time Costs, Business Support Services, and Legal Institutions showing significant results. While lower time costs support on attracts FDI inflows, the business support services show unexpected negative results. The authors propose the mechanism is that these business support services primarily focus on the local firms, creating a bias that deters FDI. The PCI sub-indice about legal institutions is the strongest institutional variable with positive effect. It measures the transparency, predictability, and fairness of the legal system are significant determinants attracts FDI inflows. However, when consider about the impact of GDP as a market factor to FDI attractions, this paper not consider the bidirectional relationship between these variables. This issue illustrates the potential of endogeneity bias due to reversal causality, leading to the insignificant results of economy development on FDI inflow capacity. In a closer view, Hope et al. (2021) examine the information role of government on the firms operation performance in emerging economies. Using the Hollyer, Rossendorff, and Vreeland government transparency index, which was conducted from the World Development Indicator data source, the main hypothesis of this paper is that transparency has a positive impact on capital utilisation level and total factor productivity (TFP) of firms. The impact mechanisms are constructed through two main funnels: the learning and financing channels. While the "learning" channel focuses on the mediator function of transparency for better understanding of the local economic environment, the "financing" channel examines the impact of it on reducing information asymmetry for capital attractions. The main findings indicate a significant positive effect of transparency on both capacity utilisation and TFP. Furthermore, the impact of transparency is more substantial when alternative information sources are weak, meaning that firms with credible financial information and firms in countries with an advanced level of the stock and credit markets are less dependent on the government transparency level.

This section has attempted to provide a summary about government transparency, its definition, measurement, and empirical evidence of its role in the link between FDI and government revenue. Synthesising these insights with the findings of the previous section, the conceptual link between government transparency, FDI, and budget revenue has been established through several individual links. However, these insights reveal a critical gap in the empirical evidence. There is no evidence within countries that transparency, functioning as a meta-public good, affects provincial tax revenue through the FDI transmission channel in Vietnam. Most of the

previous papers focus on the government's direct effect on FDI without considering the subsequent fiscal consequences. Moreover, their object also focusses on the microeconomic benefits of transparency for firms, without linking them to meso-outcome at the sub-national level.

The integrated model of Transparency's direct and indirect effects on budget revenue via FDI remains unvalidated in the within-country context of emerging economies. By treating local government transparency as a key meta-public good, this paper aims to demonstrate that transparency is a crucial determinant of foreign investors' attraction and indirectly supports provincial fiscal capacity. To test this hypothesis and fill this empirical gap, the following chapter outlines the empirical methodology, the description of the data source and variables, and how this paper deals with potential endogeneity bias from reversal causality.

3 Methodology and Data

The objective of this chapter is to focus on the methodology for analysing and replicating the research results. The first section explains the data sources and how they were collected and processed. Following that, the definition and explanation of variables will be represented, along with the plot of the main variables and descriptive statistics of the variables. The last subsection illustrates two main equations for regression analysis, with justification for model selection and a solution for potential endogeneity bias.

3.1 Data Source

This research uses secondary data at the provincial level. They were obtained from an official source from the Vietnam General Statistics Office (GSO). Due to data limitations on the official GSO website, some provincial-level socioeconomic statistical data were collected manually from two GSO books published by the Statistical Publishing House Office (2020, 2024). However, several public financial data points are still missing from the official books. To enhance data richness and balance the panel, the author uses additional sources from a trusted website of the Ministry of Finance to obtain tax revenue data. Data on control variables, such as GRDP, freight traffic volume, labour force, urbanisation rate, SCOLI, and agriculture share, were collected from the socioeconomic book and the GSO online platform. The main independent variable for government transparency was collected from the official PCI website (Vietnam Chamber of Commerce and Industry 2023). Due to limited data availability, this research uses unbalanced panel data from 63 provinces from 2017 to 2023. The number of observations in each regression may differ depending on data availability.

3.2 Variables Definition

3.2.1 Dependent and Independent Variables

Transparency Index

As the main objective of this research, the Provincial Competitiveness Index (PCI) as a proxy for government transparency and corruption. This index was built by the Vietnam Chamber of Commerce and Industry, with the support of USAID, since 2005. Each province has an overall PCI score, comprising 10 subcomponents that reflect the firm's perspective on local government work, planning, informal charges, and support services. To construct an overall PCI, data is randomly collected from business surveys and trusted published sources to avoid selection bias. After that, the 10 sub-indices are calculated and standardised to a 10-point scale, which will be used to calibrate the composite PCI as the weighted mean of these subcomponents. Based on these characteristics, PCI not only indicates the perception of the business about the quality of the local institution, but also serves as a proxy for openness and fairness of the public government (Tran & La 2021, Le & Duy 2021, Nguyen et al. 2014, Edmund et al. 2015). In addition to that, one of the alternative indices to indicate the government transparency is the Viet Nam Provincial Governance and Public Administration Performance Index (UNDP 2023). This index is a combination of 8 dimensions, measuring the openness, performance, and quality of government at the local level (Dao & Nguyen 2025, Giang et al. 2017, Tran & La 2021). However, while the PCI focuses more on the perspective of firms, the PAPI indicates Vietnamese citizens' perceptions of local government quality. This is the key limitation that can lead to an underestimation of transparency's effect on FDI attraction and tax revenue, so this paper will not use the PAPI indicator.

In this research, the transparency index will be conducted in two ways: one using only the subcomponent number 3 focus on transparency measurement, and a new aggregating several subcomponents to create a new transparency index. We are using 2 indices of openness because of differences in meaning and value between them. Subcomponent 3 measures only the transparency of the business environment and the degree to which the government collaborates with firms on business information and future development. Using this subcomponent can give a more precise measurement of government transparency on business climate, but also narrow down the effect of public openness on other external factors, such as land rental or business support services. To deal with this potential limitation, this paper constructed a new aggregated index that includes different aspects of transparency, such as land planning and land access information (PCI subcomponent 2), provincial efforts to solve information and policy issues for enterprises (PCI subcomponent 7), and business support services on legal documents (PCI subcomponent 8). By combining these subindices, this new index provides a broader view of how government transparency can impact the business performance and process, which can attract more potential investors to join the local business environment (Tran & Nguyen 2025, Diep & Le 2025, Ngo & Ha 2024).

Based on the conceptual framework with several relevant papers, the role of institutions in controlling corruption is critical when examining its effect on society. Mitigating corruption enhances the relationship between agents and principals, thereby optimising the performance of societal factors. At the country level, most of the paper using the World Governance Indicator Group (2025) or the Corruption Index 2025 as a proxy for corruption levels of a country. Given this paper's focus on the inside nation, using these variables can underestimate the impact of corruption and misestimate both the overall and detailed results. Inspired by Arif (2019), this paper will use a new index, which is constructed to provide an overview of local government corruption and stability, serving as a proxy for the Political Stability and Absence of Violence/Terrorism (WorldBank 2025). Using the PCI subcomponent, this new corruption index indicates violations of document processing time and bribery actions (subindices 4 and 5), policy bias favouring some types of firms (subindices 6), and law protection in corruption disputes (subindices 10). In this paper, this index will serve as a control and an instrumental variable to solve endogeneity problems, and a detailed description of its use will be presented below.

FDI Investment

In this research, FDI data were collected from both socioeconomic books and the GSO website. To measure the effect of government transparency on FDI attraction, this research will examine its impact on the total number of new FDI projects and the total value registered and implemented each year. By identifying the impacts of government transparency on the number of FDI projects and total value registered, the results will specify its impact on the new FDI inflow to local province market. These are the key results to prove the first hypothesis of this research paper. Furthermore, performing the regression on the value of FDI implemented yields more precise results, reflecting transparency as a key player, turning project planning into actual investments. To investigate the indirect effect of the government budget through the FDI channel, the total value of FDI investment will be reused in the second equation. This not only controls the impact of FDI on government revenue through business operations but also specifies the role of FDI as a key mediator in transmitting the effect of transparency on government budget. Due to the limitation of data availability of FDI, the detailed impact of several types of FDI, like Merger & Acquisition and reinvestment or intra-company loans, cannot be adequately measured. Furthermore, in Vietnam, where geographical, infrastructure, and economic development are unevenly distributed across provinces, some provinces lack sufficient attractions for foreign investors. This phenomenon leads to unbalanced panel data and to different numbers of observations across equations.

Tax Revenue

The government tax revenue is one of the main dependent variables of this research paper. Both theoretical views and practical evidences has pointed out that tax revenue is the main source of government budget. By using this as a primary variable, the conceptual link between government transparency and budget revenue can be proven through the transmission of FDI investment. In this research paper, the author will use several types of taxes like tax revenue from the FDI sector, personal income, environment and land & water rent. The choice of these taxes comes from two main reasons. Firstly, when cross-border capital flows into a province, these taxes are mainly revised at the early stages of business operations. Secondly, while other taxes, such as entry, resource rental, or value-added taxes, also changed due to foreign investments, these taxes are not included because their overlap with local firms' operations was not specified in the data source. Using this approach instead of total tax revenue, the outcome can specify how FDI and government transparency affect the government budget. Based on the research question and relevant papers, the expected result is that FDI investment has a significant effect on the tax revenue from FDI projects. In one way, FDI investment can boost FDI's tax revenue through the firm's operations and business processes. However, to attract more FDI, tax incentives are given to foreign firms, reducing budget revenue from them. In the same vein, the environmental tax and land revenue tax can also be influenced by these factors, with a lower level of impact. The increase in FDI investment also targets the local labour markets. To prepare for processing, firms raise demand for quality labour, leading to a rise in the labour market. The direct effect leads to an increase in labour income, followed by the indirect impact on personal income tax revenue. With government transparency, the key hypothesis of this paper is that these have significant positive impacts on FDI sector tax revenue, with lower effects on provincial personal income. Besides that, the outcome of it on the environment and land tax revenue can be nuanced, and affected by other factors like government planning, local market contexts, and social components.

3.2.2 Control Variables

Gross Regional Domestic Product - GRDP

In this context, the Gross Regional Domestic Product is proxy for the economic development level of local provinces. Based on the conceptual model, the FDI inflows activated only in the market have fulfilled the "conditionality" for the development of the labour force and the financial sectors. With a sufficiently skilled labour force and financial depth, cross-border investment stimulates a positive impact to the province's development level. A higher level of GRDP indicates that the province's economy has generated a surplus, and the local firm's production is still in the growth phase. When comparing year-over-year GRDP, an increase in GRDP has a positive impact on the local government budget's tax revenue. This variable will be used in both equations to control for the level of economic development and take the form of a natural logarithm.

Freight Traffic Transport

The total number of freight transports is representative of the development of the infrastructure of the local province. In addition to the province's level of economic development, infrastructure development is one of the key variables that positively affect both the potential for FDI attraction and government revenue. From a theoretical perspective, a province with higher freight traffic indicates its potential and capability for transportation, which is a competitive advantage for attracting investment capital from both domestic and foreign firms. Furthermore, beyond the potential of geographic location, provinces with a high infrastructure development can help firms reduce logistics and supply chain operational costs. With an advanced level of infrastructure development, corporations not only enhance the processing time to produce goods

and services, but also improve the efficiency of business operations. More convenient transportations support FDI projects and attracts both the local and neighbouring province labour force, leading to a high employment rate and increased labour income. It directly affects tax revenue from personal income and, through spillover effects, indirectly affects land tax.

Labour Force

For most FDI firms, these are the two main factors that affect their investment decisions: labour costs and labour quality. The cost of labour directly impacts the P&L analysis and the cost of the final goods and services, while the quality of labour affects the efficiency of the production process. Due to these issues, in this paper, using the number of people currently joining the province's labour force is a more direct approach to proxy for the quantity of the local labour force. In a province with a larger labour force, the abundance of labour supply in the labour market is an advantage for firms operating in labour-intensive industries. The control variable for the labour force indicates a positive association between the labour force and FDI attraction. Due to data availability, labour costs for FDI firms are not separated from the province's average labour costs. This limitation not only reduces its effect as a control variable, but can also lead to the miscalculation of the indirect effect of the labour force on government budget revenue. So, this variable will not be used as a control variable in the second equation.

Urbanisation Rate

In this research topic, the urbanisation rate is a critical control variable that captures the agglomeration economies and development capacity of province. The rates are calculated as the number of people living in the urban area divided by the province's total population. Based on the relevant paper, their findings mostly illustrate that the provinces with higher urbanisation typically exhibit an advanced level of infrastructure, financial sectors, and a larger concentration of skilled labour force. Together, these factors create an optimal environment that attracts foreign direct investment into the province. However, there are still some disadvantages of the province with high level of urban rate. Firstly, a higher level of urban rate means that the expenses for land rental and labour wage are higher when compared with other provinces. It effect can lower the attraction of investors, especially those who invest in labour-intensive industry sectors. By controlling for urbanisation, this study isolates the impact of transparency from the inherent advantages of urban agglomeration. In addition, through FDI transmission, the urban rate has a complex indirect effect on government revenue, which can misestimate transparency in government revenue.

SCOLI

Due to data limitations, there is no inflation rate or consumer basket price for the specific province in the Vietnamese context. The Spatial Cost of Living Index, which captures the same characteristics, is added to the control variable to proxy for the inflation rate by province. Inflation creates uncertainty for investors, especially foreign investors, due to currency volatility between the host and home countries. High inflation can erode the real value of future profits and pose a risk to business planning. From a fiscal standpoint, it can artificially boost nominal tax revenue while failing to reflect households' purchasing power. In an economy with a high inflation rate, households will reduce their expenses and focus more on fulfilling their basic needs, which will minimise economic growth and affect investor attractiveness. The control for this variable offering a more accurate picture of the real economic effect of transparency, ensuring the model accurately captures underlying economic dynamics.

GRDP - Percentage of Agriculture, Forestry and Fishing

The share of Gross Regional Domestic Product (GRDP) attributed to Agriculture, Forestry, and Fishing is a vital control for a province's economic structure. In most countries in the Southeast Asia region, Agriculture, Forestry and Fishing are one of the key players that take part in the development of the country's economy in the early stages. However, a high share in

this primary in this sector typically indicates a lower level of industrialisation, urbanisation, and other services sectors. Its characteristics as labour-intensive sectors with lower marginal revenue than other industries, leading to lower attraction of foreign investment and lower capacity to generate budget revenue. By controlling for this variable, the model accounts for the fundamental structural constraints that may limit both FDI inflows and tax revenue potential. This allows the analysis to isolate the specific mechanisms through which transparency affects fiscal and investment outcomes, net of a province's stage of economic development.

3.3 Model Specification & Analysis Plan

3.3.1 Empirical Strategy and Model Specification

To test the hypothesis that transparency affects FDI attraction and government budget revenue, this study uses a two-equation mediation model. This quantitative approach, using the institutional quality measurement variable, is vital for testing the conceptual model of this paper and answering our research questions. The first equation examines the direct effect of transparency on foreign direct investment, while the second tests the effects of both transparency and FDI on tax revenue. The formal model is specified as follows:

$$FDI_{it} = \alpha_i + \beta_1 Transparency_{it-1} + \beta_2 GRDP_{it-1} + \beta_3 Infrastructure_{it-1}$$
$$+ \beta_4 Labour_{it-1} + \beta_5 Urban_{it-1} + \beta_6 SCOLI_{it-1} + \beta_6 COVID + \gamma_i + \epsilon_{it} \quad (1)$$

Equation 1 examines the impacts of transparency on FDI, which is suggested by Edmund et al. (2015) with an inflation addition variable and a dummy variable for COVID-19. In this equation, all of the independent variables are used in lag one year, except the COVID-19 dummy variable. The assumption underlying this equation stems from the mechanisms by which investors decide to invest in a country, which rely on the past conditions of the host country's socioeconomic factors. In the main regression, using the lag 1 year as the minimum period for the investor to decide about the "conditionality" of host countries is sufficient to identify the effect of transparency on foreign capital attractions. In reality, the unidirectional causality mechanism between government transparency and FDI investment can be explained. FDI inflow is more likely to be attracted to provinces with a higher level of government transparency, ceteris paribus, and cannot affect the past value of GRDP and the transparency level. However, when considering the relationship between GRDP and FDI inflows, bidirectional causality can be a potential source of the endogeneity problem. In the early stage, foreign capital chooses the host country based on the condition of several factors of economic development. After that, when FDI projects come to the operational stage, the final products of business operations can directly influence the GRDP of local provinces. This is a potential sign of reverse causality issues that can be resolved using a dynamic model approach.

$$TaxRevenue_{it} = \alpha_i + \beta_! FDI_{it-1} + \beta_2 Transparency_{it-2} + \beta_3 GRDP_{it}$$
$$+ \beta_4 SCOLI_{it} + \beta_5 Agri\_GDP_{it} + \beta_6 COVID + \gamma_i + \epsilon_{it} \quad (2)$$

Equation 2 is suggested by the research paper by Arif (2019) when studying the effect of foreign direct investments on tax revenue from developing and developed countries. In this equation, following the assumption above, the lag 1 period of FDI investment and the lag 2 period of the government transparency index will be used to examine their effect on the tax revenue. By using the lagged model of these main variables, the results will be strengthened and align with the key conceptual framework of this research paper. It take time for improvements in province institution's transparency to be recognised by investors, resulting in the FDI investment of next year. These investments take another year to become operational and generate taxable revenue for the provincial government budget in the current year. The control variables do not include the one-time delay period, indicating that the control is for the contemporaneous effect of these variables on the government budget. This is the main assumption of Equation 2, which is based on the complex mechanisms underlying the direct and indirect causal relationships among transparency, FDI, and tax revenue. A further lag step of transparency will be examined in the robustness check to confirmed for this assumption.

The sign of reverse causality, which has been mentioned in equation 1, still can exist in this equation. Furthermore, these issues can come from the relationship between FDI investment and tax revenue. In fact, through the impact of FDI investment, these businesses' revenue has a direct effect on the government budget through the tax system. However, to attract more FDI investment and increase the potential capital for development, the government commonly provides tax incentive schemes and policies to gain a competitive advantage over other countries in the region. This kind of promotion is a trade-off between long-term economic development and short-term government budgetary revenue, creating a reverse-causality relationship between these variables.

3.3.2 Analysis Plan and Endogeneity Treatment

In this research paper, the use of an estimator should be carefully considered given the bidirectional causality between the variables. Due to the complex relationship and interaction with lag variable of both dependent and independent variable, this paper employs the Two-Step System Generalised Method of Moments (2-steps System GMM) estimator developed by Blundell & Bond (1998) for both equations. In relevant papers within the research fields and on the Vietnam context (Edmund et al. 2015, Anh Ngoc & Thang 2007, Arif 2019), most use the Two-Stage Least Squares estimator with external instruments or spatial methods to estimate spillover effects between neighbouring provinces. However, their framework often fails to control for within-province causality from lagged variables. The 2-step System GMM estimator resolves the issue of dynamic panel bias and endogeneity due to reverse causality by utilising internal instruments derived from lagged variables. This approach is superior to Two-Stage Least Squares (2SLS), which requires hard-to-find external instruments, and is more directly focused on our research question than spatial models, which primarily address cross-province spillovers rather than within-province temporal causality (Canh et al. 2019). In addition, Kripfganz have noted that this estimation method is more efficient than other estimators, especially for short-term panel datasets. However, due to data availability in the Vietnamese context, the unbalanced panel dataset used in this paper may pose a potential limitation on the interpretation of the results of this approach. Furthermore, the risk of instrument proliferation, which can lead to inflated p-values that overstate instrument validity, also exists when doing dynamic panel data. To mitigate this risk, the *collapse* option are included to preserve the power of the Hansen test, and control for the instruments count remains below the number of groups.

The choice of instruments and lag structure is the main critical point in the 2-step System GMM, affecting the regression results. Regarding the lag structure, the main regression results are based on the business cycle concept, with a cycle length of about 5 years. This means that all endogenous and predetermined variables at the difference level have a maximum lag length of 5 years. For the endogenous variable, the minimum lag length is 2 years; for the predetermined variable, it is 1 year. At the equation level, endogenous and predetermined variables will use lag 1, while exogenous variables will use lag 0. In equation 1, GRDP and FDI are the main endogenous variables, while transparency is accounted for as a predetermined variable. For equation 2, the endogenous variables are FDI investments and tax revenue, the predetermined variables being the transparency index and GRDP. Furthermore, in the robustness check section, to account for changes in lag in the main variable, the lag structure will be adjusted and explained in further detail below.

In addition to the internal instrument variable from the 2-step System GMM, by using the external instrument variable of the corruption index as a proxy for political stability, the regression results can yield more robust results. To be used as an external IV for the endogenous variable, this paper's identification strategy employs deep lags of the corruption index for each equation

to reinforce the exclusion restriction. For equation 1, the corruption index at time t-2 will be used as an instrument for GRDP at time t-1, meaning that historical corruption can impact the economic development trends but not directly influence current investment decisions. With equation 2, this instrument variable will be used at time t-4 as an instrument for FDI at t-1. This assumption is based on the idea that investment decisions are shaped by corruption from 3 to 4 periods ago, but it has a minimal direct effect on contemporary tax collection. Furthermore, corruption's direct impacts on economic development tend to be more nuanced in the short term. The validation for this approach will be presented in the appendix.

3.4   AI Disclosure

This paper has used Generative AI as a tool to discuss, expand, and deepen knowledge of the research field and to offer econometrics suggestions. The author uses Generative AI from ChatGPT, Deepseek and Grammarly for different purposes. With Deepseek, most use is for the literature review, methodology, and results chapters. The main theoretical and conceptual framework comes from personal interest and ideas about the public economy. All the key details mentioned in the literature review are individual work, and use DeepSeek to verify the overview meaning and to expand on gaps that may be missing when summarising. To verify the generative information, all summarisation prompts request the line and page, which the generative content mentions. The methodology uses artificial intelligence to stress-test potential mechanisms and select the right estimator for the data set and the objective of this paper. The results and conclusion chapter uses AI to double-check for hidden mechanisms that might be missed in personal interpretation. In addition, the use of ChatGPT primarily focuses on coding in Stata and Overleaf to double-check for coding errors and align it with the paper's context and reasoning. Grammarly are used to support paraphrasing and English grammar proofreading.

All the prompts and details of the log file can be extracted and shared through shareable link and online Overleaf file.

4 Results & Discussion

This chapter focuses on reviewing all the regression results and an additional robustness test to assess the robustness of the results. The first section of this chapter presents the main results of the analysis using the PCI subcomponent of transparency. The results illustrate and answer the research questions by examining the hypothesis through both models. In the second section, the robustness of the main model will be tested by using different lag steps of transparency and the new aggregate index of transparency. By including the different lag steps of the main model, it aims to examine the contemporaneous effects of openness and FDI investment on both FDI investment and provincial government tax revenue. The use of the aggregate transparency index as a stress test under a broader definition of government openness. The results can reflect the point of view that compound factors can affect the dependent variables with the same magnitude as the subcomponent index or not.

4.1 Descriptive Statistics

This section presents a statistical summary of the dependent and independent variables. The standard full sample size for all variables is 441 observations, with a lag of 1 period, for a total of 378 observations. The table 4.1 show a significant sign of data limitation of the FDI and tax variable. In the FDI sector, lag 1 of FDI investment value has the highest mean (7.28) but also the highest volatility (2.44). Key insight is the gap between registered FDI (mean = 4.55) and implemented FDI (mean = 3.87). This difference is significant, which indicate that all registered FDI is not actually realised and operation in the same year. Furthermore, the limited number of observations on implemented FDI can reduce the regression's statistical power. With all the tax variables, it is considered more stable with lower standard deviation. Tax revenue from the FDI sector is the most volatile, which makes sense given its correlation with fluctuations in FDI investment. However, the sample size of the tax variable only takes around 87% of the full sample size, meaning that the missing value still can be a significant factor in determining the robustness of our model

Table 4.1: Descriptive Statistics of FDI and Tax Revenue variables

	mean	sd	min	max	count
Lag 1 - Log FDI Value Investment	7.28	2.44	-0.92	11.51	360
Lag 1 - Log FDI Projects	2.31	1.74	0.00	8.55	319
Lag 1 - Log FDI Value Registered	4.55	2.32	-2.30	9.03	326
Lag 1 - Log FDI Value Implemented	3.87	2.26	-3.91	8.32	257
Log of FDI Tax revenue	5.72	2.55	-1.28	11.28	384
Log of Personal Tax revenue	6.18	1.39	1.03	10.94	387
Log of Environment Tax revenue	5.94	1.04	3.56	9.36	385
Log of Land Tax revenue	6.95	1.60	-3.51	10.42	386
Observations	417				

This table reports means, standard deviations, minimum and maximum values for the main variables.

For the primary independent variable, transparency, and the control variables, there were no missing data in the sample. All PCI sub-components, as shown in table 4.1, have mean values around 6.00 and 7.11, indicating stable, moderate performance across provinces. The sub-components 5 and 6, which measure the corruption and policy bias of government, are

the most volatile components overall PCI subindices. It means that are significant disparities in government corruption control activities between provinces. The assembled index of transparency and corruption show a mean value around 3.23 and 3.26, with low standard deviation and narrow variation between min and max value. This limitation in variability could make it difficult to detect statistically significant effect on the dependent variables.

Table 4.1 shows the statistical summary of the control variables. It effectively captures a wide spectrum of provincial characteristics, from economic size (GRDP) and structure (Agriculture Share) to infrastructure (Traffic) and demography (Urbanisation). This diversity is crucial to isolate the unique effect of governance transparency on FDI and tax revenue.

Table 4.2: Descriptive Statistics of Government Transparency variables

	mean	sd	min	max	count
Lag 1 - PCI sub-component 2	6.72	0.59	4.35	7.96	378
Lag 1 - PCI sub-component 3	6.16	0.53	4.48	7.44	378
Lag 1 - PCI sub-component 4	7.11	0.84	4.83	9.50	378
Lag 1 - PCI sub-component 5	6.37	0.91	4.10	8.39	378
Lag 1 - PCI sub-component 6	6.00	0.93	3.33	8.81	378
Lag 1 - PCI sub-component 7	6.27	0.79	3.63	8.37	378
Lag 1 - PCI sub-component 8	6.29	0.69	4.59	8.54	378
Lag 1 - PCI sub-component 9	6.23	0.82	3.73	8.41	378
Lag 1 - PCI sub-component 10	6.69	0.80	4.02	8.60	378
Lag 1 - Log of Government Transparency Index	3.23	0.06	3.04	3.40	378
Lag 1 - Log of Government Corruption Index	3.26	0.11	2.94	3.51	378
Observations	378				

This table reports means, standard deviations, minimum and maximum values for the government transparency variables.

Table 4.3: Descriptive Statistics of Control variables

	mean	sd	min	max	count
Lag 1 - Log of GRDP current	11.23	0.88	9.21	14.22	378
Lag 1 - Share of Agriculture	21.31	11.91	0.54	47.66	378
Lag 1 - Log of total traffic transported	6.85	1.42	2.67	10.97	378
Lag 1 - Log of number of labours	6.55	0.58	4.97	8.48	378
Lag 1 - Urbanisation Rate	0.30	0.17	0.10	0.87	378
Lag 1 - SCOLI	93.32	2.41	86.83	101.47	378
Dummy variable for Covid-19	0.43	0.50	0.00	1.00	441
Observations	441				

This table reports means, standard deviations, minimum and maximum values for the control variables

4.2 Main Regression Results

4.2.1 Direct effect of Transparency on FDI attractions

This section presents the results of equation 1. In Table 4.4, the main regression results illustrate a nuanced relationship between government transparency and FDI attraction. The effect of government transparency only shows a significant positive effect on the value of FDI implemented, with a coefficient of 0.811. It means that a one-unit improvement in transparency is associated with an 81.1% increase in the capital actually deployed. These results suggest that transparency is critical in the actual execution phase of investments. In contrast, it has an insignificant effect on other pre-processing steps of FDI inflows, such as the number of projects, the value of registered FDI, and investment. Transparency may not be a primary factor during the initial attraction and registration stages, but it becomes crucial to translating commitments into tangible economic activity.

Beyond transparency, control variables illustrate practical mechanisms. The development of the local economy and market is a powerful driver, significantly boosting both total investment and registered capital. With a one percentage point increase in the previous year's GRDP, the total value of FDI registered and investment increased by 4.43 and 4.39 percentage points, respectively. On the other hand, the labour force shows divergent effects when it positively influences the number of projects but negatively impacts the registered capital. This evidence potentially indicates that abundant labour attracts smaller foreign projects rather than large-scale ones with labour-intensive. The negative effects of the COVID-19 dummy in most dependent variables confirm the disruptive impact of the pandemic. The significant persistence of FDI projects and the value implemented (columns 2 and 4) highlight the self-reinforcing nature of these investment types. Finally, the p-value of the Arellano-Bond test for AR(1) confirms the first-order serial correlation in the first difference, while there is the absence of second-order correlation at AR(2) in all specifications. In addition, the Hansen test p-values are all above conventional significance levels, supporting the validity of our instruments and lending credibility to these causal interpretations.

Table 4.4: The Direct Effect of Government Transparency on FDI

	(1) Investment	(2) Projects	(3) Registered	(4) Implemented
Lag 1 - PCI sub-component 3	0.232	0.125	−0.575	0.811*
	(0.247)	(0.237)	(0.393)	(0.480)
Lag 1 - Log of GRDP current	4.392***	0.701	4.438***	0.947
	(1.097)	(0.790)	(1.565)	(3.043)
Lag 1 - Log of total traffic transported	−0.504	−0.561	0.546	0.0507
	(0.478)	(0.602)	(0.940)	(0.765)
Lag 1 - Log of number of labours	0.902	2.822**	−5.636**	−2.957
	(1.374)	(1.294)	(2.494)	(2.317)
Lag 1 - Urbanisation Rate	−8.499*	−2.397	0.235	15.30
	(5.092)	(3.531)	(3.777)	(17.56)
Lag 1 - SCOLI	−0.0608	0.183	−0.185	−0.150
	(0.139)	(0.133)	(0.156)	(0.186)
Dummy variable for Covid-19	−0.976*	−0.0743	−2.692***	−0.518
	(0.502)	(0.375)	(0.892)	(0.775)
Year=2019	−0.271**	0.0702	−0.487*	0.231
	(0.123)	(0.128)	(0.282)	(0.454)
Year=2020	0.186	−0.488	1.693**	0.348
	(0.505)	(0.343)	(0.743)	(0.645)
Year=2021	0.415	−0.377*	0.949**	0.450
	(0.260)	(0.211)	(0.453)	(0.342)
Year=2022	0	0	0	0
	(.)	(.)	(.)	(.)
Year=2023	−1.620**	0.436	−2.907***	−0.969
	(0.648)	(0.486)	(1.095)	(0.838)
Lag 1 - Log FDI Value Investment	0.185			
	(0.208)			
Lag 1 - Log FDI Projects		0.292**		
		(0.147)		
Lag 1 - Log FDI Value Registered			0.161	
			(0.106)	
Lag 1 - Log FDI Value Implemented				0.361***
				(0.127)
Constant	−38.43***	−38.10**	9.123	15.71
	(13.84)	(18.39)	(16.67)	(32.53)
Observations	358	291	302	243
AR(1) p-value	0.083	0.000	0.018	0.001
AR(2) p-value	0.379	0.939	0.644	0.844
Hansen p-value	0.563	0.844	0.591	0.707

Notes: All regressions are estimated using two-step system GMM (XTDPDGMM package). Robust standard errors are reported in parentheses. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4.5: The Direct Effect of Government Transparency on FDI (Control Corruption)

	(1) Investment	(2) Projects	(3) Registered	(4) Implemented
Lag 1 - PCI sub-component 3	0.545*	−0.115	−0.713*	0.564
	(0.295)	(0.126)	(0.411)	(0.556)
Lag 1 - Log of GRDP current	3.732**	1.125**	4.462***	0.911
	(1.861)	(0.554)	(1.711)	(2.903)
Lag 1 - Log of total traffic transported	−0.811	−0.482	0.362	0.182
	(0.698)	(0.431)	(0.778)	(0.667)
Lag 1 - Log of number of labours	3.164	1.538	−5.275*	−3.452
	(2.316)	(1.032)	(2.956)	(2.353)
Lag 1 - Urbanisation Rate	−14.09*	−1.724	−0.821	14.56
	(8.291)	(2.492)	(4.126)	(18.75)
Lag 1 - SCOLI	0.0469	0.108	−0.235	−0.0128
	(0.144)	(0.0962)	(0.211)	(0.206)
Dummy variable for Covid-19	−0.157	−0.539*	−2.610**	−0.515
	(0.782)	(0.284)	(1.120)	(0.684)
Year=2019	−0.165	−0.0358	−0.568**	0.201
	(0.156)	(0.133)	(0.244)	(0.424)
Year=2020	−0.687	−0.0498	1.796*	0.234
	(0.587)	(0.183)	(0.961)	(0.671)
Year=2021	−0.00608	−0.216	0.898*	0.235
	(0.300)	(0.162)	(0.489)	(0.325)
Year=2022	0	0	0	0
	(.)	(.)	(.)	(.)
Year=2023	−0.553	−0.122	−2.912**	−0.960
	(1.000)	(0.437)	(1.390)	(0.831)
Lag 1 - Log FDI Value Investment	0.340			
	(0.337)			
Lag 1 - Log FDI Projects		0.338***		
		(0.127)		
Lag 1 - Log FDI Value Registered			0.146	
			(0.147)	
Lag 1 - Log FDI Value Implemented				0.496**
				(0.196)
Constant	−55.38***	−26.66**	13.39	7.081
	(20.46)	(10.86)	(22.09)	(35.38)
Observations	358	291	302	243
AR(1) p-value	0.034	0.000	0.017	0.001
AR(2) p-value	0.257	0.760	0.634	0.796
Hansen p-value	0.445	0.640	0.941	0.364

Notes: All regressions are estimated using two-step system GMM (XTDPDGMM package). Robust standard errors are reported in parentheses. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

In table 4.5, the equation now uses the lag value of the corruption index as an external IV to sharpen the identification strategy. The results are more nuanced and statistically significant for governance than the previous version without external IV. First of all, the impacts of transparency on FDI investment and registered value are substantial. When instrumenting for corruption, a one-point increase in the transparency level is associated with a significant 72.5% increase in the total value of FDI investments, an effect that was statistically insignificant in the previous specification. This suggests that accounting for endogeneity bias of corruption can increase the estimated benefit of transparency and its true power as a driver of capital inflows. However, in column 3 on the registered value of FDI, the coefficient of transparency shows a reverse effect of transparency. While transparency boost the investment value, it simultaneously correlates with a significant -51% decrease in FDI registered capital. This can indicate that in a model with corruption's confounding influence, transparency deters potentially speculative or less committed capital registrations. The mechanism is likely to operate by reducing the potential for rent-seeking and low-commitment investment projects, and by providing transparency to attract turnover investment from old investment projects, which is more genuine and executable. By reducing information asymmetry barriers in government planning and the business environment, the effect not only attracts new qualified capital inflows but also deepens investment links with previous investors. It is a key contributor to the relationship between government transparency and the attractiveness of FDI, emphasising transparency as an effective tool for the allocation function and for satisfying the firm's demand.

Secondly, changes in the coefficients of GRDP also provide supportive insights into the above mechanisms. While the effects of lag 1 GRDP on FDI investment and registered value stay consistently positive and significant, the impacts of GRDP on the number of FDI projects is statistically significant when compare to previous model. With one percentage point increase in local economic output, it attracts nearly 1.13% more foreign projects. These results illustrate the same pattern as the other papers on the elusive link between economic growth and FDI, especially with the filter of corruption control. In addition to that, the total traffic transported does not show a significant impact on both models, showing that the level of infrastructure development does not directly affect the attractions of foreign investments. A notable finding is the substantial adverse effect of the urbanisation rate, with a one percentage point increase in the urbanisation rate associated with a 14.1% decrease in investment value. This implies that the higher costs and complexity of urban areas may act as a disincentive to governance quality when controlled. Interestingly, the time-fixed effects are reduced in magnitude and become statistically insignificant when the lagged corruption index is used as an instrument. This suggests that a portion of the temporal variation in FDI, previously captured by these year effects, was in fact confounded by underlying provincial corruption-related characteristics. By isolating the exogenous component of transparency driven by historical corruption levels, our model effectively controls for this confounding.

Overall, these results indicate that provincial information transparency is a crucial determinant of Viet Nam's attractiveness to foreign investors. As a government's meta-public good, transparency plays an essential role in lowering the information asymmetry barrier between the government and firms. The positive causal effect reveals that transparency acts not only as an attractor but also as a filter, enhancing the quality and stability of FDI with a more predictable and efficient investment environment. The subsequent analysis of equation 2 will investigate the impact of both transparency and attracted FDI on provincial tax revenue.

4.2.2 Indirect effect of Transparency and FDI on Government Revenue

Table 4.6: The Indirect Effect of Government Transparency and FDI on Tax Revenue

	(1) FDI Tax	(2) Personal Tax	(3) Envrionment Tax	(4) Land Tax
Lag 1 - Log of FDI Investment	−0.078 (0.144)	−0.085 (0.090)	−0.014 (0.046)	0.093 (0.154)
Lag 2 - PCI sub-component 3	0.367* (0.213)	0.070 (0.055)	0.038 (0.063)	−0.116 (0.240)
Log of GRDP current based	1.203** (0.492)	1.889*** (0.297)	0.273 (0.583)	0.953** (0.461)
Share of Agriculture	−0.022 (0.020)	0.015 (0.010)	0.001 (0.007)	−0.067** (0.029)
SCOLI	−0.144*** (0.049)	−0.020 (0.030)	0.002 (0.024)	−0.091 (0.060)
Dummy variable for Covid-19	−0.578*** (0.224)	0.044 (0.095)	−1.218*** (0.317)	−0.771** (0.376)
Year=2020	0.298** (0.136)	−0.074 (0.068)	0.402*** (0.140)	0.289 (0.181)
Year=2021	−0.016 (0.201)	−0.166*** (0.047)	0.310*** (0.090)	0.312 (0.234)
Year=2022	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Year=2023	−0.785*** (0.252)	−0.238* (0.127)	−1.153*** (0.185)	−1.211*** (0.392)
Lag 1 - Log of FDI Tax revenue	0.758*** (0.165)			
Lag 1 - Log of Personal Tax revenue		−0.037 (0.053)		
Lag 1 - Log of Environment Tax revenue			0.618* (0.374)	
Lag 1 - Log of Land Tax revenue				0.242*** (0.075)
Constant	0.255 (6.278)	−13.201*** (2.050)	−0.174 (3.431)	5.406 (6.893)
Observations	271	277	270	276
AR(1) p-value	0.000	0.010	0.169	0.045
AR(2) p-value	0.561	0.147	0.091	0.207
Hansen p-value	0.917	0.874	0.457	0.509

Notes: All regressions are estimated using two-step system GMM (XTDPDGMM package). Robust standard errors are reported in parentheses. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

This section examines the indirect fiscal consequences of transparency and the direct impacts of FDI, based on equation 2 on four provincial tax revenue channels. The results are represented in table 4.6. Most models are validated by strong diagnostic tests, with a significant AR(1) and an insignificant AR(2) p-value, indicating that there is no serial correlation in the error terms. The Environment tax model shows weak signs of serial correlation, warranting cautious

interpretation. The Hansen test p-value shows the conventional significance levels, supporting the validity of the instrument sets used.

The main findings reveal a significant indirect impact of transparency on government revenue from FDI. A one-point increase in the transparency index can lead to a 44.3% increase in the tax revenue from the FDI sector. This indicates that transparency enhances the state's capacity to collect taxes through several activity such as improving monitoring, supporting financial practices, and ensuring tax obligations. However, there are no significant impacts on personal, environmental, and land taxes, suggesting that the fiscal benefits of good institutions are primarily channelled through the formal corporate sector. Following that, the lagged value of FDI investment itself shows no statiscally significant relationship with any of the four tax revenue streams. This illustrates the mechanism that the presence of FDI does not automatically translate into higher direct tax revenue for local governments. It means that while transparency can attracts and filters FDI value, the direct revenue gain may not from the investment's volume, but from the enhanced ability to tax it effectively that transparency provides.

The control variables align in large part with the expectations in the above data description section. The economic development level still a main driver of tax revenue with significant effects on FDI, personal and land taxes. This underscores that the overall size of the provincial economy remains the most reliable determinant of local fiscal capacity. The share of agriculture shows a negative impact on land tax, indicating the existence of preferential tax treatments in agricultural zones. The higher cost-of-living index shows an adverse effect on FDI tax revenue, while having a negative but statistically insignificant impact on other types of taxes. The COVID-19 pandemic has had a negative impact on most taxes, highlighting the disruption of business and formal economic activity. Furthermore, most of the year dummy variables show significant effects, indicating that the common time trend can be a major driver of tax outcomes.

In conclusion, the main regression results section indicates a significant effect of government transparency on FDI attraction and its impact on government revenue, with a certain lag. In a direct way, government transparency is an effective tool for creating an open and attractive environment for transnational firms and investors to expand their businesses. These results align with those of Edmund et al. (2015), who also found that transparency is a key factor affecting the attractiveness of the local business environment to foreign investment. By attracting qualified FDI inflows to provinces, transparency supports the government budget through more open tax compliance and reduces tax avoidance driven by rent-seeking and profit-transfer behaviour from foreign firms. This is a key mechanism that satisfies the expected hypothesis and answers the research questions. In addition, it aligns with the conceptual framework of this document, which emphasises the role of transparency in the government's allocation function and, indirectly, supports the stabilisation function through fiscal revenue. As a meta-public good, government openness serves as a bridge, connecting principals and agencies by lowering information barriers and improving their efficiency, thereby achieving a win-win for society.

In the following subsection, the robustness check will examine the direct effect of transparency by excluding the mediating variable, FDI investment. In addition, the aggregate transparency index will be used to test how a broader view of transparency affects FDI investment intentions and the government's budget.

4.3   Robustness Check

4.3.1   Direct Effect of Transparency on Government Revenue

The objective of this section is to figure out if there are any direct effects of transparency on tax revenue. By testing a model excluding the mediating role of FDI investments, the results

support strengthening the conceptual model and the robustness of main regression analysis. The results are presented in table 4.7

Table 4.7: The Direct Effect of Government Transparency on Tax Revenue

	(1) FDI Tax	(2) Personal Tax	(3) Envrionment Tax	(4) Land Tax
Lag 2 - PCI Sub-component 3	−0.009	0.039	0.033	0.004
	(0.091)	(0.046)	(0.065)	(0.148)
Log of GRDP current based	0.744	1.666***	0.162	1.379***
	(0.582)	(0.118)	(0.376)	(0.444)
Share of Agriculture	−0.004	0.017	−0.001	−0.051**
	(0.018)	(0.011)	(0.007)	(0.022)
SCOLI	−0.076	0.007	0.005	−0.074
	(0.053)	(0.021)	(0.018)	(0.074)
Dummy variable for Covid-19	−0.498**	0.099	−1.297***	−0.553
	(0.244)	(0.077)	(0.276)	(0.367)
Year=2020	0.254	−0.126**	0.392***	0.256
	(0.159)	(0.050)	(0.092)	(0.184)
Year=2021	0.227	−0.168***	0.309***	0.204
	(0.157)	(0.046)	(0.079)	(0.163)
Year=2022	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)
Year=2023	−0.554*	−0.137	−1.183***	−1.053**
	(0.294)	(0.090)	(0.170)	(0.451)
Lag 1 - Log of FDI Tax revenue	0.775***			
	(0.207)			
Lag 1 - Log of Personal Tax revenue		−0.001		
		(0.025)		
Lag 1 - Log of Environment Tax revenue			0.701**	
			(0.287)	
Lag 1 - Log of Land Tax revenue				0.177**
				(0.073)
Constant	0.414	−13.879***	0.322	−1.180
	(3.967)	(1.966)	(3.154)	(6.607)
Observations	285	289	284	289
AR(1) p-value	0.000	0.000	0.067	0.046
AR(2) p-value	0.671	0.006	0.085	0.190
Hansen p-value	0.496	0.838	0.369	0.119

Notes: All regressions are estimated using two-step system GMM (XTDPDGMM package). Robust standard errors are reported in parentheses. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

What stands out in this table is the insignificance of the coefficients for government transparency in tax revenue. Compared with the previous table, these results indicate that transparency has no impact on all four tax categories. The effects of the PCI subcomponent of transparency on FDI tax revenue become insignificant with a low negative magnitude. It indicates that the direct link between transparency and tax collection does not exist without accounting for the mediating role of the FDI pathway. Furthermore, the consistency of other control variables,

such as GRDP and the share of the agricultural sector, with a lower magnitude, reinforces this interpretation. In addition to the personal tax, the environmental tax revenue in this model also violated the diagnostic test with insignificant results on both AR(1) and AR(2). This can be a critical point at which, without controlling for FDI investment, the effect of government quality on personal and environmental tax revenue becomes unstable, with the sign of autocorrelation.

The results of this table indicate that the effect of transparency is fully mediated by foreign direct investment, especially on the tax revenue from FDI sector. While the relationship is significant in the baseline model, this result demonstrates that the relationship is not robust to the inclusion of the FDI channel. The statistically insignificant impact of transparency illustrates that its fiscal impact operates indirectly by attracting investment. Mechanisms can be explained as transparency only affects government fiscal capacity in terms of new foreign capital inflows through the attraction process. In addition, it suggests that the fiscal benefit of openness does not come from improving the efficiency of tax collection from the existing economic base. Furthermore, the significant autocorrelation results for personal and environmental taxes support the key role of FDI as a transmission channel through which local institution quality affects provincial economies. In practice, FDI inflows significantly affect the supply of job positions, leading to higher overall salaries. Furthermore, with all kinds of new investments, the process impacts the nearby environment in one way or another, depending on their characteristics. Including FDI as a control transmission variable allows the effect of government openness on provinces' budgets to be specified more stably and precisely.

4.3.2 Assembled Index of Transparency

This section focus on using the compound effect of institutional transparency, such as planning, legal support, and clear policy framework as a broader view of governancce quality. The main objective of this subsection is to focus on how a more general view of transparency impacts the FDI attraction process and indirectly influences government tax revenue. The resuls in table 4.8 and 4.9 equivalent to the equation 1 and 2 of the baseline model. In both models, the lag structure is set to the maximum lag length for endogenous variables, while keeping the lag lengths of other variables unchanged from their previously defined values. The reason for this change is the sign of overidentification from the detail results of the Hansen test (Kripfganz 2019).

In table 4.8, the new aggregate transparency index shows significant positive results on the number of FDI projects. This statistical result indicates that with a 1 percentage point increase in the compound transparency index, there is a 4.73 percentage point increase in the number of FDI projects in the next year. This is consistent and strengthens the narrative from the baseline model. It demonstrates that the positive effect of overall government transparency and support can attract a greater number of distinct foreign investments. However, while the registered value of FDI is significantly affected in table 4.5, the effects in this model are statistically insignificant. The potential explanation for this change is that the transparency subcomponent is particularly potent in reshaping the type of capital registered, an effect that becomes less powerful when using a broader composite of transparency. In addition, other coefficients of the control variable are consistent with previous results, as confirmed by a diagnostic validation test.

In table 4.9, the composite transparency index reveals a surprising result for tax revenue. The effect of transparency index on FDI tax revenue in the baseline model is now insignificant and mitigated by using a broader index of transparency. Of interest here is the significantly adverse effect of the aggregated index on land tax revenue, with 1 percent increase in transparency index resulting in 3.3 percent decrease in government tax revenue from land activities. This indicates that the positive fiscal benefit is unique and is based on the dimension of transparency taken

into account. Using a broader transparency indicator that includes future planning and policies shows that the reduction in land tax may result from a decline in speculative land or informal payments. As might be expected, the mechanism of control variables remains robust, reinforcing the overall modelling framework's reliability.

Careful interpretation is needed here, since the coefficient of lag 1 FDI investment remains statistically insignificant. In table 4.7, while excluding FDI, there is no direct effect of transparency on tax revenue. It indicates that the role of FDI as a fully mediating channel supports the fiscal impact of government openness. However, the results of this table are consistent with the baseline model, indicating that the volume of FDI investment is not a reliable direct channel for increasing tax revenues in the short term. These relationships may partly be explained by the fact that FDI is not primary transmission channel for increasing tax revenue. While transparency is proven to be a key determinant attracting investments, the direct link from investment to tax revenue is ambiguous and underestimated in this context. The indirect fiscal benefits of transparency from that can be subtle or manifest through other channels than the direct tax streams analysed here. Another source of uncertainty is limited data availability and unbalanced panel data. Although the unbalanced panel can lead to systematic bias, measurement error in FDI, and limited detail in tax data can reduce statistical power, weakening the mediator effect of FDI.

Table 4.8: The Direct Effect of Government Transparency on FDI (Compound Index)

	(1) Investment	(2) Projects	(3) Registered	(4) Implemented
Lag 1 - Assembled Index of Transparency	4.668	4.727*	−7.706	3.085
	(5.268)	(2.835)	(5.404)	(4.856)
Lag 1 - Log of GRDP current	3.546*	1.444*	4.327***	1.952
	(1.872)	(0.837)	(1.269)	(2.000)
Lag 1 - Log of total traffic transported	−0.950	−0.390	0.269	−0.0389
	(0.738)	(0.437)	(0.494)	(0.534)
Lag 1 - Log of number of labours	3.627*	0.715	−4.560**	−2.810
	(2.199)	(0.907)	(2.071)	(2.664)
Lag 1 - Urbanisation Rate	−14.30	−1.681	−0.0199	5.158
	(8.753)	(2.498)	(3.603)	(12.34)
Lag 1 - SCOLI	0.0642	0.0999	−0.247	−0.0158
	(0.119)	(0.0926)	(0.159)	(0.205)
Dummy variable for Covid-19	−0.576	−0.961***	−1.809**	−0.859
	(0.613)	(0.305)	(0.705)	(0.683)
Year=2019	−0.234*	−0.0698	−0.245	−0.0429
	(0.130)	(0.121)	(0.242)	(0.370)
Year=2020	−0.288	0.0700	1.160**	0.471
	(0.435)	(0.248)	(0.565)	(0.677)
Year=2021	0.180	0.173	0.539	0.201
	(0.360)	(0.197)	(0.389)	(0.523)
Year=2022	0	0	0	0
	(.)	(.)	(.)	(.)
Year=2023	−0.760	−0.365	−2.372***	−1.162
	(0.786)	(0.420)	(0.910)	(0.748)
Lag 1 - Log FDI Value Investment	0.370			
	(0.318)			
Lag 1 - Log FDI Projects		0.319***		
		(0.117)		
Lag 1 - Log FDI Value Registered			0.179	
			(0.115)	
Lag 1 - Log FDI Value Implemented				0.465**
				(0.212)
Constant	−68.74***	−40.47***	31.86	−10.59
	(18.89)	(15.30)	(26.11)	(34.57)
Observations	358	291	302	243
AR(1) p-value	0.026	0	0.017	0.003
AR(2) p-value	0.286	0.953	0.754	0.346
Hansen p-value	0.438	0.931	0.776	0.105

Notes: All regressions are estimated using two-step system GMM (XTDPDGMM package). Robust standard errors are reported in parentheses. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4.9: The Indirect Effect of Government Transparency and FDI on Tax Revenue (Compound Index)

	(1) FDI Tax	(2) Personal Tax	(3) Envrionment Tax	(4) Land Tax
Lag 1 - Log of FDI Investment	0.053	0.072	0.008	−0.008
	(0.317)	(0.046)	(0.051)	(0.077)
Lag 2 - Assembled Index of Transparency	−2.427	0.188	0.418	−3.306*
	(1.527)	(0.664)	(0.928)	(1.691)
Log of GRDP current based	2.003*	1.343***	0.553	0.837***
	(1.054)	(0.196)	(0.538)	(0.272)
Share of Agriculture	−0.014	−0.000	0.010	−0.045***
	(0.032)	(0.013)	(0.013)	(0.015)
SCOLI	−0.142**	0.000	−0.004	−0.054
	(0.060)	(0.022)	(0.030)	(0.062)
Dummy variable for Covid-19	−0.796***	0.093	−1.030***	−0.540*
	(0.308)	(0.100)	(0.321)	(0.301)
Year=2020	0.550**	−0.133**	0.483***	0.195
	(0.244)	(0.058)	(0.118)	(0.128)
Year=2021	0.491***	−0.148***	0.383***	0.282***
	(0.148)	(0.054)	(0.088)	(0.095)
Year=2022	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)
Year=2023	−0.835**	−0.179	−1.057***	−0.743*
	(0.418)	(0.131)	(0.247)	(0.403)
Lag 1 - Log of FDI Tax revenue	0.468			
	(0.292)			
Lag 1 - Log of Personal Tax revenue		0.079		
		(0.061)		
Lag 1 - Log of Environment Tax revenue			0.398	
			(0.342)	
Lag 1 - Log of Land Tax revenue				0.273***
				(0.090)
Constant	1.701	−10.542***	−3.137	13.037**
	(10.226)	(2.832)	(4.541)	(6.372)
Observations	271	277	270	276
AR(1) p-value	0.027	0.011	0.231	0.027
AR(2) p-value	0.643	0.001	0.102	0.393
Hansen p-value	0.686	0.483	0.435	0.205

Notes: All regressions are estimated using two-step system GMM (XTDPDGMM package). Robust standard errors are reported in parentheses. Significance: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

5 Conclusion

5.1 Finding & Policy Implication

The purpose of the present research was to determine the effect of government transparency on FDI attraction and its indirect impacts on the government's financial budget. Using the conceptual framework of Budget Finance theory, this paper's results answer a critical question for provincial governments: Does greater openness and transparency actually pay off in terms of foreign capital inflows and tax revenue?

Our findings reveal that transparency is a critical factor that affects the attractiveness of Vietnam to foreign investments, but in a sophisticated way. The results show that when local governments improve their openness, they not only attract more investment but also attract higher-quality investment from foreign capital. While the total value of FDI investment has increased significantly, the decrease in the registered value of FDI is clear evidence of this. It decreases, offering an unexpected view of transparency, by reducing potentially speculative and rent-seeking capital registrations. These insights confirm and align with previous research that has been done by Edmund et al. (2015), Hoang et al. (2021), and Hope et al. (2021). The second major finding was that the indirect impacts of government transparency on public fiscal budgets are visible, but more nuanced and complex to explain. Although transparency successfully attracts foreign capital, the analysis shows that the positive effect of FDI on several tax streams in the main model is not robust with alternative model specifications. The role of FDI as a mediating channel is weak, suggesting that the fiscal benefits of transparency are more about growing overall economic capacity and productive activity.

By providing a conceptual framework, this work offers a novel understanding of how institutional quality can impact public fiscal capacity and society. As a type of meta-public good, transparency plays a crucial role in improving the efficiency of the Allocation and Stabilisation function in government budget finance. Through the lens of transparency, firms better understand how government planning and its efforts to create an optimal business environment. Indicating this as evidence of a stable and healthy government, firms are willing to invest more based on their belief about the long-term stability and fairness of host countries. In the context of provinces with varying characteristics and quality levels, these measurements can affect the competitiveness of investment across provinces. In consequence, this new investment inflow is accompanied by transparency, creating a positive impact on the government budget in the long term. The surplus on capital supports the overall stabilisation function of the government, which stimulates a positive feedback loop between the government and society. Furthermore, the empirical findings of this study provide a new understanding of different institutional quality. Using broader indices of transparency, it indicates that different factors of openness can have different effects on economic development and the well-being of society. Along with other "conditionality" factors, the effects can vary within a country's context.

Overall, this study strengthens the idea that prioritising government transparency is a meta-public good, and needs to be considered for further implications. It is a proven strategy for stimulating genuine economic development and building a reputable investment environment, especially for emerging economies. Based on that finding, the policymaker should consider it an effective tool to attract new foreign capital, alongside tax incentives or loosened policies, which can be costly and uncertain. By creating a more transparent policy and ensuring clarity in business information and future development planning, this government indicator lays a solid foundation for future investment flows. In addition, digitalising and standardising procedures for firms and investors also support the deduction of obligations from unpredictable situations and informal activities. Besides that, this study has raised important questions about the na-

ture of transparency. The policymaker should become more selective in defining which type of transparency is beneficial for both economic development and the treasury capacity. From these outcomes, tailor investment promotion activities can take efforts to the right sectors, which have strong linkages to local economies and stable tax contributions, rather than pursuing capital volume.

5.2 Limitation & Further Research

The strengths of this study are that it provides a dynamic approach to the relationship of FDI and government budget, with a critical contribution of government transparency, at the provincial level. Using the 2-step system GMM estimator, this approach includes the internal instruments of the lag variable to solve for the potential endogeneity issues in the model. However, there are still some limitations need to be noted regarding the present study.

First, data collection is conducted based on data availability, especially FDI and tax revenue data. Even using the official socio-economic books, the data from the same year are inconsistent between the 2 books. When backfilling the data from other trusted sources of GSO and Financial Ministry, the difference between the data sources is still measurable, which can leading to unstable estimator results. Furthermore, in the context of Vietnam provinces, where not every province has the foreign investment capital, this can be a sign of systematic bias if the missing data is correlated with provincial characteristics. Second, the characteristics of the data can lead to misinterpretation of the paper's results. The PCI index is created from survey data from both local and foreign firms, but it does not specify the detailed structure of the respondents due to data privacy concerns. This is an important issues, which can leading to the type 1 error, and weaken the regression results. It can be the same issues with government tax revenue, which does not have the detailed tax information. The lack of detailed tax sources for Personal, Environmental, and Land taxes can lead to mismeasurement of the effects of local and cross-border corporations and citizens. Finally, the optimal lag structure of the estimators can also be a problematic issue in this paper. The base lag structure currently relies on the average business cycle being 5 years, which may not be appropriate for developing countries.

Further studies regarding the role of transparency could be worthwhile. Firstly, future research would benefit from trying another transparency data set or improving the length of the data set to tackle the issues of missing data. Changing the scope of government openness from firms to citizens using PAPI, or broadening the research objectives to other developing countries using WGI, is a recommendation to enhance the robustness of transparency. Using other transparency data, the outcome can differ and contribute more to the theoretical and empirical evidence on the role of government transparency. Secondly, other estimators can be used to testify to the optimal lag structure for Vietnam's context. The different lag structure can be applied to various type of taxes, depending on their characteristics and impact mechanisms. Moreover, applying alternative estimators, such as Panel Vector Autoregression or Continuous Updating Estimators in GMM, can relax the assumption of a fixed business cycle length and identify the optimal lag structure. Thirdly, the inclusion of spatial spillovers from neighbouring provinces can be an essential control for meso-level changes. By identifying these variables to control for spillover effects, the results can be more stable and precise in identifying the causal relationship between governance quality, investment, and public finance in developing economies

References

Alfaro, L., Chanda, A., Kalemli-Ozcan, S. & Sayek, S. (2003), 'Fdi and economic growth: the role of local financial markets'.

Alfaro, L., Chanda, A., Kalemli-Ozcan, S. & Sayek, S. (2010), 'Does foreign direct investment promote growth? exploring the role of financial markets on linkages'.

Anh Ngoc, N. & Thang, N. (2007), 'Foreign direct investment in vietnam: An overview and analysis the determinants of spatial distribution across provinces'.

Arif, W. P. (2019), The effect of foreign direct investment on tax revenue in developing countries, Master's thesis, International Institute of Social Studies.

Binh, N. T. & Giai, N. Q. (2022), 'Transparency in local government in vietnam', *Scientific Papers of the University of Pardubice, Series D: Faculty of Economics and Administration* **30**(2).

Blundell, R. & Bond, S. (1998), 'Initial conditions and moment restrictions in dynamic panel data models', *Journal of Econometrics* **87**, 115–143.

Borensztein, E., De Gregorio, J. & Lee, J.-W. (1998), 'How does foreign direct investment affect economic growth?'.

Bruno, R. L., Campos, N. F. & Estrin, S. (2018), 'Taking stock of firm-level and country-level benefits from foreign direct investment'.

Bénétrix, A., Pallan, H. & Panizza, U. (2023), 'The elusive link between fdi and economic growth'.

Canh, N. P., Binh, N. T., Thanh, S. D. & Schinckus, C. (2019), 'Determinants of foreign direct investment inflows: The role of economic policy uncertainty'.

Dao, L. T. & Nguyen, Q. M. (2025), 'Various factors influencing the development of the vietnamese real estate market: A case study', *Contemporary Economics* **19**(1), 46.

Diep, N. T. B. & Le, N. P. (2025), 'Provincial budget transparency and economic development in vietnam', *Asian Economic and Financial Review* **15**(2), 287.

Edmund, M., Neil, M. & D., N. N. (2015), 'The impact of governance and transparency on firm investment in vietnam', *Economics of Transition* **23**(4), 677.

Farzanegan, M. R. & Fereidouni, H. G. (2014), 'Does real estate transparency matter for foreign real estate investments?', *International Journal of Strategic Property Management* **18**(4).

Gaspareniene, L., Kliestik, T., Sivickiene, R., Remeikiene, R. & Endrijaitis, M. (2022), 'Impact of foreign direct investment on tax revenue: The case of the european union', *Journal of Competitiveness* **14**(1).

Giang, L., Nguyen, C. & Tran, A. (2017), 'Does papi monitoring improve local governance? evidence from a natural experiment in vietnam', *International Journal of Development Issues* **16**(1).

Group, W. (2025).
URL: *https://www.worldbank.org/en/publication/worldwide-governance-indicators*

Hoang, H. H., Huynh, C. M., Duong, N. M. H. & Chau, N. H. (2021), 'Determinants of foreign direct investment in southern central coast of vietnam: a spatial econometric analysis', *Economic Change and Restructuring* **55**(1), 285.

Hope, O., Jiang, S. & Vyas, D. (2021), 'Government transparency and firm-level operational efficiency'.

International, T. (2025).
  URL: *https://www.transparency.org/en/our-impact*

Kripfganz, S. (2019), Generalized method of moments estimation of linear dynamic panel data models, *in* 'Proceedings of the 2019 London Stata Conference'.
  URL: *http://repec.org/usug2019/Kripfganz_uk19.pdf*

Le, N. P. & Duy, L. V. (2021), 'Effect of provincial competitiveness index on enterprise attraction in the central highlands, vietnam', *PLOS ONE* **16**(9).

Musgrave, R. (1959), 'Musgrave richard a. and musgrave peggy b. 1989 (1973) public finance in theory and practice'.

Ngo, T. Q. & Ha, T. T. V. (2024), 'Political connections and firm performance: Evidence from vietnamese smes', *Journal of Small Business Strategy* **34**(1).

Nguyen, H., Thanh, T., Nguyen, M. H. & Goenka, A. (2014), 'How does fdi affect corporate tax revenue of the host country'.

Office, G. S. (2020), *Socio-Economic Statistical Data of 63 provinces and cities 2015-2018*, Statistical Publishing House.

Office, G. S. (2024), *Socio-Economic Statistical Data of 63 provinces and cities 2019-2023*, Statistical Publishing House.

on Open Government, O. R. (2017).
  URL: *https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0438*

Tran, A. T. & Nguyen, P. A. (2025), 'The effect of provincial governance and public administration performance index on total factor productivity in vietnam'.

Tran, T. B. & La, H. A. (2021), 'Participation, transparency and trust in local governance in transitional countries: the case of vietnam'.

UNDP, Centre for Community Support Development Studies, V. (2023), 'Provincial governance and public administration performance index (papi)'. Available at: https://www.pcivietnam.vn/en.

Vietnam Chamber of Commerce and Industry (2023), 'Provincial competitiveness index (pci)'. Available at: https://www.pcivietnam.vn/en.

WorldBank (2025). Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. This table lists the individual variables from each data source used to construct this measure in the Worldwide Governance Indicators.
  URL: *https://www.worldbank.org/content/dam/sites/govindicators/doc/pv.pdf*