

WHICH INSTITUTIONS INFLUENCE ENTERPRISE PERFORMANCE BY LEGAL FORMS? EVIDENCE FROM A TRANSITIONAL ECONOMY

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Abstract

The study analyzes the differences in the impact of economic and political institutions (PI) on the performance of legally regulated business groups in Vietnam. Additionally, the study explores which types of businesses utilize resources like capital and labor most effectively. Therefore, the study is developed based on the combination of economic growth theory and new institutional economics (NIE) theory, alongside the perspective of Acemoglu and Robinson (2013) on the deep relationship between economic and political institutions. The research utilizes secondary data on companies, as regulated by Vietnamese law, and indices measuring institutional governance and economic freedom (EF) during the period 2000–2022. The study utilizes the pooled mean group (PMG) autoregressive distributed lag (ARDL) model, leveraging its capabilities to classify enterprises based on capital sources and legal regulations to identify differences between the groups. Economic and political institutions exert varying influences on the performance of different enterprise types, particularly state-owned, foreign-invested, and private enterprises. State-owned and private enterprises face significant challenges in leveraging economic institutions (EI), especially when encountering unexpected changes. Foreign-invested enterprises excel in integrating input factors, whereas private enterprises must strive harder to address resource limitations. The research results suggest reforms in flexible institutional models and specific policy mechanisms to support private enterprises.

Keywords: Economic Institutions, Political Institutions, Business Performance, Labor, PMG-ARDL, Vietnam

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1. INTRODUCTION

Enhancing institutional quality (IQ) serves as a fundamental driver of sustainable economic growth, surpassing the traditional reliance on merely expanding capital and labor inputs. Robust,

transparent, and equitable institutions facilitate the optimal allocation of resources, enhance production efficiency, and consequently drive economic growth (North, 1994; Ambrosino et al., 2018; Trebicka et al., 2024). Investing in institutional improvement is not only important in the short term

but also a long-term strategy to help economies transform and grow sustainably (Ostry et al., 2009; Tran et al., 2009; Imaginário & Guedes, 2020). North (1994) and Ménard and Shirley (2014) highlighted that the quality of institutions is a crucial factor influencing long-term economic growth. When institutions are robust, businesses and investors are able to function within a transparent framework, which reduces both risks and transaction costs (Ménard & Shirley, 2014). This enables long-term investment, thereby enhancing productivity. The neoclassical growth model, exemplified by the Solow-Swan model, highlights the importance of capital and labor accumulation in driving growth (Solow, 2016). In contrast, the new institutional economics (NIE) theory argues that such accumulation is effective only when strong institutions are in place to ensure the rational and optimal allocation of resources (Ménard & Shirley, 2014; Nasreen et al., 2015). A strong institutional framework fosters human capital development, reduces input costs, enhances economic efficiency, and prevents diminishing marginal returns, thereby ensuring sustainable growth (Ménard & Shirley, 2014).

The close integration of economic and political institutional reforms is crucial for fostering economic growth, as it establishes a stable, transparent, and conducive environment for production and business activities (Desai, 2011; Nasreen et al., 2015). Stable and efficient political institutions (PI) enable consistent and long-term economic policy formulation and implementation, reduce the risks of instability, and foster confidence among investors and businesses (Nasreen et al., 2015). Moreover, economic institutional reforms, including market liberalization, the strengthening of property rights, and the reduction of excessive state intervention, contribute to resource optimization and enhance the economy's operational efficiency (Pereira & Lopes, 2018).

Resource-based theory (RBT) emphasizes the significance of efficient resource management in establishing a sustainable competitive advantage for businesses (Fania et al., 2020). However, in-depth research indicates that the nature of these resources and their accessibility differ considerably across different types of businesses (Kontogeorga et al., 2022). State-owned enterprises typically have access to more tangible resources and benefit from political connections (Peng et al., 2016), whereas private enterprises, startups, and foreign direct investment (FDI) focus on innovation, flexibility, and specialization to generate value (Erden & Holcombe, 2005; Jung, 2020; Chen et al., 2022). This diversity prompts the question of how businesses can effectively leverage the resources at their disposal to attain success.

Previous studies have clarified the relationship between institutions and economic growth; however, there is still a lack of research on the specific impact of political and economic institutions (EI) on business groups in Vietnam, despite Acemoglu and Robinson (2013) affirming the deep relationship between these two institutions. Current studies primarily focus on developed economies or general institutional research, while the application of institutional theory to the context of business groups in the Vietnamese environment has yet to be

fully explored. Furthermore, no study has yet examined the differences in the performance of various types of enterprises: non-state joint-stock enterprises, state-owned joint-stock enterprises, foreign-invested enterprises, joint venture enterprises, private enterprises, limited liability enterprises, and state enterprises. Therefore, further research is necessary to explore how reforms in political and economic institutions affect the performance of the aforementioned business groups, thereby providing guidance for institutional improvements and optimizing resource utilization within the economy. Therefore, the pooled mean group (PMG) autoregressive distributed lag (ARDL) model is suitable for determining the impact of institutions on each enterprise by legal form, as well as the overall effect.

The remainder of the paper is organized into four sections. Section 2 reviews the literature on economic and political institutions and their impact on business operations. Section 3 outlines the data, research methodology, and model structure. Section 4 presents the empirical results and analysis. Section 5 concludes with key findings and policy implications.

2. LITERATURE REVIEW

2.1. Institutions and their impact on business performance

2.1.1. Institutions

Institutions in the economy are human-made frameworks within which business entities interact with each other (North, 1990). Institutions in the most general sense were understood as the whole system of formal rules of society (such as constitutions, laws, and regulations), informal constraints (such as customs, norms, and traditions), and organizations operating within those rules and constraints. Acemoglu and Robinson (2013) highlight a strong and intricate connection between economic institutions and political institutions, distinguishing between two key types: extractive institutions and inclusive institutions. Extractive economic institutions are naturally linked to extractive political institutions. In contrast, inclusive economic institutions are built and developed on the foundations created by inclusive political institutions, and any combination of inclusive political institutions and extractive economic institutions or vice versa is unsustainable. The choice of institutions in each country is determined by its political, economic, social, and cultural systems.

Economic institutions and political institutions share a mutually reinforcing relationship. Firstly, political institutions play a crucial role in the formation and development of economic institutions (Ugur, 2012). Political institutions, as the "rules of the game" of society, influence the formulation and implementation of economic laws, regulations, and policies (Kafouros & Aliyev, 2016; Chang, 2023). Secondly, stable, transparent, and effective political institutions are prerequisites for the development of economic institutions (Dawson, 1998). Thirdly, economic institutions, in turn, can exert influence on political

institutions (Ostry et al., 2009; Kafouros & Aliyev, 2016; Handoyo et al., 2023). Political configurations can impact the pace and timing of privatization (Chang, 2023; Kontogeorga et al., 2022).

The economic freedom (EF) index is measured from 12 component indices focusing on the rule of law, government size, regulatory efficiency, and open market (Miles et al., 2006). But on the contrary, this index overlooks the non-economic aspects of the institution, which could significantly impact economic outcomes. The World Governance Index (WGI) consists of six component indices, providing a comprehensive view of governance quality. Many studies use either the EF index (Vu, 2022; Misganaw et al., 2023) or the WGI (Imaginário & Guedes, 2020; Kafouros et al., 2024; Eldomiaty et al., 2023) to measure institutional quality, but not many studies (Chang, 2023) use both indicators simultaneously for measurement. Chang's (2023) global study highlights that political institutions exert a greater influence than economic institutions. On the other hand, Bhaumik et al. (2012) observe that the marginal impact of EF on firm output growth diminishes as the initial level of economic liberalization increases.

2.1.2. The impact of political institutions on business performance

A political system comprises rules, mechanisms, and organizations that regulate the distribution of power (North, 1990; Ménard & Shirley, 2014). North (1994) emphasized that political institution quality is critical for economic performance. Strong political institutions create a favorable business environment, attract investment, and promote sustainable economic growth. The concept of "good institutions, good governance" has been developed by the United Nations Development Program (UNDP), the Organization for Economic Co-operation and Development (OECD), and the World Bank (Dawson, 1998; Zinnes et al., 2001; Ostry et al., 2009; Schofield & Caballero, 2011).

The impact of political institutions on governance quality is evident through their role in establishing legal frameworks, enforcing contracts, and protecting property rights (Bhaumik et al., 2012; Handoyo et al., 2023). Governments shaped by political institutions ensure a stable regulatory framework, uphold the rule of law, and address corruption (Fogel et al., 2006; Fania et al., 2020). Bureaucratic inefficiencies raise costs and hinder economic growth (Fogel et al., 2006). Furthermore, political institutions influence governance indirectly by shaping economic institutions, which reduces transaction costs, improves efficiency, and boosts economic performance (Bhaumik et al., 2012). Democracy also plays a key role in the success of economic reforms (Ostry et al., 2009).

Research has demonstrated that the quality of institutions, particularly the quality of political institutions, is strongly associated with firm value and total factor productivity (TFP) (LiPuma et al., 2013; Kafouros & Aliyev, 2016; Chang, 2023; Kafouros et al., 2024). This is attributable to transparent legal systems and robust protection of property rights, which promote business operations, stimulate investment, and foster innovation (Fogel et al., 2006; Ostry et al., 2009; Chang, 2023).

However, the influence of political institutions on business performance can differ based on the type of business and the specific contextual factors. Kafouros and Aliyev (2016) discovered that institutional reforms can favor domestic firms while disadvantaging foreign subsidiaries. Contextual factors, including firm size, age, and industry characteristics, can significantly influence the impact of political institutions on business outcomes (LiPuma et al., 2013; Kafouros et al., 2024; Kontogeorga et al., 2022). These factors can act as moderators, with smaller and newer firms exhibiting greater vulnerability to institutional weaknesses.

2.1.3. The impact of economic institutions on business performance

Economic institutions are crucial in shaping the business environment, directly impacting enterprise performance and thereby promoting economic development. They are regarded as the "backbone" of a nation's economy, fostering a business environment that promotes fair competition and protects the rights of economic actors (Antonietti & Mondolo, 2023). A well-functioning economic institution helps establish a robust economic foundation, attract foreign investment, and enhance the quality of human resources (Zhou et al., 2017; Zhan & Zhu, 2021). Law is a fundamental component of economic institutions, serving as the "rules of the game" that govern economic activities and relationships (Eicher & Leukert, 2009).

Studies have demonstrated that the quality of economic institutions significantly influences firm productivity and value (Bhaumik et al., 2012; Chu, 2018). Specifically, improving the quality of economic institutions, including factors such as EF, market regulation, and control of corruption, can boost TFP and firm value (Chang, 2023; Trebicka et al., 2024). Institutions are designed to lower transaction costs and enhance transaction efficiency, serving as a key factor in shaping economic performance (Handoyo et al., 2023). On the contrary, weak institutions and corruption hinder market development and diminish business performance (Chang, 2023). Furthermore, emerging economies are often less receptive to foreign investment and competition, and bureaucratic inefficiencies adversely affect access to resources and capital, leading to misallocation of resources that hampers firm productivity (LiPuma et al., 2013; Handoyo et al., 2023).

Changes in the quality of economic institutions can impact the performance of various types of firms differently (Chu, 2018; Bhaumik et al., 2012; Cainelli et al., 2022) or have varying effects across different economies (Chang, 2023; Kafouros et al., 2024). Research in Vietnam shows that improving the quality of economic institutions leads to higher revenue and added value for state-owned enterprises compared to FDI enterprises. Meanwhile, private enterprises may benefit from increased revenue, but their added value increases at a lower rate than that of FDI enterprises (Chu, 2018). Likewise, low institutional quality allows international firms to outperform domestic firms in efficiency (Bhaumik et al., 2012; Cainelli et al., 2022), but this advantage decreases as the business environment strengthens.

2.2. The impact of capital and labor on business performance by ownership

2.2.1. Business performance by ownership

Resource-based theory (RBT) highlights the critical role of ownership structure in influencing a firm's performance. Ownership structure and financing resources have a direct impact on performance, with ownership structure playing a key role in shaping a firm's decisions and actions (Fania et al., 2020; Amornkitvikai & Harvie, 2011; Kontogeorga et al., 2022; Handoyo et al., 2023). Chen and Tan (2013) highlight that various ownership types lead to unique business structures, cultures, and processes. Foreign ownership brings advantages in technology, management, and finance (Potharla et al., 2021). Furthermore, Handoyo et al. (2023) also note that firm performance is influenced by capital structure, business risk, and market competition. Conversely, FDI from China has not demonstrated a noticeable impact on institutional improvement, unlike FDI from other economies (Fon et al., 2021).

In transitional economies, the effect of institutions on firm performance varies based on the type of ownership. Specifically, institutional reforms tend to favor domestic firms, whereas foreign-invested enterprises may face disadvantages (Kafouros & Aliyev, 2016). On the other hand, foreign-invested enterprises benefit from internalization and networking advantages, which are key factors enabling them to operate effectively in transitional economies. Firms are under significant pressure to respond to and adjust to various institutional constraints; those that adhere to the rules are more likely to thrive and succeed (Zhou et al., 2017). State-owned enterprises can benefit from preferential policies but can also be directly affected by government intervention (Bhaumik et al., 2012). Domestic private enterprises may struggle with capital access and competition from larger firms, but they are more adaptable to market changes. Despite the potential benefits of advanced technology and management skills, foreign-invested enterprises often encounter obstacles related to political and legal factors.

2.2.2. The impact of capital and labor on business performance

The quality of institutions profoundly influences the operational capacity, development, and performance of businesses. More specifically, Bhaumik et al. (2012) assert that the quality of economic institutions can influence the efficiency of all input factors, with the most significant impact on labor productivity. Institutional factors play a crucial role in determining how capital is raised, allocated, and managed (Kontogeorga et al., 2022; Trebicka et al., 2024). Improving access to credit in Albania has played a significant role in fostering entrepreneurship and the growth of small and medium-sized enterprises (SMEs) (Trebicka et al., 2024). In contrast, financial scandals in Greece have exposed "gaps in both internal and external control mechanisms", leading to a loss of investor confidence and hindering the ability of listed

companies to raise capital (Kontogeorga et al., 2022). Taking into account both the direct and indirect effects of institutional quality on TFP, improvements in labor efficiency play a significant role in driving changes in TFP. Both capital and labor positively influence business performance, reflected in revenue, pre-tax profit, and added value (Bhaumik et al., 2012; Ugur, 2012; Chu, 2018). The extent to which capital and labor exert influence may vary across nations, sectors, and stages of development. Bhaumik et al. (2012) analyzed textile and garment enterprises in nine developing economies and concluded that the labor coefficient has twice the impact of capital. On the other hand, Chu (2018), using survey data on Vietnamese enterprises from the General Statistics Office (2006–2014), concluded that capital has an impact over 2.5 times greater than labor.

3. DATA AND METHODOLOGY

3.1. Theoretical foundations for the research model

Economic growth theory is increasingly improved to clarify theoretical and practical issues raised for all economic subjects. Enterprise economic efficiency reflects the ability to optimally use resources, including capital and labor, to create products and services. The Cobb-Douglas production function is a fundamental theory explaining output factors as follows:

$$Y = A K^\alpha L^\beta \quad (1)$$

where:

Y = total output (GDP);

A = total factor productivity (TFP) reflects the scientific and technical level and management ability;

K = capital input;

L = labor input;

α and β are the output elasticities of capital and labor, respectively, which sum to 1 (assuming constant returns to scale).

Technological progress is generally viewed as an exogenous variable — an independent factor uninfluenced by other variables. However, in all cases, it plays a significant role in increasing the productivity of both capital and labor. Isolating technological progress as a distinct factor in Solow's growth model provided a foundation for later research on economic growth determinants (Ménard & Shirley, 2014; Schilirò, 2018). In the 20th century and particularly today, institutions have assumed an increasingly critical role (Pereira & Lopes, 2018). Production activities incur costs not only from the expansion of production factors but also from interactions among economic agents (Ménard & Shirley, 2014). The institutional dimension is thus incorporated into economic growth theory (Ménard & Shirley, 2014; Pereira & Lopes, 2018).

In North's (1994) perspective on the economic role of institutions, institutions are human-constructed frameworks that shape the interactions among economic agents (Ménard & Shirley, 2014). Institutions later came to be understood broadly as the whole system of formal rules of society (such as

constitutions, laws, and regulations), informal constraints (such as customs, norms, and traditions), and organizations functioning within these structures (Caballero & Soto-Oñate, 2015; Ambrosino et al., 2018). The relationship between institutions and economic growth is demonstrated through the strength of the rule of law, the level of corruption, property rights, the quality of the administrative apparatus, etc. Thus, establishing institutions is essential to enhance the efficiency of interactions among economic entities, providing a foundation for improving the investment environment, reducing risks, and increasing profitability for businesses (Dawson, 2006; Ménard & Shirley, 2014). Besides, economic theories emphasize the significance of institutional factors in explaining economic growth patterns.

Combining NIE with economic growth theory involves examining how institutions influence economic growth. The Cobb-Douglas production function, typically used to model economic growth, can be adapted to include an institutional factor, which reflects the impact of institutions on productivity and output. To incorporate institutional quality (IQ) into this model, we can modify the function to reflect how institutions affect productivity and economic growth. It reflects the strength of property rights, quality of governance, rule of law, contract enforcement, and other institutional characteristics that reduce transaction costs and improve efficiency. It depends on IQ, suggesting that enhancing IQ might be more effective than focusing on overall productivity improvements.

$$A = A_0 \cdot IQ^\gamma \quad (2)$$

where, A_0 = baseline productivity level; γ = elasticity of productivity with respect to institutional quality.

Combining Eq. (1) and Eq. (2) is:

$$Y = A_0 IQ^\gamma K^\alpha L^\beta \quad (3)$$

The parameter γ denotes the influence of institutional quality on productivity, which subsequently affects output. This model highlights the critical role of institutional quality in enhancing productivity and supporting sustainable economic growth, aligning with the insights from NIE and economic growth theory.

3.2. Data

This study, utilizing panel data from 2000 to 2022, investigates how specific economic institutions and political institutions differentially impact the performance of various business types. Specifically, businesses are divided into two categories: 1) by business type and 2) by capital ownership. There are seven types of legal enterprises in Vietnam, including private joint-stock enterprises, state-owned joint-stock enterprises, foreign-invested enterprises, joint venture enterprises, private enterprises, limited liability enterprises, and state enterprises. This study employs a dual classification system, categorizing enterprises not only by type but also by ownership source, encompassing private, state, and foreign capital. Classifying firms based on their capital source enables a more nuanced analysis of how institutional factors affect firm performance across different ownership types. These findings will guide policy recommendations for creating a more balanced and effective business environment.

Table 1. Define variables and data sources

Variable	Definition	Data source
R_t	Average net revenue of enterprise type i at time t .	General Statistics Office of Vietnam
C_t	Average capital (working and fixed asset investment capital) of enterprise type i at time t .	General Statistics Office of Vietnam
L_t	Average labor of enterprise type i at time t .	General Statistics Office of Vietnam
PI_t	Political institutions at time t are measured by the average of six component indices.	Worldwide Governance Indicators (WGI)
El_t	Economic institutions at time t .	Heritage Foundation

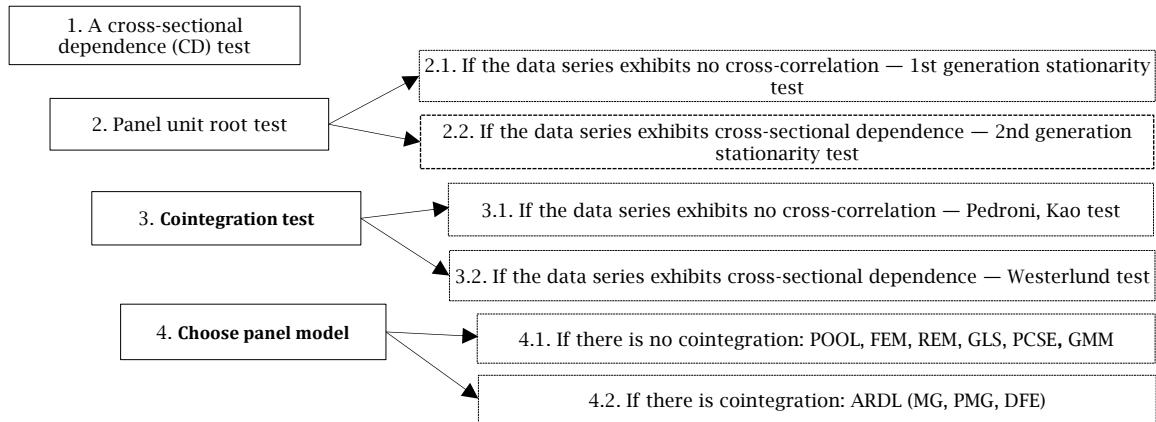
Source: Authors' elaboration.

The institutions measured include political institutions and economic institutions. The World Bank's Worldwide Governance Indicators (WGI) constitute a widely utilized dataset for measuring the quality of political institutions. This index is measured in even years from 1996 to 2002, but from 2002 it is calculated annually. The five-year plans stipulate that research should have commenced in 2000, not 2002. To address the missing 2001 data, the political institutions for that year were estimated by averaging the values from 2000 and 2002,

following a methodology employed in previous research by Law and Azman-Saini (2012) and Antonietti and Mondolo (2023).

3.3. The panel autoregressive distributed lag model

Figure 1 below describes the analytical framework for testing the characteristics of the time series and selecting the appropriate panel data model.

Figure 1. A framework for the optimal selection of a panel data model

Source: Authors' elaboration.

3.3.1. Cross-sectional dependence, panel unit root, and cointegration test

Before assessing the model, we first conduct a Pesaran cross-sectional dependence (CD) test on the balanced panel data. CD, as proposed by Pesaran (2021), refers to correlations among observations within a given period. Secondly, conducting a unit root test is a crucial step in estimating the ARDL model, as failing to verify stationarity can lead to inaccurate regression results (Gujarati, 2004). The choice between first-generation (LLC, IPS, MW) and second-generation (MP, Pesaran, Choi) panel unit root tests depends on the results of the CD test (Shahbaz et al., 2012). While first-generation tests assume cross-sectional independence, second-generation tests relax this assumption (Shahbaz et al., 2012).

Both stationary data series at levels $I(0)$ and first differences $I(1)$ can be incorporated into the panel ARDL model simultaneously (Pesaran et al., 2000). The subsequent step in the ARDL panel data regression process is to examine long-run cointegration to determine the relationship between the variables (Pesaran et al., 1999). The cointegration test hypothesis states that H_0 represents no cointegration, while H_1 indicates the presence of a cointegration relationship.

3.3.2. Selecting a panel ARDL model

The panel ARDL model employs three estimation methods: 1) Mean group (MG), 2) Dynamic two-way fixed effects (DFE); 3) PMG regression.

$$\Delta y_{it} = (\varphi_i y_{i,t-1} + \beta'_i x_{it}) + \sum_{k=1}^{p-1} \lambda_{ik}^* \Delta y_{i,t-k} + \sum_{k=0}^{q-1} \delta_{ik}^* \Delta x_{i,t-k} + \mu_i + \varepsilon_{it} \quad (4)$$

Here, y represents the dependent variable associated with business performance, while x denotes the independent variables, which is analyzed in the data section of Section 3:

λ_{ik}^* and δ_{ik}^* = short-run coefficients;

φ_i = group-specific error-correction coefficients;

β'_i = long-run coefficients of dependent variables;

μ_i = group-specific fixed effects control for unobserved heterogeneity across enterprise types;

ε_{it} = error term.

The MG-ARDL model permits all coefficients to differ and exhibit heterogeneity in both the long and short run (Pesaran & Smith, 1995). Due to the limited number of enterprise types (only seven), the sample size is insufficient to effectively apply the MG-ARDL model, which requires a larger number of cross-sectional units. The DFE-ARDL model imposes the condition that the slope coefficient and error variance must be uniform across all objects in the long run (Weinhold, 1999). Given the relatively short time series and the research objectives, the assumptions underlying the DFE-ARDL model are not met.

The PMG model is an integrated method of both MG and DFE techniques. The PMG model facilitates the simultaneous examination of both short-run and long-run relationships (Pesaran et al., 1999). PMG offers an advantage over the ordinary least squares (OLS) model as the PMG-ARDL short-run results are tailored to each specific group of enterprises, reflecting the impact of shocks based on the characteristics of each enterprise type, while the long-run coefficients are constrained to be identical. To overcome this limitation, the study employed a series of regressions stratified by capital source, facilitating comparative analysis of short-term and long-term outcomes across different ownership structures. The PMG-ARDL model establishes a long-run relationship between the dependent and independent variables, indicated by a negative and statistically significant estimated coefficient for the error correction term (ECT). The ARDL panel data model (p , q_1 , q_2 , ..., q_n) incorporates both short-run and long-run relationships, expressed as follows:

4. RESULTS

4.1. Cross-section dependence and stationarity test

The variables LnR , LnC , and LnL were log-transformed before being included in the analysis, as presented in Table 2. The results of the CD test indicate that, with the exception of the variable LnL for state-owned investment enterprises, all other variables exhibit CD, as they are statistically

significant. Next, the stationarity test for all variables indicates that they are stationary at I(0) and I(1).

These results meet the prerequisites for using the panel ARDL data model (Pesaran et al., 2000).

Table 2. Results of panel unit root tests

No.	Variable	CD test	At level		First different		Conclusion
			No cons, no trend	Cons + trend	No cons no trend	Cons + trend	
<i>Total sample</i>							
1	<i>LnR</i>	20.112***	-2.222***	-1.896**			I(0)
2	<i>LnC</i>	20.751***	-2.349***	-3.413***			I(0)
3	<i>LnL</i>	6.221***	-0.858	-2.588	-2.810***	-4.342***	I(1)
<i>Private capital</i>							
4	<i>LnR</i>	7.256***	-1.624*	-1.090	-3.085***	-4.879***	I(1)
5	<i>LnC</i>	7.853***	-1.076	-2.475	-4.850***	-5.023***	I(1)
6	<i>LnL</i>	3.358***	-1.595*	-2.73***			I(0)
<i>State capital</i>							
7	<i>LnR</i>	4.477***	-3.653***	-1.716			I(0)
8	<i>LnC</i>	4.508***	-2.611***	-1.899			I(0)
9	<i>LnL</i>	-1.582	-1.980**	-0.997	-2.400***	-1.564*	I(0)
<i>Foreign capital</i>							
10	<i>LnR</i>	4.649***	-3.341***	-1.518			I(0)
11	<i>LnC</i>	4.635***	-3.969***	-1.302			I(0)
12	<i>LnL</i>	4.640***	-5.477***	-1.693			I(0)
<i>Institutions</i>							
13	<i>PI</i>	21.494***	4.160***	1.700			I(0)
14	<i>EI</i>	21.494***	4.160***	1.700			I(0)

Note: ***, **, * represent statistical significance levels at the 1%, 5%, and 10% levels.

Source: Authors' elaboration.

Due to the CD of all variables, with the exception of the *LnL* variable for businesses invested by state capital being the only independent variable, the only applicable cointegration test is the Westerlund test (Figure 1). The test results

confirmed the presence of a cointegration relationship, providing a robust theoretical foundation for utilizing the PMG-ARDL model to further analyze the relationships between variables in the study (Table 3).

Table 3. Panel cointegration test

No.	Model	Westerlund test	Conclusion
1	Full sample: <i>LnR LnC LnL PI EI</i>	-2.772***	Cointegration
2	Private capital: <i>LnR LnC LnL PI EI</i>	-2.0842***	Cointegration
3	State capital: <i>LnR LnC LnL PI EI</i>	-2.109***	Cointegration
4	Foreign capital: <i>LnR LnC LnL PI EI</i>	-1.878**	Cointegration

Note: ***, **, * represent statistical significance levels at the 1%, 5%, and 10% levels.

Source: Authors' elaboration.

4.2. Investigate determinants of business performance

Besides categorizing enterprises by type, the study also classified them based on capital sources. Accordingly, after conducting the full-sample regression, the study carried out regressions for enterprise groups categorized by capital source. The lags of the ARDL model were selected based on the application of Kripfganz and Schneider (2023) method to select the optimal lags (p, q1, q2, q3, ...) for the panel ARDL data model (p, q1, q2, q3, ...) by running ARDL and looping for separate business group and then using the lag number with the most occurrences as the lag for the overall model. Table 4 below summarizes the regression results using the PMG-ARDL estimator for the full sample in the short run and the long run for the full sample and by capital source.

Research shows that capital plays a significant role in determining business performance, especially in the long term. However, the impact of capital shows clear differences between business groups. Specifically, in the long term, state-owned enterprises have the highest dependence on capital, followed by foreign-invested enterprises and finally private enterprises. In the short term, the impact of capital on operating efficiency was insignificant across all enterprise groups. For private enterprises, capital exerted a negative influence, potentially due to high capital costs exceeding revenue generation.

While coefficients for state and foreign capital were -0.194 and 0.308, respectively, these were statistically insignificant, suggesting no clear short-term impact. This may stem from the fact that investment capital in these two groups is often directed towards longer-term projects. In general, in the short term, capital is not a decisive factor in improving operational efficiency, especially in enterprises with state and foreign capital, while enterprises with private capital are still negatively affected by capital costs.

The research findings indicate that capital (*LnC*) and labor (*LnL*) have differing levels of influence on business performance. An analysis of the full sample reveals that the regression coefficient for *LnL* (0.755) is substantially greater than that of the labor variable (0.270), highlighting the greater significance of investment capital in driving growth. While capital remains the primary driver for private enterprises, labor also plays a significant role in enhancing operational efficiency. State-owned enterprises rely mainly on capital, while the role of labor is relatively limited, showing suboptimal exploitation of human resources. The findings of this study challenge the conclusions drawn by Bhaumik et al. (2012), as the specific characteristics of the textile industry in developing economies suggest that augmenting labor contributes more to output growth than increasing capital investment. Similarly, the study by Chu (2018), using enterprise survey data from Vietnam

conducted by the General Statistics Office of Vietnam between 2006 and 2014 through the robust random effect model, also showed that the impact of labor on revenue, pre-tax profit, and value added is greater than that of capital, with the level of impact varying depending on the dependent variable. In addition, the institutional factor included in the analysis is provincial competitiveness. Due to the reasons outlined, this study's findings differ from those of Chu (2018) regarding the impact of capital and labor on the operational efficiency of Vietnamese enterprises. Foreign-invested enterprises demonstrate a more balanced utilization of LnC (0.768) and LnL (0.881), with labor exhibiting a greater impact on value creation. The results of this study show that, although capital is an important factor, effective utilization of labor resources also contributes significantly to the success of enterprises, especially for foreign-invested enterprises. The findings highlight the importance of effective labor utilization in addition to capital, particularly for the success of foreign-invested enterprises.

Political and economic institutions may influence the efficiency of converting input factors into business outcomes, but labor and capital inputs have a much stronger impact than institutions. This result is consistent with studies by Bhaumik et al. (2012) and Handoyo et al. (2023). Long-term analysis reveals a more pronounced negative impact of political institutions, particularly on state-owned enterprises. While political institutions exhibit a negative and statistically significant impact on overall business performance (-0.384), the strongest negative impact is observed for state-owned enterprises (-0.574), only significant at the 10% level. Institutional reform has directly and significantly influenced the performance of state-owned enterprises through the implementation of numerous policies focused on innovation, restructuring, mergers, dissolution, and equitization. However, the implementation process remains challenging due to the persistence of outdated management practices, particularly resistance from certain staff and employees, which is also linked to

low labor productivity. In contrast to state-owned and privately-owned enterprises, foreign-invested enterprises do not exhibit negative operating outcomes. Furthermore, they may enjoy the advantages of preferential investment policies. Institutions that prioritize the interests of this group of enterprises to the detriment of others, particularly those with foreign capital, diverge from the conclusions of Kafouros and Aliyev (2016). Instead, they establish incentives that benefit domestic enterprises, as observed in the context of Central and Eastern European countries. This result is contrary to the conclusion of Chu (2018), who used the institutional variable of the provincial competitiveness index in Vietnam. The short-term impact of changes in PI on enterprise performance is insignificant across all ownership structures (state-owned, private, and foreign-invested). This indicates that new policies and regulations require time to produce tangible impacts on business operations.

The impact of EI on firm performance varies by capital source (Bhaumik et al., 2012; Chu, 2018; Cainelli et al., 2022). For the whole sample, economic institutions has a slight positive impact with a coefficient of 0.012 (10% significance), indicating that a free economic environment plays a certain role in improving performance. This finding aligns with previous research by Bhaumik et al. (2012) and Chu (2018). However, when analyzing by capital source, only foreign-invested enterprises exhibit a statistically significant positive effect from EF (0.059 at the 1% level). This finding aligns with previous research (Bhaumik et al., 2012; Cainelli et al., 2022), which suggests that foreign firms may exploit weaknesses in the economic institutional framework. Private (0.014) and state-owned enterprises (0.004) show no statistical significance, indicating EF's limited impact on their performance. Although not statistically significant, the impact coefficient also shows that state-owned enterprises are less flexible and less exposed to competitive pressure. In the short term, sudden changes in EF negatively impact private and foreign-invested enterprises, whereas state-owned enterprises remain largely unaffected.

Table 4. PMG-ARDL findings for the full sample and group of businesses by ownership

Independent variables	Full sample	Private capital		State capital	Foreign capital
		Long-run			
LnC	0.755*** [30.94]	0.727*** [17.97]		0.788*** [17.19]	0.768*** [8.02]
LnL	0.270*** [4.44]	0.253*** [2.65]		0.396 [1.33]	0.881*** [5.41]
PI	-0.384** [-2.22]	-0.225 [-0.98]		-0.574* [-1.80]	0.014 [0.05]
EI	0.012* [1.85]	0.014 [1.58]		0.004 [0.33]	0.059*** [5.91]
Short-run					
$\Delta EC(-1)$	-0.558*** [-3.61]	-0.612*** [-3.49]		-0.907*** [-3.37]	-0.467 [-1.15]
ΔLnR	0.172*** [2.67]	0.258** [2.32]		0.064 [0.50]	0.194 [1.60]
$\Delta LnC(-1)$	0.003 [0.02]	-0.225*** [-3.28]		-0.194 [-0.84]	0.308 [0.80]
$\Delta LnL(-1)$	0.094 [0.39]	-0.076 [-0.13]		0.066 [0.20]	0.123 [0.64]
$\Delta PI(-1)$	-0.015 [-0.09]	-0.093 [-0.35]		0.225 [0.51]	-0.075 [-0.32]
$\Delta EI(-1)$	-0.004 [-0.79]	-0.013*** [-2.89]		0.012 [1.38]	-0.019*** [-3.29]
Cons	-0.786 [-2.80]	-0.698* [-1.88]		-2.014*** [-3.88]	-3.114 [-1.14]
Log likelihood	191.321	79.945		49.361	70.233

Note: ***, **, * represent statistical significance levels at the 1%, 5%, and 10% levels. Values in brackets represents z-statistic.

Source: Authors' elaboration.

In conclusion, operational efficiency from capital and labor is the core and most stable internal factor, while institutions merely provide the framework and conditions for other factors to take effect. Moreover, this study reveals significant heterogeneity in the impact of political institutions and economic institutions on firm performance across different ownership groups. Private enterprises are adversely impacted by short-term economic fluctuations, whereas state-owned enterprises face long-term constraints primarily due to policy regulations. Foreign-invested enterprises, thanks to investment incentives, are less affected by political factors but are sensitive to fluctuations in the economic environment. Foreign-invested enterprises, benefiting from investment incentives, exhibit lower sensitivity to political factors but remain susceptible to economic fluctuations. Thus, the NIE theory does not fully apply to enterprises based on capital sources, both in the short and long term.

The recovery time following the shock occurs in the order of state-owned enterprises first, followed by private enterprises, and lastly foreign-owned enterprises. While characterized by complex management structures and slow decision-making, state-owned enterprises demonstrate faster recovery from shocks due to their close ties with state management agencies. For foreign-invested enterprises, the coefficient $\Delta EC(-1)$ (-0.467) is not statistically significant, showing that these enterprises do not react significantly to short-term shocks with institutional impacts on long-term

equilibrium. This can be attributed to factors such as international environmental dependence, long-term orientation, and the management mechanisms of the parent company. In contrast, private capital enterprises benefit from greater flexibility, whereas foreign capital enterprises require more time to recover from disruptions.

4.3. Legal form of business effects

The analysis of short-term factors by business type (Table 5) and long-term relationships based on ownership capital (Table 4) reveals consistent trends in how these factors influence business performance. This result is consistent with the study by Bhaumik et al. (2012), as foreign-invested enterprises utilize capital most efficiently, generating high revenue through advanced technology and management. Additionally, joint venture enterprises also benefit from investment capital, but to a lesser extent. Foreign-funded enterprises utilize capital most effectively, bringing in high revenue thanks to advanced technology and management. Joint ventures also derive benefits from investment capital, but to a smaller extent. In contrast, state-owned enterprises, state-owned joint-stock companies, and limited liability companies struggle to convert capital into revenue and even exhibit signs of inefficient capital utilization. Private, state-owned, and private joint-stock enterprises have not shown a clear link between capital and revenue in the short term.

Table 5. Short-term business performance by legal form of business

Independent variables	Non-state joint-stock enterprises	State-owned joint-stock enterprises	Foreign-invested enterprises	Joint venture enterprises	Private enterprises	Limited liability enterprises	State enterprises
$\Delta EC(-1)$	-0.982*** [-6.03]	-1.211*** [-5.36]	-0.024 [-0.74]	-0.277* [-1.86]	-0.405 [-1.50]	-0.444*** [-2.77]	-0.563*** [-2.81]
ΔLnR	0.250** [2.55]	0.288*** [2.66]	0.077 [0.59]	0.109 [0.67]	0.457 [1.37]	0.084 [0.45]	-0.059 [-0.39]
$\Delta LnC(-1)$	-0.142 [-1.15]	-0.420* [-1.89]	0.721*** [4.16]	0.266* [1.87]	-0.190 [-1.40]	-0.354*** [-3.24]	0.136 [0.55]
$\Delta LnL(-1)$	-0.462* [-1.85]	-0.268 [-1.05]	0.320** [2.06]	0.367 [1.18]	1.075*** [2.82]	-0.788* [-1.71]	0.411 [0.73]
$\Delta PI(-1)$	0.510* [1.68]	0.709* [1.95]	-0.348 [-1.47]	-0.032 [-0.09]	-0.256 [-0.46]	-0.422 [-1.41]	-0.268 [-0.59]
$\Delta EI(-1)$	-0.018* [-1.77]	-0.0002 [-0.00]	-0.011 [-1.42]	0.020* [1.67]	-0.003 [-0.15]	-0.008 [-0.64]	-0.004 [-0.31]
Cons	-1.617*** [-3.57]	-1.937** [-2.49]	0.015 [0.30]	-0.320 [-1.31]	-0.238 [-0.90]	-0.473* [-1.86]	-0.929* [-1.90]

Note: ***, **, * represent statistical significance levels at the 1%, 5%, and 10% levels.

Source: Authors' elaboration.

In the short term, labor ($\Delta LnL(-1)$) impacts the net revenue of various legal types of enterprises differently. Private enterprises demonstrated the most significant positive impact, with a coefficient of 1.075 (at 1% significance), indicating their ability to efficiently use labor to boost revenue. Foreign-invested enterprises also benefit from labor with a coefficient of 0.320 (5% significance), thanks to good management and the use of high-quality labor. In contrast, labor exerts a negative effect on non-state joint-stock enterprises (-0.462, significant at 10%) and limited liability companies (-0.788, significant at 10%), indicating inefficiencies in labor utilization. Meanwhile, labor is statistically insignificant in state-owned enterprises, state-owned joint-stock companies, and joint ventures,

suggesting that this factor does not significantly influence revenue in these groups.

Private enterprises demonstrate the highest labor efficiency, followed by foreign enterprises in the short term. In the short term, employment growth in non-state joint-stock and limited liability enterprises does not lead to increased revenue. State-owned joint-stock enterprises, joint ventures, and state-owned enterprises struggle to translate employment growth into revenue. Variations in management practices, technology, and business strategies significantly influence the efficiency of labor utilization across enterprises. Thus, enterprises, based on their legal characteristics, exploit the advantages of capital and labor to achieve high output outcomes, in accordance with the RBT.

In the short term, PI exerts the most significant influence on state-owned joint-stock enterprises (0.709) and non-state joint-stock enterprises (0.510), reflecting the benefits derived from institutional reforms in transitional economies. Conversely, the remaining business groups exhibited insignificant impacts, as evidenced by statistically insignificant coefficients. Joint venture enterprises benefit from institutional reforms, while private joint-stock enterprises are adversely impacted. This illustrates the disparity in businesses' ability to adjust and seize opportunities in response to changes in EI.

5. CONCLUSION

The research has highlighted the distinct effects of EI and PI on the performance of businesses by legal types of firms in Vietnam. While institutional reforms are underway in Vietnam, their effects are not uniformly distributed across all business groups, with significant disparities observed in terms of capital sources and legal frameworks. The findings indicate that PI exerts a notably negative influence on state-owned enterprises over the long term, highlighting the difficulties associated with implementing reforms and restructuring efforts. Foreign-invested enterprises face minimal negative impact from PI due to preferential policies and support. This contributes to the superior operational efficiency of foreign-invested enterprises compared to domestic ones. EI has a mildly positive impact, evident only for foreign enterprises, highlighting state-owned and private firms' limited ability to leverage institutional advantages. Many countries employ strong incentive policies to attract FDI, a strategy used to acquire financial and technological resources for economic promotion (Tran et al., 2009; Antonietti and Mondolo, 2023). However, this could weaken the domestic private sector due to legal constraints, limited access to credit and land, as well as unfair competition with FDI companies (Le, 2012; Chen et al., 2022). Additionally, private joint-stock companies face challenges in adapting to sudden institutional changes. Business performance is shaped by institutional reforms, particularly support for private firms. EI has a more positive impact than PI across the entire sample. Generally, institutions have an impact on the business performance of firms; however, according to new institutional economic theory, this relationship may not always be positive in both the short and long term.

The efficient allocation and utilization of capital and labor resources constitute fundamental determinants in enhancing overall business productivity. The study shows that, in the long term, capital serves as a crucial resource, particularly for state-owned and foreign-invested enterprises. Furthermore, privately-funded businesses need to manage capital more effectively. Crucially, the development of flexible financial models is necessary to effectively support businesses in their capital-raising endeavors. Employing modern capital

mobilization mechanisms, including venture capital funds and crowdfunding platforms, can effectively assist private enterprises in surmounting resource limitations. However, to achieve high effectiveness, businesses need not only capital but also the ability to manage and effectively utilize other resources, such as labor, technology, and core strengths. Foreign-invested firms leverage superior capital, technology, and management to maximize labor efficiency and generate high-added value. Meanwhile, private enterprises, although more flexible in using labor, face many resource constraints and institutional barriers. Private enterprises, while exhibiting greater flexibility in labor utilization, are constrained by limited resources and significant institutional barriers. Thus, the RBT demonstrates that businesses, based on legal types, optimize the exploitation of specific resources to ensure efficiency in business operations.

The study highlights the importance of institutional reform and optimizing capital and labor utilization to improve business performance, particularly within the framework of a transitioning economy. This study concentrates solely on examining the institutional impacts on legally defined business groups, excluding disadvantaged groups like startups and cooperatives, thereby restricting their generalizability. This study focuses exclusively on the institutional impacts on legally recognized business groups, omitting disadvantaged groups such as startups and cooperatives, which limits its broader applicability.

This study, while shedding light on the distinct impacts of economic and political institutions on the business performance of legally classified enterprises in Vietnam, acknowledges the diverse issues surrounding institutions and business operations. Therefore, the study still has some limitations, which in turn suggest directions for future research. First, it only considers legally recognized enterprises, excluding startups, cooperatives, and informal businesses. As a result, the findings may not be widely applicable to these groups and do not account for the institutional factors influencing their business performance. Second, while the study emphasizes the importance of capital and labor in enhancing productivity, it does not delve into industry-specific financial and labor management practices. Future research could explore institutional impacts by industry, particularly the role of technology, innovation, and digital transformation on business performance, especially for SMEs and informal businesses in Vietnam. Third, analysis of the interaction between institutional factors and other macroeconomic variables, such as global trade policies or regional economic integration, may influence business outcomes in an increasingly interconnected global economy. Future studies could extend the analysis by incorporating these external factors into the framework. Finally, this study can be applied to research in other countries or economic regions.

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