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Study on the Impact of Institutions on the Labor Productivity of Private Enterprises in Vietnam through the Spillover Effect from State-Owned Enterprises

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Abstract: The paper analyzes the impact of institutions on the labor productivity of small and medium-sized private enterprises through the spillover effect from state-owned enterprises (SOEs). The authors used data samples from three datasets: (i) The Annual Enterprise Survey conducted by the General Statistics Office of Vietnam (GSO) from 2010 to 2018; (ii) Institutional data (PCI) published by the Vietnam Chamber of Commerce and Industry (VCCI) from 2010 to 2018; (iii) GSO 2012 I-O balance sheet and a set of tabular data containing 666,221 observations at the enterprise and provincial levels in Vietnam from 2010 to 2018, including both listed and unlisted enterprises. The model's experimental result shows that institutional improvement boosts labor productivity of domestic private enterprises through a horizontal and forward spillover channel from SOEs. Through the backward spillover channel from SOEs, how institutional improvement affects the labor productivity depends on the degree of backward spillover channel from SOEs.

Keywords: institution; labor productivity; private enterprise; spillover effect; state-owned enterprises (SOEs)



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1. Introduction

According to the Enterprise Survey in 2018, the SOEs sector accounted for 95.70 percent of the total. The sector also attracted the most investment capital in the regions (53 percent), attracting over 5 million employees and has the most significant contribution to the state budget (contributing over 42 percent of GDP). The remarkable development has completely changed the mindset and perception of the Party in order to promote the development of the private economic sector. This is evident in Central Resolution 5 Term XII (2017), which considers "private economic development to be an important driving force of the socialist-oriented market economy". However, private enterprises in Vietnam continue to operate primarily on a small and medium scale, or more precisely, small, and micro enterprises (over 95 percent of private enterprises in Vietnam currently have small, medium and micro scale). This demonstrates the troubling fact that the true quality of the innovation process, which promotes the development of private enterprises, has been as effective as the statistics. The majority of large-scale enterprises in Vietnam are SOEs or foreign direct investment enterprises. According to [Katariina and Ari \(2007\)](#), this is a symptom of a poor business environment because discrimination exists between different types of businesses. Despite the fact that SOEs equitization has reduced the number of SOEs with 100 percent of state capital, the SOEs sector still receives important benefits such as access to resources. As a result, competition between SOEs and other types of enterprises becomes unequal.

According to [Porter \(2008\)](#), the institutional environment has a direct impact on enterprise productivity, which is a condition that assists enterprises in achieving the

highest level of productivity and standard. The institutional reform has yielded significant positive results in terms of lowering trade risks and legal risks, as well as creating a more transparent, open, and autonomous business environment, which has opened up new opportunities for private enterprises.

The paper investigates the impact of institutions on private enterprises labor productivity under the spillover effect of SOEs, with a focus on the impact of institutions on the spillover effect from SOEs to small and medium scale domestic private enterprises in Vietnam. A number of authors around the world have studied this topic, including [Russell \(2008\)](#); [Wang and Chen \(2014\)](#); and [Alexiou Constantinou and Osman \(2014\)](#). However, there are no research projects on this topic in Vietnam. The study result will contribute to a more comprehensive assessment of the role of SOEs in the development of private enterprises in Vietnam, as well as how the spillover effect of SOEs affects the role of improving institutions to promote private enterprise labor productivity in Vietnam.

2. Literature Review

2.1. Theoretical Basis of Institutional Impacts on Spillover Effect from SOEs to Domestic Private Enterprise

According to [North \(1991\)](#), institutions are rules established by human based on political, economic, and social relationships. [Constantinou Alexiou Constantinou and Osman \(2014\)](#) shows that institutions are one of the most important factors ensuring economic prosperity. [Wang and Chen \(2014\)](#) also demonstrate that underdeveloped institutions lack government protection, exposing them to fierce competition from foreign investors in the domestic market and institutional development aids in mitigating the negative effects of high-tech enterprises. SOEs and foreign direct investment enterprises are high-tech enterprises that have a spillover effect on domestic private enterprises; therefore, institutional improvements could promote the spillover effect from SOEs to domestic private enterprises. Simultaneously, the competitive pressure from high-tech enterprises forces enterprises to innovate technology and improve production capacity in order to compete and survive in the market ([Russell 2008](#)). According to [Yang et al. \(2015\)](#), a good institutional environment reduces the negative impact of high-tech enterprises on lower-tech enterprises because effective institutions assist entities in adhering to good game rules and more responsible operations.

In general, improving the institution creates an open and favorable business environment for enterprises, and help to save costs in compliance with administrative procedures. Thus, the result is increasing capital sources for investment, technological innovation, and market competitiveness, as well as closing the technology gap between the SOEs sector and domestic private enterprises to increase technology absorption and promote the spillover effect. In the current context of international economic integration, enterprises require a good institutional environment to survive and operate effectively.

2.2. A Research Overview of the Factors Influencing Enterprise Labor Productivity

Many factors influence enterprise development, which most studies divide into two major groups which affecting enterprise labor productivity: (i) A group of external factors, such as the institutional environment, State policies, and the legal system, as described by [Tran et al. \(2016\)](#); [Nguyen et al. \(2013\)](#); [Pham and Chu \(2015\)](#); (ii) Internal factors, such as enterprise size, which influences how enterprises choose capital sources ([Beck et al. 2007](#)). The smaller the enterprise size, the more difficult it will be to obtain loans due to transaction cost increasing as [Tran et al. \(2016\)](#); [Nguyen et al. \(2013\)](#) demonstrate; Enterprises can benefit from the enterprise age if they positively learn and gain experience. However, it can have a negative impact if the enterprise operates for an extended period of time without technological, organization, or outdated management method innovation. ([Amornkitvikai Yot and Charles Harvie 2010](#); [Tran et al. 2016](#)). *Finance approach*: According to [Njagi et al. \(2017\)](#), the capital structure of enterprises influences their value and efficiency, as represented by the external capital ratio calculated by $1 - \text{Equity} / \text{Total capital}$,

which denotes the ratio of external loans. According to [Tran et al. \(2016\)](#), difficulties in approaching external capital will prevent enterprises from operating effectively. About labor quality: According to [Akerlof \(1982\)](#), the higher the average labor income, the higher the labor productivity, which affects the operational efficiency of the enterprises. A high salary level will have an impact on the enterprise's revenue and labor quality ([Weiss 1980](#); [Ouimet and Simintzi 2015](#)); [Tran et al. \(2016\)](#). *Time* is a variable that represents the evolution of technology over time. Technological innovation has an impact on enterprise performance according to [Nguyen and Phung \(2018\)](#).

2.3. Research Overview on the Institutional Impacts of Spillover Effect from SOEs to Domestic Private Enterprises

The role of high-tech enterprises as a driving force in economic growth is confirmed. Since high-tech enterprises can boost economic growth by increasing capital accumulation and technological progress. The role of foreign direct investment enterprises has been confirmed by [Nadide and Ibrahim \(2014\)](#); [Salvador and Eric \(2002\)](#); and [Simeon and Bernard \(2000\)](#). In Vietnam, foreign direct investment enterprises and SOEs operate with large-scale; capital advantages allow them to invest more in technology, giving them an advantage over the private sector.

However, previous studies, such as [Ari \(1994\)](#); [Pham and Chu \(2015\)](#), have only looked at the effects of foreign direct investment enterprises on domestic enterprises via spillover channels such as horizontal spillover, backward spillover, and forward spillover. Many studies find that foreign direct investment enterprises have a huge impact on domestic enterprises. [Manuel and Ricardo \(2000\)](#) discover evidence of massive investment from foreign direct investment enterprises in Latin America. Following that, [Ann and Margaret \(2001\)](#) demonstrate that the presence of foreign direct investment enterprises restricts domestic enterprises' access to credit, but it is worth noting that only local private enterprises are negatively impacted, not SOEs.

In contrast, there have been few studies on the effects of SOEs on domestic private enterprises. According to [Carlos and Ling \(2004\)](#), SOEs encroach too much on the industry, overwhelming the efficiency of private enterprises and impeding private enterprise development. [Nguyen and Nick \(2009\)](#) use the SOEs dominance index as a composite measure of SOEs role to conclude: (i) SOEs are always biased in localities and provinces; the more SOEs there are, the more private enterprises face negative attitudes from local authorities; (ii) SOEs outnumber private enterprises in terms of access to resources (land, bank loans); (iii) the emergence of SOEs lengthens the time it takes for private enterprises to receive land ownership certificates; (iv) The majority of private customers are SOEs. As can be seen, there is very little interaction between SOEs and private enterprises, but according to [Yang et al. \(2015\)](#); [Zhao and Zheng \(2015\)](#), SOEs have a longitudinal spillover link as an input supplier to private enterprises; at the same time, SOEs can produce the same output or demand similar inputs, so they can create a competitive or spillover effect. Furthermore, [Katariina and Ari \(2007\)](#) highlight the relationship between SOEs and private enterprises in terms of credit access. When debts are guaranteed by the government and the risk of bankruptcy is low, SOEs are a relatively safe sector of investment. It seems that SOEs are stymieing non-state enterprises by soft financial prerogatives. According to a 2006 study conducted by the Mekong Private Sector Development Agency (MPDF), unfair competition is the most serious constraint for private enterprises and SOEs. This implies that the relationship between SOEs and private enterprises is analogous to the relationship between foreign direct investment enterprises and domestic private enterprises via spillover channels.

As can be seen, studies on the impact of institutions on labor productivity of domestic private enterprises through SOEs spillover effect are relatively new. Previous research has not fully assessed the impact of institutions through the spillover channels from SOEs to domestic private enterprises. As a result, inheriting research on spillover effects of foreign direct investment enterprises ([Ari 1994](#); [Manuel and Ricardo 2000](#); [Ann and Margaret 2001](#))

study and measure the impact of institutions on domestic private enterprises which have small and medium size through SOEs spillover channels.

3. Research Methods and Designation of Experimental Models

3.1. Research Models

To calculate the impact of institutions on labor productivity of private enterprises through spillover effects from SOEs, Beata (2004); Sumon et al. (2014) propose an empirical model with the production function Cobb—Douglas as follows:

$$\ln\left(\frac{Y}{L}\right)_{ijt} = \alpha + \beta_1 * \ln\left(\frac{K}{L}\right)_{ijt} + \beta_2 * PCI_{jt} + \beta_3 * Horizontal_{jt} + \beta_4 * Backward_{jt} + \beta_5 * Forward_{jt} + \beta_6 * PCI_{jt} * Horizontal_{jt} + \beta_7 * PCI_{jt} * Backward_{jt} + \beta_8 * PCI_{jt} * Forward_{jt} + a_1 * C_{ij} + a_2 * Z_{ij} + \varepsilon_{ijt} \quad (1)$$

where, Y_{ijt} is the output variable of enterprise i in sector j and time t ;

$\left(\frac{K}{L}\right)_{ijt}$ is the average capital per unit of labor of enterprise i at time t and industry j .

$Horizontal_{jt}$: to measure the presence of SOEs in sector j at time t , as described below:

$Horizontal_{jt} = \frac{\sum_{i \in j} FS_FDI_{ijt} * y_{ijt}}{\sum_{i \in j} Y_{ijt}}$ with FS_FDI_{ijt} is capital share of SOEs i , industry j , and time t ; y_{ijt} is the overall revenue of SOEs i , industry j at time t ; Y_{ijt} is the overall revenue of industry j at time t ;

$Backward_{jt}$: Indicates the opposite spillover effect when domestic enterprises provide inputs to SOEs. $Backward_{jt}$ is counted: $Backward_{jt} = \sum_{k (k \neq j)} \alpha_{jkt} Horizontal_{kt}$ with α_{jk} is the production proportion of industry j supplied to sector k , extracted from the I-O matrix;

$Forward_{jt}$ is defined as follows: $Forward_{jt} = \sum_{l (l \neq j)} \delta_{jlt} * Horizontal_{lt}$; with δ_{jlt} is the input percentage of industry k purchased from industry l at time t . Inputs purchased within the industry are rejected, as indicated in the variable $Horizontal_{lt}$;

C_{ij} is the vector of variables governing the effects of factors on enterprise characteristics such as form of ownership, business, age of the enterprise,...;

Z_{ij} is the vector that regulates the impact of other variables like area;

ε_{ijt} is the model error, which is treated as a random yield shock with an independent and standardized distribution with a zero mean and constant variance normalization.

3.2. Data and Data Description

The study use data from three different datasets: Data from the General Statistics Office of Vietnam's (GSO) annual enterprise survey for period from 2010 to 2018; PCI data from 2010 to 2018 published by the Vietnam Chamber of Commerce and Industry (VCCI); GSO I-O balance sheet for 2012.

The study combines datasets to obtain tabular datasets at enterprise and provincial levels. After calculating the spillover channels from foreign direct investment enterprises by sector in each year, the study was linked with available data by industry and year to obtain a complete data set. Table 1 gives the abbreviated name, measure and expectation impact used in the models.

Table 2 presents statistics that describe the variables. It can be seen that the labor productivity of small and medium scale private enterprises varies significantly between the period from 2010 to 2018. The average PCI value is quite high, the spillover variables from SOEs reach the highest value in the horizontal spillover effect, the spillover effects are very small in general. Ratio of external loans of private enterprises accounts for 53.48 percent. With 67,248 million VND, the average annual income per employee is extremely low. On the other hand, the research sample's private enterprise structure by enterprise size includes 7964 percent of medium- sized enterprises and 92.036 percent of small-sized enterprises.

Table 1. Description of variables in the model.

Variable Notation	Measure	Expectation Impact	Previous Researches
The group of variables represents the labor productivity of enterprises			
$\ln(\frac{VA}{L})$	The average added value per unit of labor in the enterprise has been logged.		Tran et al. (2016)
The group of input variables			
$\ln(\frac{K}{L})$	The average capital labor ratio, has been logged into the model.	+	Tran et al. (2016); Beata (2004)
Variables reflect institutions			
PCI	Provincial competitiveness index	+	Tran et al. (2016); Nguyen et al. (2012, 2013)
The group of variables reflecting the spillover effect			
Forward	Variable to be forward impacted from SOEs	+/-	Beata (2004); Pham and Chu (2015)
Horizontal	Variable to be horizontal impacted from SOEs	+/-	Beata (2004); Pham and Chu (2015)
Backward	Variable to be backward impacted from SOEs	+/-	Beata (2004); Pham and Chu (2015)
The group of variables reflects the characteristics of enterprises			
Age	Years of operation of the enterprise	+/-	Tran et al. (2016); Bach (2017)
Loan	Ratio of external loan	+	Njagi et al. (2017); Tran et al. (2016)
$\ln(LC)$	Logizing income per employee	+	Akerlof (1982)
The group of variables governs regions, industries, and technological advancement			
Region	Dummy variable represents economic regions (set by 7 dummy variables of economic region)	+/-	Beata (2004); Tran et al. (2016); Bach (2017)
Bran	Dummy variable represents industries, economic sectors, (set by 5 dummy variables)	+/-	Beata (2004); Tran et al. (2016); Bach (2017)
T	Variable represents advancements in technology over time.	+	Beata (2004); Tran et al. (2016)
The group of interactive variables between pervasive channels and institutional variables: Institution*Spillover			
PCI*Forward	Interaction between institutions and forward spillover channels from SOEs	+	Wang and Chen (2014)
PCI*Horizontal	Interaction between institutions and horizontal spillover channels from SOEs	+	Wang and Chen (2014)
PCI*Backward	Interaction between institutions and backward spillover channels from SOEs	+	Wang and Chen (2014)

3.3. Research Methods

To understand the institutional impact on labor productivity of private enterprises through spillover effects from SOEs, Equation (1) can be estimated using the panel data regression method. By combining cross-data and time series data, the table data has the advantages of making the regression model more efficient, providing more information, and having higher variability. For the table data regression model, the research uses the following estimation methods: Minimum squared estimation method—Pooled OLS; fixed effects model—FEM; random effect model—REM.

Table 2. Descriptive statistics for the sample of Vietnamese small and medium-sized enterprise ($N = 666,211$).

Variable	Observation	Average Value	Standard Error	Minimum	Maximum
VA/L	666,211	152.592	2277.876	1	1,314,644
K/L	666,211	30.078	29.460	10	200
PCI	666,211	60.684	3.737	45.12	73.53
Forward	666,211	0.072	0.151	0.925×10^{-3}	0.905
Horizontal	666,211	0.143	0.125	0	0.993
Backward	666,211	0.093	0.262	2.82×10^{-7}	3.634
Age	666,211	10.914	4.841	0	72
Loan	666,211	0.535	26.600	-18,484.5	16,395
Ln(LC)	666,211	67.248	381.022	0	264,370.2
T	666,211	5.303	2.614	1	9

Source: Calculation of authors.

4. Estimation Results

4.1. Result of Tests

In order to select the best model, the following tests must be researched and carried out: The F test chooses between the Pool OLS and FE estimation models which demonstrates that the FE model is appropriate. The LM test result, which were chosen between the Pool OLS and RE estimation models, demonstrates that the RE model is appropriate. The Hausman test result between FE and RE shows that FE is a suitable model. Through the tests, the FE model is the most appropriate.

Furthermore, the VIF test is used to determine the existence of multicollinearity, the Wald test is used to determine the existence of variable error variance (Greene 2000), and the Wooldridge test is used to determine the existence of cointegration (Wooldridge 2002). When the defect model is examined, the result shows that there is a variable error variance and a co-correlation phenomenon. To control the defects of variable of variance and co-correlation phenomenon, the research uses the Cluster model correction (Hoechle 2007). Since the VIF test results are less than 2, the models do not have multicollinearity defects.

4.2. Model Regression Result

The spillover channels have an impact on labor productivity at the same time. Multicollinearity appears when all three variables of interaction between *PCI* and spillover channels are included in the experimental method. To avoid multicollinearity defects, the research included each interaction variable of *PCI*Forward* (model 1), *PCI*Horizontal* (model 2), and *PCI*Backward* (model 3), the results of which are shown in Table 3. The estimated results from the three models all assess the impact of institutions on labor productivity fully, including direct and indirect effects, but take into account each individual spillover channel to private enterprises. Essentially, the results of estimating the institutional impact on labor productivity of private enterprises continue to show consistent results in most of the variables in the model, demonstrating the reliability of all three models. The findings indicate that institutions have a positive impact on the labor productivity of private enterprises. This effect is examined in greater depth by examining the interaction variables between institutions and the spillover channels from SOEs. As follows:

Variable interaction *PCI*Forward* demonstrates that, if the backward spillover channel from SOEs remains unchanged, institutional improvements will help to promote labor productivity of small and medium-sized private enterprises through forward spillover from SOEs, or, alternatively, improved institutions will help to improve the downward spillover effect from SOEs. Since institutional improvements create a more favorable business environment, small and medium-sized private enterprises operate more efficiently, while SOEs are perceived as a more technologically advanced business sector that provides better quality products. Given the existing benefits of geographical distance, SOEs that provide relatively high-quality inputs at lower costs are also an option for small and medium-sized private enterprises, and forward linkage is encouraged helps small and medium-sized private enterprise' performance improves. Meyer and Nguyen (2005) argue that

institutional improvement promotes pervasive absorptive capacity of enterprises due to the efficiency of labor and financial markets, which supports this viewpoint.

Table 3. The institutional impact on spillover effect from foreign direct investment enterprises to small and medium-sized private enterprises in Vietnam.

Variable	Model		
	Model (1)	Model (2)	Model (3)
Ln(K/L)	0.227 ** (0.002)	0.227 ** (0.002)	0.227 ** (0.002)
PCI	0.004 ** (0.000)	0.003 ** (0.001)	0.006 ** (0.000)
Forward	−1.602 ** (0.199)	0.096 ** (0.008)	0.080 ** (0.008)
Horizontal	0.337 ** (0.014)	−0.307 * (0.161)	0.332 ** (0.014)
Backward	0.033 ** (0.005)	0.037 ** (0.005)	1.753 ** (0.146)
PCI*Forward	0.026 ** (0.003)		
PCI*Horizontal		0.011 ** (0.003)	
PCI*Backward			−0.027 ** (0.002)
Age	−0.003 ** (0.001)	−0.003 ** (0.001)	−0.003 ** (0.001)
Loan	−0.001 ** (0.000)	−0.001 ** (0.000)	−0.001 ** (0.000)
Ln(LC)	0.482 ** (0.002)	0.482 ** (0.002)	0.481 ** (0.002)
T	0.056 ** (0.001)	0.057 ** (0.001)	0.057 ** (0.001)
Bran	Yes	Yes	Yes
Region	Yes	Yes	Yes
Constant	0.529 ** (0.118)	0.596 ** (0.122)	0.415 ** (0.118)
Observation	666,211	666,211	666,211
R-squared	0.436	0.436	0.436

*, ** represent estimated coefficients with statistical significance of 10% and 1%, respectively. Source: Calculation of authors.

Taking the *PCI*Horizontal* interaction variable into account, the result shows that if the horizontal spillover channel from SOEs remains constant, the institutional improvement promotes labor productivity of small and medium-sized private enterprises. That is, when institutions are improved, promoting the horizontal spillover effect from SOEs to SMEs increases SMEs' labor productivity.

The developed institutional environment creates an open and favorable environment for business sectors, assisting enterprises, particularly private enterprises, in saving transaction costs and encouraging enterprises to increase their investment in technology in order to operate more efficiently and inventively. Simultaneously, it will lessen the fierce competition among domestic enterprises. This finding is supported by a number of studies,

including those by [Ari \(1994\)](#); [Magus and Fredrik \(1999\)](#); [Berthold \(2006\)](#); and [Wang and Chen \(2014\)](#).

The variable interaction *PCI*Backward* which produced statistically backward result demonstrates that if the backward spillover from SOEs remains unchanged, how institutional improvement will impact the performance of small and medium—sized private enterprises still depend on the size of the *Backward* variable. If the *Backward* variable is less than the ratio of the variable *PCI* and the *PCI*Backward* interaction variable, the institution's impact on private enterprise performance remains positive. Meanwhile, institutions encourage the vertical link between foreign direct investment enterprises and domestic enterprises in China through forward link and backward linkage ([Du et al. 2011](#)).

The result also shows that SOEs are primarily vertically linked with small and medium-sized private enterprises in labor-intensive industries, whereas institutional improvements only promote spillover effects from SOEs to small and medium-sized private enterprises in this industry. Since the backward link between SOEs and small and medium-sized private enterprises is weak, the product quality of private enterprises has not met the requirements of SOEs, while Vietnam's favorable business environment that attracts foreign direct investment enterprises, SOEs were more likely than small and medium-sized private enterprises to participate in the backward link with foreign direct investment enterprises, because foreign direct investment enterprises offers higher-quality products with more technological content.

In conclusion, institutions have a positive impact on the performance of small and medium-sized private enterprises, and institutional improvements have a spillover effect from SOEs to small and medium-sized private enterprises. [Yi et al. \(2015\)](#), who share the same viewpoint, argue that institutions have different effects on spillover effects.

When the total impact of institution on the performance of small and medium-sized private enterprises is considered, it is discovered that improving institutions through forward and horizontal spillover channels from SOEs will have a positive impact on labor productivity, which improved by legal institutions, market access, and transparency. Because institutions encourage investment, stimulate enterprise research, and develop, and boost competitiveness ([Lu 2002](#)). Simultaneously, informal costs and transaction costs are reduced, giving enterprises more capital to invest in technology ([Holmes et al. 2016](#)). Human capital policies, such as education and training, promote labor quality, and improve the ability to absorb spillover ([Lee and Kim 2009](#)). Besides, through the backward spillover channel, the impact of the institution on the performance of small and medium—sized private enterprises are proportional to the magnitude of the backward spillover channel.

In contrast, control variables such as enterprise age, external capital ratio, or recent factors have very small effects on enterprise performance. Employees' average income, on the other hand, has a forward impact on the performance of enterprises. These results are supported by research by [Akerlof \(1982\)](#); [Nguyen and Phung \(2018\)](#).

5. Conclusions and Recommendations

Thus, the empirical research result indicates that institutions have a positive impact on the labor productivity of domestic small and medium-sized private enterprises. Furthermore, institutions have a spillover effect from SOEs to small and medium-sized private enterprises.

Horizontal and backward spillover from SOEs to the productivity of small and medium-sized private enterprises are encouraged by institutions. When institutions are improved, the equitization process becomes more efficient, encouraging SOEs to innovate their operating methods, management, improving SOEs performance, and encouraging the ability to learn to imitate or move employees from SOEs to private enterprises, as well as promoting technology transfer when SOEs supply inputs to private enterprises. This result refutes the argument that SOEs compete unfairly, that improving economic institutions creates a favorable business environment, and that fair institutional policies with business sectors will create a driving force for the development of private enterprises. As a result,

the government should continue the institutional reform process in a way that promotes the development of private enterprises, eliminates special preferential institutions, and establishes an institution of equal competition among SOEs and private enterprises, which will promote the efficiency of both enterprise sectors.

Aside from the research findings, the paper has some limitations. For starters, the enterprise survey sample differs from the PCI survey sample, raising concerns about the accuracy of combining these two data sets. However, the random PCI sample aids in the resolution of the retrograde endogenous problem. Secondly, because PCI reflects the voice of enterprises in the provincial business environment, the component PCI indicators are not convincing enough to measure institutional quality. Localities and provinces are law enforcement units, despite the fact that they do not make policies or laws. Different law enforcement capabilities influence policy differences between municipalities and enterprises. Thirdly, the specificities of Vietnamese labor market and market in general have not been taken sufficiently into account. Finally, the research does not include a comparison with a country with a comparable proportion of SOEs in order to provide a more general assessment of the research findings. It is hoped that future research will overcome these limitations, allowing them to strengthen the research findings on institutional impacts on private enterprises via the spillover channel from SOEs.

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