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Do governance and digital infrastructure support Asean-5 business growth?

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ABSTRACT

ASEAN is one of the fastest growing economies in the world and is one of the five largest economies in the world after the US, EU, China, and Japan. ASEAN-5, the founding countries of Indonesia, Malaysia, the Philippines, Singapore, and Thailand ("ASEAN-5"). The ASEAN-5 countries represent 6% of the world's population with a GDP of US$2.75 trillion, growing at an average rate of 3.7% in 2019. With a supportive business climate, ASEAN-5 countries could be the preferred destinations for local or foreign companies to venture into new businesses. This study aims to analyze the impact of governance and digital infrastructure on new business growth in ASEAN-5 countries, using panel data regression approach. This study finds that profit tax, corruption perception, internet user, secure internet and access to electricity are significantly correlated with new business growth. Time to start a business is found to be insignificant but negatively correlated with growth, implying that more efficient bureaucracy promotes business growth.

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Introduction

Investment is one of key drivers on economic growth process. Based on Forgha et al., (2014) investment as well as foreign and domestic investment could encourage economic productivity and improve society's welfare in the long term. Investment itself is affected by some factors such as monetary condition i.e., interest rate, velocity of money, money price etc., also fiscal condition i.e., tax rate and subsidies. In addition, Faroh & Shen (2015) found that economic stability also affects the interest in investment in one country. It is also supported by Onogwu (2018), that investment is also affected by corruption perception and the public infrastructure provided by the government. Corruption perception as mentioned by Onogwu (2018) is a huge issue in the field of good corporate governance field. As Villoria & Lavena (2013) mentioned that corruption cases showed the face of government quality as the country owner and policy maker. Investors will make a thousand considerations to have investment in a country with weak governance system.

In this investment issue, government is a part which has responsibility and rights to put enough consideration in increasing its country Ease of Doing Business index rank, thus it will be able to accelerate the country to facilitate the investment. Dzafic & Babajic (2016) believed that to increase private sector investment, may government be simplifying the business registration process. Hence, the business regulatory and the investment growth has a positive correlation. It means, countries with less investment barrier and simpler investment regulation are growing faster (Djankov, McLiesh, & Ramaloh, 2006).

Corruption perception and simple regulation based on Borgman (2010) is not sufficient to support investment performance. In the digital age, digital infrastructure is also needed to support investment activity. Some researchers believe that secure internet and access to electricity will affect the intention of the investor because it is related to how much cost should investor pay. The more secure the internet, the lesser the economic transaction will be cost. In terms of examining the impact of business regulation towards the investment, World Bank had determined the Doing Business which focused on measuring how effective are the business regulations and the enforcement of business are among 190 countries. In addition, this Doing Business index also elaborates the efficient and effective economic for investment growth and people's welfare.

Messaoud and Teheni (2014) found that business regulation has a strong relationship with economic growth in 162 countries. It is also supported by Ani (2015), that EODB in Southeast Asia, East Asia, and South Asis significantly affected by construction permit, getting credit, registering property and trading across border. While construction permits and getting credit negatively affect the GDP. It is different result from the Bonga & Mahuni (2018) who examined the EODB in Africa and resulted trading across border, getting credit, registering property, dealing with construction permit, and starting a business is affecting the economic growth.

This research aims to examine the impact of governance (proxied by corruption perception) and digital infrastructure to new business growth in ASEAN-5 countries as still no research yet discusses the digital infrastructure effect towards the business growth.

Method

This paper examines the impact of governance and digital infrastructure on business growth by using panel data covering five countries in ASEAN-5: Indonesia, Malaysia, Philippines, Singapore, and Thailand. The data set covers the

period between 2015 and 2019 and consists of a panel of data of new business density, time required to start business, profit tax, corruption perception, internet usage, secure internet, and access to electricity.

Definition of Variables

Measure of governance

To examine the impact of governance upon business growth, we have used three measures of governance, i.e. time required to start a business, profit tax, and corruption. By following Lecuna et al (2020); van Stel et al (2007), we use time to start business as the first measure of governance as this can reflect bureaucracy. Time required to start a business is the number of calendar days needed to complete the procedures to legally operate a business, measured in days.

Next, we use tax by following Ojeka (2011); Henrekson et al (2010), where in this paper, profit tax refers to the amount of taxes on profits paid by the business, measured in percent. Third, we also employed corruption perception variable as used by Lecuna et al (2020); Achim (2017); Mongay & Filipescu (2012); and Anokhin & Schulze (2009). Corruption perception is taken from The Corruption Perceptions Index (CPI), an index published annually by Transparency International. CPI showing the perceived levels of public sector corruption in a country.

Measure of digital infrastructure

To examine the impact of digital infrastructure upon business growth, we also have used three measures of governance, i.e., internet usage, secure internet, and access to electricity. By following Scott et al (2014); Caputo et al (2018); and Guillen & Suarez (2001), we used internet-related variables. Internet usage showing individuals who have used the Internet in the last 3 months. The Internet can be used via a computer, mobile phone, etc. It measured in percent to

Table 1. Variables Definition

Variables	Definition	Reference
Time to Start Business	The number of calendar days needed to complete the procedures to legally operate a business, measured in days	Lecuna et al (2020); van Stel et al (2007)
Profit Tax	The amount of taxes on profits paid by the business, measured in percent	Ojeka (2011); Henrekson et al (2010)
Corruption perception	Taken from The Corruption Perceptions Index (CPI), an index published annually by Transparency International. CPI showing the perceived levels of public sector corruption in a country.	Lecuna et al (2020); Achim (2017); Mongay & Filipescu (2012); Anokhin & Schulze (2009).
Internet usage	Individuals who have used the Internet in the last 3 months. The Internet can be used via a computer, mobile phone, etc. It measured in percent to total population.	Caputo et al (2018)
Secure internet server	Number of distinct, publicly trusted internet server certificates, measured in per 1 million people.	Guillen & Suarez (2001)
Access to electricity	Percent of total population have access to electricity	Scott et al (2014)

total population. Meanwhile, secure internet is the number of distinct, publicly trusted internet server certificates, measured in per 1 million people. Lastly, we use access to electricity that measure percent of total population have access to electricity.

By considering these definitions, we have developed the panel data model as follows:

$$BIZ_{it} = \alpha + \beta_1 TIME_{it} + \beta_2 TAX_{it} + \beta_3 COR_{it} + \upsilon_{it} \quad \text{..... (1)}$$

$$BIZ_{it} = \alpha + \beta_1 INT_{it} + \beta_2 SERV_{it} + \beta_3 ELCit + \upsilon_{it} \quad \text{..... (2)}$$

$$BIZ_{it} = \alpha + \beta_1 TIMEit + \beta_2 TAX_{it} + \beta_3 COR_{it} + \beta_4 INT_{it} + \beta_5 SERV_{it} + \beta_6 ELC_{it} + \upsilon_{it} \quad \text{..... (3)}$$

Where:

BIZ : New Business Density (per 1000 people)
TIME : Time required to start business (days)
TAX : Profit tax (percent)
COR : Corruption perception (index point)
INT : Internet user (percent to population)
SERV : Secure internet server (per 1 million people)
ELC : Access to electricity (percent)

The model in this study consists of three parts, namely the governance model in equation 1, the digital infrastructure model in equation 2, and the full model, a combination of the governance model and digital infrastructure in model 3. In model 1, new business density is a proxy for business growth. as the dependent variable, it is assumed that it is influenced by time required to start business, profit tax, and corruption perception. Furthermore, in model 2 business growth is influenced by internet users, secure internet server, and access to electricity variables. Finally, in model 3 business growth is influenced by six independent variables. Each model was tested using panel data regression with the model selection test stage, then continued with panel data testing. So, the hypotheses in this study are:

Hypothesis 1 (H1) : Business growth is positively affected by governance variables.
Hypothesis 2 (H2) : Business growth is positively affected by digital infrastructure variables.
Hypothesis 3 (H3) : Business growth is positively affected by governance and digital infrastructure variables.

Results and Discussion

The model selection test is carried out to select the right model before testing the panel data. The results of the model selection test are summarized in table 1-3 below:

Table 2. Model Selection Test for Governance Model

Test	Criteria	Result	Conclusion
Chow	Prob>F compared to α	0,9853 > α 0,05	PLS
Hausman	Prob>Chi2 compared to α	0,3865 > α 0,05	Random Effect
LM	Prob>Chibar2 compared to α	0,0002 < α 0,05	Random Effect

Source: Data Analysis (2020)

Table 3. Model Selection Test for Digital Infrastructure Model

Test	Criteria	Result	Conclusion
Chow	Prob > F compared to α	0,0008 < α 0,05	Fixed Effect
Hausman	Prob > Chi2 compared to α	0,3443 > α 0,05	Random Effect
LM	Prob > Chibar2 compared to α	0,0498 < α 0,05	Random Effect

Source: Data Analysis (2020)

Table 4. Model Selection Test for Full-Model

Test	Criteria	Result	Conclusion
Chow	Prob > F compared to α	0,0133 < α 0,05	Fixed Effect
Hausman	Prob > Chi2 compared to α	0,2537 > α 0,05	Random Effect
LM	Prob > Chibar2 compared to α	0,0000 < α 0,05	Random Effect

Source: Data Analysis (2020)

Table 5. Panel Data Estimation Result

Variables	Governance (RE)		Digital (RE)		Full Model (RE)	
	Coef	Prob	Coef	Prob	Coef	Prob
Time to start business	-0,0170	0,018	-	-	-0,0094	0,160
Profit Tax	-0,0548	0,231	-	-	-0,0914	0,013**
Corruption Perception	0,1355	0,000*	-	-	0,0912	0,000*
Internet user	-	-	0,0611	0,016**	0,0119	0,059***
Secure internet	-	-	0,00007	0,000*	0,00002	0,000*
Electricity	-	-	0,1268	0,386	0,0538	0,037**
Constant	-2,6573	0,181	-14,0427	0,310	-6,2111	0,0032
R^2	0,9810		0,7902		0,9965	

Source: Data Analysis (2020)
*Note: *significant in α 0,01; **significant in α 0,05; ***significant in α 0,10*

From the data selection test through the Chow, Hausman, and Lagrange Multiplier (LM) tests, it is concluded that all research models: the governance model (1), the digital infrastructure model (2), and the full model (3) will be tested using the random effect model. Furthermore, panel data testing is carried out with the following results:

Table 4 reports the empirical results for the panel data regression. Both in governance model and the full model, first, there is no significant relationship between time required to start business and business growth, but they negatively correlated indicating that the longer time needed to start a business, reducing the growth of new business. It is arguable that better bureaucracy induces business growth, and in contrast, longer bureaucracy declines the new business growth. It is in line with the finding of Augustin (2019) that longer bureaucracy raising the business costs so that minimize initiatives to undertake business activities. Next, the profit tax variable is found significant in full-model but not in governance model. In both models it negatively correlated to business growth. New business growth declines with

a higher tax imposition. Highter corporate tax rate have significant negative impact on new business growth. There is a significant negative relationship between taxes and the business' ability to sustain itself and to expand. Business owners, especially the small one, perceive tax as a threat for business growth and sustainability (Nazir et al, 2020; Naicker et al, 2018; Ojeka, 2011).

Corruption perception is found highly significant both in governance and full model. Corruption slows down business, reduces government effectiveness and thus economic growth, as it is making the business environment bad (Montes & Almeida, 2017; Dutta & Sobel, 2016). Efforts to control corruption increase levels of trust in the ability of the state and market institutions to enforce law and the rules of trade reliably and impartially. Better control of corruption will also be associated with rising levels of innovation and entrepreneurship (Anokhin & Schulze, 2009). Internet users in a country found positive and significantly affecting new business growth, both in digital infrastructure model and full model. Guillen & Suarez (2001) also found that the numbers of Internet users and hosts create a favorable condition for entrepreneurship and investment. The internet user can be a very useful tool for any company, large or small, local, national, or global one to expand the market (Apavaloaie, 2014). A secure internet server was also found to have a positive and significant relationship with new business growth in both models. Privacy risk could be a barrier in using internet, both for consumers and business owners (Carmen and María José, 2008; Weber, 2010). Thus, a more secure internet server promotes growth.

Lastly, access to electricity found increasing new business growth. It is found significant in the full model. The consensus is that access to energy leads to enterprise creation and increased employment. Research revealed an increase in revenues and profits, and better productivity of a business, enabled by improved electricity access (Scott et al, 2014). According to Afraz et al (2014) and Fjose et al (2010) the lack of access to electricity is one of the most important barriers for enterprises. More broadly, electricity infrastructure and the consumption of electricity are generally understood to be positively correlated with productivity and economic growth (Rud, 2012). Adenikinju (2005) stated that infrastructure plays a critical and positive role in economic development, one of them is through business growth.

Conclusion

This study found that profit tax, corruption perception, internet user, secure internet, and access to electricity significantly correlated to new business growth. Time to start business is found not significant but negatively correlated to growth, implied that more efficient bureaucracy promotes business growth. This research may be used to improve the investment policy quality to gain better Doing Business index and increase the business for the people's welfare in the long term.

Declaration of Ownership

This article is our original work.

Conflict of Interest

There is no conflict of interest to declare in this article.

Ethical Clearance

This study was approved by the institution.

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