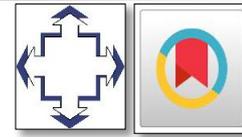


Institutional Analysis of Shadow Economy (Study on ASEAN 7 Developing Countries)



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ABSTRACT

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This study aims to analyze the institutional variables of governance in ASEAN 7 developing countries. The independent variables consist of Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption, while shadow economy is dependent variable. The data used in this study are quantitative data and secondary data by using program Stata 14, the analysis technique used is multiple linear regression panel data. The results show that Voice and accountability has a negative and significant effect on the shadow economy as well as Political stability, Government effectiveness and Control of corruption on the other side. Regulatory quality has a positive and significant effect on the amount of shadow economy. Meanwhile, Rule of law no significant effect on the shadow economy. Underlying the results, the study arranges some policy to reduce negative effect of shadow economy.

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1. Introduction

Institutional economic development must development and change due to increasingly complex economic activities. One way to measure economic performance is by measuring the ups and downs of the business climate of a country or region in comparison with other countries or regions that can reflect the performance of the government concerned in controlling policies and regulations, both at the concept level and at the operational level. The study conducted by the WEF (World Economic Forum) measures Indonesia's competitiveness with 5 (five) significant factors, three factors at the macro level and two factors at the micro level. At the macro level include: (1) not conducive macroeconomic conditions; (2) the poor quality of public institutions in carrying out their functions as facilitators and service centers; and (3) weak technology development policies in facilitating the need for increased productivity. Whereas at the micro level, they include: (1) low business efficiency at the operational level of the company; and (2) the weak business competition climate.

The problem of economic development in developing countries that often occurs in this era is an economic performance, namely the misuse of transactions in carrying out economic activities in a country. So far, a country's economic performance is often measured based on the value of the gross domestic product (GDP), which reflects the country's economic growth. Measurement using GDP to have many weaknesses, especially because the calculation of GDP has not included all the activities that take place in an economy. The implication of the results of the calculation of GDP is sometimes lower (underestimate) than the actual size of the economy, so the economic conditions reflected in the calculation are biased. Activities that take place in the economy but are not included in the calculation of GDP are often considered to be underground economic activities (shadow economy/underground economy) (Mankiw, 2006). Many writers find it difficult to define this shadow economy, but in general Schneider and Enste (2000) define that all transactions not recorded on GDP are a form of the shadow economy.

Shadow economy has become a very serious problem with various dimensions in all income groups of the country and has a significant effect on economic development Bayar, et al. (2016). Behavior that reflects the shadow economy easily spreads in all walks of life in the world, both at lower levels or higher levels. Shadow economy is known by many other names such as the underground economy, the informal economy (unofficial economy), the hidden economy or the black market economy. The following is shown in Figure 1 the amount of shadow economy recorded in Schneider, F (2017) research in 7 ASEAN from 2004 to 2015.

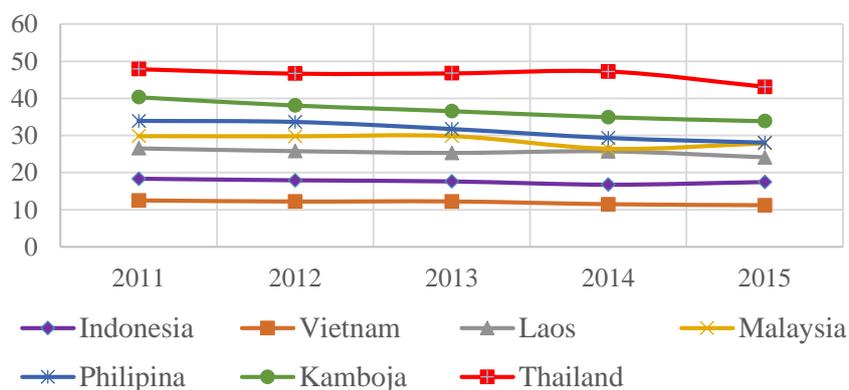


Figure 1. Size of Shadow Economy Development in 2011-2015 (%)

Source: Schneider, F (2017), data processed

Schneider's research results (2017) in estimating the level of the shadow economy in 158 countries for the period 1991-2015 shows the level of the shadow economy in developed countries reaches 8-15% of GDP, while for developing countries the level of shadow economy reaches 30- 45% of GDP. Singh, *et al.* (2012) states that the shadow economy causes significant direct or indirect losses to the economic and social life of a country. Capasso and Japeli (2013) study the extent to which the shadow economy interacts with the development of the financial sector, the results show that the development of the financial sector can reduce tax avoidance and measure the shadow economy, meaning that the development of the financial sector (reducing credit costs) encourages companies to disclose more assets and invest in high-tech projects and that this effect is stronger in mature sectors. Furthermore, increasing judicial efficiency can reduce credit costs and measure the shadow economy. Capasso and Japeli (2013) also found that shadow economy was negatively correlated with the development of the financial sector, even when controlling the development of the financial sector was endogenous.

Shadow economy in ASEAN has increased since 2007, Thailand is country with the biggest shadow economy among ASEAN member countries with average of 6,84% of GDP. Institutional quality exhibits a negative relationship to shadow economy development, except for regulatory quality. Control of Corruption, political stability and the absence of violence and voice and accountability influence shadow economy reduction Maulida R.H. and Darwanto (2018). Various empirical studies have provided very similar conclusions in terms of the shadow economy for countries around the world. Developing countries and countries in transition generally experience a larger size of the shadow economy than developed countries. Vo and Ly (2014) show that the size of the shadow economy in ASEAN varies in the range of 20 percent and 50 percent of the formal economy. However, for ASEAN, the relationship between the shadow economy and financial sector development has not been established empirically. One way that is being pursued in minimizing the level of the shadow economy is the application of principles based on good governance. Good Governance is intended as a managerial ability to manage the resources and affairs of a country in ways that are open, transparent, accountable, equitable, and responsive to the needs of the community (Widyananda, 2008). It is hoped that with this good governance, the government system implemented in the country can be more organized.

The World Bank defines good governance as an implementation of solid and responsible development management, in line with democratic principles, efficient markets, avoiding dislocation of investment funds, and preventing corruption both politically and administratively, carrying out budgetary discipline and creating a legal and political framework for business activity growth (World Bank, 1992). The World Bank is the originator of the idea of introducing good governance as a "public sector management program", in the context of creating good governance within the framework of development assistance requirements.

Institutions in governance can be measured through several indicators recorded in the World Governance Indicators (WGI) published by the World Bank, through the Macroeconomics and Growth Research Development Group since 1996, namely Voice and accountability, Political stability and absence of violence, Government effectiveness, Regulatory Quality, Rule of law, and Control of corruption, with coverage up to 200 countries. The indicator is a reference to measure the level of the shadow economy in a country.

This study tries to complement previous research by examining economic flows that are considered as shadow economy activities in developing countries, especially ASEAN 7 developing countries. Sectors analyzed were shadow economy in the category of drug trafficking, prostitution, gambling, smuggling, piracy, and fraud. Governance with each indicator such as voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption are thought to influence shadow economic activity.

The government was formed to build a civilization and maintain social order systems so that people can live their lives naturally in the context of state life. In its development, the concept of governance underwent a paradigm transformation from the all-state to market orientation (market or public interest), from a strong, large and authoritarian government to a small orientation and less government, egalitarian and democratic, and a transformation of the government system from centralized to decentralize. Therefore, this study takes the title Institutional Analysis of Governance in Shadow Economy in ASEAN 7 of 2004-2015.

2. Literature Review

Institution or Institution

According to North (1991) in Arsyad (2010) Institutions or institutions are human-created rules (constraints) for regulating and shaping political, social, and economic interactions. These rules are formal rules (e.g. laws, constitutions) and informal rules (e.g. social norms, conventions, customs, values systems) and the enforcement process (enforcement) of those rules.

The main rules include regulations that enable the community to interact. As an abstraction, Challen (2000) in Yustika (2013) reveals some general characteristics of institutions: (1) Institutions are socially organized and supported Scott (1989) which usually distinguishes every obstacle to human behavior, for example, biological things (biological constraints) and physical obstacles (Physical constraints). (2) Institutions are formal rules and informal conventions, as well as codes of behavior (North, 1990). (3) Institutions are slowly changing over activities that have been guided or hindered and (4) institutions also regulate prohibitions and conditional permits (North, 1990).

Government Governance

Good governance as a condition that guarantees about the process of alignment, equality, and balance of participation mutual control carried out by components such as government (government), the people (citizens), and entrepreneurs (business). The three components have the same and equal relationship system. If these similarities are not comparable, refraction is ensured the concept of Good Governance (RidwandanSodik, 2009). In general, good governance is a balanced interaction between government agencies and the community and the private sector, where government agencies impose policies which balanced for the development of society and the private sector.

World Bank (1992) defines good governance as an implementation of solid and responsible development management, in line with the principles of democracy and efficient markets, avoidance of dislocation of investment funds and prevention of corruption, both politically and administratively, carrying out budgetary discipline and creating legal and political framework for the growth of business activity. Several principles underlie the importance of understanding good governance. These principles are (World Bank, 1992): Community participation, upholding the rule of law: transparency, caring for stakeholders, oriented towards consensus, equality, Effectiveness, and efficiency: accountability and Strategic Vision.

Shadow Economy

Shadow economy or often referred to as Shadow economy has the same existence as the formal economy sector. Smith (1994), for example, defines Shadow economy as the activity of producing goods and services based on market prices, both legal and illegal but not recorded, or reported in statistics so that it escapes official GDP calculation. Feige (1979), defines Shadow economy by including all activities that are not reported and cannot be measured through applicable community activity monitoring techniques.

Feige (1990) grouped shadow economy into 4 (four) groups, namely: First, the illegal economy is an illegal economic activity that includes income generated by economic activities that violate or

violate regulations (laws), such as selling buy stolen goods, taxation, smuggling, gambling and drug, and narcotics transactions. Second, the unreported economy is revenue that is not reported, especially to the tax authority to avoid the obligation to pay taxes. Third, the unrecorded economy is revenue that should be recorded in government statistics but not recorded. As a result, there is a difference between the amount of income or expenses recorded in the accounting system with the actual value of income and expenses. and fourth, the informal economy, which is income that is received informally by economic actors. Economic actors in this sector may not have official permission from the authorities, work agreements, or financial credit.

Research Framework

Figure 2 shows framework the impact Voice and accountability, Political stability and absence of violence, government effectiveness, regulatory quality, rule of law, control of corruption on the shadow economy.

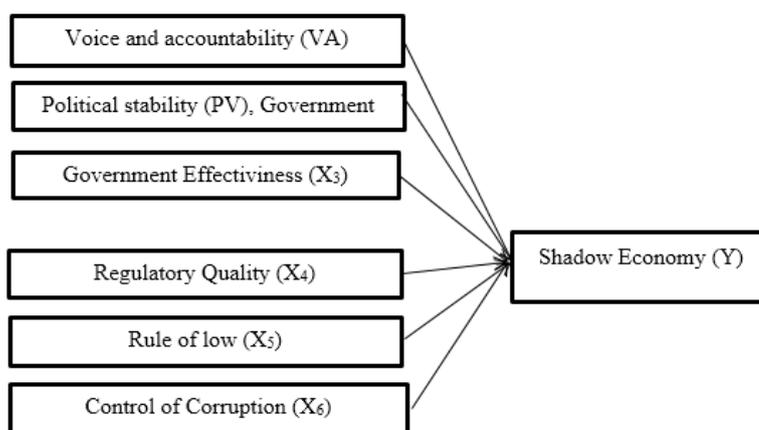


Figure 2. Framework

Hypothesis

- H1: There is a negative influence of voice and accountability on shadow economy in ASEAN 7 in 2004-2015
- H2: There is a negative influence of political stability and absence of violence on shadow economy in ASEAN 7 in 2004-2015
- H3: There is a negative effect of government effectiveness on shadow economy in ASEAN 7 in 2004-2015
- H4: There is a positive influence of regulatory quality on shadow economy in ASEAN 7 in 2004-2015
- H5: There is a positive influence of the rule of law on shadow economy in ASEAN 7 in 2004-2015
- H6: There was a negative influence of control of corruption on shadow economy in ASEAN 7 in 2004-2015

3. Research Method

Operational definition

Operational definitions of the variables in this study will be described in the table 1.

Table 1. Operational definition

No	Variable	Operational definition	Source
1	Voice and Accountability (VA)	Reflecting the understanding of the degree to which a country's citizens should engage in the choice / determination of their government, as well as freedom of expression, freedom of	WorldBank –Worldwide Governance Indicators

		association and freedom of the media.	
2	Political Stability and Absence of Violence (PV)	Reflecting expectations of the threat of democratic or unconstitutionally or violently (coup) overthrowing the government through politically motivated violence and terrorism.	WorldBank –Worldwide Governance Indicators
3	Government Effectiveness (GE)	Reflecting the understanding of the quality of public services, the quality of public service, the degree of independence from political pressure, the level of policy development and execution and the reputation of the government's commitment to policy.	WorldBank –Worldwide Governance Indicators
4	Regulatory Quality (RQ)	Reflecting the perception above the ability of the government to formulate and implement policies and regulations that enable and promote the development of the private sector.	WorldBank –Worldwide Governance Indicators
5	Rule of law (RL)	Reflecting the perception of the extent to which the government meets the community's expectations of the quality of law enforcement, property rights, and justice, and the possibility of crime and violence.	WorldBank –Worldwide Governance Indicators
6	Control Of Corruption (CC)	It is an aggregation of various indicators that measure the perception of the extent to which public power is distorted for personal gain, both on a small and large scale of corruption.	WorldBank –Worldwide Governance Indicators
7	Shadow Economy (FE)	Represents the measurement results amount of shadow economy in a country as percentage of total GDP	Working paper ,1710 Schneider, F 2017

Population and Sample

The type of population used in this study is developing countries in ASEAN. In this analysis, the sampling method uses simple random sampling which is a random sampling technique, regardless of population strata. The sample in this study was 7 countries obtained from population data that had complete data and time availability from 2004 to 2015 namely Indonesia, Vietnam, Laos, Malaysia, the Philippines, Cambodia, and Thailand. In this study panel, data regression was used. Data with panel characteristics are a combination of cross-section data and time-series data (Kuncoro, 2011).

Data analysis method

The analytical approach used is the regression model for the panel data using STATA version 14.0. To predict the coefficient of regression in this study, the transformation to logarithmic (log) form is performed to obtain the following equation as shown in Equations. (1)

$$SE = \beta_0 - \beta_1VA - \beta_2PV - \beta_3GE + \beta_4RQ + \beta_5RL - \beta_5CC \mu \dots\dots\dots(1)$$

Where SE is Shadow economy, VA is voice and accountability, PV is political stability and absence of violence, GE is government effectiveness, RQ is regulatory quality, RL is rule of low, and CC is control of corruption.

Fixed Effect (FE)

The FE model has variable intercepts that are ideal for individuals and time, where each cross section unit is defined from the Gujarati model in time series equations, and Porter (2012) as equations (2) below:

$$Y_{it} = \alpha_1 + \alpha_n D_n + \dots + \beta_3 X_{3it} + \dots + \beta_n X_{nit} + e_{it} \dots \dots \dots (2)$$

The FE model has many shortcomings, namely the lack of degrees of freedom due to the limited number of samples and there is multicollinearity as a result of the large number of dummy variables whose estimation abilities are still limited.

Random Effect

This model is almost the same as the fixed effects model, only the difference is in estimating the error term in Gujarati and Porter (2012) are as equation (3) below:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \dots + \beta_n X_{nit} + e_{it} \dots \dots \dots (3)$$

Therefore, it is necessary to do a Hausman Test with the provisions that if the resulting probability is significant or more than α 5 percent, the FE model is used, but if it exceeds α 5 percent then choose the random effect

4. Results and Discussion

Shadow Economy and Institutional Image in ASEAN 7

Figure 2 the average shadow economy in 2004-2015 in ASEAN 7 is 30% of GDP. Countries with a shadow economy above the ASEAN average are Thailand, Cambodia and the Philippines. In general, the shadow economy has declined since 2011, although the decline has not been significant. The ASEAN countries with the biggest shadow economy are Thailand with an average of 47.82% of GDP, followed by Cambodia with an average of 45.25%, and the Philippines with 34.26%. Vietnam and Indonesia are the two developing countries in ASEAN with the lowest shadow economy. The percentage of shadow economies of the two countries is below 20% of the GDP of each country. Although the magnitude of the economic shadow in Indonesia is among the lowest, its real value is the second largest in ASEAN 7. The value of the shadow economy in Indonesia reached US \$150 billion in 2015, which is ranked second in ASEAN. Thailand is a country with the highest shadow economic value of US \$173 billion. The country with the smallest real value of shadow economy is Laos, which only reaches the US \$3.4 billion.

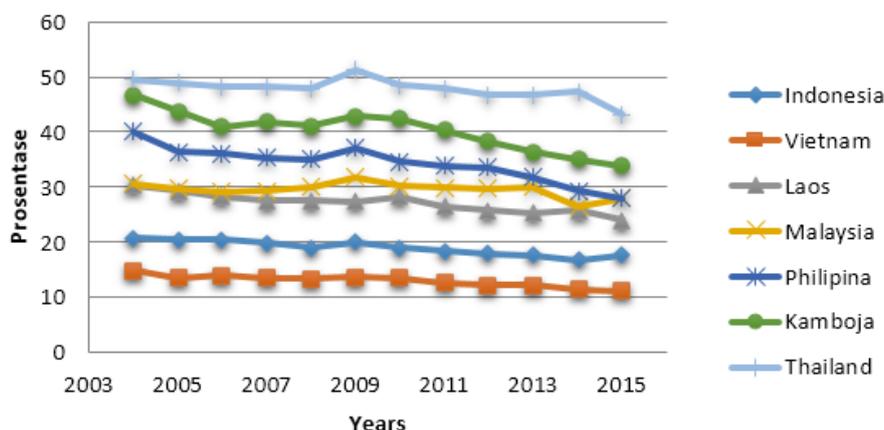


Figure 2. Development of Shadow Economy in ASEAN 7 Developing Countries In 2004-2015
Source: Schneider, F (2017), data processed.

Table 2 shows that from the institutional quality in the ASEAN 7 region which is dominated by developing countries it can be said to have a bad institutional condition. The institutional quality indicators of developing countries in ASEAN 7 generally show negative signs, which means the institution is still poor. Malaysia is a developing country that has better institutional quality than other developing countries in the ASEAN region. Malaysia scored positively on five government indicators except for the voice and accountability indicator. Thailand received positive values for government

effectiveness and regulatory quality, other indicators still showed negative. Indicators of political stability and absence of violence (PV), Vietnam shows that it has reached a fairly good level of institutional, where PV shows a positive value of 0.22. However, other indicators still show poor quality. Overall Indonesia and the Philippines have sub-zero institutional indicators. However, each country has shown improvement in institutional quality in recent years. On average, Vietnam, Cambodia, and Laos still exhibit poor institutional quality.

Table 2 ASEAN Institutional Indicator Average 7 in 2004-2015

Country	VA	PV	GE	RQ	RL	CC
Indonesia	-0.01	-0.97	-0.27	-0.36	-0.62	-0.70
Vietnam	-1.44	0.22	-0.23	-0.60	-0.48	-0.60
Laos	-1.68	-0.24	-0.84	-1.05	-0.95	-1.14
Malaysia	-0.41	0.19	1.08	0.56	0.47	0.18
Filipina	-0.01	-1.38	0.02	-0.14	-0.46	-0.63
Kamboja	-0.97	-0.28	-0.88	-0.48	-1.10	-1.16
Thailand	-0.48	-1.13	0.30	0.24	-0.12	-0.35

Source :WorldBank –Worldwide Governance Indicators

Panel Data Regression Analysis Results

In the panel data analysis there are three approaches used, namely Pooled Least Square (PLS), fixed effects and random effects. After testing, the results obtained are as follows.

Table 3. Estimated Results

Variable	Coefficient		
	OLS	Fixed Effect	Random Effect
va_x1	-11.66393	-7.078.107	-11.66393
pv_x2	-9.429146	-2.843.695	-9.429146
ge_x3	-12.3283	-0.9964194	-12.3283
rq_x4	40.5892	-0.1388331	40.5892
rl_x5	8.416966	-6.470.437	8.416966
cc_x6	-23.06118	-5.182.271	-2306118
_cons	15.52983	1.732.549	1552983
Prob(F-statistic)	0.0000000	0.0000000	0.0000000

Source : STATA, 14.0, Processed (2018)

a. Chow Test

First the digitization panel data uses the fixed specification effect. The test performed is the Chow test. This test aims to determine whether the model should use fixed effects or Pooled Least Square (PLS). To determine the choice between PLS and FE, the FE output can be seen. If P-value (Prob> f) <alpha 0.05, using fixed effect. So the best choice is using fixed effects. The results of the estimation using fixed are as follows:

Table 4. Fixed Effect Test

Fix Effects Test	Prob> F = 0.0000
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Source : STATA, 14.0, Processed (2018)

Based on these results because P-value (Prob> F) of 0.0000 so H1 is accepted. Then the fixed effect model is a model that should be used.

b. Correlated Random Effect-Hausmann Test

This test aims to determine whether the random effect model is better used than the fixed effect. If the results of the probability P-value (Prob> chi2) <alpha 0.05, the study uses Fixed effect model.

Table 5: Correlated Random Effects - Hausman Test

Hausman Test	Prob.chi2 -0,0000
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Source : STATA, 14.0, Processed (2018)

Based on these results the results of P-value (Prob> chi2) alpha 0.0, the best choice is FE rather than RE.

Classic Assumption Test

The classic assumption test is performed to determine the condition of the data used in this study. This is done to obtain the right regression model for use in research. The classic assumption tests performed on panel data include multicollinearity test and heteroscedasticity test.

a. Multicolonearity Test

To detect the presence or absence of multicollinearity in the data regression model of the panel, you can see the Free Variable Correlation Matrix if there is a correlation coefficient of more than 0.80 then there is multicollinearity (Gujarati and Porter, 2006). The results of the multicolonearity test can be seen in Table 6 below:

Table 6. Multicolonearity Test Results

	se_y	va_x1	pv_x2	ge_x3	rq_x4	rl_x5	cc_x6
se_y	1.0000						
va_x1	0.2383	1.0000					
pv_x2	-0.4451	-0.5672	1.0000				
ge_x3	0.0805	0.5001	0.0542	1.0000			
rq_x4	0.3700	0.6494	-0.0858	0.8949	1.0000		
rl_x5	0.0434	0.4236	0.1469	0.9785	0.8643	1.0000	
cc_x6	-0.0000	0.4645	0.1419	0.9647	0.8707	0.9682	1.0000

Source : STATA, 14.0, Processed (2018)

From the table above, it can be seen that there is a coefficient between independent there which is above 0.80, thus the data in this study occur multicolliniarity problems.

b. Heteroscedasticity Test

This test in is used to check whether there is an imbalance of variance between the residuals of one experiment and another in the regression model. Using the Wald method, can be used to determine the presence or absence of heteroscedasticity in a model. This can be seen in the output if the probability of significance is above α 5 percent then heteroscedasticity does not affect it and vice versa if it is below α 5 percent then it is exposed to heteroscedasticity.

Table 7. Breuches-Pagan Test Results PLS

chi2 (1)	0.8
Prob> chi2	0.371

Source : STATA, 14.0, Processed (2018)

Table 8. Modified Wald Test FE

chi2 (7)	143.65
Prob> chi2	0,0000

Source : STATA, 14.0, Processed (2018)

From the results of the PLS Breaches-Pagan Test table shows Prob> alpha (0.05) or heteroskedasticity does not occur. However, if tested with the Modified Wald FE test it shows Prob> alpha (0.05) or heteroscedasticity problems occur. Some assumptions in panel regression that are often not met are the assumptions of multicollinearity and heteroscedasticity.

The method most often used to overcome the problem of not fulfilling assumptions in panel data regression analysis is to use the SUR (Seeming Unrelated Regression) method. Zellner developed the SUR model in 1962 which is a description of the multiple regression model and is part of the linear regression model. The SUR model is composed of several equation structures. That means each (dependent and independent) variable is in one program. Errors from various systems are associated within the SUR model. The study results indicate unfavorable results if you are still using the pattern. So preferred to use the SUR approach in this analysis to solve these problems. The results of the SUR treatment can be seen as follows in the table:

Table 9. SUR Method Test Results

Variabel	T	Probabilitas
va_x1	-11.66393	0.000
pv_x2	-9.429146	0.000
ge_x3	-12.3283	0.041
rq_x4	40.5892	0.000
rl_x5	8.416966	0.266
cc_x6	-23.06118	0.000
_cons	15.52983	0.000
R-squared	0.7298	
Prob(F-statistic)	0.000	

Source : STATA, 14.0, Processed (2018)

Statistical Test Results

a. Coefficient of Determination (R^2)

Determination Coefficient Test (R^2) aims to find out how far independent variable variations can properly explain dependent variable variations. Based on the regression results obtained adjusted R^2 coefficient as follows:

Table 10. Determination Test Results (R^2)

Observasi	R^2	Chi square	P-Value
84	0.7298	226.87	0.000

Source : STATA, 14.0, Processed (2018)

The coefficient of determination or goodness of fit obtained an R^2 figure of 0.7298. This means that the contribution of all independent variables in explaining the dependent variable was 72.9 percent. The difference of 27.1 percent is explained by other variables outside the model.

b. Simultaneous Test (F)

Based on the analysis using stata 14.00 software, the F probability is 0.000000. Means that at a significance level of 5 percent, the probability of F is less than the critical value, the F test is significant. Therefore, it can be concluded that all variables jointly affect the dependent variable. Variables VA, PV, GE, RQ, RL, and CC together have a significant effect on the implementation of the shadow economy.

c. Partial Test (t)

The results of the partial test analysis indicate that three independent variables have a significant effect and three other independent variables that are not individually significant that affect the dependent variable. The following table summarizes the partial test of independent variables on the dependent variable:

Table 11. Summary of Partial Test Results

Variabel	T	Kritis	Probabilitas	Keterangan
VA	-11.66393	0.05	0.000	Significant
PV	-9.429.146	0.05	0.000	Significant
GE	-12.32.830	0.05	0.041	Significant
RQ	40.58.920	0.05	0.000	Significant
RL	8.416.966	0.05	0.266	Not significant
CC	-23.06.118	0.05	0.000	Significant

Source : STATA, 14.0, Processed (2018)

Test of hypotheses

The objective of the study is to examine the impact of voice and Voice and accountability, Political stability and absence of violence, government effectiveness, regulatory quality, rule of law, control of corruption on the shadow economy, to achieve this of hypotheses are analyzed.

H₁: Voice and Accountability has a significant negative effect on the Shadow Economy.

Voice and accountability are obtained -11.6639 by having a probability of 0.0000 with a significance level of 5 percent which indicates that VA has a negative effect on the amount of shadow economy. This means that if there is an increase in the VA index will reduce the shadow economy by 11.66 percent. The results of the first hypothesis testing namely voice and accountability have a significant negative effect on the shadow economy. Voice and accountability describe the level of a democratic society and the transparency of the government in running its government. Besides, people also have freedom of expression including freedom to carry out economic activities.

This condition is beneficial for the community because they can show their innovations freely, including the freedom to carry out economic activities without feeling too supervised by the government. This makes economic actors move to the official economy so that the shadow economy activities are reduced. Besides that democracy better reflects the freedom of the people to determine the desired leaders and legislators and to control the running of the government. This supports the research of Razmi and Jamalmanesh (2014) when people's desires can be voiced well by political parties and parliamentarians, the public's desire to contribute to the country will increase and the shadow economy will decline.

H₂: Political stability and absence of violence has a significant negative effect on Shadow Economy.

The regression coefficient of -9.4291 with a probability of 0.0000 in a significance level of 5 percent, the variable political stability and absence of violence individually significantly affect the amount of shadow economy which shows that if there is an increase in the PV index will reduce the shadow economy by 9.43 percent (*ceteris paribus*). The test results namely political stability and absence of violence have a significant negative effect on the shadow economy. Domestic political stability can affect a country's economy. Political instability can create uncertainty in business.

The political situation is closely related to a country's security. The unstable political situation of the country can cause chaos and violence in various places and hinder the enforcement of property rights. This condition can serve as a background to the rules of rapid change which increase the risk and cost of adapting to new regulations. Therefore, a more stable political condition is expected to increase economic stability. Rezmi, *et al.* (2013) states that political stability has a negative relationship with the amount of shadow economy. Therefore, a stable political and security situation of a country can reduce the shadow economy. While the unstable political situation of the country can cause chaos and violence in various places and hinder the enforcement of property rights.

H₃: Government effectiveness has a significant negative effect on the Shadow Economy.

The analysis results obtained government effectiveness variables of -12.3283 with a probability of 0.041 in a significance level of 5 percent, which means there is a significant effect if an increase in

the index of government effectiveness variables will reduce the shadow economy by -12.3283 percent (*ceteris paribus*). The results of government effectiveness testing are negative and significant. Other factors that can be used to measure the quality of institutions are the effectiveness of government in providing public services and the government's commitment to implementing policies. Fast and well-distributed public services are very beneficial for economic agents.

Economic activity will become more efficient; Besides, the government's consistency in implementing its policies will enable economic agents to be protected against their activities. Increasing the effectiveness of the government will attract shadow economy actors to the real economy which in turn will have an impact on the decline in shadow economy activities.

H₄: Regulatory quality has a significant positive effect on the Shadow Economy.

The analysis shows that the regulatory quality variable is obtained by 40.5892 with a probability of 0.0000 with a significance level of 5 percent, which means that the individual regulatory quality variable significantly influences the amount of shadow economy if an increase in the index of government effectiveness variable will increase the shadow economy by 40.59 percent (*ceteris paribus*). The intensity of regulation is another important cause of the emergence of Shadow economy. Regulation has the objective to regulate the market by applying a set of rules and restrictions. Regulations can be in the form of laws or other regulations that are usually related to labor and labor regulations (including restrictions on foreign workers), regulations in the field of export and import, and so forth.

As a result of the enactment of various regulations in the economy, it will limit individual choices in the formal economy or other words increasing the intensity of regulation will reduce freedom or limit individuals to engage in the formal economy sector (Schneider and Enste 2000). In general, an increase in the intensity of regulation can also trigger a substantial increase in labor costs in the formal economy. However, because the increase in labor costs can be easily transferred to workers, the regulation will provide incentives for workers to participate in Shadow economy activities to avoid the burden of these costs.

The impact of regulation on the shadow economy has been investigated empirically with a model from Johnson *et al.* (1997) which shows that countries with high intensity of regulation will have a greater amount of shadow economy. Likewise, the impact of labor regulation on the shadow economy has been proven empirically by Johnson *et al.* (1998b). Maulida and Darwanto (2018) in his research based on the results of proving a hypothesis using panel data regression analysis proved that the regulator quality variable (rule of law) showed a positive sign. This means that an increase in the index, which also reflects an increase in institutional quality, will increase the amount of shadow economy.

H₀₅: Rule of law does not significantly effect on Shadow Economy.

The rule of law is obtained at 8.4169 probability of 0.266 in the 5 percent significance level which means that the rule of law variable individually is not significant in influencing the amount of shadow economy. According to Albert Yen Dicey there are three of fundamental element in the rule of law, namely supremacy of law, equality before the law and due process of law. Rule of law in ASEAN 7 developing countries has an average value of -0,466 which show that in ASEAN 7 has a bad rule of law which means community legal awareness in developing countries is still low. In addition, in developing countries there are still many violations of the law, for example corruption in government.

The rule of law test results are positive but do not affect the shadow economy, the results of the study are in line with research conducted by Schneider *et al.* (2010). This study argues that regulation is an important determinant for the development of the shadow economy in transition countries and

developed countries. However, for developing countries, the regulation is not so important that it does not affect the development of the shadow economy.

H₆: Control of corruption has a significant negative effect on the Shadow Economy.

The regression coefficient of -23.0611 with probability 0.0000 indicates that the variable control of corruption individually significantly affects the amount of shadow economy if there is an increase in the CC index will reduce the shadow economy by 23.06 percent (*ceteris paribus*). The test results have a significant negative effect on the shadow economy. This supports the research of Dreher *et al.* (2008) examining the relationship between institutional quality with corruption and the shadow economy. The sample used consisted of 78-135 countries from various continents. The second equation consists of corruption as a dependent variable and shadow economy and institutional quality as an independent variable accompanied by a control variable. The results obtained reinforce the results of previous similar studies, which show that corruption and the shadow economy are substitutes. The influence of institutional quality on corruption and shadow economy is marked negative and significant, which means that improving institutional quality will reduce the amount of shadow economy and corrupt practices. In line with Razmi and Jamalmanesh's (2004) research that corruption control (CC) causes a decrease in the amount of shadow economy.

5. Conclusion

This study aims to determine and analyze the institutional variables of governance towards the shadow economy in developing ASEAN 7 countries. Based on the above discussion, it can be concluded that the average shadow economy in 2004-2015 in ASEAN 7 is 30% of GDP. Where ASEAN 7 countries that have the biggest shadow economy are Thailand, Cambodia and the Philippines. In the period of 2004-2015, Thailand is a country with the largest shadow economy among the ASEAN 7 developing countries with an average of 47.823% of GDP. While Indonesia and Vietnam have a low shadow economy while institutional quality in ASEAN 7 still shows a negative sign which means institutional quality is still poor. Malaysia is a developing country that has the best institutional quality among developing countries in ASEAN 7.

The test results show that simultaneously the six independent variables significantly influence the shadow economy with R square of 0.729794 while the partial test results show that Voice and accountability, Political stability and absence of violence, government effectiveness, Control of corruption significantly negative effect on the shadow economy. Regulatory quality has a significant positive effect on the shadow economy and the rule of law has no significant effect on the shadow economy.

Reducing the amount and growth of Shadow economy can be done by improving the quality of government effectiveness through bureaucratic/institutional reforms as well as recruitment of human resources as the driving wheel of government and strengthening control of corruption through the implementation of transparency in the management of government budgets and transparency of the taxation system with the help of information technology. Besides, improving government regulations on various economic sectors should be done to prevent and reduce the impact and magnitude of the shadow economy. Clear, structured and non-overlapping regulations and minimizing additional costs in the economy will effectively reduce the size of the shadow economy.

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