

Total Tax Rate and Shadow Economy in ASEAN Countries

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Abstract

This study investigates a total tax rate and shadow economy in ASEAN from 1991 to 2015. The critical variable in this study is the shadow economy as dependent variables. Then total tax rate, ATMs number per 100,000 adults, deposit interest rate, and GDP deflator as independent variables. Data obtained from the country indicators at the World Bank and Global Economy. The writers use quantitative research methods with the Generalized Least Squares regression model. The result shows that the shadow economy existence. The increase of the total tax rate, the increase of GDP deflator, and the decrease of deposit interest rate on the shadow economy, causing considerable losses to government revenue. This study provides strategic information to policymakers in the tax policy review.

Keywords: total tax rate; shadow economy; tax evasion

JEL classification: (H26)

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1. Introduction

Taxes are an important and crucial tool for government administration in both developed and developing countries. Researchers believe that the economy is not only generating tax revenue for public financing but also an income redistribution from the rich to the poor (Miskam et al., 2013). However, there are problems in that tax, shadow economy, and tax evasion are considered an outbreak during this decade in the economy. It is considered the root of the economic crisis experienced now (Leventi & Matsaganis, 2013; Matsaganis & Leventi, 2013).

The economic well-being of the community can significantly reduce if the tax level is too large due to inefficiencies in the tax system. Because

of this, the community has become an incentive to avoid taxes and conduct business transactions in the shadow economy. Tax evasion can define as an illegal practice in which affected a person to avoid tax liability and tax payments; therefore, tax evaders prone to criminal prosecution. The tax evasion issue is a significant concern at national and international levels. Noncompliance issues become important for violating the tax collection system and reduce the government's efforts to increase public revenue collection (Miskam et al., 2013; van Dunem & Arndt, 2009).

Tax evasion is illegal tax evasion by individuals, corporations, and partnerships. Tax evasion often makes taxpayers deliberately did not give real situation on

tax authorities to reduce his tax liability and dishonest tax reporting, as reported lower revenue, profit lower than in actual, or superiority of a tax deduction. Tax evasion is a severe warning to the business environment because it can reduce the public institution's reputation (Grgić & Terzić, 2014). Because the government as public institutions play a role in education, health, and infrastructure, it costs a lot, so public institutions need increasing tax for financing purposes (Pantoja & Peñaloza, 2014). Tax evasion is an activity that is usually associated with the shadow economy (Tenidou et al., 2015).

A shadow economy is a place where people can do business transactions because their welfare can increase if they are not subject to high taxes. However, due to illegal shadow economy activities, the adverse effects of economic activities that lead to crime can occur. Shadow economy is defined and measured as a not formal economic sector because some of the activities undertaken income received are to avoid government regulation or to avoid the obligation to pay taxes (BUEHN & SCHNEIDER, 2016; Stankevicius & Leonas, 2015). Shadow economy is a large scale in developing countries that show inefficiencies in the country's tax system. The shadow economy existence is individual reflection who is motivated to hide economic activity, both due to its business less profitable if practiced on the formal sector, or because the event is illegal (Blackburn et al., 2012). Shadow economy mostly unlawful and therefore, hide their activities to avoid tax payment and smuggling (Nchor & Konderla, 2016).

Based on Nejad (2011) reported that goods smuggling due to the tax rate, it was concluded that a higher tax rate would mislead higher tax evasion rates, because of smuggling activity. Tax evasion examples are not reporting income and sales, exaggerating

a tax deduction and tax credits, and an error in filling out tax forms (Alm, 2019; Mangoting et al., 2015). Based on Ismail et al. (2014), tax evasion caused by transactions without invoice and input tax reimbursement with fake invoices. Tax evasion becomes a severe warning to income tax as a consequence and will affect government spending allocation. Government spending provides benefits to taxpayers through excellent public service, adequate public facilities, and infrastructures like roads, bridges, schools, health centers, and hospitals. However, in some countries, tax payment benefits are still not maximized (Mangoting et al., 2015).

2. Research Method

This study's purpose is theoretical research outlining the relationship between the shadow economy determinants model. The author studies the relationship between Total Tax Rate to Shadow Economy, which regresses with three other explanatory variables. The type of data is secondary data, and the sources of data are using data from the World Bank indicator database for independent variables (The World Bank, 2020). Meanwhile, for the dependent variable or shadow economy, data is taken from (The Global Economy, 2020). The data coverage in this study is from 1991 to 2015 in ASEAN countries. Because the shadow economy data is limit from 1991 to 2015. The author covers ASEAN countries because the shadow economy is high in developing countries like the majority of ASEAN countries. ASEAN countries have the potential to become developed countries because they are the most developed emerging markets in Asia if the tax system is efficient. Then the variables and measurement adopt the several variables of (Nchor & Konderla, 2016) "ISSN": "12118516", "abstract": "This study investigates the underground economy of Czech Republic and the associated losses in tax revenue. The presence of an underground economy may

not necessarily be bad for the economies in which they prevail but they could cause huge losses to government revenue and could also constitute serious violation of labour regulations. The study uses the Currency Demand Approach. It measures the size of the underground economy in two stages: a model.

The procedures of analysis as a follow the Total Tax Rate (Total tax rate measure from taxes paid the amount by businesses after accounting for deductions and exemptions as part of their commercial profits. This tax will cause some businesses not to put their money in the banking system to avoid taxes. Then increase in ATMs per 100,000 adults (Automated teller machines are computerized telecommunications device that provides access to financial transactions in a public place for financial institutions clients), will lead to a reduction in money amount held by the public. Then increase in Deposit Interest Rate (Interest rate paid by commercial banks for current accounts), time deposits, or savings will encourage individuals to invest their money in the bank. Furthermore, an increase in GDP deflator (current local currency GDP to constant local currency GDP ratio), will cause individuals to hold more cash for transactions. After that, due to many business transactions is not taxable; the more excellent shadow economy, the higher the loss on government tax revenues.

3. Results And Discussion

3.1 Results

The study used a Generalized Least Squares regression, with Shadow Economy as the dependent variable. Then Total Tax Rate, ATMs per 1,000 adults, Deposit Interest Rate, GDP Deflator, and shadow economy or Shadow GDP as independent variables. The models are also statistically substantial from the Wald test. Coefficients can interpret as follows: Total Tax Rate and GDP Deflator have positive relations to Shadow Economy with a 5% significance level. Then, ATMs per 1,000 adults to Shadow Economy is not significant. Next, Deposit Interest Rate has adverse relations to Shadow Economy with a 1% significance level. After that, R^2 regression results in 0.6182, indicating overall explanatory variables can explain 61.82% of variations in Tax Revenue Lost.

Generalized Least Squares use the linear regression model to estimate unknown parameters when there is some degree of correlation between residuals in the regression model. Therefore, the use of Ordinary Least Squares is statistically inefficient to make a misleading conclusion. Then Generalized Least Squares are used when the assumptions required for the Ordinary Least Squares method, namely homoscedastic and non-auto correlation, are not met.

Table 1. Generalized Least Squares with Shadow Economy as Dependent Variable

Variables	Coefficients (Standard errors)
Total Tax Rate (β_1)	0.297086* (0.1370368)
ATMs per 100,000 adults (β_2)	0.0401409 (0.0413166)
Deposit Interest Rate (β_3)	-1.027098* (0.4579441)
GDP Deflator (β_4)	0.167324* (0.0380605)
R^2	0.6182
Wald chi2(4) & P-value	33.24*
N	82

Notes Generalized Least Squares, errors in parentheses.

* $P < 0.05$. Correlation is significant at the 0.5 level

Table 2. Diagnostic Test

Test Name	Probability	Result Before Treatment	Treatment	Outcome After Treatment
Wooldridge Test for Autocorrelation	0.0201	Autocorrelation	Generalized Least Squares	Non-autocorrelation
Breusch Pagan / Cook Weisberg Test for Heteroscedasticity	0.3347	Homoscedasticity	-	Homoscedasticity
Mean VIF Multicollinearity	1.33	Non-multicollinearity	-	Non-multicollinearity
One-Sample Kolmogorov-Smirnov Test against Theoretical Distribution Normal (Combined K-S)	0.277	Normal	-	Normal

3.2 Discussion

Figure 1 illustrates the estimated Shadow economy and total tax rate. This figure shows the shadow economy and total tax rate, and in ASEAN countries decreased from 1991 to 2015. The total tax rate (% of the commercial profit) in 2005 amounted to a 34.63% decline to 28.42% in 2015. The shadow economy in 1991 amounted to 34.61% fell to 25.81% in 2015.

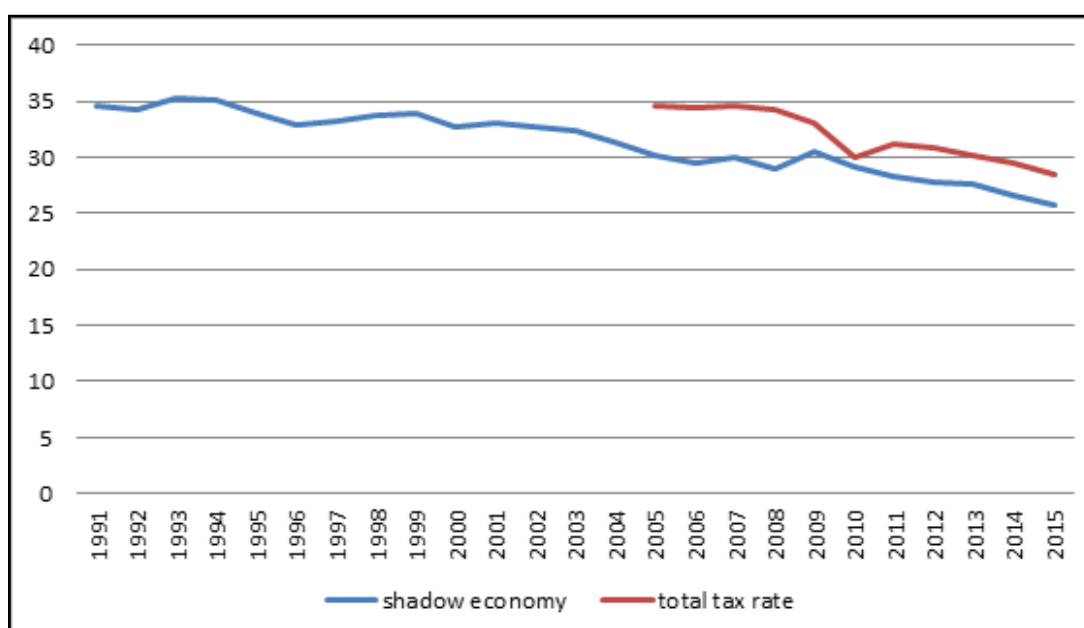


Figure 1. Shadow Economy and Total Tax Rate

Sources: Global Economy (2020) & World Bank (2020)

Apart from the graphic evidence above, there is much evidence that states that an increase in the tax rate can increase tax evasion, which causes the shadow economy to develop. According to Blackburn et al. (2012), the shadow economy arises because business profits reduce if it operates in the formal sector. Then according to

Nejad (2011), an increase in the tax rate caused an increase in the level of smuggling of goods in the informal sector. Next, according to Allingham & Sandmo's (1972) study, found a positive relationship between tax rates and tax evasion. Another research by Clotfelter (1983) revealed that a higher tax rate tends to encourage tax

evasion. Fisman & Wei (2004) checked tax rate specific to China (tariff rate plus value-added tax) and found the tax evasion gap highly correlate with a tax-level imposed state. As well as confirm higher taxes loss for products because of higher taxes level. Ali et al. (2001) and Nur-Tegin (2008) found a positive relationship between tax rates and tax evasion.

According to the author's perception, this is because, in developing countries, people have negative perceptions over the government. The purpose of the government to impose taxes is to provide public goods and services for the welfare of the people. However, the reality is the opposite, because the costs people pay for taxes are not proportional to the benefits of public goods and services received. Taxpayers perception that tax payments use for public facilities and infrastructure construction, such as roadways, schools, bridges, hospitals, health centers, subsidized food, clothing, and shelter. However, the fact is different — some of the money tax revenues taken irresponsibly. Generally, public services in those countries are still weak; facilities and public infrastructure are also inadequate because there is still corruption. Corruption by bureaucrats, both at the regional or central level, is a critical issue for the taxpayer.

4. Conclusions

The main finding from this research is that by reducing the tax rate, the economic shadow will fall in developing countries. Because the welfare of the community increases due to profits obtained in commercial businesses become even greater if the tax rate decreases. The statistical results provide significant evidence of the total tax rate against the shadow economy, which confirms the increases in overall tax will follow by the rise in the shadow economy level. Tax evasion, internationally need to be designed and implemented appropriate strategies to minimize the damage effects. This strategy should lead to tax revenue collection development by the government.

The shadow economy existence has the

potential to be severe implications for economic performance and public policy. Activities in the informal sector are not regulated and protected as in the formal area. Public financing could go down as tax base shrinks, thereby weakening the government's capacity to earn tax revenue. As a result, prospects for business growth could hamper because of a lack of public financing social infrastructure.

These research studies are insufficient to have fulfilled everything because the number of observations is relatively small and only in the area of ASEAN. The expansion and re-opening of this investigation in the future expected to be more accurate and provide a safer conclusion. This study expected to contribute to tax or economics literature and provide strategic information to policymakers in reviewing tax policies related to tax in the future.

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