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JURNAL ILMIAH MANAJEMEN FORKAMMA

Tax Policy for SMEs, Corruption Perception, and Firm Productivity in Indonesia: A Firm-Level Analysis

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ARTICLES INFORMATION | ***ABSTRACT***

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This study aims to assess the impact of policy change in tax schemes and corruption on firm performance in Indonesia. The central government has enacted a new presumptive tax regulation targeting small and medium enterprises (SMEs) started in 2013. The policy intends to attract SMEs to pay income tax and promote formalization. Additionally, we also assess the impact of corruption compared to the effect of taxation, on firm productivity. Taking advantage from the World Bank Enterprise Survey (WBES) Indonesia in the years 2009 and 2015, along with fixed-effect regression models and statistical software of STATA 16, we find that the presumptive tax scheme does not significantly affect firm productivity. This result may be explained by the formalization approach. Additionally, it is confirmed that corruption is negatively and significantly affects firm productivity. This study affirms studies that corruption has a greater impact, compared to taxation, on firm productivity

A. INTRODUCTION

Taxation has been an everlasting discussion in economic studies. As governments impose taxes by the regulations, it appears to have consequences of intertemporal effect (Escolano, 1995). This effect may influence the behavior of economic agents because they have an expectation about their future. Businesses and households react to tax policies to find the best way to maximize their benefit or even minimize their loss, for instance, choosing tax rates as lower as possible and finding the easiest way to deal with taxes. More importantly, tax regulations are drawn up regarding the ability to pay and avoid injuring the taxpayers. In the political economy, we can say that government intends to obtain the milk without killing the cows.

In addition, some studies argue that the effect of taxation is coincident with corruption (Fisman and Svensson, 2007; Friedman *et al.*, 2000; Shleifer and Vishny, 1993). These two cases are naturally avoided by individuals or corporations because they may reduce their wealth or profit. While the tax payment will be used by the government to provide public services and infrastructures for the society's advantage, the bribe payment will end up for personal benefit (Fisman and Svensson, 2007). More importantly, studies show that the effect of corruption is significantly greater than taxation because corruption creates distortion and high-cost business related to its nature that requires secrecy for agents involved (Shleifer and Vishny, 1993).

Moreover, it is generally known that taxes are regarded as a primary revenue source to finance the government budget. This is in accordance with the objective of imposing taxes: providing resources to fund state expenditure, acting as an instrument to reach other objectives, and redistributing income in society (Tan and Liu, 2016). In South East-Asia countries, taxes have indeed become major government revenue (OECD, 2021). More significantly, in some countries, tax revenue is often way bigger than non-tax revenue, for instance, tax revenue in Thailand accounted for over four times the non-tax revenue as well as in Indonesia accounted for slightly under four times than its non-tax income.

However, implementation of the regular tax scheme, regardless of firms' ability to pay the taxes, could harm small and medium enterprises (SMEs). Dabla-Norris *et al.* (2008) argue that the cost of compliance borne by SMEs is disproportionately higher compared to large enterprises. SMEs have several characteristics that make them more vulnerable related to the big firms, for instance, lack of capital, poor access to financial supports, and limited access to the market. Thus, the government needs to arrange a special tax scheme in favor of smaller businesses. The Indonesian government has put attention to SMEs because they have a substantial role in the economy. The economic growth has been supported by small and medium enterprises (SMEs). Moreover, the SMEs accounted for around 60% of Indonesia's gross domestic product (GDP) and business growth for about 2% per year in 2015 (Juswanto and Febriyadi, 2018). Looking into job creation, SMEs contributed to more than 90% of national employment in the same year (Ministry of Cooperation and SME Indonesia, 2021).

In 2013, Indonesia has implemented a presumptive tax regime that targeted SMEs that meet requirements. The policy intends to reduce the actual tax rate and administrative burden. Income tax for enterprises, with an annual gross turnover maximum of IDR 4.8 billion, is set at 1% with a calculation base of the gross turnover and considered as a final payment. That means the businesses are not obliged to recalculate their tax payable and tax credit at the end of the tax year. Before the presumptive tax scheme, SMEs were subject to income tax at a standard rate of 25% of taxable income. It seemed unfair for the SMEs and a disproportionately higher burden for SMEs since they had different characteristics from larger businesses.

Meanwhile, several researchers show that even though the tariff was reduced significantly to only 1 percent, it was not always beneficial for the eligible taxpayers because of the difference in tax calculation base (Purwaningsih 2014; Endrianto 2015; Zulaikha and Hadiprajitno 2016). By taking a simulation reflecting the comparison between the new and old schemes, we could determine areas where the schemes are beneficial or not for certain firms. Zulaikha and Hadiprajitno (2016: 7) presented a simulation that shows when the percentage of

taxable income from gross turnover is equal to 8%, the tax payable from the old scheme is as much as the new scheme. However, if the share of taxable income is less than 8% from the gross turnover, the new scheme makes the taxpayers pay more and *vice versa*.

According to various studies, a presumptive tax scheme could be applied to help SMEs comply with the tax regulations. Through that scheme, the government may reduce tax rates and administrative burdens. Similarly, according to the Indonesia Ministry of Finance (2013), the presumptive tax scheme provided a tax relief as an incentive for SMEs to enter the formal sector, therefore potential businesses will have access to better financial sources because most banks and formal lenders require the debtors registered at the tax office. Furthermore, the formal sector can be interpreted in different contexts. First, regarding the informal firm, it means that the firms register to tax authority. Second, regarding formal firms, it means that the firms become compliant with tax regulations. Specifically, some studies show that formal firms have significantly higher productivity than informal firms. It may be because formal firms have all the access they needed to boost their performance. Rothenberg *et al.* (2016) recover the characteristics of informal firms in Indonesia, such as most of them are very small, paying very low wages, having relatively low labor productivity, not well managed, and keeping lower desire to expand their business.

Discussing the informal sector, we may understand at least four schools of thought about the nature of informality and reliable solutions. First, the rational exit model argues that entrepreneurs calculate the costs and benefits before they make a decision to enter the formal sector (Floridi *et al.*, 2020). When they believe the benefits of being formal outweigh the costs, firms are most likely to register their businesses and vice versa. This model suggests policymakers reduce the cost of registration and tax for small firms, and increase the benefit for formal firms, for instance, business assistance, easing financial access, and widening access to government procurement.

Second, the exclusion model indicates that government regulations are holding back certain businesses to enter the formal sector (De Soto, 2000 in Rothenberg *et al.,* 2016). Consequently, there are only qualified entrepreneurs could benefit from formalization and leave a large pool of informal firms which congregate at the threshold of formality. The government might reduce the registration complexity and cost to promote formalization among SMEs. Third, the parasite model considers that informality suffocates economic growth and productivity because informality provides an incentive for firms to keep their remains small and inefficient (Farrel, 2014). Moreover, unregistered businesses could be favored by not paying taxes and paying lower wages for informal labor, and seizing market share from productive formal firms.

Fourth, the dual economy model suggests that informal businesses are qualitatively different from formal businesses and serve distinct markets (La Porta and Shleifer, 2011). Informal firms are apparent as having a smaller size, lower productivity, lack of access to external finance, produce by order, sell the product for informal clients for cash, and do not advertise their product. Moreover, Rothenberg et al. (2016) express that this model sees informality as a by-product of poverty. Thus, any policy intervention to reduce registration costs and increase benefits for formal firms would not give a significant impact. Specifically, the ultimate solution to this informality challenge is by reducing the poverty rate and boosting economic growth.

However, there is a scant study that evaluates the impact of the policy intervention of a presumptive tax scheme on firm productivity in Indonesia, especially the small and medium enterprises. It may be because the data of taxation is relatively difficult to obtain. Also, there are not many public surveys that collect data about firm tax behavior. There are some studies that evaluate the tax compliance in a certain region and discuss the potential impact on tax revenue, such as Zulaikha and Hadiprajitno (2016), Purwaningsih (2014), Hakim and Nagoi (2015), and Endrianto (2015). Therefore, we attempt to study the impact of the policy change of presumptive tax schemes on firm productivity.

Additionally, we also look into corruption as a factor that affects firm productivity. Corruption is defined as official acts that take advantage of their authority for private gains (Shleifer and Vishny, 1993; Sahakyan and Stiegert, 2012). Corruption may affect directly and indirectly business operations. Furthermore, numerous studies present relationships between

corruption and firm performance. They suggest that corruption give adverse effects both for firms and the economy (Fisman and Svensson, 2007; Svensson, 2005; Choi and Thum, 2005; Ades and di Tella, 1997; Shleifer and Vishny, 1993). It can create distortion to the market and unfair competition. corruption creates uncertainty and unhealthy competition among businesses. It also redistributes resources only for individuals or parties that have legitimate power. Thus, the economy will be disrupted by rent-seeking activities that lead to the misallocation of talents and resources (Murphy et al. 1990). On the other hand, a taxation is a form of legal payment regulated by the law. Even though tax payment reduces business profit, it will be utilized by the government to provide public services that indirectly give the benefit back to the community.

Although, there are arguments suggesting that corruption may beneficial for firm performance. Wei (1998) indicates that corruption might assist firms to deal with burdensome bureaucracy and accelerate business activities. Companies getting involved in corruption can have the advantage for their business operational, such as paying a bribe to obtain special permission from the government or shortening licensing duration. It then makes the company superior to other companies that do not pay a bribe. Yet, the empirical evidence for this side is very rare.

Eventually, taking advantage of the panel data from the World Bank Enterprise Survey (WBES) Indonesia conducted in two-wave years of 2009 and 2015, we attempt to evaluate the impact of the tax policy change and corruption on firm productivity. Afterward, the novel feature of this study is providing new evidence on the study of the impact of policy change in taxation as well as corruption on firm productivity in Indonesia as a developing country.

B. LITERATURE REVIEW

Firm productivity

Firm productivity shows how efficient a company processes inputs to produce outputs in general. Syverson (2011) defines firm productivity as a measurement of efficiency in the production process or the amount of output obtained from a given combination of inputs. A firm may have a large amount of output, but it is not a guarantee for high productivity. Measuring firm productivity, several indicators are generally used by researchers. Demena et al. (2021) suggest that firm productivity can be measured either using a direct approach, such as labor productivity and output value-added, or indirect estimation, such as total factor productivity (TFP). Similarly, Syverson (2011) denotes that labor productivity has become a common indicator to measure firm productivity, but sometimes material or capital productivity is applied. Indeed, several pieces of research were also employing labor productivity because it is a simple measure of firms' performance (Samsuzzoha and Tanaka 2021; Demena and Murshed 2018; Amin, Ohnsorge, and Okou 2019).

Furthermore, firm productivity is influenced by various factors. There have been immense researches to study the determinants of businesses productivity. Syverson (2011) evaluates numerous empirical works that analyze the difference in productivity levels among firms. The determinants of firm performance are divided into two big groups, internal factors, and external drivers. Edgair and Lihniash (2016) prove that at least three internal factors are determining the lower firm productivity: a lack of good management, inappropriate production process, and lower technical skill of labor.

The special tax treatment for SMEs

Indonesian Tax Authority has issued a new tax scheme that targeted particular taxpayers with an annual turnover of no more than 4.8 billion rupiahs in 2013 (Ministry of Finance of The Republic of Indonesia, 2013). A single income tax tariff of 1% from the gross turnover was applied to these taxpayers. Also, it simplified the tax administration, the income tax in the scheme was considered final which means the taxpayers do not need to recalculate their income tax at the end of the year. Therefore, after 2013, there are three schemes of income tax for the corporation:

a. The regular tariff applies to corporate taxpayers in general. Based on the regulation, it is 25% calculated from the taxable income. Moreover, corporate taxpayers with at

least 40% of the shares traded in the Indonesian stock exchange can benefit from a tariff of 5% lower than the regular tariff.

b. Regular income tax with facility applies for taxpayers with an annual turnover maximum of 50 billion rupiahs. The tariff is reduced to 50% for the portion of taxable income maximum of 4.8 billion rupiahs, while another portion of the taxable income is applied regular tariff.
c. Final Income tax for particular taxpayers applies for taxpayers with an annual turnover of no more than 4.8 billion rupiahs, so-called the presumptive tax scheme. This regulation is targeted SMEs and aims to promote formalization and foster firms' productivity by simplifying the tax tariff and administration. This special scheme is regulated by Government Regulation Number 46 Year 2013 that set the final and flat tax tariff of 1% from the gross turnover regardless of their net profit. Then, it has been amended by Government Regulation Number 23 the Year 2018 that reduced the final and flat tariff to 0.5% from the gross turnover.

That new scheme of income tax has been applied and came into effect in July 2013. This presumptive scheme covers two aspects of incentive for SMEs: Simplified tax administration and reduced tax rate. Firstly, a simplified tax administration means that complying with tax regulation becomes less burdensome for taxpayers. The taxpayers do not have to credit or count all other taxes or costs of obtaining revenues at the end of the tax period. Secondly, a reduced tax rate was applied to only 1 percent calculated from the turnover for the eligible taxpayers. Firms with higher profit margins will enjoy higher advantages from this income tax scheme (Purwaningsih, 2014). In contrast, businesses with lower profit margins will experience a disadvantage for applying the new scheme compared to the old scheme for SMEs. Meanwhile, some researchers show that even though the tariff was reduced significantly to only 1 percent, it was not always beneficial for the eligible taxpayers because of the difference in tax calculation base (Endrianto 2015; Zulaikha and Hadiprajitno 2016).

Tax Policy, Corruption, and firm productivity

Paying tax means expenses for businesses. It reduces firm welfare through direct transfer of resources to the government side and creating a direct income effect for the businesses (Zee, 1995). The firm capacity to reinvest its profit is reduced because of pying taxes, especially for the small businesses which have a narrow profit margin. In fact, Gemmell et al. (2018) study data from 11 European countries and present that the higher statutory corporate tax could induce small firms to grow slower because it reduces the entrepreneur decision to bring their income back for business development. In the same tone, Atawodi and Ojeka (2012) conduct research about the tax policy environment and SMEs growth in Nigeria. They encountered that the amount paid of tax liability is negatively correlated to the SMEs' ability to expand their business, and SMEs' ability to survive as well.

In addition, many countries face common problems increasing the tax participation rate, especially from small business entities. It is undeniable that firm productivity gap issues are related to informality challenges. A high rate of informality is considered an obstacle to economic development. It represented an unequal level playing field for businesses in a competitive market. Farrel (2004: 28), providing a study by the McKinsey Global Institute, shows that informality can distort the competition among firms in an economy because informal firms may have lower costs by averting taxes and regulations that prevent formal enterprises from gaining market share. This condition creates disincentives for the informal firms to comply with regulations. In addition, most informal firms can only produce low-quality goods with minor productivity and lower use of capital (La Porta and Shleifer 2011). When a firm chooses the informal sector, the eagerness to invest and develop its business will vanish (Farrel 2004: 30). Thus, economic activities will be trapped into inefficient operation that hinders progress.

C. METHODOLOGY

Analyzing the policy impact of presumptive tax and corruption on firm performance, this research takes advantage of reliable panel data from the World Bank Enterprise Survey (WBES) Indonesia conducted in 2009 and 2015. These surveys are firm-level surveys of representative samples of Indonesia's private sector. In total, there are about 2,764 firm samples in these datasets from 2009 and 2015 surveys. Since this study required panel data from both years, there are only 982 samples or about 35 percent of all samples that meet the requirement. In addition, these data are processed using statistical software STATA 16 that enables us to analyze through fixed-effect regression models to estimate the causal effect.

There are around 953 firm samples interviewed in the first wave (2009 survey) but not included in the second wave (2015 survey) as presented in Table 2.1. It is because the problems that appeared in the firm survey, for instance, refusal, sample no longer eligible, and out of target samples (The World Bank, 2015).

Table 1 The distribution of samples according to the survey years and commencement year

Firm interviewed	Frequency	Started before 2009	Started 2009 onward	Did not Answer
2015 only	829	782 (94.3%)	45 (5.4%)	2 (0.2%)
2009 only	953	929 (97.5%)	0 (0.0%)	24 (2.5%)
2009 and 2015	982	950 (97%)	20 (2.0%)	12 (1.2%)
Total	2,764	2661	65	38

Source: Compiled by author from the World Bank, 2015.

Regarding the unbalance panel, it may lead to potential bias in sample selection if sample attrition is systematically associated with firm basic characteristics because it would not represent the whole sample. According to Demena (2017), we may employ a probit model to examine whether the firm's attrition is considered random or systematically related to samples' attributes. The model poses the dependent variable as a binary that is valued one for the samples that enumerated only in the first wave (not included in the second wave) and zero otherwise. The probit regression result (Table 2.2) suggests that firms' attrition is not systematically related to a firm's characteristics because most of the firm's attributes are not statistically significant.

Table 2 Testing for sample attrition: Probability of dropping out of the sample

	coef.	t-test	P> | t |
firm size	0.603	-0.19	(0.846)
firm age	0.001	0.781	(0.781)
foreign equity	0.187	1.33	(0.185)
Lcapintl	0.003	0.32	(0.746)
Manager Skill	0.071	1.66	(0.096)
Capital city location	-0.149	-1.38	(0.169)
Cons	-0.099	0.472	(0.472)
N		1,409	

Note: The explanatory variables are obtained from the 2009 survey only. It is a drop-out dummy that gives the value of one for the firm that is not observed in the second wave (2015) and zero otherwise.
Source: Compiled by author.

In the same case, dealing with the entry issue, there are firms that were not interviewed in the first wave (2009) but enumerated in the second wave (2015). These new firms enter the sample list only in the second wave. This condition may cause bias if a considerable number of samples in the second wave survey began their operation after the first wave. Thus, we should examine the firm commencement operation year as presented in Table 2.1. The data indicates that only less than 4% of the 2015 samples have started their operation after the first wave. Then we may be assured that there is no bias regarding the firm's entry issue.

Evaluating the impact of presumptive tax and corruption on firm performance, we employ firm productivity as a dependent variable. Based on data availability, we proxy the firm productivity with the logarithm of labor productivity, which is firm-level annual sales divided by the number of permanent employees in the current year. This approach gives us a better view of business productivity. Syverson (2011) expresses that labor productivity is the most prevalent indicator for measuring business productivity. Moreover, it is widely used to estimate productivity, for instance, Demena and Murshed (2018) study productivity spillover as a transmission channel of foreign direct investment in Sub-Saharan Africa, as well as Shamsuzzoha and Tanaka (2021), study the relationship between formality and firm performance.

There are two variables of interest in this study: firm eligibility (for presumptive tax scheme) and corruption perception. Firm eligibility is a variable that represents whether or not a firm was eligible for the presumptive tax scheme that means can benefit from the reduced income tax tariff and simplified tax administration. Specifically, firms are determined as eligible if they have a certain amount of annual turnover, at the end of 2012, three years before the second-wave survey year of 2015, with no more than IDR 4.8 billion. In particular, all firms in the survey year of 2009 did not eligible for the tax relief, while a number of firms in 2015 are eligible for the presumptive tax scheme.

determine some variables that may have effects on firm performance as well as some

Subsequently, capital intensity is known to directly affect firm productivity. It shows the intensity of assets available to be utilized by labor. In a basic productivity growth theory, labor productivity will present a diminishing return while the assets available are fixed, because a certain unit of asset is utilized by the growing number of labor. Thus, the intensity of capital should be raised to enhance labor productivity. In other words, capital intensity is found to be positively associated with firm productivity. Furthermore, several studies apply capital intensity as an explanatory variable to estimate the variation in labor productivity (Demena and Murshed, 2018; Aitken and Harrison, 1999).

Table 3 Summary Statistics

Variable	All		Eligible firms		Non-Eligible firms	
	Mean	SD	Mean	SD	Mean	SD
Labor Productivity	18.11	1.99	17.87	1.59	18.26	2.2
Firm's Eligibility	0.30	0.45	1	0	0	0
Corruption Level	0.83	1.17	0.76	1.05	0.87	1.23
Small Firm Size	0.41	0.49	0.51	0.5	0.35	0.48
Medium Firm Size	0.31	0.46	0.32	0.47	0.31	0.46
Large Firm Size	0.26	0.44	0.12	0.33	0.34	0.47
Firm's Age	20.7	11.38	20.8	10.47	20.64	11.87
Location Effect	0.13	0.34	0.09	0.29	0.15	0.36
Foreign Ownership	0.09	0.28	0.04	0.19	0.11	0.32
Capital Intensity	10.44	9.64	11.43	8.91	9.88	9.99

Source: Compiled by author.

Table 3 presents the summary statistics of the variables. On average, the eligible group has a relatively similar age compared to the non-eligible group. Moreover, it shows a stylized fact that eligible firms have relatively lower productivity, yet they have a higher capital intensity compared to the non-eligible group. It may mean that the eligible firms are not efficient in utilizing their assets to enhance their productivity.

According to Arkhangelsky and Imbens (2018), a fixed-effect regression model becomes a common approach to estimate the causal effect. It could control for the potential characteristics of every entity in research. Besides, applying a fixed-effect model, we are believed that the firm's characteristics can influence the independent variables as a whole. Allison (2009) presents that the substantial attention of this model is the ability to deal with stable characteristics of the individual in the research, thus it may waive potential large sources of bias. In other words, the fixed-effect model may control a firm's specific characteristics that reduce potential omitted variable bias. Although, there are requirements that have to be met in order to implement a fixed-effect model. As presented in Allison (2009), applying a fixed-effects approach, there is an important data requirement that is the values of the independent variables of interest must be different on at least two of the measurement occasions for at least part of the people in the sample. Additionally, this fixed-effect approach is absolutely limited to analyzing balanced data. Thus, we only regard balanced data from the WBES in this analysis.

Furthermore, we present our empirical equation as follow,

$$\mathrm{LnLP}_{ijt} = \beta_0 + \beta_1 D_t + \beta_2 D_j + \beta_3.\ \mathrm{tax\_eligible}_{ijt} + \beta_4.\mathrm{corrupt\_scale}_{ijt} + \beta_5.\mathrm{firmsize}_{ijt} +$$

$$\beta_6.\mathrm{agefirm}_{ijt} + \beta_7.\mathrm{Lcapintl}_{ijt} + \beta_{10}.\mathrm{capcity}_{ijt} + \beta_{11}.\mathrm{foreign}_{ijt} + \alpha\sum X_{ijt} + \varepsilon_{it} \ldots\ldots (1)$$

The subscript i, j, and t refer to the different firm, sector, and time respectively. A dependent variable LnLP is a measurement of firm productivity which is represented by the logarithm of company annual sales per permanent labor. Additionally, the involvement of a time dummy (D_t) justifies controlling time-variant effects, such as the possibility of regional trends and economic shocks. While the involvement of sector dummy (Dj) justifies unobservable time-invariant heterogeneity that affects firm performances. In addition, 'tax_eligible' is a dummy variable and also the variable of interest that represents whether the entity can benefit from the presumptive tax scheme or not. Besides, 'corrupt_scale' is also the variable of interest that represents the scale of how bad the obstacle of corruption can affect a business operation. Subsequently, other explanatory variables are included in the model. 'firmsize' is a multiple dummy variable that reflects the firm capacity to do their business. The 'agefirm' variable reflects a time span in which the business has been operating by years, while 'Lcapintl' indicates the logarithm of capital intensity that refers to the density of entities' assets related to another factor of production which is labor. Afterward, 'capcity' variable reflects the region in which a business is located. The 'foreign' variable indicates the type of firm's ownership. Finally, 'ε' is an error term and is regarded as a random variable.

D. RESULT AND DISCUSSION

This chapter presents a set of various estimations regarding our empirical estimation. We run several regressions using our empirical specification model. Firstly, we run our two variables of interest separately, which are tax eligibility and corruption scale. Then, we perform our regression using these two variables together. The results of the fixed-effect regression estimation are presented in Table 3.1 below. On average, about 40 percent of the variation of response variables can be explained by the model that is represented by the R-square score. Moreover, looking at the F-test value, the model as a whole can be used to explain firm performance as a dependent variable as the results show significant value. According to the rho value in the combined regression in column (B) and column (D), about 65% of firm performance variation can be explained by the differences in each firm's attributes.

Table 4 The result of fixed-effect regression with tax eligibility as the variable of interest

Dependent Variable: LnLP (Logarithm of Labor Productivity)				
	(A)	(B)	(C)	(D)
tax_eligible	0.482 (0.668)	0.425 (0.701)	0.482 (0.496)	0.425 (0.524)
corrupt_scale	-	-0.776 ** (0.049)	-	-0.776*** (0.004)
agefirm	0.002** (0.019)	0.002* (0.058)	0.002*** (0.006)	0.002** (0.015)
foreign_equity	0.655 (0.548)	1.156 (0.749)	0.655 (0563)	1.156 (0.277)
Lcapintl	0.012 (0.861)	-0.136 (0.218)	0.012 (0.773)	-0.137* (0.069)
Cons	15.730 (0.000)	17.6518 (0.000)	15.730 (0.000)	17.652 (0.000)
R-square (within)	0.382	0.415	0.382	0.415
rho	0.585	0.646	0.585	0.646
Cluster industry	no	no	yes	yes
obs	906	808	906	808

Source: Compiled by author.

From the result of fixed-effect regression in Table 3.1 above, we find that eligibility on the presumptive tax scheme has a positive impact on the change of labor productivity as the proxy of firm's performance but there are non-significant results. That could mean with this setting and data, there is no impact of the policy change of presumptive tax to firm productivity. In addition, inspecting the robustness of the result, we run an alternative proxy of firm performance, which is sales achievement (logarithm of sales), rather than firm productivity because of the data limitation. The result as shown in Table 3.2 suggests that the tax eligibility has a positive but non-significant impact on the increase of firm sales. That means eligible firms tend to raise the firm performance in sales, but the impact is not significant. This output is consistent with the regression result when using labor productivity as a dependent variable.

Table 5 The impact of tax eligibility on sales

Dependent Variable: Log_sales (logarithm of sales)			
	conf.	t-test	P> | t |
tax eligibility	0.790	0.71	(0.480)
firm age	0.003	2.75	(0.006)
foreign equity	0.466	0.38	(0.707)
Lcapintl	0.040	0.51	(0.613)
Cons	17.404	11.38	(0.000)
R-square (within)			0.610
Rho			0.600
obs			906

Source: Compiled by author.

Looking at the numerous works of literature on the impact of tax policy changes in presumptive taxation and business performance, there are two possible results when a government offers a presumptive tax scheme for certain firms. First, we may expect that joining

the presumptive tax program and following the tax regulations will help firm boost their performance by several possible avenues. Complying with the tax regulations can help firms to expand their businesses by taking the opportunity to a broader market, such as exporting products, participating in government procurement, and getting the opportunity to advertise their product (Bulutoglu, 1995). Additionally, compliance with tax administration will enhance the entrepreneur's skill to manage the businesses better. As the policy requires companies to at least record their incomes and expenses, it will help the manager to know better their business activity. According to Rand and Torm (2012), a manager's skill level is correlated with firm performance. Moreover, by paying tax, the company can have access to formal financial sources, which usually take a lower interest, and gain government assistance programs. These facilities might help the manager to expand their business operation. These reasons lead us to think that if all goes well, eligible firms will normally join the program and comply with the special tax regulation since it has a significantly lower tax tariff and simplified administration requirement. Subsequently, the firm productivity may also advance to a higher level.

Second, there is a possibility that not many eligible firms (as targeted to small and medium businesses) follow the presumptive tax scheme and choose not to comply with tax regulations. As consequence, they missed the chance to benefit from being a registered business, such as expanding their market share, getting business assistance from the government, and obtaining a business loan from the bank. Eligible firms may have reasons why they choose to misconduct the tax constitution. Then, we may utilize formalization theories to explain this issue. In fact, Rothernberg *et al*. (2016), studying Indonesia's informal sector, find that the combination of the rational exit and the dual economy theory can be used to explain the persistence of the informal sector in Indonesia. Since it is believed that formalization leads to better firm productivity, we may test whether these theories, the rational exit, and the dual economy model, can be applied as justifications why the policy change in presumptive taxation not significantly affects firm performance.

The rational exit model

According to the rational exit model, a business will operate in a formal sector when the benefits exceed the costs (Floridi *et al.* 2020). Specifically, we may regard that being formal means a business is registered to a tax office and comply with tax regulations. Subsequently, formal firms could benefit from many advantages of being formal to increase their level of productivity. Nonetheless, the result of the analysis shows the policy change in taxation targeted SMEs does not significantly influence the firm performance. It may be because the SMEs are still not sure about the policy change. Some may consider that the costs of being formal overcome the benefits.

Table 6 The impact of tax rate perception on firm productivity

Dependent Variable: LnLP (Logarithm of Labor Productivity)	
Tax rate impact	-0.724 (0.001)***
agefirm	0.001 (0.015)**
foreign equity	0.182 (0.884)
capital intensity	-0.012* (0.891)
constanta	15.223 (0.000)
R-square (within)	0.437
F-test	978.3 (0.000)
rho	0.622
obs	870

Source: Compiled by author.

Looking at the presumptive tax scheme in Indonesia, firms will only financially benefit from the new tax scheme if their maximum annual turnover is IDR 4.8 billion and having a profit

margin over 8% (Zulaikha and Hadiprajitno, 2016). They take advantage of the presumptive tax scheme which is a lower tax payable and reduced administration costs. Nevertheless, a company that suffers from operational loss, typical new firms in industries, and has a profit margin of less than 8% will be aggrieved by the new tax scheme. In that sense, the policy change does not significantly promote firm productivity.

Testing on the rational exit model, we regard an additional variable from the WBES survey, entrepreneur's tax rate perception, into the model. The entrepreneur's perception of tax rates reflects how much tax rates become an obstacle for firm operation. It is ranged from zero (no obstacle) to four (very severe obstacles). In this case, tax rates may reflect how much taxes should be paid by the businesses and represent costs for being a formal entity. Thus, we may expect that the higher tax rates or greater number of tax-rate perceptions will lead businesses to become informal that related to lower firm productivity.

The result, as presented in Table 6 has confirmed our supposition. It demonstrates that there is a negative relationship between tax rate perception and the increase of firm productivity (significant at 1% level of confidence). This is in accordance with Rothernberg *et al.* (2016) study of Indonesia's informal sector. Since the former theory argue that business owners are counting on the benefits and costs of being in the formal sector, higher taxes tend to make them stay in the informal sector or do not comply with tax regulation. Even though the potential benefits for being formal are greater in the long run, most entrepreneurs tend to short-sighting, especially for the smaller businesses.

The dual economy theory

Regarding the dual economy theory, an intervention aimed to promote formalization would not have any impact because informal firms have different characteristics to formal businesses (Rothernberg *et al.,* 2016; La Porta and Shleifer, 2011). That means any intervention to enforce informal firms to formalize does not seem to find its objective. Indeed, it also clarifies the persistence of informal firms in the country. Informal businesses serve different niches from formal companies. They are typically small, pay lower wages, have low labor productivity, serve the local market, and are not being expanded into larger businesses. Therefore, based on the theory, formal firms do not compete with their informal counterparts.

Next, we test our supposition on the existence of the dual economy theory employing a variable from WBES Indonesia, the practice of competitors in the informal sector. This variable figures the business's perception about their market challenges regarding their rivals in the informal sector. Its value is ranged from zero (no obstacle) to four (very severe obstacle). According to this theory, we may expect that the existence of informal firms is not an obstacle for their formal counterparts.

Table 7 The relationship between firm productivity and the practice of informal competitors

Dependent Variable: LnLP (Logarithm of Labor Productivity)	
Informal competitors impact	0.142 (0.758)
firm age	0.002 (0.007)**
foreign equity	0.178 (0.878)
capital intensity	-0.025 (0.758)
constanta	15.385 (0.000)
R-square (within)	0.360
F-test	526.4 (0.000)
rho	0.571
obs	864

Source: Compiled by author.

The result as presented in Table 7 may indicate the existence of the dual economy theory in Indonesia. The correlation between firm productivity and the practice of informal

competitors is positive but not significant. That means we cannot specify the correlation between the perception of informal competitors and firm productivity. This confirms the existence of the dual economy theory for explaining the informal sector in Indonesia. Therefore, it rejects the parasite theory because the impact of the informal competitors cannot be evidenced.

Taking into consideration other possibilities, we suspect the policy change was not fully engaged to most businesses in the economy because of several factors. Firstly, the poor institutional quality reason, for instance, corruption. Any policy intervention is more likely to fail without adequate law enforcement. Also, in countries with high-corruption perception, tax intervention would not give any impact on firm formalization and performance, because the entrepreneur presumes that paying tax will only enrich a particular group of people without giving a significant impact on society. The institutional quality t may cut down the policy effectiveness. A poor institution would provide a big hole for policy implementation. It is consistent with Dabla-Norris *et al.* (2008) that shows the quality of the legal framework, as the indication of institution capacity, is significantly crucial in affecting the informality rate.

The evidence and the theories

Looking at the empirical evidence, our result is consistent with the study by Rothernberg *et al.* (2016) suggesting that the informal sector in Indonesia has persistency and on a considerable scale. Moreover, the combination of the rational exit and dual economy theory is compatible to explain the result that the policy change in presumptive taxation, attempting to promote formalization and enhance firm productivity, will not have a significant effect.

In addition, since the data in this study do not support controlling which firm really benefits the policy, we cannot directly measure the magnitude of the tax policy intervention on the firm performance. For instance, there is a possibility that several eligible firms refuse to follow the new presumptive tax scheme and choose the regular scheme that is permitted by the law. However, in this case, the firm's eligibility on the program is the best approach to control firms that may obtain the potential benefit of being eligible for the tax relief. Thus, the analysis can be applied to assess the effectiveness of the implementation of the presumptive tax to promote firm performance. Furthermore, this analysis exploits the impact of such policy on firm productivity through formalization means because presumptive taxation is generally known as a way to attract informal businesses to pay taxes, enter the formal sector and therefore enhance business performance (Haji, 2015; Bulutoglu, 1995).

The impact of corruption on a firm performance

Running several regressions applying our fixed-effect model, we find that corruption perception negatively affects firm performance, as shown in Table 3.5. In columns (A) and (C), we exclude firm tax-eligibility from the regression, while in columns (B) and (D), we include the firm tax-eligibility variable. It is shown that the results are not much different when we regard the firm eligibility variable. Moreover, controlling for industry cluster, the results present significant impact at 5% level of confidence without controlling for within-industry correlation and at 1% level of confidence with controlling the within-industry correlation.

Table 8 The result of fixed-effect regression with corruption as the variable of interest

Dependent Variable: LnLP (Logarithm of Labor Productivity)				
	(A)	(B)	(C)	(D)
tax_eligible	-	0.425 (0.701)	-	0.425 (0.524)
corrupt_scale	-0.771** (0.046)	-0.776 ** (0.049)	-0.771*** (0.003)	-0.776*** (0.004)
agefirm	0.002** (0.030)	0.002* (0.058)	0.002*** (0.006)	0.002** (0.015)
foreign_equity	1.035	1.156	1.035	1.156

	(0.415)	(0.749)	(0.283)	(0.277)
Lcapintl	-0.145	-0.136	-0.145**	-0.137*
	(0.184)	(0.218)	(0.027)	(0.069)
Cons	17.634	17.652	17.634	17.652
	(0.000)	(0.000)	(0.000)	(0.000)
R-square (within)	0.413	0.415	0.413	0.415
rho	0.650	0.646	0.649	0.646
Cluster industry	no	no	yes	yes
obs	808	808	808	808

Source: Compiled by the author.

In other words, the worse the perception of corruption, the lower the firm performance in Indonesia. Corruption perception will increase uncertainty in the economy and reflects the quality of institution in which businesses undertake their activities. Thus, businesses performance indeed is influenced by the corruption picture in an economy. The results may confirm numerous studies about the negative impact of corruption on business performance, especially its productivity (Ojeka *et al*., 2019; Athanasouli *et al*., 2012; Fisman and Svensson, 2007; Svensson, 2005; Choi and Thum, 2005; Ades and Di Tella, 1997; Shleifer and Vishny, 1993). Using the Transparency International Corruption Perception Index, Ojeka *et al.* (2019) find that businesses' involvement in corruption practices, such as paying a bribe, could reduce company productivity in Nigeria, while the corruption perception tends to undermine the market and firm performance. In addition, Athanasouli *et al.* (2012) suggest that corruption has a significant detrimental impact on firm performance and gives more adverse effects for the sales in larger companies in Greece.

For testing the robustness of our result, we use an alternative proxy of firm performance, which is sales achievement, rather than firm productivity because of the data limitation. The result as shown in Table 3.6 suggests that the corruption perception has a negative and significant impact on the increase of sales. In other words, a good perception of corruption impact tends to raise the firm performance in sales. This output is not different from the former regression result when using labor productivity as a dependent variable.

Table 9 The impact of corruption perception on sales

Dependent Variable: Log_sales (Logarithm of sales)			
	coefficient	t-test	P-value
corrupt perception	-0.664	-2.05	(0.050)
firm age	0.002	2.57	(0.010)
foreign equity	0.248	0.23	(0.821)
Lcapintl	-0.138	-1.24	(0.216)
Cons	17.325	9.31	(0.000)
R-square (within)		0.551	
Rho		0.619	
obs		808	

Source: Compiled by the author

The Impact of Taxation and Corruption on Firm Performance

Looking at Table 3.7, we may compare the impact of taxation and corruption on firm productivity and firm sales that represent firm performances. Regarding the t-value from the two variables with labor productivity as a dependent variable, it is shown that the corruption perception variable point (3.11) has a greater t-score than the tax eligibility variable (0.65). That means the corruption variable gives a more considerable effect than the tax eligibility variable. Moreover, using firm sales as the dependent variable, the t-values show consistent results.

Table 9 The impact of taxation and corruption on firm productivity

Dependent Var:	Labor Productivity		Firm Sales	
	Coef. (P-value)	t-test	Coef. (P-value)	t-test
Tax eligibility	0.425 (0.524)	0.65	0.735 (0.392)	0.87
Corruption Perception	-0.776*** (0.004)	-3.11	-0.604* (0.090)	-1.76
Const.	17.652 (0.000)	18.31	19.098 (0.000)	16.75
Obs	808		808	

Source: Compiled by author

The results confirm studies by Shleifer and Vishny (1993) and Fisman and Svensson (2007) that suggest corruption has a more detrimental effect than taxation on firm performances. Even though to some extent taxation and corruption have similarities, empirically corruption shows a more severe impact. Corrupt activities require considerable effort for the parties to avoid detection and punishment because it is illegal and operate secretly (Shleifer and Vishny, 1993). In the larger sector, corruption can foster rent-seeking practice that is threatening economic development.

Other researches present corruption induces a higher informality rate and thus impedes a firm's performance (Choi and Thum, 2005; Friedman *et al.,* 2000). Corrupt behaviors indeed provide distortion to the market mechanism. It is considered a dangerous factor that may undermine the development process. Choi and Thum (2005) present that official corruption is regarded as government-induced distortion to the economy, benefiting a particular group or individual, and driving agents to enter shadow economy or unofficial economy. Meanwhile, informal businesses typically are unproductive, avoiding paying taxes and violating the regulation, unfairly competing with formal firms, and undermining economic development (La Porta and Shleifer, 2011).

E. CONCLUSION

This study aims to examine the impact of the policy change of presumptive tax scheme on firm productivity in Indonesia. Additionally, it also looks into the corruption that is related to firm productivity and compared the effect of taxation. We employ panel data obtained from WBES Indonesia in the two-wave surveys year of 2009 and 2015, and a fixed-effect regression model to avoid omitted variable bias. The finding indicates that the policy change of the presumptive tax scheme does not significantly have an impact on firm productivity.

This result corresponds to several studies about the impact of taxation policy to enhance business performance and boost formalization (Atawodi and Ojeka, 2012; Rothernberg *et al.,* 2016). By employing the dual economic theory, tax intervention may not be an effective instrument to reduce informality and promote small business productivity. It is because formal businesses (usually large firms) and informal businesses (most of them are small firms) have a different market niche and operate on a different business scale. In addition, using the rational exit model, the policy change in taxation does not significantly affect business productivity, especially the small firm, because the benefits of complying with tax regulation may not exceed its costs. By the exclusion model, eligible firms (targeted for SMEs) may think that tax administration is still burdensome for business. Even though the authority believes that they have cut the tax administration burden for eligible firms, a great campaign and socialization may be needed to change the entrepreneur's perception.

Meanwhile, this study finds that corruption negatively and significantly affects firm productivity. A poor perception of corruption impact leads to the lower productivity of a company. The result also confirms several kinds of research that study the relationship between corruption and business performances (Ojeka *et al.,* 2019; Athanasouli *et al.,* 2012; Fisman and Svensson,

2007; Svensson, 2005; Choi and Thum, 2005; Ades and di Tella, 1997; Shleifer and Vishny, 1993). Moreover, it is an indication that corruption may contribute a greater effect on the larger business. In addition, paying a bribe is the most observable type of corruption in Indonesia, and around a quarter of public services, users are confirmed to disbursing bribes (Transparency International, 2021).

Comparing the adverse effect between taxation and corruption on firm productivity, the result suggests that corruption has a more detrimental impact on business productivity than taxation. This confirms studies by Shleifer and Vishny (1993) and Fisman and Svensson (2007). Corruption creates uncertainty for business operations and captivates firm resources for the benefit of private or group interests. It also promotes rent-seeking and unhealthy competition. Moreover, rent-seeking practice can lead to the misallocation of talents and assets. On the other side, even though taxes reduce business wealth, it is regulated by the law. Thus, it gives more certainty to the entrepreneur. Furthermore, the benefits of paying taxes may indirectly be enjoyed by the firm in the form of better public services.

This study might present additional evidence that policy change in the presumptive tax scheme does not significantly promote firm productivity, especially for small and medium enterprises. In contrast, corruption condition, in general, significantly affects firm productivity and performance. Moreover, corruption is proven giving a more adverse influence on business productivity compared to taxation. However, a further causal study supported by improved data, providing control and treatment group, might be needed to assess the magnitude of policy change in tax policy.

Two recommendations can be drawn up from this research. The first is for future policy formulation in promoting small and medium enterprises. Given the result of this study, the tax authority may focus his program on improving his transparency and quality of service for a better public perception about taxation. More importantly, the government should give more attention to the corruption eradication program because corruption indeed gives a considerable negative impact on business. The second is for future research in this field. A special survey about taxation and its impact on small and medium businesses in Indonesia is worth doing because most government funds come from taxes. However, imposing taxes is not as simple as collecting money from the community. Taxation is one of the instruments to foster business and economic growth.

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