Presumptive Taxation, Corruption, and Firm Productivity in Indonesia

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This document represents part of the author's study programme while at the International Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

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Dedication Page

For my beloved wife Afrilia,

For my parents and siblings,

To my dearest sons Arjuna and Arzano,

You are my greatest motivators.

My special thanks to my supervisor, second reader and convenor at ECD Major.

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List of Acronyms

ASEAN	:	Association of Southeast Asian Nations
FE	:	Fixed-Effect Model
G-20	:	Group of Twenty, composed of most of the world's largest economies
GDP	:	Gross Domestic Product
IDR	:	Indonesian Rupiah
ISIC	:	International Standard Industrial Classification
OECD	:	Organization for Economic Co-operation and Development
PLS	:	Pooled Least Square
RE	:	Random-Effect Model
SME	:	Small and Medium Enterprise
USD	:	United States Dollar
WBES	:	World Bank Enterprise Survey

Abstract

This research aims to evaluate the impact of a policy change of presumptive tax scheme and corruption on firm performance in Indonesia. The central government enacted a new presumptive tax regulation targeting small and medium enterprises (SMEs) in 2013. The policy intends to attract small businesses to pay income tax and promote formalization. Additionally, we also assess the impact of corruption, comparing the effect of taxation, on firm productivity. Exploiting the panel data from WBES Indonesia in 2009 and 2015, along with fixed-effect regression models, we find that the presumptive tax scheme does not significantly have an impact on firm productivity. Although, it is confirmed that corruption is negatively and significantly affects firm productivity. This study also affirms that corruption has a greater influence, compared to taxation, on firm productivity.

Relevance to Development Studies

Taxation is regarded as an important instrument to finance government spending and regulate business behavior in developing economies. In this case, a presumptive taxation strategy has been applied to boost SME productivity by promoting formalization. However, in some economies, tax instruments seem ineffectively affect formalization and thus firm productivity. In fact, the corruption situation significantly affects firm productivity and business decision to enter the formal sector. We can give a suggestion to the government that while formulating the taxation regulations, they should also devote their attention to corruption eradication.

Keywords

Firm Productivity, Presumptive Tax, Corruption, formalization, SME.

Chapter I
Introduction

1.1. Research problem statement

Taxation has been an everlasting discussion in economic studies. As governments impose taxes by the regulations, it appears to have consequences of intertemporal effect (Escolando 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 find 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 (Fissman and Svensson 2007; Friedman et.al. 2000; Shleifer and Vishny 1983). These two cases are naturally avoided by individual or corporation because they may reduce their wealthy or profit. While the tax payment will be used by the government to provide public services and infrastructures for the society advantages, the bribe payment will end up for personal benefit (Fissman and Svensson 2007). More importantly, studies show that the effect of corruption is significantly greater than taxation because the corruption creates distortion and high-cost business related to its nature that requires secrecy for agents involved (Shleifer and Vishny 1983).

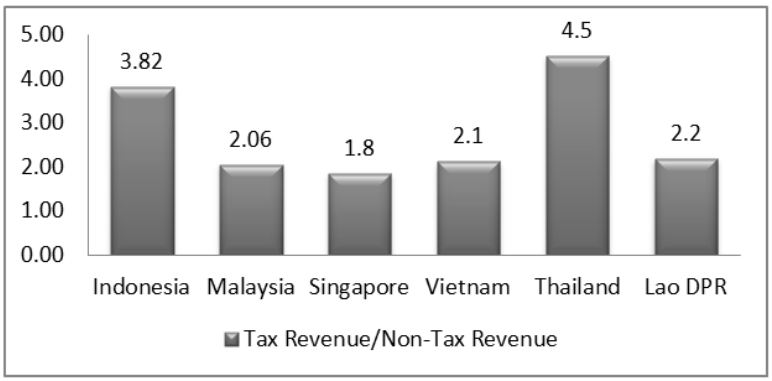
Moreover, it is generally known that taxes are regarded as a primary revenue source to finance the government budget. This is in accordance with the objective of imposing taxes: providing resources to fund state expenditure, acting as an instrument to reach other objectives, and redistributing income in society (Tan and Liu 2016). In South East-Asia countries, taxes have indeed become major government revenue (OECD 2021). It can be shown from the comparison of tax revenue and non-tax revenue that the present ratio at above one in 2019 (figure 1.1). 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. (2017) 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).

Figure 1.1

Tax Revenue and Non-Tax Revenue Ratio in South-East Asia 2019



Source: OECD Revenue Statistic in Asia-Pacific, 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. Moreover, the personal businesses under the presumptive tax policy do not have to perform complex accounting. They are only required to record the business transaction to identify the gross turnover as a taxable base. 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.

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 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. Moreover, most government support and fund programs for SMEs are available for registered firms. Furthermore, 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: 108) find that over 93% of businesses in Indonesia are informal. Further, they 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 widen 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 pay lower wages for informal labor, and seize 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 presumptive tax scheme on a 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 is not many of public survey that collects data about firm tax behavior. There are some studies that evaluate the tax compliance in a certain region and discussed the potential impact on tax revenue, such as Zulaikha and Hadiprajitno (2016), Purwaningsih (2014), Hakim and Nangoi (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 taking advantages of their authority for private gains (Shleifer and Vishny 1993; Sahakyan and Stiegert 2012). Corruption may affect directly and indirectly for business operation. Furthermore, numerous studies present relationships between corruption and firm performance. They suggest that corruption give adverse effect both for firms and economy (Fissman 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.

Although, there are argument suggesting that corruption may beneficial for firm performance. Wei (1998) indicates that corruption might assist firm to deal with burdensome bureaucracy and accelerate business activities. Companies getting involved in corruption can have advantage for their business operational, such as paying bribe to obtain special permission from government or shorten licensing duration. It then makes the company superior to other companies that do not pay 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 tax policy change and corruption on firm productivity. Afterwards, 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.

1.2. Research question and sub-question

1.2.1. The main research question

According to the presentation in the research problem statement above, the main research question is proposed: "Does the policy change of presumptive tax scheme give a significant impact on firm performance in Indonesia?"

1.2.2. Sub Research Question

a. To what extent does the presumptive tax scheme promote firm performance?
b. Does corruption perception have a significant impact on firm performance in Indonesia?
c. Does corruption has more adverse effect to firm performance than taxation?

1.3. Methodology and data selection

Evaluating the impact of policy change in taxation and corruption perception, this study takes advantage of data provided by the World Bank Enterprise Survey Indonesia (WBES Indonesia). While the policy change happened in 2013, the survey was taken in 2009 and 2015. Thus, we can make use of the WBES Indonesia data to measure whether or not the tax intervention gives an impact on business performance. Along with this evaluation, we also look at another factor that may affect firm performance which is corruption perception.

Looking at the empirical specification, we employ a fixed-effect regression model to estimate the impact of the policy change and corruption perceptions on a firm's performance. Even though we cannot specify which firms were already applied for the special tax policy, our empirical strategy lets us recognize the effectiveness of the policy issuance by determining the eligible firms. Moreover, this fixed-effect model is controlling the characteristic differences among firms, such as sector, size, and region. Thus, it will reduce the potential threat of omitted variable bias.

1.4. Original contribution

There are some studies examining the impact of the presumptive tax policy, which is reduced the tariff for eligible businesses and cut the administrative burden that first implemented in 2013. Most of them only analyze the impact of the policy on taxpayer compliance and tax revenue with only focus on particular regions of tax offices in Indonesia. To the best of our knowledge, this is the first study that evaluates the impact of the presumptive tax policy and corruption on businesses productivity in Indonesia. Moreover, taking benefit of panel data from the WBES Indonesia in the year 2009 and 2015, this study provides new evidence on the literature on the impact of presumptive tax policy and corruption regarding firm productivity in developing countries.

1.5. Scope and limitation

The scope of this research is the policy change particularly the presumptive taxation targeted SMEs, corruption condition, and firm performance in Indonesia. Additionally, this paper conducts a before-after study that can be used as an indication of policy effectiveness. We compare the condition before the implementation of the policy to the condition after the policy was implemented. Initially, we proposed to explore firm formalization caused by the policy change. It is believed as a mediating factor from the policy change to the firm's formalization. But, our available data resource cannot provide variables we need to distinguish the formal and informal businesses, as well as specify which firms really were registered for the tax policy. Our data resource is limited to firm-level data of the World Bank Enterprise Survey Indonesia for the years 2009 and 2015. Consequently, the before-after study is a feasible approach to evaluate the policy effectiveness and answer the question of whether the policy change really gives benefits for the SMEs or not.

1.6. Organization of the research

This research paper is organized into six chapters. The first chapter is an introduction part including the research problem statement, research questions, a brief of methodology and data selection, original contribution of this paper, and scope and limitation statement. The second chapter presents the overview of Indonesia regarding the private sector, income tax system, the presumptive tax scheme, and corruption issues. Afterward, the third chapter is the literature review including presumptive taxation, SMEs productivity, and corruption. In the fourth chapter, data and research methodology are described. Then, the fifth chapter provides the empirical result and discussion on the problems. Finally, the sixth chapter demonstrates the conclusion of this study and recommendations for the next research.

Chapter II
Indonesia Overview

2.1. Private Sector in Indonesia

Indonesia has a large economy and has an important role in the regional and global economy. It is also a member of G-20 which is the world forum for the biggest 20 countries regarding its GDP around the globe. Based on the world development indicators database, Indonesia's GDP was in 16th major economy and the largest in the South-East Asian (ASEAN) region. Moreover, the country has also shown significant economic growth with average GDP growth of 5.3 percent and reducing poverty headcount ratio from 9.5 to 2.7 percent of the population at 1.9 USD a day during 2011-2019 (World Development Indicators 2021).

These economic performances have been supported by the emerging of the private sector. It is regarded as the main engine of economic growth, as the private sector accounts for more than 90% of job creation in the country (The World Bank 2015). For the same reason, the growth of the private sector will also have a significant impact to reduce poverty in Indonesia. Suryadarma and Suryahadi (2007) presented that the growth of the private sector in Indonesia will be followed by the decreasing of poverty rate, and also, regarding the elasticity of poverty and private sector growth, the poverty rate may fall twice as quickly with similar growth in public and private sectors.

However, the private sector growth seems to face challenges by the low quality of the institution. It might reflect on the ease of doing business scores published by the World Bank, such as starting a business, construction permits, enforcing contracts, paying taxes, registering property, and protecting minority investors. Moreover, McLeod (2006) implied that there is a huge red tape caused by the complexity of bureaucracy that hinders the private sector's growth. This may explain the low productivity for most of the private sector in Indonesia.

Looking at the composition of Indonesia's private sector, there are different indicators used by the officials to categorize businesses into groups, such as the number of net assets, annual sales, and the number of employees. Based on the Indonesian Law number 20 the Year 2008, there are four groups of business, as follow:

a. Micro enterprises are the establishments that have net assets (excluding land and the business settlement) no more than 50 million rupiahs or have annual sales of no more than 300 million rupiahs;
b. Small enterprises are the establishments that have net assets (excluding land and the business settlement) in the range of 50 million to 500 million rupiahs, or have annual sales in the range of 300 million to 2.5 billion rupiahs; and,
c. Medium enterprises are the establishments that have net assets (excluding land and the business settlement) in the range of 500 million rupiahs to 10 billion rupiahs or have annual sales in the range of 2.5 billion to 50 billion rupiahs.
d. Large enterprises are the establishments that have net assets and annual sales more than the criteria of medium enterprises, including state-owned enterprises, private enterprises, joint ventures, and foreign-owned enterprises.

On another side, Statistics Indonesia (Badan Pusat Statistik) has grouped the business size based on the number of employment criteria. Microbusinesses have employees up to 4 including the owner, small businesses have 5-19 employees, medium businesses have 20-99 employees, and large businesses have more than 99 employees. This grouping has been used for conducting a survey related to businesses, such as economic census, the survey of micro and small enterprises, and the survey of medium and large enterprises.

In number, the majority of the businesses are SMEs. Based on the Indonesia Statistics census in 2006, large enterprises (firms with total labor of more than 99) are only accounted for around 0.13% of total firms and contributed to around 12.15% of total employment in Indonesia. Even though the number of SMEs is enormous, their contribution to the Indonesian GDP is not as much as their size. The micro, small, and medium enterprises only contribute to around 58% of Indonesia's GDP, and the rest is contributed by the large enterprises (Tambunan 2019). It implies that most of the smaller enterprises have a lower value-added. In addition, their contribution to the national tax revenue is considered very low regarded the immense portion of Indonesia's GDP. One of the causes is the significant number of the "hard-to-tax" entities that, based on the 2012 data, there are only 53.4% of all the registered taxpayers submit the income tax returns (Juswanto and Febriyadi 2018).

2.2. Income Tax System in Indonesia

In general, there are three systems of taxation in Indonesia: self-assessment, official assessment, and withholding system. The self-assessment system requires the taxpayers to count, pay, and report their tax payable, while the tax officials act as supervisors and inspectors of the tax paid by the taxpayers, for instance, income tax and value-added tax. An official assessment system means that the tax office determines the amount of tax payable that should be paid by taxpayers, such as the land and building tax. Besides, the withholding tax system involves the third-party body to count and collect the tax payable from the taxpayers, then pay and report the tax collection to the tax office, for instance, employee income tax.

As the income tax for businesses adheres to the self-assessment system, firms have to perform bookkeeping, standard tax reporting as well as disclose their financial statements to the tax office. Based on the income-tax law (Law Number 7 the Year 1983), every corporate taxpayer is obliged to conduct standard bookkeeping for tax purposes. However, the last amend of the Income-tax Law (Law number 36 the year 2008) states that taxpayers who earn annual gross turnover no more than 4.8 billion rupiahs had an option to apply taxable income estimation, so-called the calculation norm, and only perform transaction recording rather than complex bookkeeping (Purwaningsih 2014: 53). The calculation norm was applied to simplify the process of determining the taxable income. It was conducted by setting the portion of net income from the annual turnover based on the region and business classification.

In addition, the income tax tariff is differently applied for personal and corporate taxpayers. For the personal taxpayers, there are layers of progressive tariff from 5% to 30% regarding the taxable income. While for the corporate taxpayers, based on the latest amended income tax law (Law number 36 the Year 2008), the tariff was gradually reduced. A rate of 28% from taxable income was applied in 2009 and the rate of 25% came into effect in 2010 onward. Prior to this regulation, corporate income tax was set into three layers of tax rates regarding taxable income (Basri et.al. 2019: 10). The first layer was a rate of 10% for the taxable income up

to 50 million rupiahs; the second layer was a rate of 15% for the next taxable income from 50 million to 100 million rupiahs, and the third layer was a rate of 30% for all the taxable income over 100 million rupiahs.

Moreover, in 2013 the government issued a new tax scheme that targeted particular taxpayers with an annual turnover of no more than 4.8 billion rupiahs. A single income tax tariff of 1% from the gross turnover was applied to these taxpayers. Also, 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.

In 2020, the authority through The Government Regulation in Lieu of Law number 1 the year 2020, has reduced the income tax tariff for a corporation to 22% for the years 2020 and 2021, and the tariff of 20% for the year 2022 onward. These tariff reductions are imposed because of the economic shock due to the covid-19 pandemic and aim to accelerate economic recovery. Nevertheless, the businesses can still use the special scheme and tariff as long as they have an annual turnover less than or equal to 4.8 billion rupiahs.

2.3. Review of the special tax treatment for SMEs

A new scheme of income tax, the so-called presumptive tax scheme, has been applied for eligible taxpayers that have an annual turnover maximum of 4.8 billion rupiahs 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. It is reflected through the income tax paid periodically regarded as a final payment. The taxpayers do not have to credit or count all other taxes or costs of obtaining revenues at the end of the tax period. Thus, it gives less complexity to businesses. Moreover, by changing the calculation base from taxable income to gross turnover, the government intends to make the calculation less complicated for small enterprises that may have limited financial expertise.

Secondly, a reduced tax rate was applied to only 1 percent calculated from the turnover for the eligible taxpayers. This scheme turns income tax calculation as simple as possible for SMEs and also gives an incentive for the business to become more efficient. 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. Prior to this scheme, there was a regular tax rate of 25 percent calculated from the taxable income that was obtained from the financial report or using the calculation norm. Taxpayers needed to calculate their revenues, costs, and tax credits after the end of the tax year. It was a bit complicated for small businesses and gave more administrative burdensome for income tax.

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 as follows:

If, E = expenses or cost that can be deducted from the gross turnover to obtain taxable income.
Thus, 100% - E = Taxable income.
In the old scheme:
Tax payable = normal tariff x facility for maximum 4.8 billion of turnover x taxable income
= 25% x 50% x (100% - E).
In the new scheme:
Tax Payable = Tax rate x gross turnover = 1% x 100%.
At the break-even point, tax payable in the old scheme is equal to the new scheme, then we can arrange an equation:

25% x 50% x (100% - E)	= 1% x 100%
12.5% - 12.5%.E	= 1%
12.5%.E	= 12.5% -1 %
E	= 11.5%/12.5%
E	= 92%

Thus, the taxable income at break-even point = 100% - 92% = 8%.

In other words, 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*.

Furthermore, this simulation also reveals that taxpayers with low-profit margins will be aggrieved by the presumptive tax scheme. Endriarto (2015) showed that even companies that suffer from loss should pay the final income tax. In any case, small firms are usually surviving with only a tiny profit margin. Indeed, young firms often experience losses because they still struggling with new markets. For this reason, presumptive taxation may not be in accordance with one of the principles of tax collection which is the ability to pay. In addition, Purwaningsih

(2014) has presented that the implementation of the presumptive tax regime will also give a disadvantage for the taxpayers with modest turnover and if the norm calculation in their business sector is equal to or lower than 4.5%.

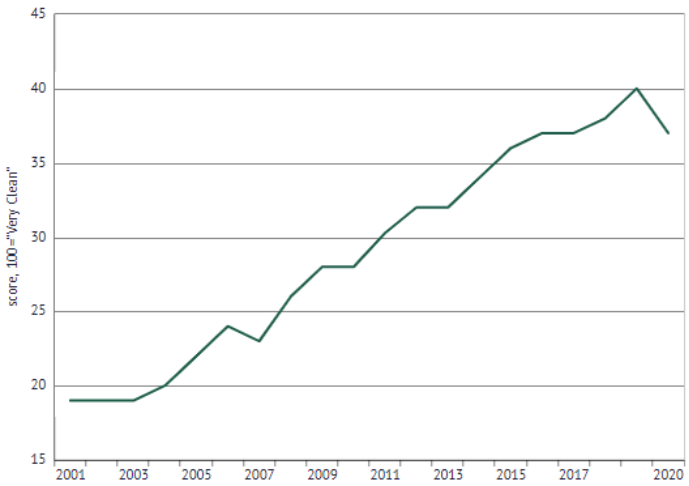
2.4. Corruption in Indonesia

The corruption issue in Indonesia has existed long before its national independence in 1945. King (2000) noted that the practices of corruption can be traced back to the pre-colonial era in Java around the 10th century. Officials should give tributes to the lord in order to be rewarded by placing them in a strategic position. Afterward, in the Dutch colonial era, there is a huge trading company, namely East India Trading Company, ruled the archipelago for nearly 200 years. The company then fell into bankruptcy because of corruptive practices among its officials. Then, after the independence day of the Republic of Indonesia, corrupt behaviors still prevail in bureaucracy. In the year 2000, after the political shifting from 'new order' to the 'reformation era', Indonesia was among the worse with a lower corruption perception index, ranked 85 out of 90 countries.

However, there are several efforts to reduce the corruption perception index. Therefore, Indonesia recorded an upward trend on the score of the perception index (Transparency International, 2021). In general, Indonesia's perception has been getting better since 2001, even though in 2007 the perception declines.

Figure 2.1

Trend of Indonesia's Corruption Perception Index



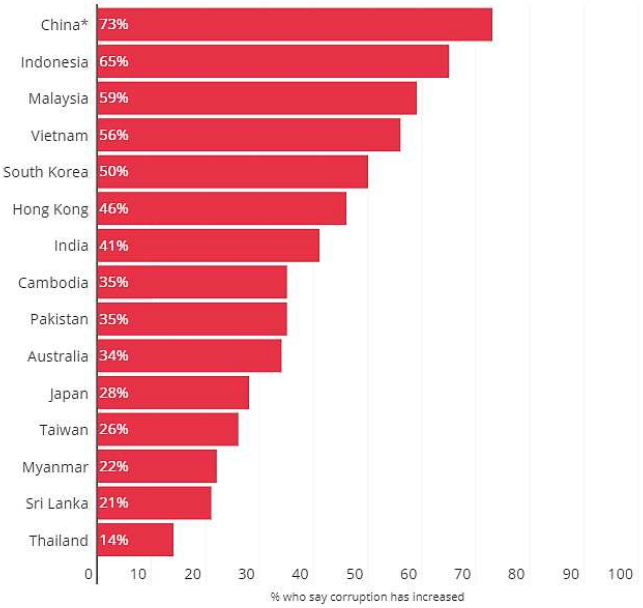
Source: Transparency International, 2021.

A study by Imbaruddin (2019) has revealed at least five sources of corruption, especially in Indonesia's case, such as monopoly, low income, traditional value, public ignorance, and forms of government. Monopoly and low income might be related as a supply and demand in terms of bribery between the private sector and public officials. Indeed, businesses need a license from the government to do monopoly practices in a particular industry, and they try to give bribes to the official. Likewise, public officers tend to accept bribes and issue licenses because of the low income they get. Next, the traditional value of giving gifts to others may be falsified as a bribe or gratification for acquiring a license or better public services. Presenting gratification is

also a way for enhancing personal connection for particular objectives, like asking for job promotion and guaranteeing access to public service (Transparency International, 2021).

Figure 2.2

Public Perceptions in the Increasing of Corruption (Asia-Pacific)



Source: Transparency International, 2021.

Looking into detail on corruption situation, based on the report of Transparency International (2017), around a quarter of public service users in Indonesia admitted to paying a bribe in the last 12 months. Moreover, respondents surveyed thought that nearly half of government officials are involved in corruption. Meanwhile, around 65% of people surveyed thought that the corruption level has escalated over the last three years. Compare to other Asia-Pacific countries, Indonesia's perception was only better than China (about 73%). This survey might reflect the condition the real condition felt by the community directly related to public services.

Chapter III
Literature Review

3.1. Presumptive taxation

3.1.1. Definition of presumptive tax

Many developing countries face a common problem in increasing the tax participation rate from a particular group of taxpayers, especially the small business entity, self-employed businesses, and other hard-to-tax bodies. Presumptive tax is one of the approaches applied to overcome the complexity of tax administration for particular taxpayers (Bulutoglu 1995; Pashev 2006; Jousten 2007; Haji 2015). From the authority side, the regulations might have weaknesses in tax administration that causes difficulties to impose effective taxes (Bulutoglu 1995). Meanwhile, from the taxpayer's side, it is because they lack the ability to comply with the tax regulation due to the inadequate knowledge in taxation or filing their financial activity. Similarly, Thuronyi (1996) suggests several justifications in the implementation of the presumptive tax regulation, such as simplifying the tax administration, reducing tax avoidance and tax evasion, and giving incentive effects.

A general definition of presumptive tax presented by Yitzhaki (2007: 312) defines a presumptive tax when there is a division regarding the tax base declared in the basic tax law (the ideal base) and the base applied in the implementation of the law (the presumptive base). While, more specific and technical definition, Pashev (2006) interprets presumptive tax as a general approach to proxy for the income tax liability based on the presumed ability of taxpayers to earn revenue, rather than on their actual income. Likewise, Tadesse and Taube (1996) describe the presumptive tax as simple and 'cost-effective' techniques to determine economic activities and earning source that often deviates from the regular taxation norms. Furthermore, Bulutoglu (1995) expresses that presumptive taxation is sometimes applied as an approach to impose indirect taxes, for instance, as a substitute for value-added tax on small businesses and as an alternative for excise taxes.

3.1.2. Type of presumptive tax

The implementation of presumptive taxation has been widely used in most developing countries. In Bulgaria, there are at least two objects of presumptive taxes applied; the patent tax that is introduced in 1998 and the minimum tax on labor expenses launched in 2003 (Pashev 2006). Meanwhile, in Tanzania, a presumptive tax scheme, introduced in 2004, has been applied by implementing a simplified taxation schedule to stimulate informal businesses to register, being formal, and begin to pay taxes (Haji 2015). These various implementations of presumptive taxation are typically used as an approximation for the ideal base because of many reasons, such as reducing complexity, administration cost, and giving incentives for formalization.

Looking at the tax bases, the presumptive tax can be calculated by various observable measurements. Bulutoglu (1995) mentions that there are three different ways where presumptive tax bases on income may be imposed: The first approach and the most common method to implement is determining the estimation of income from taxpayers and establishing the fixed-

tax-rate for taxing this income; the second way is imposing a tax on firm assets; the third approach is to apply a gross income tax; the fourth is regarding the tax base from the external indicators of revenue. Meanwhile, Yitzhaki (2007) presents typical properties for imposing presumptive taxes, such as establishing a discontinuous tax base from other bases, estimating potential business revenues during regular circumstances, setting up a floor and/or ceiling criteria on tax bases, and adopting a relatively simple measurement or characteristics for estimating income. In fact, the implementation of presumptive tax might be the combination of these properties and methods.

More importantly, for establishing an effective tax policy, the government should pay attention to the different firm size factors (Jousten 2007). The scale of the differentiation may diverge among the countries according to the specific objective and conditions. Special tax treatment for micro, small, and medium enterprises might be needed considering the nature of their businesses. Smaller enterprises usually lack administration ability. As a consequence, they find it difficult to calculate their taxable income for determining the income tax. Nevertheless, regular income tax administration requires accounting reports to determine firms' taxable income. Regarding the most basic rule of taxation, the ability to pay as a determination of tax liability should be concerned in order to not damage businesses' normal operation and make businesses fall into bankruptcy (Yitzhaki 2007). In fact, only large firms can afford to spend extra costs and additional people to take care of administrative things. The smaller firms usually have limited money and employment. Spending more on tax administrations might disrupt their performance. Therefore, the authority should find a way to tax the SMEs, separately from the large enterprises.

3.1.3. Advantage and disadvantages

In most economies, the subjects of the presumptive scheme are targeted to small businesses, small farmers, owners of rental properties, professionals, independent contractors, and other hard-to-tax groups (Bulutoglu, 1995; Yitzhaki 2007; Haji 2015). The advantages of presumptive tax lie in its simplicity features, reducing the compliance cost, efficiency for targeted taxpayers, relatively lower administrative cost, providing horizontal equity and equal opportunity for small businesses (Yitzhaki 2007). It is efficient since it could evade negative incentives for small businesses because of zero marginal tax rates on income. In addition, Bulutoglu (1995) suggests that a presumptive tax scheme could also reduce audit time and cost. Furthermore, simple taxation might help taxpayers comply with the tax regulation and the lower administrative cost provides firm opportunities to reinvest in productive activities.

However, a presumptive scheme could have drawbacks for several reasons. Yitzhaki (2007) asserts that measurement bases of presumptive taxation are less accurate compared to regular tax bases that usually use a standard bookkeeping system. It might violate the basic principle of taxation which is the taxpayer's ability to pay. That principle assures tax imposed should not disturb the regular operation of the businesses. Moreover, Haji (2015) presents that presumptive tax schemes are often only beneficial for businesses with high-profit margins. It is in line with the study by Zulaikha and Hadiprajitno (2016) that evaluate presumptive income tax in Indonesia that uses gross revenue as the income tax base for eligible taxpayers. They show that businesses should have a certain level of profit margin in order to be favored by the new presumptive tax scheme. A new firm, usually suffering from loss and challenge into a new

market, will be harmed by this presumptive regime because they are still required to pay the income tax.

3.2. Firm productivity

3.2.1. Determinants of firm productivity

Firm productivity reflects how efficiently a company processes inputs to produce outputs. Also, 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. Based on that description, we can imply that productivity is slightly different from the firm output. A firm may have a large amount of output, but it is not a guarantee for high productivity. On the assumption that the firm produces a more extensive output given a particular level of input, we may consider that the firm has higher 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 can be 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. Firstly, the internal factors are determinants that directly affect productivity within a firm. Generally, it includes the managerial practice, quality of labor and capital inputs, information technology, research and development, innovation, and firm structure decision. Likewise, 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. In addition, De and Nagaraj (2013) study the eminency of productivity between small firms and large firms based on internal factors. They found that smaller firms, which have fewer assets, have the advantages of the flexibility of management and better response to the market change, while the larger firms have the superiority of economies scale, and better access to license and financial sources. Nonetheless, small firms that have flexible management and prevail over their liquidity constraints are the most productive.

Meanwhile, the external drivers are the factors that may not directly have impacts on firm productivity, but they can give incentives or disincentives for the firms to leverage their performances. It is also called environmental factors that typically consist of productivity spillover, competition, quality of regulation, and flexible input market. Anos-Casero and Udomsaph (2009) present that there is a causal relationship between business environment and firm productivity. They studied these external driver changes, such as infrastructure quality, governance, labor market flexibility, and market competition. Their finding demonstrated that lucrative achievement would have a positive significance for firm productivity. In the same tone, Dabla-Norris *et al.* (2010) evaluate innovation and the function of the financial sector to enhance

firm productivity. They find that innovation has a direct significant role in promoting higher productivity, while the financial sector is performed as a mediating role.

Nonetheless, researchers are connecting firm productivity with informality, especially when discussing SMEs productivity. La Porta and Shleifer (2011) present the informal firms most likely are small and less productive, as well as not being productive enough to turn into a cause of economic progress. Moreover, Rothenberg *et al.* (2016) indicate that most informal firms are micro or very small businesses, relatively unproductive, and have not pursued to develop their businesses. They are most likely under-perform because they keep their operational scale under the official radar. This condition counteracts the potential growth of the firms. Similarly, Shamsuzzoha and Tanaka (2021) present that formal firm is correlated to higher productivity. They demonstrate that as informal firms shift to the formal sector, the firms are becoming more productive and efficient. Another study by Rand and Torm (2012) finds a complementary result that discloses formalization positively affects a firm's gross profit, investment, and labor condition. It implies that formal firm tends to be more compliant with regulations and more willing to invest in human capital which is needed to maintain and enhance firm productivity. In addition, Amin *et al.* (2019) exhibit that labor productivity is relatively higher for formal businesses compared to informal businesses. Using the World Bank Enterprise Survey between 2008 and 2016, they conducted research with a sample of about 46 thousand firms in 125 countries. The result has revealed a significant productivity gap between formal and informal businesses.

However, Benhassine *et al.* (2018) demonstrate that formalization policy may not lead to higher firm performance. They conducted a randomized experiment for a formalization policy regarding small enterprises in Benin. The experiment consisted of three packages of incentives to promote firm formalization. The first package was providing information about formalization procedures and gave assistance for registering the companies. The second package was granting access for the formal firm to training services related to the firm's development and giving assistance to initiate a business bank account. The third package was offering assistance with tax administration and payment, including tax returns. Furthermore, the intervention to promote formalization gives a positive sign. The effects in increasing the formalization in groups two and three are higher than in group one. However, they could not find any significant impact of firms being formal on their business performances. In the same tone, Bruhn and McKenzie (2013) argue that in many developing countries, smaller firms find the costs of being formal outweigh the benefits. Formal firms may gain several benefits, like access to banking, the ability to get government contracts, and exporting their products, but it costs the firm for paying taxes, taking manager time, and effort for administration burden.

Besides firm productivity, researchers sometimes give focus on firm growth to measure firm performance, especially when discussing small and medium enterprises (SMEs), because they usually focus on how to sustain and develop their businesses. Surely, their level of productivity is far lower than larger firms. Moreover, firm growth can be measured by several indicators such as the number of employment, turnover, and productivity (Ipinnaiye *et al.* 2016). Turnover and employment growth show the business's actual performance and potential productive capacity respectively, while productivity growth shows the efficiency rate. In addition, the determinants of firm growth can be divided into four divisions (Hansen *et al.*2009). They are identified from the literature of firm dynamics. The first division includes firm age, firm size, and innovative capacity. Young firms have a lower probability to survive, but they can account for a

higher rate of growth. Then, the small business seems to grow faster than the larger one at a certain point. An innovative capacity has a positive relationship to firm growth. The second division includes firms' characteristics related to location and legal ownership structure. Firms that are located in urban areas have a higher probability to grow faster than those located in rural areas.

The third division of determinant shows the firm's manager characteristics, for instance, gender, formal education, experience in conducting business. The manager's formal education seems to affect the firm growth because basic skills can be obtained informal education. Also, the manager's experience in the business field would give a better sight into the business environment. Thus, formal education and experience would have a positive relationship to the firm performance. The fourth division is government interactions and supports, such as credit assistance from the government and tax relief. Credit assistance and tax relief are held in order to support small business development. As result, the credit assistance and tax reliefs would give a positive impact on the firm growth.

3.2.2. Tax policy, firm productivity, and formalization

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). In other words, the firm capacity to reinvest its profit is reduced because of the obligation to pay 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. Tax paid by SMEs will cut down the money available for the business expansion, or even reduce funds that can be utilized for working capital.

Looking at tax compliance costs, Dabla-Norris *et al.* (2017) suggest that tax compliance costs are likely disproportionately higher for smaller enterprises. While large firms may assign a special team or division to manage financial and tax affairs, small firms could suffer because they have only limited resources to be allocated. That means that the cost of compliance for SMEs would significantly affect firm growth and productivity. Moreover, it is a natural behavior of corporations to minimize costs, including taxes should be disbursed to the government. They tend to choose the smallest tax rates that mean fewer taxes payable and avoid high tax tariffs. Likewise, Atawodi and Ojeka (2012) suggest that the higher the tax tariff, the lower the resources available for business to reinvestment and thus lead to slow business development. Nevertheless, reacting to the higher tax rate, firms could deceive the tax authority by doing business in the informal sector or shadow economy.

In addition, many countries face common problems increasing the tax participation rate, especially from small business entities. Numerous tax policies and researches have been conducted to promote SMEs' productivity through formalization channels. 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.

Dealing further with informality, there are at least four contested models to explain the existence of firm informality, such as the rational exit model, the exclusion model, the parasite model, and the dual economy model (Floridi *et al.* 2020; Rothenberg *et al.* 2016). First, the rational exit model considers that entrepreneurs decide to enter the formal sector or operate in the informal sector based on the calculation of costs and benefits. Even though the authority wants most firms registered, entrepreneurs may have their reasonable decision. Being formal will impose them the additional cost of compliance which reduce profits, but they expect few public good or services in return (Campos 2018: 2). Additionally, Maloney (2004: 1173) argues that the informal enterprise should be regarded as an entity that is able to take an optimal degree of participation informal sector. Informal businesses can be taking advantage of taxes, lower wages, and the absence of compliance costs on regulation, but they are deemed unfairly competing with formal firms (Rothenberg *et al.* 2016: 98). Accordingly, the authority could increase the benefits of being formal, reduce the costs (such as giving tax incentives and lower compliance costs) in order to attract businesses to enter the formal sector and promote business productivity.

Second, the exclusion model believes that bureaucratic complexity and high costs are the main reason for many firms to stay away from the regulated sector (De Soto 2013 in Floridi *et al.* 2020). In other words, informal firms exist because they are excluded by the regulations. They cannot afford the formal sector because of the administrative constraints and unreasonable costs of being formal. Rothenberg *et al.* (2016) has summarized some possible causes of exaggerated regulations that may hinder smaller firms from being informal sector, such as pressure from formal firms with political connection to prevent a competitor from the informal sector from growing bigger, and larger formal firms may benefit from the informal sector because they subcontract some works to several informal firms due to lower cost of labor. Based on this model, the government may cut the regulation to promote formalization and give a chance for informal to boost their performance.

In contrast, the parasite model contends that the informal sector could hinder economic growth because they are mostly unproductive and inhibit formal productive firms for increased market share because they take advantage by avoiding taxes and regulation costs (Farrel 2004: 30). More importantly, the growing informal sector will harm development by lowering the public service available for everyone in the economy (Loayza 1997). Furthermore, Baily *et al.* (2006: 18) propose several ways to reduce informality by strengthening law enforcement, eliminating red tape, and reducing tax rates. Therefore, based on this model, every effort that leads to reduce informality must be taken by the government, such as regulation reinforcement.

Complementing theories on informality, the dual economy model supposes that formal and informal sectors are serving different markets (Rothenberg *et al.* 2016; Floridi *et al.* 2020; La Porta and Shleifer 2011). This dual economy theory is considered the opposite of the parasite model. It is believed that formal and informal firm has different characteristics that make

informal firm market segregates from formal firms. Moreover, most informal firms are small, ineffective, have limited capital, employ unskilled labor, and pay low wages, while formal firms have skilled labor, efficient, pay normal wages following labor regulation, and can obtain capital from the formal financial institution. According to the model, a large informality sector is a consequence and symptom of poverty, thus economic growth would be the solution (Rothernberg *et al.* 2016).

3.3. Corruption, taxation, and firm productivity

3.3.1. Corruption definition

In numerous researches, corruption refers to government official behaviors that take advantage of their incumbencies. Shleifer and Vishny (1993) define corruption as the trading of government properties, such as licenses and permits, by officials for personal benefits. Corrupt officials might demand bribes from the private sector because they have authority for providing certain services for business. Similarly, Sahakyan and Stiegert (2012) describe corruption as utilizing public office and resources for private gain or enriching agents through illegal action. This may affect the quality of public service provided by the government.

Moreover, business experience to the corruption may be differentiated by its effect. Athanasouli *et al.* (2012) describe the difference between the firm experience and the contextual experience of corruption. The firm experience of corruption shows how the company deals with business barriers, while the contextual experience indicates the extent of corrupt practice in the business sector. It is shown that the contextual experience is more dangerous to business performance because it reflects the institutional quality of the economy. Ojeka *et al.* (2019) confirm that weak institutional quality could harm the firm performance.

3.3.2. Corruption and firm performance

Indeed, many scholars agree that corruption has a deleterious effect on the economy and firm performances (Fissman and Svensson 2007; Svensson 2005; Choi and Thum 2005; Ades and di Tella 1999; Shleifer and Vishny 1993). It causes uncertainty for businesses and leads to inefficient allocation of resources. Moreover, the unlawfulness of corruption cases and the requisite of secrecy make the corruption become more distortionary and detrimental effect for businesses (Shleifer and Vishny 1993). It also creates an unfair level playing field for business and consumes firm resources. Therefore, unhealthy competition among the firm could lead the economy into deceleration.

However, some economists have different views about the effect of corruption on the economy. Corruption may help businesses to accelerate their activity by avoiding onerous bureaucracy (Wei 1998). Others think that, at a certain level, corruption could provide an efficient allocation for limited licenses. The licenses or permits will only be allocated to the individual or company that can afford bribes. Mauro (1995) presents debates on which corruption might enhance economic growth through two possible mechanisms. Firstly, a bribe in a terrible bureaucratic situation may be needed to avoid delays that can undermine a whole process of production. In case that a company refuses to bribe, the loss might be higher than the amount of bribe paid. Secondly, government officials who have the opportunity to obtain would work harder, because they take bribes as incentives even though it is illegal. By taking bribes, the

bad officials seem to have an additional incentive to complete the job faster, hence they can collect more bribes.

Empirical studies on the effect of corruption on firm performance have been carried out by researchers. Ojeka *et al.* (2019) identify that corruption has a negative relationship with accounting value performance and business market value in Nigeria. The study suggests that corruption can weaken the market and firm performance. Athanasouli *et al.* (2012) find the effect of corruption is heterogenous to different sizes of companies, although, corruption is regarded as a barrier for company growth and performance in Greece. It seems more unfavorable for large firms rather than a medium and small companies.

In contrast, Sahakyan and Stiegert (2012), researching Armenia, present that corruption is recognized as more favorable for the firm that does not deal with significant competition, is relatively larger and is young. Another research is conducted by Sharma and Mitra (2015) that consider paying bribe as a proxy of corruption incidence in India. They found that the impact of paying bribes on business performance is rather mixed. While paying the bribe is correlated to export and innovation, it may be caused by the policy barrier from the authority.

3.3.3. Corruption and taxation

Some studies present that the impact of corruption is often compared to taxation for businesses and even to the economy in general (Fissman and Svensson 2007; Friedman et.al. 2000). Corruption is regarded as give a significantly bigger effect than taxation on the firm performance because it creates distortion for businesses activities (Shleifer and Vishny 1993). Since considered an illegal action, corruption could lead to misallocation of business resources that lead to lower productivity effects. In broader areas, corruption may drive an economy's focus to rest-seeking activities that are harmful to development (Murphy *et al.* 1990). On the other hand, taxation is regulated by law. Firms and citizens pay taxes to finance the public services for society's welfare.

Besides, they have some features in common related to their impacts on business and the whole economy. Both taxes and bribery, as the prevalent type of corruption, could reduce business profit margin because the firm pays a certain amount of resources to other parties. For this reason, they cause a direct income effect for businesses (Friedman *et al.* 2000). However, they are different in the term that paying taxes is legal and admirable action, while corruption is regarded as an illegal and despicable case. More importantly, payment from taxes will end up as public revenues and indirectly affects the provision of public goods for business, whereas bribery will arrive at the personal benefits (Fissman and Svensson 2007).

In addition, researchers have incriminated corruption and taxation as being the causes of firm informality. Friedman *et al.* (2000) express that there are at least two schools of thought for the cause of informal business existence. Firstly, high tax rates may provoke businesses for being informal because they do not intend to pay taxes and keep all of the income for their own. Secondly, looking into the quality of the institution, businesses are avoiding the formal sector because of the burdensome bureaucracy, corruption, and poor legal system. They undertake their informality in order to keep away from dealing with corrupt government officials. In the same tone, Choi and Thum (2005) present that the business decision to become informal is a reaction to constrain the corrupt official's capacity to impose economic distortion for private advantage. Thus, corruption is distortionary and so costly to develop and it explains the high rate of corruption in some less-developed nations (Shleifer and Vishny 1993).

Chapter IV
Data and Research Methodology

4.1. Data and descriptive analysis

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. As presented in Table 4.1, there are around 953 firm samples interviewed in the first wave (2009 survey) but not included in the second wave (2015 survey) because of problems that appeared in the firm survey, for instance, refusal, sample no longer eligible, and out of target samples (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 (Appendix Table A4.1) 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 4.1

The distribution of samples according to the survey years and commencement operation 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.

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 firm commencement operation year as presented in Table 4.1. 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.

Table 4.2

Distribution of firm size according to the survey year

Firm Size	Survey Year			
	2015/ Second Wave	2009/ First Wave	Panel	Percentage
Small Firm	461	821	400	41.4%
Medium Firm	452	346	308	31.9%
Large Firm	386	277	258	26.7%
Total	1299	1444	966	100%

Source: Author's compilation using WEBS 2009 and 2015.

Regarding the firm size, businesses are stratified into small firms if they had 5 to 19 workers, medium-firm if employed 20 to 99 workers, and large firms if employed 100 or more workers. However, the enumerators also found around 16 small firms that employed less than 5 workers that were grouped as micro firms. This explains that the number of panel units in Table 4.2 less than in Table 4.1. As presented in the table above, small firms contributed for the most samples enumerated in both surveys, year 2009 and 2015. For panel data, most of the firms surveyed were small and medium enterprises that accounted for over 40 percent and 30 percent respectively, while the large firms only accounted for around 26 percent. In addition, firm size is a variable that directly affects business productivity. Intuitively, larger firms could have a benefit from their economies of scale and technology advancement that leads to higher productivity. Also, they have the ability to influence and dominate markets. Although, De and Nagaraj (2013) show that the most productive firms are small firms that invest in research for innovation and have good liquidity. Even though large firms have the advantage from their economies scale (Tybout 2000), but they may suffer from complex decision-making and difficulty to adapt due to market change.

Table 4.3

The distribution of industry sectors according to firm size

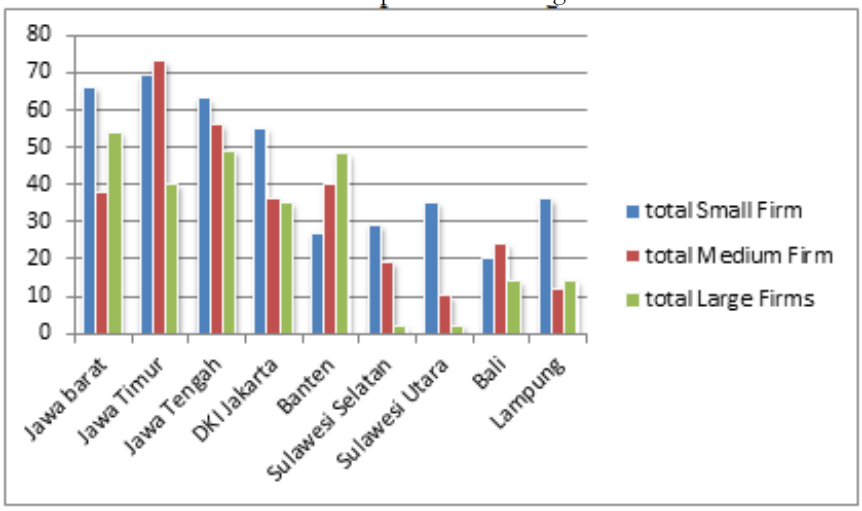
Industry Sector	**Number of Firms**								**% Panel**
	Small Firm		**Medium Firm**		**Large Firm**		**Total**		
	All	**Panel**	**All**	**Panel**	**All**	**Panel**	**All**	**Panel**	
food (15)	159	37	99	44	92	32	350	113	12.3
textiles (17)	152	47	74	33	66	35	292	115	12.5
garments (18)	149	41	100	41	84	38	333	120	13.1
chemicals (24)	79	21	68	35	79	41	226	97	10.6
plastics and rubber (25)	85	29	112	50	79	31	276	110	12.0
non-metallic mineral product (26)	187	54	92	25	65	19	344	98	10.7
retail (52)	186	67	38	17	24	6	248	90	9.8
other manufactures	71	37	103	23	112	33	286	93	10.1
other services	154	50	74	21	28	10	256	81	8.8
Total	1222	383	760	289	629	245	2611	917	100.0

Source: Author's compilation using WEBS 2009 and 2015.

Table 4.3 presents the industry sector and size of the firms. The industry sector is constructed according to the group classification of International Standard Industrial Classification of All Economic Activities (ISIC) revision 3.1 (The World bank 2015). Based on the number of observations, the sectors are then defined into 9 different groups, namely food, textiles, garments, chemicals, plastics and rubber, non-metallic mineral product, retail, other manufactures, and other services groups. Moreover, the number of panel samples in each sector is distributed almost evenly ranging from about 9 percent to 13 percent. The garments and textiles are the sectors that have the highest number of samples with 120 and 115 respectively, while the other services sector accounted for the least with only 81 samples.

On the regional stratification, the survey regards nine major regions representing Indonesia's regional economies. There is a justification that these regions have the largest population and become regional centers of Indonesia's economy that constituting over 70% of firms and around 68% of employment around the nation. Looking at Graph 4.1, the majority of panel data comes from a region within Java Island. It is not surprising because more than half of the gross domestic product is generated on Java island. Moreover, Jawa Timur has the biggest number of samples for small and medium businesses with 69 and 73 samples respectively, while Jawa Barat accounted for most large firms with 54 samples. On the other side, Bali has the least sample for small firms with only 20 firms, while Sulawesi Utara has the smallest sample for medium and large firms with about 10 and 2 samples respectively.

Figure 4.1
The distribution of sample across the region and firm size



Source: Author's compilation from WEBS 2009 and 2015.

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. Looking at Table 4.4, in total, more than one-third of the samples are eligible firms, while the rest are non-eligible firms. Regarding the firm size, small businesses have the most samples for eligible firms, whereas large businesses have the least with only 44 samples. This picture may clarify that the presumptive tax scheme is targeted at SMEs.

Table 4.4

Firm eligibility based on firm size (panel)

Eligibility	Small Firm		Medium Firm		Large Firm		Total	
	Freq	%	Freq	%	Freq	%	Freq	%
Non eligible	219	54.8%	196	63.6%	214	82.9%	629	65.1%
Eligible	181	45.3%	112	36.4%	44	17.1%	337	34.9%
Total	400	100.0%	308	100.0%	258	100.0%	966	100.0%

Source: Author's compilation from WEBS 2009 and 2015.

Meanwhile, corruption perception is an index ranging from zero (no obstacle) to four (very severe obstacle) reflecting how bad corruption affects firm operations. Intuitively, the level of corruption experienced by the businesses could influence their productivity, because it may take firm resources, such as money and manager time, to deal with any kind of corruption. The bigger scale indicates the worse the impact of corruption in firm productivity. Based on the panel data as presented in Table 4.5, more than half of the samples said that corruption was not an obstacle to business. This may be correlated to the rational exit theory of informality describing that businesses leave the formal sector to avoid bureaucracy burden and reduce interaction with government officials. More from the table, there are only less than three percent of the samples regarded corruption as a very severe obstacle for business, while others answered that corruption gave minor, moderate, and major obstacles accounted about 17%, 10%, and 12% respectively.

Table 4.5

Corruption perception according to firm size (panel)

Corruption Perception	Small Firm	Medium Firm	Large Firm	Total	%
No Obstacle	211	163	130	504	58.4%
Minor Obstacle	54	46	48	148	17.1%
Moderate Obstacle	26	30	27	83	9.6%
Major Obstacle	38	31	35	104	12.1%
Very Severe Obstacle	10	6	8	24	2.8%
Total	**339**	**276**	**248**	**863**	**100.0%**

Source: Author's compilation from WEBS 2009 and 2015.

Furthermore, we also determine some variables that may have effects on firm performance as well as some control variables regarding the firm's characteristics. Firstly, firm age is considered a significant factor regarding firm productivity. We use a proxy of the number of years in a firm's operation as a firm age variable. It is common sense that firm that runs their businesses for years typically have more experience with the market. They are also considered better expertise in undertaking the production process, so-called learning-by-doing knowledge. Moreover, experienced businesses benefit from a better growth prospect, advanced visibility, and having a better understanding of the market (Shamshuzzoha and Tanaka 2021). Furthermore, firm age has been identified as a determinant and been used as an explanatory variable for business growth and productivity in a large number of studies, such as in Demena and van Bergeijk (2019), and Fisman and Svensson (2007).

Next, the location effect is respected as an independent variable that is used to explain the variation in firm productivity. There are significant differences that may affect firm operations regarding their location. In many developing countries, the capital city has become a center for advanced development, such as infrastructure, utilities, and political reasons. It is typically the largest economic center within a country and presents agglomeration advantages (Amin *et al.* 2019). Therefore, we are controlling for a dummy variable to 1 if the businesses are located in the capital city of Jakarta and zero otherwise.

Table 4.6

Variable definition

Variable	Description
Labor Productivity	The logarithm of an establishment's annual sales per permanent labors (see Syverson 2011; Demena and Murshed 2018; Shamsuzzoha and Tanaka 2021)
Firm's eligibility	The binary variable that is valued 1 if annual sales in 2012 (three years sales before 2015) no more than IDR 4.8 billion, and zero otherwise.
Corruption level	Perception index that ranges from 0 to 4 reflects the degree of corruption impact perception from low to high respectively.
Small Firm Size	The firm has 5-19 permanent employees (see Amin, Ohnsorge, and Okou 2019; Demena 2017; Shamsuzzoha and Tanaka 202; De and Nagaraj 2014).
Medium Firm Size	The firm has 20-99 permanent employees (see De and Nagaraj 2014; Amin, Ohnsorge, and Okou 2019; Demena 2017; Shamsuzzoha and Tanaka 2021).
Large Firm Size	The firm has over 100 permanent employees (see De and Nagaraj 2014; Amin, Ohnsorge, and Okou 2019; Demena 2017; Shamsuzzoha and Tanaka 2021).
Firm Age	A number of years in operation. (see Demena and van Bergeijk 2019; Fisman and Svensson 2007; Shamsuzzoha and Tanaka 2021)
Location effect	A binary variable that is given value 1 if located in a capital city and zero otherways. (see Amin, Ohnsorge, and Okou 2019; Shamsuzzoha and Tanaka 2021)
Foreign ownership	Binary variable on firm's ownership. A firm is regarded as foreign-owned if foreign participation is at least 10%. (see Fisman and Svensson 2007; De and Nagaraj 2014; Demena et.al.2021; Aitken and Harrison 1999)
Capital Intensity	Capital intensity as the logarithm of machinery, vehicles, and equipment per labor. (Demena and Murshed 2018; Aitken and Harrison 1999)

Source: Resumed by author.

Thirdly, we regard the structure of firm ownership could influencing business performances. Demena *et al.* (2021) present that there are numerous studies that associated foreign ownership with firm productivity growth regardless of the type of firm-level heterogeneity. They reviewed a total of 1450 empirical studies and found around one-third of them showed that foreign ownership positively and significantly affects firm productivity, while only about one-sixth presented a negative and significant impact. More importantly, there is distinguishable business productivity between domestic versus foreign ownership (De and Nagaraj 2014). Therefore, we apply a dummy variable to control firm heterogeneity. A firm is regarded as foreign-owned if foreign participation is at least 10% and be given a dummy variable of one and zero otherwise.

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 4.7

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: Author's compilation.

Table 4.7 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.

4.2. Methodology and Empirical Specification

Assessing the impact of presumptive tax policy and corruption on firm performance, we employ a panel data regression model to find out a causal relationship between our dependent variable and variables of interest which are the eligibility of presumptive tax scheme and the corruption level perception. According to Hsiao (2007), panel data regression has many

advantages, for instance, great capacity for explaining the complexity of subjects' behavior, capabilities of controlling the impact of omitted variables, and simplifying the computation process and statistical inference. Moreover, there are many pieces of literature analyzing the impact of various variables on firm productivity (Fisman and Svensson 2007; Shamsuzzoha and Tanaka 2017; Demena 2017; Amin, Ohnsorge, and Okou 2019). A fixed-effect model for panel data regression is used for estimating the causal effect.

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,

$$\begin{aligned} LnLP_{ijt} = {} & \beta_0 + \beta_1 D_t + \beta_2 D_j + \beta_3 . \, tax\_eligible_{ijt} + \beta_4 . corrupt\_scale_{ijt} + \beta_5 . firmsize_{ijt} + \beta_6 . agefirm_{ijt} \\ & + \beta_7 . Lcapintl_{ijt} + \beta_{10} . capcity_{ijt} + \beta_{11} . foreign_{ijt} + \alpha \sum X_{ijt} + \varepsilon_{it} \end{aligned}$$

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.

Regarding the quality of model estimation, we took a series of econometric tests to assure that the fixed-effect model is the best approach for better estimation. According to Zulfikar (2018), we can perform several tests that may lead us to employ three common methods for the regression model estimation using panel data: pooled least square (PLS), fixed effect model (FE), and random effect model (RE). Firstly, we apply the chow test and set the null

hypothesis as the PLS is an efficient approach rather than the FE method. The test shows a p-value of less than 0.05 (0.00) which means we may reject the null hypothesis that the FE method is a better method than PLS. Second, we apply a Hausman test to examine whether FE or RE method is the most appropriate model to be used. The result indicates a p-value of less than 0.05 (0.044) and allows us to reject the null hypothesis. Eventually, the Hausman test is implied that the fixed-effect model is better than the random-effect model for the panel data regression.

After deciding the most appropriate estimation method, we have addressed several econometric issues related to our empirical strategy. Firstly, the issue of omitted variable bias is undertaken by accommodating time dummy, time-invariant fixed-effect, as well as time-variant firm-level variables. Secondly, a potential selection bias has been addressed by fixed-effect estimation. Also, a potential bias regarding entry firm and attrition between the two periods of the survey has been clarified in section 4.1. Next, we test the assumption around panel data regression that is multicollinearity. We have examined the concern around all the variables whether one or more variables have a strong correlation with other variables (as presented in Appendix Table A.4.2). From the estimated correlation matrix, we do not find any variable that has a pairwise correlation of more than +/- 0.7. Therefore, we may assure that there is no multicollinearity problem. Fourth, we also address the endogeneity issue. According to Cameron and Miller (2015), the application of a cluster-specific fixed effect estimator may be used to control for a limited form of endogeneity of the regressors. Alternatively, we apply the industry-cluster fixed effect for estimation.

Chapter V
Empirical Result and Discussion

5.1. The impact of presumptive tax on firm performance

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 5.1 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 5.1

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 5.1 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. Moreover, looking at the scatter plot in Figure 5.1, the data present eligible firms may not have

higher productivity than the non-eligible firms. In other words, the policy change of presumptive tax scheme is not an effective way to boost the eligible-firm performance. Since the target of the policy is SMEs, it does not significantly give an impact on the SME's productivity.

Figure 5.1

Two-way scatter of firm eligibility and productivity

Source: Compiled by Author.

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 5.2 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 5.2

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.

5.1.1. 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.

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.

Table 5.3

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.

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 5.3, 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.

5.1.2. 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 2014). 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 5.4

The relationship between firm productivity and the practice of informal competitors

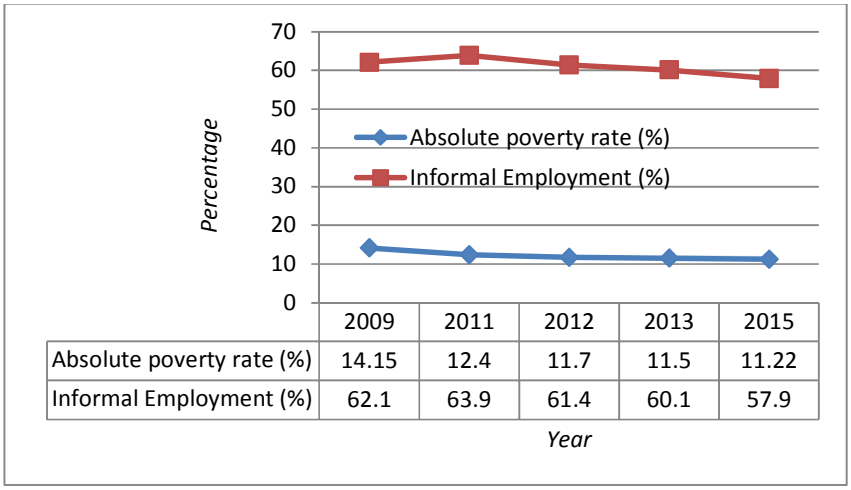
Dependent Variable: LnLP (Logarithm of Labor Productivity)	
Informal competitors impact	0.142 (0.758)
firm age	0.002 (0.007)**
foreign equity	0.178 (0.878)
capital intensity	-0.025 (0.758)
constanta	15.385 (0.000)
R-square (within)	0.360
F-test	526.4 (0.000)
rho	0.571
obs	864

Source: Compiled by author.

The result as presented in Table 5.4 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.

Figure 5.2

Poverty rate and informal employment rate Indonesia



	2009	2011	2012	2013	2015
Absolute poverty rate (%)	14.15	12.4	11.7	11.5	11.22
Informal Employment (%)	62.1	63.9	61.4	60.1	57.9

Source: Statistics Indonesia, Government Financial Statement (audited), The World Bank, and OECD calculation in OECD Overview (2015)

Moreover, according to the dual economy theory, the informality rate is an indication of poverty condition in a country. The solutions to reducing the informality rate are reducing poverty and boosting economic growth. Figure 5.2 present the patterns of the poverty rate and informal employment in Indonesia during the year 2009-2015. It can be implied that informality

size is reduced along with the decline of the poverty rate. In most developing countries, informal firms typically pay lower wage rates to their employees. People do not have any choice to pick jobs because there is limited job position available in the market. As consequence, they are forced by the condition to survive by creating small businesses. Often, these businesses are not well managed and have significantly low productivity.

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.

5.1.3. 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).

5.2. 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 5.5. 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 5.5

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

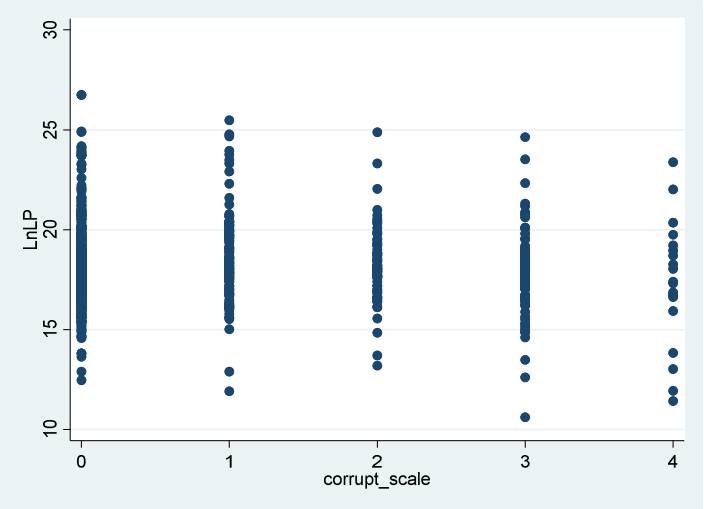
Dependent Variable: LnLP (Logarithm of Labor Productivity)				
	(A)	(B)	(C)	(D)
tax_eligible	-	0.425 (0.701)	-	0.425 (0.524)
corrupt_scale	-0.771** (0.046)	-0.776 ** (0.049)	-0.771*** (0.003)	-0.776*** (0.004)
agefirm	0.002** (0.030)	0.002* (0.058)	0.002*** (0.006)	0.002** (0.015)
foreign_equity	1.035 (0.415)	1.156 (0.749)	1.035 (0.283)	1.156 (0.277)
Lcapintl	-0.145 (0.184)	-0.136 (0.218)	-0.145** (0.027)	-0.137* (0.069)
Cons	17.634 (0.000)	17.652 (0.000)	17.634 (0.000)	17.652 (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. Additionally, the relationship between the corruption perception impact and labor productivity may be reflected in Figure 5.3. It is shown that the less impact of recent condition of corruption correlated to the higher increase of labor productivity.

Figure 5.3

Two-way scatter plot of corruption perception and firm productivity



Source: Processed by Author.

These 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; Fissman 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 5.6 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 5.6

The impact of corruption perception on sales

Dependent Variable: Log_sales (Logarithm of sales)			
	coef.	t-test	P> | t |
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

Moreover, we may attempt to check whether corruption tends to give a greater impact on the larger company. Simple regressions on cross-section data for each survey year and panel data for both survey years 2009 and 2015 are applied to test the relationship between corruption perception and firm size. The result in table 5.7 has confirmed that corruption perception is positively correlated with firm size. It confirms a study by Athanasouli et al. (2012) that suggests corruption was found to be more destructive for larger firm performance.

Table 5.7

The relationship between corruption perception and firm size

Corruption Perception	2009	2015	Panel
Firm Size	0.174*** (0.000)	0.08** (0.040)	0.105** (0.024)
Const.	0.514*** (0.000)	0.71*** (0.000)	0.64*** (0.000)
t-test	3.96	2.06	2.25
Obs	1,226	1,207	877

Source: Compiled by author.

5.3. The Impact of Taxation and Corruption on Firm Performance

Looking at Table 5.8, 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 5.8

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 Fissman and Svensson (2017) 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.

Intuitively, 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, 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.

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 2008).

Chapter VI
Conclusion and Recommendation

6.1. 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; Fissman 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 service, users are confirmed to disbursing bribes (Transparency International 2017).

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 Fissman and Svensson (2017). 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 misallocation of talents and assets (Murphy *et al.* 1990). 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.

6.2. Implication and recommendation

6.2.1. Implication for theory

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.

6.2.2. Recommendation

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.

Appendices

Appendix A4.1

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 given value of one if the firm is not observed in the second wave (2015) and zero otherwise.

Appendix A4.2

Correlation matrix of variables

	corrup~e	sizeme~m	sizela~e	agefirm	Lcapintl	food	textile	garment	chemical	plasrubb	nonmet~n	retail	others~v	mngr_s~l	capcity	foreign	time
corrupt_sc~e	1.0000																
sizemedium	-0.0133	1.0000															
sizelarge	0.0711	-0.4262	1.0000														
agefirm	-0.0204	0.0083	0.0235	1.0000													
Lcapintl	-0.0073	-0.0481	-0.1830	-0.0451	1.0000												
food	-0.0145	0.0449	0.0089	-0.0306	0.0962	1.0000											
textile	0.0063	-0.0140	0.0270	-0.0042	0.0480	-0.1311	1.0000										
garment	-0.0066	0.0150	0.0501	-0.0057	0.0978	-0.1383	-0.1375	1.0000									
chemical	0.0001	0.0159	0.1325	0.0452	-0.0131	-0.1221	-0.1214	-0.1281	1.0000								
plasrubb	-0.0029	0.1014	0.0032	0.0709	0.0600	-0.1311	-0.1303	-0.1375	-0.1214	1.0000							
nonmetalmin	-0.0084	-0.0457	-0.0645	-0.0373	0.1648	-0.1236	-0.1229	-0.1297	-0.1145	-0.1229	1.0000						
retail	-0.0120	-0.0895	-0.1546	-0.0036	-0.3075	-0.1190	-0.1183	-0.1249	-0.1102	-0.1183	-0.1116	1.0000					
otherserv	-0.0079	0.0006	-0.0849	-0.0422	-0.2381	-0.1404	-0.1396	-0.1473	-0.1301	-0.1396	-0.1317	-0.1268	1.0000				
mngr_skill	-0.0505	-0.0132	-0.0003	-0.1586	0.1685	0.0748	-0.0141	0.0464	-0.0495	-0.0069	0.0097	-0.1016	-0.0365	1.0000			
capcity	0.0748	-0.0244	0.0034	-0.0075	-0.0633	-0.0946	-0.0936	0.0549	0.0066	-0.0213	-0.1153	0.1132	0.1482	-0.0656	1.0000		
foreign	0.0798	-0.0768	0.3331	-0.0319	-0.0661	0.0162	-0.0924	0.0877	0.0847	0.0053	-0.0463	-0.0270	-0.0440	-0.0022	0.1063	1.0000	
time	-0.0389	-0.0732	0.0117	-0.0728	0.1790	0.0164	-0.0300	0.0325	-0.0386	-0.0085	0.0066	-0.0006	-0.1342	0.2208	-0.0121	0.0073	1.0000

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