

Examining the Economic and Non-Economic Factors on Tax Revenue in Indonesia

A Thesis

**Submitted to the Master's Study Program of Economics at the
Faculty of Economics and Business in partial fulfillment of the
requirements for the degree of**

Master of Arts (M.A.)



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UNIVERSITAS ISLAM INTERNASIONAL INDOENSIA

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ABSTRACT

Taxes are sometimes undermined by limitations on tax revenue measurement, despite the widespread consensus that taxes are typically a good policy instrument for evaluating the macroeconomic impact of the country's different tax policies. According to the Ministry of Finance, Indonesia's tax ratio has experienced volatile fluctuations over the past five years, and it is the third lowest of all ASEAN countries. This phenomenon can negatively impact tax revenue if not appropriately addressed by the government. This study considers various economic and non-economic indicators to assess the tax revenue. Inflation and unemployment are analyzed economically, while non-economic factors are trust and tax education. Investigating the relationship between these independent variables and tax revenue employs Panel Data Regression. The data utilized in this study were from the Directorate General of Taxes and the Central Bureau of Statistics (*Badan Pusat Statistik./BPS*) from 2015 to 2022. The analysis encompasses 34 provinces within Indonesia. The results of the Panel Data Regression indicate that inflation, tax education, and trust exhibit significant positive effects on tax revenue. In contrast, unemployment has an inverse impact on tax revenue. These findings offer valuable insights and recommendations to the government. The government should take a more proactive stance in managing inflation rates and addressing tax education. Tax revenue can be improved by effectively controlling one or more variables, thereby increasing tax revenue.

Keywords: Tax Revenue, Inflation, Unemployment, Tax Education, Trust.

PREFACE

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LIST OF ABBREVIATIONS

BPS	-	<i>Badan Pusat Statistik</i> (The Central Bureau of Statistics)
DGT	-	Directorate General of Taxes
GDP	-	Gross Domestic Products
HPP	-	<i>Harmonisasi Peraturan Perpajakan</i> (Harmonization of Tax Regulations)
KBBI	-	<i>Kamus Besar Bahasa Indonesia</i> (Great Dictionary of the Indonesian Language)
KPP	-	<i>Kantor Pajak Pratama</i> (Primary Tax Office)
MSME	-	Micro, Small and Medium Enterprises
NIK	-	<i>Nomor Induk Kependudukan</i> (National ID Number)
NPWP	-	<i>Nomor Pokok Wajib Pajak</i> (Taxpayer Identification Number)
OECD	-	Organization for Economic Co-Operation and Development.
PMK	-	<i>Peraturan Menteri Keuangan</i> (Minister of Finance Regulation)
PPH	-	<i>Pajak Penghasilan</i> (Income Tax)
SAS	-	Self-Assessment System
SPT	-	<i>Surat Pemberitahuan Tahunan</i> (Statement Letters)
UU	-	<i>Undang-undang</i> (Law of Constitution)
VAT	-	Value Added Tax

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CHAPTER 1

INTRODUCTION

1.1 Research Background

Tax revenues are the money collected from income tax, payroll tax, social security payments, and value-added tax. According to Tjahjono and Husein (2000) stated that taxes make up most of the State Budget (APBN), the cornerstone of the country's growth. Tax revenue is critical to the long-term viability of both developed and developing countries (Piancastelli, 2015). In other words, taxes are the only natural way to raise money to pay for the government's expenditures on the products and services that most of us want (Tanzi, 2001). However, establishing an effective and equitable tax system is difficult, especially for emerging nations that seek to integrate into the global economy. Developing nations like Indonesia need help with setting up effective tax systems. First, most people in these nations work in agriculture or informal, micro, small, and medium enterprises (Tanzi, 2001). They rarely receive a consistent, fixed wage. Therefore, their income fluctuates; many receive "off-the-books" cash payments. It is so challenging to determine the income tax base. Workers in these nations also tend not to spend their wages on major retailers who maintain precise sales and stock records (Tanzi, 2001). As a result, current revenues generating methods, such as income and consumption taxes, have less impact on these economies, and it is almost impossible for the government to impose high tax rates (Tanzi, 2001).

Second, statistical and tax authorities need help to provide accurate figures due to the informal economic structure of many developing nations and the need for more funding. Policymakers cannot evaluate the possible effects of significant changes to the tax system because of the absence of data (Tanzi, 2001). As a result, even when significant structural changes are preferable, minor alterations are frequently chosen over them. This keeps outdated tax systems in place (Tanzi, 2001).

In conclusion, rather than pursuing the ideal, tax policy is frequently an art in developing nations. Therefore, it is not surprising that the design of the tax systems in these nations has not been greatly influenced by economic theory, particularly the literature on optimum taxation (Tanzi, 2001). The writers of this publication thus depend on substantial practical, first-hand experience with the IMF's provision of tax policy guidance to those nations when discussing tax policy difficulties affecting many developing countries today. They take into account these difficulties from both a macroeconomic (the volume and makeup of tax income) and a microeconomic (aspects of the creation of particular taxes) standpoint (Tanzi, 2001).

The disparity in tax revenues between countries has sparked heated debate in the relevant literature. First off, taxes are the primary source of funding for the central government since they are necessary and regularly collected, which may provide income stability (Addison, 2008). Second, by providing public goods and services, taxes satisfy social and societal demands (Addison, 2008). Third, the government's establishment of military forces and judicial systems is necessary to ensure society's safety and justice (Addison, 2008). Low tax-revenue/GDP ratios in many impoverished developing countries restrict these countries from implementing ambitious spending plans. Therefore, a policy priority is a quick rise in domestic revenue and a proportional rise in public services (Addison, 2008).

The primary factors that have been identified as the root of variations in tax revenue are the level of development, which is typically represented by the gross domestic product per capita (Guptam, 2007; Pessino & Fenochietto, 2010; Castro, 2014), the productive specialization or the structure of the economy, which can be investigated through the sectoral composition of the GDP (Piancastelli, 2001; Karagoz, 2013; Castro, 2014), external factors such as control of inflation (Tanzi, 1988; Castro, 2014), foreign direct investment (FDI) and trade (Cassou, 1997; Gupta, 2007; Bird et al., 2008; Castro, 2014). Other elements include the effectiveness of the government and its institutions, which include political stability and civil tax knowledge (Bird et al., 2008;

Martin-Mayoral & Uribe, 2010; Castro, 2014). Some research has examined the impact of socioeconomic factors such as the educational level, assessed by public spending on education or illiteracy rate (Pessino & Fenochietto, 2010; Piancastelli, 2001; Castro, 2014).

In this paper, we study the determinants of tax revenue in a sample of thirty-four provinces in Indonesia from 2015-2022, employing static and dynamic panel data techniques. This study aims to help countries design better policies for mobilizing local resources and targeting them for economic growth. In conclusion, although a limited study examines the influence of these independent variables, some studies found the influence of tax revenue from two factors, namely inflation, unemployment, and non-economic factors from trust and tax education. The researcher wants to investigate whether inflation, unemployment, trust, and tax education affect tax revenue in 2015-2022.

1.2 Problem Statement

The instability of Indonesia's tax ratio over the previous five years also lies at the root of this study. Tax ratios are comparisons of tax revenue to determine the size of tax revenue in the national economy. The Indonesian government itself admits that the position of the current tax ratio is relatively low. According to the Director General of Taxes, Robert Pakpahan explained that the ideal figure for a tax ratio when referring to international standards in OECD (Organization for Economic Cooperation and Development) is 15%.

The Minister of Finance Sri Mulyani Indrawati (2021,) also stated that Indonesia's tax ratio was below regional and global standards. Previously, this tax ratio compared tax revenue and gross domestic product (GDP) in percent. The tax ratio shows the state's ability to collect taxes from annual income. The decline did appear to have occurred in a row from 2013 to 2022. Even though it had slightly increased in 2018, the tax ratio seemed to have fallen again and dropped sharply in 2020 due to the Covid-19 pandemic.

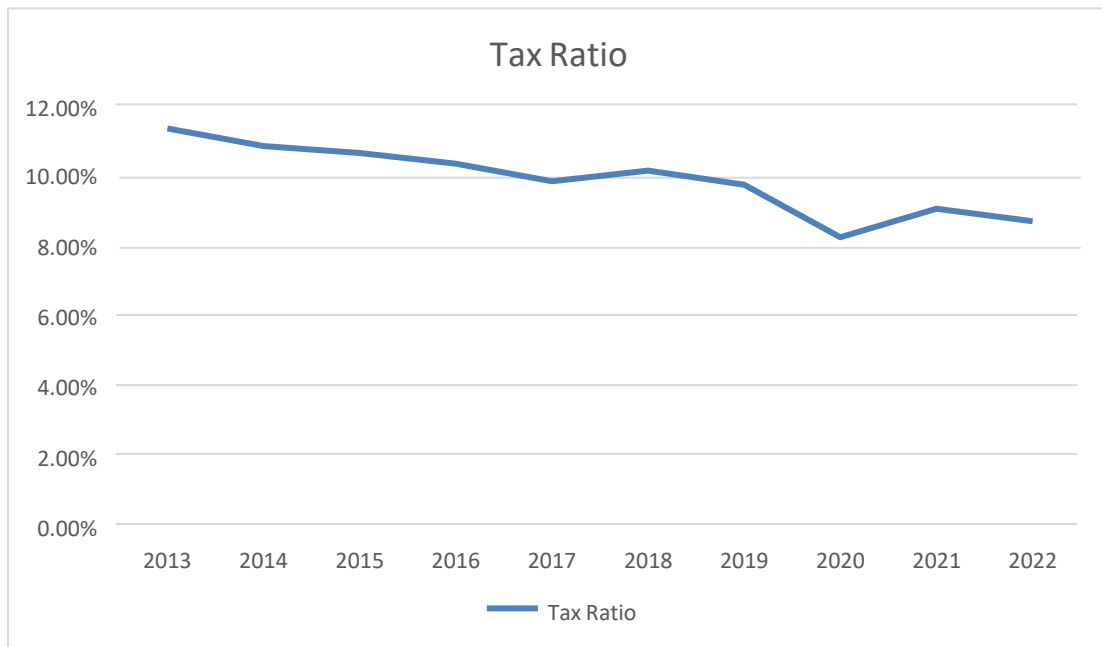


Figure 1.1 Tax Ratio in Indonesia 2013-2022

Literature studies indicate that factors such as the lack of tax education among taxpayers in self-assessment, trust issues and the impact of the Covid-19 pandemic leading to layoffs influence tax revenue. Additionally, inflation adversely affects tax revenue as citizens prioritize fulfilling their daily needs over tax obligations.

Addressing this issue is essential for adopting effective policies and strategies to improve and contribute to increased tax revenue and sustainable economic development. This study hypothesizes that inflation, unemployment, trust, and tax education impacted tax revenue. Empirical testing is required to validate these hypotheses and provide concrete evidence.

1.3 Research Question

Based on the problem statement and background provided earlier, this study explores the connection between the independent variables to tax revenue. The research questions that arise in the discussion of this thesis are as follows:

1. How do the economic factors such as inflation, unemployment and non-economic factors such as trust and tax education impact tax revenue in Indonesia?
2. What are the most effective strategies to enhance tax revenue in Indonesia?

1.4 Research Objective

The research objectives of this study are as follows:

1. To investigate and examining the economic factors such as inflation, unemployment and non-economic factors such as trust and tax education in tax revenue in Indonesia
2. To analyze and identify optimal strategies for improving tax revenue in Indonesia

By achieving these research objectives, this study aims to contribute to a comprehensive understanding of the factors influencing tax revenue. The findings will provide valuable insight for policymakers in managing the independent variables related to this issue. With meticulous attention to each component of the problem, our utmost efforts will be dedicated to successfully addressing this matter.

1.5 Research Hypothesis

The research objectives outlined above aim to investigate the impact of economic and non-economic factors to tax revenue by inflation, unemployment rate, trust, regional minimum wage, and tax education. Based on these research objectives, the research hypotheses are as follows:

- H1: Inflation has a significant positive effect on tax revenue, assuming the other independent variables remain constant
- H2: The unemployment rate has a significant negative effect on tax revenue, assuming the other independent variables remain constant
- H3: Trust has a significant positive effect on tax revenue, assuming the other independent variables remain constant

- H4: Tax Education has a significant positive effect on tax revenue, assuming the other independent variables remain constant

These hypotheses are the foundation for examining the relationships between the independent variables (inflation, unemployment rate, trust, and tax education) and their influence on tax revenue. By testing these hypotheses, the study aims to uncover meaningful insights into the impact of supported variables that impact tax revenue in Indonesia.

1.6 Relevance of The Study

This research aims to provide a comprehensive perspective on the intersection of e-tax revenue in developing country, which plays a crucial role in driving the economy in Indonesia. The study offers several benefits, including:

1. Enhancing the literature review in the field of tax revenue. This research contributes to a deeper understanding of tax law and its relationship to the economy.
2. Facilitating further research. This thesis can serve as a valuable resource for future studies exploring the role of economic and non-economic factors particularly concerning tax revenue. It can contribute to the enrichment of knowledge and provide a foundation for further research in this area.
3. Stimulating fresh viewpoints and ideas. This research can catalyze the development of new perspectives and ideas, particularly concerning governmental departments, such as the Ministry of Finance, in their efforts to establish a stable tax ratio in Indonesia
4. Providing recommendations for strategic decisions. The findings of this thesis can offer valuable recommendations for the Ministry of Finance in making strategic decisions to leverage the economic and non-economic factors as a significant contributor to tax revenue and tax ratio in Indonesia.

This research represents a new direction for the Indonesian government and policy leaders. Collaboration between the Ministry and government, responsible for tax-

related institutions in Indonesia under the Director General of Taxes, and the Ministry of Finance is crucial in developing strong regulations for the tax revenue in Indonesia. The resulting regulations in Indonesia can serve as a model for other developing countries, showcasing best practices in this domain.

1.7 Thesis Outline

This thesis has five chapters. The first chapter discusses the background of the research in this thesis, problem statements, research questions, research objectives, hypotheses, and relevance of the study. The second chapter discusses the literature review with sub-chapters tax, income tax, self-assessment tax. The third chapter discusses the research methodology, data, models, and timeframes. In the fourth chapter, discuss the research findings. The last chapter discusses the summary and conclusion. The fifth chapter will also discuss the shortcomings and limitations of this research to become a benchmark and recommendations for further research. In summary, this thesis is constructed as follows:

Chapter 1. Introduction

Chapter 1 contains the background that underlies the research on this thesis with the scope of the existing problems. The background also aims to provide background for several research questions and research objectives. This chapter's research hypothesis also discussed incorporating several studies with the same discussion. Some of the advantages of this thesis are intended to be explained by the study's applicability.

Chapter 2. Literature Review

A literature review from studies connected to this thesis discusses in this chapter, along with several theories from earlier studies. The first subchapter covers inflation, unemployment, minimum wage, tax education, and trust. It outlines pertinent scholarly publications on the topic and defines essential terms and concepts connected to tax revenue. This chapter also identifies the gaps in the body of knowledge, which will aid the reader in appreciating the importance of the ongoing investigation.

Chapter 3. Research Methodology

The third chapter describes the research methodology employed. This thesis discusses the study and social situations using the popular quantitative methodology. This thesis uses Panel Data Regression.

Chapter 4. Research Findings

Chapter 4 describes the results and discussion for interpreting the findings supported by previous research. The findings are discussed in tables to facilitate easy comprehension of research questions and hypotheses.

Chapter 5. Summary and Conclusion

This last chapter summarizes all sources, research findings, criticism, and over recommendations. This chapter also explains the limitations of this research so that it becomes a suggestion for further research.

CHAPTER 2

LITERATURE REVIEW

2.1 Theoretical Framework

This study aims to investigate the relationship between tax revenue and several independent variables to understand the complexities of tax revenue better. Inflation and unemployment are economic factors in terms of non-economic issues are considered, there are things like trust and tax education. Although studies on tax revenue have become more common, the result of these studies have needed to be more consistent, and few researchers have looked at the reputational issues that influence tax revenue. Developed countries were the most research on tax revenue. There are few studies on tax revenue in developing countries, including Indonesia.

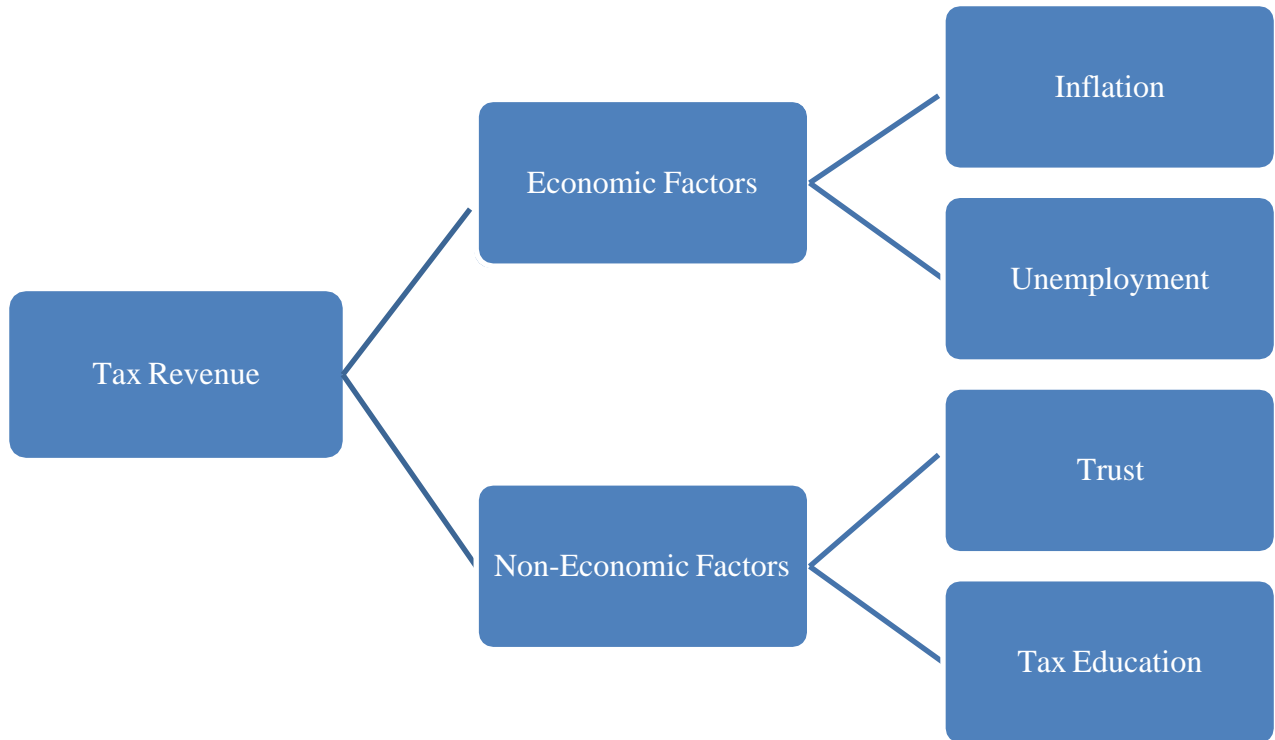


Figure 2.1 Tax Revenue theoretical framework for Thesis Research

The theoretical framework of this study focuses on the background of tax revenue as the dependent variable and factors that determine tax revenue as independent variables from economic factors, namely inflation, unemployment rate, and from non-economic factors, there are tax education and trust as independent variables.

2.1.1 Tax Revenue

Taxation is a legal obligation for all citizens, whether from informal or formal corporate sector (Alabede, 2011). According to OECD, tax revenue is the money collected from income and profit taxes, social security payments, taxes on goods and services, payroll taxes, and taxes on property ownership and transfer. Total tax revenue as a percentage of GDP shows how much of a country's output is collected by the government through taxes. It is one indicator of how much influence the government has over the economy's resources.

Tax revenue supports economic development by funding social programs and infrastructure investment (Ibrahim et al., 2015). As a civic responsibility, citizens are supposed to comply with such obligations. Most individuals dislike paying taxes, making it impossible for tax authorities to impose and collect taxes wherever and at any time, (Alm Martinez-Vazquez & Schneider, 2003; Alabede, 2011). The government's primary goal and responsibility is to ensure that citizens, regardless of socioeconomic standing, execute this civic duty and behave following tax rules (Kirchler, Hoelz, and Wahl, 2008; Alabede, 2011). However, tax collection and enforcement are difficult to enforce in both developed and developing economies. As a result, raising tax income is a top priority for policymakers. Policymakers can directly enhance revenues by considering tax revenue determinants.

The composition of tax compliance and its changes over time are significant for policymakers to enhance tax revenue (Ibrahim et al., 2015). Different levels of taxation may be associated with varying tax revenue compositions across time and among countries. Numerous publications in the literature investigate the factors that influence tax revenue. Some of the primary determinants of tax revenue are GDP per capita,

agricultural sector, industrial sector, capital inflow, openness, political stability, corruption, inflation, accountability, and mortality (Tanzi & Davoodi, 1997; Ghura, 1998; Piancastelli, 2001).

Most developing countries face significant challenges in raising tax revenue through direct taxes. However, there is often scope for rationalizing the rate structure and limiting exemptions in some middle- and high-income developing countries to improve revenue from personal income tax, which can amount to several times the country's per capita GDP and thus benefit those with high incomes (Doerrenberg, 2015). Given the positive relationship between taxes and revenue performance and the negative relationship between indirect taxes and revenue performance, one might assume that relying more on the former would increase tax performance. However, the reality in many developing countries may preclude such a move (Doerrenberg, 2015).

The cost of service, benefit, and social-political tax theories are the three fundamental theories used to examine tax revenue (Ojong et al., 2016). According to the principle of service costs, those who will ultimately get a service must contribute to the expenses incurred by the government in providing that service (Jhingan, 2004). This viewpoint holds that tax rates are similar to prices. Therefore, people should not be charged for not utilizing public services. There are several objections to this idea. According to Jhingan (2004), the cost of service theory places some restrictions on government services. The government's mission is to help those in need. This idea contends that the state does not provide welfare services, including healthcare, education, and social assistance (Ojong et al., 2016). In addition, it is challenging to calculate the cost per person of the various services provided by the state; once again, the theory violates the correct definition and basic principles of taxes; and last, the theory's taxation base needs to be more accurate. The cost of service hypothesis has already been updated due to its limitations. The benefit theory of taxes was born due to this modification (Ojong et al., 2016). This point of view contends that taxation should be based on how much a person benefits from government services. According to this theory, there is an exchange

connection between the government and the taxpayers. By providing social goods for which taxpayers pay taxes, the government offers some advantages to taxpayers (Ojong et al., 2016). The hypothesis is no longer valid since it is hard to measure the advantages that a person receives from using government services (Ahuja, 2012). According to the sociopolitical philosophy of taxation, social and political goals should be prioritized when assessing taxes (Ojong et al., 2016). According to this claim, a tax system should address social problems rather than enrich individuals.

2.1.2 Inflation

Inflation is the rate of increase in the price of goods and services in a certain period. The method that can be used to measure inflation is through the Consumer Price Index. In addition, high inflation can affect the competitiveness of an economy in global markets which results in a decrease tax revenue (Caballe, 2004). Economists and decision-makers pay much attention to inflation because it is a significant economic problem. It describes a consistent increase in the overall price level of goods and services over a certain period in an economy.

The inflation rate can significantly affect a country's economic growth by reducing purchasing power, discouraging investment, and increasing uncertainty. The nature of the relationship between inflation and tax revenue should be investigated from a policy perspective. It has been argued that inflation is tax revenue that is not regulated by law but can increase government revenue (Crane, 1986). However, if tax non-compliance is positively related to the inflation rate, the net effect of inflation on tax revenues may be more insignificant than is widely assumed. In addition, a positive relationship has implications for tax revenue strategies because taxpayers will increase their compliance efforts during periods of inflation (Crane, 1986). According to Ngotho & Kerongo (2014) examines that inflation limits the amount of money available to taxpayers and companies for tax payments. This pattern makes it reasonable to believe that tax revenue increases with inflation.

One prominent theoretical framework regarding tax revenue, is the Tanzi-Olivera effect that defines at least two equilibrium levels of tax collection, and each is

associated with a different amount of inflation (Dornbusch & Simonsen, 1987; Kiguel & Liviatan, 1988). The Tanzi-Olivera effect causes ordinary tax collections to decrease with high inflation. The Olivera-Tanzi effect can describe the decline in real government income during a period of growing inflation, which is already well-known in theory. Government revenues combine “normal” tax collections and inflation tax revenues.

A study from Lucotte (2010) explores that the study uses the Tanzi-Olivera effect to examine the relationship between inflation and tax revenue. The Tanzi-Olivera impact shows a negative relationship of tax revenues on inflation. According to the analysis, tax revenue will increase if there is a decrease in inflation. On the other hand, when there is hyperinflation, there is a tendency for non-compliance to increase. Research from Lucotte (2010) found a weak and unfavorable correlation between tax revenue conditions and tax non-compliance behavior. Therefore, in this condition, it is crucial to understand the relationship between inflation and tax revenue for policymakers, especially in developing countries such as Indonesia.

2.1.3 Unemployment

Unemployment is a crucial indicator of an economy's health that shows an individual still needs to be employed and looking for a job. According to a large body of research on tax revenue, the issue of unemployment brings up a crucial uncoordinated policy resulting in ineffectively low taxes (Wilson, 1993). Tax policy changes have drawn much attention among the different policy ideas to reduce unemployment (Bohringer, 2005). In a society with fewer children and an elderly population, unemployment poses significant challenges. If many younger individuals are still unemployed, the government cannot levy enough taxes to fund social security services. Therefore, it is crucial to consider how unemployment develops and how a government should handle the challenges it poses.

The different analytical techniques enable an assessment of the consequences of alternative tax policies on unemployment. The conceptual connections between taxes

and unemployment are made extremely clear using a framework based on market equilibrium anchored in micro-foundations (Zee, 1996). Since an equilibrium result in such a framework depends on the optimizing behavior of economic agents in response to cost-benefit incentives, all taxes and subsidies that affect these incentives, which they almost always do (directly or indirectly), will affect the equilibrium result (Zee, 1996).

Furthermore, in many emerging economies, measured unemployment represents joblessness in the formally organized urban economy. Although the reach of explicit unemployment compensation is constrained, a jobless urban worker may sustain himself by working in the unorganized sector or accepting transfers from other members of his extended family (Zee, 1996). The government's tax might significantly impact the magnitude of such payments, influencing his job search behavior and option selection (Zee, 1996).

Policymakers who value employment, efficiency, and tax revenue may be able to achieve more utility with a combination of taxes on employment and minimum wage in one sector that can be achieved with taxes on employment alone (Gokcekus, 2003). However, work is taxed, and leisure is not, so the value of the marginal product of the new workers exceeds the value to them of leisure lost by the size of the tax. Consequently, the value of the basket of goods and leisure produced in the economy rises by the amount of the tax times the net new employment as the minimum wage pulls labor out of untaxed leisure, where too much of the labor force is lurking, into taxed work. In other words, this means that employment rises, efficiency rises, and since labor is taxed uniformly in both sectors, tax revenue also rises.

The study from Zee (1996) found that taxes are a significant driver of the labor market in particular, even if it is only one of several factors (and might not even be a dominating factor) that can directly affect unemployment. The creation of aggressive tax policies should be given less importance in the effort to lower unemployment. A more significant number of workers at productive ages will mean an increase in the

production level that total state and tax revenues will accompany. Therefore, the focus of policy should be on finding the most helpful aspects of the tax system and fostering an environment favorable to economic growth and employment.

2.1.4 Trust

Trust has been studied extensively in theory from psychological, philosophical, and social-terms (Olsen, 2008; Ali & Ahmad, 2014). Trust is strongly connected with individuals' perceived vulnerability as a result of the acts of others, although the differ of definitions of trust. Trust is a significant attitudinal component that determines tax morale among the public in the taxation and can include both horizontal trust (among taxpayers) and vertical trust between taxpayers and the state literature (Torgler & Schneider, 2007; Ali & Ahmad, 2014).

In the context of tax revenue, trust emphasizes the relationship between the taxpayer and tax authority resulting from the taxpayer's trust in the tax authority's actions. Tax revenue increases if a taxpayer trusts the tax authority (Kastlunger et al., 2013). The same conclusions in the studies of Faizal et al (2017) conclude that increased tax revenue results from the credibility of the tax authorities. Research from Wahl et al (2010) investigates that a highly reliable and trustworthy tax authority could increase tax revenue voluntarily or through enforcement. Trust is also a factor that can strengthen the relationship between procedural justice and tax revenue as a mediator (Murphy, 2004). Trust is regarded as an indicator to assess the authority's level of justice (Konovsky & Pugh, 1994).

Regarding measuring the level of trust, the democracy index is used as an indicator in Indonesia per province. The author obtains data from the Indonesian Central Bureau of Statistics (*Badan Pusat Statistik/BPS*) from reliable sources. The theory that strengthens the author's use of the democracy index to represent public trust in tax compliance is from Rashid et al (2021) study which argues that collecting tax revenue is a macroeconomic regulation that encourages public spending and democracy.

Therefore, based on a compatibility perspective, the authors estimate that democracy will increase tax revenues, especially in developing countries (Torgler, 2005). The democracy index is a quantitative measurement tool used to assess the extent of the development and implementation of democracy in each province. The academic benefit of the democracy index is that it shows the level of democratic development in each province (Torgler, 2005).

Several previous studies have tested empirically the relationship between democracy and tax revenues (Baskaran & Bigsten, 2013; Boix, 2003; Cheibub, 1998; Ehrhart, 2011; Fauvelle-Aymar, 1999; Garcia & von Haldenwang, 2016; Mahdavi, 2008; Mulligan et al., 2004; Profeta & Scabrosetti, 2010). Depending on a country's level of economic development, a democratic government, regarding other criteria, will be more or less effective in enabling the collection of tax revenues from specific categories. Economic growth and a country's development level are influenced by the degree of democratization and the design of the tax system (Levi, 1988; Benno, 2004). Direct democratic standard shows that citizens are neither uneducated nor ignorant voters, which generates or maintains a certain level of social capital. Thus, the government indicates that taxpayer preferences are considered in the political process. From Benno (2004) findings that the index of direct democratic rights has a substantially significant positive effect on tax revenue. Additionally, the findings of Hassan et al (2021) imply that the government should prioritize enhancing laws and order conditions by urgently enhancing the legislative framework and its observance, which would aid in boosting tax revenue in the short term.

In order to investigate the relationship between tax compliance, tax revenue, and unemployment, the research from Lisi (2012) incorporates the core ideas of the “slippery slope” framework into the baseline matching model proposed by (Pissarides, 2000). The “slippery slope” framework was developed in the field of economic psychology to explain the high level of tax compliance rather than the high level of tax evasion, emphasizing that (a) some tax compliance is voluntary and depends on trust in tax authorities, and (b) the standard mechanism of enforced compliance (monitoring

probability and expected penalty) is still in place. The significance of the relationship between power and trust for tax revenue is captured in this theoretical study (Kirchler, 2007; Kirchler et al 2008a, b; Muechlbacher & Kirchler, 2010). Additionally, it demonstrates how the firm's choice to cheat taxes is influenced by its level of faith in tax authorities and impacts the unemployment rate, one of the most significant macroeconomic factors. The key finding of this study is that the "right mix" of deterrent tactics may maximize trust in tax authorities, boost tax revenue and possibly even lower unemployment rates. The amount of authority's power that is strong enough to encourage faith in the efficacy of their job but not so high that the exercise of power erodes confidence is characterized as the "right mix" of policy tools of deterrence.

2.1.5 Tax Education

Tax education is every effort and process in developing and increasing the potential of citizens to produce high tax awareness behavior, increase tax knowledge, tax skills and increase tax revenue. According to Palil et al (2011), tax education affects tax revenue. One strategy to manage the tax revenue problem is to look into the tax education system. Tax education is described by Palil et al (2011) straightforwardly and understandably as the capacity of the taxpayer to comprehend tax rules and determine their tax liabilities.

Tax revenue rises as tax education improves people's understanding of taxes. There is a link between education and tax revenue (Kasipillai et al., 2003). The social learning theory states that education will impact the behavior of compliance and tax revenue. Tax education is significant because citizens must be knowledgeable about taxes since it may help them comprehend tax rules and regulations more clearly (Eriksen & Fallen, 1969). According to this view, taxation is taught rather than just performed and picked up from experience (Sommerfel, 1966; Bahari, 2009). Tax education aids in a person's education improvement and helps that individual comprehend the tax regulations (Bahari, 2009).

To equalize the level of education in taxpayers, especially regarding tax education,

taxpayers need to get facilitated by professionals in tax education. In this case, the relevant ministry to provide tax education is the Directorate General of Taxes, as instructors from tax officials have a special duty to provide tax education to taxpayers. Since 2020, the DGT has deployed tax consultants to help taxpayers fulfill their tax obligations independently. This vision and mission are consistent in fostering voluntary tax compliance. The Ministry of State Apparatus Utilization and Bureaucratic Reform (*Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi/PermenpanRB*) Regulation No. 49/2020 concerning the Functional Position of Tax Instructors contains the functional legal umbrella for tax education. According to The Ministry of State Apparatus Utilization and Bureaucratic Reform No. 49/2020, the duties of tax extension functional positions are as follows:

1. Carry out counseling and extension development activities in the field of taxation to increase tax knowledge and skills, as well as the taxpayer community's behavior so that they are more understanding, aware, and concerned about exercising their rights and fulfilling their tax obligations.
2. Providing tax consultations, both offline and online, through the primary tax office (KPP) helpdesk room, phone, chat, tax seminars, or tax goes to campus and other similar activities.
3. Investigating tax administration software applications.

Only after considering the content of education, many scholars agree that more education enhances understanding of taxation (Eriksen & Fallen, 1996; Kinsey & Grasmick, 1993; Song & Yarbrough, 1978). Taxpayer education degree significantly adds to their comprehension of taxation, particularly tax laws and regulations (Eriksen and Fallan, 1996). Previous research has found that decreased complexity and increased tax knowledge increase tax revenue (Clotfelter, 1983; Kirchler & Maciejovsky, 2001; Park & Hyun, 2003). Taxpayer education affects their decision to file taxes (Machogu & Amayi, 2013). Of the respondents, 83% said that having a basic understanding of taxes helped them to understand the tax system (Machogu & Amayi, 2013). The key variables influencing revenue with income tax administration among

MSMEs in the Nkwanta South District in Ghana are a lack of tax education, non-registration, low incomes, high tax rates, and high consumption, according to the findings of (Peprah et al., 2020). Future research into the impact of informal and formal education on taxpayer compliance could be beneficial. Therefore, it is crucial to take tax education as an independent variable to examine how much tax education influences tax revenue.

2.2 Theory Application

In this sub-chapter, the application of theory explains the background of the literature review. This sub-chapter describes the critical elements associated with the independent variables used in this study. In this case, the author discussed Tax, income tax, self-assessment Tax, and Micro, Small and Medium enterprises.

2.2.1 Tax

The definition of Tax, as stated in Article 1 Paragraph 1 of Law No. 28/2007 concerning General Provisions and Procedures for Taxation, is a mandatory contribution to every citizen by people or entities who are coercive by not receiving direct compensation and used for state needs for the prosperity of the people. According to Maharani (2021), taxes are the transfer of wealth from the people to the state treasury to finance ongoing expenditures, with the surplus going to public savings, the primary funding source for public investment. From Maharani (2021) explains that the financial function is a component of the revenue function (budgetary), namely (1) The tax function, which seeks to maximize revenue in order to pay for state expenditures; (2) Functions to regulate specifically the use of taxes as a tool to regulate society with a specific goal; (3) Serves as a price stabilizer to help keep inflation under control; (4) Serves as income redistribution, where the government uses taxes to finance all public development and interests to create jobs and open positions. According to Fiscus's theory, various efforts are made in terms of intensification and extensification to increase the amount of state tax income. Extensification is a strategy to raise tax income by increasing the number of taxpayers paying taxes. Increased taxpayer compliance, tax administrative oversight,

audits, inquiries, billing, and reporting are all part of the intensification strategy.

Furthermore, a country's ability to raise sufficient resources through taxation, in addition to building and solidifying a representative democracy, determines its ability to provide for the welfare and security of its population (Armah-Attoh & Awal, 2013; Musimenta et al., 2017). Five tax principles govern e-commerce transactions in a Committee on Fiscal Affairs report (OECD, 2000; Maharani, 2021). These five principles include (1) Neutrality, which states that tax provisions must be neutral for all trade lines, including traditional and electronic trade. (2) Efficiency, expenses like taxpayer compliance and administrative costs must be kept to a minimum. (3) Clarity and simplicity; tax laws must be simple to follow and understand so taxpayers know the tax implications before engaging in any transactions. (4) Tax calculations must be made relatively and effectively appropriately. (5) Flexible. The tax system needs to be dynamic and adaptable to keep up with changes in trade and technology.

The book "*The Wealth of Nations*" by Adam Smith, as quoted in the policy paper of the Association of Chartered Certified Accountants (ACCA, 2009), emphasizes that taxes must fundamentally follow the four principles outlined below. 1) Maintaining equilibrium. Taxation must be based on the taxpayer's ability to pay. 2) Confidence. Taxpayers must be able to calculate their Taxes and when and how to pay them. 3) Ease of use. Collecting taxes at the appropriate moment when the taxpayer obtains income or money. 4) Economy. Administrative and compliance costs must be kept to a minimum so that the Tax collected does not fall below the business costs of tax collection.

2.2.2 Income Tax

As stated in Law of the Republic of Indonesia No. 36/2008, income tax is a deduction from income in salaries, wages, honoraria, benefits, and other payments associated with the labor, services, or other activities that individual taxpayers perform. Home-based

private Individuals and organizations are subject to income tax; these parties are called taxpayers.

Income tax is a particular kind of subjective tax in which the tax liabilities are assigned to the pertinent tax subject, classifying the tax obligation as a direct tax that is not transferred to other tax subjects. Income earned during a tax year is taxed for income tax clients. Tax compliance was the most crucial component in accomplishing specific goals from income tax collection (Savitri, 2016). Typically, higher tax compliance would impact the rising income tax collection. So, to enhance income tax revenue while maintaining the maximum revenue level, the government will always ensure proper income tax compliance.

2.2.3 Self-Assessment System Tax

This sub-chapter explains the purpose of the self-assessment system and the connection between tax compliance. In a self-assessment system, taxpayers are trusted and given the obligation to determine, deposit, and report their tax liabilities. Self-Assessment System tax is that the taxpayer, not the taxing authority, is in charge of determining the amount of tax due (Sarker, 2003). When contrasted to an official evaluation system, SAS offers specific advantages. The main benefits of SAS are:

1. It is more cost-effective than a non-SAS because it only chooses exceptional cases for closer examination.
2. It eliminates the administrative component of assessment work.
3. It promotes early and prompt tax collection, and;
4. It lessens corruption by limiting interactions with taxpayers.

The importance of tax compliance is projected to increase due to technologies like self-assessment and electronic commerce. These elements have ramifications for how the tax system should be implemented in terms of policy. One concern associated with self-assessment is the tendency to rely on a stricter enforcement system. Most countries

acknowledge that the fundamental goal of self-assessment systems is to boost voluntary compliance, reduce administrative expenses and boost efficiency. It has always been complex to convince every taxpayer to follow the rules of a tax system (James et al., 2009).

In a study by Fatt et al (2011), the self-assessment system's implementation had a considerable impact on taxpayer compliance. Based on Malaysia's self-assessment system, tax knowledge significantly impacts tax compliance, and respondents' levels of tax knowledge vary (Fatt et al., 2011). The findings also showed that factors such as the likelihood of an audit, how taxpayers see government expenditure, penalties, financial limitations, and the referent group affected their tax compliance (Fatt et al., 2011). The self-assessment system will significantly impact tax revenue as the expectation of voluntary efforts and active engagement of taxpayers in defending their tax rights and obligations (Palil, 2010).

Although Indonesia has been using the self-assessment method since 1984, Indonesia still needs a higher level of taxpayer compliance. Taxpayers continue to view the trust made in the self-assessment system as something other than a voluntary option. Taxpayers' low compliance and lack of understanding that the self-assessment system has yet to be adopted as a guiding principle or meeting tax rules (Wijaya, 2016; Machfuzhoh & Puspanita, 2021). Nevertheless, the findings from Nurlaela (2017) show the contradiction that the self-assessment mechanism significantly improves taxpayer compliance.

However, this system needs several things to improve. There are still taxpayers who do not understand how to fulfill their tax obligations and even feel burdened because they have to do so on their own, beginning with registering themselves, filling out SPT (Statement Letters), calculating the amount of tax payable, and depositing their obligations, as a result of which taxpayers do not have the desire to comply in fulfilling their tax obligations. Self-assessment is not a viable solution for capturing tax potential if the Directorate General of Taxes only depends on physical or conventional trade. If the potential for tax revenue in online trade increases, then the government must pay

special attention to informal workers to balance the knowledge standards for each taxpayer. This special attention aims to form a full awareness of the responsibility of taxpayers in paying taxes and can form tax revenue.

2.3 Previous Research

2.3 1 Tax Revenue

Most nations, especially medium-income nations, rely heavily on tax revenue to fund their budgets. Many academics are interested in the issue of tax revenue considerations. Researchers have used a variety of methodologies to perform studies on various nations or locations. According to Chelliah (1971) examined statistics for the tax system in more than 30 nations during the 1966–1968 period as part of a study of changes in tax collection in 30 developing countries from 1953–1955 to 1966–1968. The findings reveal that (1) the percentage of GDP devoted to mining and (2) the percentage of exports unrelated to mining had a beneficial influence on tax revenue. (3) Increased per capita income resulted in a better degree of development and a greater capacity to pay taxes. However, the per capita income did not have a statistically significant impact on tax collection, according to this study.

Economic growth is the development of economic activity that raises the aggregate amount of goods and services generated by society (Sadono Sukirno, 2011; Muttaqin, 2019). If the population's income grows, it will modify its spending habits, which will affect tax revenue. If a region's GDP improves, then the region's capacity to pay taxes (ability to pay) will likewise increase (Hanif, 2005; Muttaqin, 2019). It influences raising tax revenue. Economic growth is a process of increasing production in the long term, argued by (Boediono, 1992; Muttaqin, 2019). The usage of economic growth indicators will be witnessed over a lengthy period.

A significant source of government spending power is tax revenue (Hassan et al., 2021). For the government apparatus to function effectively, there must be an acceptable ratio between tax revenue and GDP. Prior academics have underlined the significance of the tax revenue to GDP ratio. From Kaldor (1963) argues that a nation

needs to collect taxes equal to or higher than 15% of its GDP. Therefore, the poor governance of developing nations may cause a low tax revenue ratio. A nation must collect taxes in order to operate profitably. The literature has looked into the various factors that affect tax revenue. For instance, among the other key variables, a groundbreaking study demonstrated that income and trade openness favorably impacted tax revenue (Lotz et al., 1967).

In Indonesia, there are two significant tax revenue sources: income tax and value-added tax. Income tax is described as a subjective tax that considers the personal status of the taxpayer as a primary component in taxes. The personal status of the taxpayer, which is represented in his ability to pay taxes or his carrying capacity, is taken into account and is utilized as the primary foundation for establishing how much tax can be imposed (Muttaqin, 2019).

According to Profeta and Scabrosetti (2010) examined the factors that affected tax income between 1990 and 2004 in 39 nations, including 11 in Asia, 19 in Latin America, and 9 in the European Union. In contrast to Latin American nations, their research demonstrates that GDP per capita and the debt-to-GDP ratio were crucial in predicting tax collections in Asian economies. The openness of the economy had a good influence on tax income in Asia and Europe but a negative impact in Latin America. The percentage of agriculture in GDP harmed tax revenue in Latin America but was not significant in Asia. The effectiveness of the tax system increased according to the level of democratic, civil, and political rights. The education level in Latin American countries, the proportion of the over-65 population, the percentage of female labor, and the size of the underground economy positively and significantly impacted tax revenue.

In contrast, population density did not have any impact. In Asia, the variables for the high school graduation rate and the proportion of the urban population had no impact. However, the proportion of the over-65 population significantly negatively impacted tax revenue.

A panel data regression method was applied to determine the determinants of tax revenue in 32 countries in Latin America and the Caribbean in the period 1990–2009 (Dioda, 2012). The research results indicate that civil liberties, the number of female workers, political stability, the education level, population density, and the scale of the underground economy significantly impact tax revenue.

In the investigation from 2001 to 2011, 34 OECD members' tax revenue-influencing elements were examined (Castro & Camarillo, 2014). According to them, tax revenue is positively impacted by GDP per capita and manufacturing sector size but negatively impacted by FDI rates, agriculture, civil liberties indices, and life expectancy. To identify which long-term determinants (economic, social, political, and cultural elements), a study from Castañeda Rodríguez (2018) stated that impact taxes and explain discrepancies in tax performance, researchers studied an imbalanced panel dataset with a comprehensive sample of industrialized and developing nations over 40 years (1976-2015).

The findings indicate that taxes exhibit path dependency based on the significance of delays, taking into account the overall tax burden, income, consumption tax receipts, and a progressiveness index. The results suggest that historical and structural factors like the state of the economy and the movements of other public income sources (like inflation) significantly impact tax. This study of the literature indicates the lack of agreement among previous investigations.

2.3.2 Inflation and Tax Revenue

Tax compliance has been a typical topic discussed since Allingham & Sandmo (1972) explain that the literature deals with tax avoidance which is attached to tax revenue. Most recent contribution could not account for the potential that the inflation rate might also impact the choice to avoid taxes because of the static of nature (Crane, 1986). The of the relationship between the inflation rate and aversion should be investigated from a policy perspective. Results from Crane (1986) explained that, on average, taxpayers implement their own, non-legislated tax decrease through evasion in response to the

inflation-induced tax hike. Consequently, the net impact of inflation on tax receipts is less significant than the usual elasticity estimates suggest.

Studies from Lucotte (2010), inflation could lead to lower taxes that are willing to be paid and lower real income from fines assessed to audited taxpayers. Inflation, according to the researcher, has no bearing on tax evasion decisions in Malaysia (Lucotte, 2010). In times of hyperinflation, the government's increased use of inflationary finance tends to encourage more non-compliance. In this instance, inflation was a significant by-product of non-compliance rather than its primary cause. The Tanzi-Olivera effect is the name given to this adverse impact of inflation on actual fiscal revenue (See Tanzi, 1977; Olivera, 1967). One result of the Tanzi-Olivera effect is that governments that experience significant tax evasion owing to inflation will accelerate monetary growth to obtain further inflationary financing (Fishlow, 1994). Thus, the Tanzi-Olivera effect makes stabilization operations in nations with inflation more challenging.

2.3.3 Unemployment and Tax Revenue

A comparison of the effects of different tax regimes on unemployment is possible because of the numerous analytical techniques. The conceptual relationships between taxation and unemployment are relatively simple to understand when using a framework based on market equilibrium anchored in micro-foundations. The issue of unemployment brings up a crucial policy point: According to a large body of research on tax competition, uncoordinated policies result in ineffectively low taxes (e.g., Bucovetsky & Wilson, 1991). On the other hand, a sizable portion of the literature on unemployment argues that excessively high taxes are at least partially to blame for the unemployment issue.

According to the economic literature, the consequences of a change in a country's tax rate cause a less pronounced impact on firms (Zirgulis, 2017). This finding is because the effect of tax rate changes is not immediately felt and can be felt in other different ways.

Existing approaches focus on how corporate tax rates affect how firms deploy capital. Several studies then attempt to infer how capital shifts due to these tax rate changes may impact unemployment. Therefore, unemployment can be caused by the tax rate, as firms can reduce employees if they feel that the firm will pay too much tax.

According to a study by Feriyanto (2020), Nigeria has the most robust economy in Africa. Kware investigated poverty, inequality, and unemployment. Nigeria has had rapid economic growth, yet problems like unemployment, inequality, and poverty still need to be resolved. A significant discrepancy in personal income is due to the high unemployment rate, which results in extreme inequality. Inequality between the various income levels in urban and rural areas is blatant, and as a result, poverty rates are rising.

In addition, the methodology used in the study Lavecchia (2020) can be extended to include other justifications for minimum wages. For example, a minimum wage may improve welfare despite increasing unemployment among those with low skill levels. The agents in Lavecchia (2020) solely considered the financial gains and losses of working and not working. Unemployment may incur non-financial costs or reduce one's chances of finding a job. By getting a job, the level of taxpayers who are able to pay taxes will increase tax revenue.

2.3.4 Trust and Tax Revenue

At different stages of development, there appears to be some complexity in how tax and democracy interact. It is influenced not just by a country's degree of democratization but also by its economic growth and advancement and the layout of the adopted tax system. The relationship between democracy and tax revenue has been empirically investigated in several earlier studies (e.g., Baskaran & Bigsten, 2013; Boix, 2003; Cheibub, 1998; Ehrhart, 2011; Fauvelle-Aymar, 1999; Garcia & von Haldenwang, 2016; Mahdavi, 2008; Mulligan et al., 2004; Profeta & Scabrosetti, 2010).

The compatibility and conflict perspectives are two democratic concepts from Rashid et al (2021) that state widely mentioned in public policy literature. According to the compatibility theory, democracy protects fundamental freedoms and rights, provides security for financial investments, and ensures impartial and free political participation. Democracy thus encourages economic growth (Baum & Lake, 2003; Sirowy & Inkeles, 1990). The greater the tax morale, the more taxpayers can participate in political decision-making through popular rights, and the more the tax contract is built on trust.

Citizens who vote for candidates for government leaders are believed to be exercising their rights and obligations. They can better monitor and regulate politicians through referendums. Furthermore, through initiatives, people can define regulations and therefore participate in rewriting the tax contract with the government and affecting—for example, tax laws and tax rates- increasing civic virtue (Ehrhart, 2011). Thus, the ability for taxpayers to vote on fiscal issues has a beneficial impact on tax morale. Stable governments and strong legislation may protect the populace's political, economic, and social rights.

Conversely, a stable government sends a message that its policies will remain unchanged. The economic agents become more confident, which boosts economic activity and improves tax collection. Additionally, tax collection is positively and statistically significantly impacted by the law and order variable. Law and order represent the legal system's integrity, independence, and observance. Economic agents feel responsible for their duty as taxpayers when there is law and order present, and also increases economic activity and business confidence (Ehrhart, 2011).

2.3.5 Tax Education and Tax Revenue

According to Newman (2018), understanding the tax laws that are in place within a nation is tax education. According to Pertiwi (2020), tax education is all of the information that is known and comprehended regarding tax law, and Al-Ttaffi et al., (2020) offered a concise and precise definition of tax education. They clarified that the definition of *tax education* is the capacity of the taxpayer to comprehend tax rules and

determine their tax responsibilities. According to certain studies on tax revenue, taxpayers' general education background included specialized tax knowledge (Alabede, 2012). Declarative and procedural knowledge are two categories that recognized as necessary for taxes (Spilker, 1995). A study from Kolm & Larsen (2003) investigated that chances for tax evasion may also influence a person's decision to pursue higher education.

In the end, formal education affects choices because it molds attitudes, encourages adherence to social norms like civic engagement, and supports the disclosure of all sources of income (Mayhew & Murphy, 2009; Nichita et al., 2019). Therefore, research on tax behavior looks at taxpayers' expertise in tax matters in light of their capacity to influence attitudes and behavior, ultimately leading to better income reporting. Tax literacy is the capacity of a taxpayer to comprehend their rights and responsibilities, apply their tax knowledge and abilities to complete tax returns correctly, and comply with current tax legislation. By tax compliance attitudes, we imply how people feel about paying their taxes (Erwin, 2001; Nichita et al., 2019). These attitudes become apparent when one evaluates a scenario involving contact with tax officials.

2.4 Research Framework

In this sub-chapter, the author will describe the research framework. Start with the author's desire to raise a hot topic in Indonesia: tax. According to some literature, tax is a country's most significant income source. The instability of Indonesia's tax ratio over the previous five years lies at the root of this thesis and the tax ratio in Indonesia has never reached the OECD minimum standard.

Tax ratios are comparisons of tax revenue to determine the size of the tax share in the national economy. Therefore, the writers explore the growth of tax revenue in Indonesia as a background study. The author will then present the government with the best action plan for stabilizing taxpayer tax revenue.

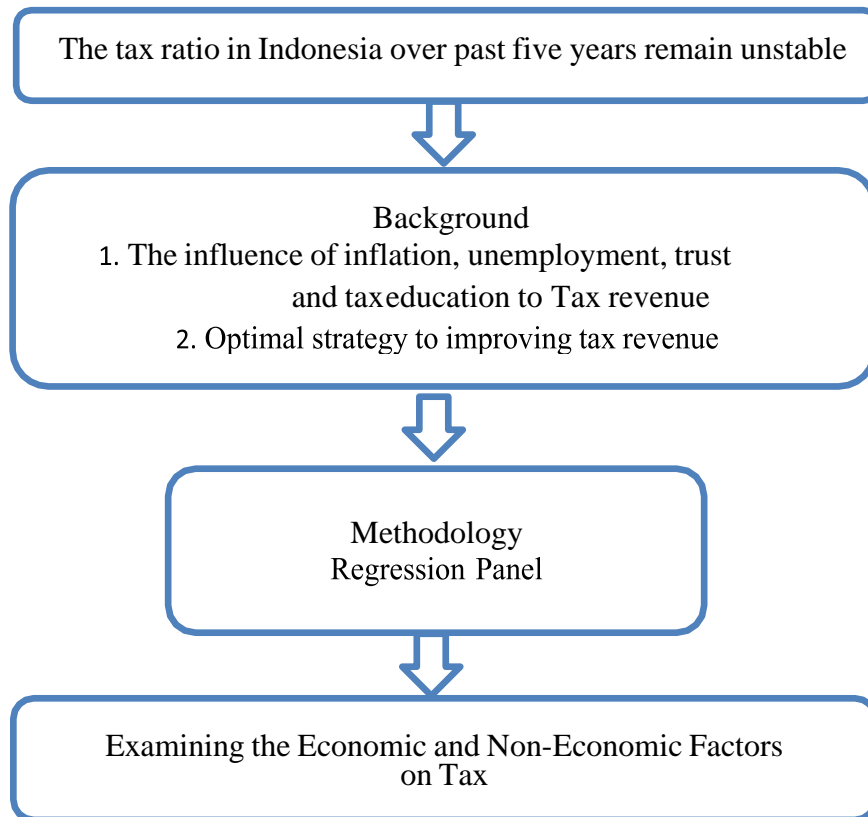


Figure 2.2 Research Framework

CHAPTER 3

RESEARCH METHODOLOGY

This thesis research conducts quantitative analysis to gain border insight. This study uses Panel Data Regression Analysis utilizes the data of 34 provinces in Indonesia in a range 8-year period from 2015 to 2022. This model focuses on regression analysis combining time series and cross-section data, popularly known as pooled time series. Pooled time series is a combination of time series with regular temporal observations at a unit of analysis and cross-section data with observations at a certain point of analysis. Applying Panel Data Regression Analysis can help estimate the impact of specific policy interventions and changes that do not touch everyone simultaneously and, in the same way, are joint in empirical economics. For the quantitative analysis, this research applies econometric and statistical tools using Stata for applications. The analysis examined the effects of variables such as unemployment, inflation, trust and education in tax revenue. According to Basuki (2017), the use of panel data regression provides many advantages, including the following :

1. Panel data can account for individual heterogeneity explicitly by allowing for individual-specific variables.
2. Panel data can be used to test, build and study complex behavioral models.
3. Panel data is repeatedly based on cross-sectional observations (time series), so it is suitable for studying dynamic adjustment.
4. Panel data has implications for more informative, more data varied and can reduce collinearity between variables, degrees freedom (df) higher to obtain more efficient estimation results.
5. Panel data can be used to minimize possible bias generated by the aggregation of individual data

6. Panel data can better detect and measure impact separately observed using time series or cross data section.

3.1 Data

The data are collectible and accessible from trusted data providers in Indonesia, such as the National Institutions Government Central Bureau of Statistics (*Badan Pusat Statistik/BPS*) for index democracy as the indicator of trust, unemployment rate, inflation while the data for total tax revenue and tax education from Minister of Finance, Directorate General of Taxes. The authors obtain information from 34 provinces that are relevant to and have an impact on the tax revenue determinants.

The summary of data utilized in this thesis as the following:

Variable	Description	Units	Sources
TTR	Total Tax Revenue	IDR Billion	Minister of Finance, Directorate of General Tax
TRS	Trust	%	Central Bureau of Statistics
EDU	Tax Education	annual	Minister of Finance, Directorate of General Tax
UNM	Unemployment Rate	%	Central Bureau of Statistics
INF	Inflation	%	Central Bureau of Statistics

Table 3.1 Summary of Data

3.2 Statistic Model Description

The relationship between tax revenue is analyzed from the macroeconomic perspective. The model is constructed based on the logarithmic below :

$$\ln(tr) = \beta_0 + \beta_1 * INF + \beta_2 * \ln(EDU) + \beta_3 * \ln(UNM) + \beta_4 * trust + \varepsilon$$

The model above implies that the tax revenue variable, denoted by Y, serves as the dependent variable. Then there is inflation rate, the quantity of tax education conducted by the directorate general of taxes, the open unemployment rate and finally the public trust as evaluated by the level of democracy. All explanatory factors in this study are based on data from the Central Bureau of Statistics agency for 34 provinces, while tax revenue data is sourced from the Directorate General of Taxes for the same number of provinces.

3.2 Data Analysis Technique Method

Panel data regression analysis is a method used to model the effect of predictor variables on response variables in several sectors that are observed from an object of research over a certain period of time. In addition, panel data regression is also used to predict the response variable in each existing sector. However, to predict it, forecasting needs to be done first for the predictor variables in each sector. The estimation can be done using the Common, Fixed Effect of Random Effect approaches, which are described as follows :

1. Common Effect (All coefficients are constant over time and individuals)

The model assumes that the intercept and slope coefficient are constant over time and the individual, and the error term explains the difference between the intercept and slope coefficient over time and the individual.

Regression is done by combining time series data and cross section (pooled). Estimation is done by using Ordinary Least Square (OLS) regression. This method is called pooled regression or common effect. Thus, in this model there are no individual effects.

2. Fixed Effect (Slope coefficient is constant but intercept varies across individuals)

The model that assumes that there are differences in intercept for each individual is known as a fixed effect regression model. The term fixed effect comes from the fact that although the intercept is different for each individual, each individual intercept does not vary or is constant over time (time invariant). In addition, the model also assumes that the slope coefficient is constant over time and for individuals. Estimation is done by using the dummy variable technique for individuals. Furthermore, because of the use of a dummy for the estimation of the fixed effect, the literature calls it the Least Square Dummy Variables (LSDV) technique. Thus, in this model there are individual effects. This model has a general equation :

$$Y_{it} = \alpha_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_k X_{kit} + \mu_{it}$$

Where: i represent the individual i and t represent the time. In this development, it can also include elements of time effect, so that individual intercepts are no longer constant all the time. The effect of the time effect was calculated by adding a dummy variable for time

3. Random Effects

The panel data method with the fixed effect approach above has problems in terms of the degree of freedom if there are many individuals in the regression. The question that arises is if the dummy variable shows a lack of knowledge about the actual model, why not express this ignorance through the disturbance term μ_{it} ? Because of that, the panel data method is known with the random effects approach. The basic idea begins with the equation above with α_i not assumed to be fixed, but α_i assumed to be a random variable with an average α value (no index) and the intercept value for individuals is stated :

$$\alpha_i = \alpha + \varepsilon_i ; i = 1, 2, \dots, n$$

Where : ε_i is the random error term, with an average value of zero and variance σ^2 . In this case, it is said that the individuals in the estimated sample are taken from a large population of individuals and they have a general mean value for the intercept, namely α and the individual difference in the intercept value for each individual is expressed in the term error ε_i . So that :

$$Y_{it} = \alpha_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_k X_{kit} + \mu_{it}$$

$$Y_{it} = \alpha + \varepsilon_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_k X_{kit} + \mu_{it}$$

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_k X_{kit} + \omega_{it}$$

Where : $\omega_{it} = \varepsilon_i + \mu_{it}$

The composite error term ω_{it} consists of two components, namely ε_i is the cross section or individual specific error component, and μ_{it} is the combined time series and cross section error component. General assumptions in the random effect :

$$\varepsilon_i \sim N(0, \sigma^2_\varepsilon) \quad E(\varepsilon_i, \mu_{it}) = 0, E(\varepsilon_i \varepsilon_j) = 0, (i \neq j)$$

3.2.1 Panel Data Model Selection Method

According to (Basuki, 2016), the selection of model with panel data can be done using several tests, namely :

1. Chow-Test

Chow-Test is to determine the most appropriate Pooled Least Square (Common Effect) model or Fixed Effect Model to use.

$$H_0 : \mathbf{a} + \beta'X_{it} + s_{it} \text{ (Model PLS / Common Effect)}$$

$$H_1 : \mathbf{a}_i + \beta'X_{it} + s_{it} \text{ (Model Fixed Effect) Uji I}$$

2. Hausman-Test

Hausman-Test is to determine the most appropriate Random Effect Model or Fixed Effect model to use. It assists in determining if unobserved specific factors (Fixed Effects) have a significant impact on the coefficient of independent variables in a panel dataset. Comparing the estimated coefficients from the fixed effect model (FE) and the estimated coefficients from the random effects model (RE) is the main step in the Hausman test formula. The test is based on the hypothesis that the random effects model should be used if the fixed effects have no correlation with the independent variables

$$H_0: \text{(Model REM)}$$

$$H_1: \text{(Model FEM)}$$

3. Lagrange Multiplier Test

Lagrange Multiplier Test is to determine the most appropriate Pooled Least Square (Common Effect) model or Random Effect Model to use.

$$H_0 : \mathbf{a} + \beta'X_{it} + s_{it} \text{ (Model PLS)}$$

$$H_1 : \mathbf{a} + \beta'X_{it} + u_{it} + s_{it} \text{ (Model REM)}$$

3.2.2 Classical Assumption Test

The Classical Assumption test that must be fulfilled from Panel Data Regression is:

1. Normality Test

The normality test aims to test whether the residual data is normally distributed or not. The Normality test is carried out with Histogram, P-P Plot and Shapiro-wilk test. Hypothesis is: Data is normal distributed or not. If the value of probability > 0.05 then data distribution is abnormal

2. Heteroscedasticity Test

The heteroscedasticity test aims to test the homoscedasticity of the residual data. The homoscedasticity test is carried out with Breusch Pagan test, which is to regress the absolute value. If the probability value > 0.05 the residual data is free from heteroscedasticity problems.

3. Multicollinearity Test

The multicollinearity test will test whether there is a strong relationship between independent variables. Regression models that are good should not have a relationship between the independent variable (Ghozali, 2013). How to detect multicollinearity assessment relationship has a perfection VIF (Variance Inflation Factor) if $VIF > 10$ it means there is multicollinearity.

CHAPTER 4

RESEARCH FINDINGS

4.1 The Development of Indonesia's Tax Revenue in 2022

Macroeconomic factors and tax arrangements simultaneously influence the increase and volatility of state tax revenues. Government officials should carefully anticipate and assess the potential effects of proposed tax reform and revenue increases on the long-term growth and volatility of their particular tax revenue portfolios since state economies vary widely (Cornia, 2010). To reduce the impact of the economic cycle on their financial health, they can alter the structure of their tax portfolios (Cornia, 2010). State authorities must thus consider the inherent trends of their economies when deciding on tax policy. For example, states with volatile economies may choose to implement tax portfolios that reduce the effects of national macroeconomic trends; states with stable economies may think about implementing more aggressive tax portfolios that maximize their tax revenue growth/volatility combinations.

The current development on tax revenue regarding tax ratio in Indonesia is shown from the provisions of Article 2 paragraph (1a) of Law Number 7/2021 concerning Harmonization of Tax Regulations (*UU HPP*) and Minister of Finance Regulation Number 112/PMK.03/2022 concerning NPWP for Individual Taxpayers, Corporate Taxpayers, and Government Entities Taxpayers. The government is aiming for tax reform through Law Number 7 of 2021 about Harmonization of Tax Regulations (HPP) to raise this percentage. With this rule, the government can more easily monitor taxpayers by unifying the National Identity Number (NIK) and Taxpayer Identification Number (NPWP).

Regarding Taxpayer Identification (NPWP), there has been a recent innovation for integration between the National Identity Number (NIK) and Taxpayer Identification (NPWP). Converting this invention began on Tax Day, 19 July 2022,

and will last until 2023. Adopting an NPWP into an Electronic National Identity Card (e-KTP) is a development that has many benefits for society, DGT, and overall state revenue. In the findings of the Directorate General of Taxes, Dwi Astuti added that the reason for the high increase in the number of new taxpayers in 2022, but not followed by an increase in the number of revenues, is also due to the new regulations regarding tax collection in the Law of Harmonization of Tax Regulations. Therefore, the government must evaluate and review the Law of Harmonization of Tax Regulations.

Additionally, tax revenue fueled by economic expansion suggests that tax money is a byproduct of that expansion. This tax revenue makes logical sense if economic growth leads to successful ventures. It may increase the government's revenue. There are two possible reasons why government revenue can increase. First, even while the marginal corporate tax rates remain the same, increased economic activity will lead to higher corporate tax payments from firms due to increased corporate profitability. Second, increased economic growth will increase the money available for expenditure. More significant economic activity will create more jobs, and some workers may have to work longer hours to keep up with the increased demand conditions. The income tax collected will increase even if marginal tax rates are unchanged.

The best way to increase tax revenue has to correlate between the government and some ministries to handle inflation. Directorate General of Tax officers must also be more active in making the newest and latest movement in providing tax education to business owner taxpayers online and offline. The significance of regulating inflation stems from the fact that excessive and unstable inflation has a negative influence on society's socioeconomic conditions. High inflation causes people's income to continue falling, lowering living standards and eventually making everyone, especially the poor, poorer. Furthermore, unstable inflation will make economic players' decisions more unclear, so it is crucial to regulate price stability in supporting efforts to maintain financial system stability.

4.2 Major Challenge of Tax Revenue in Indonesia

Studies that focus specifically on tax revenue in developing countries are uncommon. There is a difference between developing and developed countries. These disparities consider political, environmental, social, cultural, and economic factors. As a result, research findings from developed countries can not be easily applied to developing countries. There are several issues related to tax revenue in Indonesia. Some of these problems include:

1. **Low Tax Compliance:** A significant problem facing Indonesia is the low level of tax compliance. Many taxpayers do not report or evade their tax obligations intentionally or due to limited knowledge. This results in the potential for more significant tax revenue not being realized.
2. **Complicated Tax Structure:** Indonesia's tax system has many types and complex tax rates at the central and local levels. It can confuse taxpayers and create loopholes for tax evasion. Reforms are needed to simplify the tax structure to improve efficiency and compliance.
3. **Dependence on Natural Resource Taxes:** Most of the tax revenue in Indonesia still comes from the natural resources sector, such as oil, gas, and mining. Dependence on this sector makes tax revenues vulnerable to fluctuations in global commodity prices.
4. **Corporate Tax Avoidance:** Some corporations use transfer pricing strategies and create complex business structures to avoid taxes. It can reduce tax revenue that would otherwise go to the state treasury.
5. **Tax Inequalities:** Some sectors may receive special treatment or tax incentives that may lead to inequalities in tax contributions between these sectors.

6. Tax Administration Limitations: A tax administration system that needs to be fully integrated and modernized may hinder tax collection and enforcement efficiency.
7. Misuse of Tax Incentive Policies: Tax incentives provided by the government as an economic stimulus may be misused or have no direct impact on the economy.
8. Presence of Informal Sector: Indonesia's large informal economic sector may cause much economic activity outside of tax coverage.
9. Global Economic Influence: Fluctuations in the global economy may affect tax revenues, especially if the global economy experiences a slowdown.
10. Technological Changes: Technological advances can enable economic activities and transactions that are difficult for traditional tax systems to track.

In the face of these issues, the government needs to undertake tax reforms, increase taxpayer awareness, strengthen tax administration, and optimize tax incentives to maximize tax revenue reasonably and efficiently.

As the G-20 presidency amid the recovery from the Covid-19 epidemic and during an unpredictable international scenario, 2022 was also a proud year for Indonesia. Indonesia managed to host 437 events during its G20 presidency in 24 cities nationwide. Out of its presidency, according to The Ministry of Coordinating Ministry for the Economy (2022), Indonesia created 226 multilateral cooperation programs and 140 bilateral cooperation programs, with a combined worth of 71.5 billion USD. In this instance, Indonesia demonstrated its resiliency and capacity not just in the face of pressure from internal and international economic and political situations but also since Indonesia is one of the G20 nations with one of the weakest economies.

Compared to other nations in the Asia Pacific, the Organization for Economic

Cooperation and Development (OECD) states that Indonesia's tax ratio, or ratio of tax income to Gross Domestic Product (GDP), is meager. Indonesia's tax percentage is the third lowest out of 28 Asia Pacific nations in the OECD study titled Revenue Statistics in Asia and Pacific (2022), published on July 25th, 2022. The OECD did not count in Social Security Contribution (SSC) as factors while calculating the 2020 tax ratio. SSC is a tax from the social protection sector that may be applied to pension income, accident compensation, or company-provided health benefits. However, if SSC is considered, Indonesia's tax percentage will be lower, at just 9.5%.

According to the OECD (2022), a similar situation is also evident in the Tax Ratio indicator. Despite having higher tax revenues than Turkey, Argentina, and Saudi Arabia combined, Indonesia occupies one of the worst three spots among other members. This is because Indonesia's tax income to GDP ratio is far lower than most G20 nations. Indonesia has potential due to the country's consistently strong tax revenue growth, which might lead to an above-average tax ratio for Indonesia in the future. Indonesia's tax income is expected to expand by 34.26% in 2022 compared to 19.26% in 2021, a rate much higher than GDP growth. In the end, Indonesia's tax ratio will be even more significant since the country's consistently strong GDP growth will be supported by quicker tax revenue growth (Bank of Indonesia, 2022).

The fact that Indonesia's economic superiority in the region is different from the size of its tax revenue compared to countries in the ASEAN region. Indonesia's tax ratio among ASEAN countries is low compared to G20 countries. In 2022, according to data from the Minister of Finance, Indonesia falls into the bottom 5 in terms of its tax ratio when Indonesia's tax revenue is nominally the largest. With the largest GDP in the ASEAN region, Indonesia's Tax Ratio should be high or at least above the average value. Therefore, it is expected that by becoming the chairman of ASEAN in 2023, Indonesia can achieve various kinds of regional cooperation in the fields of economy, investment, and taxation to increase Indonesia's tax revenue and Indonesia's tax ratio can be comparable to other countries in the ASEAN region or even with the G20.

4.3 Findings of the Model

The study employs a panel data regression analysis, to examine and investigate the hypotheses. The developed model aims to assess the impact of various independent variables, namely inflation, unemployment, trust and tax education on tax revenue in Indonesia.

4.3.1 Model Description

The dependent variable in the model is tax revenue. The β^0 refers to constant value (intercept) when all independent variables are equal to zero. β^1 until β^4 represent the impact or influence of each independent variable (Inflation, tax education, unemployment and trust). In the model, there are variables that is need (ln) to equate the units of the variable, such as education and unemployment. So, the units of each variable before the regression will be the same. This model assumes a linear relationship between the dependent variable and independent variables.

$$\hat{\ln}_{tr} = \beta^0 + \beta^1 * inflation + \beta^2 * \ln(EDU) + \beta^3 * \ln (UNM) + \beta^4 * trust$$

In order to explore the relationship between the independent and dependent variables, this study uses Panel Data regression as the econometric model. Data for this research are taken from 34 province from 2015 to 2022.

4.3.2 Determining the Model Selection Test

Test	P-Value	Conclusion
Chow	0.000	FEM
LM	0.000	REM
Hausman	0.479	REM

Table 4.1 Model Selection Test

Given that the data is a panel, it is critical to identify which estimate models, Common effect model (CEM), fixed effect model (FEM), and random effect model (REM), can produce an outcome more accurately. In the following steps, we do the Chow test to determine whether a regression model contains structural breakdowns. In this instance, the fixed effect (FEM) and common effects (CEM) models are compared using the Chow test. The table above shows the results of the model selection test using the Chow test to compare the Fixed Effect Model and the Common Effect Model. The table above, shows that the F test's P-value is 0.000 (below the alpha significance level of 0.05). Thus, the fixed effect model is better than the common effect model for use in this research data.

After doing the Chow test, we do a Lagrangian test to see a comparison between the Random Effect Model and the Common Effect Model. The table above shows that the P-value for the Chi-square test is 0.000 (below the alpha significance level of 0.05). Thus, the Random Effect Model is better than the Fixed Effect Model for this research data. Based on the results of the model selection test using the Hausman test to compare the Random Effect Model and the Fixed Effect Model. The table above, shows that the P-value for the Chi-Square test is 0.479 (above the alpha significance level of 0.05). Thus, the Random Effect Model is better than the Fixed Effect Model for this research data. The random effect model, which captures the time-invariant properties of the individual units, compensates for individual-specific effects by including unobserved heterogeneity for each cross-section. On the other hand, the fixed effects model assumes that the unobserved heterogeneity is unrelated to the regressors.

There is an Adjusted r-square of 0.8344 or 83.4%, indicating that the independent variables in the model, inflation, tax education, unemployment, and trust, can explain the diversity of the pull variables or that these independent variables can affect tax revenue of 83.4%. The remaining 16.56% is explained by additional independent variables not included in the model, implying that some other factors or indicators affect tax revenue but are not included in the model.

4.3.3 Testing the Classic Assumption

The Classic Assumption test that must be fulfilled from Panel Data Regression is normality test. The normality test aims to test whether the residual data is normally distributed or not. The Normality test is carried out with Histogram, P-P Plot and Shapiro-wilk test. Hypothesis is: Data is normal distributed or not. If the value of probability > 0.05 then data distribution is abnormal.

From the first Graph (see Appendix) shows the results of the normality test using a histogram. Residual data can be declared normal if the histogram is in the form of a normal distribution. From the graph it is found that the histogram of the residual data has followed a normal distribution so that it can be indicated that the residual data of this study have fulfilled the assumption of normality.

From the second graph (see Appendix) shows the results of the normality test using the P-P plot. Residual data is stated that to meet the assumption of normality if the plots are spread around the normal line. From the graph it can be seen that the plots are scattered around the normal line so that it can be indicated that the residual data already meets the assumption of normality.

The second test of classic assumption test is homoscedasticity using Breusch-Pagan Test. The heteroscedasticity test aims to test the homoscedasticity of the residual data. The homoscedasticity test is carried out with Breusch Pagan test, which is to regress the absolute value. If the probability value > 0.05 the residual data is free from heteroscedasticity problems.

From the table (see Appendix) shows the results of the homoscedasticity that shown the P-value is 0.0002 (below the alpha significance level of 5%) thus it can be concluded that the residual data in this study contains heteroscedasticity problems. Therefore, a robust standard error is used in this research model to deal with this problem.

The multicollinearity test is the last step of classic assumption test to investigate

whether there is a strong relationship between independent variables. Regression models that are good should not have a relationship between the independent variable (Ghozali, 2013). How to detect multicollinearity assessment relationship has a perfection VIF (Variance Inflation Factor) if $VIF > 10$ it means there is multicollinearity. From the table (see Appendix) shows the result of the multicollinearity test using correlation. The independent variable is declared free from multicollinearity problems if it has a correlation value with other independent variables are below 0.8, thus the research data is free from multicollinearity problems.

Furthermore, the results of the multicollinearity test using VIF, independent variable is declared free from multicollinearity problems if it has a VIF value below 10. From the table (see Appendix) it can be seen that all VIF values of the independent variables are below 10, thus this research data is free from multicollinearity problems.

4.4 Finding and Discussion from Research Hypothesis

VARIABLE	COEFFICIENT	P-VALUE
INFL	0.1078	0.000
LN-EDU	1.0538	0.000
UNM	-0.0446	0.222
TRS	-0.0058	0.354

Table 4.2 Common Effect Model Result

$$\ln n_{tr} = 0.2222 + 0.1078 * inflasi + 1.0538 * \ln(education) - 0.0446 * \ln(unemployment) - 0.0058 * trust$$

4.4.1 Inflation on Tax Revenue

The beta coefficient of the inflation variable is 0.1078. According to the data above, these numbers mean that when inflation rises by 1%, tax revenue rises by 10.7%. If inflation falls by 1%, tax revenue falls by 10.7%, assuming the other independent

variables remain constant. Furthermore, based on the P-value of 0.000 (less than the alpha significance level of 0.05), it can be argued that inflation is essential to tax collections at a significance level of 5%.

Many factors can affect tax revenue other than GDP, including inflation. The decline in inflation reduces tax revenue (Fuad Rahmany, 2014). It may be observed from the rise of state revenue and rising consumption in society. This notion is confirmed when the inflation rate is related to the impact of actual tax revenue (Vito Tanzi, 1977). Meanwhile, (David G & Bernard, 1977) claimed that inflation would affect government expenditure and revenue. Management of national tax revenue is the accumulation of all tax revenues from areas where tax revenue growth differs between regions based on their tax potential.

Additionally, the nature of the relationship between the inflation rate and tax revenue should be investigated from a policy perspective. In the results of the author's hypothesis, inflation has a significant positive effect on taxpayer revenue. This result is supported by the findings (Crane & Nourzad, 1986) that inflation is an unregulated tax increase that increases government revenue which is influenced by their conclusion that tax revenue positively correlated with the inflation rate. However, if the inflation rate positively correlates with tax evasion, the net impact of inflation on tax revenues will be more negligible than is often thought.

According to the Central Bureau of Statistics, the estimated range of the elasticity of income tax revenue to the inflation rate is 2.5 to 3.5. (Crane & Nourzad, 1986) Findings indicate that, generally, people implement their unconstitutional tax cuts through avoidance in response to inflation-induced tax increases. As a result, the net effect of inflation on tax collection is less critical than estimates of standard elasticity. It is essential to undertake a more thorough review of the implications of the revenue and stabilization strategy from a policy perspective. Estimating the net income effect of various policy changes and the sensitivity of various revenue sources to various policy actions are essential considerations regarding revenue policies. Similar efforts should be made to ascertain the impact of tax reduction and inflation control on stabilization

policies.

4.4.2 Unemployment on Tax Revenue

In the short-time analysis, the beta coefficient of -0.0446 shows that if unemployment rises by 1%, tax income falls by 4.46%, assuming other independent variables remain constant or fixed. If unemployment falls by 1%, tax income rises by 4.46%. Following that, the P-value of 0.111 (above the 0.05 significance level) shows that with an alpha significance level of 5%. Assuming the other independent variables remain the same, H2 has a significant negative effect of unemployment on taxpayer revenue and is not statistically significant.

Most of the literature on unemployment argues that excessively high taxes are at least part of the cause of the unemployment problem. Furthermore, rising unemployment rates, reduced incomes, and decreased economic activity contribute to lower taxes (Johnson et al., 2010). These findings also show that the decision of companies and MSME taxpayers to avoid taxes also depends on their level of trust in the tax authorities and impacts the unemployment rate, one of the most significant macroeconomic variables (Lisi, 2012).

Based on the regression result, there is a P-Value of 0.435%, which exceed 0.05% of the significance level. It means there is no significance between the unemployment and tax revenue variable. These results align with those of the study (Disney, 2000). The precise theoretical link between economic growth and the unemployment rate and how the tax revenue and the presence of an unemployment compensation system impact this have yet to be extensively studied (Disney, 2000). Growing productivity can often result in job losses and increased unemployment (Aghion & Howitt, 1994). However, it can also increase job openings and the exodus from unemployment and impact the price of new positions (Bean & Pissarides, 1993). Tax and welfare policies may undoubtedly impact all these mechanisms by influencing the amount of money and the length of unemployment periods.

The model can also replicate the critical relationship between power and trust and how

that interaction affects tax revenue. The key findings of this analysis are that the "right mix" of deterrence policy tools maximizes trust in tax authorities, improves tax revenue, and can reduce unemployment. Even if the average unemployment rate is maintained, changes in the tax structure (that is, whether taxes are made more or less progressive) can significantly impact unemployment (Pissarides, 1990, n.d.). However, only in the bargaining model is this true. Therefore, the link between unemployment and tax revenue hinges on the government's role in controlling state tax revenues and making the tax system more progressive.

4.4.3 Trust on Tax Revenue

The variable of trust has a beta coefficient of -0.0058, suggesting that when public trust increases by 1%, tax revenue falls by 0.58%. Furthermore, at a significance level of 5%, the P-value of 0.354 (above the 0.05 alpha significance level) indicates that with significance level of 5%, it can not be stated that trust is significant to tax revenues. The coefficient indicates a negative relationship between trust and the dependent variable and it is not statistically significant. This implies that changes in trust do not significantly affect the dependent variables.

These findings are approved by the research (Ehrhat, 2009) that state because interest groups use democracy as a political negotiation tool, it hinders economic growth, especially in developing countries. Economic expansion is negatively affected by this. Therefore, this study predicts that democracy has a minor positive effect on tax revenues in developing countries than developed countries. In the former, democracy promotes economic expansion, and one may anticipate that democracy will increase tax revenue. Contrarily, the second viewpoint claims that democracy impedes economic progress, particularly in emerging nations, since interest groups exploit it as a political negotiating chip. This has negative repercussions on the growth of the economy.

There seems to be some complexity in the link between taxes and democracy. It is influenced not just by a country's level of democratization but also by its economic

development and progress, as well as maybe by the design of the tax system that has been implemented. Previous research has objectively looked at the connection between tax revenue and democracy (Baskaran & Bigsten, 2013; Boix, 2003; Cheibub, 1998; Ehrhart, 2011; Fauvelle-Aymar, 1999; Garcia & Von Haldenwang, 2016; Mahdavi, 2008; Mulligan et al., 2004; Profeta & Scabrosetti, 2010). They fail to consider the relationships between the various tax income streams and democracy or if these relationships vary depending on a nation's economic growth level. Depending on the country's level of economic growth and other conditions, democratic governance may be more or less effective at facilitating the collection of a specific type of tax revenue.

Public policy literature frequently refers to the compatibility and conflict perspectives, two democratic ideas. The compatibility approach contends that democracy guarantees free and fair political involvement and the protection of essential liberties and civil rights. As a result, democracy promotes economic expansion (Baum & Lake, 2003; Sirowy & Inkeles, 1990). According to Mansfield and Sisson (2004), wealthy nations have a higher chance of maintaining democracies.

On the other hand, these results show a contradictive theory answer by Rashid et al., (2021), who argue that the influence of democracy on tax revenues has significant implications for a country's economic development because tax revenue collection is a component of a country's economic activity. According to Lucotte (2012), given the significant dependence between public revenues and spending, we also include variables that measure government spending. It is created by subtracting the democracy score from the autocracy score and ranges from 0 (very autocratic) to +10 (very democratic). This score, considered a general indicator of political stability, will correlate well with the probability of adopting inflation. In addition, Ehrhart (2009) shows a correlation between domestic tax revenues in developing countries and the level of democracy. From a compatibility perspective, the authors predict this can be considered for future researchers that democracy will increase tax revenues, especially in developing countries.

4.4.4 Tax Education Impact on Tax Revenue

Based on the result of the beta coefficient for the $\ln_education$ variable is 1.0538, which suggests that increasing tax education by 1% will increase tax revenue by 1.0538%. Furthermore, based on the P-value of 0.000 (below the 5% alpha significance level), it stated that tax education is significant for tax revenue with a 5% significance level. Assuming the other independent variables remain the same, the hypothesis of H4 stated that tax education has a significant positive effect on tax revenue. Studies from some literature can prove this author's hypothesis.

Taxpayers who understand tax rules are more likely to comply than those who do not (Mustafa, 1997). Ignorance of taxes can result in intentional or inadvertent non-compliance (Hansford, 2015). In the findings, tax knowledge, in general, is an awareness of the critical tax policy principles that a country implements (Kurniawan, 2020). Taxpayers' comprehension of tax policies influences their compliance with the tax system. Tax expertise is crucial to a voluntary compliance tax system, particularly in determining appropriate tax liabilities (Baru, 2016). Their research supports the social learning hypothesis that environments impact cognition and behavior. Tax education can improve tax knowledge and affect taxpayers' compliance behavior, so tax revenue increased (Basu, 2016).

In order to reduce the issue of tax compliance, one technique to regulate it is by looking into the tax education system. Tax education is significant as citizens need to acquire tax knowledge as it may allow them to comprehend better the tax rules and regulations (Eriksen & Fallen, 1996; Ghani, 2020). Education assists taxpayers in comprehending the tax system and being informed of their tax duties and rights (Osebe, 2013; Ghani, 2020). More research in Malaysia also revealed tax knowledge as the most significant element influencing taxpayers' compliance behavior under the self-assessment system (Loo et al., 2009; Damajanti & Karim, 2017; Ghani, 2020). Tax knowledge allows people to comprehend the tax system better.

CHAPTER 5

SUMMARY AND CONCLUSION

5.1 Summary and Conclusion

This thesis is essential in examining the aspects that influence tax revenue regarding the economics and non-economics variable. This thesis also provides answers to the following two research questions: 1. How do the economic factors such as inflation, unemployment and non-economic factors such as trust and tax education impact tax revenue in Indonesia? 2. What is the best way strategies to improve tax revenue in Indonesia? So, the answer to research question number one is that tax revenue shows significant results in inflation and tax education. In the unemployment variable and trust do not affect tax revenue significantly.

The authors provide recommendations and suggestions for the significant regression results without reducing the essential and effectiveness of the insignificant variable regression results. Insignificant variables namely unemployment and trust, can be potential variables for further research. In this study, the authors advise the government on controlling inflation and increasing tax education for the Directorate of Taxes.

The current development on tax regulation is show from the provisions of Article 2 paragraph (1a) of Law Number 7/2021 concerning Harmonization of Tax Regulations (*UU HPP*) and Minister of Finance Regulation Number 112/PMK.03/2022 concerning NPWP for Individual Taxpayers, Corporate Taxpayers, and Government Entities Taxpayers, officially, that stated e-commerce businesses traders must still pay 0.5% of income tax on income above IDR 500 million, then be subject to 25% of IDR 4.8 billion, and are required to report income tax for sellers who earn a net profit of less than IDR 500 million. Under the law, e-commerce and traditional entrepreneurs must have a Taxpayer Identification Number (NPWP).

Regarding the Taxpayer Identification (NPWP), there has been a recent innovation for integration between the National Identity Number (NIK) and NPWP. Converting this invention began on Tax Day, 19 July 2022, and will last until 2023. Adopting an NPWP into an Electronic National Identity Card (e-KTP) is a development that has many benefits for society, DGT, and overall state revenue. However, the authors found a phenomenon of decreased on tax revenue between 2015-2022. In the findings of the Directorate General of Taxes, Dwi Astuti added that the reason for the high increase in the number of new taxpayers in 2022, but not followed by an increase in the number of revenues, is also due to the new regulations regarding tax collection in the Law of Harmonization of Tax Regulations.

The best way to increase tax revenue has to correlate between the government and some ministries to handle inflation. Directorate General of Tax officers must also be more active in making the newest and latest movement in providing tax education to business owner taxpayers online and offline. The significance of regulating inflation stems from the fact that excessive and unstable inflation has a negative influence on society's socioeconomic conditions. High inflation causes people's income to continue falling, lowering living standards and eventually making everyone, especially the poor, poorer. Furthermore, unstable inflation will make economic players' decisions more unclear so it is important to regulate price stability in supporting efforts to maintain financial system stability.

5.2 Policy Recommendations

Controlling tax revenue to achieve stability is a long-term process that requires cooperation between the government and related ministries. In this case, the author advises the government to regulate prices or inflation. If inflation is steady, increasing the price of goods will not only boost tax revenue. However, it may also stimulate producers to expand production and absorb human resources to maximize profits. These are the three main strategies government can apply :

1. Affordability. The affordability program is about how to manage demand and price stabilization.
2. Increasing food production and availability through programs will help balance the supply and demand for food availability.
3. To ensure smooth distribution, the two initiatives call for improved trade infrastructure and interregional trade cooperation.

According to Bank Indonesia, *inflation* is an increase in the prices of products and services over time, as well as a price increase if it spreads or results in an increase in the prices of other goods. Bank Indonesia is collaborating with the government to keep inflation constant in the 2.5 -3.5% range. Bank Indonesia handles inflation in two ways: first, by reducing rising domestic goods and services prices, and second, by keeping the rupiah exchange rate stable versus foreign currencies. Indonesia's central statistics office calculates inflation by conducting a survey to collect price data for various categories of products and services that are believed to represent public consumption spending. Low and steady inflation is required for long-term economic growth, which will bring benefits for enhancing people's well-being.

Furthermore, recommendations for the officers from the Directorate General of Tax must be more proactive and consistent in tax educating taxpayers, both online and offline. For offline business owners, the Directorate General of Taxes provides officers in each district who are prepared to be tasked with routine instruction every semester so that people can avoid mistakes while paying and reporting taxes. To make communication more straightforward, the Directorate General of Taxes executors necessary to provide education through social media and WhatsApp services. Directorate General of Taxes officers who are tasked with appealing to taxpayers, starting from the collection of central data from the Directorate of Tax Data and Information (DIP) Division, then processed by the Directorate of Potential Compliance and Revenue (PKP), then the data is submitted to the tax office (KPP) to be further

supervised by the Account Representative. This AR is tasked with urging and educating every taxpayer in the region to report their income. Tax education is important to understanding the Duties of Citizens. Tax education helps people understand their tax obligations. Tax is one of the primary sources of income for the government to run various programs and public services. By understanding tax obligations, citizens can contribute pretty and follow the law in the country's development. Furthermore, tax education preventing tax non-compliance or tax evasion. When people understand how the tax system works and why taxes are needed, they are more likely to comply with tax regulations and avoid harmful practices such as tax evasion. Tax education can increase transparency and accountability in government financial management. Communities that understand how the government uses tax funds will be better able to monitor and evaluate spending policies and the effective use of public funds. Tax education can also improve financial literacy in general. Understanding basic principles about taxes, money management, and how financial decisions affect personal, business, or community financial situations can help people make wiser decisions. Tax education can help people understand the tax incentives provided by the government to support economic development and investment. Knowledge of these potential incentives can encourage people to invest and contribute to economic growth. Tax education can encourage active participation in tax policymaking. Educated people can provide input based on their understanding of the tax system so better and fairer tax policies can be designed. Tax education, both within the school setting and through social programs, can provide wide-ranging benefits to society and help create a more transparent, fair, and effective tax system.

5.3 Limitations of The Study

In this thesis research, apart from the critical information offered by the researcher, there are limitations that the author cannot fulfill, which can be a provision for future research for other writers or researchers. First, there might be some unobserved variables that have an impact on tax revenue. For instance, there is no cost-benefit analysis in this study to serve as a reference for the government's policy recommendations. The government can use cost and benefit analysis to create a

reference for budget control, increasing tax revenue. The lack of a cost-benefit analysis is due to the requirement for additional integration with the relevant ministries. The second limitation, this study did not use a questionnaire given directly to citizen that have an active Taxpayer Identification (NPWP) since the scope of the research area is national and requires more extensive data than the questionnaire, including tax revenue per province. Researchers use the democracy index to quantify taxpayer participation in government rules. Therefore, there are insignificant variables to tax revenue namely trust and unemployment that can be further research. The study's final weakness is the observation of lower tax revenues, which could be explained by other independent variables but are not included in the model. The Covid-19 phenomenon, which happened in 2019 and spread nationally and globally in 2020, may be studied and has the potential for further research. The third limitation, the number of studies regarding the tax revenue determinants, is still limited, so there is a need for further research and collaboration between qualitative and quantitative methodology.

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APPENDIX

1. Approval of Research in Directorate General Tax



KEMENTERIAN KEUANGAN REPUBLIK INDONESIA
DIREKTORAT JENDERAL PAJAK
DIREKTORAT PENYULUHAN, PELAYANAN, DAN HUBUNGAN MASYARAKAT
JALAN GATOT SUBROTO NOMOR 40-42 JAKARTA 12190 TELEPON (021) 5250208 FAKSIMILE (021) 5796088; SITUS
www.pajak.go.id LAYANAN INFORMASI DAN PENGADUAN KRING PAJAK (021) 1500200 EMAIL: pengaduan@pajak.go.id;
informasi@pajak.go.id

Nomor : S-119/PJ.09/PJ.091/2023 5 April 2023
Sifat : Segera
Lampiran : Satu Berkas
Hal : Persetujuan Izin Riset Sebagian a.n. Adinda Rachmawati

Yth. Adinda Rachmawati
Villa Serpong BSD City Tangerang Selatan, Blok C4/10

Sehubungan dengan permohonan izin riset yang Saudara ajukan dengan surat pengantar izin riset nomor 067/FEB/U/III/UM.02/03/2023 tanggal 20 Maret 2023, dengan informasi:

NIM : 03232110013
Kategori riset : S2
Perguruan Tinggi : Universitas Islam Internasional Indonesia
Fakultas : Ekonomi dan Bisnis
Jurusan : Ilmu Ekonomi
Judul Riset : The Impact of Repealing Minister of Finance Regulation No 210/PMK.01/2018 on Tax Compliance. A study case of an E-commerce in Indonesia

Izin yang diminta : data statistik

Berdasarkan hasil verifikasi berkas permohonan dan kesediaan unit kerja di Lokasi Riset, dengan ini Saudara diberikan izin untuk melaksanakan sebagian Riset pada Direktorat Data dan Informasi Perpajakan, sepanjang data dan/atau informasi yang didapat digunakan untuk keperluan Riset dan tidak melanggar ketentuan Pasal 34 Undang-Undang KUP dan informasi publik yang dikecualikan sebagaimana diatur dalam Undang-Undang Republik Indonesia Nomor 14 Tahun 2008 tentang Keterbukaan Informasi Publik.

Beberapa hal yang perlu Saudara perhatikan:

- 1) Masa berlaku Surat Izin Riset ini adalah: 4 April 2023 s/d 3 Oktober 2023;
- 2) Izin Riset dapat diperpanjang paling banyak 1 (satu) kali, berlaku selama 6 (enam) bulan;
- 3) Perpanjangan diajukan sebelum sebelum berakhirnya masa berlaku izin Riset;
- 4) Setelah melaksanakan Riset, Saudara diwajibkan mengirimkan Hasil Riset melalui email ke riset@pajak.go.id;
- 5) Apabila periset tidak mengirimkan hasil riset, maka DJP dapat menghentikan layanan pemberian izin riset kepada periset.

Demikian, agar dapat dipergunakan sebagaimana mestinya.

a.n. Direktur Penyuluhan, Pelayanan, dan
Hubungan Masyarakat
Kepala Subdirektorat Penyuluhan
Perpajakan



Ditandatangani secara elektronik
Inge Diana Rismawanti



Dokumen ini telah ditandatangani menggunakan sertifikat elektronik yang diterbitkan oleh Balai Sertifikat Elektronik (BSrE), BSSN. Untuk memastikan keaslian tanda tangan elektronik, silakan pindai QR Code pada laman <https://office.kemendku.go.id> atau unggah dokumen pada laman <https://te.kominfo.go.id/verifyPDF>

2. Statement Letter Willingness to Submit Research Results

SURAT PERNYATAAN BERSEDIA MENYERAHKAN HASIL RISET KEPADA DIREKTORAT JENDERAL PAJAK

Yang bertanda tangan di bawah ini:

Nama : Adinda Rachmawati
NIM : 03232110013
Jurusan dan Fakultas : Ilmu Ekonomi/Magister Ekonomi (S2)/Fakultas Ekonomi dan Bisnis
Perguruan Tinggi : Universitas Islam Internasional Indonesia
Rencana Judul Riset : The Impact of Repealing Minister of Finance Regulation No 210/PMK.01/2018 on Tax Compliance. A Study Case of an E-Commerce in Indonesia

Menyatakan dengan sungguh-sungguh atas kehendak sendiri, bahwa saya bersedia menyerahkan hasil riset kepada Direktorat Jenderal Pajak dalam jangka waktu sesuai dengan ketentuan.

Demikian surat pernyataan ini dibuat dengan sebenarnya tanpa ada paksaan dari pihak manapun untuk dipergunakan sebagai persyaratan permohonan izin riset di lingkungan Direktorat Jenderal Pajak. Apabila di kemudian hari pernyataan ini terbukti tidak benar, saya bersedia untuk dikenakan sanksi penghentian layanan pemberian izin riset.

Tangerang, 20 Maret 2023

Yang membuat pernyataan,



Adinda Rachmawati
03232110013

1. Quantitative Analysis Findings Output

A. Model Selection Test

Model Selection Test Using the Chow Test

```

xtreg ln_tc inflasi ln_penyuluhan pengangguran trust, fe

Fixed-effects (within) regression           Number of obs   =       272
Group variable: prov                      Number of groups =        34

R-sq:                                       Obs per group:
  within = 0.2960                          min =           8
  between = 0.9013                         avg =          8.0
  overall  = 0.8344                         max =           8

corr(u_i, Xb) = 0.5466                    F(4,234)        =       24.60
                                           Prob > F         =       0.0000
  
```

ln_tc	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
inflasi	.1078397	.0159944	6.74	0.000	.0763283	.1393511
ln_penyuluhan	1.053874	.1653949	6.37	0.000	.7280207	1.379727
pengangguran	-.0446756	.027908	-1.60	0.111	-.0996587	.0103075
trust	-.0058868	.0063446	-0.93	0.354	-.0183866	.0066129
_cons	.2222954	.9764969	0.23	0.820	-1.701553	2.146144
sigma_u	.5353522					
sigma_e	.43285748					
rho	.60468689	(fraction of variance due to u_i)				

F test that all u_i=0: F(33, 234) = 7.50 Prob > F = 0.0000

Source: *processed data*

Model Selection Test using the Lagrangian Multiplier Test

```
xttest0
```

Breusch and Pagan Lagrangian multiplier test for random effects

$$\ln_tc[prov,t] = Xb + u[prov] + e[prov,t]$$

Estimated results:

	Var	sd = sqrt(Var)
ln_tc	2.159116	1.469393
	.1873656	.4328575
e_u	.1448517	.3805939

Test: $Var(u) = 0$

chibar2(01) = 167.02
 Prob > chibar2 = 0.0000

Model Selection Test using the Hausman Test

```
. quietly xtreg ln_tc inflasi ln_penyuluhan pengangguran trust, fe
. estimates store fe
. quietly xtreg ln_tc inflasi ln_penyuluhan pengangguran trust, re
. estimates store re
. hausman fe re
```

	— Coefficients —			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
inflasi	.1078397	.10485	.0029897	.
ln_penyuluhan	1.053874	1.30698	-.2531063	.150665
pengangguran	-.0446756	-.0238659	-.0208097	.014014
trust	-.0058868	-.0047545	-.0011323	.0024571

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(4) = (b-B)'[(V_b-V_B)^{-1}](b-B) = 3.49$$

Prob>chi2 = 0.4794
 (V_b-V_B is not positive definite)

B. Model Interpretation

```
. xtreg ln_tc inflasi ln_penyuluhan pengangguran trust, re

Random-effects GLS regression              Number of obs   =       272
Group variable: prov                      Number of groups =        34

R-sq:                                     Obs per group:
    within = 0.2894                        min =           8
    between = 0.9094                       avg =          8.0
    overall = 0.8429                       max =           8

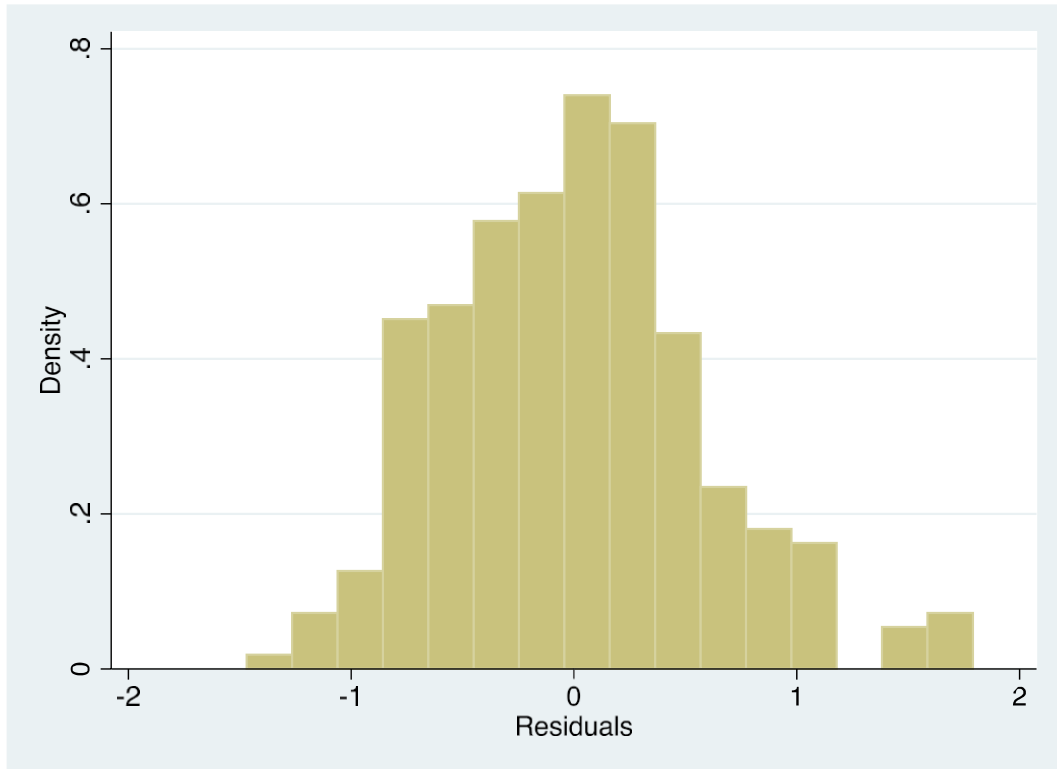
Wald chi2(4) = 438.57
corr(u_i, x) = 0 (assumed)                 Prob > chi2     = 0.0000
```

ln_tc	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
inflasi	.10485	.0160576	6.53	0.000	.0733777 .1363223
ln_penyuluhan	1.30698	.0682314	19.16	0.000	1.173249 1.440711
pengangguran	-.0238659	.0241343	-0.99	0.323	-.0711682 .0234364
trust	-.0047545	.0058495	-0.81	0.416	-.0162193 .0067102
_cons	-1.438467	.5420298	-2.65	0.008	-2.500826 -.3761076
sigma_u	.38059389				
sigma_e	.43285748				
rho	.43601494	(fraction of variance due to u_i)			

C. Classic Assumption

5.2 Normality Test

1. Test for Normality using a Histogram Graph



2. Normality test using the P-P Plot

3. Normality test using the Shapiro-Wilk W test

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
e	272	0.99472	1.032	0.073	0.47086

5.3 Homoscedasticity Test

1. Homoscedasticity test using Breusch-Pagan

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
Variables: fitted values of ln_tc

chi2(1) = 13.91
Prob > chi2 = 0.0002

D. Multicollinearity Test

1. Multicollinearity test using correlation

2. Multicollinearity test using VIF

vif

Variable	VIF	1/VIF
ln_penyulu~n	1.18	0.850066
pengangguran	1.14	0.877826
trust	1.07	0.937533
inflasi	1.02	0.977999
Mean VIF	1.10	

CURRICULUM VITAE

A. Personal Information

Name : Adinda Rachmawati
Place of Birth/D.O.B : Tangerang, September 20th 1996
Employment Identity Number : 36740260099600023
Home Address : Kencana Street 1, Villa Serpong Block C4/10,
South Tangerang, 15323
Name of Father : Ir. H. Luhur Hananto Seno
Name of Mother : Dra. Hj. Ratna Kusumawardhani
Name of Husband : Muhammad Ridho, S.Pi
Name of Child : Lyaudra Farzana

B. Education Background

a. Formal Education

- i. SDN Pondok Jagung 2, 2002 - 2008
- ii. SMPN 8 Tangerang Selatan, 2008 - 2011
- iii. High School 2011 - 2014
- iv. Undergraduate, 2014 – 2018

b. Non-Formal Education

- i. Yayasan Pendidikan Musik Jakarta, 2019

C. Professional Background

1. PT. Bank Tabungan Negara, 2018-Now
2. Part-Timer of Piano Classic Teacher 2014-Now

D. List of Awards and Achievements

1. Finalist of Putra Putri Bahari Province of Banten 2019
2. Finalist of Pertukaran Pelajar antar Negara (PPAN) South Tangerang City
3. Solo Piano Classic Player Performance Concert

E. Organizational Background

1. Vice President of Finance, Governance and Legality AIESEC in UIN Jakarta 2016-2018
2. Student Exchange to Cambodia, AIESEC UI