THE EFFECT OF COMMODITY PRICE, INFLATION, AND EXCHANGE RATE TOWARDS PROFIT GROWTH (STUDY ON OIL AND GAS INDUSTRY LISTED IN IDX 2017-2021)

UNDERGRADUATE THESIS

Submitted as one of the requirements to obtain

Sarjana Akuntansi

By:

AFRAH AZZAHIRA WISMONO

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FACULTY OF BUSINESS

ACCOUNTING STUDY PROGRAM

CIKARANG

SEPTEMBER, 2023

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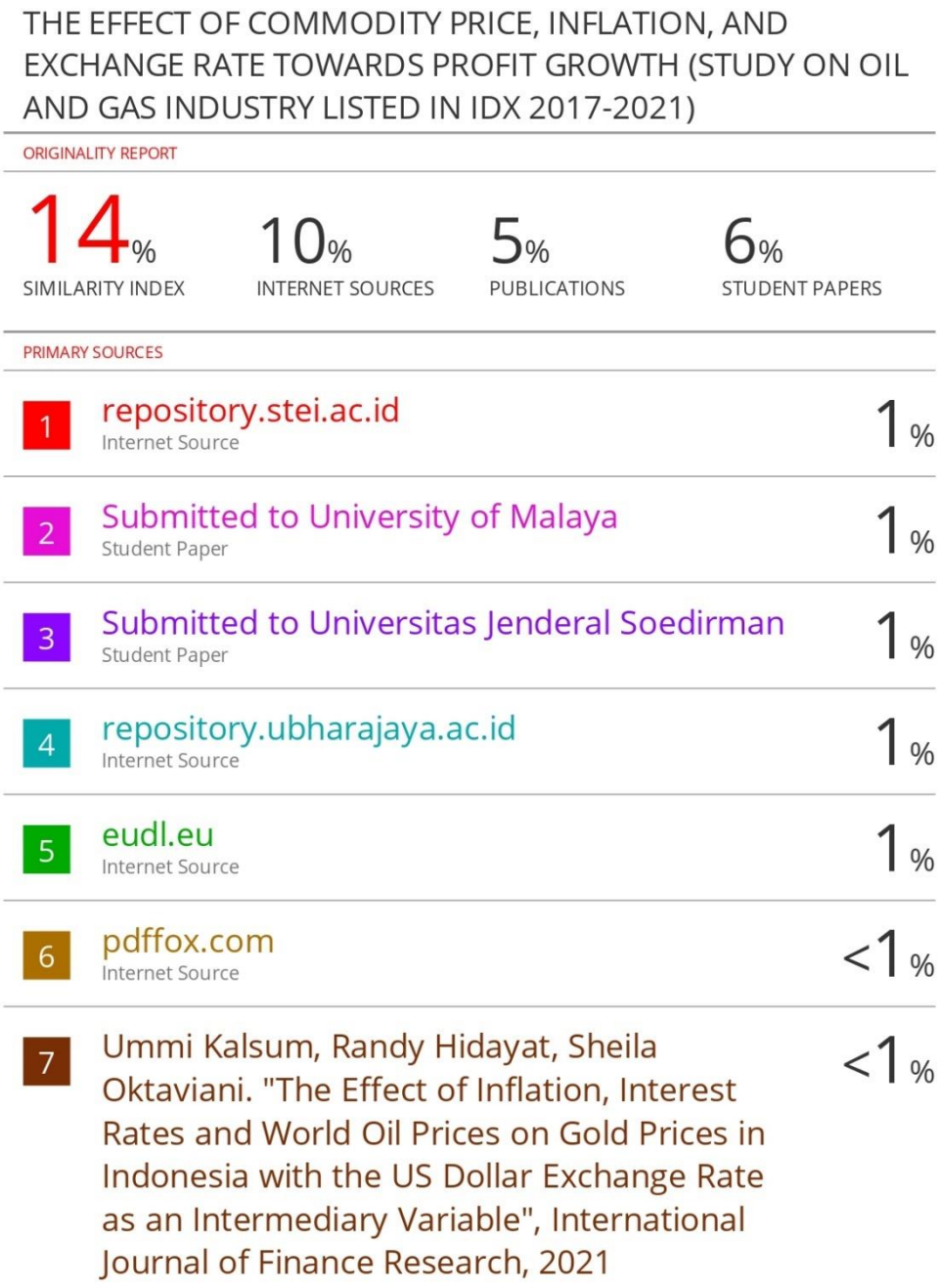

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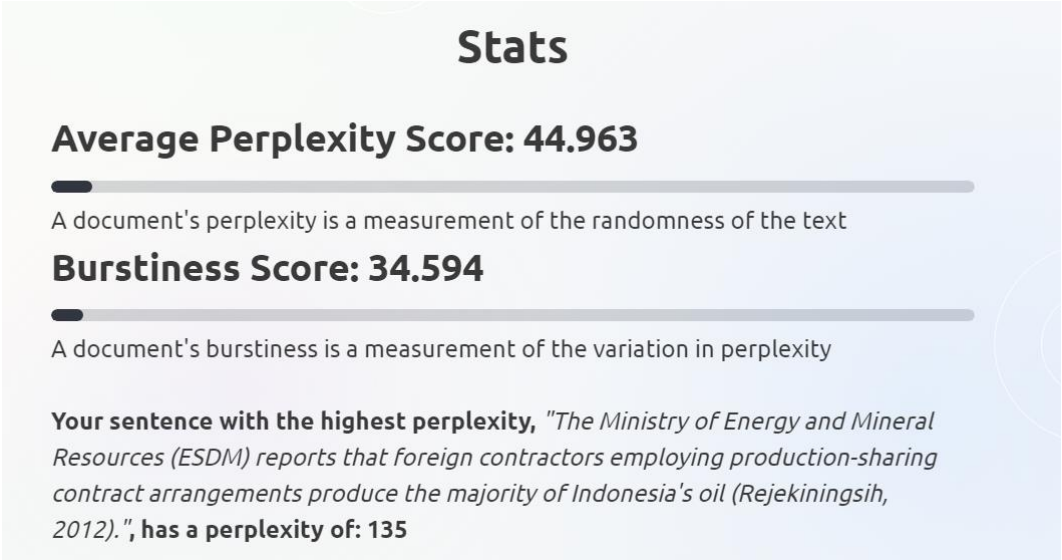

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Cikarang, 1 September 2023

Afrah Azzahira Wismono

TABLE OF CONTENTS

LIST OF FIGURE

LIST OF TABLE

ABSTRACT

The purpose of this research is to determine the effect commodity price, inflation, and exchange rate on the profit growth of the oil and gas company listed on the Indonesia Stock Exchange from 2017 until 2021. The sampling method used was the purposive sampling method. The Analysis of the data used is the linear regression analysis and determination coefficient, T test, and F test using Eviews. The study concluded that commodity price, inflation, and exchange rate is partialy no significant effect on the profit growth.

Keywords: *Commodity Price, Inflation, Exchange Rate, Profit Growth*

INTISARI

Tujuan dari penelitian ini adalah untuk mengetahui pengaruh harga komoditas, inflasi, dan nilai tukar terhadap pertumbuhan laba pada perusahaan minyak dan gas yang terdaftar di Bursa Efek Indonesia tahun 2017 sampai dengan tahun 2021. Metode pengambilan sampel yang digunakan adalah metode purposive sampling. Analisis data yang digunakan adalah analisis regresi linier dan koefisien determinasi, uji T, dan uji F menggunakan Eviews. Hasil penelitian menyimpulkan bahwa harga komoditas, inflasi, dan nilai tukar secara parsial tidak berpengaruh signifikan terhadap pertumbuhan laba.

***Kata Kunci**: Harga Komoditi, Inflasi, Nilai Tukar, Pertumbuhan Laba*

CHAPTER I

INTRODUCTION

1.1 Research Background

One of Indonesia's many potential sources of natural wealth is the mining industry, particularly in the oil and gas sector. Gas and oil continue to be the most vital natural resources for human existence. There is no denying that oil and natural gas are used extensively by humans for a variety of everyday purposes, including transportation, electricity, and domestic necessities, as well as industrial or commercial purposes.

Indonesia has a comparative advantage in the oil business because it is an oil exporter. Because Indonesia still has significant oil reserves and there is an increasing demand for oil, one of the factors supporting Indonesia's comparative advantage in international trade is the availability of human resources in the form of a high number of workers (Batubara and Saskara, 2015). The Ministry of Energy and Mineral Resources (ESDM) reports that foreign contractors employing production-sharing contract arrangements produce the majority of Indonesia's oil (Rejekiningsih, 2012).

Crude oil is the commodity which contributes to upwards the vast majority of oil and gas exports, and it is one of the commodities that has done rather well in the global marketplace (Shrestha and Coxhead, 2018). Because of its high value, crude oil can be classified as one of the export commodities that the government prefers to use to encourage economic growth.

Profit growth is one of the most important aspects of a business within a company. Profit itself is a form of achievement of a company. If profits in the company have increased, then the financial condition of the company will also improve. According to (Taruh, 2011), the financial position of a company is the basis for assessing the health of a company. The better the company's financial position, the better the conditions that occur in the company. Irawati (2012), explains that an increase or decrease in profit can be presented in the form of a percentage. This is closely related to the amount of cash dividends that will be obtained by the company depending on the amount of profit that the company will receive in the future. Thus, profit growth in a company becomes one of the factors considered by an investor when making a decision whether or not to invest in a company.

According to the description above, the reason the researcher choose the mining sector on oil and gas company in the profit growth as the population of the sample because Indonesia has natural wealth that provides the potential for companies to manage large quantities of natural products in the long term. Natural wealth is not yet a guarantee for mining companies to get high profits, there are several factors that need to be considered in making financial decisions from an external perspective such as commodity prices, exchange rates and inflation which will affect the company's financial performance. The research title is "**The Effect of Commodity Price, Inflation, and Exchange Rate Towards Profit Growth (Study on Oil and Gas Company Listed in IDX 2017-2021)**".

1.2 Research Problem

1.2.1 Problem Formulation

Large companies in trading activities are inseparable from export-import activities, where the rupiah exchange rate is a factor that needs attention, many companies experience a decrease in profits and suffer losses when the rupiah weakens, but the weakening of the rupiah cannot be generalized that all companies will experience losses. , for exporting companies such as the mining sector, where most of their commodities are exported, the weakening of the rupiah brings benefits, because most transactions are carried out using US dollars, but the weakening of the rupiah is also a burden, because several components of production materials and production equipment still have to be imported. For this reason, management must be more careful in making financial decisions that will affect the trade balance, because the unstable condition of the rupiah makes it difficult for management to carry out financial planning, so that companies have the potential to incur higher costs than the budget has been set.

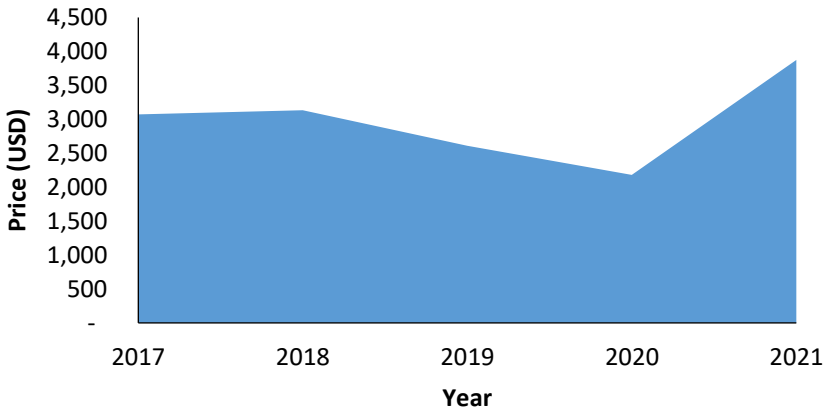

Figure 1.1

Graph of Oil and Gas Commodity Prices for 2017-2021

From the graph above, it can be seen that oil and gas commodity prices have decreased. In 2020 there was a decline in prices for oil and gas commodities. This was experienced in the midst of the Covid-19 pandemic, global oil and gas corporations faced heavy pressure due to weak demand, falling crude oil prices, and the weakening of the currency exchange rate against the US dollar. The decline in crude oil prices was triggered by excess supply. The International Energy Agency (IEA) report states that oil demand in 2020 will decrease by 8.1 million barrels per day compared to 2019 with the biggest decline occurring in April at 21 million barrels per day.

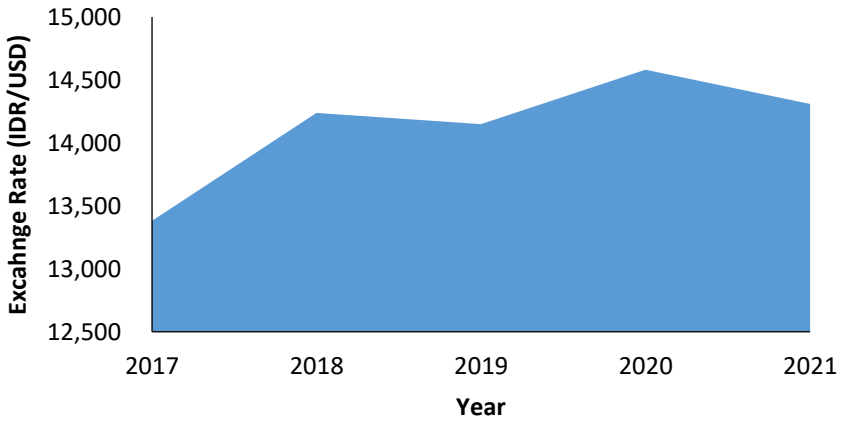

Figure 1.2

Graph of the 2017-2021 Rupiah Exchange Rate

Figure 1.2 shows that 2018 recorded the biggest decline in the value of the rupiah relative to the US dollar. Strong pressure on Indonesia's balance of payments (NP) and a high level of global uncertainty affected the dynamics of the Rupiah

currency rate in 2018. The ongoing rise in the Federal Reserve Funds Rate (FRR) and the unpredictability of the global financial markets were the main causes of this concern. This circumstance led to a decrease in foreign capital inflows into developing nations, such as Indonesia. Because of this, there was pressure on the Rupiah currency rate until October 2018, with the most pressure being in July 2018.

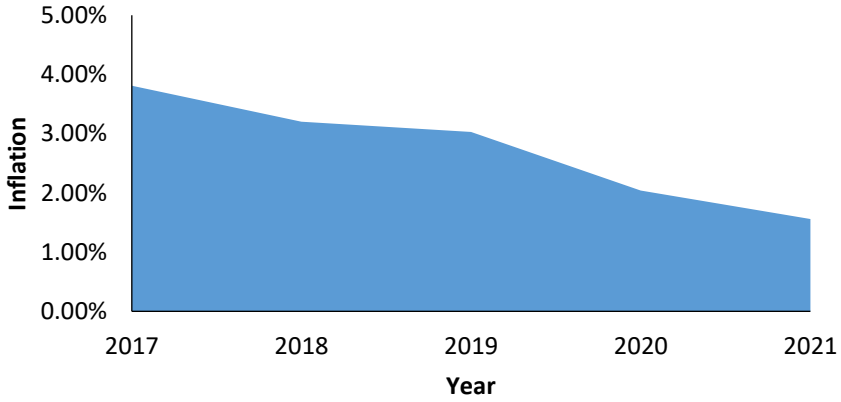

Figure 1.3

Inflation Chart for 2017-2021

In Figure 1.3 it can be seen that inflation in 2017 was from 3.81% to 3.20% in 2018, then in 2019 inflation was 3.03%, 2020 was 2.04%, and reached the lowest in 2021 with inflation of 1.56%. In the midst of increasing pressure on the Rupiah exchange rate, inflation remained low and under control.

Another factor that causes a reduction in net profit is the increase in the company's production costs which occur due to the inflation factor where the company incurs more costs for rising production material prices, even though with an increase in production costs the company can increase the selling price of its

production goods, but it is necessary to consider that if the selling price is increased it will impact on company revenue.

This problem was raised by researchers regarding the commodity price factor, the rupiah exchange rate, and the inflation rate that occurred in 2017 to 2021 which should affect the growth of company profits in the mining sector, especially the oil and gas industry on the Indonesia Stock Exchange in 2017 to 2021.

1.2.2 Research Questions

- Does commodity price influence profit growth?
- Does inflation influence profit growth?
- Does exchange rate influence profit growth?

1.3 Research Objectives

- To examine the relation of commodity price on profit growth.
- To examine the relation of inflation on profit growth.
- To examine the relation of exchange rate to profit growth.

1.4 Research Scope and Limitations

The scope and limitation are followed:

- This study using a sample focuses on the firms in oil and gas companies which are consistently listed on the Indonesia Stock Exchange for the 2017 until 2021.
- This study only used three factors to determine profit growth.

1.5 Research Benefits

Based on the research objectives, it is hoped that this research will provide benefits and contributions to various parties with an interest in the results of this research, including:

1. For researchers, this research is expected to provide understanding and broaden insight into how much influence oil and gas commodity prices, inflation, and exchange rates can affect profit growth.
2. For investors and issuers listed on the IDX, the results of the research can provide some assistance in making decisions in selling, purchasing, and understanding the shares they own.
3. For academics, this research can be used as a comparison with previous similar studies. Because these studies use different spaces, methods, and times, they will provide different learning.

CHAPTER II

LITERATURE REVIEW

2.1 Theory

2.1.1 Signaling theory

Signaling theory explains that providing information as a signal is carried out by management to reduce information asymmetry (Lo, 2012). According to Morris, 1987 (in Mediawati and Afiyana, 2018), this theory was originally a theory developed to solve problems that exist in the labor market. However, along with its development, this theory can be applied to all types of markets that have information asymmetry problems. Signal theory is information signals needed by investors that can be used to determine investment decisions (Khairudin and Wandita, 2017). According to Khairudin and Wandita (2017), the announcement of accounting information will provide a signal regarding the good or bad development of a company in the future. The relationship between signal theory and this research is that the company provides information signals through the company's financial statements. Signal theory can provide valuable insights into how companies ues profit growth as a signal to convey important information to stakeholders. Profits listed in the financial statements are often used as a measure of company performance. Profit growth that occurs can show the good and bad performance of a company in managing company finances. So that investors can assess the company's performance through profit growth.

2.1.2 Financial Statement

Financial statements are statements that contain firm information and provide a financial picture of the company's performance. When it comes to the performance and financial health of the business, financial reports are the most comprehensive source of information available to both internal and external stakeholders (Sukamulja, 2019). Financial reports, according to Wardiyah (2017: 6), are written reports that provide a fair picture of the company's financial position, performance, and cash flows. Report users can use these reports to help them make financial decisions and to show that management is accountable for how the company uses its resources. A balance sheet, income statement, statement of changes in equity, statement of cash flows, and notes to the financial statements are all considered to be full financial statements, as stated by the Statement of Financial Accounting Standards (PSAK) (2015). The information on financial situation, performance, and changes in financial position that is useful for management in making choices is what financial reports are for, according to Wardiyah (2017: 6).

2.1.3 Profit Growth

Making a profit is one of the things that allows a business to thrive and keep running. According to Hasibuan (2009), profit is extra net revenue in the form of assets and cash that can be utilized to keep the business afloat. It can refer to the revenue that an organization or corporation receives from the products or services they provide to clients during a given time frame after taxes and other payments have been made. Because a company's goal is always to turn a profit, regardless of

the size, scope, or industry in which it operates, users of financial statements evaluate management success based on how management turns a profit.

Gains or losses from a foreign country must be converted into the owner company's financial unit or utilize an international financial unit standard. Profit is one sign that an investor will give money to a business in order to receive a higher return. Profit also indicates that a business has been operating for a long time, even when operating in a foreign nation with a distinct culture and set of material. One of the most crucial things a business can do to make decisions about its operations going forward is to analyze its earnings over the year and assess what factors contributed to a decrease or increase in profit over the course of the year.

Rusmanto (2006) states that one of the usual methods used by manufacturing companies to estimate future profits is profit growth, which is determined by analyzing the previous year's financial statement data. A state-owned enterprise with substantial total assets indicates that it has matured. For the investor, the company's increasing profits demonstrate its capacity to operate a firm over the long term. One of the percentages that might alter a firm in a single period of time during its operation is profit growth.

The corporation is employing every means necessary to achieve growing profit growth in order to entice investors to participate in the business, as seen by the rising profit growth. Particularly in the mining sector, where multinational corporations constantly export and import goods to other nations. The company's profit growth is impacted by various factors, including changes in sales, cost of products sold, income taxes, and other unusual changes, as shown in the financial

statements. Other external factors that can affect profit include the country's inflation rate, exchange rate, commodity price, and manager discretion, which gives the manager the freedom to select an accounting strategy that will maximize profit. In a way that it can compute.

2.1.4 Commodity Price

A product's price is its exchange rate, stated in money or monetary units. The definition of "selling price" according to Hansen and Mowen (2009: 633) is "the monetary amount charged by a business unit to buyers or customers for goods or services sold or delivered." On the other hand, commodities are defined by Alfred Pakasi (2009: 11) as goods or materials with a marketable value that producers provide or supply in order to satisfy customer demand. The main commodity market's trading is characterized by its volatile price fluctuations and the emergence of price trends that follow particular patterns, which entice investors to participate and execute.

2.1.4.1 World Crude Oil Price

Crude oil is a blackish brown liquid obtained from gas pockets several hundred meters below the surface of the earth's crust (Daryanto, 2007:128). Crude oil is one of the most needed and important sources of energy for human life. Crude oil management will produce diesel oil, diesel oil, gasoline oil, gas which then becomes a source of energy to operate various types of equipment to facilitate human life (Mediastika, 2013: 7). This important role makes oil a driving force for the country's and even the

world's economy. Oil is used as a material for many industries in the world, so it is not surprising that the demand for oil throughout the world. Demand is high but oil reserves are decreasing day by day.

The types of oil traded in the world include Brent, WTI (West Texas Intermediate), Dubai Crude, Russian Export Blend. However, world crude oil benchmark prices use Brent and WTI. Brent blend is considered to be a sweet crude oil because it has a sulfur content of 0.37% and a density of 38.06 degrees, which is classified as a light oil especially for making gasoline. WTI has a sulfur content of around 0.24% and a density of 39.6 degrees. WTI oil is often used as a reference price for global oil.

2.1.4.1 Natural Gas Price

An essential part of the global energy supply is natural gas. Natural gas can be used to produce fuel and ammonia, which is an essential ingredient in the creation of fertilizer. Natural gas is a fossil fuel that has been underground for millions of years, where the remains of plants, animals, and microbes have been preserved. However, compared to other fossil fuels, natural gas is among the safest, most effective, and cleanest energy sources (it has the lowest carbon intensity).

2.1.5 Inflation

2.1.5.1 Inflation Definition

A general, continuous increase in the cost of goods and services over a predetermined period of time is known as inflation. It is not appropriate to

refer to a price increase for one or two commodities as inflation unless it is significant or raises the cost of other goods as well. Deflation is the antithesis of inflation.

In Indonesia, the Central Bureau of Statistics (BPS) is responsible for performing inflation calculations. Price information is gathered by BPS through surveys for a range of products and services that are thought to be typical of expenditures made by the general public. The inflation rate is then determined by comparing the present and past prices using the data.

2.1.5.2 IHK Measurement

IHK is one of the indicators used to measure the inflation rate. Based on the 2018 Classification of Individual Consumption by Purpose (COICOP), CPI is grouped into 11 (eleven) expenditure groups, namely:

1. Food, drink and tobacco group;
2. Clothing and footwear group;
3. Housing, water, electricity, and household fuel groups;
4. Equipment, tools, and household routine maintenance group;
5. Health group;
6. Transportation group;
7. Information, communication and financial services group;
8. Recreation, sports and cultural groups;
9. Educational groups;
10. Food and beverage/restaurant supply group and
11. Group personal care and other services.

2.1.5.3 Inflation Disaggregation

In addition to the COICOP-based grouping, BPS is currently also publishing inflation based on another grouping called inflation disaggregation. Inflation disaggregation is carried out to produce inflation indicators that illustrate the influence of fundamental factors.

1. Core Inflation, namely the inflation component that tends to be stable or persistent in its movements and is influenced by fundamental factors. Factors affecting core inflation include:
    - Supply-demand interaction
    - External environment, such as: exchange rates, international commodity prices, and global economic developments
    - Future inflation expectations
2. Non-core inflation, namely the inflation component that tends to have high volatility because it is influenced by factors other than fundamentals. The components of non-core inflation consist of:
    - Volatile Food Inflation: Inflation is predominantly influenced by shocks in the foodstuff group such as harvests, natural disturbances, or development factors in domestic and international food commodity prices.
    - Inflation Component of Prices Regulated by the Government: Inflation is dominantly influenced by shocks in the form of

government price policies, such as subsidized fuel prices, electricity rates, transportation rates, and the like.

2.1.5.4 Cause of Inflation

The cause of inflation can be caused by the following things.

1. Pressure from the supply side: Occurs when inflation is caused by pressure from the supply side or an increase in production costs.

   Some of the contributing factors include:

   - Exchange rate depreciation: If a country's currency depreciates against foreign currencies, import prices will rise, thereby increasing production costs and eventually driving up inflation.
   - Impact of foreign inflation: Inflation in trading partner countries or on the global market can have an impact on import prices, which can increase domestic production costs.
   - Increase in Government regulated commodity prices: If the Government regulates prices of essential commodities, the increase in those prices can lead to a general increase in production costs.
   - Negative supply shocks: Natural disasters or disruptions in the distribution of goods and services can reduce supply, potentially causing price increases.

2. Demand-side pressure: When demand-side pressure or increasing demand for goods and services relative to their availability causes inflation. Real output exceeding potential output or total demand exceeding the economy's capacity serve as examples of this circumstance in the macroeconomic setting. Prices may rise as a result.
3. Inflation Expectations: Inflation expectations are factors that are influenced by the perceptions and expectations of the public and economic actors regarding future inflation rates. This factor can influence the decisions of consumers, investors, and other economic actors.

   There are two types of inflation expectations:

   - Adaptive inflation expectations: Inflation expectations based on past experience or historical data.
   - Forward-looking inflation expectations: Inflation expectations based on analysis and forecasts of economic and policy factors that will affect future inflation.

2.1.6 Exchange Rate

2.1.6.1 Definition of Exchange Rate

According to Yusgiantoro (2004:111) Exchange rate is the price of domestic currency against foreign currency. The rupiah exchange rate is a

number of domestic currencies (rupiah) to get a number of foreign currencies.

2.1.6.2 Factors Affecting Exchange Rates

Halim (2015: 274-276) states that there are several factors that can affect exchange rates, the factors include the following:

1. Inflation

   If inflation in Indonesia increases while in the United States, it will cause an increase in demand for dollars. In addition, the surge in inflation that occurred in the United States will reduce American consumers' interest in products made in Indonesia so that the supply of dollars in the market will decrease.

2. Interest Rate

   If interest rates in Indonesia increase while in the United States it remains the same, it will reduce the demand for dollars. Indonesia's high interest rate will attract investors to invest their money in Indonesia and possibly withdraw their deposits in the United States, and vice versa.

3. National Income Level

   If the level of Indonesia's national income increases while in America it remains the same, it will cause Indonesian consumers' demand for American products to increase.

4. Government Control

Governments of foreign countries can influence exchange rates in various ways, including by buying and selling currencies in the foreign exchange market, changing macro variables such as inflation, interest rates, and national income.

2.1.6.3 Exchange Rate System

According to Hady (2001:40-45) the exchange rate system is divided into 3 types, namely:

1. Fixed Exchange Rate System

   The exchange rate system is needed so that international trade and investment flows can run smoothly, thus providing certainty to international trade activities.

2. Floating Exchange Rate System

   The exchange rate system is determined by the forces of supply and demand on the foreign exchange market. The floating exchange rate system is divided into 2 types, namely:

   a. Freely Floating System: determination of foreign exchange rates on the foreign exchange market without any interference from the government.
   b. Managed Float System: determination of foreign exchange rates with government intervention to influence the demand and supply of foreign exchange.

3. Pegged Exchange Rate System

The exchange rate system is carried out by linking one currency to another country's currency.

2.2 Hypothesis Development

2.2.1 Crude Oil Price and profit growth

Crude oil and natural gas are mining products that are widely used by everyone, even industries in the world. Various activities in the world still use crude oil as fuel. The price of crude oil is the center of attention because many activities still use crude oil. Oil and gas prices rise, companies engaged in the oil and gas sector or companies that use oil and gas as raw materials will face an increase in production costs. This can lead to a decrease in the company's profit margin, especially if the company has difficulty increasing the selling price of its products proportionally.

H1: Crude Oil has effect on Profit Growth

2.2.2 Natural Gas Price and Profit Growth

An increase in gas prices may lead to higher profit growth for energy companies or related industries. Higher gas prices may also impact a company's production costs, especially if the company uses gas as a raw material or energy source for the production process. This may lead to a decrease in the company's profit margin, especially if the company finds it difficult to increase the selling price of its products proportionally. In addition, government policies are also one of the things that affect profit growth.

H2: Natural Gas has effect on Profit Growth

2.2.3 Inflation and profit growth

It can be seen that the amount of supply that is relatively low, as well as the amount of demand that is soaring, as well as the amount of money in circulation and the estimated price in the future will result in continuous price changes or inflation. According to (Mankiw, 2011) increased inflation can be a negative signal for investors because rising inflation will reduce company profitability. According to Agustina (2016), inflation can affect profit growth because it can increase consumer purchasing power, so that sales levels become lower. The research hypothesis can be formulated as follows:

H3: The inflation rate has effect on profit growth.

2.2.4 Exchange rate and profit growth

Investor attention is focused on the appreciation or depreciation of the rupiah exchange rate against foreign currencies, especially the dollar because it can affect investors in investing. Exchange rates always fluctuate following the demand and supply that occurs. However, these requests and offers can also be made with the intervention of the government.

H4: Exchange Rate has effect on Profit Growth.

2.3 Research Framework

The conceptual framework of this research explains that profit growth is influenced by commodity price, inflation, and exchange rate.

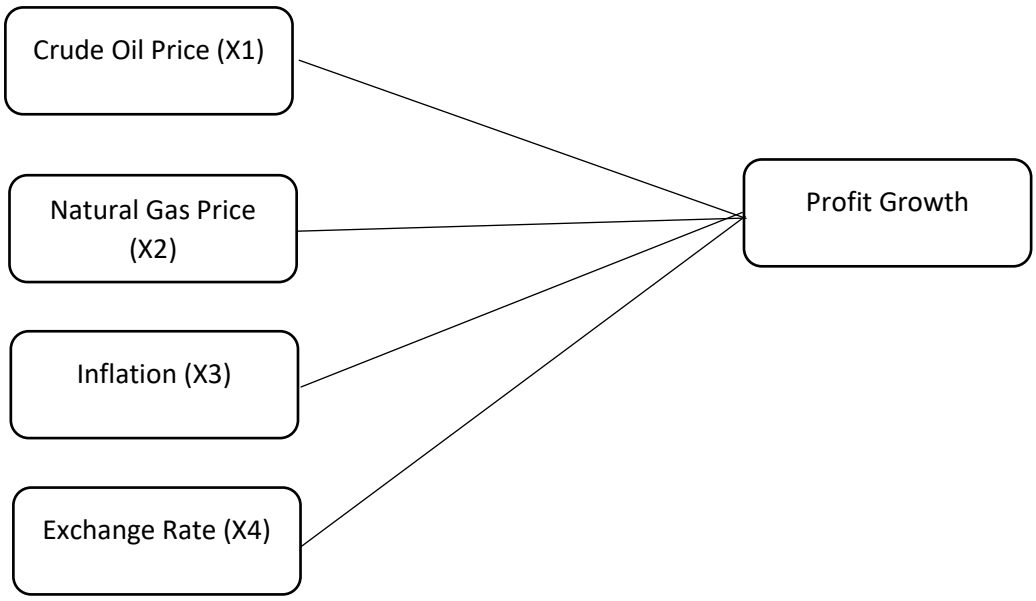

Figure 2.1

Research Framework.

CHAPTER III

RESEARCH METHOD

3.1 Research Design

The influence of commodity price, inflation, and exchange rate on profit growth was discovered, developed, and proven by quantitative approach. Quantitative approach was chosen since it relies on numerical research data and statistical analysis, which are believed to produce results that are unbiased and in line with the facts of the available data. The data was taken from the Indonesia Stock Exchange (IDX) in the years of 2017–2021, or before and during Covid-19. 5 years period used in order to get more updated and precise results with a clearer understanding of how variables affect profit growth. In addition, purposive sampling technique used to obtain the sample or choose the sample with some criteria. Utilizing EViews version 12 and Microsoft Excel, the data will be processed, assessed, and measured.

3.2 Data and Sampling

Mining sector sub-sector oil and gas companies were chosen for this study population. In deciding the sample, this research engages nonprobability sampling which namely purposive sampling method. To determine the sample from the population, use the following criteria:

1. Mining firms sub-sector oil and gas company that have listed on the Indonesia Stock Exchange in 2017-2021

2. Mining firms sub-sector oil and gas company that consistently release financial statements on the Indonesia Stock Exchange during the period of 2017-2021.

3.3 Variable and Measurement

3.3.1 Dependent Variable

3.3.1.1 Profit Growth

In the following paragraphs, profit growth is the main topic. A statistic that demonstrates the company's capacity to raise net income in comparison to the prior year is called profit growth (Harahap, 2016). One of the company's primary objectives in carrying out its operations is profit. The corporation will utilize its revenues for a variety of things, including enhancing its wellbeing in exchange for the services it receives. A ratio called profit growth indicates how well a corporation can raise net income in comparison to the prior year. Profit growth, then, is a ratio that illustrates the company's capacity to raise net profit over the previous year. Thus, it is also known to raise or lower profitability.

For calculating profit growth, reduce this year's net profit from last year's and divide the result by the net profit from the previous year (Harahap, 2016). The following is the formula for profit growth:

$$Profit\ Growth = \frac{Profit\ t - Profit\ t - 1}{Profit\ t - 1}$$

3.3.2 Independent Variable

3.3.2.1 Commodity Price

Commodity price data used in this study is annual data taken at the end of each year during the 2017-2021 research period, sourced from the official website of the Ministry of Energy and Mineral Resources of the Republic of Indonesia.

3.3.2.2 Inflation

Inflation data used in this study is monthly data taken every date at the end of the month during the 2017-2021 research period, sourced from the official website of Bank Indonesia.

3.3.2.3 Exchange Rate

The Exchange Rate data used in this study is the rupiah exchange rate data against the US dollar sourced from the official website of Bank Indonesia. The exchange rate used is the middle rate. The middle exchange rate data used is the month-end monthly exchange rate data during the 2017-2021 research period.

3.4 Research Model

This paper aims to provide evidence about commodity price, inflation, and exchange rate as an independent variable towards profit growth as the dependent variable. This study investigates the hypothesis using multiple linear regression with the equation as follows:

To test H1 and H2:

$$PG_{it} = \alpha + \beta_1 CPCR_{it} + \beta_2 CPG_{it} + \beta_3 INF_{it} + \beta_4 EXCR_{it} + \ + \varepsilon_{it}$$

Where:

PG_{it} = Profit Growth (i), in the Period (t)

α = Constant

β_1 *to* β_9= Regression Coefficient

$CPCR_{it}$= Commodity Price of Crude Oil (i), in the Period (t)

CPG_{it} = Commodity Price of Natural Gas (i), in the Period (t)

INF_{it} = Inflation (i), in the Period (t)

$EXCR_{it}$= Exchange Rate (i), in the Period (t)

ε = Error

3.4.1 Panel Data Regression Estimation Model

Data that were collected by cross section and time series called panel data. Panel data can minimize the bias generated by individual aggregation due to too many units of observation. There are three different model to processing procedures that can be used to conduct research utilizing the panel data technique:

3.4.1.1 Common Effect Model (CEM)

Cross-sectional and time series data are combined in this methodology. By combining the two distinct data sources, CEM can be utilized to estimate the panel data model. According to Greene (2007), CEM is a regression model on panel data that was developed under the presumption that the cross-section and time series units utilized in this model had already been specified. This strategy assumes that data behavior across organizations is constant across time, ignoring both the individual and temporal factors. The companies' attributes, both geographically and

qualitatively, clearly set them apart from one another, demonstrating how far this theory is from reality.

3.4.1.2 Fixed Effect Model (FEM)

Panel data with disturbance factors that can be related over time and between individuals can be estimated using this approach. Gujarati et al. (2015) state that the Fixed Effect Model (FEM) assumes that there are individual differences in the intercept. The benefit of this strategy is that it can distinguish between individual impacts and time effects. It is not essential to apply the assumption that the error component is unrelated to the independent variables to this technique.

3.4.1.3 Random Effect Model (REM)

Judge (1980) states that the Random Effect Model postulates that individual impacts on time series and cross-sectional units are random variables that are incorporated into the model as an error. In this method, the precise impacts of each individual variable are included in the error-term. The error-term, in accordance with REM, is a constant that may be related across cross sections and temporal periods. This technique performs better with panel data when the number of participants exceeds the number of time periods.

3.4.2 Determining Estimation Model

Several tests can be performed with the Eviews application to assist decide which of the three equation models is the most effective to use. These tests include:

3.4.2.1 Chow Test

Chow tests are used as a method to find the best model for estimating panel data in order to ascertain if FEM or CEM is the most suitable. If the probability is higher than 0.05, CEM is selected as the research model. Conversely, FEM should be used if the probability is less than 0.05.

3.4.2.2 Hausmann Test

The Hausmann Test was used to choose a model for panel data between the FEM and REM techniques. In cases where the probability is higher than 0.05, REM is selected as the research model. Conversely, FEM should be used if the probability is less than 0.05.

3.4.2.3 Lagrange Multiplier Test

This is a test to see if using the REM instead of the CEM is more appropriate. The creator of this important test is Bruesch Pagan. The CEM is utilized for additional testing if the value of the Chi-square Probability Cross-section is higher than 0.05. For further testing, if the Probability Cross-section Chisquare value is less than 0.05, the REM model is chosen.

3.5 Descriptive Statistics Analysis

In order to succinctly communicate the essential features of the data, descriptive statistics visualize or explain the thesis variables based on their average (middle), minimum, maximum, and standard deviation.

3.5.1 Classic Assumptions Tests

In quantitative research, one of the requirements is to carry out tests on the more traditional types of assumptions. A valid result can only be obtained from a regression analysis if the assumptions that it makes are satisfied. Therefore, in order to provide reliable findings, it is necessary to make the following four assumptions about the analysis:

3.5.1.1 Normality Tests

The test for normality is performed in order to gain insight into the manner in which the data for the study's variables are distributed. It is important for the variables that make up a regression model to have a normal distribution; otherwise, the t-values may be interpreted incorrectly. If the probability is greater than 0.05, then the data are assumed to be distributed normally; if it is less than 0.05, then the data are considered to be non-normally distributed (Ghozali, 2017). Jarque Berra (JB) is a statistical test that is used to test the assumption that the data are normally distributed.

3.5.1.2 Multicollinearity Tests

The multicollinearity test is used to examine the relationships between variables in order to establish whether or not correlation exists. The estimations of the regression coefficients can even change signs if there is significant collinearity present in the data. The relationship that exists between the variables in this research may be seen by determining collinearity, which entails determining the value of the collinearity coefficient that exists between each variable. If the value is less than

0.8, the regression model does not exhibit multicollinearity; nevertheless, if the value is greater than 0.8, it does. (2017) according to Gozali.

3.5.1.3 Heteroscedasticity Tests

The heteroscedasticity test is used to determine whether or not the residual variance in the regression model differs from one observation to another observation. This can be done by comparing one observation to another. Because heteroscedasticity was not found in the data, it can be deduced that the regression model is accurate. Both the graph and the Breusch-Pagan test can be used to determine whether or not heteroscedasticity exists. When the graph displays a pattern, heteroscedasticity may be present in the data. It is possible to see from the likelihood that the Breusch-Pagan test for determining heteroscedasticity is valid. If the probability is greater than 0.05, then it is possible to draw the conclusion that the data are free from heteroscedasticity.

3.5.1.4 Autocorrelation Tests

The Durbin-Watson (DW) test is a statistical method that can be utilized to ascertain whether or not autocorrelation is present. This determines whether or not there is autocorrelation by testing the null hypothesis that there is none, which states that there is no autocorrelation. The positive and negative autocorrelations are evaluated based on how they compare to the lower and upper bounds, respectively. The results of the test between the lower critical value (dL) and the upper critical value (dU) and the D-W test statistic (d) may reflect the following:

	Hypothesis Null	If	Decision
1	Positive autocorrelation does not exist	0 < DW < dL	Rejected
2	Positive autocorrelation does not exist	dL < DW < dU	No Decision
3	There is no negative autocorrelation	4-dL < DW < 4	Rejected
4	There is no negative autocorrelation	4-dU < DW < 4-dL	No Decision
5	There is no autocorrelation, either positive or negative	dU < DW < 4-dU	Accept

Table 3.1 Durbin-Watson: Decisions towards hypothesis.

3.5.2 Hypothesis Tests

This research performed two different types of regressions. As the first type of regression, the multiple linear regression analysis is a type of research that includes more than one independent variable. The purpose of this type of regression is to discover the outcome of both hypothesis 1 and hypothesis 2.

3.5.2.1 The Coefficient of Determination (R^2)

In this research, tests of the coefficient of determination, abbreviated as R2, were carried out in order to ascertain the proportion of the study's independent

variables that correspond to the variable that is having an effect on the dependent variable.

3.5.2.2 Significant F-Test

There is a possibility that independent factors will impact or affect dependent variables all by themselves. In this test, in reference to the significant number, it is possible to draw the conclusion that all of the independent factors that were employed in this research are affecting the dependent variables concurrently if the significance is lower than 0.05 (Sig 0.05). Therefore, from all of the independent variables, it is possible to be certain that if significance is lower than 0.05 (sig 0.05), one or more factors may have a significant link with the variable that is being investigated (the dependent variable).

3.5.2.3 Significant T-Test

The T-test will show whether the study hypothesis is accepted or rejected, depending on the outcome. In the same way that the significance of an F-test can be determined by looking at the significance number of each variable, the significance of a T-test can be evaluated by determining whether or not that number is less than 0.05. If it is, then one can draw the conclusion that the independent variable significantly affects the dependent variable on its own. In order to achieve a higher level of accuracy, the T-test should also be assessed by making reference to the T-table that has already been established. If the T-test is larger than the T-table, then we can say that the independent factors have a considerable impact on the dependent variables; this is denoted by the phrase "T-test > T-table." If the result

of the T-test is a positive value, it indicates that the independent variable has a significant and positive influence on the dependent variable, and vice versa.

CHAPTER IV

RESULT ANALYSIS, DISCUSSION, AND IMPLICATION

4.1 Results Analysis

Code	Firm	Code	Firm
AKRA	AKR Corporindo Tbk.	ENRG	Energi Mega Persada Tbk.
APEX	Apexindo Pratama Duta Tbk	MEDC	Medco Energi Internasional Tbk.
BIPI	Astrindo Nusantara Infrastruktur Tbk	RAJA	Rukun Raharja Tbk.
ELSA	Elnusa Tbk		

Table 4.1 Sample Selection: List of companies used for data collection.

In the course of this study, a sample was collected when it was determined that the sample satisfied the criteria (see table 1). The website of the Indonesia Stock Exchange was consulted in order to gather some sample data. The information used in this study originated from three businesses that had operations in the oil and gas subsector of the mining sector and had been listed on the Indonesia Stock Exchange for a period of five years, or from 2017 until 2021.

4.1.1 Model Selection Test

4.1.1.1 Chow Test

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.340385	(6,24)	0.0638
Cross-section Chi-square	16.122579	6	0.0131

Table 4.2 Chow Test

If the value of the probability is less than 0.05, then we say that the probability is less than 0.05, or prob 0.05. Therefore, in order to determine the estimate panel data model, the chow test must indicate a probability that is greater than 0.05 for it to be considered a candidate for selection as the CEM.

4.1.1.2 Hausmann Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	4	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

Table 4.3 Hausmann Test

The probability is more than 0.05, as shown in table 5, sometimes written as prob > 0.05. Therefore, in accordance with the standards of the hypothesis, if the Hausman test reveals that the cross-section random probability is more than 0.05, this implies that the REM model is the one that it would be most appropriate to apply.

4.1.1.3 Lagrange Test

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	3.128426 (0.0769)	2.916667 (0.0877)	6.045093 (0.0139)
Honda	1.768736 (0.0385)	-1.707825 (0.9562)	0.043070 (0.4828)
King-Wu	1.768736 (0.0385)	-1.707825 (0.9562)	-0.204229 (0.5809)
Standardized Honda	1.691235 (0.0454)	-2.51E-06 (0.5000)	-1.941758 (0.9739)
Standardized King-Wu	1.691235 (0.0454)	-2.51E-06 (0.5000)	-2.308765 (0.9895)
Gourieroux, et al.	--	--	3.128426 (0.0908)

Table 4.4. Lagrange Test

According to the data shown in table 6. The LM value is 0.9545, which is greater than 0.05, hence the probability is greater than 0.05. According to the parameters of the hypothesis, a lagrange test that indicates the LM value is more than 0.05 supports using CEM. Because of this, CEM has been selected to serve as the model for this investigation.

4.1.1.4 Descriptive Statistical Analysis

Date: 09/20/23 Time: 05:49
Sample: 2017 2021

	Y	X1	X2	X3	X4
Mean	-0.384434	0.080518	0.390836	0.027263	0.140608
Median	-0.295322	0.087630	0.404557	0.030292	0.141050
Maximum	0.375273	0.095235	0.509976	0.038092	0.144810
Minimum	-1.221056	0.057849	0.287028	0.015600	0.135480
Std. Dev.	0.469153	0.014953	0.075946	0.008272	0.003242
Skewness	-0.163462	-0.482128	0.220725	-0.189634	-0.341127
Kurtosis	1.850829	1.527101	2.062665	1.589156	1.974482
Jarque-Bera	2.081730	4.519698	1.565486	3.112559	2.212523
Probability	0.353149	0.104366	0.457150	0.210919	0.330793
Sum	-13.45519	2.818119	13.67924	0.954217	4.921280
Sum Sq. Dev.	7.483540	0.007602	0.196106	0.002326	0.000357
Observations	35	35	35	35	35

Table 4.5. Descriptive Statistics

Table 7 was resorted to for descriptive statistics, and it can be seen from the table that each of the variables has a total of 15 observation samples. These samples cover the time span from 2017 through 2021. The value of the Profit Growth (Y) variable can range from its minimum of -1.221056 all the way up to its maximum of 0.375273. The mean of this variable is -0.384434. The commodity price of crude oil, denoted by the variable X1, has a mean value of 0.080518 and a range that extends from 0.057849 to 0.095235. Commodity Price of Natural Gas (X2) with a mean of 0.390836 and a range that goes from a low of 0.287028 all the way up to a high of 0.509976 as the highest. This variable's mean value is 0.027263, and its value range is from 0.015600 at the low end to 0.038092 at the high end. The variable being discussed here is inflation (X3). This has a mean value of 0.140608 for the exchange rate (X4) variable, with a value range that extends from 0.135480 all the way up to 0.144810 as the maximum possible value.

4.1.2 Classical Assumption Test

4.1.2.1 Normality Test

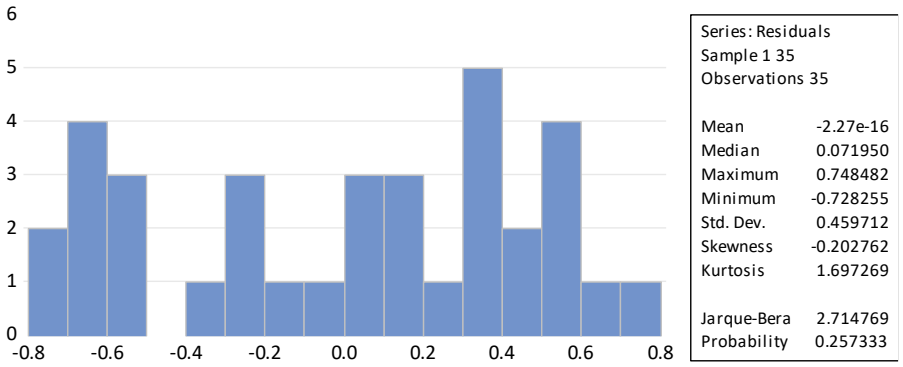

Table 4.6 Normality Test

According to the diagram in figure 2, the Skewness probability value was -0.202762, the Kurtosis probability value was 1.697269, and the Jarque-Bera probability value was 0.257333. These values were derived from the results of the normalcy test that was described earlier and utilized the Skewness, Kurtosis, and Jarque-Bera test method. These findings lend credence to the idea that a conclusion of normal distribution can be drawn from the data when the Skewness Probability value is greater than zero, the Kurtosis Probability value is greater than three, and the Jarque-Bera Probability value is greater than two.

4.1.2.2 Multicollinearity Test

This research can be considered free from multicollinearity when each collinearity coefficient is lower than 0.8.

	X1	X2	X3	X4
X1	1.000000	0.698212	-0.104138	0.526792
X2	0.698212	1.000000	-0.189400	0.247813
X3	-0.104138	-0.189400	1.000000	-0.521390
X4	0.526792	0.247813	-0.521390	1.000000

Table 4.7 Multicollinearity Test

According to table 8, each of the variables investigated in this study has a collinearity coefficient that is less than 0.8. As a result, according to the collinearity coefficient, all of the variables are satisfactory, leading one to the conclusion that these data are not affected by multicollinearity.

4.1.2.3 Heteroscedasticity Test

In order to increase the reliability of the findings, this study used a combination of two distinct kinds of testing. The first step is to examine the graph in order to establish whether or not heteroscedasticity is involved in this research.

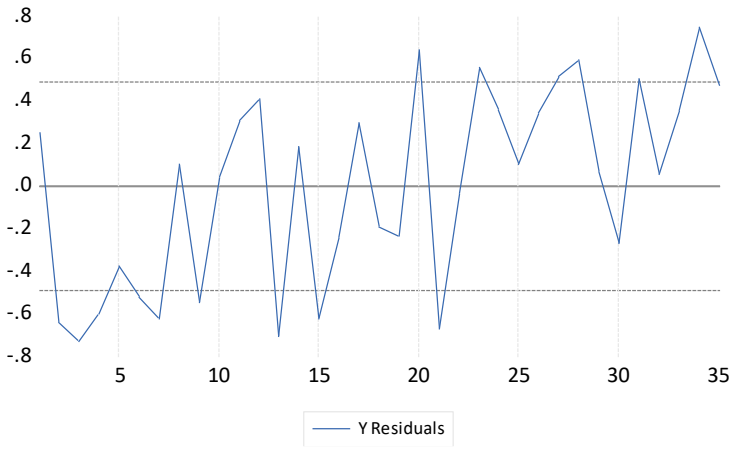

Table 4.8 Heteroscedasticity Test: Graph

Table 4.8 presents a graph that can be used to demonstrate that the graph of the regression has a different pattern, despite the fact that it appears to have a pattern when it is initially viewed. establishes beyond any reasonable doubt that

heteroscedasticity is unaffected. The Breusch-Pagan test is carried out in order to ensure that the regression is not impacted by heteroscedasticity. This is due to the fact that the graph can only be observed by the pattern.

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.262616	Prob. F(4,30)	0.8996
Obs*R-squared	1.184081	Prob. Chi-Square(4)	0.8807
Scaled explained SS	0.303290	Prob. Chi-Square(4)	0.9896

Table 4.9 Heteroscedasticity Test: Breusch-pagan

The Breusch-Pagan test yielded a probability that was more than 0.05. Due to the fact that the regression has already satisfied the requirement that the likelihood of a Breusch-pagan LM should be more than 0.05 (Sig > 0.05), it is possible to draw the conclusion and have the assurance that the regression was not impacted by heteroscedasticity.

4.1.2.4 Autocorrelation Test

R-squared	0.039842	Mean dependent var	-0.384434
Adjusted R-squared	-0.088179	S.D. dependent var	0.469153
S.E. of regression	0.489400	Akaike info criterion	1.540292
Sum squared resid	7.185380	Schwarz criterion	1.762484
Log likelihood	-21.95510	Hannan-Quinn criter.	1.616992
F-statistic	0.311215	Durbin-Watson stat	1.936559
Prob(F-statistic)	0.868193		

Table 4.10 Autocorrelation Test

According to the outcomes, the value of DW is calculated to be 1.936559, and the values of DL and DU that are suitable for use in this investigation are calculated as follows: DL = 1.1439 and DU = 1.8076. It is possible to draw the conclusion that there is no autocorrelation for this regression based on the DW value that was obtained from this research. This is because DU DW 4 - DU.

4.1.3 Hypothesis Test

4.1.3.1 Multiple Linear Regression

To seek the outcome of independent variables that have more than one in research toward dependent variables, Multiple linear regression is used.

Dependent Variable: Y
Method: Panel Least Squares
Date: 09/20/23 Time: 05:35
Sample: 2017 2021
Periods included: 5
Cross-sections included: 7
Total panel (balanced) observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.892209	5.468713	0.163148	0.8715
X1	7.015085	9.921713	0.707044	0.4850
X2	-0.985639	1.670327	-0.590087	0.5596
X3	-10.37173	12.97714	-0.799231	0.4304
X4	-8.345834	38.98902	-0.214056	0.8320

Table 4.11 Multiple Linear Regression

Multiple linear regression in this research generated the model equation as follows based on Common Effect Model:

$$Y = 0.8922 + 7.0150X1 + 0.9856X2 + 10.3717X3 + 8.3458X4 + \alpha$$

According to the equation shown before, the value of the constant is 0.8922, which implies that the value of profit growth (Y) remains unchanged even if the crude oil price (X1), natural gas price (X2), inflation rate (X3), and exchange rate (X4) are ignored or made equal to zero.

According to the equation presented above, the coefficient values found in the commodity price of crude oil (X1) variable are in the range of 7.015085. According to these data, the variable profit growth slows by 7.015085. percentage points if there is a one-unit increase in the price of the commodity. According to the equation presented above, the value of the coefficients associated with the commodity price of natural gas (X2) variable is -0.985639. These data illustrate that a one-unit rise in the variable commodity price results in a -0.985639 percentage point decrease in the variable profit growth rate. In the equation that came before, the exposure of the outcomes of the coefficient values of the inflation variable (X3) is calculated to be -10.37173. This is in addition to the constants for profit growth and commodity price. The findings illustrate that there is a -10.37173 percentage point increase in the profit growth variable whenever there is a one unit decrease in the inflation variable. The coefficients on exchange rate, denoted by the symbol (X4), come in at -8.345834, which suggests that a one-unit rise in exchange rate will result in a -8.345834-unit decrease in profit growth.

4.1.3.2 The Determination of Coefficient (R^2)

R-squared	0.039842

Table 4.12 Determination of Coefficient (R^2)

According to table 12, the R^2 value for this regression is 0.039842. Based on this value, it can be deduced that the factors that were included in this study were

responsible for explaining 3.9% of the total profit growth, while other variables not included in this research were responsible for explaining the remaining 96.1%.

4.1.3.3 Significant F-Test

F-statistic	0.311215
Prob(F-statistic)	0.868193

Table 4.13 Significant F-Test

The F-test for 0.311215 with a probability of 0.868193 shows that all independent variables, which are commodity price, inflation, and exchange rate simultaneously significantly do not affect profit growth as a dependent variable. This is due to the fact that the result based on table 13 did not meet the condition where significance should be lower than 0.05 (prob 0.05) to be said to have a significant effect.

4.1.3.4 Significant T-Test

It would be reasonable to make the conclusion, based on the information presented in table 11, that none of the variables, including the control variables, that were utilized in this study to support the result had a significant impact on the dependent variables. This is evidenced by the significance levels of each variable, which are all greater than 0.05. When looking at the T value, we can see that every single value is higher than the T table that is suitable for this study, which has a value of 2.042.

Crude Oil Price (X1) as the independent variable with significant 0.485 shows that it has not significantly affected profit growth because it hasn't met the condition where the significant value should be less than 0.05. Looking at the T value, commodity price not significantly affecting profit growth in a negative way based on the T value of -1. Thus, H1 in this research can be rejected where crude oil price have affecting profit growth.

Natural Gas Price (X2) as the independent variable with significant 0.559 shows that it has not significantly affected profit growth because it hasn't met the condition where the significant value should be less than 0.05. Looking at the T value, commodity price not significantly affecting profit growth in a positive way based on the T value of 2.042. Thus, H2 in this research can be rejected where natural gas price have affecting profit growth.

Inflation (X3) as the independent variable with significant 0.430 shows that it has not significantly affected profit growth because it hasn't met the condition where the significant value should be less than 0.05. Looking at the T value, commodity price is not affecting significantly toward profit growth in a postive way based on the T value of 2.042. Thus, H3 in this research can be received where inflation have not affecting profit growth.

Exchange Rate (X4) as the independent variable with significant 0.832 shows that it has not significantly affected profit growth because it hasn't met the condition where the significant value should be less than 0.05. Looking at the T value, commodity prices are not affecting significantly toward profit growth in a

negative way based on the T value of. Thus, H4 in this research can be rejected where exchange rate have not affecting profit growth.

4.2 Result Discussion

4.2.1 Crude Oil Price and Profit Growth

From the outcome of the T test for H1, the coefficient value of commodity price of crude oil variable is 0.707044 and probability of 0.4850. Significant value for the crude oil price shows a probability higher than 0.05 and T count < T table which means H1 which states crude oil price has a no impact on profit growth rejected. Companies engaged in the mining sector in Indonesia are companies whose revenues do not depend directly on world crude oil and natural gas. The fluctuations in world oil prices and natural gas have no direct impact on the income of companies operating in the oil and gas sub-sector.

4.2.2 Natural Gas Price and Profit Growth

From the outcome of the T test the coefficient value of commodity price of natural gas variable is -5.90087 and probability of 0.5596. Significant value for the natural gas price shows a probability higher than 0.05 and T count < T table which means H2 which states natural gas price has a no impact on profit growth rejected. Companies engaged in the mining sector in Indonesia are companies whose revenues do not depend directly on world crude oil and natural gas. The fluctuations in world oil prices and natural gas have no direct impact on the income of companies operating in the oil and gas sub-sector.

4.2.3 Inflation and Profit Growth

From the outcome of the T test for H2, the coefficient value inflation variable is -799231 as well as the probability of 0.4304. The significant value for the executive preference risk shows a probability higher than 0.05 and T count < T table which means H3 which states inflation has impact on profit growth rejected. Inflation rate and profit growth rate, the higher the inflation rate, the lower people's purchasing power which can affect company profits. This increase in inflation usually has an impact on business actors who have to import raw materials from abroad, when inflation rises, the price of these commodities also increases which causes a lack of consumer purchasing power. This condition certainly had an impact on the company, and the company's selling costs decreased, which also reduced the company's profits. Conversely, when the inflation rate is low, the price of goods falls, it increases the purchasing power of consumers and firms earn higher profits. The inflation rate will not be able to affect a company's profit growth. Moreover, if the company has market and consumer segments that are not tied to the ups and downs of inflation. This research is in line with Ulfa (2018) which argues that inflation has a negative effect on profit growth.

4.2.4 Exchange Rate and Profit Growth

From the outcome of the T test for H3, the coefficient value exchange rate variable is -0.214056 as well as the probability of 0.8320. The significant value for the executive preference risk shows a probability higher than 0.05 and T count < T table which means H4 which states exchange rate has not impact on profit growth

received. Analysis of the exchange rate is often used in the non-oil and gas sector. This is because theoretically it can be said that exchange rate movements will greatly affect trade in non-oil and gas goods, where transactions for oil and gas are more unaffected by exchange rate movements but only determined by the real need for these goods.

CHAPTER V

CONCLUSION, LIMITATIONS AND SUGGESTION

5.1 Conclusion

Based on the finding of the analysis that has been explained, the following conclusions can be given:

1. The results of the study suggest that crude oil price does not affect the profit growth on oil and gas company listed on the Indonesia Stock Exchange for 2017 until 2021.
2. The results of the study suggest that natural gas price does not affect the profit growth on oil and gas company listed on the Indonesia Stock Exchange for 2017 until 2021.
3. The results of the study suggest that inflation not affect the profit growth on oil and gas company listed on the Indonesia Stock Exchange for 2017 until 2021.
4. The results of the study suggest that exchange rate does not affect the profit growth on oil and gas company listed on the Indonesia Stock Exchange for 2017 until 2021.

5.2 Limitations

The following are the study's limitations:

1. This study using a sample focuses on the firms in oil and gas companies which are consistently listed on the Indonesia Stock Exchange for the 2017 until 2021.

2. This study only used three factors to determine profit growth.

5.3 Suggestions

The researcher has the following suggestions for the following researcher who want to go on or develop the study related to this research in consideration of these limitations:

1. For future researchers, the researcher can utilize a new company sector as a sample or by extending the duration period of the study for the development of testing the theory connected to the implementation of profit growth.
2. For investors, it would be preferable if they gave focus to the company's financial performance because it has an impact on the company's revenue growth and this is to determine the benefits that can be generated from the expected return.
3. For company, pay more attention to any external factors that affect profit growth

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APPENDIX

1. Raw Data

PERUSAHAAN	Year	Y	X1	X2	X3	X4
AKRA	2017	-0.0435	0.0686	0.4046	0.0381	0.1355
	2018	-0.3375	0.0933	0.4112	0.0320	0.1448
	2019	0.0545	0.0876	0.3414	0.0303	0.1390
	2020	0.3753	0.0578	0.2870	0.0204	0.1411
	2021	0.1798	0.0952	0.5100	0.0156	0.1427
APEX	2017	-0.2370	0.0686	0.4046	0.0381	0.1355
	2018	0.0125	0.0933	0.4112	0.0320	0.1448
	2019	-1.0061	0.0876	0.3414	0.0303	0.1390
	2020	-0.1865	0.0578	0.2870	0.0204	0.1411
	2021	-0.9178	0.0952	0.5100	0.0156	0.1427
BIPI	2017	-1.2211	0.0686	0.4046	0.0381	0.1355
	2018	-0.4270	0.0933	0.4112	0.0320	0.1448
	2019	0.2552	0.0876	0.3414	0.0303	0.1390
	2020	-0.0143	0.0578	0.2870	0.0204	0.1411
	2021	-0.1905	0.0952	0.5100	0.0156	0.1427
ELSA	2017	-0.2051	0.0686	0.4046	0.0381	0.1355
	2018	0.1180	0.0933	0.4112	0.0320	0.1448
	2019	0.2901	0.0876	0.3414	0.0303	0.1390
	2020	-0.3013	0.0578	0.2870	0.0204	0.1411
	2021	-0.5634	0.0952	0.5100	0.0156	0.1427
ENRG	2017	-1.0706	0.0686	0.4046	0.0381	0.1355
	2018	-1.0209	0.0933	0.4112	0.0320	0.1448
	2019	-0.1986	0.0876	0.3414	0.0303	0.1390
	2020	-0.9161	0.0578	0.2870	0.0204	0.1411
	2021	-0.2496	0.0952	0.5100	0.0156	0.1427
MEDC	2017	-0.2953	0.0686	0.4046	0.0381	0.1355
	2018	-1.0389	0.0933	0.4112	0.0320	0.1448
	2019	-1.0322	0.0876	0.3414	0.0303	0.1390
	2020	-0.9678	0.0578	0.2870	0.0204	0.1411
	2021	-0.6697	0.0952	0.5100	0.0156	0.1427
RAJA	2017	-0.7852	0.0686	0.4046	0.0381	0.1355
	2018	-0.0986	0.0933	0.4112	0.0320	0.1448
	2019	-0.4903	0.0876	0.3414	0.0303	0.1390
	2020	-0.6018	0.0578	0.2870	0.0204	0.1411
	2021	0.3461	0.0952	0.5100	0.0156	0.1427

2. Data Processing Result

Dependent Variable: Y
Method: Panel Least Squares
Date: 09/20/23 Time: 05:35
Sample: 2017 2021
Periods included: 5
Cross-sections included: 7
Total panel (balanced) observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.892209	5.468713	0.163148	0.8715
X1	7.015085	9.921713	0.707044	0.4850
X2	-0.985639	1.670327	-0.590087	0.5596
X3	-10.37173	12.97714	-0.799231	0.4304
X4	-8.345834	38.98902	-0.214056	0.8320

R-squared	0.039842	Mean dependent var	-0.384434
Adjusted R-squared	-0.088179	S.D. dependent var	0.469153
S.E. of regression	0.489400	Akaike info criterion	1.540292
Sum squared resid	7.185380	Schwarz criterion	1.762484
Log likelihood	-21.95510	Hannan-Quinn criter.	1.616992
F-statistic	0.311215	Durbin-Watson stat	1.936559
Prob(F-statistic)	0.868193		