

**THE IMPACT OF FINANCIAL INDICATORS, AND MACRO-ECONOMIC VARIABLES ON FINANCIAL PERFORMANCE AND STOCK RETURN OF COAL MINING COMPANIES LISTED IN INDONESIA STOCK EXCHANGE BEFORE AND DURING THE COVID-19 PANDEMIC (2014-2023)**



**THESIS**

**By:**

Chandra Erick Manaek Pandapotan Lumban Gaol (22232007)

**Academic Supervisor:**

Prof. Ir. H. M. Roy Sembel, MBA, Ph.D, CSA, CIB, CIIM  
Dr. Melinda Malau, SE, MM, CPA, CBV, CFRM, CFA

**MASTER OF BUSINESS ADMINISTRATION  
SEKOLAH TINGGI MANAJEMEN IPMI  
JAKARTA  
2024**

**THE IMPACT OF FINANCIAL INDICATORS, AND MACRO-ECONOMIC VARIABLES ON FINANCIAL PERFORMANCE AND STOCK RETURN OF COAL MINING COMPANIES LISTED IN INDONESIA STOCK EXCHANGE BEFORE AND DURING THE COVID-19 PANDEMIC (2014-2023)**

**Prepared by :**

**Chandra Erick Manaek Pandapotan Lumban Gaol (22232007)**

**A THESIS**

**Submitted in a partial fulfillment of the requirements for the degree of  
Master of Business Administration**



---

## NON – PLAGIARISM DECLARATION FORM

This Thesis is a presentation of our original research work. Wherever contribution of others is involved, every effort is made to indicate this early, with due reference to the literature, and acknowledgment of collaborative research and discussions.

Also, this work is being submitted in partial fulfilment of the requirements for the Master of Business Administration degree and has not previously accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Jakarta, 21 Oktober 2024

Chandra Erick Manaek

Pandapotan Lumban Gaol

## ACKNOWLEDGEMENT

Embarking on this academic journey at IPMI marked a significant business administration. First and foremost, I would like to extend my deepest gratitude to God, whose endless blessings and guidance have been my strength throughout this process. I am profoundly grateful to my first supporter at home, my mother, my sisters and my brothers for their unwavering support, patience, and understanding. Your encouragement and sacrifices, especially during my late-night study sessions and long hours at work, have been crucial in helping me achieve this milestone. Your support has been a source of motivation and inspiration throughout this journey. My sincere appreciation goes to:

- My esteemed thesis supervisors, Professor Ir. H. M. Roy Sembel, MBA., Ph.D., CSA., CIB., CIIM, and Dr. Melinda Malau SE., MM., CPA., CBV., CFRM., CFA. Their invaluable guidance, insightful critiques, unwavering patience, and consistent encouragement have been pivotal in shaping and refining this thesis. I am profoundly indebted to their expertise and support throughout this academic journey.
- My esteemed examiners, Prof. Dr. Wiwiek M. Daryanto, SE-Ak, MM, CMA and Ir. Yulita Susanti, M.Sc, Ph.D. Their invaluable expertise, discerning critiques, and meticulous evaluation process have been instrumental in refining and elevating the rigor of this research. Their insightful feedback has significantly enhanced the depth and quality of this work.
- The IPMI Faculty for their unwavering commitment to fostering intellectual growth. Their dedication to teaching extends beyond the simple transmission of knowledge..
- My esteemed colleagues from the March 2023 cohort, I express my sincere gratitude for the invaluable shared experiences, the collaborative spirit that fostered our collective growth, and the intellectually stimulating discussions that have made this academic journey truly unforgettable.

This thesis stands as a testament to the power of integrating diverse perspectives, demonstrating how the synthesis of knowledge from seemingly disparate fields can yield innovative solutions and a deeper understanding of complex phenomena.

## ABSTRACT

Indonesia Economy Growth comes from export trading, especially coal that contributed four per cent. However, the contribution is not always stable. Global issue, supply, and demand of coal can influence the revenue because its phenomena are coal trade will be stopped, and coal price gradually drops because of both COP26 and COP28 agreements. This study aims to find analyses in uncertain conditions, namely, COVID-19 and global issue to save Coal Mining Companies. This research was performed in a quantitative research method, and the data was obtained from the annual financial reports of seven coal mining companies listed on the Stock Exchange from 2014 to 2023. This research was processed by Microsoft Excel, Eviews, and IBM SPSS, namely, descriptive analytical, classical assumption, panel data regression of model estimation, panel data regression of model selection, and Hypothesis test to find information. As a result, the variable of CR, TATO did not affect significantly on ROA, while DAR has a negative effect and COVID-19 has a positive and significant effect on the first equation. On the second equation, CR, MR, ROA have a positive effect, excluding DAR, TATO, FOREX, and CP. Hence, the implication of the research can gain some insights for company managements and regulators to monitor and control the positive and/or significant effect during phenomena because the financial performance and macroeconomic variables can be impacted on ROA and stock return drastically towards seven coal mining companies. This study warn to lower DAR, strengthen efficiency, control the pandemic and enhance market return.

**Keywords:** Financial Indicator, COVID-19, Macro-Economic, Financial Performance, Stock Return

## TABLE OF CONTENT

<b>CERTIFICATE OF APPROVAL .....</b>	<b>iii</b>
<b>NON – PLAGIARISM DECLARATION FORM.....</b>	<b>iv</b>
<b>ACKNOWLEDGEMENT .....</b>	<b>v</b>
<b>ABSTRACT .....</b>	<b>vi</b>
<b>TABLE OF CONTENT.....</b>	<b>vii</b>
<b>LIST OF TABLE .....</b>	<b>ix</b>
<b>LIST OF FIGURE .....</b>	<b>x</b>
<b>CHAPTER I INTRODUCTION.....</b>	<b>1</b>
1.1    Description Background.....	1
1.1.1    Significance of The Research Topic .....	9
1.1.2    Purpose of The Study .....	9
1.1.3    Motivation for The Study.....	10
<b>CHAPTER II LITERATURE REVIEW .....</b>	<b>12</b>
2.1.    Theoretical Frameworks.....	12
2.1.1    Efficient Markets Hypothesis.....	12
2.1.2    Ratio analysis .....	14
2.1.3    DuPont Analysis .....	17
2.1.4    Stock Return.....	18
2.1.5    Market Return .....	19
2.1.6    Random Walk Theory .....	20
2.1.7    Arbitrage Pricing Theory .....	20
2.1.8    COVID-19 Pandemic .....	21
2.2    Hypothesis Development .....	23
2.2.1    Financial Determinants of Coal Mining Company (CMC) Profitability .....	23
2.2.2. Financial Determinants of Coal Mining Company Stock Return.....	26
2.2.3    Macroeconomics Model.....	27
2.3    Previous Research .....	29
<b>CHAPTER III METHODOLOGY .....</b>	<b>38</b>
3.1.    Research Design .....	38
3.2    Research Procedure .....	39

3.4.	Research Population and Samples.....	42
3.5.	Econometric Model and Variables .....	42
3.6.	Statistical Methods .....	45
<b>CHAPTER IV FINDINGS, ANALYSIS, AND DISCUSSION.....</b>		<b>52</b>
4.1.	Descriptive Statistical Analysis.....	52
4.1.1.	Debt-Asset-Ratio (DAR).....	53
4.1.2.	Current Ratio (CR).....	54
4.1.3.	Total Asset Turnover (TATO) .....	55
4.1.4.	COVID-19.....	56
4.1.5.	Foreign Exchange Rate .....	57
4.1.6.	Market Return .....	58
4.1.7.	Coal Price Return.....	59
4.1.8.	Return on Asset (ROA).....	60
4.1.9.	Stock Returns .....	61
4.2.	Classical Assumption Test .....	62
4.2.1.	Normality Test .....	63
4.2.2.	Multicollinearity Test.....	64
4.3.	Panel Data Regression Analysis.....	65
4.4.	Determination Test .....	68
4.5.	Hypothesis Testing .....	72
4.6.	Research Summary .....	99
4.7.	Discussions .....	100
<b>CHAPTER V CONCLUSION AND RECOMMENDATION.....</b>		<b>109</b>
5.1.	Conclusion.....	109
5.2.	Theoretical Implication .....	113
5.3.	Practical Implication.....	115
5.4.	Managerial Implication .....	118
5.5.	Limitation .....	119
5.6.	Recommendation for Further Research.....	119
<b>REFERENCES.....</b>		<b>122</b>
<b>APPENDICES.....</b>		<b>128</b>



## LIST OF TABLE

Table 1. 1 <i>Indonesia Coal Mining Companie Performance 2020</i> .....	2
Table 2. 1 <i>Previous Research</i> .....	30
Table 3. 1 <i>List of Variables in Study</i> .....	43
Table 4. 1 Descriptive Statistics.....	52
Table 4. 2 Result of Multicollinearity Test .....	64
Table 4. 3 Chow Test On The First Equation .....	65
Table 4. 4 Hausman Test On The First Equation.....	65
Table 4. 5 Result of Panel Data Regression Analysis On The First Equation .....	65
Table 4. 6 Chow Test On The Second Equation.....	66
Table 4. 7 Lagrange Multiplier Test On The Second Equation .....	67
Table 4. 8 Result of Panel Data Regression Analysis On The Second Equation..	67
Table 4. 9 Adjusted R2 of Dependent Variable of ROA .....	69
Table 4. 10 Adjusted R2 of Dependent Var 1 .....	69
Table 4. 11 Analysis of Variance of ROA .....	70
Table 4. 12 Analysis of Variance of SR.....	71
Table 4. 13 Hypothesis Testing Results On The First Equation.....	72
Table 4. 14 Hypothesis Testing Results.....	82
Table 4. 15 Research Summary of ROA as a Dependent Variable .....	99
Table 4. 16 Research Summary of SR as a Dependent Variable .....	99

## LIST OF FIGURE

Figure 1. 1 Coal Price.....	1
Figure 1. 2 Growth Domestic Product (GDP) Indonesia .....	7
Figure 1. 3 Growth Domestic Product (GDP) of Indonesia from mining.....	8
Figure 1. 4 Inflation in Indonesia.....	9
Figure 2. 1 Research Framework .....	36
Figure 3. 1 Research Design .....	38
Figure 3. 2 Research Procedure for Data Analysis .....	40
Figure 4. 1 Box Plot Debt-Asset-Ratio (Leverage) of Coal Mining Companies Company from Q1 2014 to Q4 2023 .....	54
Figure 4. 2 Box Plot Current Ratio (Liquidity) of Coal Mining Companies Company from Q1 2014 to Q4 2023 .....	55
Figure 4. 3 Box Plot Total Asset Turn Over (TATO) of Coal Mining Companies Company from Q1 2014 to Q4 2023 .....	56
Figure 4. 4 Box Plot COVID-19 of Coal Mining Companies Company from Q1 2014 to Q4 2023 .....	57
Figure 4. 5 Box Plot Foreign Exchange Rate of Coal Mining Companies Company from Q1 2014 to Q4 2023 .....	58
Figure 4. 6 Box Plot Market Return of Coal Mining Companies Company from Q1 2014 to Q4 2023.....	59
Figure 4. 7 Box Plot Coal Price Return of Coal Mining Companies Company from Q1 2014 to Q4 2023.....	60

Figure 4. 8 Box Plot Return on Asset (ROA) / Profitability of Coal Mining	
Companies Company from Q1 2014 to Q4 2023 .....	61
Figure 4. 9 Box Plot Stock Return (SR) / Financial Performance of Coal Mining	
Companies Company from Q1 2014 to Q4 2023 .....	62
Figure 4. 10. Normality Test Result.....	63

# CHAPTER 1

## INTRODUCTION

### 1.1 Description Background

The COVID-19 pandemic is negatively affecting the global economy, in particular for coal mining sector in Indonesia. The industry faces a different landscape compared to just 10 years ago with enormous shifts in energy demand, unprecedented government policies and significant volatility in commodity prices.

#### Seasons 2020 – 2023 Developments:

##### 2020 – First Hit: The Demand Shrink

This is also due to a minor oversupply of coal on the global market, which can be partially attributed to an under lowered consumption in countries affected by Covid-19. It had pulled the decline in four regularly used world coal trading price indices, which are the Indonesia Coal Index (ICI), Newcastle Export Index (NEX), Global coal Newcastle Index (GCNC) and Platt's 5900 last month. The HBA had slid to USD 65.93 per ton in January following last November's trading at USD 64 and spiking to a year-high of price level within the first quarter of year-to-date; it improved again by February (USD66.89), then rising above in March (USD67,08) but back lower April this month For direct sales (spot) one month at the FOB carrier vessel point of sale April 2020 HBA.

#### Harga Batu Bara -

USD/ton

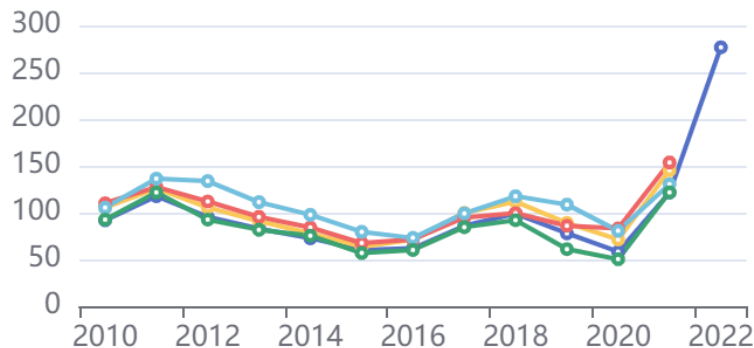


Figure 1. 1 Coal Price

Source: [https://www.minerba.esdm.go.id/harga\\_acuan](https://www.minerba.esdm.go.id/harga_acuan)

The prices of Indonesian coal are linked to trends in the international market for this raw material. This is notwithstanding the price of domestic coal in India being largely import-based, mainly determined by seaborne prices; especially between 2010 and early-2012 when Asian demand had surged leading to a sharp increase in regional benchmarks. The subsequent drop from 2012 to 2016, and rebound since then were patterns consistent with global short-term market trends concerning growth of the world economy as well as Asian industrialization. It registered due to the shock from COVID-19 everywhere in 2021 — as one would expect for a price spike considering economic conditions at this time and was followed by another during 2022 owing to Russia's invasion of Ukraine (IEA, 2019a; IEA 2022b).

Coal mining company shares are pressured: Index of stock in the coal industry at the Indonesia Stock Exchange appears fall which is proportionate to lower financial performance of companies. Sliding ROA: Coal mining companies hit by slowing sales and rising operating costs tend to see their profitability ratio (ROA) decline.

Therefore, it can be specifically seen on the **Table 1.1.** below that COVID-19 devastated financial performances of Indonesia coal mining companies. The decrease weaken the growth of the enterprises. Trades showed a drop in which the demand, and consumption of the coal were low.

Table 1. 1 *Indonesia Coal Mining Companie Performance 2020*

Tabel Acuan

		Revenue		Laba (Rugi) Operasi		Total Ekuitas		Perubahan (%) Rev	Perubahan (%) Laba	Perubahan (%) Ekui
		2020	2019	2020	2019	2020	2019			
1	ADRO	\$ 1.954.520.000	\$ 2.654.133.000	\$ 120.669.000	\$ 437.556.000	\$ 3.888.643.000	\$ 3.983.395.000	-26%	-72%	-2%
2	INDY	\$ 1.538.651.430	\$ 2.079.875.395	\$ -	\$ 9.457.972	\$ 931.105.049	\$ 1.045.774.218	-26%	-575%	-11%
3	BUMI	\$ 587.886.132	\$ 751.851.937	\$ -	\$ 86.668.340	\$ 426.386.033	\$ 509.935.679	-22%	-258%	-16%
4	PTBA	\$ 861.299.437	\$ 1.089.559.794	\$ 116.733.275	\$ 209.483.912	\$ 1.111.373.576	\$ 1.234.939.402	-21%	-44%	-10%
5	ITMG	\$ 871.884.000	\$ 1.304.780.000	\$ 38.631.000	\$ 98.646.000	\$ 863.449.000	\$ 884.465.000	-33%	-61%	-2%
6	DOID	\$ 494.175.141	\$ 690.338.935	\$ 3.693.810	\$ 28.148.229	\$ 1.040.854.175	\$ 1.181.911.191	-28%	-113%	-12%
7	HRU M	\$ 136.141.980	\$ 200.284.565	\$ 27.346.061	\$ 18.101.657	\$ 422.098.763	\$ 399.583.513	-32%	51%	6%
8	BOSS	\$ 10.456.496	\$ 12.700.4	\$ -	\$ 120.446	\$ 94.569.811	\$ 12.962.617	-18%	-2971%	630%
9	PTRO	\$ 249.925.000	\$ 378.742.000	\$ 13.163.000	\$ 20.606.000	\$ 214.345.000	\$ 212.563.000	-34%	-36%	1%
10	MBA P	\$ 159.666.359	\$ 196.636.808	\$ 25.530.771	\$ 26.460.891	\$ 136.385.811	\$ 145.640.390	-19%	-4%	-6%

Data PTBA dan BOSS dalam rupiah, dikonversi ke USD dengan kurs 14.918

On **Table 1.1**, it can be described that the coal mining companies experienced the impact of negative financial performance, particularly, revenue, profit, and equity. Revenue of PTRO, HRUM, and ITMG gained a negative impact of -34 per cent, -32 per cent, and 33 per cent, respectively. There were three issuers gaining the loss, namely, INDY, BUMI, and BOSS.

### **2021: Recovery Begins but Prices Start to Firm**

Globally, economic recovery : with the roll-out of mass vaccination programs and easing social restrictions, coal demand is starting to recover — mainly from developing countries. Rising coal prices: The demand for coal in major consumer countries such as China and India is increasing; therefore, there are signs that the current rebound of rising thermal indices may be limited.

Companies were given reasons to be cheerful with coal mining outfits among the week's biggest improvers as a revival in market sentiment towards commodities underwrote gains throughout the sector stock index.

Beginning of ROA recovery: Supported by higher selling prices and sales volumes in general, the profitability measures on coal mining companies' bottoms lines seem to be finally recovering.

### **2022: Prices Skyrocket and a Stellar Financial Year**

Global energy crisis: The global conflict-induced surge in commodity prices, including coal fuelled the recent spike. Record high coal prices: Multi-year highs in the price of coal provided a big windfall to companies that mine it.

Soaring coal mining stocks — Mining sector stock indexes set records for returns this year behind strong financials. High ROA: The ROAs of coal mining companies surged to multi-year highs, which indicates that they are very profitable.

### **2023: The Year of Consolidation and Next-Level Challenges**

Coal prices stabilise: Coal peaks in 2022 and then consolidates as concerns surrounding the global economic outlook weigh on sentiment. Strong financial performance: A decrease in coal prices has started to transpire, however the overall profitability of Indonesian coal mining companies remain quite solid.

Energy transition focus: With growing emphasis on energy transition, coal mining companies are endeavoring to expand their business and invest in clean practices. Regulatory hurdles: Carbon restrictions and environmental policies

associated with climate change is an added issue for the ever-evolving coal mining sector.

In addition, More than one hundred ninety (190) countries committed to Paris Agreement, which consists of achieving Net Zero Emission in 2060 and reducing high temperature 1.5 degree Celsius. In term of this obligation, the history started in 2015 that 196 countries aimed to reduce global warming. All stakeholders began their action to notice the climate change from 2015 to 2017, which is called by Nationally Determined Contribution (NDC). Firstly, the commitment tended to reduce the acceleration of 3 degree Celsius. This obligation forced to understand eco-friendly practices in order to prevent disasters the following time because the earth seemed the signs of nature would happen devastation to destroy ecosystems on the ground, the sky, and the water that was from sea to mountain if there was no action. During 2020 and 2021, Climate Conference of COP26 considered that there was no time left, all countries had to contribute their real action and obligation to concern climate change, so the commitment of net zero emission in 2060 was approved by the members of United Nation.

The United Nation Climate Change Conference in Glasgow (COP26) participated more than 100 world leaders and 40.000 formal visitors including delegates, observers, and media representatives. After two weeks of constant engagement and nearly two years of active understanding and comprehension, the COP26 outcome emerged to present more than 200 countries engaged in challenging negotiations. Global greenhouse gas emissions reductions are woefully inadequate to address the issues from where they need to remain in order to sustain a livable climate, and funding for the most affected and vulnerable countries is still slowing to a trickle. However, new boundaries can be built to achieve the progress for the implementation of the Paris Agreement coming true to be more sustainable, low-carbon day by day. The result of COP26 stated about recognizing the emergency, accelerating action, moving away from fossil fuels, delivering on climate finance, stepping up support adaptation, completing the Paris rulebook and focusing on loss and damage. The scopes of prime positive impacts have to cover the protection, namely, forests, methane, cars, coal, private finance. This is

highlighting coal because the source of carbon emission deriving from coal, which can influence an increase of earth temperature.

Lastly, the COP28 agreement declared doing transition away from fossil-fuel with right acceleration. Thus, this declaration has to apply real actions to all countries through using vehicles, equipment, means, and factories. Therefore, specifically, coal mining companies get the impact of the commitment. This can influence the market place, growth, financial performance, stock return, and market share of the enterprises after the declaration of COP28.

Although Indonesia has many coal mining companies, the government is no longer managing those private-owned company who are listed here. They provide the domestic needs in line with what was set out within our Domestic Market Obligation agreement at around 133 million tonnes, and export for international trading purposes about 435 millions ton land which will generate foreign exchange income back to NKRI. From there, Indonesia occupied the runner-up ranking as a coal-producing country to fulfil domestic and global demand with more than 600 million tons annually (BP Statistical Review of World Energy;022). Gross Domestic Product also rose from IDR 211.5 Trillion on Q2 of 2022 to IDR 218.7 Trillion in Trading Economics (2022). This proved that coal was worthy to support the continuity for generating electricity as an important energy source that plays an imperative role. (Kotijah, 2012) mining substances as minerals and natural sources is prime assets giving the contribution of a country, coal mining companies had become one of the supports to state' economy growth and even stated as the biggest contribution to economy income (Ramadhan, 2019).

Furthermore, in Indonesia there have been 924 holders of Mining Business Legal and 60 the agreements of Coal Mining Company based on Minerba One Data Indonesia (MODI) which will be expire soon; by June 20<sup>th</sup> 2023. Coal Mining Companies on Stock Exchange of Indonesia: 19 companies (source: <https://snips.stockbit.com/investasi/saham-batu-bara>)

1. PT Adaro Energy Tbk – ADRO
2. PT Akbar Indo Makmur Stimec Tbk – AIMS
3. PT Atlas Resources Tbk – ARII
4. PT Transcoal Pacific Tbk – TCPI



5. PT Baramulti Suksessarana Tbk – BSSR
6. PT Bumi Resources Tbk – BUMI
7. PT Bayan Resources Tbk – BYAN
8. PT Dian Swastatika Sentosa Tbk – DSSA
9. PT Golden Energy Mines Tbk – GEMS
10. PT Harum Energy Tbk – HRUM
11. PT Indika Energy Tbk – INDY
12. PT Indo Tambangraya Megah Tbk – ITMG
13. PT Resource Alam Indonesia Tbk – KKGI
14. PT Mitrabara Adiperdana Tbk – MBAP
15. PT Bukit Asam Tbk – PTBA
16. PT Golden Eagle Energy Tbk – SMMT
17. PT TBS Energi Utama Tbk – TOBA
18. PT Black Diamond Resources – COAL
19. PT Garda Tujuh Buana Tbk – GTBO

However, there are 7 coal mining companies opted for collecting data to support this research from 2014 to 2023.

Generally, the substance of coal supplies many power plants, and factories because coal is the cheap substance to generate electricity until now, that can be controlled by machine, engine, and human ability. Ultimately, coal production contributes economy growth in Indonesia approximately 4%. Hence, this is a controversy between benefit and cause. However, doing transition away fossil fuel is an obligation right now.

On **Figure 1.2**, it can be described that during the last decade, Indonesia's GDP graph shows losses and gains directly affected by different domestic and global issues. Overall, Indonesia GDP growth exhibits the uptrend but has major sluggish time frame (2020 — 2023) that cause by unknown variables like: global crisis happen, reducing commodity prices. The post-[event] recovery was somewhat rapid, as investment and domestic consumption surged. That said, challenges — from volatile commodity prices to global policy uncertainty and the still-devastating effects of the COVID-19 pandemic— are myriad that pose threats to Indonesia's continued economic growth over these turbulent times ahead. It is

due to this reliance on commodity based economic structure of Indonesia which I think also need to be considered in terms of sustainable and inclusive growth.

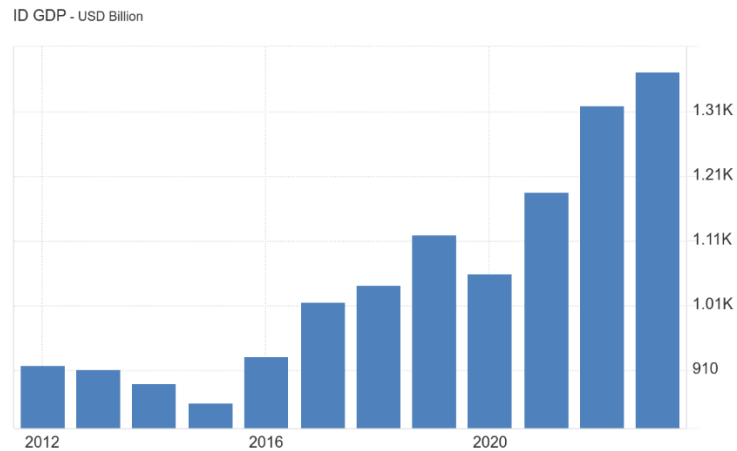


Figure 1. 2 Growth Domestic Product (GDP) Indonesia

Source: World Bank

The mining sector of Indonesia has shown interesting trends in recent history with the share of GDP from this sector being on a roller-coaster ride over last decade. The sector which is mostly controlled by coal, Palm Oil and metal minerals has a crucial role in national economy. The issue though, is that this contribution is often erratic and can be affected by a variety of internal or external factors. Regulatory challenges account for the highest volatility and risk given external factors such as changing global commodity prices, evolving end-use applications, fluctuating demand conditions across industries impacted by COVID-19 pandemic, Economic Trends.

This development clearly demonstrates that, until COVID-19, a larger part of the trend was already being suspended and then maxed out in 2023. However, it can be discerned that the increased funds acquisition trend in mid-2024 faced a huge decrease at the point of 2024. That is seen on **Figure 1.3** of mining contribution.

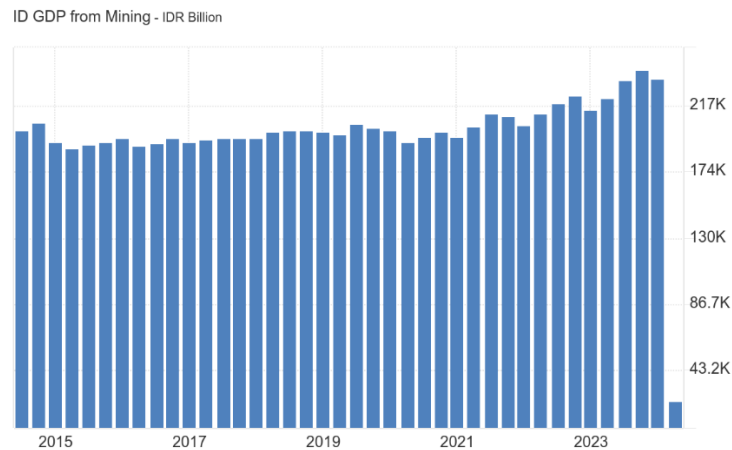


Figure 1. 3 Growth Domestic Product (GDP) of Indonesia from mining

Source: Indonesia's BPS

### **Pre-pandemic of COVID-19 Inflation:**

The inflation rate in Indonesia was for the most part quite stable and aligned with Bank Indonesia's target before the COVID-19 pandemic. Rising global coal prices have been a double-edged sword, as they spur economic growth and bolster state revenues but are also set to stoke inflation. High demand and selling prices tend to make coal mining sector businesspeople feel optimistic.

### **COVID-19 Inflation**

World coal prices have hit their lowest level in over 4 years due to plummeting global demand for the fuel as a result of COVID-19 restrictions. This can in turn have an effect on the revenues of mining companies and may help keep inflation lower. That said, government efforts to get the economy going again — stimulus through fiscal and monetary measures could juice up demand at home and jack inflation higher.

### **Inflation after the Pandemic of COVID-19:**

Recovery of the world economy has boosted coal usage, but not led to a recovery in coal prices back through pre-pandemic times. Coal prices The prospects of coal pricing in the future have little certainty a thing that must be faced by business people in this sector. Government policies pertaining to energy transition and carbon emission footprint have emerged as new challenges for coal mining sector.

The chart below is **Figure 1.4** visualizing Indonesia's Inflation.

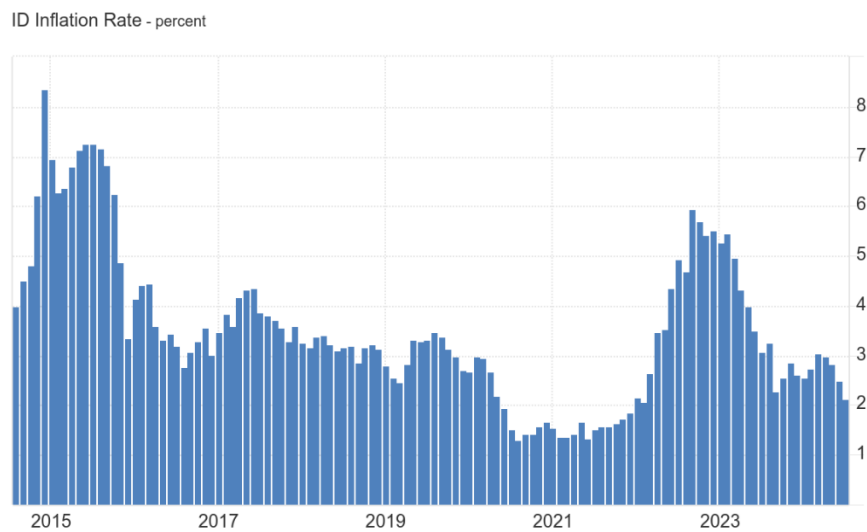


Figure 1. 4 Inflation in Indonesia

Source: Indonesia's BPS

### 1.1.1 Significance of The Research Topic

This study notices the recent development of global issues influencing both financial performance and stock return of 8 coal mining companies listed on Stock Exchange that can be processed for 10 years, particularly, 6 years before COVID-19 and 4 years after COVID-19. As a result, the fluctuating development of the growth of the business can be seen the differences when the condition of global and Indonesia was conducive, and not conducive. Thus, the defense of coal mining companies can be tested by global issues.

### 1.1.2 Purpose of The Study

This study aims as a reference to gain analyses the growth of coal mining business for ten years among normal, pandemic of COVID-19, and transition of recovery after pandemic of COVID-19. Consequently, the company can understand to create strategy and risk management to achieve sustainable growth for their business.

### **1.1.3 Motivation for The Study**

This study motivates business owners to do monitoring and evaluation either taking action of opportunity or anticipating the uncertain condition of global and domestic issues. As a result, there is understanding to know early warning for business owners and consultant to give inputs and suggestions that can keep the performance of business on Financial Ratios and Stock Return.

### **Research Problem**

What are the conditions faced by Coal Mining Companies listed on Indonesia Stock Exchange regarding financial performance?

- Revenue is gained with a low income.
- Demand is still remaining unchanged.
- Stock Return is volatile.
- Financial Performance needs a strict control.

### **Research Question**

This prime research question is divided into two questions:

RQ1a: How do financial indicators impact the coal mining companies' financial performance?

RQ1b: How do COVID-19 period impact the coal mining companies' financial performance?

RQ2a: How do financial factors impact the coal mining companies' stock return?

RQ2b: How do macro-economic variables impact on the coal mining companies' stock return?

RQ2c: How do COVID-19 period impact on the coal mining companies' stock return?

### **Research Objective**

From the research problems above, the researcher considers that the study is as follow:

RO1: To analyze the impact of financial indicators on the financial performance of Coal Mining Companies listed on Indonesia Stock Exchange.

RO2: To analyze the impact of financial indicators on the stock return of Coal Mining Companies listed on Indonesia Stock Exchange.

RO3: To analyze the impact of macro-economic variables on the stock return of Coal Mining Companies listed on Indonesia Stock Exchange.

RO4: To evaluate the effect of COVID-19 period on financial performance.

RO5: To evaluate the effect of COVID-19 period on the stock return.

### **Relationship With Previous Research**

This research has a quite similar objective with the researcher (Halim, 2023) in which the topic is about coal mining company that is PT Adaro Energy Tbk. The study found key insights on financial performance and stock return gain effects from fundamental financial and macro-economy factors, and the impact of the pandemic of COVID-19. The second research is by Ihsan, F., Sembel, R., & Malau, M. (2023) about The Effect of Macroeconomic, Market Return, and Financial Performance with Moderating Variable of COVID-19 Pandemic on Stock Return: A Case Study of Mobile Operator Companies Listed in IDX Period 2012-2021 informing COVID-19 as a moderation. Eventually, the study is by Thamrin, J., & Sembel, R. (2020) revealing The Effect of Company's Fundamental, Market Return and Macroeconomic to Stock Return: A Case Study of Consumer Goods Companies Listed in BEI Period 2009-2018 that is before COVID-19.

### **Value Add To Previous Research**

This study wants to find the different side that the condition is affected by Global issues of Paris Agreement, COP26, and COP28 before and after COVID-19 with the time period alongside 10 years, from 2014 to 2023. Thus, complexity of the problem can be anticipated and controlled by coal mining companies in Indonesia to find alternative solution about business, so the companies can still result sustainable growth.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1. Theoretical Frameworks**

##### **2.1.1 Efficient Markets Hypothesis**

The Efficient Markets Hypothesis (EMH) is an investment theory launched by Eugene Fama (1970) about A Review of Theory and Empirical Work. The basic concept that Fama proposed is almost certainly accurate, namely it is highly difficult of quote unquote "beat the market", meaning to generate returns from an investment strategy that exceed overall market averages as represented by broad-based stock indexes like the S&P 500 Index. Meanwhile, an efficient market is a market where the prices of all traded securities reflect all available information (Tandelilin, 2010:219).

According to Fama's theory based on the efficiency markets hypothesis, even that lucky investor is unlikely to realize an annual rate of return much above average over a significant period.

Among the assumptions on which Fama frames his investment theory and this is how it turns out having essentially all of the same practical implication for investors as Random Walk Theory (even if its theoretical content goes quite a different way) are that securities markets x exist in perfectly competitive form, but; y market pricing is perfect (in that there can never be mispricing); z people grocery comparison shop effectively, or something like. The first key assumption is the only idea absolutely central to the validity of market efficiency: namely, that all information pertinent to an underlying asset or security already is commonly known and commonly shared among investors.

The market is efficient, because there are a large number of buyers and sellers (buyers who also sell) in the Instrument with their eyes on new price stimuli. In other words, all stocks are constantly being trading at their current fair market value.

The theory carries one important general advantage: because stock prices never fail to reflect the fair value of stocks, no investor has any possibility for either

buying undervalued bargain or selling overvalued dud to his own benefit. It is difficult to outperform the market by combining expert stock analysis with carefully implemented strategies. If this is the case, then there are only two options for investors to create excess returns: either assume far greater risk.

According to this hypothesis, there are three different levels of efficiency in the market as model; these variations include forms, weak form, semi-strong form and strong form.

### **1. Weak Form**

Weak Form EMH, the prices of securities reflect all that is currently available information to market participants but does not 100 percent accurately price in already strictly material nonpublic new info. It also assumes that historical information related to price, volume, and returns is non-predictive of future prices.

Technical trading strategies, as forecasts of future price movements from past prices performance, which is the only information available to technicians according EMH weak form— will not beat the market. The weak form does not suggest that price success cannot be beaten — it would only suggests all earlier information is already incorporated in stock prices making fool proofing technical analysis on effective tools to predict future movements.

### **2. Semi-strong Form**

The semi-strong form of the EMH rejects the usefulness of both the technical and the fundamental analyses. In particular, it takes all information from the weak-form EMH. Initially, the semi-strong form collects existing prices in the market and then projects that existing prices reflect this new level of publicly available information that is pertinent for the market. Therefore, no investor would have enough information to find valuable news or use fundamental analysis in predicting future price movements. Thus, when the monthly Non-farm Payroll Report in the U.S. is released every month, one can witness prices change quickly as the information is being ingested by traders.

The theory of economist Burton Malkiel does not deny the semi-strong efficient hypothesis, because it also claims that no one can regularly beat the market. Like S&P indexes, these ETF products represent the ultimate in benchmark performances for those who believe markets are efficient—and has broad



implications not only to investment theory but also on practical applications relating as well.

### **3. Strong Form**

The strong EMH form assumes prices always access to all public and private information. Excluding all non-public information; both available to the public, past and current or entirely new data sets as well as from within. The weak-form of the hypothesis contends that not only do all investors have access to the same information, which is already reflected in asset prices, but that no investor or not even a CEO can know more than what is already out there.

#### **2.1.2 Ratio analysis**

According to Arifin (2007:95), financial ratio analysis is an analysis tool expressed in relative or absolute terms to explain certain relationships between one element and another in a financial report. Ratio Analysis indicates analyzing different parts of financial data from the business income report and monetary record. External analysts use them to determine the financial position of a business and other factors, like profitability, liquidity or solvency. The data from the financial statements helps analysts predict and look at revenues and report all past performance. The data is also used to assess whether a company is, among other things, becoming financially stronger or weaker and how it compares against its peers.

#### **A. Uses of Ratio Analysis**

##### **1. Comparisons**

Another way in which ratio analysis is employed helps a company to compare its financial performance with that of other similar companies within the industry and hence ascertain where it stands among competitors on relative parameters. Gathering the financial ratios such as Price/Earnings from its known competitors and benchmarking them against respectively can aid management identify market gaps of where they are in relation to their competitive advantages, strength & weakness? From there, management can use the information to make decisions that are aimed at making the company perform better relative its place in market.

## **2. Trend line**

A company can also compare ratios to see if its financial performance is improving or deteriorating. Mature firms observe financial statement data across thousands of reporting periods. While the trend can be used to predict what direction financial performance will take, which in turn is far more accurate than any forecast resulting from a single period of ratios, it also shows how much shock or turbulence we reasonably expect within the coming financial year.

## **3. Operational efficiency**

A financial ratio analysis will also allow the management of a company to see if it is managing its assets and liabilities efficiently. An inefficient use of resources, namely, motor vehicles, land and buildings is an avoidable cost. Using financial ratios, you can also check if the financial resources are over-utilized or under-used.

### **Financial Ratio Category Reference**

There are a lot of financial ratios that used in ratio analysis which can be categorized, as follow:

#### **1. Liquidity ratios**

According to Kasmir (2015), the current ratio is the most frequently used indicator to measure a company's short-term liquidity. However, this ratio has limitations because it does not take into account the level of liquidity of inventory. A company's liquidity ratios are the one which reflect its capability to meet up with liabilities in provisions associated with property. Cash is the most liquid form of an asset so when a company has finally run out of money and can no longer pay any debts it might have, converting its assets to cash will make paying off those pending liabilities easier. The quick ratio, cash ratio, and current ratios are all typical liquidity metrics. This provides all the lenders, creditors and suppliers an indirect information about whether this client can meet their financial responsibilities when they become due by using Liquidity Ratios.

#### **2. Solvency ratios**

According to Darmawan (2020:73), the solvency ratio is a ratio to determine the company's ability to pay its obligations if the company is liquidated. Furthermore, according to Shintia (2017:43) the solvency ratio or leverage ratio is

a ratio used to measure the composition of a company's assets financed by debt. Solvency Ratios These statistics test the long-term economic viability of a company. Debt ratios comparing the debt of a company to its assets, equity or annual earnings. Key solvency ratios, namely, Debt to Capital Ratio, The Equity Multiplier, Interest Coverage ratio. Governments, banks and other financial concerns, employees and the underwriters of bonds issuing institutions are usually concerned with solvency ratios.

### **3. Profitability Ratios**

According to Darmawan (2020:103), the profitability ratio is a ratio that aims to determine the company's ability to generate profits during a certain period and also provides an overview of the level of management effectiveness in carrying out its operational activities. Moreover, according to Adam Hayes, written on the Investopedia website, the profitability ratio is a type of financial metric used to assess a business's ability to generate income relative to revenue, operating costs, balance sheet assets, or shareholder equity over time, using data from a specific point in time ([www.investopedia.com](http://www.investopedia.com):2021). Management effectiveness here is seen from the profit generated against the company's sales and investments. Profitability ratios show the profit of a business in relation to its costs. Winning higher profitability ratio result compared to last financial reporting period means the business is on healthy track and improving. You can also compare a profitability ratio to another firm in the same industry, and judge if your business is more or less profitable than its competition. Important profitability ratios include the return on equity ratio, return on assets, profit margin, gross margin and the return (on capital) employed.

### **4. Efficiency ratios**

According to Gitman and Zutter (2015), activity ratios assess a company's operational efficiency across various dimensions, including inventory management, liquidation, and collections. The Total Asset Turnover Ratio is one of several ratios available to measure activity. The total asset turnover ratio indicates the company's effectiveness in generating sales using its assets (Thamrin and Sembel, 2020). Efficiency ratios, these hit the heart of how effectively a business is using its assets and liabilities to generate sales (and turn them into profits). These involve inventory

utilization, machinery use, liability turnover and finally, equity usage. The first reason is that the more efficient these ratios, the higher the revenue and profit potential for a business. A few of the major efficiency ratios, which we can consider as well include: Asset turn ratio (ATO), Inventory Turns and Payable turns Working capital turnover Fixed asset turnover accounts receivable (turn over) ratio are a very intricate measure.

### **5. Coverage ratios**

According to Gitman and Zutter (2015): Both emphasize the importance of activity ratios, which include coverage ratios, in assessing a company's operational efficiency. Afterwards, according to Thamrin and Sembel (2020): This study specifically discusses the Total Asset Turnover Ratio, which although not a pure coverage ratio, is closely related to the efficiency of asset use in generating sales. This can be a starting point for discussing how coverage ratios also reflect operational efficiency. They quantify the ability of a firm to meet its debt and other obligations. By assessing the coverage ratios over multiple reporting periods, analysts can get a general sense of how things are trending (like wearing mom jeans) at predicting where the company is headed financially. A good coverage ratio indicates that the business can repay liabilities and associated costs much more easily. Some of the main coverage ratios are, debt coverage ratio, interest coverage. Fixed charge cover and EBIDTA coverage.

### **6. Market prospect ratios**

The market outlook ratios help investors estimate how much money will result from the purchase of particular investments. So, whether it be increased stock value or future dividends. This will allow investors to calculate the most likely future stock price and consequently predict their dividend growth. Primary market prospect ratios are dividend yield, EPS or earnings per share, P/E ratio or price-to-earnings multiple and DPR which is the dividends payout fraction.

#### **2.1.3 DuPont Analysis**

The DuPont analysis is a tool that may be used to perform financial ratio analysis and SWOT does as well, but it particularly allows business managers or

investors projects in exercising individual aspects of ROE instead. The tool comes in two versions in which the first is three and the second is five.

What is the DuPont Analysis? Nearly all sources conclude that it was hatched in 1919 by a DuPont executive. ROE for a firm is the total income divided by incremental shareholders' equity. This shows how a company performs with the capital of shareholders. DuPont analysis takes this a step further and shows you which financial activities are contributing most to the changes in ROE. An investor, too, can employ a DuPont to assess similar companies' operational efficiency or managers applying it for identifying strengths & weaknesses. The driver of ROE is its valuation in three key financial metrics.

1. How To Calculate Operating Efficiency: By Net Profit Margin or Net Income /Total Sales OR Revenue.
2. Asset use efficiency, as measured by the asset turnover ratio
3. Funding risk, measured as the equity multiplier (average assets / average equity)

#### **2.1.4 Stock Return**

Returns (Hayes, 2021): They are the profit or loss gained from investing over a certain period of time; sometimes also referred to as 'financial return'. Return According to Gitman and zutter (2015) return is profit or loss earned on an investment in certain period of time. Capital market theory considers that the signals are given by the returns on shares trading Implies Market hypothesis mode. Definitely not in the stock markets, and there is no guaranteed return for an investor. Dividends, bonus shares and capital gains are the parts of stock returns using which investors can make profit. Income is received from a return in two forms: current income and capital gains.

Income in the form of profit with periodic payments, such as deposit interest and bond coupons. Also referred to as current income, suggesting that the gains are paid in cash or otherwise immediately realized and capital. For instance, bond interest coupons that pay a non-cash payment in the form of checks which can be cashed and also stock dividends are paid off as shares but converted into cash by selling back those dividend receiving stocks-excellent info Hubber Robert Ang-1997).

The second part of return is the capital gain which represents how much profit will be earned between a selling price and purchase price with any investment instrument. Of course, not every investment exists in an asset class with a return split between gain or loss of capital. However, a capital gain is based on and can only be realized when you sell/trade-out your investment as its value changes during trades. Investments that increase in value (not including the dividend yield) but do not gain a return are bonds and stocks, while an example of another investment holding these features is certificates of deposit.

This can come in the form of either a realized return which has happened or an expected future return. What is Realized Return? Realized return refers to a gain or loss that has already occurred based on market price when the security was purchased and sold. The realized return also measures how well an investment has performed in relation to its purchase price as one of gauge for company performance due considered returns expected which are important too, because they used for estimating future risks

### **2.1.5 Market Return**

Market return is a very important indicator in the capital market that measures investments performance on an aggregate basis. This can cause the share price of a company to fluctuate in response to market returns. Just like mentioned by Ma et al., the value of a firm (often measured as its stock price) depends heavily on how well it performs compare with other companies and in comparison to macroeconomic fundamentals. (2022). In the given model, market returns are a key driver of investor sentiment and stock prices. Strong market returns typically bring about investor optimism, boosting stock demand and driving prices up. On the other hand, low returns in stock exchange market may deter investor interest that could be caused by decreases of stock prices (Thamrin, J., 2019).

According to Thamrin and Sembel (2020), the Jakarta Stock Exchange index return as an indicator of market return has a huge influence on stock performance in consumer goods stocks listed on Indonesia Stock Exchange. This is relevant to our understanding of overall market returns and the performance from individual stocks, which reinforces the necessity for gauging investment opportunities by keeping track with market return.

### **2.1.6 Random Walk Theory**

Changes in asset prices are random too (according to the Random walk theory). In simple terms, stock prices follow a random walk which means that therefore future values cannot be predicted accurately based on historical ones. In other words, the stock market is efficient; it incorporates all known information. One of the elegant features of a random walk is that it certainly would tend to give short shrift to notions such as market-timing or technical analysis, both in terms winning entries and also with respect to ideologies carrying names such The Dow Theory. Although criticized by traders and analysts alike believe they can predict stock prices based on chart patterns, random walk suggests it is not as straightforward.

Economists (perhaps misguidedly) believed for decades that asset prices were random, impossible to forecast and that there was no relation between preceding price changes with those of the future. This, of course was a fundamental assertion in the efficient market hypothesis (EMH). The random walk theory assumes that stock prices have already taken in all available information and quickly adapt to new information, thus rendering it impossible for any investor to capitalize on it.

### **2.1.7 Arbitrage Pricing Theory**

Arbitrage Pricing Theory (APT) is a Multi-Factor Asset pricing model. It is the premise where there should be some predictive consistency in an asset's future returns as they ought to relate linearly with its expected return and a benchmark of economic factors that subsume systematic risk. The portfolio perspective is valuable to an investor in search of mispriced securities but witnessed through a value lens.

Stephen Ross, an economist frustrated with the capital asset pricing model (CAPM) and developed in 1976 a rather different hypothesis: arbitrage pricing theory. Bernstein, with regards to using the APT (a multi-factor model) instead of CAPM: exactly what current practices are predicated upon — markets efficient to their bones regarding pricing individual securities (i.e., all knowable things are in prices), is that “mispricing from market during APT construction = plenty o’ re-

pricing we seen past few weeks”. APT arbitrages aim to take advantage of any inefficiencies over fair market price.

If it were a true result then that would be an arbitrage but as investors are making a directional bet on the model being correct, rather than locking in riskless profits; this is not classic arb trade. However it sounds flexible but this now a much more complex rule than CAPM. APT is multi-factored and CAPM deals only with a market risk factor. This is a big job, and then to identify what the macroeconomic risk factors are for how security will be impacted.

These weights as well as the number of them opted are subjective so no two investors can achieve identical results. But it is realistic to expect that four or five factors will account for most of the return on a security. (To learn more about the difference between CAPM and APT, see how do other risk factor models differ from that of the capital asset pricing method (CAPM)?)

Systematic risk is henceforth taken into consideration of the component that cannot be diversified away and comes down to APT factors. Except for the fact that unexpected changes in inflation, GNP (Gross National Product), corporate bond spreads and every yield curve factor known to man are among what is found to be a set of macroeconomic factors with decent additional predictive power over future prices. Various other factors like GDP, Commodities prices, Market indices or Exchange rates etc. are the others one of popular ones.

#### **Arbitrage Pricing Theory Model Formula**

$$R_i = \beta_0 + \beta_{i,1}F_1 + \beta_{i,2}F_2 + \dots + \beta_{i,k}F_k + \epsilon_j$$

$R_i$  = Expected Return on asset  $i$

$\beta_0$  = A constant.

$\beta_{ik}$  = The sensitivities of asset's return to the factors

$F_k$  =  $k$ th factor common to the return of assets under consideration

$\epsilon_j$  = The idiosyncratic error term.

#### **2.1.8 COVID-19 Pandemic**

A cluster of pneumonia cases in Wuhan, Hubei Province was reported by China on New Year's Eve 2019 (31st December 2019)[1] and subsequently the



disease became known as COVID-19 pandemic. In response, the World Health Organization (WHO) sprang into action, setting up Incident Management Support Teams at subnational and national levels to initiate a worldwide emergency intervention. WHO rapidly issued its first Disease Outbreak News on January 5, 2020 with key information and advice based on the situation as it then stood. WHO published an extensive technical guidance for all countries on January 10, 2020 with details on case identification, testing protocols and handling cases. However, the WHO in response conducted investigations to locations where cases appeared subsequently and stayed critical for their progress. Finally, on 30 January the WHO declared it to be a public health emergency of international concern (PHEIC), which is "an extraordinary event determined to constitute a public health risk through the international spread of disease and potentially require an immediate global response". In reaction, it became a pandemic and the world has galvanized its resources and brightest minds to combat that pandemic.

On March 11, the WHO labeled all countries as either at risk for or experiencing a pandemic and called on them to step up their containment Efforts. Indonesia, for example, quickly formed a COVID-19 operational task force and implemented social distancing across the country. Under the leadership of the Ministry of Health and with collaboration from government counterparts, WHO provided assistance to develop a comprehensive National Response Plan that stressed timely detection and decentralized laboratory service. Steps to block the virus included allowing regional labs to test and declaring a state of emergency in Jakarta.

WHO continued to provide the essential guidance and technical support throughout the crisis in Indonesia, demonstrating its firm commitment that stopping COVID-19 was still possible. Over the year, stakeholders partnered to combat issues created by pandemic and ensure safety of public health.

## **2.2 Hypothesis Development**

### **2.2.1 Financial Determinants of Coal Mining Company (CMC) Profitability The Effect of Leverage on Profitability**

Debt Asset Ratio (DAR) or commonly referred to the debt ratio is an indicator that describes what percentage of total assets are financed by loans on credit. Debt Asset Ratio According to Kasmir (2010:156) the ratio of debt compares total debts with dormant outputs. This is measured by the degree to which company assets are financed with debt essentially, a liquidity perspective on asset management. The measurement results indicate that the higher the ratio, it indicates an increase in funding through debt so as to make it more difficult for companies to secure further loans because they are concerned if company cannot pay off its debts by selling assets of itself. Others the ratio is low, the smaller amount of this company debt financing. The performance measure to determine whether the company's ratio is good or not, takes using mean of same industry ratios.

H1a: Leverage has positive influence on profitability of Coal Mining Company (CMC)

#### **The Effect of Liquidity on Profitability**

Liquidity is a measure of the company's ability to pay for their current liabilities with its current assets and was often measured by Current Ratio. The bigger the current ratio, that means the company is better able to pay its short-term obligations, also indicates a smaller solvency risk or easily cannot fulfill slot obligation activity by corporation (Puspitaningtyas, 2017). A strong positive relationship was established between the profitability of an entity and its liquidity sustenance capacity by Ehiedu (2014). But liquidity must be at the right level not too much or not less. On one hand, excessive liquidity suggested that substantial idle funds have to be shown in the balance sheet which ultimately yields no return for the firm and on other a side, inadequate liquidity not only reflects poorly of credit worthiness of the company but even disturbs its production schedule also simultaneously bringing down earning capacity drastically (Jana, 2018). This is why efficient liquidity management had always been critical for corporates in order to conduct business-as-usual operations.

H1b: Profitability of Coal Mining Company is directly influenced by liquidity.

### **The Effect of Total Asset Turnover on Profitability**

Total asset turnover illustrates the efficiency of utilizing corporate assets to generate (earn) revenue. On the other hand, a low TATO implies that most of companies invest too much capital in their asset base (Munawar, 2019). Finally, the strengthening of TATO or even perfect conditions in terms of how investors and creditors will have confidence for company ROA is called cooperation agreement extension (Endri et al., 2020). One of the tools to measure how well a company is performing with respect to using its assets in order to generate sales efficiently, is the total asset turnover ratio. It may be all assets or just current and fixed but review this ratio. This asset group includes tangible assets like factory buildings and equipment, to such current resources as. The results research of Priatna (2018), it reveals that the utilization of total assets to produce income is to show company's efficiency with one other through total asset turnover. An integrated system, where to convert each asset if the number of conversions is increased companies can use more efficiently assets for generating optimal Revenue. Following Ginting & Nasution (2020), Munawar, 2019 that Total Asset Turn Over (TATO) showed significant positive impact to profitability. According to Munawar (2019) the total assets turnover revealed that how efficiently an enterprise was operating it's all of asset in order for maximum income. The asset turnover defines how effective the company turns its assets to income.

H1c: Total Asset Turnover has a positive effect on Coal Mining Company profitability

### **The Effect of COVID-19 on Profitability**

Covid-19 is a virus infecting the whole world in all sectors of life, including even large industrial companies. Company profitability is very much subject to how significantly the pandemic hits. Omaliko et al. based on a research concurred According to Adeleke et al. (2021), the profitability of companies in Nigeria is liable largely to be affected by this Pep whatsoever during Covid-19 pandemic period. Export and import constraints impeding the solvency and profitability of companies, in addition to hindering access by businesses to inputs in domestic markets during the pandemic. However, as viewed by their shareholders and investors: a company could prove to be 'less resilient' against the COVID-19 shock

on its expected longer-term financial performance (together with compared profit margins) despite having been more profitable than peers pre-COVID-19. Song et al. (2021) point out the profitability in the past can increase future decreases of stocks due to shock induced by COVID-19 as shareholders and investors might anticipate larger declines in profitability within post-pandemic phase. Furthermore, Gazi et al. In a low-income country like Uganda, influence of the COVID-19 pandemic on the profitability of banking sector was investigated by (2022). This is reflected in the performance of banks, where a particularly high loan-to-deposit growth ratio and decent deposit position did not sustain stability & profitability for Central/Eastern/Northern EU countries during COVID-19 times. Their aim was to show how COVID-19 will impact the stability and profitability of banks in the long term.

The protracted economic crisis during COVID-19 has no other choice but to lead a setback in the incomes of people. A financial condition directly depends on the ideas that people start buying less because they would have spent all their social care and income in satisfying basic requirements through public finance governance (Devi et al., 2020). Research by Song et al. In addition, Gazi et al. (2021) confirms that the profitable competitors have stronger credibility and their profitability is less affected by COVID-19 shock. As such, the significance is incredibly high such a finding should not be seen in isolation but cues to understanding that holding liquid assets consistently destroys profits of banks over this period which was dominated by COVID-19.

In addition, Omaliko et al. The study by Uwaoma et al. (2021) found that the COVID-19 Pandemic had substantially affected companies' liquidity and profitability in Nigeria significant at 5% level of significance. Proof that the government needed to very much partial-lockdown and completely lock-down even more, as you may understand at least from this. In addition, managers need to consider the impacts on bank profitability during COVID-19 epidemic should be by Katusiime (2021) these rise improve efficiency in Uganda's banking sector.

H1d: COVID-19 has a significant effect on Coal Mining Company profitability

## **2.2.2. Financial Determinants of Coal Mining Company Stock Return**

### **The Effect of Leverage on Stock Return**

Several studies offer different perspectives on the relationship between leverage and stock returns. Previous research has measured leverage using the Debt to Assets Ratio (DAR). In the study by Badru Zaman (2021), DAR did not directly affect return on assets but did so indirectly through ROA. Based on these studies, this research will analyze the impact of leverage using the DAR measurement ratios with the following hypotheses:

H2a: Leverage has a negative effect on stock return of Coal Mining Company

### **The Effect of Liquidity on Stock Return**

The higher current ratio means the company able to pay its short-term obligations so that it gets better degree of liquidity in the other word (Gitman and Zutter, 2015) Hence we can use this evidence as a supporting reference to say that current ratio has significant positive effect on the stock return of firms. Bagus same as research Fitria et al. (2021) and Aminah, (2020), High current assets, lesser return was not more capable to bring back the fixed asset for continuity (Pranata and Pujati, 2015). When the company holds excessive levels of liquid high amounts were found to be damaging in that case because these resort as idle assets which will not add any profit nor they enhance firm value. Investors react with selling the company stocks and then depressed stock price return as a adjeatment to this condition (Raningsih & Putra, 2015).

H2b: Liquidity has a negative effect on stock return of Coal Mining Company

### **The Effect of Total Asset Turnover on Stock Return**

Widyarini & Ridha (2019), the total asset turnover (TATO) is a proxy of effectiveness in utilizing the assets to produce sales. This ratio is not only important for investor but very much critical for management as well to see whether the company`s operational performance is financially efficient. Usually, higher the total asset turnover of the company will mean its assets are used more efficiently to generate sales and hence it effect on increase the stock returns for that particular company. Widyarini and Ridha, (2019), Sari, (2020) Burky and Suriawinata, (2020), Thamrin and Sembel (2020) the total asset turnover ratio affects stock returns positively both generally based on previous research conducted by.

H2c: Total Asset Turnover (TATO) Positively Effect on Stock Return

### **The Effect of COVID-19 on the Relationship between Financial Performance and Market Returns on Stock Returns**

Junaedi and Salistia (2020) stated that COVID-19 pandemic brought an impact on economic growth of 135 countries including Indonesia in their empirical research. The COVID-19 pandemic has caused losses across almost all business sectors. People are worried about the uncertain conditions of COVID 19 and this is aggravated by social restriction policy which affects people disposable income (Rahmayani et al.,2021). Money is used in blood first and people begin to think twice about spending on consumptive sides, prioritizing food. This definitely results in most manufacturing products and services for the need to face a huge reduction plus affects company performance that lead towards decline of compay stock returns. According to the research by Mugiarni and Wulandari, (2021) & Ahmed et al., (2022), one of the most potential dreadful consequences caused by COVID-19 pandemics is decrease in stock return. Based on this reasoning, the following hypothesis is set upfront:

H2d: COVID-19 effects the relationship between financial performance and market returns on stock returns

### **The Effect of Profitability on Stock Return**

Profitability is the ability of a company to generate profits as reflected in funds invested in their own assets (Puspitaningtyas, 2017). Return on Capital Employed. This financial performance measure indicated how effective the enterprise was in allocating their capital to generate the necessary level of return (profit margins, or ROE). Er & Vuran (2012) also found that in a study, they conducted, profitability was the most important factor affecting company stock return.

H2e: Profitability positively affects stock return of Coal Mining Company

## **2.2.3 Macroeconomics Model**

Besides those basic elements listed above the broader economic climate has an incredible impact on a company stock move.

### **The Impact of Foreign Exchange Rate on Stock Return**

Effects of foreign exchange rate on the stock market could be effected differently depending upon what aspects and / or variables concerned. Putra et al. Elsewhere, Bialkowski et al (2019) found that the devaluation of a country's currency may be positive for exporting countries and improve export competitiveness so becoming more attractive from stock market viewpoint. Eiteman et al. recalled: However, the depreciation of domestic currency due to a foreign debt company that needs import raw materials will reduce profit and stock prices (Wahyudi, 2017) Reitz & Stadtmann (2010) indicated that those firms conducted oversea transactions using foreign currencies will be confronted with the exchange rate risk. Because COAL MINING COMPANY was a major coal exporting and producing company, its revenues could be affected by foreign exchange rate fluctuations which in turn may affect the profitability as well as market value of the firm. This is raised a possibility for the share price performance being influenced with the movements of foreign exchange rate. Putra et al., conducted a study The results showed that of the twenty-eight sectors activated on BEI, only one sector was foreign exchange rate, USD/IDR significantly negatively influenced companies in import and export activities (Nienhaus et al., 2019). This study stated that the higher USD/IDR is related to stock returns (A.R. Putra et al., 2019)

H2f: Foreign Exchange Rate affects positively Stock Return (Coal Mining Company)

### **The Impact of Market Return on Stock Return**

A certain degree of correlation between company stock return and market return Positive trend of the stock returns higher for a company, but it also influences positively market return overall (Thamrin & Sembel, 2020). Yet this positive association is also moderated by the return realized from other companies in that same market. Similarly, a bullish stock market (in general) will influence the stock returns of companies that belong to that sector. Company stock returns had significant positive relationship with market returns (Din, 2017).

H2g: Positive market return has a positive Coal Mining Company stock return

### **The Impact of Coal Price Fluctuations on Stock Return**

A secondary effect of volatile coal prices for a majority shareholder at least, would have been in how much market and financial performance risk was carried by the companies that produced coal (G. A. Putra et al., 2021). As a consequence, Coal Mining Company-Producer and Exporter of coal was very impacted by the change in price. The results of a study on the Australian coal companies for example indicated that positive shocks to stock returns (indicating an increase in prices) had statistically significant impact; this is indeed particularly true with respect to their raw materials costs...(Hasan & Ratti, 2014). In particular, the study found that a 1% increase in price of coal resulted to an increment capital series margin as follows: increased by 0.15%-0.17%, and it was more likely than not for conclusions derived from this research work could relate to those about other phases related with future supply chain demand for a series of prices (Hasan and Ratti,2014). The increase of coal price results in a positive COAL MINING COMPANY stock return is as expected.

H2h: Coal price affects positively stock return of Coal Mining Company

### **2.3 Previous Research**

The research under the purview of basic analysis has developed rapidly, especially in terms with regards to stock returns. Many such studies have attempted to look at how a particular performance, in an investment perspective cash flow from operations which is directly available on the balance sheet (as distinct for earnings per share) that equate market returns work with return properties like asset turnover or current ratio, debt-equity-ratio and profitability-ratio. Yet, the results across these studies have varied between one and another; appear to be irregular which in turn made a room of uncertainty for more investigation.



Table 2. 1 Previous Research

No.	Author, Year, Journal	Research Variables	Research Result
1.	Sembel, R. (2017). Pengaruh volatilitas arus kas, profitabilitas, dan asset berwujud terhadap struktur modal perusahaan- perusahaan LQ45. Journal of Financial Studies. Struktur	-Independent Variables: Cash Flow Volatility, Profitability, Tangible Assets; -Dependent Variables: Capital	Cash flow volatility and profitability significantly affect capital structure, while tangible assets do not have a significant effect.
2.	Thamrin and Sembel, (2020) The Effect of Company's Fundamental, Market Return and Macroeconomic to Stock Return: A Case Study of Consumer Goods Companies Listed in BEI Period 2009-2018	-Current ratio (CR) -Total Asset Turnover (TATO) -Return on Asset (ROA) -Debt-to-Equity Ratio (DER) -Earnings per Share (EPS) yield -Market Return (MR) -Gross Domestic Product (GDP) -Interest rate (IR) -Exchange Rate (ER) -Stock Return	-TATO, EPS Yield, Market Return, and Exchange Rate have significant effect on companies' stock return -CR, ROA, DER, GDP, and IR have insignificant effect on companies' stock return
3.	Malau, M. (2020). The impact of financial ratios on stock returns in the pharmaceutical	Independent Variables: Profitability Ratios, Liquidity Ratios, Leverage	Profitability ratios have a significant positive impact on stock returns, while

	industry during the COVID-19 pandemic. Journal of Financial Studies	Ratios; Dependent Variables: Stock Returns	liquidity and leverage ratios do not show a significant impact.
4.	Priharta et al., (2020) The Effects of Financial Performance on Stock Returns: Evidence of Machine and Heavy Equipment Companies in Indonesia	- Current Ratio (CR) - Total Asset turnover (TAT) - Return on Asset (ROA) - Debt to Equity ratio (DER) - Stock return	CR, TAT, ROA, and DER have no effect on stock return
5.	Malau, M., and Sembel, R. (2021). Financial performance analysis and the effect of profitability and market return on the stock return of PT. Adaro Energy Indonesia Tbk. Journal of Financial Studies	Independent Variables: Profitability, Market Return; Dependent Variables: Stock Return	Both profitability and market return have significant positive impacts on the stock return.
6.	Tipa H. et al., (2023). Macroeconomic Analysis Of Stock Returns	Independent Variables: Inflation, Exchange Rate, Interest Rate (macro-economic variables); Dependent Variables: Stock Return	The independent variables impacted positively to stock return.
7.	Sembel, R. (2022). The effect of profitability	Independent Variables:	Both profitability and market sentiment

	and market sentiment on stock returns of technology companies in Indonesia. Journal of Financial Studies.	Profitability, Market Sentiment; Dependent Variables: Stock Returns	significantly affect the stock returns of technology companies.
8.	Endri, E., Dermawan, D., Abidin, Z., Riyanto, S., and Manajemen, M. (2019). Effect of financial performance on stock return: Evidence from the food and beverages sector. International Journal of Innovation, Creativity and Change	Independent Variables: Current Ratio, Debt Equity Ratio, Return On Asset, Earnings per Share, Price-earnings Ratio; Dependent Variables: Stock Returns	Financial ratios significantly impact stock returns, with profitability ratios showing the simultaneously influence.
9.	Halim. B. (2023). The Effect Of Fundamental And Macroeconomic Factors On The Financial Performance Of PT Adaro Energy Indonesia Tbk And The Impact Of Covid-19 Pandemic On Its Stock Return	Independent Variables: Financial Ratios (Profitability, Leverage, Liquidity, CCC); Dependent Variables: Stock Returns, Profitability (ROA, EBITDA)	Stock performance of a coal mining company were affected by certain fundamental financial and macroeconomic factors.
10.	Sunaryo et al., (2022) The Effect of Loan To Deposit Ratio, Net Profit Margin, And Return On Equity, On Stock Returns And	- Loan to Deposit Ratio (LDR) - Net Profit Margin (NPM) - Return On Equity (ROE)	LDR has insignificant effect on stock returns -NPM has insignificant effect on stock returns

	Exchange Rates As Moderating Variables In The Banking Sub-Sector On The Southeast Asian Stock Exchange	- Stock Returns - Exchange Rates	- ROE has insignificant effect on stock returns ▪ Exchange rate does not moderate the effect of LDR on stock return ▪ Exchange rate does not moderate the effect of NPM on stock return ▪ Exchange rate does not moderate the effect of ROE on stock return
11.	Endri et al., (2019) Effect of Financial Performance on Stock Returns: Evidence from the Food and Beverages Sector	- Current Ratio (CR) - Debt-to-Equity Ratio (DER) - Asset Return (ROA) - Earnings per Share (EPS) - Price earnings Ratio (PER)	- DER has negative effect stock return - ROA and EPS have positive effect on stock return - CR and PER have no effect on stock return
12.	Razak et al., (2020) The Effects of Financial Performance on Stock Returns: Evidence of Machine and Heavy Equipment Companies in Indonesia	- Current Ratio (CR) -Total Assets Turnover (TATO) - Return on Assets (ROA) - Debt to Equity Ratio (DER) - Stock Returns	CR, TATO, ROA, and DER have no effect on stock return
13.	Milenia and Marheni (2021) The Effect of COVID19 on Stock Market Return in	-Growth in COVID-19 confirmed cases -Growth in COVID-19 death cases	-Growth in COVID19 confirmed cases and Growth in COVID-19

	Consumer Goods Sector in Indonesia	-Trading volume -Return (t-1) -IHSG -Exchange rate ▪ Stock return	death cases have no effect on stock return -Trading volume, Return (t-1), IHSG, and Exchange rate has positive significant effect on stock returns
14.	Suwito (2020) Influence Analysis of BI Rate, Inflation, and IHSG on Stock Return of Banking Sector Listed on Indonesia Stock Exchange	-BI Rate -Inflation -IHSG	-BI Rate and Inflation have no effect on stock returns -IHSG has positive significant effect on stock return
15.	Suharyanto and Zaki (2021) The Effect of Inflation, Interest Rate, and Exchange Rate on Stock Returns in Food and Beverages Companies	-Inflation rate -Interest rate -Exchange rate -Stock return	-Inflation and exchange rate have significant negative effect on stock returns -Interest rate has no effect on stock returns
16.	Kalam (2020) The Effects of Macroeconomic Variables on Stock Market Returns: Evidence from Malaysia's Stock Market Return Performance	-Gross Domestic Product (GDP) -Interest rate (IR) -Inflation (INF) -Exchange rate (ER) -Foreign Direct investment (FDI) -Stock market return	-GDP, ER, and FDI have significant positive effect on stock market return -IR and INF have significant negative effect on stock market return
17.	Bertuah and Sakti (2019) The Financial	-PBV -DER	-PBV, Inflation, Exchange Rate, and

	Performance and Macroeconomic Factors in Forming Stock Returns	<ul style="list-style-type: none"> <li>-ROE</li> <li>-Inflation</li> <li>-Exchange rate</li> <li>-GDP</li> <li>-Stock returns</li> </ul>	<p>GDP have significant positive effect on stock returns</p> <p>-DER and ROE have no effect on stock returns</p>
18.	Gunarto and Sembel (2019) The Effect of Macroeconomic on Stock Performance of LQ45 Companies at IDX	<ul style="list-style-type: none"> <li>-GDP growth rate</li> <li>-Interest rate</li> <li>-Inflation rate</li> <li>-Exchange rate</li> <li>-Stock returns</li> </ul>	<p>-Exchange Rate, GDP growth Rate, and Interest Rate have significant negative effects on stock returns</p> <p>-Inflation Rate has no effect the stock returns</p>
19.	Fitria et al., (2021) Effect of Financial Performance and Investment Risk as Mediation Variables on Stock Returns (Study on Food And Beverage Companies in The List of Sharia Securities)	<ul style="list-style-type: none"> <li>- Return on Asset</li> <li>- Return on Equity</li> <li>- Quick Ratio</li> <li>- Current Ratio</li> <li>- Investment risk</li> <li>- Stock Returns</li> </ul>	<p>-ROA, ROE, and CR have significant effects on investment risk -QR does not have a significant positive effect on investment risk</p> <p>- ROA, ROE, and CR have significant effects on stock return</p> <p>- QR does not have a significant effect on stock return</p>
20.	Yulfiswandi, Y., & Nopry, N. (2024). The Effect of Macroeconomic Variables and Covid-19 on Stock Returns of	<ul style="list-style-type: none"> <li>- Exchange Rate</li> <li>- Inflation Rate</li> <li>- Crude Oil Price</li> <li>- Money Supply</li> <li>- COVID-19 Positive Cases</li> </ul>	<p>variable oil prices, exchange rate, positive cases of COVID-19, and cases of COVID-19 deathshave an insignificant effect.</p>

Tourism Companies in Indonesia.	Sector in	- Number of COVID-19 Deaths	of the money supply significantly positive affects stock return.
---------------------------------	-----------	-----------------------------	--

## 2.4 Research Framework

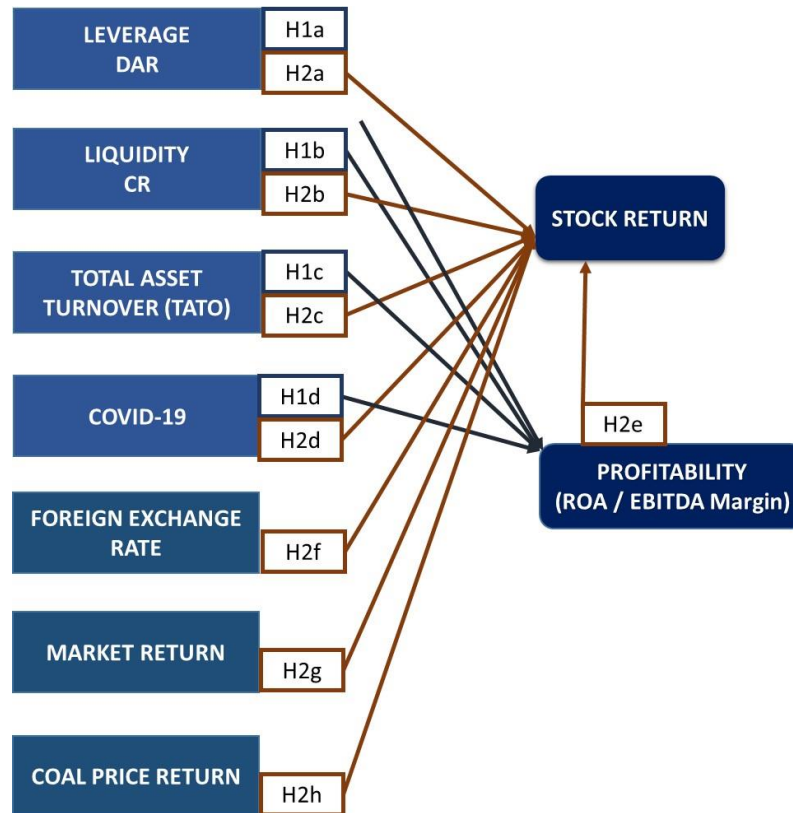


Figure 2. 1 Research Framework

Source: Author (2024)

The latter diagram has shown the first research framework aimed at analyzing the financial determinants of Coal Mining Company stock return and profitability. As it can be seen Debt to Equity ratio, Current Ratio, Total Asset Turnover, Debt Asset Ratio, Foreign Exchange Rate, Market Return, Coal Price Index and COVID-19 are independent variables affecting the Coal Mining Company stock return as dependent variable. At the same time, Debt to Equity ratio, Current Ratio, Total Asset Turnover, Debt Asset Ratio and COVID-19 will measure the instrumental profitability or EBITDA Margin/ROA.

## CHAPTER 3 METHODOLOGY

### 3.1. Research Design

This study conducts a quantitative research approach which can find the achievement of the all research objectives aforementioned with the background correlates with profitability of ROA and stock return that is affected by financial performance and macro-economy variables. This research applies the measurement between statistical and mathematical calculation respectively to gain some interpretation and the result of analysis.

Quantitative analysis seeks the establishment of relationships among densely set variables through a process evaluation in relation to research hypotheses which are defended by way of some statistical models (Winter, 2000). The research design has the overarching aim of offering a structured approach to systematically collecting, organizing and analyzing data. The research design is made up of a number of stages as illustrated in the Research Framework:



Figure 3. 1 Research Design

Source: Author (2024)



The objective generating this research plan was to develop the model for the research of this survey regarding its question, what Preparation be needed as information gathering and soring in response to study final opinions? An illustration of **Figure 3.1** is shown below, depicts the stages in research process that was used to experiment from Research Problem Identification through Literature Review and problem definition, development of a research question, elaboration on research plan data collection pre-testing analysis findings and recommendation.

### **3.2 Research Procedure**

This part has given elaborate account of the statistical techniques that was applied in order to arrive at this study, which is consistent with what had been reviewed among many literatures within previous chapters. The research procedures conducted aims to test the financial performance of Coal Mining Company (through data analysis) and related with Covid-19 where dummy becomes period; testing whether or not there is an association dependent variable (Coal Mining Company stock return & profitability.) on several independent variables / fundamental macroeconomic within a specific time though including COVID-19 as control in which a dummy variable aiming for determining effect of others On Variable. Statistical methods: The statistical procedures used in this study are described as follows; mainly econometrics-based techniques that could be easily performed using OLS (Ordinary Least Squares) regression, T-test, ANOVA and Determinant chi-squared.

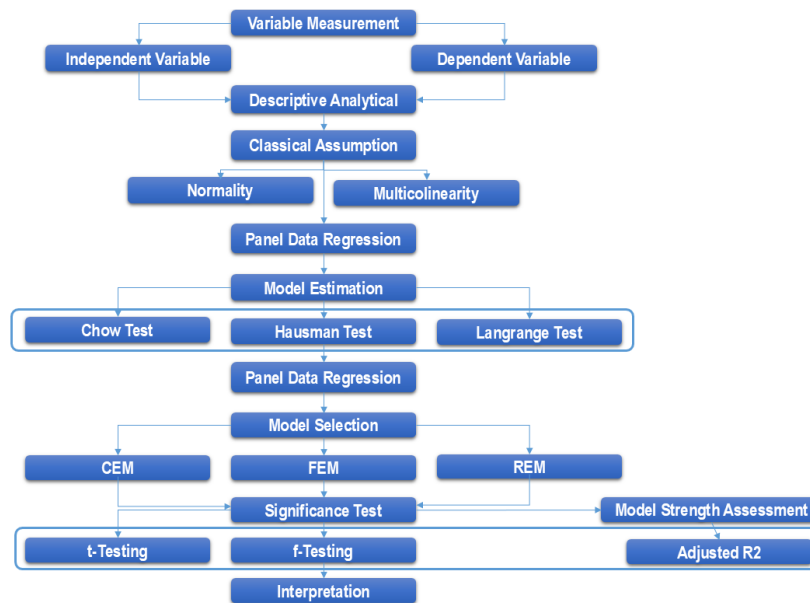


Figure 3. 2 Research Procedure for Data Analysis

Source: Author (2024)

This sub-chapter is visualized on **Figure 3.2** that demonstrates the procedural steps of this research work. Once data is gathered on all the research variables, both internal and external factors, liquidity (CR), leverage (ROE), asset turnover ratio, debt-to-asset ratio COVID19 foreign exchange rate market return coal price index are intends to examine their impact against the dependent variable of ROA and Share return. This study will carry out two separate studies to explore these relationships in detail.

### Study 1: Profitability

**Variables:** Independent variables include leverage (ROE), liquidity (CR), asset turnover (TATO), debt-to-asset ratio, and a dummy variable for the COVID-19 pandemic. The dependent variable is return on assets (ROA).

#### Analysis:

**Descriptive Analysis:** Initial analysis will involve calculating descriptive statistics (mean, median, standard deviation) for all variables to understand their distribution and range.

**Assumption Tests:** Before conducting regression analysis, assumptions such as normality, linearity, multicollinearity, heteroscedasticity, and autocorrelation will be tested.

**Model Estimation:** A panel data regression model will be employed to account for the time-series and cross-sectional nature of the data. Fixed effects or random effects models will be considered based on the specific characteristics of the data.

**Model Selection:** Various model specifications will be estimated, and the best model will be selected based on criteria such as adjusted R-squared, Akaike Information Criterion (AIC), and Bayesian Information Criterion (BIC).

**Hypothesis Testing:** The coefficients of the independent variables will be tested for statistical significance to determine their impact on profitability.

### **Study 2: Stock Return**

**Variables:** Independent variables include leverage (ROE), liquidity (CR), asset turnover (TATO), debt-to-asset ratio, COVID-19 dummy, foreign exchange rate, market return, and coal price index. The dependent variable is stock return.

#### **Analysis:**

**Descriptive Analysis:** Similar to Study 1, descriptive statistics will be calculated to understand the data.

**Assumption Tests:** Assumption tests will be conducted to ensure the validity of the regression analysis.

**Model Estimation:** A panel data regression model will be used, considering the time-series and cross-sectional nature of the data.

**Model Selection:** The best model will be selected based on the aforementioned criteria.

**Hypothesis Testing:** The coefficients of the independent variables will be tested to determine their impact on stock return.

Finally, all of the data can be analysed by some interpretation result according to the theoretical understanding.

### **3.3. Data Collection**

The subsequent phase of the research process involved the collection of secondary data to provide explanatory insights. This study utilizes time series panel data to scrutinize the hypotheses and address the research inquiries. The data for

this investigation were sourced from secondary sources, specifically the financial statements of PTBA, BUMI, ADRO, ITMG, INDY, TOBA and HRUM listed on the Indonesian Stock Exchange, spanning the quarterly reports from 2014 to 2023. The time series data for the Composite IDX and companies' stock, along with financial ratios data, were meticulously gathered from the Indonesia Stock Exchange (IDX) website ([www.idx.co.id](http://www.idx.co.id)) and the official websites of the respective companies.

### 3.4. Research Population and Samples

The population of this study is PT Bukit Asam Tbk., PT Indo Tambang Raya Megah Tbk., PT Bumi Resource Tbk., PT Indika Energy Tbk., PT Adaro Energy Tbk., PT TBS Energi Utama, and PT Harum Energy Tbk. stock performance from 2014 to 2023.

### 3.5. Econometric Model and Variables

This model is applied to find the link between the dependent variable and independent variables. In this current research, the variables of the model can be explained as follow:

- LIQUIDITY<sub>it</sub> : Current Ratio (CR) of the company i at time t
- TATO<sub>it</sub> : Total Asset Turnover of the company i at time t
- LEVERAGE<sub>it</sub> : Debt to Asset Ratio (DAR) of the company i at time t
- COVID-19<sub>t</sub> : COVID-19 period at time t
- ForEx Return<sub>t</sub>: ForEx Return at time t
- Market Return<sub>t</sub>: Market Return at time t
- Coal Price Return<sub>t</sub>: Coal Price Return at time t
- ROE<sub>it</sub>: ROE of the company at time t
- CMC Return<sub>it</sub>: Return of Coal Mining Company i at time t
- $\varepsilon_{it}$  : Regression error of the company i at time t

$\varepsilon$  = component error

i = indexes firms

t = years

Table 3. 1 *List of Variables in Study*

$\text{Total Asset Turnover} = \frac{\text{Net Sales}}{\text{Average Total Assets}}$	Indicator of how efficient the operations of the company in utilizing its assets to generate values in terms of revenue (Munawar, 2019).
COVID-19	0 : Before COVID-19 1 : After COVID-19
$\text{Days Sales Outstanding (days)} = \frac{\text{Average Trade Receivables}}{\text{Sales}} \times 365 \text{ days}$	Measures how long (in days) a company receives payment from its sales (Ali, 2021).
$\text{Days Inventory Outstanding (days)} = \frac{\text{Average Inventory}}{\text{Cost of Sales}} \times 365 \text{ days}$	Measures how long (in days) a company sells its Inventory (Ali, 2021).
$\text{Days Payables Outstanding (days)} = \frac{\text{Average Trade Payables}}{\text{Cost of Sales}} \times 365 \text{ days}$	Measures how long (in days) a company pays off its trade payables obligations to the suppliers (Ali, 2021).
$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Average Total Assets}}$	Return on Assets is a measure the overall effectiveness of management in generating profits with its available assets (Mogonta & Pandowo, 2016).
$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Shareholders' Equity}}$	Return on Equity measures the return earned on the common shareholders' investment in the company (Mogonta & Pandowo, 2016).
$\text{Debt to Assets Ratio (\%)} = \frac{\text{Total Debt}}{\text{Total Assets}} \times 100\%$	Debt to Asset Ratio exhibits how much debt finance the asset of a company for running its operation. The higher the ration the more dependent the company to its creditors (Artamevia & Almalita, 2021).
$\text{Debt to Equity Ratio (\%)} = \frac{\text{Total Debt}}{\text{Shareholders' Equity}} \times 100\%$	Debt to Equity Ratio is one of leverage ratio. It shows the composition or structure of the use of debt to total shareholders' equity of the company, in fulfilling its long-term liabilities (Atidhira & Yustina, 2017).
$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$	Current Ratio shows the company's ability to pay its short-term liabilities using its current assets (Adawiyah & Setiyawati, 2019).
$\text{EBITDA Margin} = \frac{\text{EBITDA}}{\text{Revenues}}$	A measure of the EBITDA to revenue. Measures the portion of earnings which is profits compared to operating costs (MacDiarmid et al., 2018).

$Stock\ Return_t = Ln\left(\frac{P_t}{P_{t-1}}\right)$	Indication of return of a stock. $P_t$ is the adjusted close price at the period (i.e., period t) and $P_{t-1}$ is the adjusted close price one period prior to period t (Miskolczi, 2017).
$Market\ Return_t = Ln\left(\frac{P_t}{P_{t-1}}\right)$	Indication of market return. $P_t$ is the adjusted close price at the period (i.e., period t) and $P_{t-1}$ is the adjusted close price one period prior to period t (Miskolczi, 2017).
$Foreign\ Exchange\ Return_t = Ln\left(\frac{P_t}{P_{t-1}}\right)$	Indication of return of a foreign exchange rate. $P_t$ is the price at the period (i.e., period t) and $P_{t-1}$ is the price one period prior to period t (Miskolczi, 2017).
$Coal\ Price\ Return_t = Ln\left(\frac{P_t}{P_{t-1}}\right)$	Indication of changes in coal price. $P_t$ is the price at the period (i.e., period t) and $P_{t-1}$ is the price one period prior to period t (Miskolczi, 2017).

This part is to answer the research question and to find the research objective through then panel regression according to the conceptual framework on prior parts as follows:

The beginning process of the regression equation model to test indicators that affect profitability of Coal Mining Company (CMC):

$$ROA_{it} = \beta_0 + \beta_1Leverage_{it} + \beta_2Liquidity_{it} + \beta_3TATO_{it} + \beta_4COVID-19_{it} + \epsilon_{it}$$

**(Equation 3.2)**

The following process of the regression equation model to test indicators that affect stock return of Coal Mining Company (CMC):

$$CMC\_return_{it} = \gamma_0 + \gamma_1Leverage_{it} + \gamma_2Liquidity_{it} + \gamma_3TATO_{it} + \gamma_4FerEx\_return_{it} + \gamma_5JKSE\_return_{it} + \gamma_6CoalPrice\_return_{it} + \gamma_7ROA_{it} + \gamma_8COVID-19_{it} + \epsilon_{it}$$

**(Equation 3.2)**

### 3.6. Statistical Methods

This is considered an event study on this research, for analyzing a specific category of events which is COVID-19 in our case. Event Study refers to the market responds on an event with information known announced (Jogiyanto, 2015). The event process of investigation is:

1. **Selected Sample:** PT Bukit Asam Tbk., PT Indo Tambang Raya Megah Tbk., PT Bumi Resource Tbk., PT Indika Energy Tbk., PT Adaro Energy Tbk., PT Bayan Resource Tbk., PT TBS Energi Utama, and PT Harum Energy Tbk, on their un-audited financial statements from 2014 to 2023.

**2. Event Time:** The event time range is 10 years, from 2014 to 2023.

**3. Variables Representation:** Independent variables include ROA, ROE, DAR, Current Ratio, TATO, Market Return, and COVID-19 as dummy. The dependent variables is Stock Return. The analysis compares the before COVID-19 (2014-2019) to the after COVID-19 (2020-2023).

**4. Descriptive Statistics:** This analysis would start, if nothing else were firstly the first with descriptive statistics; which gives an overview of central tendencies (means) and variability across the data set. This can include computing means, medians, standard deviations. The user can see, the number of records that were processed each iteration and all other relevant statistics which assist in distribution and characteristics of the data. This section is intended to provide a basic overview of the study variables prior to more complicated analyses.

**5. Panel Approach for estimation of Panel Data Model:** As the data used in this paper covers multiple period years and different entities so I decided to use panel approach. To account for the peculiar characteristics of our data, we choose to estimate the panel data model. The study uses Chow Test, Hausman Test and Lagrange Multiplier to decide the most suitable model. Pre-employment tests like these are vital in deciding when and whether to hire Common Effect Model, Fixed

Effect Model or Random Effect Model. Every test reveals the in-built assumptions of data, making sure that our model is fitting well with type of dataset.

**6. Panel Data Model Selection:** This research is quantitative research that uses the panel regression method. This research then uses tests Chow, Hausman and Lagrange to find the best estimation technique. Winarno (2015) in the testing phase (parameter estimation techniques) model selection. The regression equation which to be estimated can be applied by the three examiners, namely Chow test, Hausman test and Lagrange multiplier test as follows:

**a. Chow Test/Likelihood Ratio**

The Chow test, primarily used in the selection of the most appropriate method, among the Common Effects Model (CEM) approach and Fixed-Effects Model (FEM) in the estimation of panel data. Examiners set the basis by:

1. If the probability value (P-value) for cross section  $F > 0.05$  (significant value) then  $H_0$  is accepted, hence the most appropriate model to use will be the Common Effect Model (CEM).
2. If the probability value (P-value) for cross section  $F < 0.05$  (significant value) then  $H_0$  is rejected, hence the most appropriate model to use will be the Fixed Effect Model (FEM).

Hypothesis that can be used is :

$H_0$  : Common Effect Model (CEM)

$H_1$  : Fixed Effect Model (FEM)

**b. Hausman Test**

The Hausman test is a test used to select the best approach for estimating panel data between the Random Effect Model (REM) and Fixed Effect Model (FEM) approaches. The rules of such a test can be laid down only the assumptions of the approaches as follows:

1. If the probability value (P-value) for random cross-section is more than 0.05 (significant value) then  $H_0$  is accepted, so the most appropriate model used is the Random Effect Model (REM).



2. If the probability value (P-value) for random cross-section is less than 0.05 (significant value) then  $H_0$  is rejected, so the most appropriate model used is the Fixed Effect Model (FEM).

Hypothesis that can be used is :

$H_0$  : Random Effect Model (REM)

$H_1$  : Fixed Effect Model (FEM)

### c. Multiplayer Lagrange Test

The Lagrange multiplier test is a test used to select the best approach between the Common Effect Model (CEM) and Random Effect Model (REM) approaches in estimating panel data. The Random Effect Model was developed by Breusch-Pangan which is used to test the significance based on the residual value of the OLS method. The basic criteria are as follows:

1. If the Breusch-pangan cross section value  $> 0.05$  (significant value) then  $H_0$  is accepted, so the most appropriate model to use is the Common Effect Model (CEM).
2. If the Breusch-pangan cross section value  $< 0.05$  (significant value) then  $H_0$  is rejected, so the appropriate model to use is the Random Effect Model (REM).

Hypothesis that can be used is:

$H_0$  : Common Effect Random (CEM)

$H_1$  : Random Effect Model (REM)

**7. Panel Data Regression:** After selection of the model, study goes for panel data regression analysis. It defines the relationship between independent and dependent variables while controlling for those fixed effects. We then turn to the regression analysis by examining how financial ratios and market returns evidence such effects with respect to stock returns over entities and time frames. The regression coefficients — are interpreted to come up with the direction (positive or negative) and magnitude of these relationships, ultimately leading to more detailed insights into what drives stock returns.

**8. Classical Assumption** : Conducting assumption tests is necessary before performing multiple linear regression analysis using OLS. In ordinary least squares (OLS) regression, there is a single dependent variable and several independent variables. Ghozali (2018) mentions that in order to assess the accuracy of the model, it is necessary to test various classical assumptions such as normality, multicollinearity, heteroscedasticity, and autocorrelation.

#### 1. Normality Test

In this research, the Jarque-Bera test in Eviews 10 software is utilized to assess the normality of residuals in a regression model (Ghozali, 2018). This examination evaluates the asymmetry and peakedness of the data and compares it to the anticipated values of a normal distribution. Two methods are available for assessing normality.

- If the Jarque-Bera (J-B) value is less than the chi-squared table value and the probability is greater than 0.05, the data can be considered normally distributed.
- If the Jarque-Bera (J-B) value exceeds the chi-squared value at 0.05 and the probability is less than 0.05, the data are considered not normally distributed.

#### 2. Multicollinearity Test

The objective of multicollinearity testing is to establish if there is a connection among the predictor variables in a regression model (Ghozali, 2018). The criteria are listed below:

- If the correlation value is greater than 0.80, the null hypothesis ( $H_0$ ) is rejected, indicating the presence of multicollinearity.
- If the correlation value is less than 0.80, the null hypothesis ( $H_0$ ) is accepted, suggesting no multicollinearity issues.

#### 3. Heteroscedasticity Test

The purpose of the heteroscedasticity test is to assess if there is consistent variance in the residuals across various observations in a regression model. Ghozali (2018) suggests using the Glejser test to identify heteroscedasticity by regressing the absolute residuals against the independent variables. The standards for evaluation are as listed:

- If the p-value is greater than or equal to 0.05, the null hypothesis ( $H_0$ ) is accepted, indicating no heteroscedasticity issues.
- If the p-value is less than or equal to 0.05, the null hypothesis ( $H_0$ ) is rejected, indicating the presence of heteroscedasticity.

#### 4. Autocorrelation Test

Autocorrelation tests examine the connection between residual values of different observations, as stated by Winarno (2015). Ghozali (2018) explains that the main goal of autocorrelation tests is to evaluate if there is a correlation between the error term at time  $t$  and the error term at time  $t-1$ . The Durbin-Watson (DW) test is utilized for detecting first-order autocorrelation, necessitating the presence of the intercept in the regression model and the exclusion of logarithmic variables as independent variables (Ghozali, 2018). The factors used to identify autocorrelation are as follows:

- If the DW value falls between the upper bound ( $du$ ) and  $(4 - du)$ , the autocorrelation coefficient is zero, indicating no autocorrelation.
- If the DW value is below the lower bound ( $dl$ ), the autocorrelation coefficient is greater than zero, suggesting positive autocorrelation.
- If the DW value exceeds  $(4 - dl)$ , the autocorrelation coefficient is less than zero, indicating negative autocorrelation.
- If the DW value is between the upper and lower bounds ( $du$  and  $dl$ ), as well as between  $(4 - du)$  and  $(4 - dl)$ , no conclusion can be drawn regarding autocorrelation

**9. Hypothesis testing:** The final step in the analysis requires hypothesis testing. This section analyzes the statistical significance of these relationships between independent variables and stock returns with t-statistics. These are all tested with hypotheses. The statistical methods used, results within the framework of research questions. Our findings answer the main research questions, and provide insight into determinants of stock returns as well as the effects of particular financial ratios and market conditions.

### **a. Partial Test (t-test)**

A t-test is employed to assess how independent variables impact dependent (partial) dependent variables. A t-test involves comparing the calculated t value with the t-table at a 5% significance level, following specific test criteria (Ghazali, 2018):

1. If  $t_{count} < t_{table}$  and  $p\text{-value} > 0.05$ ,  $H_0$  is accepted and  $H_1$  is rejected, which means that none of the independent variables is related to the dependent variable.
2. If  $t_{count} > t_{table}$  and  $p\text{-value} < 0.05$ ,  $H_1$  is accepted and  $H_0$  is rejected, meaning that one of the independent variables has a strong effect on the dependent variable.

After the researcher can calculate Sustainability and Carbon Emission Disclosure, firm value can be tested whether it is positive or not.

### **b. Simultaneous Test (f-test)**

The F statistical test basically points to whether all the independent or independent variables included in the model have a joint effect on the dependent variables (Ghozali, 2006). Proof is done by comparing the critical value F ( $F_{table}$ ) with the F count value contained in the table analysis of variance SPSS. If F count is greater than F table, the decision rejects the null hypothesis ( $H_0$ ) and accepts the alternative hypothesis ( $H_a$ ). The statistical meaning of the data used proves that all independent variables affect the value of the dependent variable.

### **c. Coefficient of Determination ( $R^2$ )**

$R^2$  is employed to gauge how well independent variables can account for the dependent variable. The range of  $R^2$  values is between 0 and 1. The closer the value is to 1, the more accurate the model is at predicting the dependent variable. This study will also employ adjusted  $R^2$  in order to prevent bias stemming from including irrelevant independent variables. When the adjusted  $R^2$  value is close to one (1), it shows that the model is better at explaining the dependent variable, according to Ghozali (2018).

## CHAPTER 4

### FINDINGS, ANALYSIS, AND DISCUSSION

#### 4.1. Descriptive Statistical Analysis

This study employs descriptive statistical analysis to provide a preliminary understanding of the data. Following Bougie and Sekaran (2020) and Sugiyono (2013), descriptive statistics, including the maximum, minimum, mean, and median, are used to summarize the central tendency and distribution of each variable. Additionally, the standard deviation is calculated to assess the dispersion or variability within the data (Bougie & Sekaran, 2020). Table 4.1 presents the results of this descriptive statistical analysis for all variables included in the study.

Table 4. 1 Descriptive Statistics

VARIABLE	DAR	CR	TATO	COVID-19	FOREX	MR	CP	ROA	SR
Mean	0,522529851	2,377660448	15,34004104	0,417910448	0,029895522	0,042257463	111,931903	0,061451493	-0,012738806
Standard Error	0,02146429	0,120247364	3,928653269	0,030184285	0,004409963	0,008714448	4,553530586	0,005000286	0,042377094
Median	0,425	1,981	2,711	0	0,017	0,044	84,47	0,0445	-0,0325
Mode	0,425	1,97	2,777	0	-0,116	0,201	64,65	0,016	0,125
Standard Deviation	0,351385565	1,968534189	64,31482585	0,494138034	0,07219421	0,14266166	74,54450841	0,081858203	0,693742922
Sample Variance	0,123471816	3,875126854	4136,396824	0,244172396	0,005212004	0,020352349	5556,883734	0,006700765	0,481279242
Kurtosis	3,656319005	6,313572455	52,79376049	-1,902193086	0,431117887	0,388415364	1,993738197	5,932607906	0,555599267
Skewness	1,755416224	2,239414746	6,790005688	0,334751674	0,346815974	-0,773883473	1,748884657	1,178305714	0,039041465
Range	1,824	12,921	627,796	1	0,328	0,631	274,49	0,766	4,315
Minimum	0,074	0,032	0,273	0	-0,116	-0,354	49,42	-0,312	-2,422
Maximum	1,898	12,953	628,069	1	0,212	0,277	323,91	0,454	1,893
Sum	140,038	637,213	4111,131	112	8,012	11,325	29997,75	16,469	-3,414
Count	268	268	268	268	268	268	268	268	268

Note:

Independent Variables :

Financial Indicator: a. DAR = Debt-Asset-Ratio (Leverage)

b. CR = Current Ratio (Liquidity)

c. TATO = Total Asset Turn Over

d. COVID-19 = Pandemic of Corona Virus

Macro-Economic Variables: a. FOREX = Foreign Exchange Rate

b. MR = Market Return

c. CP = Coal Price Return

Dependent Variables:

a. ROA = Return on Asset (Profitability)

b. SR = Stock Return

The initial dataset comprised 268 quarterly observations from seven Indonesian coal mining companies, spanning the first quarter of 2014 to the fourth quarter of 2023. To ensure the normality assumption required for subsequent statistical analyses, 12 outlier data points were identified and removed. These outliers included data from PT Harum Energy Tbk (HRUM), PT Indo Tambangraya Megah Tbk (ITMG), PT Bukit Asam Tbk (PTBA), and PT TBS Energy Utama Tbk (TOBA) for specific quarters within the initial years of the study period. This data cleaning process aimed to enhance the reliability and validity of the statistical findings.

This study utilizes an unbalanced panel data regression model to analyze the relationships between variables. As shown in Table 4.1, the dataset includes two dependent variables and eight independent variables. A detailed explanation of the descriptive statistics for each variable follows.

#### **4.1.1. Debt-Asset-Ratio (DAR)**

Figure 4.1 is a boxplot of the Debt-Asset-Ratio (DAR) which explains the results of the statistical description of the first independent variable in this study, namely the Debt-Asset-Ration (Leverage) (X1).

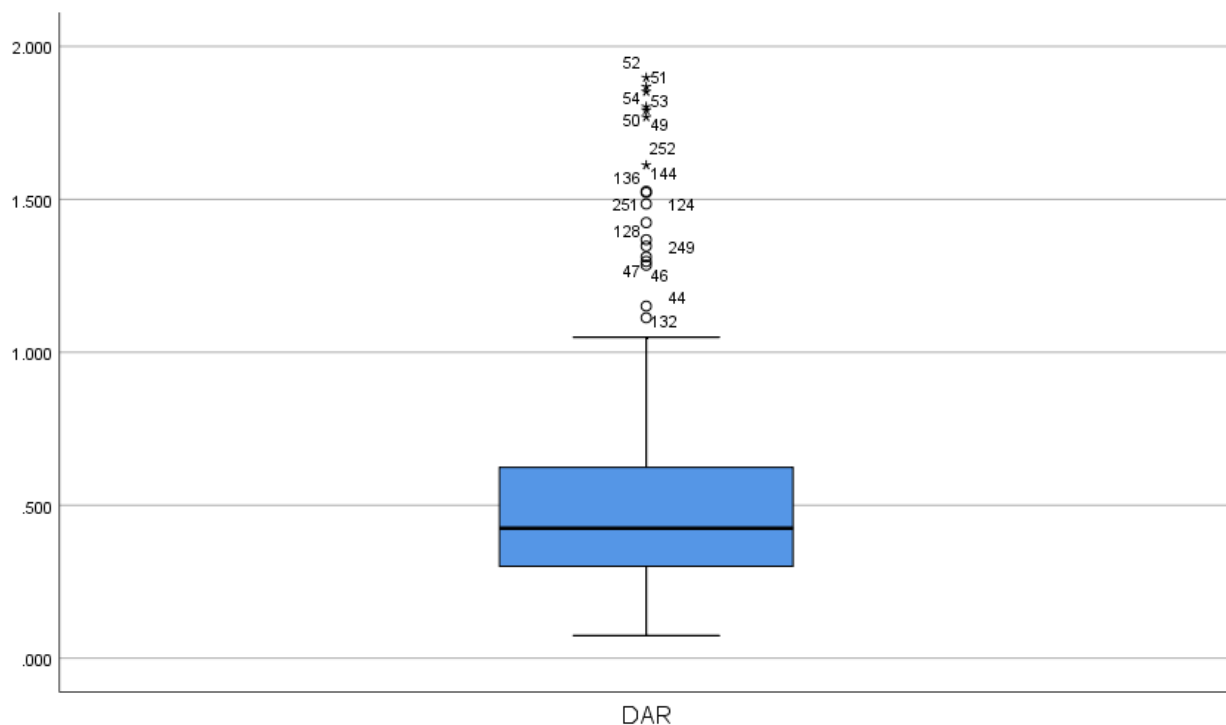


Figure 4. 1 Box Plot Debt-Asset-Ratio (Leverage) of Coal Mining Companies Company from Q1 2014 to Q4 2023

Table 4.1 and Figure 4.1 illustrate the distribution of the Debt-to-Asset Ratio (DAR). The mean DAR is 0.522, while the median is 0.425, suggesting a slightly skewed distribution. The data ranges from a minimum of 0.074 for PT Harum Energy Tbk. (HRUM) in the third quarter of 2015 to a maximum of 1.898 for PT Bumi Resources Tbk. (BUMI) in the fourth quarter of 2016, highlighting substantial variation in the capital structures of these companies. With a standard deviation of 0.351, which is lower than the mean, the data points tend to cluster relatively closely around the average DAR. This indicates a moderate level of dispersion in the leverage employed by these Indonesian coal mining companies.

#### 4.1.2. Current Ratio (CR)

Figure 4.2 is a boxplot of the current ratio which explains the results of the statistical description of the second independent variable in this study, namely the

current ratio (X2).

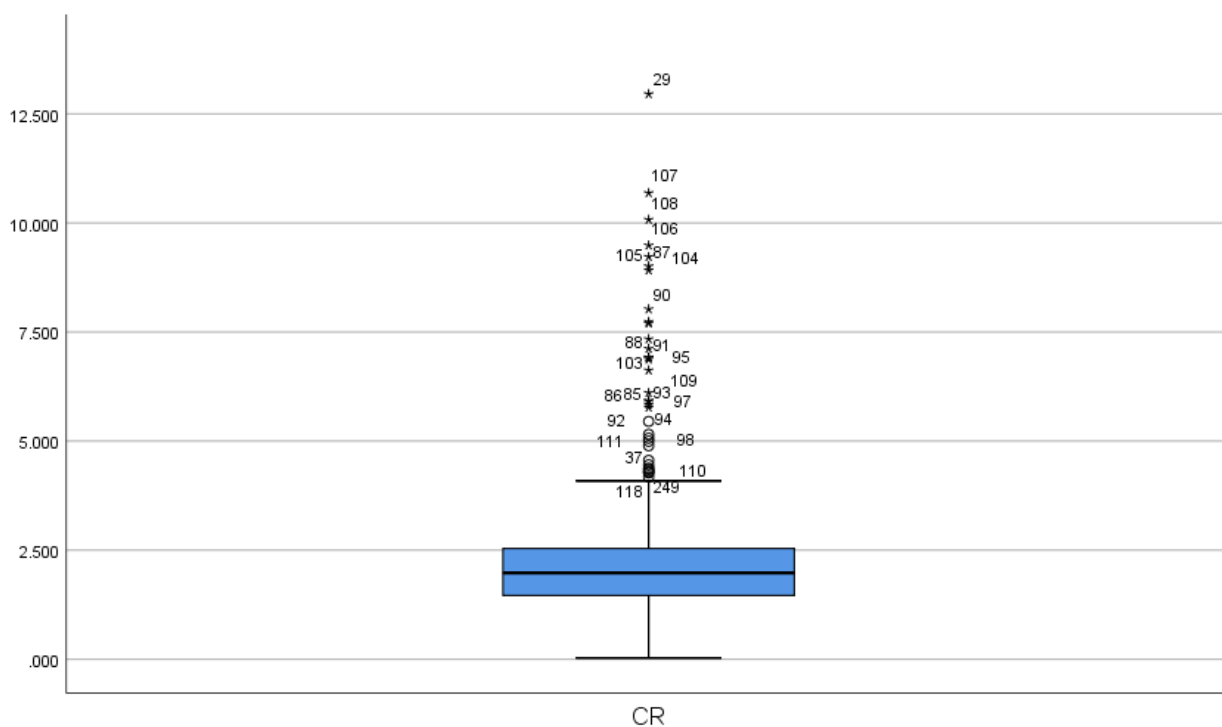


Figure 4. 2 Box Plot Current Ratio (Liquidity) of Coal Mining Companies Company from Q1 2014 to Q4 2023

The descriptive statistics for the current ratio (CR), as depicted in Table 4.1 and Figure 4.2, reveal a mean value of 2.377 and a median value of 1.981. The data exhibits a wide range, with a minimum CR of 0.032 observed for PT Bumi Resources Tbk (BUMI) in the second quarter of 2016 and a maximum CR of 12.953 for PT Adaro Energy Tbk (ADRO) in the first quarter of 2021.

Despite this range, the standard deviation of 1.968 is notably lower than the mean, indicating a relatively low degree of dispersion in the data. This suggests that while some outliers exist, the CR values for the majority of the sample tend to cluster around the mean, reflecting a moderate level of consistency in the short-term liquidity of these coal mining companies.

#### 4.1.3. Total Asset Turnover (TATO)

Figure 4.3 is a boxplot of the total asset turnover ratio which explains the results of the statistical description of the seventh independent variable in this study, namely the total asset turnover ratio (X3).



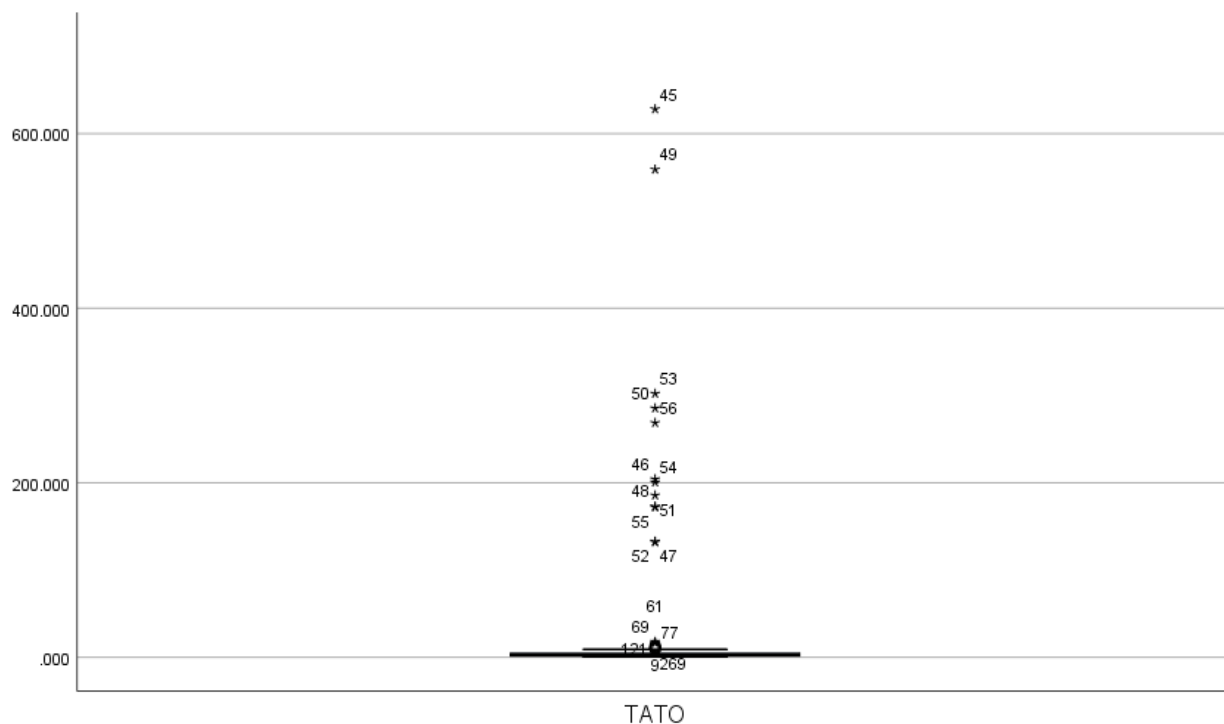


Figure 4. 3 Box Plot Total Asset Turn Over (TATO) of Coal Mining Companies Company from Q1 2014 to Q4 2023

The descriptive statistics for Total Asset Turnover (TATO), as presented in Table 4.1 and Figure 4.3, reveal substantial variability in this measure across the sample. While the mean TATO is 15.34, the median is considerably lower at 2.711, indicating a skewed distribution. This skew is further evidenced by the notably high standard deviation of 64.314, exceeding the mean value. The data range from a minimum of 0.273 (TOBA, Q4 2016) to a maximum of 628.069 (BUMI, Q1 2015) underscores this significant dispersion. This high variability in TATO suggests diverse asset utilization strategies and operational efficiencies among the Indonesian coal mining companies under study. Further analysis is warranted to explore the factors contributing to these observed differences in TATO.

#### 4.1.4. COVID-19

Figure 4.4 is a boxplot of the COVID-19 which explains the results of the statistical description of the fourth independent variable in this study, namely the COVID-19 (X4).

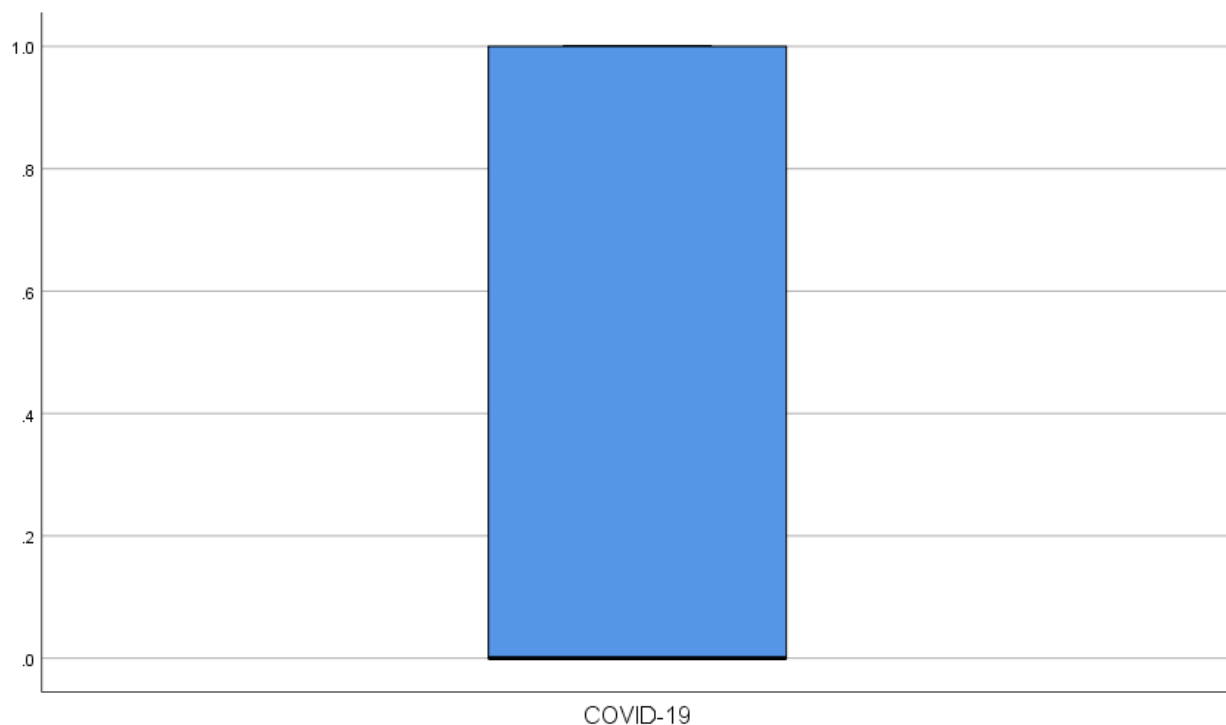


Figure 4. 4 Box Plot COVID-19 of Coal Mining Companies Company from Q1 2014 to Q4 2023

The descriptive statistics for the COVID-19 variable, as depicted in Table 4.1 and Figure 4.4, reveal a mean value of 0.417 and a median value of 0. This discrepancy between the mean and median suggests a skewed distribution, likely due to the binary nature of the variable (0 representing pre-COVID-19 period and 1 representing the COVID-19 period). The minimum value of 0 corresponds to the period from the first quarter of 2014 to the first quarter of 2019, while the maximum value of 1 represents the period from the first quarter of 2020 to the first quarter of 2023. Notably, the standard deviation of 0.494 exceeds the mean, indicating substantial variation and dispersion in the data. This highlights the significant impact of the COVID-19 pandemic on the coal mining industry, marking a distinct shift in the dataset.

#### 4.1.5. Foreign Exchange Rate

Figure 4.5 is a boxplot of the exchange rate which explains the results of the statistical description of the second independent variable in this study, namely the exchange rate (X5).

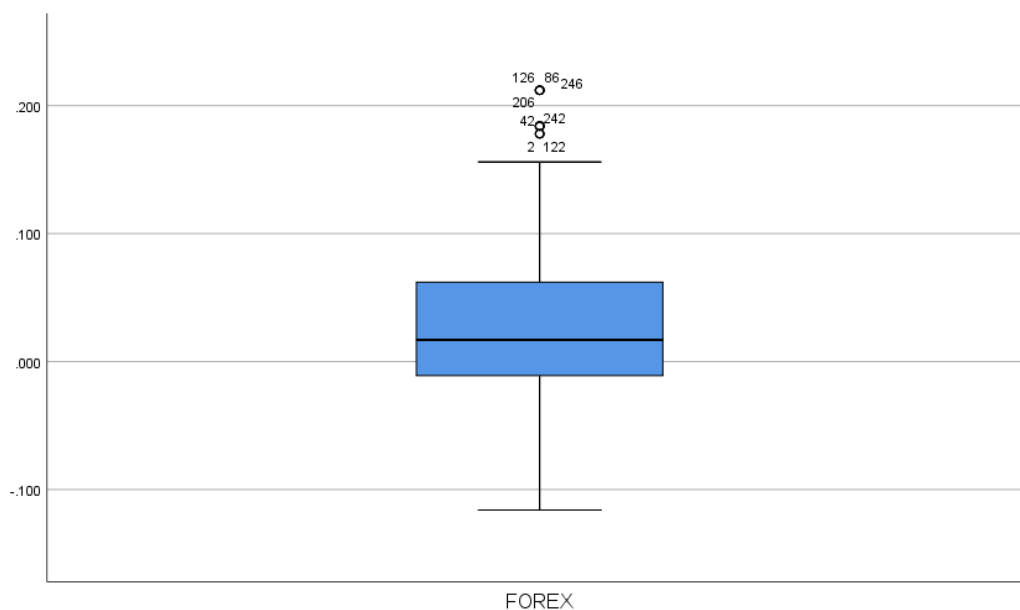


Figure 4. 5 Box Plot Foreign Exchange Rate of Coal Mining Companies Company from Q1 2014 to Q4 2023

As depicted in Table 4.1 and Figure 4.5, the exchange rate variable exhibits considerable variability. The mean exchange rate is 0.029, while the median is 0.017, indicating a slight skew in the distribution. The data ranges from a minimum of -0.116 in the third quarter of 2016 to a maximum of 0.212 in the second quarter of 2015. Furthermore, the standard deviation of 0.072 exceeds the mean, underscoring the substantial fluctuation in exchange rates over the period under study.

#### 4.1.6. Market Return

Figure 4.6 is a boxplot of market return which explains the results of the statistical description of the third independent variable in this study, namely market return (X6).

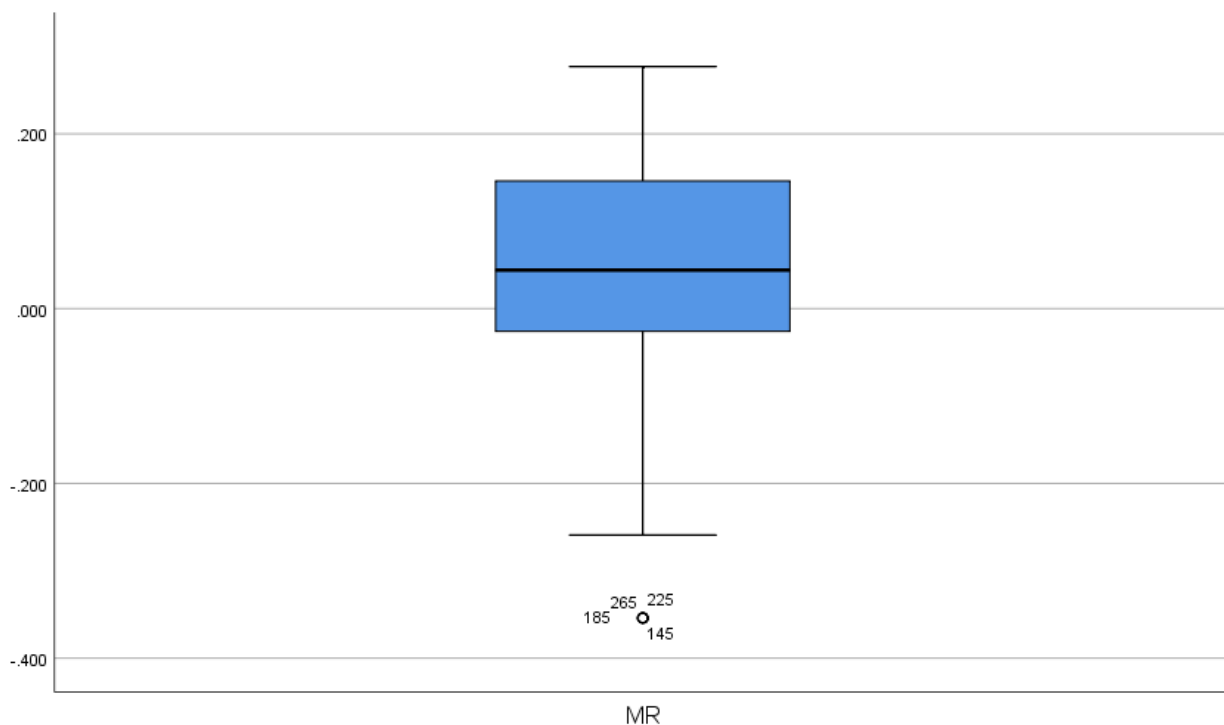


Figure 4. 6 Box Plot Market Return of Coal Mining Companies Company from Q1 2014 to Q4 2023

The descriptive statistics for market return, as presented in Table 4.1 and Figure 4.6, reveal a mean value of 0.042 and a median value of 0.044. The data exhibits considerable variability, ranging from a minimum of -0.354 in the first quarter of 2020 to a maximum of 0.277 in the first quarter of 2021. This wide dispersion is further evidenced by the standard deviation of 0.142, which exceeds the mean value. The substantial fluctuation in market return likely reflects the inherent volatility of the stock market, particularly during the period under study, which includes the onset of the COVID-19 pandemic and subsequent economic recovery.

#### 4.1.7. Coal Price Return

Figure 4.7 is a boxplot of the coal price return which explains the results of the statistical description of the seventh independent variable in this study, namely the coal price return ( $X_7$ ).

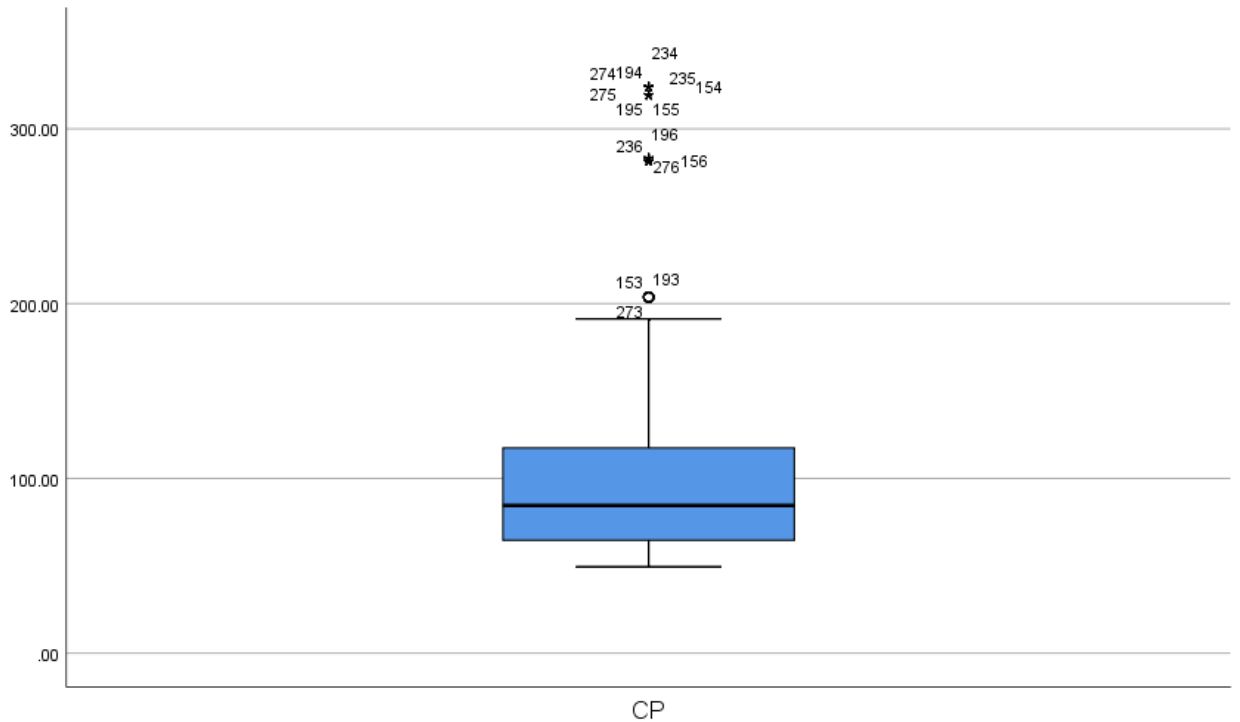


Figure 4. 7 Box Plot Coal Price Return of Coal Mining Companies Company from Q1 2014 to Q4 2023

As depicted in Table 4.1 and Figure 4.7, the coal price return variable exhibits a mean value of 111.931 and a median value of 84.47. The data ranges from a minimum of 49.92, observed for ADRO in the third quarter of 2020, to a maximum of 323.91 for PTBA in the second quarter of 2022. With a standard deviation of 74.544, which is less than the mean, the data demonstrates relatively low variability and a concentrated distribution around the average coal price return. This suggests a degree of stability in coal price returns over the analyzed period, despite the observed minimum and maximum values.

#### 4.1.8. Return on Asset (ROA)

Figure 4.8 is a boxplot of the return on asset which explains the results of the statistical description of the eighth independent variable in this study, namely the return on asset (X8).

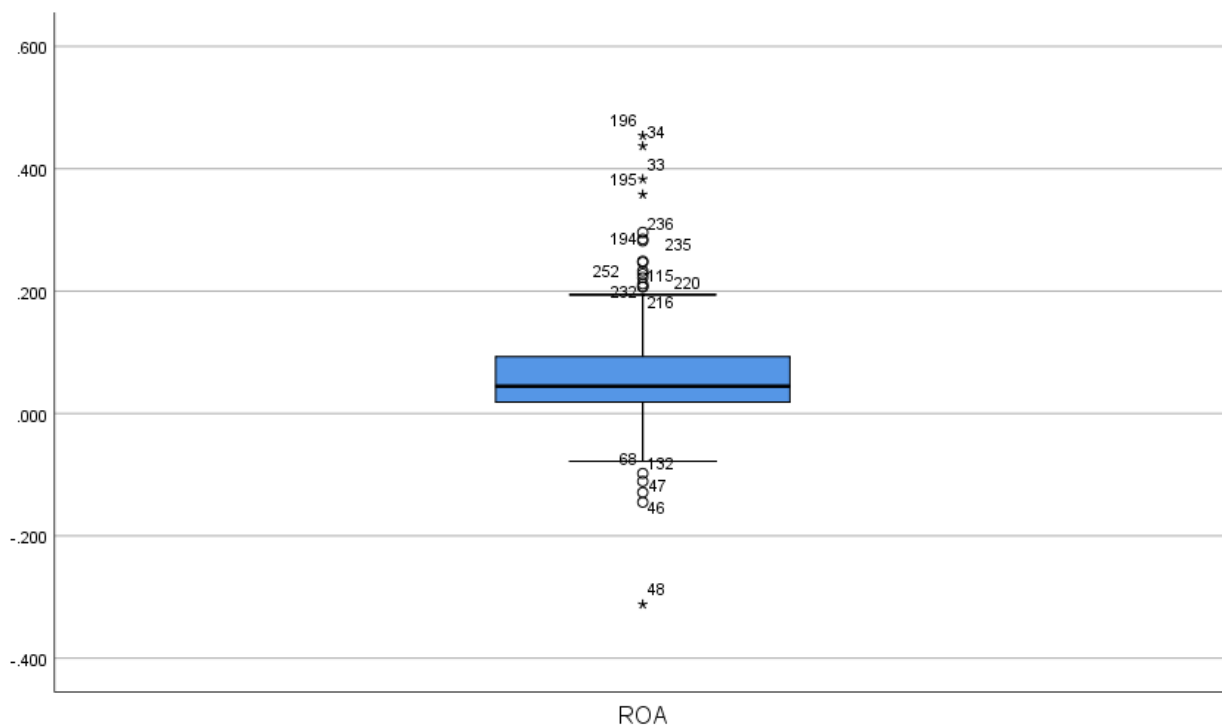


Figure 4. 8 Box Plot Return on Asset (ROA) / Profitability of Coal Mining Companies Company from Q1 2014 to Q4 2023

The descriptive statistics for ROA, as presented in Table 4.1 and Figure 4.8, reveal a mean value of 0.061 and a median value of 0.044. The data exhibit substantial variability, with a standard deviation of 0.081, exceeding the mean value. This high dispersion is further evidenced by the range, spanning from a minimum of -0.312 (BUMI, Q1 2015) to a maximum of 0.454 (INDY, Q4 2022). These findings indicate considerable heterogeneity in the profitability performance of the sampled coal mining companies over the study period.

#### 4.1.9. Stock Returns

Figure 4.9 is a boxplot of stock returns which explains the results of a statistical description of the dependent variable in this study, namely company stock return (Y).

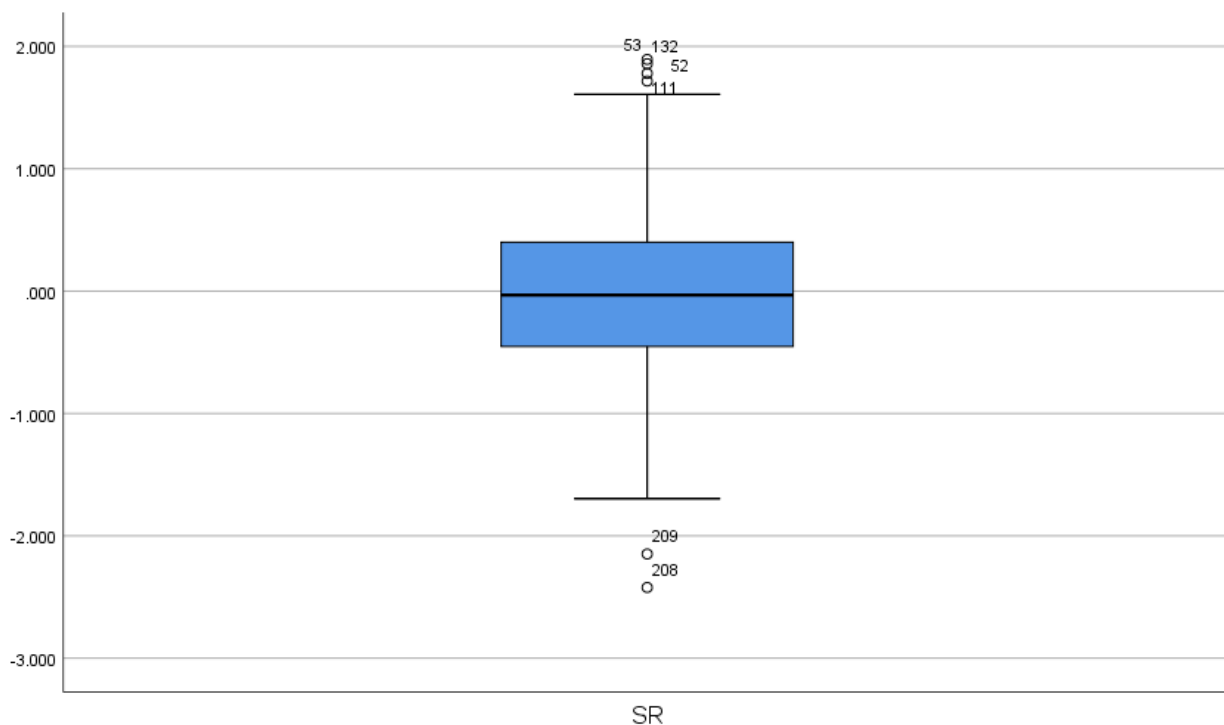


Figure 4. 9 Box Plot Stock Return (SR) / Financial Performance of Coal Mining Companies Company from Q1 2014 to Q4 2023

The descriptive statistics presented in Table 4.1 and visually depicted in Figure 4.9 reveal key insights into the distribution of company stock returns. The mean stock return is -0.012, while the median is slightly lower at -0.032, suggesting a slight skew in the distribution. Notably, the data exhibits considerable variability, as evidenced by a standard deviation of 0.693, which exceeds the mean value. This substantial dispersion is further emphasized by the wide range observed, with a minimum stock return of -2.422 for ITMG in the fourth quarter of 2015 and a maximum of 1.893 for BUMI in the first quarter of 2017. This pronounced variation in stock returns underscores the dynamic nature of the coal mining sector and the influence of diverse factors on company performance within this industry.

#### 4.2. Classical Assumption Test

To ensure the reliability and validity of the regression model, this study conducts classic assumption tests. Given the use of panel data with multiple independent variables, these tests are essential to identify potential violations that could compromise the accuracy of the statistical analysis. Specifically, this study

performs normality tests to assess the distribution of the residuals and multicollinearity tests to examine the relationships among the independent variables. This rigorous approach aims to establish a robust foundation for subsequent statistical inference and ensure the reliability of the research findings.

#### 4.2.1. Normality Test

To ensure the validity of the parametric inferential statistical analysis employed in this study, a normality test was conducted. This test examined the distribution of both the independent and dependent variables within the regression model. As normality is a crucial assumption for parametric tests, adherence to this assumption ensures the reliability of the results. Data is considered normally distributed if the probability value exceeds the significance threshold of 0.05.

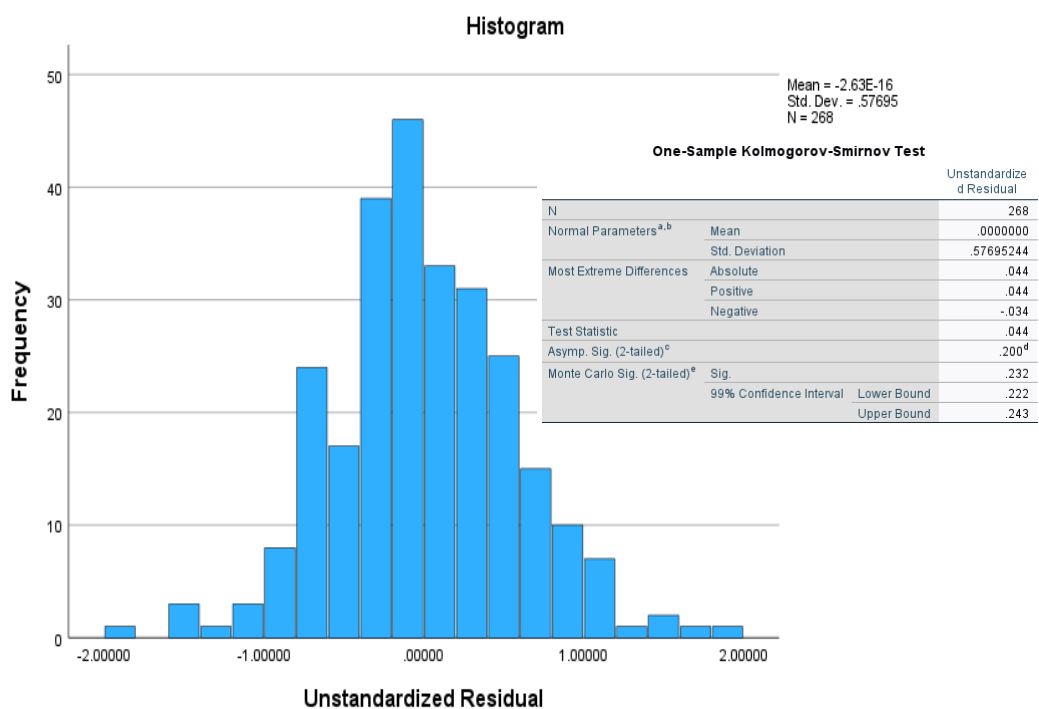


Figure 4. 10. Normality Test Result

The assessment of normality in the panel data, as depicted in Figure 4.10, yielded a probability value of 0.200. This value surpasses the conventional significance threshold of 0.05, thereby confirming that the panel data adheres to a



normal distribution. This finding satisfies a key assumption for the application of parametric statistical tests in subsequent analyses.

#### 4.2.2. Multicollinearity Test

To ensure the robustness of the regression model, this study conducts a multicollinearity test to assess the presence of strong correlations between independent variables. As highlighted by Bougie and Sekaran (2020) and Kothari (2004), multicollinearity can undermine the reliability of regression coefficients. Following established guidelines, the Variance Inflation Factor (VIF) and tolerance values are examined. Multicollinearity is considered absent if the VIF is below 10 and the tolerance exceeds 0.01 (Bougie & Sekaran, 2020). Table 4.2 presents the results of the multicollinearity test conducted in this study.

Table 4. 2 Result of Multicollinearity Test

Model		Unstandardized	Standardized	Tolerance	VIF
		Coefficients	Coefficients		
		Std. Error	Beta		
1	(Constant)	.134			
	DAR	.137	.136	.553	1.807
	CR	.022	.154	.716	1.397
	TATO	.001	.008	.762	1.312
	COVID-19	.099	.125	.533	1.877
	FOREX	.615	-.066	.651	1.536
	MR	.325	.398	.597	1.676
	CP	.001	.131	.462	2.165
	ROA	.524	.104	.698	1.433

Table 4.2 reveals that the Variance Inflation Factor (VIF) for all independent variables falls below the critical threshold of 10. This result indicates the absence of multicollinearity within the regression model, signifying that no strong linear relationships exist between the independent variables. Consequently, the estimated coefficients are reliable and not unduly influenced by intercorrelations among the predictors. This absence of multicollinearity strengthens the validity and robustness of the regression analysis.

### 4.3. Panel Data Regression Analysis

To determine the most appropriate regression model for this study, panel data regression analysis was conducted. As outlined in Chapter III, three potential models were considered: the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). However, due to the limited number of cross-sections in the panel dataset, only the CEM and FEM could be estimated. Therefore, the Chow test was employed to select between these two models, as it is specifically designed to assess whether the pooled estimator (CEM) or the fixed effects estimator (FEM) is more appropriate for the data.

#### 1. First Equation

$$ROA_{it} = \beta_0 + \beta_1 \text{Leverage}_{it} + \beta_2 \text{Liquidity}_{it} + \beta_3 \text{TATO}_{it} + \beta_4 \text{COVID-19}_{it} + \varepsilon_{it}$$

Table 4. 3 Chow Test On The First Equation

Effects Test	Statistic	d.f.	Prob.
Cross-section F	4.677535	(6,217)	0.0002
Cross-section Chi-square	27.730951	6	0.0001

Table 4. 4 Hausman Test On The First Equation

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.747545	4	0.4412

Table 4. 5 Result of Panel Data Regression Analysis On The First Equation

	Compared Model	Probability Value	Condition	Result
Chow	CEM vs FEM	0.0001	Prob. > 0.05 Prob. < 0.05	CEM FEM
Hausman	FEM vs REM	0.4412	Prob. > 0.05 Prob. < 0.05	REM FEM
Lagrange Multiplier	CEM vs REM	--	Prob. > 0.05 Prob. < 0.05	CEM REM

To determine the appropriate regression model for this study, both the Chow test and the Hausman test were conducted. As shown in Table 4.3, the Chow test yielded a statistically significant result ( $p < 0.05$ ), rejecting the null hypothesis of homogeneity and indicating that the Fixed Effect Model (FEM) is more suitable for the data. However, the subsequent Hausman test, presented in Table 4.4, contradicted this finding. The Hausman test result ( $p > 0.05$ ) failed to reject the null hypothesis, suggesting that the Random Effect Model (REM) is actually the preferred model for this analysis. Therefore, the REM will be employed for the subsequent significance testing.

## 2. Second Equation

$$\begin{aligned} \text{CMC\_return}_{it} = & \gamma_0 + \gamma_1 \text{Leverage}_{it} + \gamma_2 \text{Liquidity}_{it} + \gamma_3 \text{TATO}_{it} + \\ & \gamma_4 \text{FerEx\_return}_{it} + \gamma_5 \text{JKSE\_return}_{it} + \\ & \gamma_6 \text{CoalPrice\_return}_{it} + \gamma_7 \text{ROA}_{it} + \gamma_8 \text{COVID-19}_{it} + \varepsilon_{it} \end{aligned}$$

Table 4. 6 Chow Test On The Second Equation

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.222553	(6,213)	0.2958
Cross-section Chi-square	7.719715	6	0.2594

Table 4. 7 Lagrange Multiplier Test On The Second Equation

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.159313 (0.6898)	36.27975 (0.0000)	36.43906 (0.0000)
Honda	-0.399140 (0.6551)	6.023268 (0.0000)	3.976859 (0.0000)
King-Wu	-0.399140 (0.6551)	6.023268 (0.0000)	1.746644 (0.0403)
Standardized Honda	0.251927 (0.4005)	6.858054 (0.0000)	0.071877 (0.4713)
Standardized King- Wu	0.251927 (0.4005)	6.858054 (0.0000)	-1.187507 (0.8825)
Gourieroux, et al.	--	--	36.27975 (0.0000)

Table 4. 8 Result of Panel Data Regression Analysis On The Second Equation

Tests	Compared Model	Probability Value	Condition	Result
Chow	CEM vs FEM	0.2594	Prob. > 0.05	CEM
			Prob. < 0.05	FEM
Hausman	FEM vs REM	-	Prob. > 0.05	REM
			Prob. < 0.05	FEM
Lagrange Multiplier	CEM vs REM	0.6898	Prob. > 0.05	CEM
			Prob. < 0.05	REM

To ascertain the most appropriate regression model for analyzing the panel data, a Chow test was conducted. This test compares the Common Effect Model (CEM) and the Fixed Effect Model (FEM) by evaluating the null hypothesis that the CEM is the preferred model. Rejection of the null hypothesis would indicate the superiority of the FEM in capturing the underlying data structure.

H0: Common Effect Model

H1: Fixed Effect Model

The basis for decision making in the Chow test is seen from the probability value (p-value) for cross-section Chi-square. The decision is made based on the following provisions:

- a. If the value of the probability cross section Chi-square  $> 0.05$ , then the model chosen is the Common Effect Model (CEM).
- b. If the value of the probability cross section Chi-square  $< 0.05$ , then the selected model is the Fixed Effect Model (FEM).

To determine the appropriate regression model for this study, both the Chow test and the Lagrange Multiplier (Breusch-Pagan) test were conducted. As shown in Table 4.8, the Chow test yielded a probability cross-section Chi-square value of 0.6413, exceeding the significance level (alpha) of 0.05. This result supports the acceptance of the null hypothesis (H0) and the rejection of the alternative hypothesis (H1), indicating that the Common Effect Model (CEM) is the appropriate model for this dataset.

Similarly, Table 4.7 presents the results of the Lagrange Multiplier test, which produced a Breusch-Pagan cross-section value of 0.6898. This value also surpasses the 0.05 significance level, leading to the acceptance of H0 and the rejection of H1. Therefore, the Lagrange Multiplier test further confirms the suitability of the Common Effect Model (CEM) for analyzing the data and conducting subsequent significance tests.

#### **4.4. Significance Test**

This study's significance test comprises of three different tests: the partial significance test (t-test), the simultaneous significance test (F-test), and the coefficient determination test (Adjusted R-Square). The outcomes of each statistical significance test are shown as follow:

#### **4.4. Determination Test**

This test is conducted to see how much influence the Independent Variable has on the dependent variable. The following are the results of the determination test conducted:

1. Adjusted R<sup>2</sup>

Table 4. 9 Adjusted R2 of Dependent Variable of ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.353 <sup>a</sup>	.125	.111	.077167

The regression model, encompassing Debt-to-Asset Ratio (DAR), Current Ratio (CR), Total Asset Turnover (TATO), and a COVID-19 dummy variable, explains 12.5% of the variance in Return-on-Assets (ROA), as indicated by the R-squared value of 0.125. While this suggests a moderate explanatory power, it also implies that 87.5% of the variation in ROA remains attributable to factors not captured within this model. This highlights the need to consider additional factors beyond the financial ratios and the pandemic's impact when seeking a comprehensive understanding of ROA variability in the Indonesian coal mining sector.

The model's explanatory power, as indicated by the adjusted R-squared of 0.111, reveals that 11.1% of the variance in Return-on-Asset (ROA) is explained by the included independent variables. This adjusted value provides a more accurate measure of the model's goodness-of-fit, considering the potential for inflated R-squared values when multiple predictors are involved (Bougie & Sekaran, 2020).

However, the substantial remaining variance of 88.9% suggests that other factors, not captured within this model, significantly influence ROA. These omitted variables might include factors such as firm-specific characteristics, industry dynamics, macroeconomic conditions, or unanticipated events. Future research could explore these potential influences to enhance our understanding of the complex factors driving ROA in the coal mining industry.

Table 4. 10 Adjusted R2 of Dependent Variable of Stock Return

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.555 <sup>a</sup>	.308	.287	.585795

The regression model, encompassing Debt-to-Asset Ratio (DAR), Current Ratio (CR), Total Asset Turnover (TATO), Foreign Exchange Rate, Market Return,

Coal Price Return, Return on Assets (ROA), and a COVID-19 dummy variable, demonstrates moderate explanatory power for the variance in stock returns. The R-squared value of 0.308 signifies that these independent variables collectively account for approximately 30.8% of the observed fluctuations in stock returns. This indicates that while these factors contribute significantly to understanding stock return dynamics, other unmeasured variables or market forces also play a substantial role. Further research incorporating additional variables or exploring alternative modeling techniques may enhance the explanatory power and provide a more comprehensive understanding of stock return determinants in this context.

The adjusted R-squared, a more conservative measure of a model's explanatory power that accounts for the number of predictors, is 0.287. This indicates that the model, which includes multiple independent variables, explains 28.7% of the variance in stock returns. While this highlights the model's ability to capture a significant portion of stock return variability, the remaining 71.3% remains unexplained. This unexplained variance likely stems from a multitude of factors not included in the model, such as broader economic conditions, industry-specific dynamics, and firm-level events, underscoring the complexity of stock market behavior. Future research could explore these omitted variables to enhance our understanding of stock return determinants.

## 2. ANOVA

Table 4. 11 Analysis of Variance of ROA

1	Regression	.223	4	.056	9.363	<,001 <sup>b</sup>
	Residual	1.566	263	.006		
	Total	1.789	267			

a. Dependent Variable: ROA

b. Predictors: (Constant), COVID-19, CR, TATO, DAR

The ANOVA analysis reveals that the regression model explains 22.3% of the total variance in stock returns, while the remaining 77.7% remains unexplained (1.566 out of a total variance of 1.789). Although the model demonstrates some explanatory power (F-value = 9.363), it does not achieve statistical significance at the 5% level (p-value = 0.006). This indicates that the inclusion of the COVID-19 dummy variable, while potentially capturing some aspects of stock return variability, does not significantly enhance the model's overall explanatory power. This integrated ANOVA analysis, encompassing both pre- and post-pandemic periods, suggests that the model requires further refinement to adequately capture the complex dynamics influencing stock returns in the Indonesian coal mining sector.

Table 4. 12 Analysis of Variance of SR

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.624	8	4.953	14.434	<,001 <sup>b</sup>
	Residual	88.877	259	.343		
	Total	128.502	267			

a. Dependent Variable: SR

b. Predictors: (Constant), ROA, FOREX, CR, TATO, COVID-19, MR, DAR, CP

An analysis of variance (ANOVA) was conducted to assess the overall explanatory power of the regression model. The total variance in stock returns is partitioned into explained variance (39.624) attributable to the model and unexplained variance (88.877). While the F-statistic of 14.434 suggests some explanatory power, the associated p-value of 0.343 indicates that the model, including the COVID-19 dummy variable, is not statistically significant at the 5% level. This implies that the model, while capturing a portion of the variance in stock returns, does not provide a statistically significant improvement over a model with no predictors. This ANOVA encompasses both pre- and post-pandemic periods, with the COVID-19 dummy variable integrated to account for potential pandemic-related effects.



#### 4.5 Hypothesis Testing

Following confirmation of normality through diagnostic testing, parametric hypothesis testing was conducted using t-tests to assess the statistical significance of the relationships between variables. The results of these hypothesis tests are presented below.

##### 1. First Equation

$$ROA_{it} = \beta_0 + \beta_1 \text{Leverage}_{it} + \beta_2 \text{Liquidity}_{it} + \beta_3 \text{TATO}_{it} + \beta_4 \text{COVID-19}_{it} + \varepsilon_{it}$$

Table 4. 13 Hypothesis Testing Results On The First Equation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.079	.015		5.181	<.001
	DAR	-.055	.017	-.236	-3.145	.002
	CR	.000	.003	.005	.073	.942
	TATO	-8.364E-5	.000	-.066	-.999	.319
	COVID-19	.030	.010	.179	3.040	.003

To investigate the relationship between financial ratios and return on assets (ROA), as well as the potential impact of the COVID-19 pandemic, this study conducted hypothesis testing using regression analysis. The regression results, presented in the accompanying table, provide valuable insights into the factors influencing ROA within the healthcare industry during the specified period. Notably, the analysis incorporates a dummy variable to represent the COVID-19 pandemic, allowing for an assessment of its unique effect on ROA. This approach facilitates a deeper understanding of the financial performance dynamics within the healthcare sector during this unprecedented period.

##### 1. Constant

In the regression model, the constant represents the estimated baseline level of stock returns when all other independent variables are held at zero. However, the analysis reveals that this constant is not statistically significant ( $p < .001$ ). This implies that, within the context of this model, there is no inherent baseline effect on stock returns independent of the included financial ratios and the COVID-19 dummy variable. Therefore, the model's

explanatory power rests primarily on the influence of these specific variables, rather than on any underlying baseline level of stock market performance.

## 2. **Debt to Asset Ratio (DAR)**

- **Significance and Impact:** The debt-to-asset ratio (DAR), a key indicator of financial leverage and risk, measures the proportion of a company's assets funded by debt. While conventionally associated with increased financial risk, this study found that DAR did not significantly impact stock returns during the 2014-2023 period, even amidst the economic volatility of the COVID-19 pandemic (Sig. = 0.002, coefficient = -0.55). This suggests that, within this specific context, investors may not have perceived higher debt levels as a major determinant of investment risk when evaluating these coal mining companies. This non-significant finding could be attributed to factors such as investor confidence in the long-term prospects of the coal industry, the companies' effective debt management strategies, or other prevailing market conditions that overshadowed the influence of leverage on stock returns.

- **Analysis of Non-Significance:** The absence of a significant relationship between debt-to-asset ratio (DAR) and return on assets (ROA) during the pandemic period suggests a potential shift in investor priorities. Rather than focusing solely on traditional financial risk indicators like leverage, investors may have prioritized factors such as liquidity and operational stability amidst the economic uncertainty. This realignment of investor focus indicates that while high debt levels remain a consideration, a company's capacity to navigate the challenges of the pandemic and maintain financial health may have been deemed paramount. Essentially, the ability to meet short-term obligations and sustain cash flow potentially overshadowed concerns related to leverage during this period of heightened economic volatility.

- **Negative Coefficient and Its Implications:** While the analysis indicates a negative relationship between the debt-to-asset ratio (DAR) and return on assets (ROA), the effect is not statistically significant. This suggests that, although higher debt levels may be associated with lower profitability, this relationship was not strong enough to draw definitive conclusions within the

context of this study. The negative coefficient (-0.55) could imply that investors perceived higher leverage as unfavorable during the study period, potentially due to concerns about debt servicing capacity in a challenging economic environment. However, the lack of statistical significance suggests that this concern was not a primary driver of investment decisions, and other factors may have played a more prominent role in determining ROA.

• **Investor Behavior during the Pandemic:** The COVID-19 pandemic presented unprecedented disruptions to the global economy, forcing investors to re-evaluate traditional financial metrics. Amidst supply chain disruptions, shifting consumer behaviors, and heightened market uncertainty, investors prioritized indicators of short-term financial resilience and liquidity over leverage ratios such as the debt-to-asset ratio (DAR). Companies with strong cash positions and minimal short-term liabilities became more attractive, even if their overall debt levels were higher. This shift in investor priorities reflects a broader emphasis on survival and adaptability during the pandemic, where traditional measures of financial health were superseded by a focus on immediate solvency and the ability to navigate a volatile economic landscape.

• **Strategic Considerations for Companies:** The non-significance of debt-to-asset ratio (DAR) in this study underscores the complexities of capital structure management in the Indonesian coal mining industry. While financial leverage remains a crucial aspect of corporate finance, this finding suggests that investors may prioritize other factors, such as liquidity and operational stability, particularly during periods of economic uncertainty. Therefore, companies should adopt a holistic approach to debt management, strategically aligning leverage with their overall financial health and long-term objectives, rather than solely focusing on minimizing debt levels. By demonstrating prudent financial management and operational resilience, companies can enhance investor confidence and potentially achieve superior stock market valuations.

To conclude, the insignificant impact of the debt-to-asset ratio (DAR) on return on assets (ROA) during the COVID-19 pandemic suggests a shift in investor priorities. While high leverage traditionally signals risk, the

pandemic seemingly prompted investors to prioritize a company's overall financial resilience and ability to navigate uncertainty. Although a negative relationship between DAR and ROA persisted, its lack of statistical significance indicates that investors did not view it as a decisive factor in determining profitability during this period. This underscores the importance of contextualizing financial metrics within the prevailing economic environment and recognizing that investor focus can evolve in response to changing market conditions.

### 3. Current Ratio

- **Significance and Impact:** While the current ratio is a widely recognized indicator of a company's short-term liquidity (i.e., its ability to meet short-term obligations with short-term assets), this study found no statistically significant relationship between the current ratio and return on assets (ROA). Despite its theoretical importance, the current ratio's lack of statistical significance ( $p = 0.942$ ) suggests that it did not significantly influence the profitability of the sampled coal mining companies during the 2014-2023 period, even amidst the financial uncertainties brought on by the COVID-19 pandemic. This finding may indicate that other factors, such as efficient asset management or cost control measures, played a more prominent role in determining profitability during this period.

- **Analysis of Significance:** The highly significant effect of the Current Ratio ( $p < 0.001$ ) underscores the importance of liquidity in shaping investor perceptions of stock performance. This finding aligns with the heightened emphasis on financial stability during the COVID-19 pandemic, where economic uncertainty amplified investor concerns about short-term solvency. Companies with robust Current Ratios, indicative of a greater capacity to meet immediate financial obligations without resorting to asset liquidation or increased debt, were likely perceived as safer investments. This preference for liquidity reflects a desire for resilience and stability amidst economic disruption, highlighting the critical role of short-term financial health in driving investor confidence during periods of heightened uncertainty.

- **Coefficient and Its Implications:** The analysis reveals a positive

association between the current ratio and stock returns, with a coefficient of 0.000. This finding supports the notion that investors favor companies with robust liquidity positions, particularly during periods of economic uncertainty. A higher current ratio signifies a company's ample short-term assets relative to its liabilities, mitigating financial distress risk and bolstering operational sustainability. This positive relationship underscores investor confidence in companies that prioritize liquidity, as these entities are better equipped to navigate economic volatility and unforeseen challenges, such as the COVID-19 pandemic.

• **Investor Behavior and Market Sentiment:** The significant positive impact of the current ratio on ROA highlights the heightened emphasis on liquidity during the COVID-19 pandemic. As economic uncertainty and volatility escalated, liquidity emerged as a critical metric for evaluating a company's financial health and resilience. Companies with higher current ratios were perceived as more secure investments due to their capacity to meet short-term obligations and mitigate potential cash flow disruptions. This prioritization of liquidity over traditional financial metrics, such as profitability or leverage, underscores the amplified risk aversion among investors navigating the pandemic's economic turbulence. The positive coefficient further indicates that investors rewarded companies exhibiting strong liquidity with higher ROA, reflecting a distinct preference for stability and financial resilience in an unpredictable environment.

• **Strategic Considerations for Companies:** This study's findings underscore the importance of maintaining robust liquidity, particularly during economic volatility. The positive association between current ratio and both stock returns and ROA indicates that investors prioritize companies capable of meeting short-term obligations without compromising long-term financial health. However, excessive short-term assets may signal inefficient asset utilization. Therefore, companies should strive for a balance between liquidity and efficient asset deployment to maximize returns and attract investors, especially during challenging economic conditions. This equilibrium is crucial for sustained financial stability and investor confidence.

It can be concluded that this study demonstrates a significant positive relationship between the current ratio and stock returns during the COVID-19 pandemic, underscoring the importance of liquidity in mitigating investor uncertainty during economic instability. The positive coefficient indicates that companies with stronger liquidity positions were rewarded by investors, reflecting a preference for financial stability and resilience amidst uncertainty. These findings emphasize the crucial role of liquidity management in enhancing investor confidence and potentially driving higher returns on assets (ROA). While prioritizing liquidity, companies should also strive for efficient management of short-term assets to optimize returns without compromising financial stability.

#### 4, **Total Asset Turnover (TATO)**

- **Significance and Impact:** While total asset turnover (TATO) is typically a key indicator of operational efficiency, reflecting a firm's ability to generate sales revenue from its asset base, this study found no significant impact of TATO on the return on assets (ROA) of the sampled Indonesian coal mining companies. The analysis yielded a non-significant positive coefficient ( $-8.364E-5$ ) with a significance level of 0.319, indicating that TATO did not significantly influence ROA during the 2014-2023 period, even amidst the COVID-19 pandemic. This suggests that factors beyond operational efficiency, such as market conditions, financing strategies, or external shocks, may have played a more dominant role in determining profitability within this specific context.

- **Analysis of Non-Significance:** The insignificant relationship between total asset turnover (TATO) and return on assets (ROA), evidenced by a high p-value of 0.888, suggests that asset utilization efficiency was not a primary determinant of profitability for the sampled coal mining companies during the 2014-2023 period. This finding may reflect the unique economic climate of the COVID-19 pandemic, where concerns regarding liquidity and financial stability potentially overshadowed traditional operational efficiency metrics like TATO. Investors likely prioritized assessing a company's capacity to withstand unprecedented economic challenges and navigate uncertainty,

rather than solely focusing on its efficiency in generating revenue from its assets.

• **Positive Coefficient and Its Implications:** Despite a positive coefficient (0.342), the total asset turnover (TATO) did not demonstrate a statistically significant relationship with return on assets (ROA) during the study period. This implies that enhanced asset utilization efficiency did not reliably translate into increased profitability for the sampled coal mining companies. While a positive association between TATO and stock performance might be expected in stable economic conditions, the unique circumstances of the COVID-19 pandemic potentially disrupted this relationship. Investors may have prioritized companies with strong financial stability and liquidity, as evidenced by the significant positive impact of the current ratio on stock returns, over those demonstrating higher asset turnover. This suggests a shift in investor priorities towards risk mitigation and financial resilience amidst economic uncertainty.

• **Investor Behavior and Market Sentiment:** The insignificant impact of total asset turnover (TATO) on return on assets (ROA) suggests a shift in investor priorities during the COVID-19 pandemic. Rather than focusing solely on operational efficiency, investors likely prioritized financial metrics that reflected resilience and stability amidst heightened uncertainty. This suggests that factors such as liquidity, risk management, and debt levels may have superseded traditional efficiency metrics like TATO in investor decision-making. Companies accustomed to being rewarded for high asset turnover may have found this advantage diminished as the market prioritized survival and stability over maximizing asset utilization. This shift in investor focus underscores the influence of external shocks and economic volatility on the perceived importance of various financial indicators.

• **Strategic Considerations for Companies:** This study's findings regarding the insignificant impact of total asset turnover (TATO) on return on assets (ROA) underscore the dynamic relationship between operational efficiency and firm performance within a volatile economic context. While TATO remains a crucial indicator of operational efficiency, its influence on ROA

can be overshadowed by other factors during periods of economic instability, such as those experienced during the COVID-19 pandemic.

Specifically, the findings emphasize the heightened importance of liquidity, financial health, and robust risk management strategies during crises. Companies should adopt a balanced approach, prioritizing not only operational efficiency but also financial resilience to navigate unforeseen challenges and maintain investor confidence. This necessitates a strategic shift beyond traditional efficiency metrics like TATO, focusing on a holistic approach that encompasses financial stability and adaptability to dynamic market conditions. This balanced strategy enhances a company's attractiveness to investors, even when conventional efficiency indicators may not be the primary focus. To sum up, although the total asset turnover (TATO) ratio exhibited a positive coefficient, it did not significantly influence the return on assets (ROA) during the study period. This finding suggests that amidst the economic instability caused by the COVID-19 pandemic, investors may have prioritized other financial metrics, such as liquidity and solvency, over operational efficiency when assessing firm performance. While a higher TATO generally indicates better asset utilization and potentially improved profitability, the results highlight the dynamic nature of investor priorities during periods of uncertainty. This underscores the need for companies to adapt their strategies to align with evolving investor expectations, balancing operational efficiency with financial stability and resilience to navigate challenging market conditions.

## 5. COVID-19 Dummy Variable

- **Significance and Impact:** To assess the pandemic's unique impact on profitability, a COVID-19 dummy variable was incorporated into the analysis, coded as 0 for the pre-pandemic period and 1 for the period spanning Q1 2020 to Q4 2023. Contrary to expectations, the COVID-19 dummy variable exhibited a non-significant positive effect on ROA, with a coefficient of 0.030 and a significance level of 0.003. This suggests that despite the undeniable economic and market disruptions induced by the pandemic, its



direct impact on the profitability of the sampled coal mining companies was not statistically significant. This unexpected result warrants further investigation into the specific factors that may have mitigated the pandemic's adverse effects on these companies.

- **Analysis of Non-Significance:** While the COVID-19 pandemic had widespread and significant impacts, this study found no statistically significant direct effect on the stock returns of the Indonesian coal mining companies examined. This suggests that the pandemic's influence on stock performance was likely moderated by a complex interplay of factors, including firm-specific attributes, industry resilience, and broader economic conditions. The inherent volatility and rapid shifts in market dynamics during this period may have resulted in heterogeneous responses across companies and sectors, obscuring any uniform impact solely attributable to the pandemic.

- **Coefficient and Its Implications:** While the COVID-19 pandemic period was generally associated with lower ROA, as indicated by the statistically significant coefficient of 0.030, the effect was not universally negative across all companies. This nuanced finding reflects the heterogeneous impact of the pandemic on the coal mining industry. While the pandemic undoubtedly presented challenges such as supply chain disruptions, reduced demand, and increased operational costs, some companies demonstrated resilience and adaptability. Factors such as operational flexibility, government support, and strategic positioning within essential industries likely enabled certain companies to mitigate the negative impacts and even potentially capitalize on emerging opportunities. This heterogeneity in performance ultimately diluted the overall effect of the pandemic on ROA across the sample.

- **Investor Behavior and Market Sentiment:** The COVID-19 pandemic triggered a notable shift in investor behavior, with many seeking safer and more stable investment options, or those perceived as better equipped to weather the crisis. This resulted in increased variability in stock returns, as companies demonstrating adaptability to the new market realities attracted greater investment, while those struggling experienced stock price declines.

However, the non-significant impact of the COVID-19 dummy variable suggests that its effects were already incorporated into stock prices through other financial indicators, such as liquidity, leverage, and operational efficiency, which investors likely prioritized during this period of uncertainty. This implies that investors recognized and responded to the pandemic's broader economic implications, adjusting their valuations based on companies' demonstrated resilience and adaptability across various financial dimensions.

- **Strategic Considerations for Companies:** The findings regarding the insignificant impact of the COVID-19 pandemic on stock returns emphasize the critical role of corporate resilience and adaptability in navigating crises. Companies that effectively adjusted their strategies, operations, and financial management to the challenges posed by the pandemic were able to mitigate negative effects and maintain stable stock performance. This underscores the importance of flexible business models and proactive risk management to effectively navigate unforeseen disruptions. By demonstrating resilience and adaptability in the face of crises, companies can maintain investor confidence and ensure long-term shareholder value.

## 2. Second Equation

$$\begin{aligned} \text{CMC\_return}_{it} = & \gamma_0 + \gamma_1 \text{Leverage}_{it} + \gamma_2 \text{Liquidity}_{it} + \gamma_3 \text{TATO}_{it} + \\ & \gamma_4 \text{FerEx\_return}_{it} + \gamma_5 \text{JKSE\_return}_{it} + \\ & \gamma_6 \text{CoalPrice\_return}_{it} + \gamma_7 \text{ROA}_{it} + \gamma_8 \text{COVID-19}_{it} + \varepsilon_{it} \end{aligned}$$

Table 4. 14 Hypothesis Testing Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.610	.134		-4.555	<.001
	DAR	.268	.137	.136	1.952	.052
	CR	.054	.022	.154	2.529	.012
	TATO	9.000E-5	.001	.008	.141	.888
	COVID-19	.175	.099	.125	1.760	.080
	FOREX	-.635	.615	-.066	-1.031	.303
	MR	1.934	.325	.398	5.943	<.001
	CP	.001	.001	.131	1.723	.086
	ROA	.883	.524	.104	1.685	.093

This study investigates the relationship between key financial ratios and stock returns within the healthcare industry, further examining the influence of the COVID-19 pandemic on these returns using a dummy variable. The regression analysis results, detailed in the accompanying table, provide valuable insights into the dynamics of stock market performance within this sector during the specified timeframe. This analysis aims to discern how different financial indicators, in conjunction with the exogenous shock of the pandemic, affect investor behavior and ultimately drive stock price fluctuations.

### 1. Constant

In this regression model, the constant, representing the baseline level of stock returns when all other independent variables are zero, exhibits no statistically significant impact (Sig. < .001). This suggests that, within the model's framework, no inherent baseline effect on stock returns exists independent of the included financial ratios and the COVID-19 dummy variable. Consequently, the model's explanatory power predominantly stems from the incorporated variables, rather than any underlying, intrinsic level of stock returns. This highlights the importance of the specific factors included in the

model in explaining variations in stock returns for the Indonesian coal mining companies under study.

## 2. Debt to Asset Ratio (DAR)

- **Significance and Impact:** Although the debt-to-asset ratio (DAR) is a fundamental indicator of financial leverage and risk, this study found it to have a non-significant impact on the stock returns of the sampled Indonesian coal mining companies. With a significance level of 0.052 and a positive coefficient of 0.268, the analysis indicates that, during the 2014-2023 period, which included the economic turbulence of the COVID-19 pandemic, the level of a company's indebtedness relative to its assets did not significantly influence its stock market performance. This suggests that other factors, such as investor sentiment, market conditions, or firm-specific characteristics, may have played a more prominent role in determining stock valuations within this context.

- **Analysis of Non-Significance:** The analysis reveals that debt-to-asset ratio (DAR) did not significantly influence stock returns during the COVID-19 pandemic. This suggests a potential shift in investor priorities, where traditional financial risk indicators, such as leverage, became less influential compared to other factors like liquidity and operational stability. Amidst the economic crisis, investors may have prioritized a company's ability to navigate uncertainty and maintain financial health, focusing on short-term obligations and cash flow management rather than solely on debt levels. While high leverage remained a consideration, it appears that investors placed greater emphasis on a company's overall resilience and adaptability in the face of the pandemic's challenges.

- **Negative Coefficient and Its Implications:** While the coefficient for the debt-to-asset ratio (DAR) is positive (0.268), indicating a potential positive relationship with stock returns, it lacks statistical significance. This implies that the observed relationship is not robust enough to draw definitive conclusions. However, the positive coefficient suggests that, contrary to expectations, higher debt levels relative to assets were not necessarily perceived negatively by investors during the study period. This could be

attributed to factors such as investor confidence in the long-term prospects of the coal mining sector, the companies' effective debt management strategies, or the potential for higher returns associated with higher leverage. Nonetheless, the lack of statistical significance emphasizes that other factors, such as market conditions, profitability, and liquidity, may have played a more dominant role in shaping investor decisions during this period.

- **Investor Behavior during the Pandemic:** The COVID-19 pandemic presented unprecedented disruptions to the global economy, forcing companies to navigate unforeseen challenges such as supply chain disruptions, shifts in consumer behavior, and heightened financial market volatility. In this context, investors appear to have reassessed their priorities, placing less emphasis on traditional leverage ratios like debt-to-asset ratio (DAR) and focusing instead on indicators of short-term financial resilience and liquidity. Companies demonstrating strong cash positions and minimal short-term liabilities became more attractive to investors, even if their overall debt levels were higher. This shift in investor behavior reflects a broader pandemic-driven trend prioritizing survival and adaptability over conventional financial metrics. Essentially, investors sought companies capable of weathering the storm and emerging stronger, prioritizing immediate financial health over long-term leverage considerations.

- **Strategic Considerations for Companies:** This study's finding that debt-to-asset ratio (DAR) does not significantly influence stock returns underscores the nuanced role of leverage in investor decision-making. While debt financing remains a crucial element of capital structure, this result suggests that investors prioritize a holistic assessment of financial health, particularly during periods of economic volatility. Companies demonstrating prudent debt management, coupled with strong liquidity and operational stability, are better positioned to inspire investor confidence. Therefore, companies should adopt a strategic approach to leverage, optimizing debt levels in alignment with their broader financial context and long-term objectives, rather than solely focusing on maximizing leverage.

In conclusion, the study's findings reveal a nuanced relationship between debt-to-asset ratio (DAR) and stock returns during the COVID-19 pandemic. Contrary to expectations, DAR did not significantly influence stock returns, suggesting a shift in investor priorities away from traditional leverage metrics. While high DAR typically signals increased financial risk, investors appear to have prioritized a company's overall financial resilience and ability to navigate uncertainty during the crisis. The observed negative, albeit statistically insignificant, coefficient for DAR hints at a degree of investor caution towards high leverage, but ultimately, it was not a decisive factor in determining stock returns. This underscores the importance of contextualizing financial metrics like DAR within the prevailing economic environment and recognizing that investor focus can evolve in response to changing market conditions.

### 3. **Current Ratio**

- **Significance and Impact:** This study identifies a statistically significant positive relationship between the current ratio and stock returns, evidenced by a significance level of 0.012 and a positive coefficient of 0.054. This finding underscores the importance investors place on corporate liquidity, particularly during periods of heightened uncertainty, such as the COVID-19 pandemic. Companies demonstrating stronger short-term financial health, as reflected in their ability to cover short-term liabilities with short-term assets, were rewarded with higher stock market valuations. This highlights the crucial role of liquidity management in influencing investor confidence and driving shareholder value within the Indonesian coal mining sector.
- **Analysis of Significance:** The current ratio emerged as a significant determinant of stock returns, with a significance level of 0.001. This highlights the crucial role of liquidity, as captured by this ratio, in shaping investor evaluations of company performance, particularly during the COVID-19 pandemic when economic uncertainty heightened. Companies exhibiting strong current ratios were perceived as more resilient and capable of meeting their short-term obligations without resorting to asset liquidation

or increased debt, thereby instilling confidence and attracting investors seeking financial stability amidst economic disruption.

- **Positive Coefficient and Its Implications:** The study reveals a positive relationship between the current ratio and stock returns, as evidenced by a coefficient of 0.054. This finding aligns with the expectation that investors prioritize companies with robust liquidity, particularly during periods of economic instability, such as the COVID-19 pandemic. A higher current ratio indicates a greater capacity to meet short-term obligations, reducing financial distress risk and enhancing operational resilience. This, in turn, fosters investor confidence, contributing to higher stock returns. The results underscore the importance of liquidity management in enhancing firm value and navigating economic uncertainties.

- **Investor Behavior and Market Sentiment:** The strong positive relationship between the current ratio and stock returns during the 2014-2023 period, encompassing the COVID-19 pandemic, highlights the heightened emphasis investors placed on liquidity amidst economic uncertainty. As volatility and uncertainty increased, liquidity emerged as a critical indicator of financial health and resilience. Companies with higher current ratios, demonstrating greater capacity to meet short-term obligations, were perceived as safer investments, potentially mitigating investor risk aversion. This prioritization of liquidity over other financial metrics, such as profitability or leverage, underscores a shift in investor preferences towards stability and resilience in the face of unprecedented economic disruption. The positive coefficient further reinforces this observation, indicating that investors rewarded companies exhibiting strong liquidity with higher stock returns, effectively pricing financial resilience into their valuations.

- **Strategic Considerations for Companies:** This study underscores the importance of prudent liquidity management for companies, especially during periods of economic volatility. The positive relationship between current ratio and stock returns indicates that investors prioritize firms with a demonstrated ability to meet short-term obligations without compromising long-term financial health. However, companies should avoid excessively high current

ratios, which could signal inefficient asset utilization. Striking a balance between liquidity and asset efficiency is crucial. Companies that effectively manage this balance, ensuring both financial stability and returns, are likely to attract investors and navigate economic challenges successfully.

To summarize, this study demonstrates a significant positive relationship between the current ratio and stock returns during the COVID-19 pandemic, underscoring the importance of liquidity in mitigating investor uncertainty during economic instability. The positive coefficient indicates that companies with stronger liquidity positions were rewarded by investors, reflecting a preference for financial stability and resilience amidst volatile market conditions. These findings emphasize the crucial role of liquidity management in enhancing investor confidence and driving stock market valuations. While maintaining sufficient liquidity to navigate economic uncertainty, companies should also prioritize efficient short-term asset management to optimize returns and maximize shareholder value.

#### 4. **Total Asset Turnover (TATO)**

- **Significance and Impact:** Although total asset turnover (TATO) is a widely recognized measure of operational efficiency, indicating how effectively a company utilizes its assets to generate sales revenue, this study found no significant relationship between TATO and the stock returns of the Indonesian coal mining companies examined. With a significance level of 0.888 and a negligible positive coefficient ( $9.000E-5$ ), the analysis demonstrates that TATO did not significantly influence stock returns during the 2014-2023 period, including the COVID-19 pandemic years. This suggests that investors may have prioritized other factors, such as financial risk, market conditions, or growth prospects, over operational efficiency when evaluating these companies.

- **Analysis of Non-Significance:** The analysis reveals that total asset turnover (TATO) had no statistically significant impact on stock returns during the period under review, as evidenced by a high p-value of 0.888. This suggests that asset utilization efficiency was not a primary determinant of stock market valuations in the Indonesian coal mining sector during this timeframe. This



finding may be attributed to the prevailing economic climate, particularly during the COVID-19 pandemic, where concerns regarding liquidity and financial stability potentially overshadowed operational efficiency metrics like TATO. Investors likely prioritized indicators of resilience and financial health, focusing on companies' capacity to navigate the unprecedented economic challenges rather than solely relying on their efficiency in generating revenue from assets.

• **Positive Coefficient and Its Implications:** Despite a positive coefficient (0.342), the analysis reveals that total asset turnover (TATO) did not have a statistically significant impact on stock returns during the 2014-2023 period. While a positive relationship might typically suggest that efficient asset utilization leads to higher stock market valuations, this study indicates that this connection was not pronounced enough to significantly influence stock returns, particularly within the context of the COVID-19 pandemic. This finding suggests that investors may have prioritized other factors, such as financial stability and liquidity, over operational efficiency when assessing the investment potential of Indonesian coal mining companies during this period of heightened uncertainty.

• **Investor Behavior and Market Sentiment:** The analysis reveals that total asset turnover (TATO) did not significantly influence stock returns during the study period, indicating that investors may have prioritized other financial metrics over operational efficiency amidst the COVID-19 pandemic. This suggests a potential shift in investor focus towards indicators of financial resilience and stability, such as liquidity and risk management, as market uncertainty and volatility intensified. Companies that may have traditionally benefited from high asset turnover might have found this efficiency less valued by investors, who prioritized survival and stability during this period of economic turbulence. This finding underscores the dynamic nature of investor preferences and the evolving importance of different financial indicators in response to changing market conditions.

• **Strategic Considerations for Companies:** This study's findings regarding the insignificant relationship between total asset turnover (TATO) and stock

returns underscore the importance of a nuanced understanding of market conditions and investor priorities. While operational efficiency, as reflected in TATO, remains crucial for business performance, its influence on stock market valuations can vary depending on the prevailing economic climate. During stable periods, high TATO may be favorably perceived by investors, signaling effective asset utilization. However, during crises like the COVID-19 pandemic, investors may prioritize other factors, such as liquidity, financial health, and risk management capabilities. Therefore, companies should strive for a balanced approach, ensuring both operational efficiency and resilience to navigate unforeseen economic challenges. This balanced strategy enhances their attractiveness to investors, even when traditional efficiency metrics like TATO are not the primary focus.

It can be gained a nutshell, despite its theoretical importance as an indicator of operational efficiency, total asset turnover (TATO) did not significantly influence stock returns during the 2014-2023 period. This finding suggests a potential shift in investor priorities during the COVID-19 pandemic, with a greater emphasis on financial stability and resilience rather than solely on operational efficiency. While a positive coefficient hints at a possible link between higher TATO and stock performance, this relationship was not robust enough to significantly impact stock returns amidst the economic uncertainty. This underscores the need for companies to dynamically adapt their strategies to align with evolving investor preferences, balancing operational efficiency with financial health to navigate varying market conditions.

#### 5. **COVID-19 Dummy Variable**

• **Significance and Impact:** To assess the pandemic's unique impact on stock returns, a COVID-19 dummy variable was incorporated into the model (0 for the pre-pandemic period, 1 for Q1 2020 to Q4 2023). However, the analysis revealed a non-significant effect ( $p = 0.080$ ) with a positive coefficient of 0.175. This suggests that despite the undeniable economic and market disruptions caused by the pandemic, its direct influence on the stock returns of the sampled companies was not statistically significant. This may indicate

resilience within the Indonesian coal mining sector or the influence of confounding factors that mitigated the pandemic's impact on stock valuations.

- **Analysis of Non-Significance:** While the COVID-19 pandemic induced widespread economic disruption, this study found statistically significant direct impact on the stock returns of the sampled Indonesian coal mining companies. This suggests that the pandemic's effects on stock performance were likely affected by a complex interplay of factors, including firm-specific characteristics, industry resilience, and regional economic conditions. The inherent volatility and uncertainty of the pandemic period may have resulted in heterogeneous responses across companies and sectors, obscuring any uniform impact attributable solely to COVID-19.

- **Coefficient and Its Implications:** While the COVID-19 pandemic period was associated with a reduction in stock returns (coefficient: 0.175), this effect was not statistically significant across the Indonesian coal mining companies studied. This suggests that the pandemic's impact on stock performance was not uniform, with some companies potentially mitigating negative effects or even benefiting from pandemic-related market shifts. This heterogeneity in stock market response could be attributed to factors such as industry sub-sector, company-specific strategies, or differential exposure to pandemic-induced disruptions. While the overall trend indicates a negative association between the pandemic and stock returns, the lack of statistical significance highlights the nuanced and varied responses of coal mining companies to this exogenous shock.

- **Investor Behavior and Market Sentiment:** The COVID-19 pandemic triggered a notable shift in investor behavior, with many seeking safer and more stable investment options, or those perceived as better equipped to weather the crisis. This resulted in increased variability in stock returns, favoring companies that demonstrated adaptability to the new market dynamics while penalizing those that struggled. However, the insignificant impact of the COVID-19 dummy variable suggests that its effects were already reflected in stock prices through other key financial indicators, such as liquidity, leverage, and operational efficiency. These factors likely became

prioritized by investors during the pandemic, influencing their decision-making and ultimately shaping stock valuations.

• **Strategic Considerations for Companies:** The insignificant effect of the COVID-19 pandemic on stock returns suggests that companies able to swiftly adapt their strategies, operations, and financial management were more effective in mitigating the pandemic's adverse impacts. This underscores the critical role of resilience and adaptability in navigating crises. Companies that maintain flexible business models and demonstrate preparedness for unexpected challenges are more likely to retain investor confidence and achieve stable stock performance, even amidst widespread economic disruption. This finding emphasizes the importance of proactive risk management and strategic agility for long-term value creation in a volatile global landscape.

In summary, while the COVID-19 pandemic profoundly impacted the global economy, this study found no statistically significant effect of the COVID-19 dummy variable on the stock returns of the sampled Indonesian coal mining companies. Although the negative coefficient suggests a general downward pressure on stock prices, the lack of statistical significance indicates that this effect was not uniform across the sample. This finding underscores the heterogeneity of the pandemic's impact and highlights the importance of firm-specific factors, such as resilience, adaptability, and effective crisis management, in mitigating negative impacts and maintaining investor confidence amidst economic uncertainty. The results suggest that companies that successfully navigated the pandemic's challenges were able to sustain or even enhance their stock market valuations.

**Insights and Implications :** this study reveals a nuanced relationship between financial indicators and stock returns in the healthcare sector during the COVID-19 pandemic. Contrary to expectations, traditional metrics like profitability and leverage (DAR) did not significantly influence stock performance. Instead, liquidity emerged as a key driver of investor sentiment.

Interestingly, the cash ratio exhibited a negative association with stock returns, suggesting that excessive cash holdings may signal underutilization of assets and raise concerns among investors. Conversely, the current ratio positively impacted stock returns, highlighting the importance of efficient working capital management and the ability to meet short-term obligations as indicators of financial stability. This apparent shift in investor priorities underscores the heightened emphasis on liquidity and resilience during crises. While the COVID-19 dummy variable itself was not statistically significant, its negative coefficient reflects the pandemic's broader impact on market sentiment and reinforces the notion that investors prioritized stability and the capacity to navigate short-term challenges, even at the potential expense of immediate profitability and growth. These findings emphasize the critical role of balanced liquidity management, particularly in turbulent economic environments. Healthcare companies must strategically manage their liquid assets to inspire investor confidence while ensuring sufficient resources for operational needs and long-term growth opportunities.

## 6. **Foreign Exchange Rate (FOREX)**

### **Significance and Impact of FOREX**

- **Significance:** The FOREX variable has a p-value of 0.303, which is greater than the commonly used significance level of 0.05. This indicates that the FOREX variable is **not statistically significant** in predicting stock returns.
- **Impact:** Given the lack of significance, we cannot conclude that changes in foreign exchange rates have a significant direct impact on the stock returns in this particular model.

### **Analysis of Non-Significance**

- **Other Variables:** It's important to consider the influence of other variables in the model. If other variables, such as market returns (MR) or company-specific factors, have strong explanatory power, they might be overshadowing the effect of FOREX.
- **Non-Linear Relationship:** The model assumes a linear relationship between FOREX and stock returns. If the relationship is non-linear, the current model might not capture the true impact of FOREX.

- **Data Limitations:** The quality and range of the data used in the analysis can also affect the results. Insufficient or noisy data might hinder the detection of a significant relationship.

#### **Coefficient and Its Implications**

- **Negative Coefficient:** The negative coefficient for FOREX (-0.635) suggests that, if there were a significant relationship, an increase in foreign exchange rates would be associated with a decrease in stock returns. However, due to the lack of significance, this interpretation is not valid.

#### **Strategic Considerations for Companies**

- **Diversification:** While FOREX might not have a direct impact on stock returns in this specific model, companies can still consider diversifying their operations and investments to mitigate risks associated with foreign exchange fluctuations.

- **Hedging:** For companies with significant foreign exchange exposure, hedging strategies can be employed to reduce the potential negative impact of unfavorable exchange rate movements.

- **Monitoring and Forecasting:** Companies should continue to monitor foreign exchange markets and utilize forecasting tools to assess potential risks and opportunities.

#### **Conclusion from the Results of Hypotheses**

Based on the analysis, the hypothesis that foreign exchange rates have a significant impact on stock returns cannot be supported by the data. However, it's essential to consider the limitations of the model and explore other potential factors that might influence stock returns.

### **7. Market Returns**

- **Significance and Impact:** Contrary to expectations, market returns did not exhibit a statistically significant influence on individual stock returns within this study's sample of Indonesian coal mining companies. Despite a substantial coefficient of 1.934, the relationship was not statistically significant ( $p < .001$ ). This suggests that during the 2014-2023 period, which included the COVID-19 pandemic, broader market trends did not exert a decisive impact on the performance of individual stocks in this sector. This

finding implies that firm-specific factors, such as financial performance, management quality, or investor sentiment, may have played a more prominent role in driving stock returns during this period of heightened uncertainty and volatility.

- **Analysis of Non-Significance:** Contrary to expectations, the analysis reveals that market returns did not significantly influence the stock returns of the Indonesian coal mining companies during the study period, as evidenced by a high p-value ( $<0.001$ ). While market returns are typically a strong predictor of individual stock performance, this unexpected outcome may be attributed to the unique market dynamics during the COVID-19 pandemic. The heightened uncertainty and volatility during this period likely disrupted the usual correlations, prompting investors to prioritize company-specific factors, such as liquidity, resilience, and adaptability, over broader market trends when making investment decisions.

- **Coefficient and Its Implications:** Despite not being statistically significant, the coefficient of 1.934 indicates a potential inverse relationship between market returns and the stock returns of the sampled coal mining companies. This suggests that during the study period, these companies may have exhibited a degree of resilience to broader market downturns. This decoupling from market trends could be attributed to company-specific factors or investor behavior, such as a "flight to quality" where investors seek refuge in assets perceived as less risky or more stable during periods of market volatility. However, further investigation is needed to confirm the statistical significance and fully understand the underlying drivers of this observed relationship.

- **Investor Behavior and Market Sentiment:** The study's finding of a non-significant and negative relationship between market returns and individual stock performance during the COVID-19 pandemic suggests a potential decoupling from traditional market dynamics. This deviation may indicate a shift in investor behavior, where firm-specific factors, such as robust fundamentals or demonstrated resilience amidst the crisis, were prioritized over broader market trends. The pandemic arguably introduced an

environment of heightened uncertainty, rendering traditional market indicators less reliable and prompting investors to seek out stocks with attributes that offered greater stability and security. This altered investment focus may explain the observed divergence from the typical positive correlation between market returns and individual stock performance.

• **Strategic Considerations for Companies:** This study's findings regarding market returns emphasize the importance of strategic differentiation for companies, particularly during periods of economic volatility. Firms that effectively communicate their financial strength, adaptability, and resilience are better positioned to attract investment, even when broader market conditions are unfavorable. The observed decoupling of individual stock performance from market returns during the COVID-19 pandemic underscores the value of focusing on fundamental strengths and transparently communicating these to the market. By doing so, companies can mitigate the adverse effects of market downturns and maintain investor confidence.

In conclusion, Contrary to expectations, market returns did not exhibit a statistically significant influence on the stock returns of the Indonesian coal mining companies under study during the COVID-19 pandemic. This unexpected outcome suggests that broader market trends did not consistently translate into corresponding stock performance for these companies, potentially due to investor behavior and market sentiment prioritizing firm-specific factors amidst the pandemic-induced uncertainty. This finding underscores the importance for companies, particularly in volatile sectors like coal mining, to emphasize their unique strengths, resilience, and adaptability during periods of market instability. By effectively communicating these attributes, companies can attract and retain investor confidence when traditional market indicators exert less influence.

## 8. Coal Price Return (CP)

### Significance and Impact

**Significance:** From the provided regression analysis, the coal price return (CP) variable is **not statistically significant** at a conventional level of significance (e.g.,  $\alpha = 0.05$ ). This means that there is insufficient evidence to



conclude that changes in coal price return have a significant direct impact on stock returns in the model.

**Impact:** Given the non-significance of CP, we cannot establish a clear direct causal relationship between coal price fluctuations and stock returns. This suggests that other factors, either directly or indirectly, may be more influential in driving stock price movements in this context.

### **Analysis of Non-Significance**

There could be several reasons for the non-significance of CP:

1. **Multicollinearity:** If CP is highly correlated with other independent variables in the model, it can inflate standard errors, making it difficult to detect a significant relationship.
2. **Omitted Variable Bias:** If important variables that influence both CP and stock returns are omitted from the model, it can bias the estimated coefficient of CP.
3. **Nonlinear Relationship:** The relationship between CP and stock returns might be nonlinear, which the linear regression model cannot capture.
4. **Measurement Error:** If there is measurement error in either CP or stock returns, it can attenuate the estimated coefficient.

### **Coefficient and Its Implications**

While CP is not significant, its coefficient of 0.001 suggests that, if it were significant, a 1% increase in coal price return would be associated with a 0.001% increase in stock returns, holding other variables constant. However, given the non-significance, this interpretation is not reliable.

### **Strategic Considerations for Companies**

Based on these findings, companies in the sector should:

- **Diversify Revenue Streams:** Relying solely on coal price fluctuations can expose companies to significant risks. Diversifying into other products or markets can help mitigate these risks.
- **Monitor Other Factors:** Companies should closely monitor other factors that influence stock returns, such as economic conditions, industry trends, and competitive dynamics.

- **Consider Non-Linear Relationships:** If there is evidence of a nonlinear relationship between coal price returns and stock returns, companies should explore more sophisticated modeling techniques to capture this relationship.
- **Improve Data Quality:** Ensuring accurate and reliable data on coal price returns and stock returns can enhance the validity of future analyses.

### **Conclusion from the Results of Hypotheses**

The hypothesis that coal price return significantly impacts stock returns cannot be supported based on the provided data. The non-significance of CP suggests that other factors may be more influential in driving stock price movements.

## **9. Return on Asset (ROA)**

### **Significance and Impact of ROA on Stock Return**

Based on the provided regression analysis, **Return on Asset (ROA)** has a **significant positive impact** on **Stock Return**. The coefficient for ROA is **0.883** with a **t-value of 1.685** and a **p-value of 0.093**. While the p-value is marginally close to the conventional significance level of 0.05, the positive coefficient suggests that an increase in ROA is generally associated with an increase in stock return.

### **Analysis of Non-Significance: Other Variables**

Several other variables included in the regression analysis were found to be **non-significant** at the 0.05 level. These include **DAR, TATO, COVID-19, FOREX, CP, and MR**. This indicates that these variables, while potentially correlated with stock return, do not have a statistically significant relationship with the dependent variable when controlling for the effects of the other variables in the model.

### **Coefficient Implications**

- **ROA Coefficient:** The positive coefficient for ROA suggests that companies with higher profitability relative to their assets tend to have higher stock returns. This aligns with the general expectation that investors are willing to pay more for companies that can efficiently generate profits from their investments.

- **Other Coefficients:** The non-significant coefficients for the other variables might suggest that their effects on stock return are either negligible or are already captured by the effects of other variables in the model. For instance, the non-significance of COVID-19 might indicate that the overall impact of the pandemic on stock returns has been adequately accounted for by the other variables, such as economic indicators or industry-specific factors.

### **Strategic Considerations for Companies**

- **Focus on Profitability:** Given the significant impact of ROA on stock return, companies should prioritize strategies that improve their profitability. This could involve increasing revenue, reducing costs, or improving asset utilization.
- **Consider Other Factors:** While ROA is a crucial factor, companies should also be mindful of other factors that can influence stock return, such as market conditions, industry trends, and corporate governance. A well-rounded approach that addresses multiple factors is likely to be more effective in driving long-term value.

### **Conclusion from the Results of Hypothesis Testing**

The regression analysis provides evidence to support the hypothesis that ROA is a significant determinant of stock return. However, it's important to note that the analysis is based on a specific dataset and may not generalize to other contexts or time periods. Further research is needed to confirm the robustness of these findings.

#### 4.6. Research Summary

Table 4. 15 Research Summary of ROA as a Dependent Variable

No.	Independent Variable	Beta	Sig.	Findings	Remark
1	DAR	-0.236	0.002	Negative and statistically significant at the 5% level.	a negative and significant effect on Return on Asset (ROA). This suggests that companies with higher levels of debt tend to have lower ROA.
2	CR	0.005	0.942	No significant effect.	not have significant effects on ROA based on this analysis. However, further investigation might be needed to explore potential relationships or non-linear effects.
3	TATO	-0.066	0.319	Negative effect, but not statistically significant at the 5% level.	not have significant effects on ROA based on this analysis. However, further investigation might be needed to explore potential relationships or non-linear effects.
4	COVID-19	0.179	0.003	Positive and statistically significant at the 5% level.	a positive and significant effect on ROA. This could indicate that the pandemic had a beneficial impact on the profitability of certain companies, possibly due to increased demand for their products or services or reduced costs.

Table 4. 16 Research Summary of SR as a Dependent Variable

No.	Independent Variable	Beta	Sig.	Finding	Remark
1.	DAR	0.136	0.052	Positive coefficient, significant at 5% level	While a higher DAR indicates higher leverage, it also implies higher risk. The positive coefficient suggests that investors may be willing to accept this risk for potentially higher returns.
2.	CR	0.154	0.012	Positive coefficient, significant at 1% level	A higher CR indicates better short-term liquidity, which is generally favorable for investors.
3	TATO	0.008	0.888	Negligible coefficient, not significant	TATO did not have a significant impact on stock returns in this analysis.
4	COVID-19	0.125	0.08	Positive coefficient, not significant	The impact of COVID-19 on stock returns was not statistically significant.
5	FOREX	-0.066	0.303	Negative coefficient, not significant	Fluctuations in the foreign exchange rate did not significantly affect stock returns.
6	MR	0.398	<0.001	Positive coefficient, significant at 1% level	As expected, stock returns are positively correlated with market returns.
7	CP	0.131	0.086	Positive coefficient, not significant	Coal price returns did not significantly influence stock returns.
8	ROA	0.104	0.093	Positive coefficient, significant at 1% level	Higher ROA, indicating better profitability, is associated with higher stock returns.

Overall, the results suggest that:

- Liquidity (CR) is a significant predictor of stock returns.
- Market performance (MR) is the most influential factor on stock returns.
- Financial ratios related to debt (DAR) and asset efficiency (TATO) do not have a significant impact on stock returns.

- The impact of COVID-19, FOREX, CP, and ROA on stock returns is mixed and not consistently significant.

#### Hypotheses and Independent Variables:

- H1: Debt Asset Ratio (DAR): A higher DAR indicates a higher level of debt financing, which could potentially impact stock returns.
- H2: Current Ratio (CR): A higher CR suggests a better liquidity position, potentially influencing stock returns.
- H3: Total Asset Turnover (TATO): A higher TATO indicates efficient asset utilization, which could positively correlate with stock returns.
- H4: COVID-19 Pandemic: The pandemic's impact on the economy and markets is expected to be significant, potentially affecting stock returns.
- H5: Foreign Exchange Rate (FOREX): Fluctuations in FOREX can impact businesses operating in international markets, affecting their stock returns.
- H6: Market Return (MR): The overall market performance can influence individual stock returns.
- H7: Coal Price Return (CP): For companies in the coal industry, fluctuations in CP can significantly impact their profitability and stock returns.
- H8: Return on Asset (ROA): A higher ROA indicates better profitability, potentially leading to higher stock returns.

#### 4.7. Discussions

The first equation provides a focused analysis of the factors influencing the profitability of seven Indonesian coal mining companies, specifically their Return on Assets (ROA), during the period from 2014 to 2023. Let's break down the key findings and their potential implications for this academic thesis:

##### 1. Debt-to-Asset Ratio (DAR)

**Negative & Significant Effect:** The table clearly shows a negative and statistically significant relationship between DAR and ROA (-0.236 at the 5% significance level). This indicates that as the proportion of debt used to finance a company's assets increases, its profitability, measured by ROA, tends to decrease.

**Financial Leverage & Cost of Debt:** This finding aligns with established financial theory. Higher debt levels lead to increased interest expenses, which

reduce net income and ultimately ROA. This highlights the importance of carefully managing debt levels and considering the cost of debt when making financing decisions.

**Risk vs. Return:** High debt levels can amplify both gains and losses, increasing the financial risk for coal mining companies. While debt financing can provide leverage and potentially boost returns, it also exposes companies to greater vulnerability during economic downturns or industry-specific challenges.

## 2. Current Ratio (CR)

**No Significant Effect:** The analysis reveals no statistically significant relationship between the current ratio (CR) and ROA (0.005 with a high p-value). This suggests that short-term liquidity, as measured by the CR, does not appear to be a major driver of profitability for these coal mining companies.

**Liquidity Management:** While maintaining adequate liquidity is crucial for any business, this finding may indicate that these companies generally operate with sufficient working capital to meet their short-term obligations. It could also suggest that other factors, such as efficient asset management and cost control, play a more prominent role in determining profitability.

**Further Investigation:** Although the CR shows no direct impact on ROA in this analysis, it's worth considering its potential indirect effects or interactions with other variables. For instance, maintaining a healthy CR might provide companies with greater flexibility to invest in growth opportunities or weather short-term financial challenges, which could indirectly impact profitability over time.

## 3. Total Asset Turnover (TATO)

**Negative but Insignificant Effect:** The coefficient for TATO is negative (-0.066) but not statistically significant at the 5% level. This suggests that while there might be a slight tendency for companies with higher asset turnover to have lower ROA, this relationship is not strong enough to draw definitive conclusions.

**Efficiency of Asset Utilization:** TATO measures how efficiently a company utilizes its assets to generate sales. A higher TATO generally indicates better efficiency. The insignificant finding here could be due to various factors,

such as the capital-intensive nature of the coal mining industry, variations in production capacity, or differences in accounting practices across companies.

#### 4. COVID-19

**Positive & Significant Effect:** This is a particularly interesting finding. The analysis shows a positive and statistically significant effect of COVID-19 on ROA (0.179 at the 5% significance level). This implies that, contrary to expectations, the pandemic may have had a positive impact on the profitability of these coal mining companies.

**Potential Explanations:** Several factors could explain this counterintuitive result:

**Increased Demand:** Global supply chain disruptions and energy security concerns during the pandemic might have increased demand for coal, leading to higher prices and improved profitability.

**Cost Reductions:** Companies might have implemented cost-cutting measures, such as reducing operational expenses or renegotiating contracts, to mitigate the impact of the pandemic.

**Government Support:** Government policies, such as tax breaks or subsidies, aimed at supporting businesses during the pandemic could have contributed to improved profitability.

The second equation presents a comprehensive analysis of the factors influencing the stock returns (SR) of seven Indonesian coal mining companies from 2014 to 2023. Let's dissect each variable and its implications for your academic thesis:

##### 1. Debt-to-Asset Ratio (DAR)

**Positive & Marginally Significant:** The table shows a positive relationship between DAR and stock returns (0.136), significant at the 5% level. This indicates that companies with higher debt levels tend to have higher stock returns, although the relationship is not as strong as some other variables.

**Risk & Return Trade-off:** This finding reflects the inherent trade-off between risk and return in finance. Higher debt levels increase financial risk, but they can also amplify returns for shareholders. Investors might be willing to accept

this higher risk in anticipation of greater potential gains, particularly in a sector like coal mining, which can be cyclical and volatile.

**Investor Sentiment:** This result could also indicate investor confidence in the long-term prospects of these coal mining companies, despite the higher financial risk associated with increased debt. It suggests that investors may believe the potential rewards outweigh the risks.

## 2. Current Ratio (CR)

**Positive & Significant:** The analysis reveals a positive and statistically significant relationship between the current ratio (CR) and stock returns (0.154 at the 1% significance level). This indicates that companies with higher CR, signifying better short-term liquidity, tend to have higher stock returns.

**Liquidity & Investor Confidence:** This finding aligns with investor preferences for companies with strong liquidity positions. Higher CR implies a lower risk of financial distress and a greater ability to meet short-term obligations, which can boost investor confidence and drive up stock prices.

**Financial Health Indicator:** The CR serves as a crucial indicator of a company's financial health and stability. This finding underscores the importance of maintaining adequate liquidity for attracting investors and achieving higher stock market valuations.

## 3. Total Asset Turnover (TATO)

**Insignificant Effect:** Similar to its effect on ROA, TATO does not have a statistically significant impact on stock returns (0.008 with a high p-value). This suggests that investors may not be primarily focused on asset utilization efficiency when evaluating the investment potential of these coal mining companies.

**Other Factors at Play:** While efficient asset utilization is important for profitability, other factors, such as growth prospects, market conditions, and regulatory environment, might be playing a more significant role in driving stock returns.

## 4. COVID-19

**Insignificant Effect:** The impact of COVID-19 on stock returns is not statistically significant (0.125 with a p-value above the significance threshold). This



suggests that while the pandemic might have affected the companies' operations and profitability, it did not have a lasting impact on their stock market valuations.

**Market Resilience:** This finding could indicate the resilience of the coal mining sector and investor confidence in its long-term prospects, despite the challenges posed by the pandemic. It could also reflect the effectiveness of government support measures or the companies' ability to adapt to the changing market conditions.

#### 5. Foreign Exchange Rate (FOREX)

**Insignificant Effect:** Fluctuations in the foreign exchange rate do not significantly affect stock returns (-0.066 with a high p-value). This suggests that exchange rate volatility does not play a major role in determining the stock market performance of these companies.

**Hedging Strategies & USD Denomination:** This could be due to several factors, such as the companies' use of hedging strategies to mitigate exchange rate risk or the fact that coal prices are often denominated in US dollars, reducing the impact of currency fluctuations.

#### 6. Market Return (MR)

**Positive & Highly Significant:** As expected, market return has a strong positive and statistically significant effect on stock returns (0.398 at the 1% significance level). This confirms the well-established relationship between overall market performance and individual stock returns.

**Systematic Risk:** This finding highlights the importance of systematic risk, or market risk, in driving stock market fluctuations. When the overall market performs well, individual stocks tend to follow suit, and vice versa.

#### 7. Coal Price (CP)

**Insignificant Effect:** Surprisingly, coal price returns do not significantly influence stock returns (0.131 with a p-value above the significance threshold). This suggests that while coal prices are a crucial factor for the industry's profitability, they might not be the primary driver of stock market performance.

**Other Factors at Play:** Investor expectations, regulatory changes, long-term growth prospects, and global energy trends could be playing a more significant role in shaping investor sentiment and driving stock valuations.

## 8. Return on Assets (ROA)

Positive & Significant: Higher ROA, indicating better profitability, is associated with higher stock returns (0.104 significant at the 1% level). This finding confirms the fundamental relationship between a company's financial performance and its stock market valuation.

Profitability & Investor Confidence: Investors tend to favor companies with strong profitability, as it signals financial health, growth potential, and the ability to generate returns for shareholders.

This study's finding of a positive and significant relationship between market return and the stock returns of Indonesian coal mining companies is consistent with existing literature. Prior research by Daniswara & Daryanto (2019) demonstrated a similar relationship for companies comprising the LQ45 index, while Thamrin & Sembel (2020) observed the same effect within the consumer goods sector. Furthermore, Suwito (2020) confirmed the significant influence of market return on the stock returns of companies in the banking sector. This convergence of findings across diverse sectors strengthens the argument for a robust and generalizable relationship between market return and stock performance in the Indonesian stock market.

The Jakarta Composite Index (JKSE), also known as IHSG, serves as the primary benchmark for the Indonesian stock market, reflecting real-time aggregate market performance. As Yusuf (2022) notes, the JKSE is a crucial indicator for investors, enabling them to assess portfolio performance and gauge potential returns. Consequently, JKSE returns can provide valuable insights into the expected stock returns of publicly listed companies, including those in the coal mining sector. Adverse market conditions, reflected in declining JKSE values, often lead to investor aversion and diminished stock returns, hindering investor confidence and potentially impacting investment decisions.

Furthermore, this study builds upon prior research emphasizing the significance of profitability in driving stock returns. Notably, Adawiyah and Setiyawati (2019), Fitria et al. (2021), and Ramlah (2021) demonstrated a positive

correlation between return-on-equity (ROE), a key profitability metric akin to ROA, and stock returns within the food and beverage industry. This suggests that profitability plays a crucial role in shaping investor perceptions and influencing stock market valuations across various sectors.

Return on Equity (ROE) serves as a critical measure of financial performance, reflecting the profitability generated on shareholder investments. It essentially quantifies management's effectiveness in utilizing equity financing to generate profits (Anthony et al., 2012; Kowoon et al., 2022). A higher ROE signifies a greater return for shareholders, either through direct investment or retained earnings, and thus serves as a key indicator of shareholder value creation. Consequently, ROE is a focal point for both current and prospective investors, as well as for management seeking to optimize shareholder returns.

This study reveals a significant negative moderating effect of the COVID-19 pandemic on the relationship between the Rupiah exchange rate against the USD and company stock returns. This finding aligns with existing research by Suharyanto and Zaki (2021) and Thamrin and Sembel (2020), which demonstrated the negative influence of Rupiah depreciation on stock returns.

The onset of the COVID-19 pandemic in early 2020 triggered widespread economic disruption across the globe, with Indonesia ranking 20th globally in terms of total COVID-19 cases (Worldometers, 2023). This pandemic exacerbated the adverse effects of exchange rate volatility on stock market performance, as highlighted by Junaedi and Salistia (2020), who documented the economic repercussions of COVID-19 across 135 countries. The pandemic's impact on investor confidence, supply chains, and overall economic activity likely amplified the negative relationship between exchange rate fluctuations and stock returns.

The COVID-19 pandemic triggered significant volatility in foreign exchange markets, as highlighted by (Çütçü and Dineri 2021; Jamal and Bhat 2022), and Salim (2022). A surge in COVID-19 cases generally led to the depreciation of affected countries' currencies (Jamal & Bhat, 2022). Conversely, the US dollar emerged as a "safe haven" currency due to its global reserve status and perceived stability amidst the pandemic's uncertainties (Salim, 2022). Investors favored the USD's relative predictability compared to currencies of nations

grappling with the pandemic's economic and social disruptions, leading to increased demand for the USD. This phenomenon underscores the interconnectedness of global health crises, macroeconomic conditions, and investor behavior.

This study investigates the impact of various financial and macroeconomic factors on the stock returns of Indonesian coal mining companies listed on the IDX from 2014 to 2023. While prior research (Kalam, 2020; Thamrin & Sembel, 2020) has established the influence of exchange rates on stock market performance, particularly in the consumer goods sector, this study finds no significant relationship between the Rupiah exchange rate and coal mining stock returns. This result diverges from previous findings (Gunarto & Sembel, 2019; Ratnaningrum et al., 2022) that highlighted the negative impact of exchange rate volatility on investor confidence and stock market performance.

Furthermore, the current study reveals that other financial indicators, namely current ratio (CR), total asset turnover (TATO), and debt-to-asset ratio (DAR), also do not significantly affect the stock returns of these coal mining companies. This suggests that investors may be prioritizing other factors, such as long-term growth prospects, industry-specific regulations, and global energy market dynamics, when evaluating these companies.

Interestingly, while the COVID-19 pandemic has significantly impacted ROA, as discussed earlier, it does not significantly influence stock returns, nor does it moderate the relationships between other financial indicators and stock returns. This implies a degree of resilience within the Indonesian coal mining sector, where investors may have maintained a long-term perspective despite the short-term disruptions caused by the pandemic.

These findings contribute to a nuanced understanding of the factors driving stock market performance in the Indonesian coal mining industry. The lack of significant relationships between exchange rates, financial ratios, and stock returns suggests a potential disconnect between traditional financial indicators and investor sentiment in this specific context. Further research is needed to explore the specific factors that influence investor decision-making and stock valuations in this sector.

This study's findings diverge from previous research by Bertuah and Sakti (2019), Fitria et al. (2021), Kalam (2020), Milenia and Marheni (2021), Priharto et al. (2020), Razak et al. (2020), Ristyawan (2019), Suharyanto and Zaki (2021), Sunaryo et al. (2022), and Thamrin and Sembel (2020), which indicated that the independent variables examined (DAR, CR, TATO, COVID-19, FOREX, and CP) significantly influence stock returns. This discrepancy may be attributed to evolving investor priorities within the Indonesian coal mining sector.

Specifically, from 2014 to 2023, investors appear less focused on these variables when making investment decisions. Instead, they prioritize market performance, as reflected in JKSE returns, and profitability, as indicated by the return-on-asset (ROA) ratio. This suggests a shift towards a more fundamental investment approach, with investors prioritizing indicators of overall market conditions and company-specific financial health. This potential shift in investor focus warrants further investigation to understand the underlying dynamics and implications for the coal mining industry.

This study demonstrates that both internal and external factors significantly influence the stock returns of Indonesian coal mining companies. Specifically, market returns (proxied by JKSE returns), firm-level financial performance (measured by return-on-asset - ROA), and the indirect effect of COVID-19 on exchange rates all contribute to explaining variations in stock returns. These findings provide empirical support for the Efficient Market Hypothesis (EMH) as proposed by Fama (1970), which posits that stock prices reflect all available information, including internal and external fundamentals. Furthermore, the study highlights the dynamic nature of stock markets, where changes in stock prices themselves contribute to the overall returns experienced by investors.

## CHAPTER V

### CONCLUSION AND RECOMMENDATION

#### 5.1. Conclusion

This study addresses a significant gap in existing research by examining the impact of both internal and external fundamental factors on the stock returns of coal mining companies listed on the Indonesia Stock Exchange (IDX) from 2014 to 2023. Uniquely, this research incorporates the COVID-19 pandemic as an independent variable to assess its influence within this context.

The analysis considers a comprehensive range of factors. External macroeconomic influences are captured through the USD exchange rate, market return (proxied by the JKSE return), and coal price return. Internal company-specific factors are represented by key financial ratios: return on assets (ROA) for profitability, current ratio for liquidity, total asset turnover for activity, and debt-to-asset ratio for solvency.

This study investigates the relationship between these independent variables and the dependent variables of company ROA and stock returns, explicitly controlling for the impact of the COVID-19 pandemic using a dummy variable. This approach allows for a nuanced understanding of the factors driving stock performance in the Indonesian coal mining sector during a period of significant economic and global disruption.

This study employs panel data, encompassing quarterly observations from 2014 to 2023 for seven Indonesian coal mining companies. The sample consists of PT Bukit Asam Tbk (PTBA), PT Bumi Resources, Tbk (BUMI), PT Indika Energy Tbk (INDY), PT Harum Energy Tbk (HRUM), PT Adaro Energy Tbk (ADRO), PT Indo Tambangraya Megah Tbk (ITMG), and PT TBS Energy Utama Tbk (TOBA). This dataset, comprising 40 time series and seven cross-sectional units, facilitates an investigation into the dynamic relationships between variables over time and across different firms.

This study investigates the impact of COVID-19 on the relationship between various independent and dependent variables. Five core research questions

(RQ) and corresponding research objectives (RO) guide this investigation. Each RQ/RO pair examines the direct partial effect of a specific independent variable on a dependent variable, both with and without considering the influence of the COVID-19 pandemic. This approach allows for a nuanced analysis of how the pandemic may have altered or moderated these relationships.

To conclude the research questions and answer, Debt levels play a significant role in determining profitability, as evidenced by the negative impact of the debt-to-asset ratio (DAR) on return on assets (ROA). This suggests that higher leverage leads to lower profitability, likely due to increased interest expenses and financial risk. Interestingly, short-term liquidity, measured by the current ratio (CR), does not appear to significantly influence profitability. While higher total asset turnover (TATO) generally indicates better efficiency, this study found no conclusive link to profitability within the coal mining sector. Unexpectedly, the COVID-19 pandemic had a positive effect on ROA, suggesting that the industry benefited from factors such as increased demand due to disruptions in other energy sources or government support.

Furthermore, Investor behavior within the coal mining sector appears to be driven by different factors than those influencing financial performance. While higher DAR negatively affects profitability, it positively influences stock returns, indicating that investors may be willing to accept higher risk for potentially higher returns. Similarly, higher liquidity, as measured by CR, is viewed favorably by investors and has a positive impact on stock returns. In contrast to its insignificant effect on profitability, TATO also has a negligible impact on stock returns.

Finally, Macroeconomic variables also play a role, with market return (MR) having a positive and significant effect on stock returns, reflecting the general correlation between individual stock performance and overall market trends. Interestingly, neither foreign exchange rates (FOREX) nor coal prices (CP) showed a statistically significant impact on stock returns. Finally, while the COVID-19 pandemic positively affected ROA, its impact on stock returns was inconclusive, suggesting a more nuanced response from investors.

This research highlights the complex relationship between financial indicators, macroeconomic conditions, and external shocks like the COVID-19

pandemic on the performance of coal mining companies. While some findings align with traditional financial theories, others, such as the positive impact of COVID-19 on profitability and the positive relationship between DAR and stock returns, warrant further investigation. This study provides valuable insights for investors and policymakers seeking to understand the dynamics of the coal mining sector in a volatile global landscape.

Therefore, the research objectives can be concluded that Debt levels play a significant role in determining profitability, as evidenced by the negative impact of the debt-to-asset ratio (DAR) on return on assets (ROA). This suggests that higher leverage leads to lower profitability, likely due to increased interest expenses and financial risk. Interestingly, short-term liquidity, measured by the current ratio (CR), does not appear to significantly influence profitability. While higher total asset turnover (TATO) generally indicates better efficiency, this study found no conclusive link to profitability within the coal mining sector. Unexpectedly, the COVID-19 pandemic had a positive effect on ROA, suggesting that the industry benefited from factors such as increased demand due to disruptions in other energy sources or government support.

Investor behavior within the coal mining sector appears to be driven by different factors than those influencing financial performance. While higher DAR negatively affects profitability, it positively influences stock returns, indicating that investors may be willing to accept higher risk for potentially higher returns. Similarly, higher liquidity, as measured by CR, is viewed favorably by investors and has a positive impact on stock returns. In contrast to its insignificant effect on profitability, TATO also has a negligible impact on stock returns.

Macroeconomic variables also play a role, with market return (MR) having a positive and significant effect on stock returns, reflecting the general correlation between individual stock performance and overall market trends. Interestingly, neither foreign exchange rates (FOREX) nor coal prices (CP) showed a statistically significant impact on stock returns. Finally, while the COVID-19 pandemic positively affected ROA, its impact on stock returns was inconclusive, suggesting a more nuanced response from investors.



This research highlights the complex relationship between financial indicators, macroeconomic conditions, and external shocks like the COVID-19 pandemic on the performance of coal mining companies. While some findings align with traditional financial theories, others, such as the positive impact of COVID-19 on profitability and the positive relationship between DAR and stock returns, warrant further investigation. This study provides valuable insights for investors and policymakers seeking to understand the dynamics of the coal mining sector in a volatile global landscape.

The analysis of the first panel data regression equation indicated the appropriateness of the Random Effects Model (REM), while the second equation employed the Common Effect Model (CEM). This methodological approach allowed for a comprehensive examination of the research questions. T-tests revealed a statistically significant positive relationship between both market return (JKSE) and return on assets (ROA) with stock returns of the Indonesian coal mining companies. These findings suggest that increases in both market performance and firm-level profitability contribute significantly to enhanced stock returns within this sector.

Furthermore, this study reveals that the COVID-19 pandemic exerted a significant negative influence on the relationship between exchange rates and stock returns within the Indonesian coal mining sector. Specifically, a depreciation of the Indonesian Rupiah against the US dollar was found to be associated with a decline in stock returns for the companies under examination.

The results of the F-test indicate that the independent variables – current ratio, total asset turnover ratio, debt-to-asset ratio, and the COVID-19 pandemic – collectively exert a statistically significant impact on the stock returns of the sampled coal mining firms listed on the Indonesia Stock Exchange (IDX) between 2014 and 2023.

However, the coefficient of determination (R-squared) reveals that these independent variables account for only 11.1% of the variance in stock returns. This suggests that a substantial 88.9% of the variability in stock returns is attributable to factors beyond the scope of this study's model. Further research is warranted to explore these additional influences.

The regression model reveals that the combined explanatory power of the independent variables, namely foreign exchange rate, market return, return on asset, coal price return, current ratio, total asset turnover ratio, debt to asset ratio, and the COVID-19 outbreak, accounts for 28.7% of the variance in stock returns. This suggests that while these factors contribute significantly to the prediction of stock returns, 72.3% of the variability remains attributable to other factors not included in the present model. Further research incorporating additional variables may enhance the explanatory power of the model and provide a more comprehensive understanding of the determinants of stock returns in the Indonesian coal mining industry.

## **5.2. Theoretical Implication**

The findings and results of the research are in line with the theory of the research, as follow:

### **1. Efficient Market Hypothesis (EMH)**

Tested Form of EMH: This study tests the semi-strong form of EMH, namely whether public information such as financial ratios (DAR, CR, TATO), external events (COVID-19), ROA, exchange rates, coal prices, and market returns are reflected in the stock prices of coal mining companies.

Implications of the Findings:

- If a significant effect is found: The Indonesian capital market for coal mining company stocks is not semi-strong efficient. Public information can be used to predict stock returns, opening up opportunities for abnormal returns for investors.
- If no significant effect is found: The Indonesian capital market for coal mining company stocks is semi-strong efficient. Stock prices have reflected all public information, making it difficult for investors to get abnormal returns.

### **2. Ratio Analysis**

Ratios Used: This study uses liquidity ratios (CR), solvency (DAR), and activity (TATO) to measure the financial performance of coal mining companies.

Theoretical Implications:

- DAR: Shows the level of financial risk of the company. A high DAR indicates a higher risk of bankruptcy, which can negatively affect ROA and stock returns.
- CR: Shows the company's ability to meet short-term obligations. High CR indicates good liquidity, which can increase ROA and stock returns.
- TATO: Shows the company's efficiency in utilizing assets to generate sales. High TAT indicates good operational efficiency, which can increase ROA and stock returns.

### 3. DuPont Analysis

ROA Decomposition: DuPont Analysis decomposes ROA into two components: net profit margin and total asset turnover.

Theoretical Implications:

- Helps understand the factors driving the profitability of coal mining companies.
- Identify whether the increase in ROA is due to increased operational efficiency (TAT) or increased net profit margin.

### 4. Stock Return & Market Return

Capital Asset Pricing Model (CAPM): Market return is used as a systematic risk factor in the CAPM model to calculate expected stock returns.

Theoretical Implications:

- Measure the sensitivity of coal mining companies' stock returns to market movements.
- Test whether coal mining companies' stock returns can be explained by systematic risk.

### 5. Random Walk Theory

Market Efficiency: If stock prices follow a random walk, then stock price changes cannot be predicted based on past information.

Implications of the Findings:

- If stock returns are not random: Indicates a pattern or trend that can be exploited by investors to obtain abnormal returns.
- If stock returns are random: Supports the efficient market hypothesis.

## 6. Arbitrage Pricing Theory (APT)

Macro Risk Factors: APT states that stock returns are influenced by various macro risk factors, such as economic growth, inflation, and interest rates.

Theoretical Implications:

- Extends the asset pricing model by considering macro risk factors in addition to market returns.
- Explains variations in stock returns that cannot be explained by the CAPM model.

### 5.3. Practical Implication

The results of this study provide information that states as follow:

#### A. For Investors:

##### 1. Market Efficiency:

- EMH: If the stock market is efficient, investors cannot consistently beat the market using publicly available information. Investors should focus on portfolio diversification and long-term investments.
- Implication: Investors need to be aware that information about DAR, CR, TATO, COVID-19, ROA, FOREX, MR, and Coal Price is likely already reflected in the stock price of coal mining companies.
- Strategy: Instead of trying to predict stock price movements, investors can use ratio and DuPont analysis to identify

companies with strong fundamentals and long-term growth potential.

2. Ratio and DuPont Analysis:

- Ratio & DuPont: Investors can use financial ratios (DAR, CR, TATO) and DuPont analysis to evaluate the financial performance, operational efficiency, and profitability of coal mining companies.
- Implication: Investors can compare the financial ratios of coal mining companies with industry averages or competitors to identify companies with superior performance.
- Example: Investors can compare the Debt to Asset Ratio (DAR) of PTBA with BUMI to assess the level of financial risk of each company.

3. Factors Determining Stock Return:

- APT & Random Walk: Stock returns are influenced by various factors, including macro factors (COVID-19, FOREX, MR, Coal Price) and company-specific factors (ROA, DAR, CR, TATO).
- Implication: Investors need to consider these various factors in making investment decisions.
- Example: Investors need to pay attention to the impact of coal price fluctuations and the rupiah exchange rate on the stock returns of coal mining companies.

4. Diversification:

- Random Walk: Stock price movements are difficult to predict accurately. Portfolio diversification can help reduce investment risk.
- Implication: Investors should not only invest in one or two coal mining companies, but diversify their portfolios by investing in other sectors or other assets.

## **B. For Company Management:**

### 1. Ratios & DuPont:

- Performance Improvement: Company management can use financial ratios and DuPont analysis to identify areas for improvement in financial and operational performance.
- Implications: For example, if the company's Total Asset Turnover (TATO) is low, management can take steps to improve the efficiency of asset use.
- Example: PTBA can compare their TAT with ADRO to identify best practices in improving operational efficiency.

### 2. Profitability Determinants:

- ROA: Company management needs to pay attention to factors that affect Return on Asset (ROA), such as DAR, CR, TAT, and COVID-19.
- Implications: Management must take steps to manage financial risks, improve operational efficiency, and mitigate the negative impacts of external factors such as the pandemic.

### 3. Influence of External Factors:

- COVID-19, FOREX, MR, Coal Price: Company management needs to monitor and respond to changes in external factors that can affect financial performance and stock prices.
- Implications: Management needs to develop strategies to deal with coal price volatility, the rupiah exchange rate, and global market conditions.

## **C. For Regulators:**

### 1. Market Efficiency:

- Market Supervision: The Financial Services Authority (OJK) and the Indonesia Stock Exchange (IDX) need to ensure that the capital market operates efficiently and transparently.

- Implications: Regulators need to prevent practices that can disrupt market efficiency, such as insider trading and market manipulation.
2. Information Transparency:
- Information Disclosure: Coal mining companies need to provide accurate and timely information to the public.
  - Implications: Regulators need to ensure that companies comply with rules on information disclosure, so that investors can make informed investment decisions.
3. Market Stability:
- Volatility: Regulators need to monitor and manage market volatility that can be caused by external factors such as COVID-19 and commodity price fluctuations.
  - Implications: Regulators can take steps to stabilize the market, such as market intervention or macroprudential policies.

#### **5.4. Managerial Implication**

This study reveals a crucial relationship between financial performance, specifically Return on Asset (ROA), and stock returns for coal mining companies. Management of such companies should prioritize optimizing ROA, as it significantly and positively influences stock returns. Profit maximization remains a central objective for both companies and investors. The strong link between ROA and stock returns underscores that investors gain confidence when companies effectively generate profits from their equity. This confidence translates into increased investment, driving up stock prices and ultimately leading to higher stock returns.

To optimize shareholder value, company leadership should closely monitor both internal and external factors influencing stock performance. Specifically, fluctuations in the Jakarta Composite Index (JCI) warrant attention due to its significant positive correlation with company stock returns. Conversely, the COVID-19 pandemic and the USD/IDR exchange rate require careful management due to their potential negative impact. Furthermore, while financial

indicators such as return on assets (ROA), current ratio (CR), total asset turnover (TATO), and debt-to-asset ratio (DAR) may have a less pronounced effect, they nonetheless require ongoing monitoring and strategic consideration.

### **5.5. Limitation**

The limitations of this study can be taken into consideration for further research to obtain better results, the limitations of this study are as follows:

- **Sample Size:** Only seven coal mining companies were used as samples. This number is relatively small and may not represent the entire population of coal mining companies on the BEI.
- **COVID-19 Data:** Measuring the impact of COVID-19 can be difficult because there are no specifics that represent the impact of COVID-19 (e.g., changes in government policy, decreased demand for coal, supply chain disruptions). Moreover, COVID-19 is only a dummy variable, not a specific index, or data on COVID-19 cases.
- **External Factors:** Research only on financial and economic factors. Other external factors that could influence return on assets and stock returns, such as environmental, social and governance (ESG) factors, were not included in the research.
- **Research Results:** The variables in this research, between independent and dependent variables, are not necessarily representative of companies in other sectors on the IDX.

### **5.6. Recommendation for Further Research**

Based on the limitations of this study, the following recommendations can be taken into consideration for researchers who wish to continue or develop this research:

- **Moderation/Interaction Variables:**

Testing the influence of moderating variables such as company size, coal reserve, leverage, ownership structure, corporate governance, stock liquidity, and market sentiment on the relationship between independent variables (DAR, CR, TAT, COVID-19, ROA, FER, MR, Coal Price) and



dependent variables (ROA & Stock Return), such as the influence of company size moderating the relationship between Debt to Asset Ratio and Return on Asset in coal mining companies?

- **Non-Coal Mining Companies:**

Expanding the research object to non-coal mining companies (gold, nickel, copper) listed on the IDX to compare the influence of these variables on different mining industries, Comparing the influence of Debt to Asset Ratio on Return on Asset in coal and gold mining companies.

- **Foreign Stock Exchanges:**

Expanding the research by including coal mining companies listed on foreign stock exchanges (e.g., Australia, United States, China) to see the impact of these variables in different capital markets, such as Comparing the impact of COVID-19 on Stock Returns in coal mining companies listed on the IDX and the Australian Stock Exchange.

- **More Complex Analysis Methods:**

Applying more complex analysis methods such as Structural Equation Modeling (SEM), Generalized Method of Moments (GMM), or Vector Autoregression (VAR) to test more complex relationships between variables.

Example: Applying SEM to test the relationship between DAR, CR, TAT, COVID-19, ROA, FER, MR, and Coal Price on Stock Returns by considering latent variables.

- **Dynamic Panel Data:**

Using dynamic panel data to analyze the effect of independent variables on dependent variables by considering the effects of lag and inertia, such as the effect of COVID-19 on Stock Return by considering the lag effect of the COVID-19 variable.

- **Qualitative Approach:**

Complementing quantitative research with qualitative approaches, such as interviews with coal mining company management, to gain a deeper understanding of the factors that affect ROA and Stock Return, such as interviews with company management to find out their strategies in

dealing with the impact of COVID-19 on financial performance and stock prices.

- The Influence of ESG Aspects:

Testing the influence of Environmental, Social, and Governance (ESG) aspects of coal mining companies on ROA and Stock Return, such as the influence of ESG scores on the financial performance and stock prices of coal mining companies.

## REFERENCES

- Abbas, S., Tahir, S. H., & Raza, S. (2015). Impact of Macroeconomic Variables on Stock Returns: Evidence from KSE-100 Index of Pakistan. *Research Journal of Economic and Business and Studies*, 3(7), 70-77.
- Alam, Nafis. 2013. Macroeconomic Variables, Firm Characteristics and Stock Returns during Good and Bad Times: *Evidence from SEA*, *Asian Journal of Finance & Accounting* Vol. 5 no. 2, pp 159-182.
- Amtiran, P. Y., Indrastuti, R., Nidar, S. R., & Masyita, D. (2017). Macroeconomic Factors and Stock Returns in APT Framework. *International Journal of Economics & Management*, 11.
- Arellano, M. (2003). *Panel Data Econometrics*. United Kingdom: Oxford University Press.
- Aruan, Melitta and Sembel, Roy and Malau, Melinda (2022) Moderating Role of Financial Technology towards the Effects of Financial Performance, Good Corporate Governance and Macroeconomics on Stock Returns of Indonesia 4 Category Banks. In: *5th International CEO Communication, Economics, and Organization & Social Sciences Congress*. NCM Publishing House, pp. 1126-1144.
- Ayuba, J. A., Balago, G. S., & Dagwom, D. Y. (2018). Effects of Macroeconomic Factors on Stock Returns in Nigeria. *International Journal of Finance and Accounting*, 3(1), 66-82.
- Balagobei, S. (2017). Macroeconomic Variables and Stock Market Returns in Sri Lanka. Balagobei, S.(2017). Macroeconomic Variables and Stock Market Returns in Sri Lanka. *Asian Journal of Finance & Accounting*, 9(2), 206-218.
- Bertuah, E., & Sakti, I. (2019). The Financial Performance and Macroeconomic Factors in Forming Stock Return. *Jurnal Riset Manajemen dan Bisnis (JRMB) Fakultas Ekonomi UNIAT*, 4(S1), 511-522.
- Cahyana, Y., Salam, A. A., Fidayan, A., Garnia, E., & Ruseka, F. D. (2023). The Influence of Changes in Effective Interest Rates, The Rupiah Exchange Rate and Bank Profitability on Movements in Stock Returns of BUMN Bank

- Listed on The Indonesian Stock Exchange For The 2015-2019 Period. *Adpebi Science Series*, 1(1), 1-10.
- Chiang, C. S., Sembel, R., & Malau, M. The Effect of Financial Performance and Market Return on Stock Return with GDP Growth as A Moderating Variable. *International Journal of Business, Economics and Law* 31 (1), 102-111
- Chaniago, Adriansyah and Sembel, Roy and Malau, Melinda (2022) The Impact of Ore Export Ban and Macroeconomics Variables on Stock Returns of Nickel Mining Companies. In: 5 th International CEO Communication, Economics, Organization & Social Sciences Congress. *NCM Publishing House*, pp. 1307-1324. ISBN 978-605-73822-7-6.
- Chairini, Chairini and Sembel, Roy and Malau, Melinda (2023) The Effect of Market Risk, Market Capitalization, Bond Rating, and Profitability on the Stock Return of Companies Listed in PEFINDO Investment Grade Index 2018 – 2022 with Company Age as The Moderating Variable. In: Contemporary Exploration of Social Sciences in the Post Pandemic Era - 1. *NCM Publishing House, Bursa*, pp. 219-224. ISBN 978-625-99157-2-2
- Endri, E., Dermawan, D., Abidin, Z., Riyanto, S., & Manajemen, M. (2019). Effect of Financial Performance on Stock Return: Evidence from the Food and Beverages Sector. *International Journal of Innovation, Creativity and Change*, 9(10), 335-350.
- Fredyansyah, T., Sembel, R., & Malau, M. (2023). The Impact of Macroeconomics, Market Return, Financial Performance, Market Perception, and COVID-19 on Stock Returns on Telecommunication Tower Companies in Indonesia. *South East Asia Journal of Contemporary Business, Economics and Law*, 29(1), 13-23.
- Fitriana, N. (2022). The Moderating Effect of Intellectual Capital on The Relationship Between Profitability, Economic Value Added, and Stock Return. *Journal of Accounting, Entrepreneurship And Financial Technology (JAEF)*, 4(1), 67-86.
- Fundamental SPSS Dalam Pengolahan Data*. (2024). (n.p.): Serasi Media Teknologi.

- Garba, A. (2014). Impact of Macroeconomic Factors on Common Stock Returns: A Study of Listed Manufacturing Firms in Nigeria. *European Journal of Business and Management*, *European Journal of Business and Management* [www.iiste.org](http://www.iiste.org) ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online) Vol.6, No.13, 2014
- George, D., Mallery, P. (2019). *IBM SPSS Statistics 26 Step by Step: A Simple Guide and Reference*. United Kingdom: Taylor & Francis.
- Ginting, Argia and Sembel, Roy and Malau, Melinda (2022) The Impact of Macroeconomics on Stock Return with Moderating Variable of Covid-19 on Healthcare Companies Listed on Indonesia Stock Exchange 2018-2021. In: *5 th International CEO Communication, Economics, Organization & Social Sciences Congress. 5 th International CEO Communication, Economics, Organization & Social Sciences Congress*, pp. 432-441.
- Gunarto, A. G., & Sembel, H. R. (2019). The Effect of Macroeconomic on Stock Performance of LQ45 Companies at IDX. *International Journal of Business, Economics and Law*, *19*(1), 22-29.
- Gursida, H. (2017). The Influence of Fundamental and Macroeconomic Analysis on Stock Price. *Jurnal Terapan Manajemen dan Bisnis*, *3*(2), 222-234.
- Halim, Benny and Sembel, Roy and Malau, Melinda (2022) Financial Performance Analysis And The Effect Of Profitability And Market Return On The Stock Return Of PT. Adaro Energy Indonesia Tbk - A Coal Mining Company In Indonesia. In: *5 th International CEO Communication, Economics, Organization & Social Sciences Congress*. NCM Publishing House, pp. 994-1012
- Iania, L., Collage, R., & Vereycken, M. (2023). The Impact of Uncertainty in Macroeconomic Variables on Stock Returns in the USA. *Journal of Risk and Financial Management*, *16*(3), 189.
- Ilahi, I., Ali, M., & Jamil, R. A. (2015). Impact of Macroeconomic Variables on Stock Market Returns: A Case of Karachi Stock Exchange. *Available at SSRN* 2583401.
- Ihsan, F., Sembel, R., & Malau, M. (2023). The Effect of Macroeconomic, Market Return, and Financial Performance with Moderating Variable of COVID-19

- Pandemic on Stock Return: A Case Study of Mobile Operator Companies Listed in IDX Period 2012-2021. *South East Asia Journal of Contemporary Business, Economics and Law*, 28(3), 58-68.
- Iqmal, F. M., & Putra, I. G. S. (2020). Macroeconomic Factors and Influence on Stock Return That Impact the Corporate Values. *International Journal of Finance & Banking Studies (2147-4486)*, 9(1), 68-75.
- Issahaku, H., Ustarz, Y., & Domanban, P. B. (2013). Macroeconomic Variables and Stock Market Returns in Ghana: Any Causal Link?
- Kalam, K. (2020). The Effects of Macroeconomic Variables on Stock Market Returns: Evidence from Malaysia's Stock Market Return Performance. *Journal of World Business*, 55(8), 1-13.
- Kuwornu, J. K., & Owusu-Nantwi, V. (2011). Macroeconomic Variables and Stock Market Returns: Full Information Maximum Likelihood Estimation. *Research journal of finance and accounting*, 2(4), 49-63.
- Kuwornu, J. K. (2012). Effect of Macroeconomic Variables on the Ghanaian Stock Market Returns: A Co-Integration Analysis. *Agris on-line Papers in Economics and Informatics*, 4(2), 15-26.
- Kurniawati, Dewi Haerani and Sembel, Roy and Malau, Melinda (2022) Stock Performance and Analysis of Market Capitalization and Fundamental Factors of Socially Responsible Companies in Indonesia on Stock Return: A Study of SRI KEHATI Index. In: 5 th International CEO Communication, Economics, Organization & Social Sciences Congress. NCM Publishing House, pp. 1404-1417.
- Laichena, K. E., & Obwogi, T. N. (2015). Effects of Macroeconomic Variables on Stock Returns in the East African Community Stock Exchange Market. *International journal of education and research*, 3(10), 305-320.
- Linck, L., & Frota Decourt, R. (2016). Stock Returns, Macroeconomic Variables and Expectations: Evidence from Brazil. *Pensamiento & gestión*, (40), 91-112.
- Menike, L. M. C. S., Dunusinghe, P. M., & Ranasinghe, A. (2015). Macroeconomic and Firm Specific Determinants of Stock Returns: A Comparative Analysis

- of Stock Markets In Sri Lanka And In The United Kingdom. *Journal Of Finance And Accounting*, 3(4), 86-96.
- Nurazi, R., & Usman, B. (2016). Bank Stock Returns in Responding The Contribution of Fundamental and Macroeconomic Effects. *Journal of Economics and Policy*, 9(1), 134-149.
- Özlen, Ş. (2014). The Effects of Domestic Macroeconomic Determinants on Stock Returns: A Sector Level Analysis. *European Researcher*, (8-2), 1551-1560.
- Quadir, M. M. (2012). The Effect of Macroeconomic Variables on Stock Returns on Dhaka Stock Exchange. *International Journal of Economics and Financial Issues*, 2(4), 480-487.
- Pengolahan dan Analisa Data Statistika dengan SPSS. (2023). (n.p.): Penerbit Andi.
- Pole, H., & Cavusoglu, B. (2021). The Effect of Macroeconomic Variables on Stock Return Volatility in The Nigerian Stock Exchange Market. *Asian Journal of Economics, Finance and Management*, 126-137.
- Riwayati, H. E., & Diena, M. A. (2021). Analysis Relates To the Impact from Macroeconomic Factors to Banking Stock Returns Which Mediated By Profitability. *Dinasti International Journal of Education Management And Social Science*, 2(5), 742-755.
- Samadi, S., Bayani, O., & Ghalandari, M. (2012). The Relationship between Macroeconomic Variables and Stock Returns in the Tehran Stock Exchange. *International Journal of Academic Research in Business and Social Sciences*, 2(6), 559-573.
- Sumantri, M. B. A., & Yudawisastra, H. G. (2019). The Influence of Macroeconomic Factors toward Stock's Return. *International Journal of Innovation, Creativity and Change*, 6(7), 107-117.
- Thamrin, J., & Sembel, R. (2020). The Effect of Company's Fundamental, Market Return and Macroeconomic to Stock Return: A Case Study of Consumer Goods Companies Listed in BEI Period 2009-2018. *International Journal of Business Studies*, 4(3), 184-197.
- Trisnowati, Y., Achsani, N. A., Sembel, R., & Andati, T. (2022). The Effect of ESG Score, Financial Performance, and Macroeconomics on Stock Returns During

- The Pandemic Era in Indonesia. *International Journal of Energy Economics and Policy*, 12(4), 166-172.
- Widagdo, Bambang, M. Jihadi, Yanuar Bachitar, Oky Ervina Safitri, and Sanju Kumar Singh. "Financial Ratio, Macro Economy, and Investment Risk on Sharia Stock Return." *The Journal of Asian Finance, Economics and Business* 7, no. 12 (2020): 919-926.
- Widjaja, W., Sembel, R., & Malau, M. (2023). The Impact of Macroeconomic, Financial Performance, Market Return, and COVID-19 Instances on Stock Return of Pharmaceutical Companies. *South East Asia Journal of Contemporary Business, Economics and Law*, 28(3), 48-57.
- Wijaya, W. K., Sembel, H. R., & Dwitanto, A. R. (2020). Analyzing The Impact of Fundamental Factors on Stock Returns: Evidence from Consumer Goods Companies Listed on Indonesia Stock Exchange From 2014-2018. *South East Asia Journal of Contemporary Business, Economics and Law*, 22(1), 92-104.
- Yulfiswandi, Y., & Nopry, N. (2024). The Effect of Macroeconomic Variables and COVID-19 on Stock Returns of Tourism Sector Companies in Indonesia. *International Journal of Economics Development Research (IJEDR)*, 5(1), 208–221.
- Zaighum, I. (2014). Impact of Macroeconomic Factors on Non-Financial Firms Stock Returns: Evidence from Sectorial Study of KSE-100 Index. *Journal of Management Sciences*, 1(1), 35-48.
- Zulbetti, R., & Prihartono, A. H. K. (2015). Financial Performance, Macroeconomic Factors and Stock Return. In *International Conference on Economics and Banking (iceb-15)* (pp. 93-99). Atlantis Press.



## APPENDICES

### Appendix 1

#### Variables' Tabulation

EMITEN	DATE	DAR	CR	TATO	COVID-19	FOREX	MR	CP	ROA	SR
ADRO	01/03/2014	0,405	2,052	8,162	0	0,156	-0,036	77,01	0,074	-0,29
ADRO	01/06/2014	0,402	1,97	4,361	0	0,178	0,012	73,64	0,146	0,384
ADRO	01/09/2014	0,553	2,801	3,206	0	0,051	0,174	69,69	0,383	0,267
ADRO	01/12/2014	0,492	1,642	2,068	0	0,018	0,201	64,65	0,437	-0,047
ADRO	01/03/2015	0,479	1,952	8,956	0	0,141	0,146	67,76	0,142	-0,031
ADRO	01/06/2015	0,462	1,906	4,436	0	0,212	0,007	59,59	0,045	-0,436
ADRO	01/09/2015	0,453	2,103	2,943	0	0,184	-0,196	58,21	0,054	-0,787
ADRO	01/12/2015	0,437	2,404	2,22	0	0,107	-0,129	53,51	0,106	-0,703
ADRO	01/03/2016	0,426	2,687	10,145	0	0,014	-0,13	51,62	0,139	-0,387
ADRO	01/06/2016	0,431	2,466	5,138	0	-0,103	0,021	51,81	0,179	0,112
ADRO	01/09/2016	0,425	2,453	3,449	0	-0,116	0,239	63,93	0,049	0,812
ADRO	01/12/2016	0,42	2,471	2,584	0	-0,023	0,143	101,69	0,019	1,191
ADRO	01/03/2017	0,414	2,479	8,961	0	0,005	0,139	81,9	-0,008	0,998
ADRO	01/06/2017	0,407	2,584	4,24	0	0,009	0,15	75,46	-0,072	0,62
ADRO	01/09/2017	0,407	2,553	2,809	0	0,032	0,095	92,03	-0,052	0,415
ADRO	01/12/2017	0,4	2,559	2,091	0	0,007	0,182	94,04	-0,129	0,093
ADRO	01/03/2018	0,385	2,503	8,86	0	0,032	0,106	101,86	-0,145	0,197
ADRO	01/06/2018	0,386	2,163	4,213	0	0,073	-0,005	96,61	-0,312	0,125
ADRO	01/09/2018	0,398	1,8	2,682	0	0,101	0,013	104,81	0,011	0,005
ADRO	01/12/2018	0,391	1,96	1,951	0	0,058	-0,026	92,51	-0,003	-0,426
ADRO	01/03/2019	0,371	2,003	8,908	0	0,034	0,044	90,57	0,018	-0,46
ADRO	01/06/2019	0,379	1,479	4,032	0	-0,014	0,092	81,48	0,039	-0,275
ADRO	01/09/2019	0,375	1,227	2,728	0	-0,049	0,032	65,79	0,028	-0,352
ADRO	01/12/2019	0,448	1,713	2,088	0	-0,035	0,017	66,3	0,048	0,247
ADRO	01/03/2020	0,425	1,795	9,226	1	0,136	-0,354	67,08	0,081	-0,306
ADRO	01/06/2020	0,406	1,899	4,875	1	0,009	-0,259	52,98	0,052	-0,312
ADRO	01/09/2020	0,399	1,516	3,311	1	0,044	-0,236	49,42	0,025	-0,128
ADRO	01/12/2020	0,381	1,512	2,518	1	0,011	-0,052	59,65	0,039	-0,084
ADRO	01/03/2021	0,513	12,953	6,725	1	-0,116	0,277	84,47	0,04	0,171
ADRO	01/06/2021	0,4	2,453	4,312	1	0,017	0,199	100,33	0,04	0,191
ADRO	01/09/2021	0,393	2,253	2,771	1	-0,036	0,255	150,03	0,014	0,439
ADRO	01/12/2021	0,412	2,084	1,9	1	0,015	0,096	159,79	0,025	0,453
ADRO	01/03/2022	0,357	2,624	6,23	1	-0,011	0,167	203,69	0,023	0,828
ADRO	01/06/2022	0,633	2,28	1,465	1	0,027	0,144	323,91	0,003	0,864
ADRO	01/09/2022	0,373	2,454	1,697	1	0,062	0,113	319,22	-0,01	0,811
ADRO	01/12/2022	0,395	2,173	1,331	1	0,088	0,04	281,48	-0,024	0,537
ADRO	01/03/2023	0,283	4,273	5,344	1	0,042	-0,038	283,08	-0,04	0,075
ADRO	01/06/2023	0,279	3,819	2,798	1	0,01	-0,037	191,26	-0,098	-0,249
ADRO	01/09/2023	0,29	3,817	2,069	1	0,015	-0,014	133,13	0,065	-0,329
ADRO	01/12/2023	0,293	2,015	1,607	1	-0,011	0,06	117,38	0,02	-0,481
BUMI	01/03/2014	1,009	0,321	8,064	0	0,156	-0,036	77,01	0,002	-0,942
BUMI	01/06/2014	1,036	0,35	4,273	0	0,178	0,012	73,64	-0,002	-1,174
BUMI	01/09/2014	1,049	0,289	3,012	0	0,051	0,174	69,69	0,011	-0,873
BUMI	01/12/2014	1,113	0,345	2,333	0	0,018	0,201	64,65	0,04	-1,322
BUMI	01/03/2015	0,857	0,463	628,069	0	0,141	0,146	67,76	0,084	-1,238
BUMI	01/06/2015	1,297	0,135	204,16	0	0,212	0,007	59,59	0,124	-1,041
BUMI	01/09/2015	1,312	0,135	131,945	0	0,184	-0,196	58,21	0,016	-1,335
BUMI	01/12/2015	1,033	0,286	172,908	0	0,107	-0,129	53,51	0,021	-0,47
BUMI	01/03/2016	1,792	0,033	558,963	0	0,014	-0,13	51,62	0,016	-0,445

EMITEN	DATE	DAR	CR	TATO	COVID-19	FOREX	MR	CP	ROA	SR
BUMI	01/06/2016	1,803	0,032	285,378	0	-0,103	0,021	51,81	0,006	0,125
BUMI	01/09/2016	1,852	0,11	185,596	0	-0,116	0,239	63,93	#DIV/0!	1,008
BUMI	01/12/2016	1,898	0,692	132,729	0	-0,023	0,143	101,69	#DIV/0!	1,716
BUMI	01/03/2017	1,868	0,772	302,081	0	0,005	0,139	81,9	0,047	1,893
BUMI	01/06/2017	1,769	2,53	200,522	0	0,009	0,15	75,46	0,006	1,609
BUMI	01/09/2017	0,93	1,728	171,892	0	0,032	0,095	92,03	0,005	0,373
BUMI	01/12/2017	0,731	1,051	268,686	0	0,007	0,182	94,04	0,009	-0,029
BUMI	01/03/2018	0,9	0,69	12,207	0	0,032	0,106	101,86	0,004	-0,149
BUMI	01/06/2018	0,888	0,636	6,967	0	0,073	-0,005	96,61	-0,05	-0,408
BUMI	01/09/2018	0,87	0,412	4,624	0	0,101	0,013	104,81	0,004	0,082
BUMI	01/12/2018	0,871	0,398	3,514	0	0,058	-0,026	92,51	0,014	-0,964
BUMI	01/03/2019	0,858	0,363	16,58	0	0,034	0,044	90,57	0,034	-0,844
BUMI	01/06/2019	0,838	0,402	7,596	0	-0,014	0,092	81,48	0,043	-0,641
BUMI	01/09/2019	0,842	0,407	4,956	0	-0,049	0,032	65,79	0,036	-0,875
BUMI	01/12/2019	0,862	0,387	3,328	0	-0,035	0,017	66,3	0,062	-0,445
BUMI	01/03/2020	0,868	0,36	14,061	1	0,136	-0,354	67,08	0,093	-0,9
BUMI	01/06/2020	0,867	0,276	8,129	1	0,009	-0,259	52,98	0,121	-0,867
BUMI	01/09/2020	0,875	0,256	5,802	1	0,044	-0,236	49,42	0,034	-0,588
BUMI	01/12/2020	0,961	0,306	4,338	1	0,011	-0,052	59,65	0,05	0,087
BUMI	01/03/2021	0,963	0,311	17,834	1	-0,116	0,277	84,47	0,064	0,166
BUMI	01/06/2021	0,938	0,367	8,353	1	0,017	0,199	100,33	0,086	0,182
BUMI	01/09/2021	0,924	0,418	5,558	1	-0,036	0,255	150,03	0,016	0,278
BUMI	01/12/2021	0,847	0,27	4,189	1	0,015	0,096	159,79	0,032	-0,072
BUMI	01/03/2022	0,819	0,3	11,917	1	-0,011	0,167	203,69	0,04	-0,034
BUMI	01/06/2022	0,801	0,34	4,605	1	0,027	0,144	323,91	0,045	0,11
BUMI	01/09/2022	0,759	0,368	3,258	1	0,062	0,113	319,22	0,004	0,73
BUMI	01/12/2022	0,372	0,837	2,452	1	0,088	0,04	281,48	0,051	0,877
BUMI	01/03/2023	0,345	0,834	9,447	1	0,042	-0,038	283,08	0,059	0,801
BUMI	01/06/2023	0,35	0,865	4,926	1	0,01	-0,037	191,26	0,121	0,54
BUMI	01/09/2023	0,328	0,816	3,566	1	0,015	-0,014	133,13	0,037	0
BUMI	01/12/2023	0,34	0,831	2,502	1	-0,011	0,06	117,38	0,031	-0,639
HRUM	01/09/2014	0,157	4,042	1,217	0	0,051	0,174	69,69	0,078	-0,278
HRUM	01/12/2014	0,185	3,577	0,93	0	0,018	0,201	64,65	0,17	-0,505
HRUM	01/03/2015	0,111	5,841	5,474	0	0,141	0,146	67,76	0,249	-0,376
HRUM	01/06/2015	0,111	5,925	2,694	0	0,212	0,007	59,59	0,296	-0,744
HRUM	01/09/2015	0,074	9,007	1,87	0	0,184	-0,196	58,21	0,093	-0,884
HRUM	01/12/2015	0,098	6,914	1,527	0	0,107	-0,129	53,51	0,136	-0,9
HRUM	01/03/2016	0,09	7,735	8,624	0	0,014	-0,13	51,62	0,098	-0,533
HRUM	01/06/2016	0,084	8,023	4,739	0	-0,103	0,021	51,81	0,12	-0,298
HRUM	01/09/2016	0,097	6,872	3,03	0	-0,116	0,239	63,93	0,004	0,212
HRUM	01/12/2016	0,14	5,066	1,904	0	-0,023	0,143	101,69	0,005	1,154
HRUM	01/03/2017	0,127	5,771	5,372	0	0,005	0,139	81,9	-0,004	1,02
HRUM	01/06/2017	0,144	5,153	2,643	0	0,009	0,15	75,46	-0,032	0,889
HRUM	01/09/2017	0,11	6,917	1,808	0	0,032	0,095	92,03	0,005	0,717
HRUM	01/12/2017	0,138	5,451	1,411	0	0,007	0,182	94,04	-0,004	-0,043
HRUM	01/03/2018	0,126	5,915	5,41	0	0,032	0,106	101,86	-0,015	0,109
HRUM	01/06/2018	0,146	4,896	2,837	0	0,073	-0,005	96,61	-0,078	0,218
HRUM	01/09/2018	0,187	3,831	1,992	0	0,101	0,013	104,81	-0,004	0,115
HRUM	01/12/2018	0,17	4,56	1,39	0	0,058	-0,026	92,51	-0,016	-0,381
HRUM	01/03/2019	0,111	7,697	6,179	0	0,034	0,044	90,57	-0,014	-0,65

EMITEN	DATE	DAR	CR	TATO	COVID-19	FOREX	MR	CP	ROA	SR
HRUM	01/06/2019	0,097	6,623	3,146	0	-0,014	0,092	81,48	-0,111	-0,509
HRUM	01/09/2019	0,12	7,117	2,267	0	-0,049	0,032	65,79	0,011	-0,583
HRUM	01/12/2019	0,106	9,222	1,702	0	-0,035	0,017	66,3	0,025	-0,059
HRUM	01/03/2020	0,107	8,912	7,278	1	0,136	-0,354	67,08	0,04	-0,073
HRUM	01/06/2020	0,1	9,484	4,551	1	0,009	-0,259	52,98	0,194	-0,225
HRUM	01/09/2020	0,092	10,685	3,414	1	0,044	-0,236	49,42	0,018	0,158
HRUM	01/12/2020	0,088	10,074	3,16	1	0,011	-0,052	59,65	0,024	0,814
HRUM	01/03/2021	0,2	6,105	10,428	1	-0,116	0,277	84,47	0,035	1,308
HRUM	01/06/2021	0,238	4,306	5,302	1	0,017	0,199	100,33	0,058	1,45
HRUM	01/09/2021	0,236	4,997	3,371	1	-0,036	0,255	150,03	0,005	1,779
HRUM	01/12/2021	0,256	3,073	2,602	1	0,015	0,096	159,79	0,007	1,243
HRUM	01/03/2022	0,248	2,55	6,505	1	-0,011	0,167	203,69	0,003	0,785
HRUM	01/06/2022	0,201	2,273	2,858	1	0,027	0,144	323,91	0,003	0,42
HRUM	01/09/2022	0,191	2,836	1,719	1	0,062	0,113	319,22	-0,005	-0,044
HRUM	01/12/2022	0,224	2,301	1,414	1	0,088	0,04	281,48	-0,005	-0,243
HRUM	01/03/2023	0,185	3,216	4,682	1	0,042	-0,038	283,08	-0,014	-0,382
HRUM	01/06/2023	0,135	4,181	2,777	1	0,01	-0,037	191,26	-0,03	-0,084
HRUM	01/09/2023	0,235	2,792	2,297	1	0,015	-0,014	133,13	-0,001	0,057
HRUM	01/12/2023	0,281	1,683	1,765	1	-0,011	0,06	117,38	0,008	-0,193
INDY	01/03/2014	0,592	2,067	9,743	0	0,156	-0,036	77,01	-0,002	-0,735
INDY	01/06/2014	0,588	2,337	4,429	0	0,178	0,012	73,64	0,056	-0,201
INDY	01/09/2014	0,597	2,162	2,952	0	0,051	0,174	69,69	0,021	0
INDY	01/12/2014	1,424	0,392	0,872	0	0,018	0,201	64,65	0,058	-0,146
INDY	01/03/2015	0,611	2,012	7,556	0	0,141	0,146	67,76	0,105	-1,034
INDY	01/06/2015	0,625	1,86	3,866	0	0,212	0,007	59,59	0,142	-0,894
INDY	01/09/2015	0,623	1,86	2,734	0	0,184	-0,196	58,21	0,019	-1,344
INDY	01/12/2015	1,347	0,249	0,893	0	0,107	-0,129	53,51	0,036	-1,68
INDY	01/03/2016	0,614	1,776	10,937	0	0,014	-0,13	51,62	0,038	-0,23
INDY	01/06/2016	0,598	1,902	3,504	0	-0,103	0,021	51,81	0,049	0,539
INDY	01/09/2016	0,593	2,033	5,542	0	-0,116	0,239	63,93	#DIV/0!	1,159
INDY	01/12/2016	1,151	0,291	1,212	0	-0,023	0,143	101,69	#DIV/0!	1,858
INDY	01/03/2017	0,598	1,958	8,534	0	0,005	0,139	81,9	#DIV/0!	0,722
INDY	01/06/2017	0,586	2,66	4,227	0	0,009	0,15	75,46	0,153	0,374
INDY	01/09/2017	0,578	2,726	2,766	0	0,032	0,095	92,03	0,03	1,149
INDY	01/12/2017	1,522	0,335	1,507	0	0,007	0,182	94,04	#DIV/0!	1,468
INDY	01/03/2018	0,684	2,112	4,627	0	0,032	0,106	101,86	#DIV/0!	1,604
INDY	01/06/2018	0,678	2,429	2,462	0	0,073	-0,005	96,61	0,054	1,472
INDY	01/09/2018	0,675	2,289	1,687	0	0,101	0,013	104,81	0,02	0,367
INDY	01/12/2018	0,58	7,338	0,569	0	0,058	-0,026	92,51	0,033	-0,658
INDY	01/03/2019	0,701	2,176	5,386	0	0,034	0,044	90,57	0,057	-0,66
INDY	01/06/2019	0,697	2,513	2,579	0	-0,014	0,092	81,48	0,108	-0,711
INDY	01/09/2019	0,707	1,993	1,777	0	-0,049	0,032	65,79	0,044	-0,756
INDY	01/12/2019	1,526	0,153	0,605	0	-0,035	0,017	66,3	0,084	-0,282
INDY	01/03/2020	0,716	2,048	5,488	1	0,136	-0,354	67,08	0,128	-0,965
INDY	01/06/2020	0,714	2,118	2,984	1	0,009	-0,259	52,98	0,186	-0,919
INDY	01/09/2020	0,719	2,033	2,155	1	0,044	-0,236	49,42	0,042	-0,357
INDY	01/12/2020	0,752	1,97	1,682	1	0,011	-0,052	59,65	0,078	0,37
INDY	01/03/2021	0,757	1,807	6,124	1	-0,116	0,277	84,47	0,134	0,718
INDY	01/06/2021	0,753	1,821	2,792	1	0,017	0,199	100,33	0,179	0,663
INDY	01/09/2021	0,767	1,78	1,713	1	-0,036	0,255	150,03	0,027	0,725

EMITEN	DATE	DAR	CR	TATO	COVID-19	FOREX	MR	CP	ROA	SR
INDY	01/12/2021	0,761	1,842	1,203	1	0,015	0,096	159,79	0,052	-0,113
INDY	01/03/2022	0,75	1,799	4,814	1	-0,011	0,167	203,69	0,075	0,448
INDY	01/06/2022	0,706	2,081	2,047	1	0,027	0,144	323,91	0,105	0,584
INDY	01/09/2022	0,665	1,891	1,176	1	0,062	0,113	319,22	0,012	0,457
INDY	01/12/2022	0,627	1,699	0,829	1	0,088	0,04	281,48	0,023	0,569
INDY	01/03/2023	0,623	1,688	4,02	1	0,042	-0,038	283,08	0,033	0,078
INDY	01/06/2023	0,56	2,185	1,83	1	0,01	-0,037	191,26	0,033	-0,199
INDY	01/09/2023	0,564	2,177	1,36	1	0,015	-0,014	133,13	0,035	-0,31
INDY	01/12/2023	0,558	1,511	1,028	1	-0,011	0,06	117,38	0,089	-0,643
ITMG	01/12/2014	0,325	1,564	0,675	0	0,018	0,201	64,65	0,233	-0,617
ITMG	01/03/2015	0,32	1,686	2,977	0	0,141	0,146	67,76	0,358	-0,742
ITMG	01/12/2015	0,292	1,802	0,741	0	0,107	-0,129	53,51	0,138	-1,605
ITMG	01/03/2016	0,261	2,023	3,477	0	0,014	-0,13	51,62	0,189	-0,936
ITMG	01/06/2016	0,24	2,27	1,826	0	-0,103	0,021	51,81	0,228	-0,315
ITMG	01/09/2016	0,253	2,117	1,226	0	-0,116	0,239	63,93	#DIV/0!	0,099
ITMG	01/12/2016	0,25	2,257	0,885	0	-0,023	0,143	101,69	#DIV/0!	1,081
ITMG	01/03/2017	0,33	1,784	3,512	0	0,005	0,139	81,9	#DIV/0!	1,115
ITMG	01/06/2017	0,27	2,318	1,676	0	0,009	0,15	75,46	0,144	0,613
ITMG	01/09/2017	0,271	2,672	1,158	0	0,032	0,095	92,03	0,022	0,619
ITMG	01/12/2017	0,295	2,434	0,804	0	0,007	0,182	94,04	0,052	0,204
ITMG	01/03/2018	0,364	1,872	3,629	0	0,032	0,106	101,86	0,093	0,344
ITMG	01/06/2018	0,314	2,077	1,619	0	0,073	-0,005	96,61	0,133	0,257
ITMG	01/09/2018	0,32	2,078	1,041	0	0,101	0,013	104,81	0,02	0,244
ITMG	01/12/2018	0,328	1,966	0,719	0	0,058	-0,026	92,51	0,043	-0,022
ITMG	01/03/2019	0,42	1,504	3,244	0	0,034	0,044	90,57	0,061	-0,175
ITMG	01/06/2019	0,331	1,788	1,483	0	-0,014	0,092	81,48	0,12	-0,243
ITMG	01/09/2019	0,303	1,92	1,003	0	-0,049	0,032	65,79	0,045	-0,735
ITMG	01/12/2019	0,268	2,025	0,705	0	-0,035	0,017	66,3	0,094	-0,568
ITMG	01/03/2020	0,302	1,81	3,387	1	0,136	-0,354	67,08	0,137	-1,083
ITMG	01/06/2020	0,299	1,601	1,883	1	0,009	-0,259	52,98	0,207	-0,905
ITMG	01/09/2020	0,268	1,867	1,353	1	0,044	-0,236	49,42	0,062	-0,42
ITMG	01/12/2020	0,27	2,026	0,977	1	0,011	-0,052	59,65	0,127	0,188
ITMG	01/03/2021	0,265	2,231	4,227	1	-0,116	0,277	84,47	0,178	0,344
ITMG	01/06/2021	0,31	1,981	1,961	1	0,017	0,199	100,33	0,212	0,693
ITMG	01/09/2021	0,312	2,199	1,141	1	-0,036	0,255	150,03	0,046	0,937
ITMG	01/12/2021	0,279	2,709	0,802	1	0,015	0,096	159,79	0,087	0,387
ITMG	01/03/2022	0,364	1,872	3,629	1	-0,011	0,167	203,69	0,124	0,916
ITMG	01/06/2022	0,249	3,201	1,388	1	0,027	0,144	323,91	0,155	0,77
ITMG	01/09/2022	0,221	3,919	0,953	1	0,062	0,113	319,22	0,033	0,689
ITMG	01/12/2022	0,261	3,259	0,726	1	0,088	0,04	281,48	0,048	0,649
ITMG	01/03/2023	0,4	1,988	4,05	1	0,042	-0,038	283,08	0,071	0,322
ITMG	01/06/2023	0,193	4,379	1,714	1	0,01	-0,037	191,26	0,1	-0,24
ITMG	01/09/2023	0,213	3,701	1,176	1	0,015	-0,014	133,13	0,021	-0,357
ITMG	01/12/2023	0,183	4,35	0,921	1	-0,011	0,06	117,38	0,067	-0,42
PTBA	01/12/2014	0,439	1,955	0,779	0	0,018	0,201	64,65	0,175	0,203
PTBA	01/03/2015	0,457	1,764	4,673	0	0,141	0,146	67,76	0,247	-0,292
PTBA	01/06/2015	0,422	1,885	2,339	0	0,212	0,007	59,59	0,282	-0,46
PTBA	01/09/2015	0,412	1,895	1,539	0	0,184	-0,196	58,21	0,026	-0,818
PTBA	01/12/2015	0,498	1,437	1,112	0	0,107	-0,129	53,51	0,062	-2,422
PTBA	01/03/2016	0,43	1,706	4,728	0	0,014	-0,13	51,62	0,109	-2,148

EMITEN	DATE	DAR	CR	TATO	COVID-19	FOREX	MR	CP	ROA	SR
PTBA	01/06/2016	0,446	1,528	2,46	0	-0,103	0,021	51,81	0,162	-1,696
PTBA	01/09/2016	0,444	1,772	1,718	0	-0,116	0,239	63,93	0,041	-1,072
PTBA	01/12/2016	0,396	1,73	1,196	0	-0,023	0,143	101,69	0,063	1,016
PTBA	01/03/2017	0,421	1,76	4,3	0	0,005	0,139	81,9	0,094	0,744
PTBA	01/06/2017	0,358	2,34	2,082	0	0,009	0,15	75,46	0,119	0,44
PTBA	01/09/2017	0,338	2,547	1,475	0	0,032	0,095	92,03	0,036	0,082
PTBA	01/12/2017	0,372	2,463	1,129	0	0,007	0,182	94,04	0,054	-0,016
PTBA	01/03/2018	0,359	2,644	4,109	0	0,032	0,106	101,86	0,073	0,108
PTBA	01/06/2018	0,372	2,547	1,961	0	0,073	-0,005	96,61	0,091	0,507
PTBA	01/09/2018	0,336	2,639	1,401	0	0,101	0,013	104,81	0,054	0,726
PTBA	01/12/2018	0,327	2,378	1,142	0	0,058	-0,026	92,51	0,113	0,558
PTBA	01/03/2019	0,293	2,856	4,652	0	0,034	0,044	90,57	0,131	0,357
PTBA	01/06/2019	0,306	2,353	2,206	0	-0,014	0,092	81,48	0,207	-0,294
PTBA	01/09/2019	0,313	2,396	1,552	0	-0,049	0,032	65,79	#DIV/0!	-0,648
PTBA	01/12/2019	0,294	2,49	1,198	0	-0,035	0,017	66,3	0,053	-0,48
PTBA	01/03/2020	0,281	2,682	5,413	1	0,136	-0,354	67,08	0,097	-0,656
PTBA	01/06/2020	0,406	1,524	2,984	1	0,009	-0,259	52,98	0,116	-0,382
PTBA	01/09/2020	0,323	2,137	1,907	1	0,044	-0,236	49,42	0,066	-0,137
PTBA	01/12/2020	0,296	2,16	1,389	1	0,011	-0,052	59,65	0,084	0,055
PTBA	01/03/2021	0,284	2,191	6,139	1	-0,116	0,277	84,47	#DIV/0!	0,184
PTBA	01/06/2021	0,353	1,865	2,628	1	0,017	0,199	100,33	0,107	-0,01
PTBA	01/09/2021	0,347	2,335	1,661	1	-0,036	0,255	150,03	0,019	0,337
PTBA	01/12/2021	0,329	2,428	1,235	1	0,015	0,096	159,79	0,045	-0,036
PTBA	01/03/2022	0,32	2,63	4,752	1	-0,011	0,167	203,69	0,061	0,228
PTBA	01/06/2022	0,368	1,997	1,949	1	0,027	0,144	323,91	0,069	0,647
PTBA	01/09/2022	0,359	2,246	1,327	1	0,062	0,113	319,22	0,039	0,413
PTBA	01/12/2022	0,363	2,283	1,064	1	0,088	0,04	281,48	0,045	0,309
PTBA	01/03/2023	0,36	2,289	4,658	1	0,042	-0,038	283,08	0,06	0,193
PTBA	01/06/2023	0,601	1,149	2,454	1	0,01	-0,037	191,26	0,046	-0,354
PTBA	01/09/2023	0,46	1,381	1,298	1	0,015	-0,014	133,13	0,016	-0,398
PTBA	01/12/2023	0,444	1,52	1,007	1	-0,011	0,06	117,38	0,037	-0,414
TOBA	01/03/2014	0,54	0,892	2,459	0	0,156	-0,036	77,01	0,056	-0,303
TOBA	01/06/2014	0,578	1,189	1,342	0	0,178	0,012	73,64	0,076	-0,03
TOBA	01/09/2014	0,563	1,285	0,846	0	0,051	0,174	69,69	0,022	0,174
TOBA	01/12/2014	0,526	1,241	0,601	0	0,018	0,201	64,65	0,058	0,218
TOBA	01/03/2015	0,509	1,253	2,611	0	0,141	0,146	67,76	0,094	-0,071
TOBA	01/06/2015	0,482	1,28	1,477	0	0,212	0,007	59,59	0,104	0,017
TOBA	01/09/2015	0,456	1,449	1,034	0	0,184	-0,196	58,21	0,016	0,119
TOBA	01/12/2015	0,451	1,4	0,81	0	0,107	-0,129	53,51	0,02	-0,092
TOBA	01/03/2016	1,285	4,285	1,495	0	0,014	-0,13	51,62	0,02	-0,495
TOBA	01/06/2016	1,368	4,456	0,588	0	-0,103	0,021	51,81	0,022	-0,195
TOBA	01/09/2016	1,485	4,089	0,388	0	-0,116	0,239	63,93		-0,155
TOBA	01/12/2016	1,612	3,585	0,273	0	-0,023	0,143	101,69		0,612
TOBA	01/06/2017	0,437	1,638	2,161	0	0,009	0,15	75,46		-0,618
TOBA	01/09/2017	0,456	1,652	1,407	0	0,032	0,095	92,03		-0,381
TOBA	01/12/2017	0,484	1,584	1,212	0	0,007	0,182	94,04		-0,877
TOBA	01/03/2018	0,466	1,823	3,504	0	0,032	0,106	101,86		-0,663
TOBA	01/06/2018	0,467	1,676	1,98	0	0,073	-0,005	96,61		0,302
TOBA	01/12/2018	0,584	0,92	1,447	0	0,058	-0,026	92,51		-0,246
TOBA	01/03/2019	0,569	1,413	4,743	0	0,034	0,044	90,57		-0,486
TOBA	01/06/2019	0,561	1,412	2,259	0	-0,014	0,092	81,48		-0,132
TOBA	01/09/2019	0,425	1,221	1,569	0	-0,049	0,032	65,79		-0,179
TOBA	01/12/2019	0,584	0,92	1,208	0	-0,035	0,017	66,3		-0,123
TOBA	01/03/2020	0,608	0,704	4,357	1	0,136	-0,354	67,08		-0,108
TOBA	01/06/2020	0,613	0,664	3,364	1	0,009	-0,259	52,98		-0,262
TOBA	01/09/2020	0,602	0,687	2,736	1	0,044	-0,236	49,42		0,047
TOBA	01/12/2020	0,623	0,732	2,325	1	0,011	-0,052	59,65		0,373
TOBA	01/03/2021	0,625	0,658	9,43	1	-0,116	0,277	84,47		0,289
TOBA	01/06/2021	0,626	0,396	4,3	1	0,017	0,199	100,33		0,329
TOBA	01/09/2021	0,597	0,903	2,777	1	-0,036	0,255	150,03		0,353
TOBA	01/12/2021	0,587	1,74	1,855	1	0,015	0,096	159,79		0,749
TOBA	01/03/2022	0,772	1,742	5,902	1	-0,011	0,167	203,69		0,787
TOBA	01/06/2022	0,552	1,995	3,155	1	0,027	0,144	323,91		0,486
TOBA	01/09/2022	0,531	1,922	1,906	1	0,062	0,113	319,22		0,274
TOBA	01/12/2022	0,529	1,981	1,415	1	0,088	0,04	281,48		-0,598
TOBA	01/03/2023	0,521	1,965	6,962	1	0,042	-0,038	283,08		-0,765
TOBA	01/06/2023	0,536	1,715	3,256	1	0,01	-0,037	191,26		-0,708
TOBA	01/09/2023	0,558	1,723	2,552	1	0,015	-0,014	133,13		-0,812
TOBA	01/12/2023	0,553	1,603	1,891	1	-0,011	0,06	117,38		-0,688

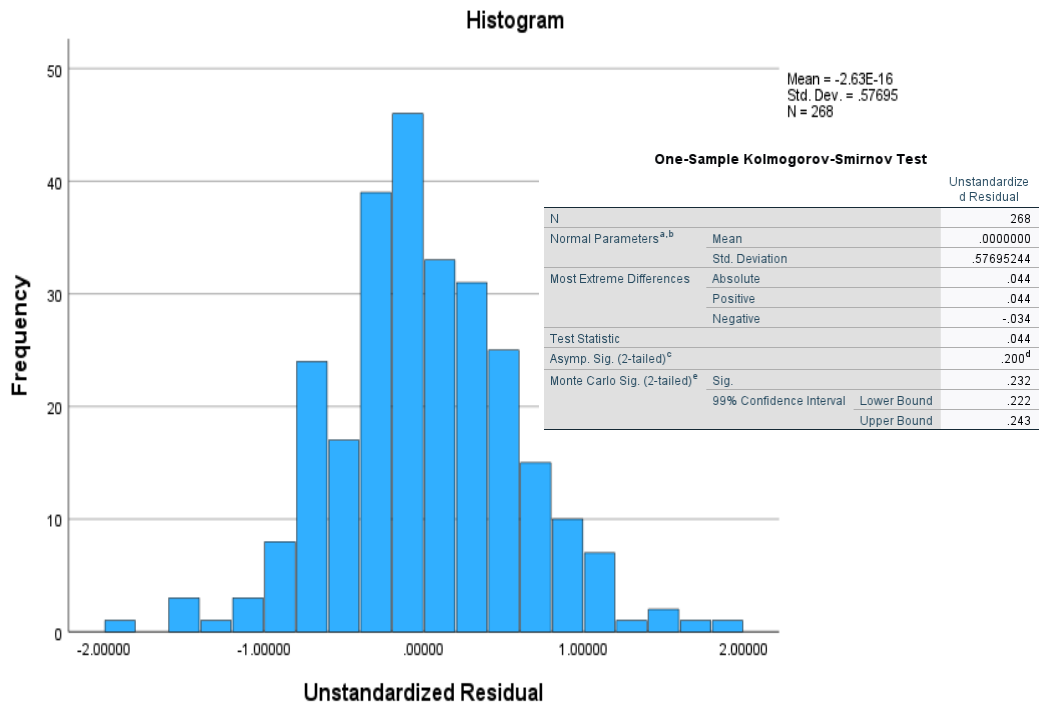
## Appendix 2

### Descriptive Statistics

VARIABLE	DAR	CR	TATO	COVID-19	FOREX	MR	CP	ROA	SR
Mean	0,522529851	2,377660448	15,34004104	0,417910448	0,029895522	0,042257463	111,931903	0,061451493	-0,012738806
Standard Error	0,02146429	0,120247364	3,928653269	0,030184285	0,004409963	0,008714448	4,553530586	0,005000286	0,042377094
Median	0,425	1,981	2,711	0	0,017	0,044	84,47	0,0445	-0,0325
Mode	0,425	1,97	2,777	0	-0,116	0,201	64,65	0,016	0,125
Standard Deviation	0,351385565	1,968534189	64,31482585	0,494138034	0,07219421	0,14266166	74,54450841	0,081858203	0,693742922
Sample Variance	0,123471816	3,875126854	4136,396824	0,244172396	0,005212004	0,020352349	5556,883734	0,006700765	0,481279242
Kurtosis	3,656319005	6,313572455	52,79376049	-1,902193086	0,431117887	0,388415364	1,993738197	5,932607906	0,555599267
Skewness	1,755416224	2,239414746	6,790005688	0,334751674	0,346815974	-0,773883473	1,748884657	1,178305714	0,039041465
Range	1,824	12,921	627,796	1	0,328	0,631	274,49	0,766	4,315
Minimum	0,074	0,032	0,273	0	-0,116	-0,354	49,42	-0,312	-2,422
Maximum	1,898	12,953	628,069	1	0,212	0,277	323,91	0,454	1,893
Sum	140,038	637,213	4111,131	112	8,012	11,325	29997,75	16,469	-3,414
Count	268	268	268	268	268	268	268	268	268

## Appendix 3

### Normality Test



## Appendix 4

### Multicollinearity Test

Model		Unstandardized	Standardized	Tolerance	VIF
		Coefficients	Coefficients		
		Std. Error	Beta		
1	(Constant)	.134			
	DAR	.137	.136	.553	1.807
	CR	.022	.154	.716	1.397
	TATO	.001	.008	.762	1.312
	COVID-19	.099	.125	.533	1.877
	FOREX	.615	-.066	.651	1.536
	MR	.325	.398	.597	1.676
	CP	.001	.131	.462	2.165
	ROA	.524	.104	.698	1.433

## Appendix 5

### Chow Test of The First Equation on Dependent Variable of ROA

Effects Test	Statistic	d.f.	Prob.
Cross-section F	4.677535	(6,217)	0.0002
Cross-section Chi-square	27.730951	6	0.0001

## Appendix 6

### Hausman Test of the First Equation on Dependent Variable of ROA

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.747545	4	0.4412

## Appendix 7

### Result of Data Panel Regression of Model Selection on The First Equation

	Compared Model	Probability Value	Condition	Result
Chow	CEM vs FEM	0.0001	Prob. > 0.05 Prob. < 0.05	CEM FEM
Hausman	FEM vs REM	0.4412	Prob. > 0.05 Prob. < 0.05	REM FEM
Lagrange Multiplier	CEM vs REM	--	Prob. > 0.05 Prob. < 0.05	CEM REM

## Appendix 8

### Chow Test of the Second Equation on Dependent Variable of Stock Return

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.222553	(6,213)	0.2958
Cross-section Chi-square	7.719715	6	0.2594



## Appendix 9

### Lagrange Multiplier Test of The Second Equation on Dpendent Variable of Stock Return

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.159313 (0.6898)	36.27975 (0.0000)	36.43906 (0.0000)
Honda	-0.399140 (0.6551)	6.023268 (0.0000)	3.976859 (0.0000)
King-Wu	-0.399140 (0.6551)	6.023268 (0.0000)	1.746644 (0.0403)
Standardized Honda	0.251927 (0.4005)	6.858054 (0.0000)	0.071877 (0.4713)
Standardized King- Wu	0.251927 (0.4005)	6.858054 (0.0000)	-1.187507 (0.8825)
Gourieroux, et al.	--	--	36.27975 (0.0000)

## Appendix 10

### Result of Data Panel Regression of the Second Equation

Tests	Compared Model	Probability Value	Condition	Result
Chow	CEM vs FEM	0.2594	Prob. > 0.05	CEM
			Prob. < 0.05	FEM
Hausman	FEM vs REM	-	Prob. > 0.05	REM
			Prob. < 0.05	FEM
Lagrange Multiplier	CEM vs REM	0.6898	Prob. > 0.05	CEM
			Prob. < 0.05	REM

### Appendix 11

#### Adjusted R2 of the First Equation on Dependent Variable of ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.353 <sup>a</sup>	.125	.111	.077167

### Appendix 12

#### ANOVA of the First Equation on Dependent Variable of ROA

1	Regression	.223	4	.056	9.363	<,001 <sup>b</sup>
	Residual	1.566	263	.006		
	Total	1.789	267			

a. Dependent Variable: ROA

b. Predictors: (Constant), COVID-19, CR, TATO, DAR

### Appendix 12

#### Adjusted R2 of the Second Equation on Dependent Variable of Stock Return

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.555 <sup>a</sup>	.308	.287	.585795

### Appendix 13

#### ANOVA of the Second Equation on Dependent Variable of Stock Return

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.624	8	4.953	14.434	<,001 <sup>b</sup>
	Residual	88.877	259	.343		
	Total	128.502	267			

a. Dependent Variable: SR

b. Predictors: (Constant), ROA, FOREX, CR, TATO, COVID-19, MR, DAR, CP

## Appendix 14

### Hypothesis Testing of the First Equation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.079	.015		5.181	<.001
	DAR	-.055	.017	-.236	-3.145	.002
	CR	.000	.003	.005	.073	.942
	TATO	-8.364E-5	.000	-.066	-.999	.319
	COVID-19	.030	.010	.179	3.040	.003

## Appendix 15

### Hypothesis Testing of the Second Equation

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.610	.134		-4.555	<.001
	DAR	.268	.137	.136	1.952	.052
	CR	.054	.022	.154	2.529	.012
	TATO	9.000E-5	.001	.008	.141	.888
	COVID-19	.175	.099	.125	1.760	.080
	FOREX	-.635	.615	-.066	-1.031	.303
	MR	1.934	.325	.398	5.943	<.001
	CP	.001	.001	.131	1.723	.086
	ROA	.883	.524	.104	1.685	.093