International Journal of Research and Review
www.ijrrjournal.com E-ISSN: 2349-9788; P-ISSN: 2454-2237

Research Paper

Stock Return Analysis While Recession and Expansion Cycle in Consumer Goods and Mining Sector Listed on Indonesia Stock Exchange

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ABSTRACT

This study aims to analyze stock returns during the recession and expansion cycles in two different sector characteristics, namely the consumer goods and mining sectors. And, this study also analyzes the asset pricing model with the best level of accuracy in estimating stock returns for two different sectors and two economic cycles. This study uses multiple regression to see the effect of beta and gross domestic product growth on stock returns and mean absolute deviation method to measure the asset pricing model with the best degree of accuracy. The results of the analysis show that beta has a significant effect on the stock returns of the consumer goods and mining sectors during recession and expansion. Whereas, gross domestic product growth only had a significant effect on mining sector stock returns during recession and expansion. But, in the consumer goods sector, gross domestic product growth has no significant effect on stock returns both during recession and expansion. Model Asset Pricing with the best level of accuracy for the consumer goods sector is the Arbitrage Pricing Theory at the time of recession and expansion. But, for the mining sector the best models are Arbitrage Pricing Theory during recession and Capital Asset Pricing Model during expansion.

Keywords: Stock Return, Recession, Expansion, Beta, CAPM, APT, Fama French Three Factor Model

PREFACE

Investment in the Indonesia Stock Exchange, particularly investment in company stocks, currently is one of the most attractive investment alternatives in addition to other investment instruments such as investment in savings, deposits, gold, and property. Investor growth in the stock market continues to increase..PT Indonesian Custodian Securities (KSEI) recorded a significant growth in the number of Single Investor Identification (SID) from previous years with the highest growth occurring at the end of 2018, amounting to 1,617,367 (an increase of 44.06%).

In investing, all investors expect an optimal rate of return. In fact, the rate of return received by investors (actual return) does not always correspond to the expected rate of return (expected return), in other words investors do not know with certainty the results to be obtained from their investments. This situation shows that investors face investment risk. In making investment decisions, there are two factors that are most important to consider, namely the expected return and the risk.

Stock returns and risks are closely related to historical data and economic conditions / cycles, because the level of efficiency of the Indonesian capital market is classified as semi strong. The stock price is not only influenced by historical data of the past, but also the information published by the company and the current state of the economy. Each sector in the stock market has its own risks which are reflected in the value of beta (β).Beta value of securities

shows the sensitivity of the level of profit of securities to market changes. When the beta value of a stock is less than 1, the fluctuation of the relevant stock price is lower than the fluctuation of the market index, and vice versa. The beta value of a stock equal to 1 indicates that the fluctuation of the relevant stock price is the same as the market index fluctuation (Samsul, 2006)

Stock returns as beta values, have links with the economic cycle of a country. In line with changes in the economic cycle, it will also affect the stocks markets related to a country's economic growth. For example, during the economic crisis in 2008, almost all stock market in various countries were affected by the cycle. Rowland in the book Macroeconomic Theory states that the economic cycle is often associated with changes in output volume. Many economists believe that this output is usually measured by the Gross Domestic Product (GDP) as the most reliable indicator of the economy. Gross Domestic Product is often considered the best measure of economic performance. GDP is the market value of all goods and services.

The ability to estimate the return of securities is indispensable for investors for many financial decisions such as predictions of equity costs, investment decisions, portfolio management, capital budgeting, and performance evaluation. The pricing model is a model for determining the return on assets that is needed or expected. The evolution of the asset pricing model continues to develop starting from 1964 when Sharp, Litner, Mossin introduced the Capital Asset Pricing Model (CAPM).CAPM is an asset valuation model that illustrates the relationship between market risk factors and expected returns and is used in valuation of securities price (Sharpe, 1964).the second model is Arbitrage Pricing Theory (APT). Arbitrage Pricing Theory (APT) was first formulated by Ross in 1976. APT is an alternative balance model to assess the relationship between risk and return of an asset (Lemiyana, 2015). APT appears to overcome the weaknesses of the CAPM model that allows inclusion of more than one factor to determine return on assets other than systematic risk. In 1992, Fama and French developed a valuation model that combined several factors, namely the market (contained in the CAPM), size, and market ratio.

Prior Research

Sutjipto (2007) concluded that the beta variable (market risk) has a significant and positive effect on stock returns. Ni Nyoman Devi Septiani (2014) concluded that beta had no significant effect on bank stock returns in the period before the global crisis. YestiDwiFinia (2015) concluded that partially the Gross Domestic Product (GDP) had a negative and significant effect on Islamic stock returns. ChairulNazwar (2008) concluded that the variable of economic growth had a positive and significant effect on stock returns. In the asset pricing model, Laia&Saerang (2015) concluded that the APT model with three macroeconomic factors is more accurate in predicting expected returns on national private commercial banks. Liani's research (2017) concludes that CAPM is considered better in predicting returns than the Fama-French Three Factor Model.

Research Gap

Based on some of the descriptions above, it appears that there are differences in the results of stock return analysis. These results are illustrated in 3 points, namely:

1. Stock characteristics (Beta)

Different sectors will give different analysis results. This is because the characteristics of the stock sectors studied are also different which is reflected in the beta value of each stock sector.

2. Period of research (economic cycle)

Different time series will make a difference in the results of stock return analysis.

3. Model Asset Pricing

Each asset pricing model has a different expected return calculation formula including the variables used in each model.

Based on the above analysis, this research will try to combine some of these gaps. This study will review and analyze stock return during the recession and expansion economic cycle in the consumer goods sector and the mining sector that registered on the IDX ".

Research purposes

The purpose of this study is divided into two, namely:

- General Objective

The general objective in this research is to analyze the stock return behavior in the recession cycle and the expansion cycle in two different sector characteristics, namely the consumer goods sector (defensive stock) and the mining sector (aggressive stock)

- Specific Objective

Specific objective in this study include:

1. Analyze the effect of the beta value of the Consumer Goods sector on the stock returns of the Consumer Goods sector during the recession and expansion cycles
2. Analyze the effect of the beta value of the mining sector on the stock returns of the mining sector during the recession and expansion cycles
3. Analyze the effect of Gross Domestic Product growth on the stock returns of the Consumer Goods and mining sectors
4. Analyzing the effect of a significant decrease in Gross Domestic Product on stock returns in the Consumer Goods and mining sectors
5. Analyzing the difference in average stock returns obtained by investors in the Consumer Goods sector during the recession and expansion cycle.
6. Analyze the difference in average stock returns obtained by investors in mining sector during the recession and expansion cycles.
7. Analyze the best model in predicting stock returns in the Consumer Goods sector during a recession and expansion cycle
8. Analyze the best model in predicting stock returns in the mining sector during a recession and expansion cycle

Scope of Research

This study analyzes stock returns in the recession and expansion cycle of the Consumer Goods and mining sectors on the Stock Exchange in 2016-2019.In this study, the stock data to be analyzed is the stock data of the Consumer Goods sector (31 issuers) and the mining sector a year (26 issuers).Data sources were obtained from the Indonesia Stock Exchange (IDX) site and Yahoo Finance's website. The data used in this study are daily stock data, CSPI, Inflation, Exchange Rate, BI Rate, and Gross Domestic Product (GDP) which are restricted in the study period, namely 2016-2019.

LITERATURE REVIEW

Economic cycle

The National Bureau of Economic Research (NBER) defines expansion and recession in terms of aggregate economic activity rising or falling, and this views real GDP as the only best measure of economic activity / cycle (NBER, 2011).

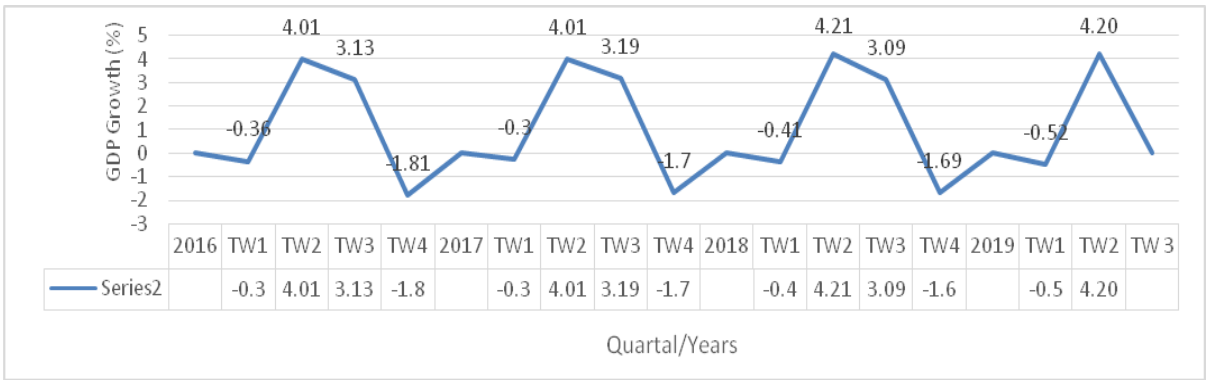

Figure 1 Indonesian GDP growth per quarter from 2016 – 2019
Source: *www.bps.go.id* (2019, edited)

From the data shown in Figure 1, in the 2016-2019 research periods there were several cycles that showed recession and expansion activities, namely:

Table 1 Recession and Expansion Cycles

No.	Recession cycle	Expansion cycle
1.	April 2016 - September 2016	October 2016 - March 2017
2.	April 2017- September 2017	October 2017 - March 2018
3.	April 2018 –September 2018	October 2018 – March 2019

Asset Pricing Model

In summary, the comparison between the Capital Asset Pricing Model (CAPM), the Arbitrage Pricing Theory (APT), and the Fama French Three Factor Model are summarized in Table 2.

Table 2: Comparison of Asset Pricing Models

Model	Variable	Assumption	Superiority	Weaknesses
CAPM	Market	In equilibrium conditions, risk is based on only one factor, beta. There are no transaction fees, taxes, and inflation factors	The simplest Asset Pricing model.	Multi period beta and still requires several assumptions
APT	Market, macroeconomic factors	Risk is based on several macroeconomic factors	More flexible than CAPM because it has multifactorial variables.	Does not explain how many effective macroeconomic factors
Fama French Three Factor Model	Market ,SMB (Small Minus Big), and HML (High, Medium, Low)	Risk is based on three factors namely, market, Market Capitalization, and Book Value.	Standards for three factors have been determined	The data needed is quite a lot and some data is difficult to obtain.

Framework

Based on the background in Chapter 1 and previous studies, the framework can be presented in Figure 2 below:

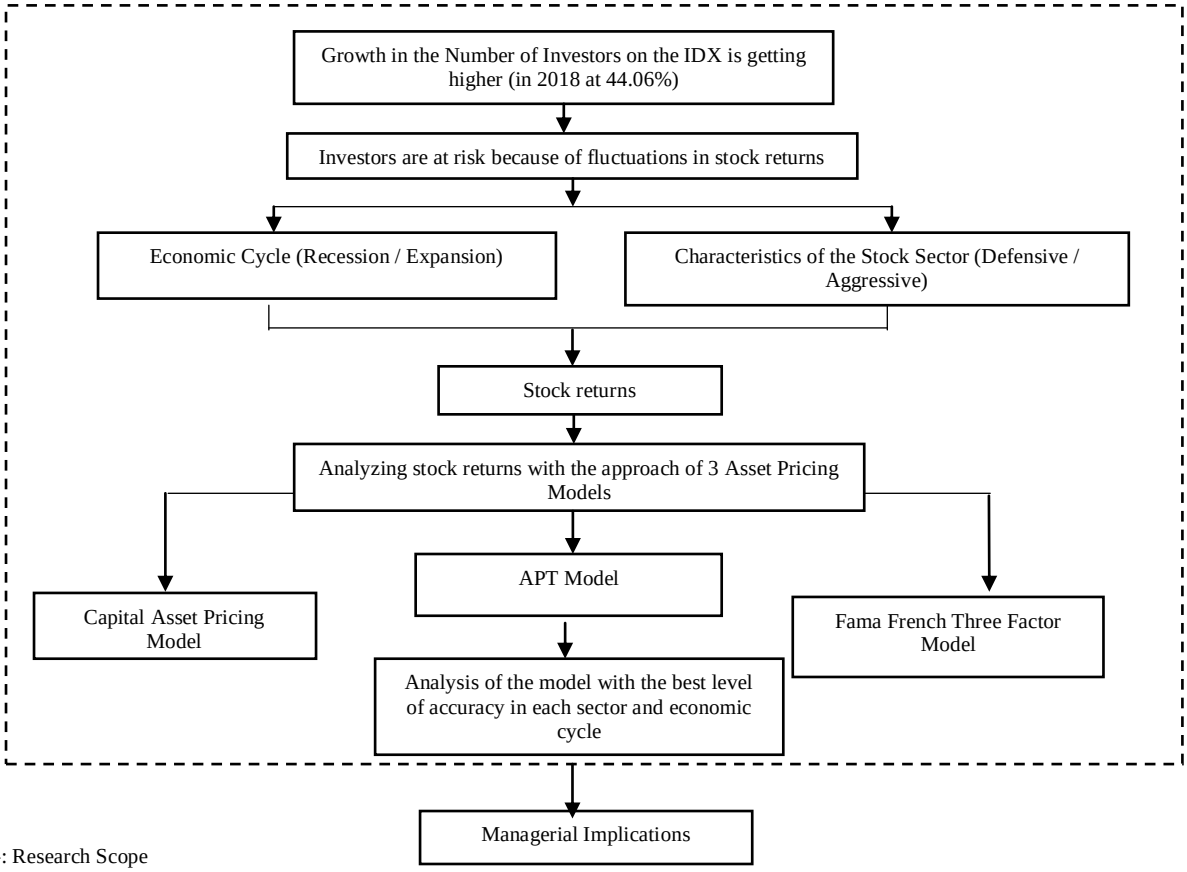

Figure 2: Research Framework

Hypothesis Formulation

Based on the theoretical basis and previous research studies, the following hypotheses can be formulated:

H_1.	Beta (Systematic Risk) significantly influences the stock returns of the Consumer Goods sector during the recession cycle.
H_2.	Beta (Systematic Risk) significantly influences the stock returns of the Consumer Goods sector during the expansion cycle.
H_3.	Beta (Systematic Risk) has a significant effect on stock returns in the mining sector during recession cycle.
H_4.	Beta (Systematic Risk) has a significant effect on stock returns in the mining sector during the expansion cycle.
H_5.	The decline in GDP has a significant effect on the stock returns of the Consumer Goods sector.
H_6.	GDP growth has a significant effect on stock returns in the Consumer Goods sector.
H_7.	The decline in GDP has a significant effect on mining sector stock returns.
H_8.	GDP growth has a significant effect on stock returns in the mining sector.
H_9.	There is a significant difference in accuracy between the Capital Asset Pricing Model (CAPM), the Arbitrage Pricing Theory (APT), and the Fama French Three Factor Model in predicting stock returns in the Consumer Goods sector during the recession cycle.
H_{10}.	There is a significant difference in accuracy between the Capital Asset Pricing Model (CAPM), the Arbitrage Pricing Theory (APT), and the Fama French Three Factor Model in predicting the stock return of the Consumer Goods sector during the expansion cycle.
H_{11}.	There are significant differences in accuracy between the Capital Asset Pricing Model (CAPM), the Arbitrage Pricing Theory (APT), and the Fama French Three Factor Model in predicting mining sector stock returns during a recession cycle.
H_{12}.	There is a significant difference in accuracy between the Capital Asset Pricing Model (CAPM), the Arbitrage Pricing Theory (APT), and the Fama French Three Factor Model in predicting mining sector stock returns during the expansion cycle.

RESEARCH METHODOLOGY

Data Types and Sources

The research sample was taken using a purposive sampling method. This research uses the following types and sources of data:

1. Secondary data in the form of stock of the consumer goods sector (31 issuers) and the mining sector in the year (26 issuers) 2016-2019 were obtained from the Indonesia Stock Exchange (IDX) site and the Yahoo Finance site.
2. Secondary data in the form of an annual report on the consumer goods sector and the mining sector in 2016-2019, were obtained from each issuer's website.

Analysis Methods and Data Processing Techniques

The analytical method in this study uses multiple linear regression analysis and t-test to determine the effect of beta, Gross Domestic Product (GDP) growth on stock returns, and calculate the expected return of each asset pricing model. To determine the model with the best level of accuracy in estimating stock returns, the method used is Mean Absolute Deviation (MAD).E-Views 8 and Microsoft Excel programs are used for data processing

RESULTS AND DISCUSSION

Descriptive Statistics Analysis

Descriptive statistics is the process of collecting, presenting and summarizing various characteristics of the data to describe the real condition comprehensively.The data used in this study are Gross Domestic Product (GDP), beta, and stock returns.

- **Descriptive Statistical Analysis on Gross Domestic Product (GDP) Growth**

Table 3: Gross Domestic Product (GDP) Growth

Variable	N	Min	Max	Mean	Std.Dev
GDP *Growth*	12	-1.81	4.21	1.36	2.49

Based on descriptive statistics GDP Growth variables shown in Table 3, it can be seen that the number of samples (N) is as many as 12. Within the 4 year study period, the minimum (lowest) GDP Growth variable is equal to - 1.81, and the maximum (highest) which is 4.21. The average value of the GDP Growth variable during 2016-2019 is 1.36, with a standard deviation of 2.49. This figure means that the standard deviation value is greater than the average which means that the level of diversity of the distribution of GDP growth values is high.

- **Descriptive Statistical Analysis on Beta (β) of the Stock sector**

Table 4: Beta (β) on the Stock Sector

No	Sector	Recession cycle					Expansion cycle				
		N	Min	Max	Mean	Std.Dev	N	Min	Max	Mean	Std.Dev
1	Consumer Goods	31	-1.14	1.66	0.63	0.53	31	-1.18	1.65	0.62	0.53
2	Mining	26	-1.94	2.06	1.12	0.82	26	-1.97	2.11	1.12	0.83

Based on descriptive statistics of the beta variables shown in Table 4, it can be seen that the average beta variable of the consumer goods sector is 0.63 during the recession cycle, and 0.62 during the expansion cycle. In the mining sector, the average beta variable value of the mining sector is 1.12 during the recession and expansion cycles.

- **Descriptive Statistical Analysis of Stock Returns**

Table 5: Daily Stocks Return Period 2016-2019

No	Variable	Recession Cycle					Expansion Cycle			
		N	Min	Max	Mean	Std.Dev	Min	Max	Mean	Std.Dev
1	Consumer Goods	31	-0.0018	0.0039	0.0007	0.0010	-0.0021	0.0033	0.0006	0.00095
2	Mining	26	-0.0027	0.018	0.0015	0.0036	-0.0010	0.0230	0.0025	0.00441

Based on descriptive statistics of stock returns shown in Table 5, it can be seen that the average daily return of the consumer goods sector is 0.0007 during the recession cycle, and 0.0006 during the expansion cycle. In the mining sector, the average daily return of the consumer goods sector is 0.0015 during the recession cycle, and 0.0025 during the expansion cycle.

Hypothesis testing

Partial Significance Test with T-Test

Table 6: T-Test Results Effects of Beta and GDP Growth

No.	Hypothesis	Asymp. Sig T test	Interpretation
H_1.	Beta (Systematic Risk) significantly influences the stock returns of the Consumer Goods sector during the recession cycle.	0.0000	Prob value <alpha 5%, meaning that the hypothesis is accepted. Beta has a significant effect on Consumer Goods stock returns during a recession
H_2.	Beta (Systematic Risk) significantly influences the stock returns of the Consumer Goods sector during the expansion cycle.	0.0481	Prob value <alpha 5%, meaning that the hypothesis is accepted. Beta has a significant effect on Consumer Goods stock returns on expansion
H_3.	Beta (Systematic Risk) has a significant effect on stock returns in the mining sector during the recession cycle.	0.0204	Prob value <alpha 5%, meaning that the hypothesis is accepted. Beta has a significant effect on mining stock returns during a recession
H_4.	Beta (Systematic Risk) has a significant effect on stock returns in the mining sector during the expansion cycle.	0.0008	Prob value <alpha 5%, meaning that the hypothesis is accepted. Beta has a significant effect on Consumer Goods stock returns during a recession
H_5.	The decline in GDP has a significant effect on the stock returns of the Consumer Goods sector.	0.1346	Prob value > alpha 10%, meaning the hypothesis is rejected. The decline in GDP has no significant effect on Consumer Goods stock returns
H_6.	GDP growth has a significant effect on stock returns in the Consumer Goods sector.	0.9346	Prob value > alpha 5%, meaning the hypothesis is rejected. GDP growth has no significant effect on Consumer Goods stock returns
H_7.	The decline in GDP has a significant effect on mining sector stock returns.	0.0000	Prob value < alpha 5%, meaning the hypothesis is accepted. The decline in GDP has a significant effect on mining stock returns
H_8.	GDP growth has a significant effect on stock returns in the mining sector.	0.0000	Prob value < alpha 5%, meaning the hypothesis is accepted. GDP growth has a significant effect on mining stock returns

Calculation of Stock Expected Return uses the Asset Pricing Model

Table 7: Daily Expected Return of Consumer Goods and Mining Sector Stocks in Recession Cycle

Sector	Ri	E(Ri)		
		CAPM Model	APT Model	Fama French Model
Consumer Goods	0.000660	0.003024	0.000594	0.000556
Mining	0.001532	0.001936	0.002038	0.001808

In Table 7 it can be seen that during the recession cycle, in the consumer goods sector the highest average expected return value is 0.00302 in the CAPM model and the lowest expected return value is 0.000556 in the Fama French Three Factor Model. In the mining sector, the highest average expected return value is 0.00209 in the APT model and the lowest expected return value is 0.00180 in the Fama French Three Factor Model.

Table 8: Daily Expected Return of Consumer Goods and Mining Sector Stocks in the Expansion Cycle

Sector	Ri	E(Ri)		
		CAPM Model	APT Model	Fama French Model
Consumer Goods	0.000604	0.002504	0.000662	0.000683
Averages	0.002504	0.001999	0.002149	0.002301

In Table 8, it can be seen that during the recession cycle in the consumer goods sector the highest average expected return is 0.00683 on the French Three Factor Model and the lowest expected return value is 0.002504 on the CAPM. In the mining sector, the highest average expected return value is 0.002301 on the Fama French Three Factor Model and the lowest expected return value is 0.001999 on the CAPM.

Comparing the Accuracy of 3 Asset Pricing Models with Mean Absolute Deviation (MAD)

The method for evaluating forecasting methods uses the sum of absolute errors. The smaller the error value, the more accurate the forecasting is. The method for evaluating forecasting methods uses the sum of absolute errors (Konno & Yamazaki, 1991).

Table 9: Comparison of Accuracy of 3 Asset Pricing Models

Sector	Cycle	MAD		
		CAPM	APT	FF
Consumer Goods	Recession	0.01598	0.01138	0.01597
	Expansion	0.01677	0.01633	0.01639
Mining	Recession	0.02136	0.01603	0.02089
	Expansion	0.02158	0.02204	0.02244

Based on Table 9, several conclusions can be drawn:

- In the Consumer Goods Sector, in a recessionary economic cycle, the MAD APT Model value (0.01138) is lower than the MAD CAPM (0.01598) and the Fama French Three Factor Model (0.01597).
- In the Consumer Goods Sector, in the economic cycle of expansion, the MAD APT Model value (0.01632) <MAD CAPM (0.01677) and the Fama French Three Factor Model (0.01639).
- In the Mining Sector, in a recessionary economic cycle, the MAD APT Model value (0.01603) <MAD CAPM (0.0213) and the Fama French Three Factor Model (0.0208).
- In the Mining Sector, in the economic cycle of expansion, the MAD CAPM value (0.0215) <MAD APT (0.0220) and the Fama French Three Factor Model (0.0224).
- Based on the MAD comparison of CAPM, APT, and the Fama French Three Factor Model, a 2x2 matrix can be made to summarize the results of the comparison of asset pricing models.

Table 10: Summary of Comparison of Asset Pricing Model Results

Sector	Recession Cycle	Expansion Cycle
Consumer Goods Sector	APT	APT
Mining Sector	APT	CAPM

Based on the above table, it can be concluded that the APT model is the most accurate model for estimating stock returns in the consumer goods sector during the recession and expansion cycles. For the mining sector, the most accurate model for estimating stock returns during the recession cycle is the APT model, while the CAPM model is more accurate during the expansion cycle.

Comparison Test of Mean Absolute Deviation (Kruskal Wallis)

After getting the MAD values for the three methods, the next step is to test the different MAD values by comparing the three MAD values with the Kruskal Wallis test.

Table 11: Kruskal Wallis Test Results MAD Comparison

No	Hypothesis	Asymp.Sig	Interpretation
H_9	There is a significant difference in accuracy between the Capital Asset Pricing Model (CAPM), the Arbitrage Pricing Theory (APT), and the Fama French Three Factor Model in predicting stock returns of the consumer goods sector on the Indonesia Stock Exchange, during the recession cycle	0,047	There are significant differences
H_{10}	There is a significant difference in accuracy between the Capital Asset Pricing Model (CAPM), the Arbitrage Pricing Theory (APT), and the Fama French Three Factor Model in predicting stock returns of the consumer goods sector on the Indonesia Stock Exchange, during the expansion cycle	0.037	There are significant differences
H_{11}	There is a significant difference in accuracy between the Capital Asset Pricing Model (CAPM), the Arbitrage Pricing Theory (APT), and the Fama French Three Factor Model in predicting mining sector stock returns on the Indonesia Stock Exchange, during the recession cycle	0.553	There is no significant difference
H_{12}	There is a significant difference in accuracy between the Capital Asset Pricing Model (CAPM), the Arbitrage Pricing Theory (APT), and the Fama French Three Factor Model in predicting mining sector stock returns on the Indonesia Stock Exchange, during the recession cycle	0.531	There is no significant difference

Managerial Implications

For investors when investing, return and risk are two things that cannot be avoided and always go hand in hand. From the results of the study in general it can be concluded that the beta that reflects the level of sector risk and the characteristics of the stock sector has a significant effect on return on stock. For investors it is very important to see this as one of the considerations to decide to invest in the capital market, especially on the IDX (Indonesia Stock Exchange). In this study, it appears that during the recession cycle and expansion the average daily return of the consumer goods sector tends to be smaller than the average daily return of the mining sector. This is influenced by the characteristics of each different stock sector. The consumer goods sector is one of the stocks with defensive characteristics in which stocks with these characteristics are stocks that tend to be stable and have low fluctuations in both recession and expansion. On the other hand, the mining sector is one of the stocks with aggressive characteristics where stock prices are more volatile and more influenced by macroeconomic factors that affect stock performance on the capital market.

Based on the results of this study, it can be concluded that for the type of risk averse investor with a high degree of risk aversion can choose the mining sector because of the aggressive character of the stock sector and the expansion cycle due to higher average stock returns. As for the type of risk averse investor with a low degree of risk aversion, they can choose the consumer goods sector because of the defensive character of the stock sector and recessionary conditions, due to higher average stock returns. As for the asset pricing model to estimate stock returns with an accuracy level the best is Arbitrage Pricing Theory, illustrated from the expected return value and the smallest error value.

From the results of the comparison of the accuracy of the asset pricing model it can be concluded, in general the analysis of the stock returns of the consumer goods and mining sectors in the Indonesia Stock Exchange, both during the recession cycle and expansion cycle is influenced by macroeconomic variables (inflation, exchange rates, and interest rates) contained in the calculation of the Arbitrage Pricing Theory model as the model with the best average accuracy.

CONCLUSIONS AND SUGGESTIONS

Conclusions

Based on the discussion of the results of the research conducted, the following conclusions can be drawn:

1. Beta significantly influences the stock returns of the Consumer Goods Sector during the recession and expansion cycles
2. Beta has a significant effect on stock returns in the Mining Sector during the recession and expansion cycles
3. Gross Domestic Product growth has no significant effect on stock returns in the Consumer Goods and mining sectors

4. The decline in Gross Domestic Product has a significant effect on stock returns in the Consumer Goods sector, but has no significant effect on the Mining Sector.
5. There is a difference in the average stock returns obtained by investors in the Consumer Goods Sector stocks during the recession and expansion cycle, which are 0.07% per day during the recession cycle and 0.06% per day during the expansion cycle.
6. There is a difference in the average stock returns obtained by investors in Mining Sector stocks during the recession and expansion cycle, which are 0.15% per day during the recession cycle and 0.25% per day during the expansion cycle.
7. The APT (Arbitrage Pricing Theory) asset pricing model is the model with the best level of accuracy in predicting stock returns in the Consumer Goods sector during a recession and expansion economic cycle, compared to the Capital Asset Pricing Model and the Fama French Three Factor Model.
8. The APT (Arbitrage Pricing Theory) asset pricing model is the model with the best level of accuracy in predicting stock returns in the Mining sector during a recessionary economic cycle, whereas during the expansion cycle, the Capital Asset Pricing Model has a better accuracy than the Arbitrage Pricing Theory and the Fama French Three Factor Model.

From the summary table of the comparison of the asset pricing model above, it can be concluded that the Arbitrage Pricing Theory model is the most accurate model for estimating stock returns in the consumer goods sector during the recession and expansion cycles. This shows that during the recession cycle, the behavior of stock returns in the consumer goods sector (defensive stocks), is more influenced or can be described from the pattern of variables contained in the calculation of the Arbitrage Pricing Theory model, namely inflation, exchange rates and interest rates. Likewise in the mining sector (aggressive stocks), during a recession cycle the behavior of stock returns is influenced by inflation, exchange rates and interest rates, which are the variables that influence the calculation of the Arbitrage Pricing Theory model. Whereas during the expansion cycle, the stock return behavior of the mining sector is more influenced by market risk / beta (βi) which is a variable in the Capital Asset Pricing Model.

Suggestion

This study uses a Gross Domestic Product approach to determine the cycle of expansion and recession. Future studies are suggested using other macroeconomic variable approaches so as to increase references for the advancement of stock return analysis research

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How to cite this article: Simamora RTP, Priyarsono DS, Andati T. Stock return analysis while recession and expansion cycle in consumer goods and mining sector listed on Indonesia stock exchange. International Journal of Research and Review. 2019; 6(12):156-165.

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