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Application of Capital Asset Pricing Model (CAPM) Sector Company Insurance

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ABSTRACT

Application of Capital Asset Pricing Model in Insurance Sector Companies". For stock selection decisions. In this study, the insurance sector became the author's choice to compare and choose the optimal stock, PT. Maximus Graha Persada Insurance with issuer code (ASMI), PT. Asuransi Harta Aman Pratama with issuer code (AHAP) and PT. Asuransii Multhi Artha Guna with issuer code (AMAG). The method used in this study is a quantitative research method. The sampling technique is generally carried out randomly by collecting quantitative or statistical data The data used in this study is secondary data where the stock price or closing price of the insurance sector is chosen randomly by the author, and the selected one is an insurance company with issuer codes ASMI, AHAP, and AMAG in brackets for five consecutive years. Data analysis techniques used to explain stock investment decision-making use the Capital Asset Pricing Model (CAPM) method. The study results used CAPM that the shares of insurance companies with the issuer code AMAG are the best stocks for investors because they have the lowest positive return rate and beta value.

ABSTRAK

Penerapan Model Penetapan Harga Aset Modal pada Perusahaan Sektor Asuransi". Untuk keputusan pemilihan saham. Dalam penelitian ini, sektor asuransi menjadi pilihan penulis untuk membandingkan dan memilih saham yang optimal, PT Maximus Graha Persada Insurance dengan kode emiten (ASMI), PT Asuransi Harta Aman Pratama dengan kode emiten (AHAP) dan PT Asuransii Multhi Artha Guna dengan kode penerbit (AMAG). Metode yang digunakan dalam penelitian ini adalah metode penelitian kuantitatif. Teknik pengambilan sampel umumnya dilakukan secara acak dengan mengumpulkan data kuantitatif atau statistik Data yang digunakan dalam penelitian ini adalah data sekunder dimana harga saham atau harga penutupan sektor asuransi dipilih secara acak oleh penulis, dan yang terpilih adalah perusahaan asuransi dengan kode emiten ASMI, AHAP, dan AMAG dalam kurung selama lima tahun berturut-turut. Teknik analisis data yang digunakan untuk menjelaskan pengambilan keputusan investasi saham menggunakan metode Capital Asset Pricing Model (CAPM). Hasil studi menggunakan CAPM bahwa saham perusahaan asuransi dengan kode emiten AMAG merupakan saham terbaik bagi investor karena memiliki tingkat pengembalian positif dan nilai beta terendah.

INTRODUCTION

A country's economic growth can show its success in managing its economy. One of the crucial things in managing the wheels of the economy is investment activities. Investment Activities are activities for a certain amount of funds or other resources currently used to obtain several profit benefits in the future. Investment is planting shares using resources in the form of money or goods expected to provide excellent profits in the future. We can invest in securities (stocks) through money or capital markets.

An increasing number of people are curious about the processes by which participants in impact investing work together to achieve several objectives (e.g., Agrawal & Hockerts, 2019; Lee

et al., 2020). It's crucial because it influences how many people invest in and how much money goes toward resolving intractable societal problems (GIIN, 2020b). While the amount of money available for impact investing continues to grow, it still represents a minuscule fraction of the amount required to solve problems like hunger, poverty, and sex trafficking (Clark et al., 2015). Investing with the intention of producing a positive return is what is meant by the phrase "impact on investment."

The goal of most people who put money into the stock market is financial gain. The three most important factors to consider when making an investment are the potential rate of return, the amount of associated risk, and the liquidity of the investment vehicle. A capital market is an exchange where buyers and sellers of securities can come together to facilitate the transfer of capital. Companies can raise money through the capital market by selling shares to interested investors. The capital market is a place where anyone with spare cash can put their money into various securities already on the market in the hopes of making a profit (returns). Every investment carries some degree of risk, so investors select and construct their holdings using metrics like expected returns and standard deviations. (Baricevic et al., 2022)

The increasing number of insurance providers in Indonesia is indicative of the industry's importance to the country's booming economy. Insurance firms also contribute to national development by shaping policy around economic growth. The goal of any insurance regulation is to reduce the likelihood of insurance businesses failing and to enhance risk diversification, regardless of the specifics of its implementation (Garayeta et al., 2022). The term "risk" is used to describe the possibility that actual results will differ from those predicted. The general rule is that actual returns for investors will typically fall short of projections.

Further, the danger and probability of a result will both increase if there are more factors involved (Martin, 2017). Due to the inherent nature of risk in every investment, discussions of guaranteed profits are meaningless (Kaklauskas et al., 2021). Some life insurance firms may be negatively impacted by prolonged low-interest rates because of the insurance firm's investment portfolio's longer-than-average tenure (Szüle, 2021). This may be due to the insurance firm's choice of asset-liability management strategies.

Investors seek out opportunities with high rewards and unique risks. Investors are inherently cautious people (do not like risk). The main reason why people put their money into the stock market is because stocks are more liquid than other types of investments. Merging or diversifying stocks from different industries is a common method used by investors to manage or lower the level of risk in their assets. A portfolio is a diversified investment in several firm securities that protects against losses in investment operations due to the fluctuating prices of individual stocks. Combining many stocks cannot eliminate all hazards, but it can lessen their impact.

All the stocks and securities traded on the stock market are subject to a standard or systematic risk. To put it simply, systematic risk is the influence of market forces that have an inescapable and pervasive effect on stock prices (Larasati & Ramadhan, 2022). The Beta measure of volatility between a security's returns and market returns is a measure of this systemic risk. Those unfamiliar with the money or capital markets, like many investors, rarely investigate the dynamics of systematic risk in the specific context of emerging markets. Understanding emerging markets and their degree of comparability is crucial due to the growing importance of developing countries in

global financial markets (Asafo-Adjei et al., 2022). When unexpected news causes a drop in share prices for multiple companies at the same time, this is an example of systematic risk. In that case, it's inevitable for stockholders.

Meanwhile, the non-systematic risk is a risk related to one particular stock, which, in general, this risk cannot eliminate. Diversification can only minimize it (Nalini & Trinley, 2022). Examples of systematic risks are the risk of failure in company performance, financial risk, and management risk. We can minimize this risk or avoid it if an investor knows in advance the profile of the company and the track record of the board of directors. Thus an investor can avoid buying ABCD shares and move his capital to other, more prospective investors.

The CAPM is a fictitious description of how securities are valued in the financial markets, which determines the predicted return on capital investment (Dhannur & Kusane, 2022). The capital asset pricing model or CAPM has a variety of macro factors that represent sensitivity to the market portfolio so that we can determine the balance between risk and expected return for each security. The central vision of using CAPM is to help investors accurately guess the relationship between the risk of an asset and the expected return to determine the price of an asset. Asafo-Adjei et al. (2022) suggest that the Capital Asset Pricing Model (CAPM) is a particular asset's expected market return rate concerning the expected risk. CAPM is also the basis for determining which groups we can choose as a place of investment. We widely use the capital asset pricing model (CAPM) to measure the risk and return of equity investments. Risk and return are vital factors that help investors to make decisions (Nalini & Trinley, 2022).

The ability to estimate the return on individual security is the most important thing for investors. Therefore, the CAPM we can use to estimate a security's return is very important in finance (Anggraeni, 2018). Aprialinita et al. (2022) The results of the research obtained are stock investment decision-making using the Capital Asset Pricing Model (CAPM) Method in cigarette sub-sector companies listed on the Indonesia Stock Exchange carried out on efficient stocks; Nalini & Trinley (2022) CAPM helps investors to identify whether the stock is too cheap or too expensive. Therefore, investors can avoid overpriced stocks.

RESEARCH METHODS

The method used in this study is a quantitative research method. Sampling techniques are generally carried out randomly by collecting quantitative or statistical data (Sugiyono, 2018). The data used in this study is secondary data where the author randomly selects the insurance sector's stock price or closing price, and the selected one is an insurance company with issuer codes ASMI, AHAP, and AMAG in brackets for five consecutive years. The data analysis technique used to explain stock investment decision-making uses the Capital Asset Pricing Model (CAPM) method by performing several calculations, as follows:

$$Ri = a1 + a2\beta i$$

(Lintner, 1965)

In this case:

Ri = average return of security i in the period

βi = beta estimation for securities i

If the CAPM is valid, then the value of *a1* will be close to the average value of the risk-free return during the test period, and the value of *a2* will be close to the average of the market risk premium during the period.

Beta is the estimated individual stock beta, usually using a single index or a market model with equations.

$$Ri = a1 + \beta i\ Rm + ei$$

(Lintner, 1965)

The next step to conduct an analysis using CAPM is to regress the actual returns of individual stocks against the betas of those stocks or to recreate the actual returns of the portfolios they form against the betas of the portfolios. This step of regression is with i is a stock *i* or portfolio *i*. By running those regressions over different periods, researchers can determine whether a0 and a1 conform to CAPM theory.

According to CAPM, the relationship between βi and *Ri* should be positive. A positive a2 average value indicates that securities with higher systematic risk should have a higher average return. Then the first hypothesis is as follows: *H1: E (a1)>0*

According to CAPM, the second hypothesis (H2) is that the average value of *a0* should be equal to the average value of the rate of return of risk-free assets. Thus the second hypothesis is as follows: *H2: E (a1) = E(Rf).* The average risk-free rate of return over the estimated period measures value E (RF).

RESULTS AND DISCUSSION

Results

The expected rate of Return *[E(Ri)]* is the profit the investor expects from the stock investment. We use the CAPM method to calculate the expected rate of return using the risk-free variable Rate of Return (RF), the average market rate of Return *[E(Rm)]*, and also the systematic risk of each stock. The following are the analysis results using CAPM in 3 companies with issuer codes ASMI, AHAP, and AMAG in 5 years starting from 2016 – 2020.

The rate of return on individual shares is one of the investors' parameters in making investments. The rate of return on individual shares is the profit investors receive. We can calculate the rate of return on individual stocks by comparing the market closing price or the closing price of the first month in the first period we sampled with the market closing price before the first period we sampled. The calculation of the stock rate of return in this study used monthly closing prices for five consecutive years at companies randomly selected by the author, in this case, insurance companies with issuer codes ASMI, AHAP, and AMAG.

Table 1. Closing Price

DATE	ASMI	AHAP	AMAG	JCI	RF
01/12/2015	241	118	380	4.593.007.813	
01/01/2016	252	104	355	4.615.163.086	7,25%
01/02/2016	256	102	305	4.770.956.055	7,00%
01/03/2016	293	93	323	4.845.371.094	6,75%

01/04/2016	300	91	336	4.838.583.008	6,75%
01/05/2016	314	95	382	4.796.869.141	6,75%
01/06/2016	363	106	366	5.016.646.973	6,50%
01/07/2016	440	106	340	5.215.994.141	6,50%
01/08/2016	448	102	344	5.386.082.031	5,25%
01/09/2016	414	99	400	5.364.804.199	5,00%
01/10/2016	448	118	364	5.422.541.992	4,75%
01/11/2016	464	102	370	5.148.910.156	4,75%
01/12/2016	496	104	374	5.296.710.938	4,75%
01/01/2017	462	95	450	5.294.103.027	4,75%
01/02/2017	476	107	480	5.386.691.895	4,75%
01/03/2017	505	123	488	5.568.105.957	4,75%
01/04/2017	595	122	420	5.685.297.852	4,75%
01/05/2017	690	96	442	5.738.154.785	4,75%
01/06/2017	630	96	438	5.829.708.008	4,75%
01/07/2017	695	97	392	5.840.938.965	4,75%
01/08/2017	855	104	416	5.864.059.082	4,50%
01/09/2017	875	86	400	5.900.854.004	4,25%
01/10/2017	875	99	376	6.005.784.180	4,25%
01/11/2017	870	87	350	5.952.138.184	4,25%
01/12/2017	890	104	380	6.355.653.809	4,25%
01/01/2018	890	96	360	6.605.630.859	4,25%
01/02/2018	830	93	376	6.597.217.773	4,25%
01/03/2018	790	86	364	6.188.986.816	4,25%
01/04/2018	740	106	370	5.994.595.215	4,25%
01/05/2018	705	112	344	5.983.586.914	4,50%
01/06/2018	735	107	354	5.799.236.816	5,25%
01/07/2018	730	78	346	5.936.442.871	5,25%
01/08/2018	725	70	350	6.018.459.961	5,50%
01/09/2018	705	68	360	5.976.553.223	5,75%
01/10/2018	690	68	328	5.831.649.902	5,75%
01/11/2018	640	62	298	6.056.124.023	6,00%
01/12/2018	700	85	326	6.194.498.047	6,00%
01/01/2019	685	69	310	6.532.969.238	6,00%
01/02/2019	660	69	300	6.443.348.145	6,00%
01/03/2019	595	65	302	6.468.754.883	6,00%
01/04/2019	690	64	300	6.455.352.051	6,00%
01/05/2019	815	59	316	6.209.117.188	6,00%
01/06/2019	970	59	316	6.358.628.906	6,00%
01/07/2019	870	56	308	6.390.504.883	5,75%
01/08/2019	1.050	54	308	6.328.470.215	5,50%
01/09/2019	1.085	66	302	6.169.102.051	5,25%
01/10/2019	960	69	306	6.228.316.895	5,00%

01/11/2019	925	59	310	6.011.830.078	5,00%
01/12/2019	1.285	60	302	6.299.539.063	5,00%
01/01/2020	1.350	58	304	5.940.047.852	5,00%
01/02/2020	1.250	51	300	5.452.704.102	4,75%
01/03/2020	1.230	50	296	4.538.930.176	4,50%
01/04/2020	1.150	50	286	4.716.402.832	4,50%
01/05/2020	1.095	57	268	4.753.611.816	4,50%
01/06/2020	1.230	50	274	4.905.392.090	4,25%
01/07/2020	1.170	53	248	5.149.626.953	4,00%
01/08/2020	1.140	55	206	5.238.486.816	4,00%
01/09/2020	1.035	51	194	4.870.039.063	4,00%
01/10/2020	1.075	57	195	5.128.225.098	4,00%
01/11/2020	1.070	58	210	5.612.415.039	3,75%
01/12/2020	990	70	226	5.979.073.242	3,75%

Source: Secondary Data processed (2022)

Table 2. Actual Return

ABDA	*AHAP*	*AMAG*	*JCI (1)*	*RF*
0,045643	-0,11864	-0,0657895	0,0048237	0,003804
0,015873	-0,01923	-0,1408451	0,03375676	0,001323
0,144531	-0,08824	0,05901639	0,01559751	0,012044
0,023891	-0,02151	0,04024768	-0,0014009	0,001991
0,046667	0,043956	0,13690476	-0,0086211	0,003889
0,156051	0,115789	-0,0418848	0,04581693	0,013004
0,212121	0	-0,0710383	0,03973713	0,017677
0,018182	-0,03774	0,01176471	0,03260891	0,001515
-0,07589	-0,02941	0,1627907	-0,0039505	-0,00632
0,082126	0,191919	-0,09	0,01076233	0,006844
0,035714	-0,13559	0,01648352	-0,0504619	0,002976
0,068966	0,019608	0,01081081	0,02870526	0,005747
-0,06855	-0,08654	0,20320856	-0,0004924	-0,00571
0,030303	0,126316	0,06666667	0,01748906	0,002525
0,060924	0,149533	0,01666667	0,0336782	0,005077
0,178218	-0,00813	-0,1393443	0,02104699	0,014851
0,159664	-0,21311	0,05238095	0,00929713	0,013305
-0,08696	0	-0,0090498	0,01595517	-0,00725
0,103175	0,010417	-0,1050228	0,0019265	0,008598
0,230216	0,072165	0,06122449	0,00395829	0,019185
0,023392	-0,17308	-0,0384615	0,00627465	0,001949
0	0,151163	-0,06	0,0177822	0
-0,00571	-0,12121	-0,0691489	-0,0089324	-0,00048
0,022989	0,195402	0,08571429	0,06779339	0,001916
0	-0,07692	-0,0526316	0,03933145	0

-0,06742	-0,03125	0,04444444	-0,0012736	-0,00562
-0,04819	-0,07527	-0,0319149	-0,0618793	-0,00402
-0,06329	0,232558	0,01648352	-0,0314093	-0,00527
-0,0473	0,056604	-0,0702703	-0,0018364	-0,00394
0,042553	-0,04464	0,02906977	-0,0308093	0,003546
0,042553	-0,04464	0,02906977	-0,0308093	0,003546
-0,0068	-0,27103	-0,0225989	0,02365933	-0,00057
-0,00685	-0,10256	0,01156069	0,01381586	-0,00057
-0,02759	-0,02857	0,02857143	-0,006963	-0,0023
-0,02128	0	-0,0888889	-0,0242453	-0,00177
-0,07246	-0,08824	-0,0914634	0,03849239	-0,00604
0,09375	0,370968	0,09395973	0,02284861	0,007813
-0,02143	-0,18824	-0,0490798	0,05464062	-0,00179
-0,0365	0	-0,0322581	-0,0137183	-0,00304
-0,09848	-0,05797	0,00666667	0,0039431	-0,00821
0,159664	-0,01538	-0,0066225	-0,0020719	0,013305
0,181159	-0,07813	0,05333333	-0,0381443	0,015097
0,190184	0	0	0,02407938	0,015849
-0,10309	-0,05085	-0,0253165	0,00501303	-0,00859
0,206897	-0,03571	0	-0,0097073	0,017241
0,033333	0,222222	-0,0194805	-0,0251827	0,002778
-0,11521	0,045455	0,01324503	0,00959862	-0,0096
-0,03646	-0,14493	0,0130719	-0,0347585	-0,00304
0,389189	0,016949	-0,0258065	0,04785714	0,032432
0,050584	-0,03333	0,00662252	-0,0570663	0,004215
-0,07407	-0,12069	-0,0131579	-0,0820437	-0,00617
-0,016	-0,01961	-0,0133333	-0,1675818	-0,00133
-0,06504	0	-0,0337838	0,03910011	-0,00542
-0,04783	0,14	-0,0629371	0,00788927	-0,00399
0,123288	-0,12281	0,02238806	0,03192946	0,010274
-0,04878	0,06	-0,0948905	0,04978906	-0,00407
-0,02564	0,037736	-0,1693548	0,01725559	-0,00214
-0,09211	-0,07273	-0,0582524	-0,0703348	-0,00768
0,038647	0,117647	0,00515464	0,05301519	0,003221
-0,00465	0,017544	0,07692308	0,09441667	-0,00039
-0,07477	0,206897	0,07619048	0,06532984	-0,00623
E(Ri)	0,00361851	0,004153445	0,00232835	0,00526883	0,002374
Bi	0,42983418	0,614647368	-0,0159034		

Source: Secondary Data processed (2022)

Based on the actual return table, we know that the rate of return for each company has a positive value, but one company has an adverse risk. Of the two companies with issuer codes ASMI and AHAP, which the company sampled, it showed that the higher the return value, the Beta value

in terms of Beta CAPM is also a greater risk. In contrast, the results differ for companies with the AMAG issuer code. The positive return value obtained is 0.000232835 but with a negative Question value of -0.0159034. Investors will prefer AMAG shares because the return value is positive, and the risk is adverse.

Discussion

This study examines whether the application of the CAPM method affects stock investment decisions made in insurance sector companies, in this case, companies with the issuer code PT. ASMI, PT. AHAP and PT AMAG. The results of such tests help researchers determine preferred stocks by applying CAPM. Of the two companies with issuer codes ASMI and AHAP, which the company sampled, it showed that the higher the return value, the Beta value in terms of Beta CAPM is also a greater risk.

In contrast, results differ by the company with the issuer code AMAG. The positive return value obtained is 0.000232835 but with a negative Question value of -0.0159034. Investors will prefer AMAG shares because the return value is positive, and the risk is adverse.

CONCLUSION

Based on the results of research analysis obtained from a series of data analyses, researchers can conclude that PT. Insurance with issuer code is the preferred stock for investors, and this follows the return value indicated by the CAPM analysis of 0.000232835, and the beta value or risk is the lowest compared to other stocks -0.0159034. For investors, we hope that this research will be a reference in making stock investments.

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