

**THE ANALYSIS OF RISK AND RETURN COMPARATION BETWEEN  
SILVER, GOLD, JKSE, AND PROPERTY IN PASAR KEMIS,  
SUKAMANTRI, KUTAJAYA, GELAM JAYA AND KUTABARU  
WARDS IN KABUPATEN TANGERANG FOR LONG TERM  
INVESTMENT**

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**Abstract**

*Nowadays, investment term has become a common word be heard and be talk of many people, from businessmen to students, even among the housewives. The understanding that the investment of capital or funds are placed in assets which are expected to provide benefits or the value will rise someday in the foreseeable future, it means investing is done by 'sacrificing' the potential of current consumption to get better opportunities or greater in the future. Generally, the purpose of investment is to fulfill the needs and desires in order to improve the quality of life. In order to achieve those needs and desires, then the investment is one of the best solution. Indonesia's strong economic growth and favorable demographics make it a great country for investors, but there are several risks that investors should be aware of before committing any capital. There are several benefits of investing in Indonesia, Indonesia has strong historic growth. Indonesia has been one of the best performing investments throughout the world economic crisis that began in 2008. The types of investment instrument is quite widely and variously. It could be real or paper investment, such as stocks, bonds, mutual funds, precious metals, property, and even open your own real business. In this term, author will analyze risk and return of silver, gold, JKSE, and Pasar Kemis, Sukamantri, Kuta Jaya, Gelam Jaya, Kuta Baru Property in KPP Kosambi, Tangerang. Methodology used in this research are Problem Identification, Theoretical Foundation, Data Collection, Data Analysis, and the last step is Conclusion and Recommendation. These steps need to be conducted in order to complete the project. Basically, the writer want to analyze the risk and return and give the result to determine the highest return of instrument investment the recommendation for retirement financial purposes.*

*Correlation must be analyzed also for the recommendation for the choices of investment proportion. The Conclusion came out with Pasar Kemis property as the best investment instrument with the highest point in Treynor in risk adjusted method. The combination of two investment which came out with the best correlation is Pasar Kemis property and Silver. These two investments give the most negative result which means that the movement towards market would be in contrast to each other and give the best diversified portfolio. Further research is could be the recommendation in order to construct an optimal portfolio investment.*

*Key Words : Investment Instruments, Risk and Return, Silver, Gold, JKSE, Property*

**Introduction**

Global economic condition in 2011 gives an outlook of the high uncertainty. This resulting a negative effect on financial and banking condition in many countries and also increasing risk in future global economic. Even though the global economic shows its negative condition, it doesn't impact the economy in Indonesia. Indonesia has a significant growth rate at 6.5 percent on 2011. The growth rate is also constructed with a healthy condition of Indonesian banking. This shows that Indonesia could survive in global economic crisis. Hence that makes the projection of Indonesian economic in 2012 will be increased by 0.2 percent from 6.5 in 2011 to 6.7 this year. One of the reason that resulting an optimism of economic prospect in 2012 is due to the

increased of Indonesian investment rate that named Indonesia on a list of Investment Level Grade. This accomplishment has already proven that Indonesia has a trusted Investment market. (Purnomo, 2011).

Indonesia's strong economic growth and favorable demographics make it a great country for investors, but there are several risks that investors should be aware of before committing any capital. There are several benefits of investing in Indonesia, Indonesia has strong historic growth. Indonesia has been one of the best performing investments throughout the world economic crisis that began in 2008. In fact, it was the only economy posting any real economic growth in 2011. It also relatively less risky. Indonesia may be less risky than many emerging markets, with an average annual return of over 25% and a beta coefficient of less than 0.8, according to a February 2011 study by MSCI and Bloomberg. Another benefit is, Indonesia's market capitalization is significantly smaller than the BRIC economies, which suggests that it has ample room to grow, even if overall growth rates were to slow down, according to a NYSSA analysis.

Investment is divided by two types of investment, paper investment and real investment. Simple description of paper investment is the types of investment that most of them are intangible, like stock, bonds, money market, etc., while real investment is the investment that are tangible, like property, silver, gold, collectible items, etc.

First investment instrument to be analyzed is silver. According to market analysts, silver prices have jumped 109% from 2008, outshining gold by 26.9% on an annual basis, as stated in [www.CommodityOnline.com](http://www.CommodityOnline.com). Second investment instruments in this research is gold. Gold is commonly regarded as a value and wealth protector, normally called 'hedging'. Gold values tend to be stable, and generally stated to have zero inflation effect. Because the price of gold continues to rise in a certain manner, many people got interested in gold investing. The third is stock, Public interest on capital market investing continues to rise nowadays, The increase is about 30% from 2008 to 2011 based on BEI. It also can be easily seen and kept track from the JKSE

(Jakarta Stock Exchange) composite index graph in [finance.yahoo.com](http://finance.yahoo.com) website.

Last but not least is investment in Property and Real Estate Sector is never inflicting in financial loss. Each year the average price of property increase by 15% to 20%, and it can be more than 20% if the location is become favourite and potential for living, business, or industry. There are two ways on invest in Property and Real estate either buying a land (with or without house building) or buying a stocks (paper asset). In this final project author tend to do the research analysis for property in the area that is industrial area. This type of property is more often limited to one tenant. For example, it can be a warehouse for manufacturing, a storage garage or a distribution center. Industrial buildings typically require a smaller investment than an office or retail building and residential.

The data for property price in industrial is obtained from Kantor Pelayanan Pajak (KPP) Kosambi, Kabupaten Tangerang. Kabupaten Tangerang is well known for the place for manufacturing company, plantation, warehousing, and other industrial activities. Author choose Pasar Kemis Sub district as the area for research. Pasar Kemis area is known as the center region of activities in Kabupaten Tangerang. The reason for choosing Pasar Kemis Sub district is also due to the area in Kosambi area that are mainly swamp. As the sample for this research, author choose five wards in industrial and residential wards, the wards are Pasar Kemis, Sukamantri, Kuta Jaya, Gelam Jaya, and Kuta Baru.

Based on the statement above, author would like to analyze and compare those investment instruments based on risk and return, Sharpe and Treynor performance evaluation, and make the coefficient correlation for diversified portfolio of investments.

## Literature Review

### Return

In the concept of return, there are two size of nominal return base on time period. The two approaches are Arithmetic and Geometric Return. In analyzing investment returns, it is important to differentiate between the simple arithmetic return and the geometric return. In all

other circumstances, geometric return is always equal or lower than the arithmetic return, which resulted in the geometric return frequently referred as a more conservative measure. Arithmetic average return is usually used in a single period of investment. It explains the sum of a series of numbers divided by the count of that series of numbers. Below is the arithmetic return formula:

$$R_{\text{arithmetic}} = (C_t + P_t - P_{t-1}) / P_{t-1} \quad (2.1)$$

Note :  $C_t$  = cash (flow) received from the asset investment in the time period t-1 to t ;  $P_t$  = value at time t ;  $P_{t-1}$  = value at time t-1.

Geometric average value repeatedly called the time-weighted average. Typically, the geometric return used for periods such as 2, 3, or more years for time-series data. Calculations on geometric returns can boast a significant impact on asset allocation decisions. The general equation to calculate geometric average return is described as follow:

$$\bar{r}_{\text{geometric}} = \left( \prod_{i=1}^n (1 + r_{\text{arith},i}) \right)^{1/n} - 1 \quad (2.2)$$

Note:  $r_{\text{arith}}$  = arithmetic return per period ;  $n$  = total number of periods

**Risk**

Risk is the possibility of losing some or all of the original investment. Risk also defined by a measure of uncertainty return that investment earned. The purpose of an asset's risk calculation is to measure the dispersion around the expected value; indicated by the value of standard deviation of the arithmetic return for  $n$  years. The expression for standard deviation of return is:

$$s = \sqrt{\frac{1}{N-1} \sum_{i=1}^N (x_i - \bar{x})^2} \quad (2.3)$$

Note:  $x_i$  = return for the  $i$ th outcome ;  $\bar{x}$  = average return ;  $N$  = number of outcomes considered

After calculating the standard deviation as above, it could be concluded that in general, the higher of result's value, the greater the risk.

Beta measures also has to be calculated in order to the extent to which returns on the stock and the market move together. The lower the beta, means that the instrument has a low volatility towards market. Vice versa for the high beta. The general equation of calculating beta is:

$$\beta_j = \text{Cov}(r_j, r_M) / s_M^2 \quad (2.4)$$

Note :  $r_j$  = required return on asset  $j$  ;  $r_M$  = required return on the market  $s_M^2$  = variance of the macroeconomic factor

**Coefficient correlation**

Investor's goal is creating the most efficient portfolio that means a portfolio that maximizes return for a given level of risk. Below is the general equation of coefficient correlation between the return of two investments:

$$\text{Corr}(R_1, R_2) = r_{12} = \frac{\sigma_{12}}{\sigma_1 \sigma_2} = \frac{\text{Cov}(R_1, R_2)}{\text{SD}(R_1) \text{SD}(R_2)} \quad (2.5)$$

Note:  $r_{12}$  = the correlation coefficient between the returns on instruments 1 and 2 ;  $\sigma_{12}$  = the covariance between the returns on instruments 1 and 2 ;  $\sigma_1$  = the standard deviation on instruments 1 ;  $\sigma_2$  = the standard deviation on instruments 2

**Performance Evaluation**

Evaluating performance based on average return alone is not very useful. Returns must be adjusted for risk to become compared meaningfully. Methods of risk-adjusted performance evaluation using mean-variance criteria come on stage simultaneously with the capital asset pricing model. Jack Treynor, William Sharpe, and Michael Jensen recognized the implication of CAPM for rating performance of managers. There are some possible risk-adjusted performance measures for a portfolio; those are Sharpe, Jensen, and Treynor Ratio.  
*Sharpe Ratio*

The Sharpe ratio tells us whether a portfolio's returns are due to smart investment decisions or a result of excess risk. The greater a portfolio's Sharpe ratio, the better its risk-adjusted performance has been. A negative Sharpe ratio indicates that a risk less asset would perform better than the security being analyzed. Below is a formula of Sharpe ratio:

$$S_m = \frac{R_m - R_f}{s_m} \quad (2.6)$$

Note:  $R_p$  = return portfolio ;  $R_{rf}$  = risk free rate (SBI : 5,75%) ;  $s_i$  = standard deviation

**Treynor Ratio**

Treynor ratio is a risk-adjusted measure of return based on systematic risk. It is similar to the Sharpe ratio, with the difference being that the Treynor ratio uses beta as the measurement of volatility. Below is the formula of treynor ratio:

$$T_i = \frac{R_i - R_f}{b_i} \quad (2.7)$$

Note:  $T_i$  = Treynor's ratio for Portfolio I ;  $R_i$  = Portfolio i Return ;  $b_i$  = Beta of Portfolio I ;  $R_f$  = Return of risk free rate per year (BI rate = 5.75%)

**Methodology**

In doing this research, there are five major steps, there are Problem Identification, Theoretical Foundation, Data Collection, Data Analysis, and the last step is Conclusion and Recommendation. These steps need to be conducted in order to complete the project. The first step is to calculate each risk and return of silver, gold, JKSE, and Pasar Kemis, Sukamantri, Kuta Jaya, Gelam Jaya, Kuta Baru using arithmetic and geometric for return and using standard deviation & beta for risk. These result will be compared. After that the methodology used are Sharpe and Treynor measurement for performance evaluation. The last is to make a coefficient correlation between the investment instruments

**Analysis**

**Comparison based on Arithmetic, Geometric, and Risk**

**Table 4.5. Comparison of All Investment Instrument**

Risk and Return Investment Instrument	Average Arithmetic Return per Year	Average Geometric Return per Year	Risk per Year
Pasar Kemis	14,75%	12,94%	14,74%
Sukamantri	14,63%	12,42%	19,51%
Kuta Jaya	14,23%	12,95%	8,43%
Gelam Jaya	12,48%	11,15%	11,17%
Kuta Baru	13,89%	12,59%	10,28%
<b>Silver</b>	14,76%	12,08%	30,27%
<b>Gold</b>	13,07%	12,44%	13,66%
<b>JKSE</b>	20,38%	12,69%	40,59%

Based on risk and return analysis, the highest return among those investments is Kuta Jaya at 12,94 %. It is also noticeable that the highest risk among those investments is JKSE at 40,59%. In addition, the recommended investment instrument based on its return is Kuta Jaya. Then there should be risk-adjusted method to know how the risk affects its performance evaluation.

### Comparison based on Performance Evaluation

**Table 4.7. Performance Evaluation**

Investment Instrument		Sharpe Instrument	Treynor Instrument	Beta Coefficient
Property	Pasar Kemis	0,488	0,009	7,989
	Sukamantri	0,342	0,0614	1,086
	Kuta Jaya	0,854	0,0582	1,237
	Gelam Jaya Kuta Baru	0,483 0,665	0,032 0,0206	1,688 3,320
Silver		0,209	0,240	0,284
Gold		0,490	0,414	0,161
JKSE (Market)		0,275	0,112	1

The comparison in this section are using Sharpe's measure and Treynor's measure as a method to find performance evaluation (risk-adjusted method). The result of JKSE will be benchmarked as market.

The difference between Sharpe's measure and Treynor's measure is standard deviation is used as a volatility measurement for Sharpe's measure while Treynor's measure used beta. According to Sharpe's measure, the highest investment instrument is property in Kuta Jaya ward at 0,854. Furthermore, we can see in Treynor's measure, the highest investment instrument is land property in Pasar Kemis at 7,989 point.

### Coefficient Correlation

**Table 4.8 Coefficient Correlation**

COEFFICIENT CORRELATION	Gold	Silver	JKSE	Pasar Kemis	Sukamantri	Kuta Jaya	Gelam Jaya	Kuta Baru
Gold	1.000							
Silver	0.762	1.000						
JKSE	0.403	0.302	1.000					
Pasar Kemis	0.151	-0.152	-0.045	1.000				
Sukamantri	0.185	-0.066	0.039	0.856	1.000			
Kuta Jaya	0.344	-0.116	0.237	0.453	0.424	1.000		
Gelam Jaya	0.380	-0.026	0.193	0.122	0.137	0.771	1.000	
Kuta Baru	0.332	-0.075	0.089	0.517	0.821	0.821	0.584	1.000

The coefficient correlation consists of the correlation between the investment return. The diagonal cells are equal to 1. This matrix shows the relationship of each investment to each other. All correlation that show a positive number means the investments move in the same pattern, they increase and decrease at the same time but in different portion of percentage. Negative correlation means the investment move in contrast to each other, and it is preferable to construct a diversified portfolio. All positive instruments are not preferable to construct a diversified portfolio but still possible to be included in the portfolio.

### Conclusion and Recommendation

#### Conclusion

After applying sequences method for the calculation based on the past fifteen years data in this final project, the conclusion came out as a follow :

- From the result of return comparison, Kuta Jaya ward property has the highest return among the other investment instrument.
- According to beta coefficient comparison, JKSE has the highest value which means it is the riskiest instrument investment compared to other. On the other hand, investment in Pasar Kemis ward has the lowest beta coefficient as the best choice to avoid risk due to the low price volatility.
- In Sharpe measurement for performance evaluation, Kuta Jaya ward property investment has the highest ratio which means that the performance after risk adjusted is the best compared to the other instruments.

- In Treynor measurement for performance evaluation, Pasar Kemis has the best performance in 15 years period.
- Based on coefficient correlation, the most negative correlation are investments in Silver and Pasar Kemis ward property. This means that this two combination of investments move in a contrary movement which give the best result for investment and to construct a diversified portfolio.

### Recommendation

#### Investment Purposes

- This research can only applied in Indonesia because of the BI Rate as the basis of risk free asset. Investor who wants to invest in outside of Indonesia should use Risk Free Asset from the respective country.
- From the result of this research, it is recommended to investor to invest in Pasar Kemis Property and Silver based its good correlation in past fifteen years.

#### Further Research

- This research can be applied to other property area.
- The wider period of research, the better the outcome, it is because it can resulted the more accurate calculation.
- To avoid the risk, investor can also make an optimal portfolio which need a further research of the correlation between each investment instruments.

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