

COMPARATIVE STUDY OF SMALL MEDIUM ENTERPRISE (SME) PORTFOLIO PERFORMANCE IN THE CAPITAL MARKETS OF INDONESIA, SOUTH AFRICA, AND THE UK

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ABSTRACT : The purpose of this study is to compare the share portfolio performance of SMEs in the Indonesian, South Africa and England capital markets based on the Sharpe Index and to learn the significance difference of the average of portfolio performance between the three capital markets. This study used historical data of stock prices of SMEs and the interest rate of the central bank of Indonesia (BI Rate), South Africa (Reverse Bank base Interest rate) and England (BoE Interest rate) in the period of January 2018 through January 2019. Purposive sampling method is the sampling technique used to obtain a total sample of 15 stocks of SMEs which has best performance on that year. The findings show that the share portfolio performance of SMEs based on the Sharpe index in Capital Market of Indonesia, South Africa and England is better than the performance of composite index and the performance of A-list share index in respective capital market. Statistically based on one-way ANOVA, the difference of the average of SMEs portfolio performance between the Indonesian, South Africa, and England capital market, is not significant.

KEYWORDS : *SMEs, capital markets, portfolio performance, Sharpe Index*

I. INTRODUCTION

The purpose of forming a portfolio is to maximize the expected return on investment with a minimum level of risk through the concept of diversification. Investments in Small Medium Enterprises (SME) stocks are an investment alternative for investors who are expected to provide a more competitive return. Banz (1981) and Ziemba (1991) in Japan, Levis (1985) in England and Brown, et al. (1983) in Australia found that the stock performance of companies with small capitalization consistently outperformed the stock performance of companies with large cap (Tudor, et al.,2014).

The countries that are the object of this research are Indonesia as a developing country with an economic growth rate of 5,07%, South Africa as a country that is experiencing economic pressure with an economic rate of -0,3% and the UK as a developed country with an economic growth rate of 1,2%. The role of SMEs for the economic growth of the three countries is shown in the table below:

Table 1. Continent Research Object

	Indonesia	South Africa	England
Economic growth	5,07%	-0,3%	1,2%
<i>SME to GDP</i>	60,34%	95%	66,7%
Characteristic	Innovation, natural resource development, flexible	Resilient, dynamic and innovative	Unique, Value Added, Consumer Satisfaction, technology implementation

Source: Processed Data,2020

The reasons for choosing SME in these three countries as research objects (1) the contribution in the GDP of the three countries is more than 60% (2) Continent differences allow diversification so that the risk is minimal.

The calculation of performance in this study uses a combination of the Markowitz portfolio model with the Sharpe index as a risk premium divider with a standard deviation representing the sum of unsystematic risk and market risk.

Previous research in Romania (Tudor, Et Al,2014), India and China (Sandhi,2017) which found that the performance of the SME stock portfolio was consistently able to exceed the performance of the composite stock index and A-list on the BSE (Bucharest Stock Exchange) with the risk adjusted performance calculation method. combined with the Sharpe index.

Based on the phenomena from previous research, this study aims to know the performance of the SME portfolios formed in Indonesia, South Africa and the UK when compared to the composite index and leading stock index in each of these countries in the study period January period 1st of January 2018–1st January 2019.

II. HEADINGS

Investment is a commitment to a number of funds or other resources that are carried out at this time with the aim of obtaining a number of benefits in the future (Tandelilin,2017:2). The parties that carry out investment activities are called investors. Investors buy one or a number of shares today in the hope of obtaining a profit or return from an increase in stock prices or a number of dividends in the future, as a reward for the time and risk associated with the investment activity.

According to Bodie and Kane (2016:243), common stock or commonly referred to as equity securities or equity is proof of ownership in a company. Each shareholder entitles the owner to one vote in corporate governance which is used in the annual general meeting of shareholders and shares the companies financial benefits.

Husnan (2016:47) reveals that the investment process has several stages including: (1) determining investment policy, (2) analyzing securities, (3) calculating the risk of investment, (4) forming a portfolio, (5) evaluating portfolio performance. The formation of a portfolio is one of the ways to minimize risk in the hope of getting a certain level of return with the assumption that all investors are risk averse investors. The calculation using Markowitz's portfolio theory describes the level of profit from the portfolio with minimal risk or can be called an efficient portfolio. The steps used in the calculation are

- (1) Collect data on the closing price of each issuer to be able to calculate the actual return using the equation:

$$TR = \frac{CF_t + PC}{P_B}$$

Information :

CF_t = Cash flow during the measurement period t

P_E = Closing price periode t

P_B = The purchase price of shares or the share price at the beginning of the period t

PC = Changes in share prices during the period of ownership

- (2) Calculate the expected return on shares of each issuer with the equation (Hartono, 2017: 300) :

$$E(R_i) = \frac{\sum_{t=1}^n R_{it}}{N}$$

Information :

R_{it} = Return of stock i during measurement period t Returnsahamipada periodepengukuran

N = Number of periods

- (3) Calculates the risk (variance and standard deviation) of each sample using equations (Hartono, 2017: 307) :

$$\sigma^2 = \frac{\sum_{i=1}^n [X - \bar{X}]^2}{n - 1}$$

Information :

σ^2 = variance from i stock return

σ = Standard deviation of i stock

X = Return of stock i

\bar{X} = Average stock returns i

n = Number return

- (4) Creating a correlation matrix between stocks and calculating the correlation. This is necessary to reduce portfolio risk so that it is expected that the portfolio formed is an efficient portfolio
 (5) Calculating the covariance between two stocks in the portfolio.
 (6) Calculate the expected return (expected return) of the portfolio

$$E(R_p) = \sum_{i=1}^n X_i E(R_i) \text{ (Hartono, 2017: 332).}$$

- (7) Calculates the risk (variance and standard deviation) of the portfolio. The variance and standard deviation of the portfolio can be calculated from the following equation (Hartono, 2017: 352):

$$\sigma_p^2 = x_1^2 \sigma_1^2 + x_2^2 \sigma_2^2 + 2(x_1 x_2 \rho_{12} \sigma_1 \sigma_2)$$

- (8) Forming a portfolio with the same proportion.

- (9) Measuring the performance of the stock portfolio using the Sharpe Index with the equation:

$$S = \frac{\bar{r}_p - \bar{r}_f}{\sigma_p}$$

Information :

S = Sharpe's measure

\bar{r}_p = The average portfolio return

\bar{r}_f = Average return on risk-free assets

σ_p = Standard deviation of the portfolio

III. METHODS

This study is a comparative research that compares the performance of SMEs stock portfolios in the Indonesian, UK and South African capital markets and the average portfolio performance formed in the Indonesian, UK and South African capital markets for the period 1st of January 2018–1st January 2019.

The variables studied in this study in both the Indonesian, South African and British capital markets are: (1) Individual SME stock returns (2) Individual SME stock risk (3) SME stock portfolio return (4) Risk of SME's Portfolio (5) Performance of the SME's portfolio.

Population in this study is all SME shares that are actively listed and traded on the Indonesian capital market (IDX) and are included in the Pefindo25 Index, on the South African Capital Market (JSE) and on the JSE Altx Index, and on the capital market. United Kingdom (FTSE) and entered into the FTSE Small Caps index during the research period 1st of January 2018–1st January 2019. and sample selection criteria is to select 15 stocks with the highest returns respectively in the three capital markets.

The sampling technique in this study used a purposive sampling method, which is taking samples from a population based on certain criteria in accordance with the research (Jogiyanto, 2016) And the method of data collection is non-participant observation technique through observing the historical price of SME shares in the Indonesian, UK and South African Capital Markets through the Yahoo Finance website (<https://finance.yahoo.com>) for the period 1st of January 2018–1st January 2019.

IV. RESULT AND DISCUSSION

The return of SME stock portfolios with ownership periods of 1, 3 and 6 months in the Indonesian, South African and British Capital Markets are :

Table 2.
Calculation of Return and Risk on SMEs Stock Portfolio

	Indonesia			South Africa			The UK		
	1 mth	3 mth	6 mth	1 mth	3 mth	6 mth	1 mth	3 mth	6 mth
Expected Return	3.22%	7.87%	15.24%	3.48%	9.85%	14.11%	2.35%	6.76%	12.17%
Variance	0.14%	0.27%	0.35%	0.24%	0.69%	1.09%	0.18%	0.81%	1.40%
Standard Deviation	3.73%	5.15%	5.89%	4.90%	8.30%	10.43%	4.26%	9.01%	11.83%

Source: Processed Data, 2020

1. Portfolio performance of SME's measurement.

Portfolio Performance of SME Stocks in the Indonesian Capital Market The average return on risk-free assets is calculated by calculating the average BI-rate, South African central bank interest rate (Reverse Bank of Sout Africa base interest rate), and British central bank (Bank of England interest rate) for the period 1st of January 2018–1st January 2019.

Table 3.
Portfolio Performance of SME Shares in the Indonesian Capital Market

Periode	RP	RF	SD	IS
1 bln	3.22%	0.43%	3.73%	0.75
3 bln	7.87%	1.28%	5.15%	1.28
6 bln	15.24%	2.56%	5.89%	2.15

Portfolio Performance of SME Shares in the South Africa Capital Market

Periode	RP	RF	SD	IS
1 bln	3.48%	0.55%	4.90%	0.6

3 bln	9.85%	1.65%	8.30%	0.99
6 bln	14.11%	3.30%	10.43%	1.04

Portfolio Performance of SME Shares in the British Capital Market

Periode	RP	RF	SD	IS
1 bln	2.35%	0.05%	4.26%	0.54
3 bln	6.76%	0.15%	9.01%	0.73
6 bln	12.17%	0.31%	11.83%	1.00

Source: Processed Data,2020

2. Analysis of Variance

The assumption test is fulfilled are : 1) The sample comes from an independent group because the samples are taken from three different capital markets, namely the Indonesian, South African and British Capital Markets, 2) Normality test using the Shapiro Wilk Test the Sig value is obtained. for the performance of the SME stock portfolios in the capital markets of Indonesia, South Africa and the UK are 0.230, 0.253 and 0.213(greater than 0.05) so the performance data for the SME stock portfolios in the Indonesian, South African and British capital markets are normally distributed , 3) The homogeneity test with the IBM SPSS Statistics application obtained a significance value of 0.150 (greater than 0.05) so that the variants of the performance of the SME stock portfolios in the Indonesian, South African and British capital markets are the same.

Table 4.
Results of Analysis of Variance (ANOVA)

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
<i>Between Groups</i>	0.790	2	.395	2.000	.216
<i>Within Groups</i>	1.185	6	.197		
<i>Total</i>	1.975	8			

Source: Test results with the IBM SPSS Statistics 22

Based on Table 6, the significance value (p-value) = 0.216, thus statistically at the significant level 0.05 significance level, Ho is accepted, so it is found that the difference in the average performance of the SME stock portfolio in the Indonesian Capital Market, South Africa and the UK is insignificant.

3. Return of the SME Stock Portfolio

The return of the SME stock portfolio which is formed from 15 SME stocks in the Indonesian, South African and British Capital Markets shows that the longer the portfolio ownership period, the higher the return obtained by investors. The highest return in research in the three capital markets is obtained during the ownership period of 6 months

Tabel 5.
Return of SME's Portfolio

	Indonesia	South African	The UK
1 bulan	3.22%	3.48%	2.35%
3 bulan	7.87%	9.85%	6.76%
6 bulan	15.24%	14.11%	12.17%

Source: Processed Data,2020

The macroeconomic environment is the environment that affects the companies operations in an investment destination country (Tandelilin, 2017). The ability of investors to understand and predict the economic conditions of an investment destination country is useful in making investment decisions.

Komparasi Kinerja Portofolio Saham SME (Indeks Sharpe)

The calculation results of the portfolios formed from 15 SME stocks with the highest returns on the Pefindo25,JSE ALTX And FTSE Small cap Index in the ownership period of 1, 3 and 6 months resulted in better performance compared to the IHSG performance and the performance of the LQ45 Index during 1st of January 2018–1stJanuary 2019 period based on performance measurements with the Index Sharpe.

Table 9.
Sharpe Index in the Indonesian Capital Market (BEI)

INDEKS SHARPE			
Periode	Portofolio SME	IHSG	LQ45
1 bln	0.75	-0.15	-0.22
3 bln	1.28	-0.21	-0.39
6 bln	2.15	-0.51	-0.54

Sharpe Index in the South African Capital Market (JSE)			
INDEKS SHARPE			
Periode	Portofolio SME	JSE All Share	JSE SA40
1 bln	0.6	-0.27	-0.32
3 bln	0.99	-0.84	-0.72
6 bln	1.04	-1.78	-1.72

Sharpe Index in the British Capital Market (FTSE)			
INDEKS SHARPE			
Periode	Portofolio SME	FTSE ALL Share	FTSE 100
1 bln	0.54	-0.38	-0.35
3 bln	0.73	-0.38	-0.36
6 bln	1.00	-0.4	-0.38

Source: Processed Data, 2020

Comparison of the performance of SME stock portfolios based on the Sharpe Index in the Indonesian, South African and British Capital Market shows different performance results of the SME stock portfolios but overall the three portfolios formed have higher returns compared to the composite index and A-list in each country.

Statistically, a comparative analysis of the average SME portfolio performance that has been formed from SME stocks in the Indonesian, South African and British Capital Markets in the observation period during 1st of January 2018–1st January 2019 based on the one-way variant analysis method obtained a calculated F value of 1.711 < F table of 5.14 or a significance value (p-value) of 0.258 > 0.05 so that H₀ is accepted at the 0.05 significance level, which means that there is no significant difference between the average SME portfolio performance in the three capital markets.

The results of statistical comparative analysis which show that there is no significant difference in the average performance of the SME stock portfolio in the Indonesian, South African and British Capital Markets in the observation period 1st of January 2018–1st January 2019 can be explained because the limited period in portfolio formation is only year.

IV. CONCLUSION

From the results of research and discussion, it can be concluded that, first, the performance of the SME stock portfolio in the Indonesian Capital Market shows better performance than the performance of the JCI and LQ45 Index. Second, the performance of the SME stock portfolio in the South African Capital Market (JSE) shows better performance than the JSE All Share and JSE Alt X performance. Third, the performance of the SME stock portfolio in the UK Capital Market (FTSE) shows better performance than the performance FTSE All Share and FTSE 00. Fourth, statistically based on the comparison test with one-way ANOVA, it is found that the average difference in the performance of SME stock portfolios in the Indonesian, South African and British capital markets is not significant at the 0.05 significance level.

V. ACKNOWLEDGMENT

The implication of the research result is that the SME stock portfolio shows relatively better performance compared to the A-list stock index performance and the composite index performance in the three capital markets, both in Indonesia, South Africa and the UK, can be a consideration for investors to invest in SME stocks. For international investors, investing in SME stocks in Indonesia can be an alternative investment where the research results show that the performance of the SME stock portfolio is the highest compared to the performance of the SME stock portfolio in South Africa and the UK. In line with the high rate of return, the risk

faced by investors is also the highest when compared to the level of risk held by South Africa and the UK. Investors can also consider the period of ownership of the SME stock portfolio, where the results of the study show that in a longer ownership period of 6 months, the performance of the SME stock portfolio shows the best performance in both the Indonesian, South African and British Capital Markets.

REFERENCES

- [1] E. Tandelilin, *Portofolio dan Investasi Teori dan Aplikasi* (Yogyakarta: Kanisius, 2017).
- [2] J. Hartono, *Teori Portofolio dan Analisis Investasi* (Jakarta: Rajawali Pers, 2019).
- [3] Bailey, J. 1992. Evaluating Benchmark Quality. *Financial Analysts Journal*, May-June. pp. 33 – 39.
- [4] Barth, J. Lin, D. Yost, K. 2017. Small and Medium Enterprise Financing in Transition Economies. *International Atlantic Economic Society*, No.39, pp.19–38
- [5] Chandra, Liliana, Hapsari, Y. 2016. *Analisis Pembentukan Portofolio Optimal dengan Menggunakan Model Markowitz untuk Saham LQ 45 Periode 2008-2012*. *Jurnal Manajemen*, Vol 1 No. 1 Mei 2016, pp.41-65
- [6] Damodaran, A. 2007. Return on Capital (ROC), Return on Invested Capital (ROIC) and Return on Equity (ROE) : Measurement and Implications. Stern School of Business
- [7] Elton, E. dan Gruber, M. 1997. Modern Portfolio Theory, 1950 to Date. *Journal of Banking and Finance*, No 21, pp. 1743 -1759.
- [8] Graham, B. Dodd, D. 2019. *Security Analysis*. Sixth Edition, McGraw –Hill, New York
- [9] Hadi, S. 2017. *Statistik*, Pustaka Pelajar
- [10] Harwood, A. Konidaris, T. 2015. SME Exchanges in Emerging Market Economies A Stocktaking of Development Practices. *Policy Research Working Paper 7160*, World Bank Group
- [11] Husnan, S. 2016. *Dasar-dasar Teori Portofolio dan Analisis Sekuritas*. Yogyakarta, UPP STIM YKPN
- [12] International Monetary Fund. 2016. *World Economic Outlook : Subdued Demand : Symptoms and Remedies*. Washington. October
- [13] Indrayanti, Yuli N. Darmayanti, N. 2013. *Penentuan Portofolio Optimal dengan Model Markowitz pada Saham Perbankan di Bursa Efek Indonesia*. E-Jurnal Manajemen Universitas Udayana, Vol. 2, No. 8
- [14] Jensen, M. 1968. The Performance of Mutual Funds in the Period 1945 -1964. *The Journal of Finance*, Vol 23.
- [15] Jogiyanto, H. 2016. *Teori portofolio dan Analisis Investasi*. Edisi Kesembilan, Yogyakarta, BPF.
- [16] Jones, C. 2016. *Investment: Principles and Concepts 12th Edition*. John Wiley & Sons, New York.
- [17] Kazan. Halim. Uludag, K. 2014. Credit Portfolio Selection According to Sectors in Risky Environments: Markowitz Practice. *Asian Economic and Financial Review*, 4(9), pp.1208-1219
- [18] Manulang, M. 2012. *Optimalisasi Kinerja Portofolio Investasi di Indonesia*. Tesis, Universitas Indonesia
- [19] Markowitz, H. 1952. Portfolio Selection. *Journal of Finance*, 7, pp.77-91.
- [20] Mishra, B. 2013. Financing of Micro, Small and Medium Enterprise: Challenges and Strategies. *Asia Pacific Journal of Management & Entrepreneurship Research (APJMER)*, Volume 2, Issue 2, April 2013
- [21] Moskowitz, T. Grinblatt, M. 1999. “Do Industries Explain Momentum”. *Journal of Finance*, 54
- [22] Naveen, C. 2014. Application of Sharpe Single Index Model to BSE. *Management Today*, Vol.4 (April-June), No.2
- [23] Paskawati, L. 2012. *Kinerja Portofolio Saham Infrastruktur, Keuangan dan Konsumsi Berdasarkan Strategi Investasi Sektoral di Pasar Modal Indonesia*. Tesis, Program Pascasarjana Universitas Udayana
- [24] PEFINDO. 2018-2019. Kinerja Indeks Pefindo 25 Tahun 2020: *Konsisten Mencatat Pertumbuhan Yang Terbaik*. www.pefindo.com
- [25] Rachman, A. Febrianto, I. 2012. *Analisis Kinerja Portofolio Saham Subsektor Perkebunan Dengan Sharpe Measure, Treynor Measure, dan Jensen Measure*. *Jurnal Ilmiah ESAI*, Volume 6, No.3, Juli 2012
- [26] Radcliffe, R. 1997. *Investment: Concepts, Analysis, Strategy*. Addison-Wesley Educational Publisher Inc., Massachusetts
- [27] Reilly, F. Brown, K. 2012. *Investment Analysis and Portfolio Management*, 10th Edition. Addison-Wesley Educational Publisher Inc., Massachusetts.
- [28] Roll, R. 1981. A Possible Explanation of The Small Firm Effect. *The Journal of Finance*, Vol. XXXVI, No.4

- [29] Sekaran, U. Bougie, R. 2013. *Research Methods for Business : a skill building approach*. 6th ed, Wiley, Chichester.
- [30] Sharpe, G. Jeffery V. 1995. *Investment*. Prentice Hall, Inc., New Jersey.
- [31] Shinozaki, S. 2016. Capital Market Financing for SMEs: A Growing Need in Emerging Asia. *ADB Working Paper Series on Regional Economic Integration*
- [32] Singh, R. Suresh. Deshmukh, G. 2009. The competitiveness of SMEs in a globalized economy. *Management Research Review*, Vol. 33 Iss 1 pp. 54 – 65
- [33] JSE, JSEALTx. Stock Market Performance Report in 2020. www.JSE.sa.
- [34] FTSE Stock Market Performance report in 2019 www.londonstockexchange.com
- [35] Sudarsana. Sedana, I. Artini, L. 2014. Pembentukan Portofolio Optimal pada Saham-saham Indeks IDX30 di PT. Bursa Efek Indonesia. *E-Jurnal Manajemen Universitas Udayana*, Vol. 3, No. 2
- [36] Sulistyorini. 2009. Analisis Kinerja Portofolio Saham dengan Metode Sharpe, Treynor dan Jensen. *Tesis*, Universitas Diponegoro, Semarang.
- [37] Tambunan, T. 2016. Ongoing trade facilitation improvement: Its impact on export-oriented small and medium-sized enterprises in Indonesia. *Asia-Pacific Research and Training Network on Trade*, No.133, Oktober 2013
- [38] Tudor, C. Tudor, M. Anghel, A. 2014. Performance of SMEs stocks portfolios at Bucharest Stock Exchange. *Procedia - Social and Behavioral Sciences*, Vol.150, pp.772 – 777
- [39] Van Eck Global. 2015. Independent companies driving China's growth. Market Vectors
- [40] Walpole, R. Myers, R. Myers, S. Ye, K. 2007. *Probability & Statistics for Engineers & Scientists*. Eight Edition, Pearson Prentice Hall
- [41] Wiksuana, I. Purwanti, N. 2008. Konsistensi Risk-Adjusted Performance Sebagai Pengukur Kinerja Portofolio Saham di Pasar Modal Indonesia. *Buletin Studi Ekonomi*, Volume 13, Nomor 2, hal. 172-183
- [42] Wood, D. Pratt, C. Hoff, B. 2010. Investing in the Backbone of Emerging Markets. *Working Paper from Boston College Center for Corporate Citizenship's Institute for Responsible Investment*, www.bcccc.net.