FACING GLOBAL DIGITAL REVOLUTION

Edited by
Dyah Nirmala Arum Janie, Hendrati Dwi Mulyaningsih
and Ani Wahyu Rachmawati

ROUTLEDGE

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Facing Global Digital Revolution

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Dyah Nirmala Arum Janie, Hendrati Dwi Mulyaningsih & Ani Wahyu Rachmawati

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Foreword

In terms of industrial revolution 4.0, what technological aspect can disrupt jobs nowadays and change the business model? The digital revolution has re-imagined how individuals live. Technology is changing the traditional business model and reinterpreting the value for the customer in economic circumstances. Kavadia et al. (2016) contradict the idea that technology is exclusively responsible for the transformation of the industry. Westerman (2017) supports that view, noticing that "technology doesn't provide value to a business, but that technology's value comes from doing business differently because technology makes it possible."

Facing the digital revolution has shown how business, economy, and management have been affected by technological changes in a more personalized product/service offering, a closed-loop process, asset sharing, usage-based pricing, and a more collaborative ecosystem, an agile and adaptive organization.

The 1st Business and Economic Series: Economics, Management, and Accounting Conference 2019 (1st BES 2019) presented various articles that discuss research in business, economy, management, and accounting in a digital era. The research needs to be emphasized by a continuous study for a more significant impact.

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Optimal portfolio with single index cut-off model in LQ 45 stocks on Indonesia Stock Exchange

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ABSTRACT: This study aims to examine the relevance of the single index cut-off model for investors on the Indonesia Stock Exchange (IDX). The population consists of all the public firms listed on IDX during 2011–2013 and the sample comprises LQ 45 companies. The method of sample selection was conducted through purposive sampling and there are two criteria: 1) the company is included in the top 10 highest liquidity of the LQ45 category, and 2) the company has never been one of the top 10 category. Using the single index cut-off model from Elton and Gruber (1997), drastic changes in the selected stock of investors from 2011 to 2013 were found. These indicate investor demographic changes that are caused by differences in the emerging trendsetters in the capital market, in line with the theory of fad and fashion in capital markets (Shiller, Fischer, & Friedman, 1984). This study also finds that ASII, UNVR, and ISAT are always included in the optimal portfolio, which shows the effectiveness of the single index cut-off model in previous studies.

Keywords: single index cut-off model, LQ 45, investors, IDX, risk avoider, risk seeker

1 INTRODUCTION

Sartono and Zulaihati (1998) researched selecting the optimal portfolio with the single index method, with emphasis placed on investor's rationality, in other words, the investor's ability to choose the optimum portfolio based on preference, risk, and behavior in setting up the transaction. The use of twenty-five LQ45 capital companies for the period 1994–1996 showed three portfolio candidates' capital, namely, Lippo Land Development (LPLD), Astra International (ASII) and Gudang Garam (GGRM) with compositions of 51.32%, 47.55%, and 1.13% respectively. Investor's rationality was proven using an independent t-test. Yuniarti (2010), in a research test based on Sartono and Zulaihati (1998), used bank's capital with adequate consideration given to the years prior to 1997, which mainly used only manufacture's capital. Meanwhile, for the bank capital of period 2009–2010, three flagship stocks were found: BBRI, BBCA, and BBNI with proportions 58.15%, 23.72%, and 18.13% respectively. As a continuation of Sartono and Zulaihati (1998) and Yuniarti (2010), Sembiring (2012) used the Panin Securities Investment Manager approach, specifically, the Panin Dana Maksima's Mutual Fund (PDM) for the period of March 2011. With the single index method, the author discovered five superb stocks: Duta Pertiwi (13.20%), Delta Djakarta (25.59%), Bank Niaga (52.01%), Panin Insurance (5.72%), and Kalbe Farma (3.49%). Furthermore, Ramanathan and Jahnavi (2014) tested the model for bank stocks and information technology in India's capital market for the period 2009–2013. There are five stocks included in the portfolio candidates: Dish (7.24%), Saregama (13.45%), Suntv (13.95%), HT Media (24.79%), and PVR (40.58%). Nalini (2014) attempts to prove the accuracy of the single index model with stocks

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in BSE for period 2009–2014. The findings show four stocks of candidate portfolio optimums: ITC (70.88%), Tata (10.08%), Dr. Reddy's L (17.41%), and Bajaj Auto (1.63%).

The single index cut-off model has been used by several researchers. However, in this study, the model is still considered relevant because it was used based on a few important basic elements, for instance, stock individual return. Interestingly, researchers in Indonesia focus on the industrial sector while in India they are more focused on the IT (Information Technology) sector. The difference is due to the investors' diversification strategies, meaning that India's strategy displays more homogeny. In Indonesia, heterogeneity in the industry sector still exists. Thus, the objectives of this research are to retest the single index cut-off model, which still existed in IDX from 2011–2013, in accordance with Elton and Gruber (1997), and selecting the stocks that are always present in the optimal portfolio.

2 RESULT OF RESEARCH

2.1 *Profile of average risk & return of 10 selected LQ45 stocks for 2011–2013*

Table 1 presents both return and risk for 10 preferred LQ45 stocks between 2011 and 2013. In 2011, the highest return was obtained by BBCA stocks and the lowest return by KLBF, while the highest risk goes to INCO and the lowest to UNVR stocks. Thus for 2011, the preferred stock for the risk-avoidant investor (type 1) is BBCA and for risk-seeker investor (type 2) is UNVR. While the preferred stock type for the risk-seeking investor (type 2) is KLBF and for the risk-avoidant investor (type 1) is INCO. The risk-avoidant investor (type 1) only wants the highest return, similar to the risk-seeking investor (type 2) who seeks the highest risk.

In terms of 2012 data, higher risk was obtained by KLBF stocks and higher returns by AALI. However, KLBF stocks obtain second place for the highest return. These findings confirm the theory of portfolio formation for investors who are risk-seekers. Meanwhile, if this theory is excluded, risk-seekers (type 2) who are confirmed to AALI stocks will also consider KLBF as an alternative in the portfolio pair. From the data in 2013, it appears that PTBA has the highest return and risk. Therefore, PTBA will be the first priority as a portfolio for risk-seeking investors. As a compartment in the stock market, risk-avoidant investors will select GGRM and as compensation for premium market risk then TLKM or BCA can be used as alternatives. These differences between risk seekers and avoiders are in accordance with Shiller, Fischer, and Friedman (1984) who posits that there are fads and fashion in IDX.

2.2 *Stock ranking profile based on ERB value of LQ45*

Selecting stocks using risk and return criteria has significant subjectivity because it is based only on the type of investor. Therefore, in Table 2, the process of selecting stocks is outlined based on ERB rank (excess return to beta), which can be compared to the Sharpe ratio.

Table 1. Profile of average risk and return 10 LQ45 selected stocks for 2011–2013.

Stock	Return 2011	Risk 2011	Return 2012	Risk 2012	Return 2013	Risk 2013
TLKM	0.118	2.437	0.068	1.957	0.163	2.159
AALI	0.133	2.470	0.178	2.152	0.289	2.587
BBCA	0.275	2.207	0.129	1.730	0.169	2.181
ASII	0.242	2.368	0.009	2.216	-0.072	2.887
GGRM	0.001	1.758	-0.090	2.302	-0.266	1.890
UNVR	-0.054	1.752	0.083	2.199	-0.234	2.046
KLBF	-0.014	3.296	0.168	2.544	0.177	2.775
PTBA	0.177	3.266	0.047	2.103	0.493	3.700
ISAT	0.240	2.390	-0.010	2.036	-0.140	2.379
INCO	0.045	3.859	0.032	2.170	0.276	2.985

Table 2. Stock rating based on ERB value for 2011–2013.

Stock	ERB 2011	C* 2011	ERB 2012	C* 2012	ERB 2013	C* 2013
TLKM	-233.193	-146.227	-754.969	-35.913	-237.310	-51.403
AALI	-623.108	-47.654	-1670.591	-6.449	1616.165	3.231
BBCA	-355.263	-88.484	513.655	45.818	-242.021	-52.241
ASII	-355.263	-136.769	-634.789	-17.717	-140.417	-86.285
GGRM	-411.036	-99.092	-902.586	-11.238	-668.183	-4.946
UNVR	-490.293	-29.051	-2123.301	-9.260	971.151	2.596
KLBF	-1855.792	-61.674	-289.414	-49.056	-106.540	-56.100
PTBA	-147.642	-60.615	-564.509	-56.109	685.311	1.781
ISAT	-409.776	-106.290	-213.826	-64.481	-382.654	-21.526
INCO	-444.335	-18.274	3126.963	4.609	-360.501	-9.068

For 2012, all stocks are also selected in the optimal portfolio given that the ERB values are much larger than C* (cut-off indices). Interestingly, BBCA and INCO have positive ERB values. This is because the increase in stock prices per year from both stocks exceeds the increase in risk-free asset value (Rf), that is, the BI rate. Similar to the data for 2011 and 2012, all stocks in 2013 have a large ERB, meaning they will all be included in the optimal portfolio.

2.3 *Determination of the optimal portfolio proportion*

Based on Figure 1, all LQ45 stocks will be selected as an optimal portfolio. The biggest percentage, owned by UNVR, is more than 19% and the smallest percentage, owned by INCO, is 0.3%. Optimal portfolio selection can also be mapped in Figure 1 through a pie chart. The use of this is driven by the success of Ramanathan and Jahnavi (2014) and Nalini (2014), who conducted research in the Indian capital market.

The results from Figure 1 indicate that the risk-avoidant investor type dominates on IDX, while two mining sector stocks (PTBA and INCO) have high business risks that makes them less attractive to investors. Furthermore, based on Figure 2, all LQ45 stocks are also selected in the optimal portfolio for 2012. The stocks that have the highest percentage are PTBA with a proportion of 16.3% and the lowest is GGRM with 5.5%. The findings in 2012 are clearly different from those in 2011 as PTBA stocks that were initially not in demand by investors were later in great demand. GGRM was ranked second among the preferred stocks of investors in 2011.

In 2013, the most preferred stock of investors was ASII (automotive sector) with 26.7% and the lowest-ranked stock was PTBA (mining sector) with 1.5%. The findings in Figure 3 indicate a change in investor-return demographics. If the risk-seeking investor type dominated the IDX making mining stocks a favorite in 2012, then in 2013 it returned to the risk-avoidant investor type dominating the IDX making blue-chip stocks such as ASII and UNVR the preferred stock. The findings in Figures 1-3 confirm Shiller, Fischer, and Friedman's (1984) theory of fad and fashion in capital market. There are differences in investor bias, both emotional and cognitive, resulting in changes in investor demographic types that do not occur automatically. This is because investors will need a basis for decision-making called frames.

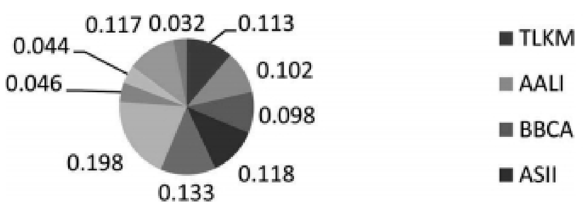

Figure 1. Graphic of optimal proportion portfolio in 2011.

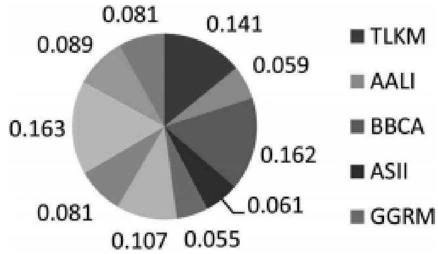

Figure 2. Graphic of optimal proportion portfolio for 2012.

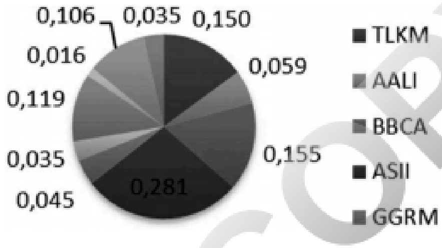

Figure 3. Graphic of optimal proportion portfolio for 2013.

This irrational type as the main basis of trendsetters is rooted in competition between concepts of EMH (efficient market hypothesis) and behavioral finance in terms of expected utility from investors for achieving investment objectives. However, based on the data from 2011–2013, it remains evident that the EMH theory is more dominant because, in principle, more investors are risk avoidant. This can be seen from the selection of blue-chip stocks in the highest order, such as ASII, UNVR stocks, and ISAT.

3 CONCLUDING REMARKS

The results of the analysis using 10 selected LQ45 stocks during 2011–2013 proved that the single index cut-off model can still be used properly. This model is able to provide an overview of the optimum proportion for all LQ45 stocks on the IDX without including the results of negative proportions (short selling). Evidence from the single index cut-off model shows rationality investors are still dominated by risk-avoidant types. In addition to the proven relevance of the model, this study also found that there was a change in the preferred stock of investors as seen in the drastic change in rank for a stock in the optimal portfolio proportion for each year. This indicates a demographic change in investors on the IDX, which occurred due to changing trendsetters in the capital market. According to Shiller, Fischer, and Friedman's (1984) fad and fashion in capital market theory, investors in the capital market are like consumers in the goods & services market. They will be subject to the spirit of favoritism for a particular product. In this case, the capital market will have an increasingly widespread choice of stock analyst versions.

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