Selectivity and Market Timing Ability of Polish Fund Managers
Analysis of Selected Equity Funds

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Abstract
The study aims to analyse the selective ability and market timing ability of Polish equity fund managers during the period from January 2009 to November 2014. After the global financial crisis of 2008, in this period of quantitative easing (QE), thanks to an increase in the money supply, a capital flow from developed countries to developing countries was observed. In this study, Polish equity fund manager performances are analysed by using Jensen (1968) alpha measure and Treynor&Mazuy (1966) regression analysis method. Jensen alpha (1968) and Treynor&Mazuy (1966) models provide us the selectivity skills and market timing ability of fund managers, respectively. A total of 14 Polish equity funds have been evaluated during the study period. Among 14 funds, only two funds have positive Jensen alpha, but none of them are statistically significant. Similarly, Treynor&Mazuy (1966) regression analysis indicated that again two other funds have positive yet insignificant market timing ability.

Keywords: Polish equity funds; Selectivity skills; Market timing; Performance evaluation.

Introduction
The mutual fund performance has been analysed for a long time in finance studies. These studies forecast fund performances in different markets by using different technical measurement approaches. Especially, after the liberalization of financial markets, mutual funds have become more significant for investors and efforts on their performance evaluation have increased noticeably. Deepak (2011) defines a mutual fund as a trust that pools the savings of a number of investors who share a common goal. The money thus collected is then invested in capital...
market instruments such as shares, debentures and other securities. The income earned through these investments and the capital appreciation realised are shared by its unit holders in proportion to the number of units owned by them. Therefore, a mutual fund is offers an opportunity to invest in a diversified, professionally managed basket of securities at a relatively low cost.

Since 1960s, there have been many studies on performance of mutual funds and their managers. Jensen (1968) examined 115 mutual funds that had been active between 1945 and 1964 with the alpha indicator he generated. His alpha indicator displays the selectivity skills of fund managers. According to his results, funds couldn’t outperform the market performance, which revealed that mutual fund managers, in general, did not have selective ability. Treynor and Mazuy (1966) established quadratic regression analysis method in order to measure market timing ability of the fund managers. They applied this method on 57 open-end mutual funds. Among these funds, they could only detect one fund, which had statistically significant market timing ability. Later, Henriksson & Merton (1981) and Henriksson (1984) applied market timing ability. Henriksson (1984) applied parametric and non-parametric test, which were introduced by Henriksson and Merton (1981), so as to test market timing ability of 116 open-end funds from 1968 to 1980. The result of the study disclosed that fund managers lacked market timing ability and an opposite relationship between selection ability and market timing of funds.

Studies on fund manager performance are scant in Poland as in other emerging economies. Swinkels and Rzeznizcak (2009) investigated the manager’s selectivity and market timing skills of 38 Polish mutual funds (equity, balanced and bond funds) using monthly fund returns over to period February 2000-April 2007. According to their analysis, fund managers did not have selective ability. Furthermore, fund managers in the analysis period also did not have market timing ability. Bialkowski and Otten (2011) tested the performance of the 140 Polish mutual funds over the period 2000-2008 using a multi-factor Carhart model. There are two main outcomes of their study; first Polish funds had lower performances than their benchmarks and second domestic funds outperformed the international funds.

After the global financial crisis in 2008, Fed decided to use quantitative easing policy to lower long-term interest rates. During the quantitative easing policy, monetary supply raises and creates a plethora of money in the financial markets. Quantitative easing policy started in December 2008 and finished in October 2014. During the period, huge amount of money influx from developed countries to developing countries experienced. Thus, in this paper, we have tried to analyze fund performances of Polish equity funds between 09 January 2009 - 31 October 2014 in the era of quantitative easing. Poland is considered as one of the emerging markets and over the study period of 5 years -10 months, Warsaw Stock Exchange (WSE) grew by 12.8% compounded annually on average. Warsaw Stock Exchange performed better than major developed European markets. In the sample period, developed market indices DAX, FTSE 100, CAC 40 yielded 12.1%, 6.8% and 4.1%, respectively.

1. Methodology

In this study, we have tried to evaluate selectivity skills and market timing ability of Polish fund managers. A total of 14 equity fund managers’ performances are analysed. In order to evaluate fund manager performances, Jensen alpha (1968) is computed, which depicts selectivity skills of fund managers. For determining market timing ability of fund managers, Treynor&Mazuy (1966) regression analysis is applied.

1.1. Jensen’s alpha

A portfolio manager’s predictive ability – that is his ability to earn returns through successful prediction of security prices which are higher than those which we could expect to give the level of his riskiness of his portfolio (Jensen, 1968).

Jensen model can be written as below:

\[ R_p - R_f = \alpha_p + \beta_p (R_m - R_f) + \epsilon_p \]

(1)

\[ \alpha_p \] is the excess return of the portfolio after adjusting for the market risk.
\( R_{p} \) is the return on portfolio \( p \) at time \( t \)
\( R_{f} \) is the return on a riskless asset at time \( t \)
\( R_{mt} \) is the return on the market portfolio at time \( t \)
\( \beta_{p} \) is the sensitivity of the excess return on the portfolio \( t \) with the excess return on the market.

The Jensen performance index permits the comparison of portfolio’s managers’ performance relative to one another or to the market. The numerical values of alpha permit the ranking of performance, with the higher scores showing better performances. The sign of the alpha displays whether the portfolio manager is superior to the market after adjusting for the risk of the portfolio. A positive alpha denotes a better performance relative to the market while a negative alpha indicates poorer performance. (Mayo, 2011).

1.1.2. Treynor&Mazuy Regression Analysis

Investment managers may well beat the market, if they are able to adjust the composition of their portfolios in time when the general stock market is going up or down. That is, if fund managers believe the market is going to drop, they alter the composition of the portfolios they manage from more to less volatile securities. If they think the market is going to climb, they shift in the opposite direction. (Treynor&Mazuy, 1966).

Mutual fund managers may hold a higher proportion of the market portfolio if they are qualified to predict future market conditions and envisage the stock market as a bull market. On the other hand, mutual fund managers may hold a lower proportion of the market portfolio if they expect the market to underperform in the future. Treynor and Mazuy (1966) developed the following model to evaluate market-timing performance:

\[
R_{it} - R_{ft} = \alpha_{t} + \beta_{t0}(R_{mt} - R_{ft}) + \beta_{t1}(R_{mt} - R_{ft})^{2} + \varepsilon
\]  

where \( \alpha_{t} \) is the timing-adjusted alpha, which represents the timing-adjusted selective ability of mutual fund managers. The quadratic term in equation (2) is the market timing factor and the coefficient of the market timing factor, \( \beta_{t1} \), represents mutual fund managers’ market timing ability. If \( \beta_{t1} \) is positive, mutual fund managers have superior market timing ability i.e., the investment portfolios of mutual funds are adjusted actively to well-anticipated changes in market conditions. A negative \( \beta_{t1} \) implies that mutual fund managers do not exhibit market timing ability. (Chen et al., 2013).

2. Data

In this paper, we have tried to analyse selectivity skills and market timing ability of 14 Polish equity funds by using Jensen alpha (1968) and Treynor&Mazuy (1966) regression analysis method, respectively. Time period is chosen as January 2009-October 2014 with which quantitative easing (QE) policy overlaps. Weekly returns of funds are used and 304 weeks (09 January 2009-31 October 2014) are observed in this study.

According to Chamber of Fund and Asset Management (IZFIA), there are 9 types of funds in Poland, which are equity funds, mixed funds, bond funds, cash funds and money market funds, real estate funds, private equity funds, absolute return funds, commodity funds and securitization funds. Among mutual funds, equity funds are chosen as these funds carry company stocks that are riskier and more vulnerable to volatility in prices. We can categorize equity funds as domestic market funds, European market funds, American market funds, Asia and Pacific funds and global funds. This study evaluated only the domestic mutual funds that invested in Polish company stocks. With respect to Investment Company Institute database (2014; Q3), there are 280 mutual funds in Poland. Within these funds, we evaluated equity funds, which are managed by those large asset management companies with a minimum net asset value of one billion zlotys. If a fund was closed, newly established or if it merged with another fund over the period between January,2009 and October 2014, its performance was not evaluated. Also performances of those funds that had less than 50% equity shares in their portfolio were not assessed. Consequently, 14 equity funds were filtered to work with. Equity shares of selected equity funds are available in Table 1. The study uses 304 weekly returns of price index of funds. As the benchmark index, Warsaw Stock Exchange (WSE) price index is used. Polish
3-month zloty deposit rate is used as a proxy for the risk-free rate, which is in line with a prior study by Swinkels & Rzezniczak (2009). The data is obtained from Thomson Reuters DataStream.

Table 1. Selected Polish Equity Funds

| Fund Name               | Equity Share (%) |
|-------------------------|------------------|
| Arka BZ WBK Akcji       | >66%             |
| Aviva Investors Polskich| >60%             |
| BPH FIO Akcji           | >70%             |
| ING Akcji               | >70%             |
| Inventum Akcji          | >60%             |
| KBC Akcyjny             | >75%             |
| Legg Mason Akcji        | >90%             |
| Metlife Akcji           | >66%             |
| Pioneer Akcji Polskich  | >80%             |
| PKO Akcji               | >60%             |
| PZU Akcji Krakowiak     | >50%             |
| Skarbic Akcja           | >50%             |
| Skok Akcji              | >80%             |
| Uni Korona Akcje        | >60%             |

Equity shares are taken from the http://www.analizy.pl/fundusze/

3. Empirical Results

Table 2 denotes us the results of Jensen’s alpha measure that indicate selectivity skills of fund managers. Fund managers either have higher performance or lower performance relative to the market. 2 out of 14 funds have positive alphas, but none of them are statistically significant. Aviva Investors Polskich and Uni Korona Akcje have positive alphas. 12 funds are negatively statistically significant. It is interpreted that these funds’ managers don’t have selective ability.

Table 2. Jensen's alpha measure for Polish funds

| Fund Name               | Jensen's alpha | t-stat  | p-value   |
|-------------------------|----------------|---------|-----------|
| Aviva Investors Polskich| 0,00006        | 0,14453 | 0,88518   |
| Uni Korona Akcje         | 0,00004        | 0,07603 | 0,93945   |
| KBC Akcyjny              | -0,00018       | -0,60421| 0,54616   |
| Legg Mason Akcji         | -0,00022       | -0,81022| 0,41845   |
| Skok Akcji               | -0,00027       | -0,93422| 0,35094   |
| PKO Akcji                | -0,00044       | -1,33933| 0,18147   |
| ING Akcji**              | -0,00054       | -2,3017 | 0,02203   |
| BPH FIO Akcji**          | -0,0007        | -2,28206| 0,02318   |
| Arka BZ WBK Akcji        | -0,00075       | -1,47603| 0,14098   |
| Skarbic Akcja**          | -0,00095       | -2,16295| 0,03133   |
| Metlife Akcji**          | -0,00106       | -5,17564| 0,00000   |
| PZU Akcji Krakowiak***   | -0,00113       | -4,14275| 0,00004   |
Treynor&Mazuy (1966) denotes the market timing ability of fund managers. If fund managers foresee that the market is going to go up, they change their portfolio composition from less volatile to high volatile securities or if they foresee that the market is going to go down, they shift their portfolio composition from high volatile to less volatile securities. If fund managers have this market timing ability, they unite their portfolios according to their up or down forecasts of the market tendencies. Table 3 indicates Treynor&Mazuy regression analysis results. Only two out of fourteen funds have positive market timing ability, but they are statistically insignificant. These are PKO Akcji FIO and Skok Akcji. The other twelve funds have negative market timing ability and among them, KBC Akcyjny is statistically significant at 10% level, Pioneer Akcji Polskich and Uni Korona Akcje at 5% level, Arka BZ WBK Akcji, Aviva Investors Polskich, ING Akcji, Legg Mason Akcji, PZU Akcji Krakowiak, Skarbiec Akcja FIO at 1% level.

Table 3. Treynor&Mazuy Regression Analysis for Polish Funds

| Fund Name             | T&M       | t-stat  | p-value  |
|-----------------------|-----------|---------|----------|
| PKO Akcji FIO         | 0.24704   | 1.35659 | 0.17592  |
| Skok Akcji            | 0.03504   | 0.16035 | 0.87272  |
| Metlife Akcji         | -0.13506  | 0.86272 | 0.38898  |
| BPH FIO Akcji         | -0.26813  | 1.14386 | 0.25359  |
| KBC Akcyjny           | -0.4177   | 1.88584 | 0.06028  |
| PZU Akcji Krakowiak   | -0.58636  | 2.82756 | 0.005    |
| ING Akcji***          | -0.71966  | 4.07435 | 0.00006  |
| Legg Mason Akcji***   | -0.72468  | 3.58331 | 0.0004   |
| Pioneer Akcji Polskich| -0.73981  | 2.13899 | 0.03324  |
| Uni Korona Akcje**    | -0.92958  | 2.07586 | 0.03875  |
| Skarbiec Akcja FIO*** | -1.22556  | 3.70959 | 0.00025  |
| Aviva Investors Polskich*** | -1.32811 | 4.29209 | 0.00002  |
| Inventum Akcji        | -1.53016  | 1.61733 | 0.10685  |
| Arka BZ WBK Akcji***  | -1.55267  | 4.11045 | 0.00005  |

Significance levels: * indicates 10%, ** indicates 5%, *** indicates 1%

Conclusion

In this study, selective ability and market timing ability of Polish equity fund managers are analysed over the period from 09 January 2009 to 31 October 2014, after global crisis in 2008 and in the era of quantitative easing policy. To the best of our knowledge this is the first study that investigates how Polish fund managers performed in the recent quantitative easing era. In this paper, we used Jensen alpha (1968) and Treynor&Mazuy (1966) regression analysis method for determining selectivity skills and market timing ability of fund managers, respectively. At the end of this study, along with the outcomes, we observe similarities with the results of earlier studies in literature. In this work, we can detect that in the era of quantitative easing, although the financial market in Poland made an...
incredible progress, the fund returns were generally lower than the stock market and Polish fund managers could not display a good performance both in selectivity skills and market timing abilities. Jensen (1968) alphas indicate that over this period fund managers did not have selective ability, as none of the 14 funds had statistically significant positive alphas. Furthermore, Treynor&Mazuy (1966) regression analysis shows that over the same period fund managers did not also have market timing ability, as again none of the 14 funds had statistically significant positive coefficients. It can be deduced that Polish fund managers had neither selective ability nor market timing ability during the quantitative easing era. We can suggest studying persistence of Polish fund managers’ performances for further research.

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References

Bialkowski, J. & Otten, R. (2011). Emerging mutual fund performance: Evidence for Poland. North American Journal of Economics and Finance, 22, 118-130.

Chamber of Fund and Asset Management (2015). The classification of investment funds. Retrieved January 3, 2015 from http://www.izfa.pl/en/index.php?id=10024

Chen, D., Gan, C. & Hu, B. (2013, February 18). An empirical study of mutual funds performance in China. Social Science Research Network. Retrieved January 10, 2015 from SSRN: http://papers.ssrn.com/abstract=2220323 or http://dx.doi.org/10.2139/ssrn.2220323

Deepak, A (2011, June). Measuring performance of Indian mutual funds. Social Science Research Network. Retrieved November 15, 2014 from SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1311761

Fundusze Inwestycyjne Analizy Online. (2015). Retrieved February 13, 2015 from http://www.analizy.pl/fundusze/

Henriksson, R. D., & Merton, R. C. (1981). On market timing and investment performance. II. Statistical procedures for evaluating forecasting skills. The Journal of Business, 54, 513-533.

Henriksson, R. D. (1984). Market timing and mutual fund performance: An empirical investigation. The Journal of Business, 57, 73-96.

Investment Company Institute (ICI). Investment trusts data. Retrieved from February, 15, 2015 from http://www.ici.org/research/stats

Jensen, M.C. (1968). The performance of mutual funds in the period 1945-1964. The Journal of Finance, 23, 389-416.

Mayo, H. B. (2011). Introduction to Investments (10th Edition). Canada: SOUTH-WESTERN Cengage Learning

Swinkels, L. & Rzezniczak, P. (2009). Performance evaluation of Polish mutual fund managers. International Journal of Emerging Markets, 4, 26-42.

Treynor, J. L., & Mazuy, K. K. (1966). Can mutual funds outguess the market? Harvard Business Review, 44, 131-136.