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EVOLUTION OF MUTUAL FUNDS IN ROMANIA: PERFORMANCE AND RISKS

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Abstract

The evolution of mutual funds and their inflows and outflows is seen as a good indicator for the financial markets of different countries. There were numerous studies, mainly conducted in the US, which illustrated that flows were highly dependent on the previous performance. This paper envisaged to study the flows of funds into and out of Romanian mutual funds during the 2007-2014 period. An analysis of the relative performance of the funds was developed by using the methodology set forth by Sirri and Tufano (1998), in which we monitor the dynamics of money invested in the funds as we move from one month to the next. The regression results show that the performance may be characterized by the factors (log of the size for the fund in the previous month, standard deviation of monthly funds returns in the previous month, previous period flows, the percentage growth in the new money, the rank, the square rank) taken into account with p-values for the F-test that exceed the 5%.

Keywords: capital market, mutual funds performance evaluation, investors' behaviour, Romania

JEL Classification: G11, G15

I. Literature Review: Mutual Funds and Investor Behaviour

The flow-performance relationship was studied intensively in the past, with a large bulk of studies being carried out in the US mutual fund market. Ippolito (1992), Sirri and Tufano (1998) and Del Guercio and Tkac (2002) are among those who found in their studies that inflows in mutual funds depend highly on their past performance, as the US

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consumers acquire more winning funds and sell poor performing funds. This illustrates that flows react asymmetrically to past returns and they create a convexity in the flow-performance relationship. Other studies looked at mutual funds in other countries (Ferreira, Keswani, Miguel and Ramos, 2012). Therefore, in this section we examine the factors identified in the literature to influence the above-mentioned behaviour, on the one hand, and the differences in this behaviour in different countries, on the other hand.

I.1. Factors Affecting the Purchase of Mutual Funds Units (Inflows)

In order to study the consumer behavior for the acquisition of mutual funds (investors), it is of great importance to know about the factors that affect consumer behavior in relationship with mutual funds' acquisition: what are those factors and how do they influence the consumer?

The literature (Sirri and Tufano, 1998) identified as the main factors affecting the inflows into mutual funds the following: historical returns, fund fees and risk. They hypothesized that high past performance funds were expected to generate higher future inflows, low risk funds were preferred by consumers and higher fees negatively influenced the inflows. The results of their study of 690 equity mutual funds in the US at three moments in time (1971, 1980 and 1990), illustrated the following influencing factors:

- a) **Performance.** There is a very strong performance-flow relationship for the funds placed in the top 20th percentile in terms of historic performances and a positive but superficial relationship for the funds placed in the bottom 80th percentile in terms of performance. Other studies found both linear relationships between past performance and future flows (Patel, Zeckhauser and Hendricks, 1991), while others found non-linear relationships in terms of past performance and future flows (Ippolito, 1992). One main conclusion can be that consumers respond differently to high and low performance: while high performance is associated with an increase in inflows, low performance is not proportionately associated with a decrease in inflows.
- b) **Fees.** Funds with higher fees tend to grow at a slower pace than funds with lower fees. At the same time, lowering the fees resulted in an increase in inflows at a constant return, illustrating that fees were an important factor in the mutual funds' buying decision.
- c) **Risks.** An increase in risk determined a reduction in flows. Among the three factors, it is considered that the performance is the most salient, exerting the highest influence on consumer behavior (Sirri and Tufano, 1998). However, generally the literature expressed controversial opinions on the issue of past performance as a predictor for future returns. Ibbotson and Goetzmann (1994) and Grinblatt and Titman (1992) found that there is a positive performance persistence for high performing funds.
- d) Beside the three above-discussed classical factors, another influencing element in the purchasing of mutual funds refers to the **cost of search**. Getting information about performance, fees and other aspects comes at a cost for consumers and the fact that the collection and the processing of information are costly activities determine consumers to buy those funds that are easier for them (and consequently less costly) to identify. Marketing is the main vehicle to convey the information on

performance, but at the same time marketing expenses add to increasing fee. Marketing has two contrary effects on fund attractiveness: they increase the price of the fund, on the one hand, but they decrease the search costs for the consumer, on the other hand. Usually, high performance funds are the ones that are highly marketed and this explains why consumers crowd to winners.

- e) **Media attention** influences the funds inflows, as funds receiving more media attention are expected to grow faster. Sirri and Tufano (1998: 1616) found a very strong relationship between the level of current media and the growth of funds. Larger funds, funds with extreme performances, funds with more volatile returns are more likely to be presented in the media.

Whatever are the external factors and influencers on decision making when acquiring mutual funds, the consumers are also influenced in their decisions by inner factors, such as propensity towards risk and level of knowledge in the field.

I.2. Investors' Behavior across Countries

The flow-performance relationship for mutual funds was recognized by most of the literature: generally speaking, investors look for favorable performance and try to avoid unfavorable performance. At the same time, differences were identified between countries in flow performance sensitivities and the differences were related to the countries' levels of development (Ferreira, Keswani, Miguel and Ramos, 2012). The role of the various influencing factors of investors' behaviour (presented above) will be different in different countries: a) the latest available information on winners and losers can determine investors to chase past performance as they put more weight on the latest fund performance and to fail to sell losers as they tend to screen the latest information on underperformance (Goetzman and Peles, 1997); b) investors might buy winners and not sell losers, as advertising will focus on performers rather than underperformers. This is seen to be related to the investor's level of sophistication, as more sophisticated investors will be less influenced by advertising (Sirri and Tufano, 1998; Ferreira, Keswani, Miguel and Ramos, 2012); c) mutual fund investors in developed countries are more familiar with financial products and have a better understanding of financial markets and mutual funds, as markets in these countries are older, larger and have more educated populations (Khorana, Servaes and Tufano, 2005); d) the level of participation costs (both transactional and informational) will also influence investors' behaviour and, consequently, a fund has to obtain a higher rate of return before a large number of investors will choose that fund (Huang, Wei and Yan, 2007).

Ferreira, Keswani, Miguel and Ramos (2012) conducted a study in 28 countries and aimed to measure the relationship between flows and favorable fund performance and between flows and poor fund performance. The main finding of the study was that in the developed countries the reaction of investors to top performance is more restrained than in the less developed countries, but also that in the developed countries investors are more proactive in selling losers than in the other countries.

To conclude, the literature identifies a flow-performance relationship that ultimately influences the size of the funds as past performance conditions the way funds perform in the future. Further on, the dependence of flows on the past performance will infer with the investors' experiences in terms of risks and returns. The level of development of the

country is seen as a determinant of the flow-performance sensitivities (Ferreira, Keswani, Miguel and Ramos, 2012).

Therefore, the present study will be looking at the flow-performance relationships for mutual funds in Romania, a country with a mutual fund industry still young and not very developed as compared to the more developed countries. In this analysis, we rely on a unique database that was constructed by manually collecting the dynamics of the mutual fund investment companies in Romania. To our knowledge, an academic analysis of the dynamics of the performance of investment funds was never developed at this level on the Romanian market.

II. Data and Methodology

As a starting point, we considered the evolution of the open-ended mutual funds from Romania. Data collected related to the unit value of the funds and their returns as measures of their performance. We also considered the size of the funds, measured through their net assets. The data on mutual funds was drawn from the AAF (The Fund Managers' Association)⁴, the organization that brings together all Romanian collective investors and currently administers over 60 mutual funds. We used data about the evolution of the mutual funds in respect to net assets and the value of the fund unit. The data collected was from the period January 2007 to June 2014 and included a number of 94 funds, both active and dead funds. The sample included all national mutual funds that were and are traded on the Romanian market, excluding the mutual funds existing in Romania and administered by international investment companies. The national mutual funds represent 90% of the total net assets traded by the open-ended mutual funds operating in Romania. We used monthly data for both the total net assets and the fund unit value. A minimum 12 month observations were required for the inclusion in the final sample in order to have enough information to calculate performance measures adjusted to risk, resulting in a final number of 74 funds. The data of the final sample were grouped into five categories according to the type of fund: monetary funds (4), bond funds (10), equity funds (14), mixed funds (27) and other funds (19).

In order to characterize the evolution of the five types of funds, the four moments of the time series were calculated: returns, standard deviation, skewness and kurtosis. Ideally, investors should take into consideration all four moments of an investment's return distribution. Mutual funds' performance is measured using log returns in local currencies.

The data bases were further analyzed using statistics in order to study the convexity of the flow-performance relationship.

The fund performance can be measured in different ways and we looked at their performance evolution using different measures: growth in the monthly new money, rank of the fund at the end of the month.

Using the method described by Sirri and Tufano (1998), we compute the monthly new money in each fund as a percentage of the beginning of the period total net assets (TNA), according to the following formula:

⁴ AAF (Asociația Administratorilor de Fonduri – Fund Managers' Association), www.aaf.ro

$$FLOW_{i,t} = \frac{TNA_{i,t} / (1 + R_{i,t}) - TNA_{i,t-1}}{TNA_{i,t-1}}$$

where: $R_{i,t}$ is the return of fund i for the month t . Therefore, $FLOW_{i,t}$ represents a growth in percentage of the new money during month t .

We also calculate the rank of the fund i at the end of the month in its category (Sirri and Tufano, 1998). The category rank of a fund i is formed using the total monthly return relative to the total monthly return of all the other funds in the same category.

In order to compare the performance of the five categories in relative terms, we standardized the rank measure ($RK_{i,t}$) with values between zero and one, where one represents the top performing fund in its category. The square of the rank measure ($SQRK_{i,t}$) was calculated.

As control variables, we calculated the log of the size for the fund in the previous month ($LnTNA_{i,t-1}$).

We envisage to assess the degree to which investors in mutual funds are sensitive to portfolio risk, so we control for the monthly standard deviation of monthly funds' returns in the previous month ($STD_{i,t-1}$).

In order to identify the inertia of the flows, we included the previous period's flows ($FLOW_{i,t-1}$). Also, to control for category wide trends, we included the percentage growth in the new money during the month t in a given investment segment ($FLOWCAT_{s,t}$).

Therefore, the study of the flow-performance convexity was conducted based on the following regression:

$$FLOW_{i,t} = \alpha + \beta_1 LnTNA_{i,t-1} + \beta_2 STD_{i,t-1} + \beta_3 FLOW_{i,t-1} + \beta_4 FLOWCAT_{s,t} + \beta_5 RK_{i,t-1} + \beta_6 SQRK_{i,t-1}$$

where: α , β = coefficients

The regressions look at the way other parameters (the log of the size of the fund in the previous month, standard deviation of the monthly funds return in the previous month, previous period flow, the percentage growth in the new money for each fund category, measure of performance in each fund category and its square rank) influence the growth in the percentage of new money.

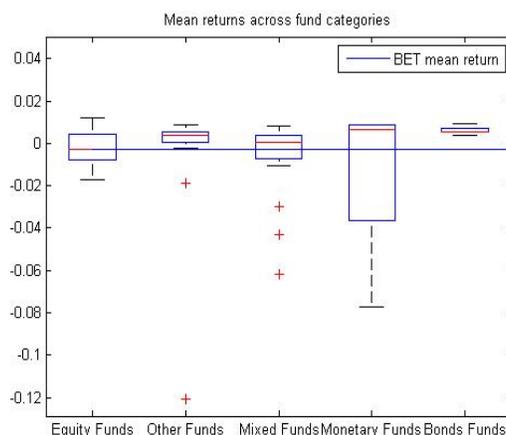
III. Results of the Empiric Analysis

As we previously mentioned, the four moments of the returns of the open investment funds present a general image of the mutual funds market in Romania.

The analysis of the mean returns for the five categories of open mutual funds for the entire period revealed, as expected, that the equity funds had the highest variation in returns.

Figure 1

Mean Returns of the 5 Types of Funds during 2007-2014



Source: Authors' calculations.

As it may be noticed in Figure 1, in the seven-year analyzed period, 2007-2014, the return of mutual funds grouped by categories differs from one category of funds to another. The funds in the high risk categories (equity, mixed funds and other funds), even the ones with the best results, did not manage to obtain returns much better than the ones with a low risk, the funds from the “bonds category” being the only ones with positive returns.

The “equity funds” category stands out, as it did not manage to have positive returns for two thirds of the total number of 14 funds, the median of this category being situated in the minus zone.

As far as the “other funds” are concerned, the scattering of this category is very small, except two returns [-0.1206; -0.0189]. The results are good, taking into consideration the high level of risk of this category and the best (the highest) median of the group in the high risk categories of funds.

The scattering of the returns of the “mixed funds” category is comparable with the “equity funds” category (with the exception of three funds that had strong negative returns), but overall they showed better performance than the equity funds, as the median of the group is in the positive zone. There are only four monetary funds, three of them having positive returns, while one has strong negative returns [- 0.0772], resulting in the rather abnormal evolution illustrated in Figure 1.

The “bond funds” category, usually known as the safest category of funds, also managed to produce in the analyzed period positive returns for all the ten funds included. The scattering of returns followed a predictable path, bond funds being a category of funds associated with low risk.

At the same time, in the analyzed period the medians of all fund categories managed to exceed the BET index at the Bucharest Stock Exchange. Figure 1 illustrates that all funds in “Other funds” category, (except two) managed to obtain results superior to the BET index, demonstrating that for this fund category the diversification of the portfolio led to high returns.

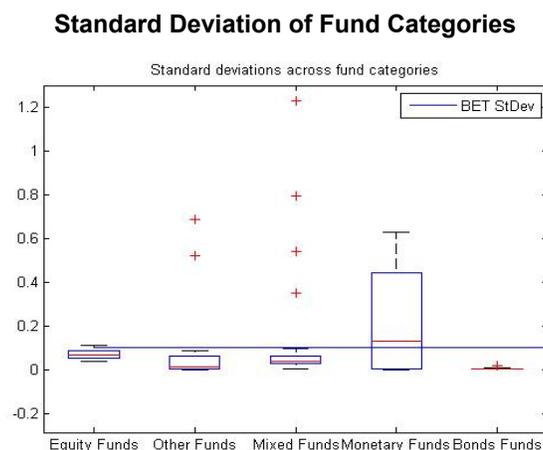
In conclusion, we can state that the funds in the high risk categories (equity funds, mixed funds and other funds), even the ones with the best results, did not manage to get returns significantly higher than the low risk categories, such as the “bond funds” category. Most funds had low performance in the analyzed period. One explanation can be associated with the crash of the stock market in Romania in 2008 and the significant decrease in the stock market in 2011, part of the analyzed time interval being in the full period of global economic crisis. In the crisis and post crisis period, investing in high risk funds does not represent a solution that can bring significant earnings on medium term.

At the same time, Romania has a young, still emerging capital market, which in spite of the improved legislation is still influenced by problems associated with regulatory quality, rule of law and effectiveness of legal institutions and government, as in many other emerging markets (Pistor, Raiser and Gelfer, 2000). Such aspects also affect the growth of capital markets in these countries and their performance. In this respect, the literature (LaPorta, Lopez-de-Silanes, Shleifer and Vishny, 1998; Berglof and Bolton, 2002) also acknowledges that legal effectiveness has a more important role in the equity market development than the quality of the law.

Figure 2 illustrates the standard deviation of the returns for the five categories of funds and offers us an image of the risk associated with each fund category; more precisely, it helps us to set the limits into which the expected returns fall for each group of funds. Equity funds with a standard deviation ranging between 0.0409 and 0.1116 have a relatively low risk for a category usually associated with high risks. The “mixed funds” category, the category with highest number of funds (27) has the smaller deviations within the cluster, but similarly with the “other funds” category, it has four funds that step out of the cluster with large differences [0.12304; 0.7965; 0.5431; 0.3496]. However, as a general comment, we may state that the “mixed funds” category has the smallest cluster with values close to zero, illustrating the lowest risk for the investor among the three categories of high risk funds.

This feature makes funds attractive in their categories as they have lower levels of risk, due to small standard deviations. The only fund category that had a standard deviation with a value close to the standard deviation of the BET index was the equity fund category. Analyzing separately the three categories that have in their structure shares quoted at the Stock Exchange, we can conclude that portfolio diversification managed to reduce risk.

Figure 2



Source: Authors' calculations.

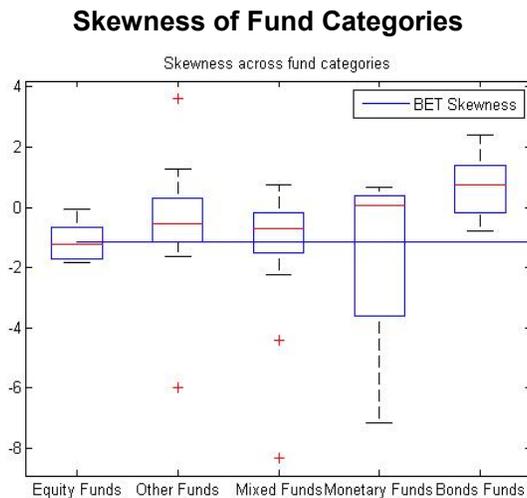
Studies in the literature (Cohen, 2001) emphasize that the attraction of the emerging capital markets (as Romania has) is dependent on their performance. The general view is that stock returns in the emerging markets are on average higher than in the international markets, but performances and their interpretation depend very much on the selected periods and regions.

As we know that the frequency of appearance of large returns in a certain direction is measured by skewness, which is also known as the "third moment" of the distribution. The distribution that has no tail towards the right or towards the left has the same characteristics as a normal distribution. When the skewness is positive, the distribution of returns shows an asymmetric tail towards positive values and when it is negative, vice-versa.

In the analyzed dataset, the only category that has a positive skewness for seven of the ten funds is the "bond funds" category that has a positive median and it is also skewed to the right, illustrating a low risk of appearance of negative returns. The other category of funds associated with low risk, the "monetary funds" category, had a different evolution as compared to the previously discussed one. Two of the funds had strong negative skewness and two funds had positive skewness, but with low values [-7.1425; -0.0534; 0.1493; 0.6584].

Among the funds with high risk, the "other funds" category has four out of the 19 funds with a positive skewness [3.6027; 1.27042; 1.2196; 1.0483], illustrating their better performance. However, even though the median of the group is negative, its value is the closest to zero among the high risk funds.

Figure 3



Source: Authors' calculations.

The "equity funds" category has only negative tails comprised between -1.8196 and -0.0380. Such results correspond to other findings in the literature (Pindyck, 1984; Campbell and Hentschel, 1992; Braun, Nelson and Sunier, 1995), emphasizing that the return of the shares listed on the Stock Exchange, part of the portfolios of the first three categories of funds (equity, mixed and other funds) have asymmetric negative skewness. Our findings are similar to the ones from the literature, illustrating a strong relationship between the evolution of the Stock Exchange and the evolution of the mutual funds. The fact that portfolio returns distribution may be non-normal is present in the literature (Farias, Ornelas and Almeida, 2009; Malkiel and Saha, 2005). In these situations, distributions have fat tails and negative skewness, depicting a negative correlation between returns and skewness. This is also the case of Romania, similarly to other emerging markets such as Brazil (Farias, Ornelas and Almeida, 2009). It means that the risk of investing in these funds is higher and, therefore, they ask for higher returns. Starting from such findings, there is a growing literature that proposes to use in the performance evaluation of funds higher moments of distribution and not only the mean and the variance of returns. One such model is introduced by Koekebakker and Zakamouline (2009), who propose the inclusion of skewness and kurtosis in the funds' performance evaluation. It can be appreciated that the use of skewness and kurtosis of returns, as performance measures and risk predictors, becomes more relevant, especially for financial markets where non-normal distributions of returns prevail (such as the Romanian capital market).

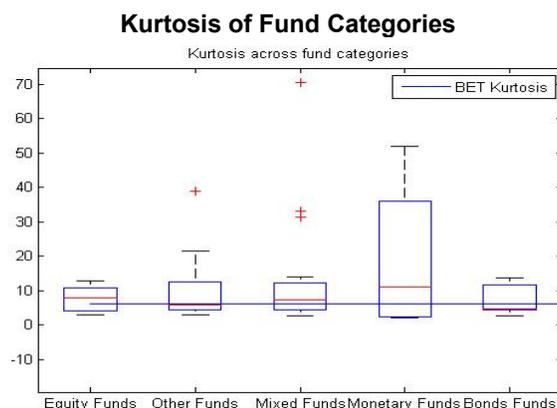
Figure 4 illustrates the kurtosis that shows if the distribution of the funds returns has peaks that exceed or not the normal distribution. It is known (Hicks, 1946) that often investors base their decisions on the fact that returns are not normally distributed.

A distribution that has the kurtosis coefficient equal to 3 is a mesokurtic distribution, being identical with the normal distribution. In the “equity funds” category there is just one fund that has the kurtosis equal to 2.7977, in the “mixed fund” category is one fund with the kurtosis of 2.5227, in the “monetary funds” category there are two funds with kurtosis coefficients of 2.4448 and 2.1532 and in the “bond fund” category there is one fund with kurtosis coefficient of 2.5658.

A platykurtic distribution that is flatter than the normal distribution with a flatter scatter of the peak illustrates a lower probability to have extreme values of returns than the normal distribution (the kurtosis distribution is lower than 3). There were five mutual funds that had such a distribution.

A leptokurtic distribution is taller than the normal distribution, it has a high peak, the kurtosis distribution is higher than 3 and illustrates that the values concentrate around the mean and thicker tails.

Figure 4



Source: Authors' calculations.

The “equity funds” category includes open investment funds with all of them having kurtosis distributions higher than 3, illustrating higher probabilities for extreme values, the highest kurtosis coefficient being 12.8962.

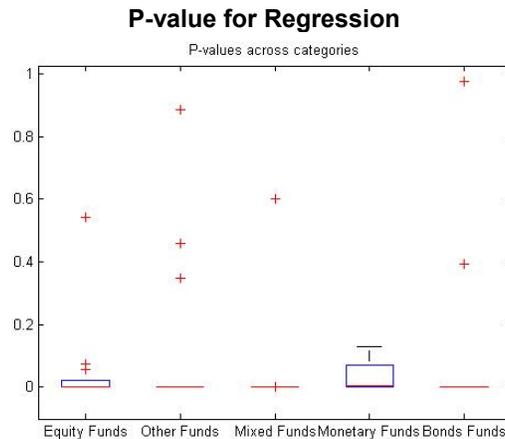
As one may notice in Figure 4, the kurtosis distribution of the “mixed funds” is very similar with the kurtosis distribution of “equity funds”. As far as the “monetary funds” are concerned, as we previously mentioned, it is very difficult to find a pattern, because there are too few funds in this category. In the “bond funds” category, more than half of the funds have kurtosis coefficients between 4.1017 and 4.977, illustrating a small probability of having extreme values in comparison with the other fund categories and the BET index. From the fund categories with high risk, the “other funds” category is the only one that obtained kurtosis values equal with the ones of the BET index from the Bucharest Stock Exchange.

We can conclude that for the other two fund categories that have in their structure shares listed on the Stock Exchange, the equity funds and the mixed funds, the portfolio diversification did not manage to reduce the risk associated with the existence of extreme values.

The **F-test** is applied, as the test in which the test statistic has an F-distribution in the conditions of null hypothesis. It has the purpose to identify the model that best fits the population from which the sample was extracted. For the F-test, the p-values were calculated, both for the global test and for each of the independent variables.

The p-value shows us for which regressions the dependent variable (flow = percentage growth in the new money) is explained by the independent variables (the log of the size of the fund in the previous month, standard deviation of the monthly funds return in the previous month, previous period flow, the percentage growth in the new money for each fund category, measure of performance in each fund category = the rank in the category and its square rank).

Figure 5



Source: Authors' calculations.

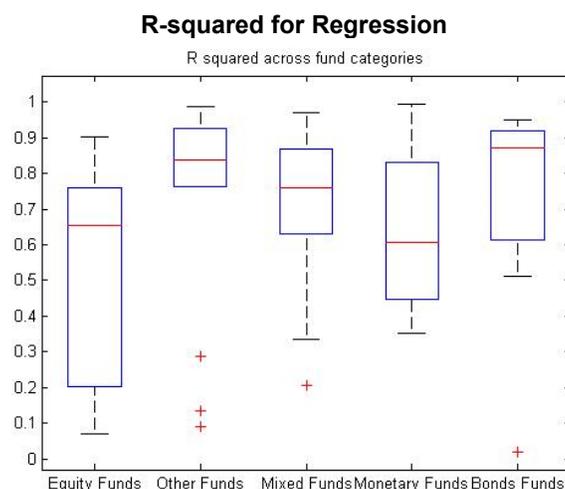
Figure 5 illustrates that for the majority of the regressions of the mutual funds' flow (67 out of 74), the null hypothesis (all β values being equal to zero) is rejected because their p-value is below 0,05. This shows valid regression equations and confirm influence of the independent variables on the dependant one.

We know that a model fits well the reality when the difference between the observed values and the predicted values are small and random. R square, also known as the determination coefficient, statistically measures how close the real observations to the regression model are. The closer the determination coefficient is to 1, the better our model explains the dependent variable (flow = percentage growth in the new money). The R square for the five fund categories are presented in Figure 6.

The "equity funds" show the largest scattering for the determination coefficient with values comprised between 0.9022 and 0.0683, illustrating differences between real

values and predicted values for many equity funds. For the “other funds” category, except for three results [0.0903; 0.1360; 0.2858], the percentage growth in the new money is explained the best by the independent coefficients of the regression, showing a good prediction of the regression model. For the “mixed funds” as a high risk category, the scattering is smaller than in the case of the equity funds, most of the determination coefficients having values above 0.6, up to 0.9703. The “bond funds” category has seven of its 10 funds with determination coefficients with values above 0.851, illustrating a very good prediction of the regression.

Figure 6



Source: Authors' calculations.

Figure 7 illustrates the value of all coefficients in the regressions for all 74 mutual funds analyzed, by the five categories.

The analysis of the relationship between the flow (percentage growth in the new money) as the dependent variable and the **log of the total net assets** in the previous period illustrates that only 11 funds out of 74 had a significant relationship between the two variables (out of which 2 were equity funds, one from “the other funds” category, 6 mixed funds and 2 bond funds). The relationships were both positive and negative. Other studies (Barber, Odean, and Zheng 2000; Sirri and Tufano, 1998) showed that lagged fund size (as total net assets) was negatively related to flows for small funds (with a low total net assets), results that differ from our findings in which there are both positive and negative relationships between these variables. The only fund category in our study that is different is the “mixed funds” category, for which 5 of the 6 funds with a significant relationship had negative relationships, showing results similar to other studies.

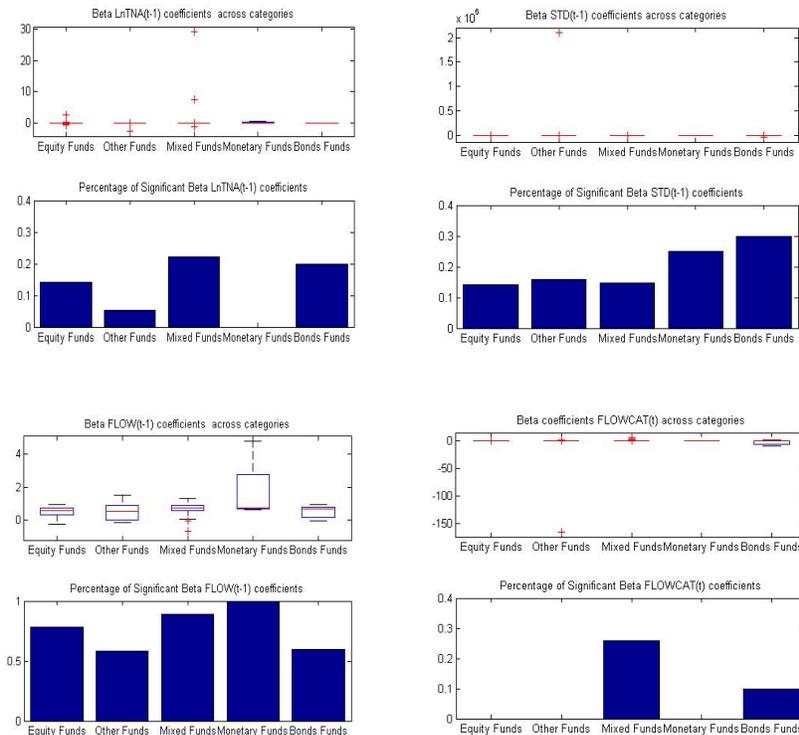
The **monthly standard deviation** of fund's return in the previous month is an influencing factor for 13 funds (2 equity funds, 3 other funds, 4 mixed funds, one monetary fund and 3 bond funds). The results show the existence of preponderantly

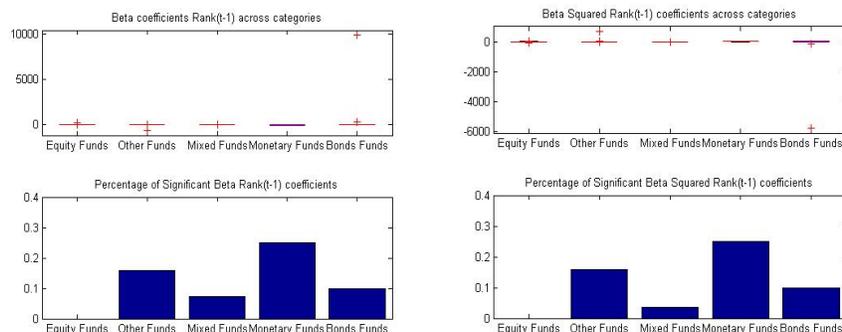
positive relationships, which indicates that an increase in the standard deviation of returns (showing high risks) leads to an increase in the net inflows in the next month. This is an abnormal situation, as according to literature (Barber, Odean and Zheng, 2000; Luo, 2003), at a higher risk the net inflows should decrease, and not increase as in our case. A possible explanation could be the fact that the Romanian investors (as opposed to investors from developed countries) have less knowledge about the capital markets and usually do not take informed decisions.

Past monthly flows (percentage growth in the new money) are a significant predictor for future flows for the majority of the analyzed funds (58), illustrating an increasing convexity of the flow-performance relation.

Figure 7

The Values of the Regression Coefficients (β for all Independent Variables)





Source: Authors' calculations.

For half of the funds, there is a positive relationship between the two variables (an increase in the past monthly flows determined an increase in the current monthly flows).

As far as the **flowcat** (the percentage growth in the new money for each fund category) influence over the flow is concerned, the percentage growth in the net inflows of the category to which each fund belongs influences to a low extent the percentage growth of the fund (8 mutual funds among which 7 mixed funds and one bond fund).

The **rank** of the fund in the category it belongs to, as a measure of performance of each fund, has a low significance as an influencing factor, as only 7 of the 74 funds illustrate a level of statistical significance of 5% for the relationship between the rank and the flow. These 7 funds include 3 other funds, 2 mixed funds, one monetary fund and one bond fund. The situation is similar for the **square rank**.

IV. Conclusions

Despite of the wide literature that provides evidence for the existence of financial market integration, in the European Union (Beckers, 1999; Freimann, 1998; Fratzscher, 2001; Reszat, 2003) as well, there is also sufficient proof that the local national features for both individual and institutional investing are still important and they reflect the domestic investment culture (Adjaoute and Danthine, 2003).

From this perspective, the investment fund industry is considered to exhibit many market specific features when analyzed in various regions or countries. Our paper provides an analysis of the investment fund industry in Romania. We use data that characterize the institutional investment dynamics for 74 entities covering approximately seven years of monthly observations (2007 to 2014).

We found important evidence in support of changing skewness and kurtosis for each category of funds and we characterized the evolution of fund performance over this time interval by comparison of various types of funds as established by the current regulatory bodies. Our analysis proves that the dynamics of the third and fourth central moments of the distribution of fund returns has the same properties as the ones already found in the literature for the time series of log-returns computed for various financial assets (Farias, Ornelas and Almeida, 2009; Koekebakker and Zakamouline, 2009). Their

changes also reflect the effect of the global financial crisis on the evolution of investment habits in Romania, highlighting the reduced liquidity corresponding to the second part of the time framework, which comprises the period when the crisis influenced the Romanian economy.

An analysis of the relative performance of the funds was developed by using the methodology set forth by Sirri and Tufano (1998), in which we monitor the dynamics of money invested in the funds as we move from one month to the next. The regression results showed that the performance can be characterized by the factors taken into account, with goodness of fit that is important for almost all the categories and with p-values for the F-test that are under the 5% threshold, except for the case of the monetary fund category. The most frequent significance was found in the case of the lagged flow factor (monitoring the money flow from one period to another), followed by the lagged standard deviation (as a measure of risk). In other words, the money invested in a mutual fund in the previous period and the risks associated with the fund are the factors which influence most frequently the performance of mutual funds in Romania. However, results for Romania differ from the results in the literature, as data for Romania showed an increase in the net inflows for funds that exhibit higher risks in the previous period, behaviour opposed to the behaviour of investors in more developed countries (Luo, 2003; Barber, Odean and Zheng, 2000). Such results come to reinforce the idea of existence of national and cultural investment behaviours, with differences between countries in the flow-performance relationship, differences highly dependent on the countries level of development (Ferreira, Keswani, Miguel and Ramos, 2012). Other studies (Comerton-Forde and Rydge, 2006) found that the differences in the market structures influence their success. They argue that markets tended to develop in isolation from one another, without having a consensus on the most efficient market design, being dependent on the types of securities traded and the types of investors trading.

The local character of emerging markets was also discussed by Harvey (1995) and Bilson, Brailsford and Hooper (2000), who suggest that emerging stock markets are disconnected from the world capital markets and, in this context, local information and local evolution has an increased importance in these markets.

Specifically for the capital markets in the Central and Eastern Europe (CEE), Pajuste (2002) observed that countries in the region differed highly in terms of their correlations with the European Union (EU) capital markets at a certain point in time, with the Czech Republic, Hungary and Poland displaying higher correlations with the EU market, while Romania and Slovenia showed zero correlation with the EU markets. In these markets, local factors have a higher explanatory power as compared to the European and global specific factors (Pajuste, Kepitis and Hogfeld, 2000).

One of the most important contributions of the present paper resides in the fact that a proper characterization of the investment fund industry in Romania was, to our knowledge, never developed from an academic perspective.

An extension of the database by a sample covering the investment fund industry in countries from the Central European financial markets could allow us to conclude on the possible investment habits in this region and issue judgments concerning the possible importance of the use of Romanian and regional funds in the international portfolio diversification process.

References

- Adjaoute, K. and Danthine, J.P. 2003. European Financial Integration and Equity Returns: A Theory-Based Assessment, *FAME, HEC Lausanne Research Paper No. 84*. Available at <<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.198.8508&rep=rep1&type=pdf>> [Accessed on November 2015]
- Barber B. M., Odean, T. and Zheng L., 2000. The Behavior of Mutual Fund Investors. *Working Paper*, Available at: <<http://faculty.haas.berkeley.edu/odean/papers/MutualFunds/mfund.pdf>>, [Accessed on October 2014]
- Beckers, S. 1999. Investment implications of a Single European Capital Market. *The Journal of Portfolio Management*, 25(3), pp. 9-17
- Berglof, E. and Bolton P. 2002. The Great Divide and Beyond: Financial Architecture in Transition. *Journal of Economic Perspectives* 16(1), pp. 77-100.
- Braun, Ph. A., Nelson, D. B. and Sunier, A. M., 1995. Good News, Bad News, Volatility, and Betas, *Journal of Finance*, 50(5), pp. 1575-1603.
- Campbell, J. Y. and Hentschel, L., 1992. No News Is Good News: An Asymmetric Model of Changing Volatility in Stock Returns. *Journal of Financial Economics*, 31(3), pp. 281-318.
- Cohen, S.I. 2001. Stock performance of emerging markets. *The Developing Economies*, 39(2), pp. 168-188. Available at <<http://onlinelibrary.wiley.com/doi/10.1111/j.1746-1049.2001.tb00898.x/pdf>>. [Accessed on November 2015]
- Comerton-Forde, C. and Rydge J. 2006. The current state of Asia-Pacific stock exchanges: A critical review of market design. *Pacific-Basin Finance Journal*, 14(1), pp. 1-32
- Del Guercio D. and Tkac P., 2002. The determinants of the flow of funds of managed portfolios: mutual funds versus pension funds, *Journal of Financial and Quantitative Analysis*, 37(4), pp. 523-558.
- Ferreira M.A., Keswani A., Miguel A.F. and Ramos S.B., 2012. The flow-performance relationship around the world, *Journal of Banking & Finance*, 36(6), pp. 1759- 1780.
- Farias A. R., Ornelas J.R.H. and Almeida A.F.Jr.. 2009. Accounting for Skewness in Performance Evaluation of Brazilian Mutual Funds. Available at <<http://ssrn.com/abstract=1402945>>
- Fratzscher, M. 2001. Financial Market Integration in Europe: On the Effects of EMU on Stock Markets, *Working paper No.48*, European Central Bank. Available at <<http://econpapers.repec.org/paper/ecbecbwps/20010048.htm>> [Accessed on November 2015]
- Freimann, E. 1998. Economic Integration and Country Allocation in Europe. *Financial Analysts Journal*, 54(5), pp. 32-41.

- Fu, R., Navone, M., Pagani, M., Pantos, T.D. 2012. The determinants of the convexity in the flow-performance relationship, *Journal of Index Investing*, 3(2), pp. 81-95.
- Goetzmann W.B. and Peles N., 1997. Cognitive dissonance and mutual fund investors, *Journal of Finance Research*, 20(2), pp. 145-158.
- Grinblatt M. and Sheridan T., 1992. The persistence of mutual fund performance, *Journal of Finance*, 47(5), pp. 1977-1984.
- Harvey, C.R. 1995. Predictable Risk and Returns in Emerging Markets. *The Review of Financial Studies*, 8(3), pp. 773-816.
- Hicks, J. R., 1946. *Value and Capital: An Inquiry into Some Fundamental Principles of Economic Theory*, 2d ed., Clarendon Press, Oxford.
- Huang J., Wei K. and Yan H., 2007. Participation costs and the sensitivity of fund flows to past performance, *Journal of Finance*, 62(3), pp. 1273-1311.
- Ibbotson R. and Goetzmann W., 1994. Do winners repeat?, *Journal of Portfolio Management*, 20(2), pp. 9-18.
- Ippolito R.A., 1992. Consumer reaction to measures of poor quality: Evidence from the mutual fund industry, *Journal of Law and Economics*, 35 (1), pp. 45-70.
- Khorana A., Servaes H. and Tufano P., 2005. Explaining the size of the mutual fund industry around the world, *Journal of Financial Economics*, 78(1), pp. 145-185.
- Koekebakker, S. and Zakamouline V. 2009. Portfolio performance evaluation with generalized Sharpe ratios: Beyond the mean and variance, *Journal of Banking and Finance*, 33(7), pp. 1242-1254.
- La Porta, R., Lopez-de-Silanes, F., Shleifer A. and Vishny R. 1998. Law and Finance, *Journal of Political Economy* 106(6), pp. 1113-1155.
- Luo D., 2003. Market Volatility and Mutual Fund Cash Flows. Working Paper Yale ICF no. 03-21, Yale University. Available at < <http://depot.som.yale.edu/icf/papers/fileuploads/2401/original/03-21.pdf>> [Accessed on October 2014]
- Malkiel B. and Saha A. 2005. Hedge funds: Risk and return. *Financial Analysts Journal*, 61(6), pp. 80-88.
- Pajuste, A. 2002. Corporate Governance and Stock Market Performance in Central and Eastern Europe: A Study of nine countries, 1994-2001. Centre for the Study of Economic & Social Change in Europe, UCL, Working paper no. 22. Available at < <http://discovery-dev.ucl.ac.uk/17556/1/17556.pdf>> [Accessed on November 2015]
- Pajuste, A., Kepitis, G. and Hogfeld, P. 2000. Risk Factors and Predictability of Stock Returns in Central and Eastern Europe, Working paper 155, Department of Finance, Stockholm School of Economics
- Patel J., Zeckhauser R. and Hendricks D., 1991. The Rationality Struggle: Illustrations from Financial Markets, *American Economic Review*, 81(2), pp 232-236.

- Pindyck, R. S., 1984. Risk, Inflation, and the Stock Market, *American Economic Review*, 74(3), pp. 334-351.
- Pistor, K., Raiser M. and Gelfer S. 2000. Law and Finance in Transition Economies. *Economics of Transition*, 8 (2), pp. 325-368.
- Reszat, B. 2003. How the European Monetary Integration Process Contributed to Regional Financial Market Integration, HWWA (Hamburg Institute of International Economics) Discussion Paper no. 221. Available at < <http://www.econstor.eu/bitstream/10419/19311/1/221.pdf>> [Accessed November 2015]
- Sirri E. and Tufano. P., 1998. Costly search and mutual funds flows, *Journal of Finance*, 53(5), pp. 1589-1622.