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**DOMANIN: FINANCE**

**ROMANIAN MUTUAL FUNDS AS PORTFOLIO INVESTMENTS AND FUND RAISING ALTERNATIVES**

**SUMMARY**

**Scientific coordinator:**

**PHD Professor Ioan NISTOR**

**PhD. Student:**

**Ioana RADU (cas. POP-RADU)**

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Thesis summary

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# KEYWORDS

*Total net assets, stock market capitalization, equity, economic growth, financial crisis, pre-crisis, post-crisis, efficiency, inflows of capital, mutual funds, close-end funds, market indexes, private equity investments, sophisticated investors, institutional investors, portfolio investments, liquidity, collective portfolio investments, return, net asset value, investment alternatives, volatility risk.*

# MAIN OBJECTIVES OF THE STUDY

Investment funds evolution has been lately very dynamic being widely studied along with international market volatility and the crisis cycles. The main challenge of the research is to identify the determinants (direct or indirect) of investment fund dynamics, for both global and national capital market and to evaluate appropriate solutions to prevent future fluctuations.

This topic is attractive for the latter researches as mutual funds issues (dynamic, market size, market shares) involve a wide areas of study, industries and countries, enhancing a great significance for both academic literature and global capital market as complex connections are involved between capital allocation, financing decisions and economy.

The research of Romanian mutual funds industry is spreaded over a 10 years time period, between 2006 and 2014. The yearly selected interval facilitates the observation of the industry’s dynamics – i.e. its upsurge between years 2005-2007, its recessive tear in 2008 and also the post-crisis evolution until end of 2014.

Actually, this research approach is significant as there were fewer studies that have included the local industry on the map of the global investment funds market. It becomes one of the studies that observes the main development areas of the national investment funds industry. As well, the research outlines the industry’s redimensioning trends and sets a pillar for the local literature. Therewith, our approach gains relevance as it provides relevant alternatives in boosting the economy thourgh this investment vehicles – by funding companies and simultaneously by supporting economic growth.

In order to fulfill the study, we have taken to the forefront the following objectives:

- establishing the role of investment funds;

- highlighting the causal relationship between the dynamics of investment funds and economic conditions;

- highlighting the growth potential determinants of investment funds;

- reflecting the influence and significance of the determinants of investment funds on the pursued variable;

- reviewing and comparing the main models proposed by literature;

- developing of econometric models to highlight the relation between the variables that define the economic environment and the investment placement and investment funds managed by the investment;

- analyzing of the explanatory model proposed, along with the systematization of the derived results and identifying the contributions of different explanatory variables over the dependent variable.

Given the complexity, timeliness and the continuous dynamics of investment funds market, this research adds a significant scientific contribution to the theoretical literature and provides realistic solutions for the interesed parties. The carried approach creates value added by the fact that our study is a first step in assessing the determinants of market development Romanian investment funds in exposing an assessment model state of the industry and hence presents the current maturity level of the national market. However, the usefulness and originality lies in deepening the study in the Romanian market. More specifically, the undertaken analysis, rigorously structured into fivec chapters sizes and reveals the local investment funds market attractiveness and sets its place in the global market in line with the countries with medium to high investment attractivity.

# THESIS CONTENT - MAIN CONTRIBUTIONS

## *Chapter 1. Main aspects of investment funds industry development*

In the first chapter of the thesis are stated and presented the main theoretical aspects of the investment funds functionality, focusing on identifying the economic implications derived from investment funds activity. Conceptual boundaries and legislative milestones identified in shaping the functioning mechanism of investment funds aim to outline a clear course in knowledge and understanding of the work of these investment vehicles. The analysis over the Romanian mutual funds marked compared to European benchmarks complements and deepens the reserach towards identifying the degree of market integration in the unique European market or even in the international market.

The latter development of capital markets, as well the developments of financial innovations have led to many institutions and financial instruments improving the financial intermediation system. Consequently, the actors involved in capital allocation have perfected a complex circuit in brokering the supply of financial investments (i.e. equity holders - investors) and demand for capital (i.e. users of capital - entrepreneurs in need of capital). As a result, this circuit of raising capital has been organized and concentrated in investment funds vehicles.

The related scientific literature has long evaluated the evolution of this industry since its beginnings and now we are observing that funds collective industry development has seen a gradual development aside to regulatory framework development, for which ( Fink 2008) ( Radu 2010D ) identified five stages: (1) 1946-1981; (2) 1982 - 1993; (3) 1992 - 2003; (4) 2003-2007 and (5) current stage (this new phase occurs as a consequence of the financial crisis that has resized the investment fund industry globally, which corresponds with promoting prudential supervision of the global financial market).

Regulatory activity and establishing norms and standards for the conduct of investment funds recorded a series of mutations that provide integration and strengthening the supervisory function of the financial system in a single or unitary system.

Main regulatory authorities defining the integrated financial market are depicted in table 1.1.

**Tabel 1. 1 Regulatory authorities of the financial market**

|  |  |  |  |
| --- | --- | --- | --- |
| **Authorities / countries** | **Banking sector** | **Insurance market** | **Capital market** |
| SUA | Federal Reserve Bank (FED) | Securities and Exchange Commission (SEC) – 1934 | |
| Canada | Biroul de Supraveghere a Instituţiilor Financiare | | |
| Japan | Integrated Financial Regulator | | |
| Korea | Integrated Financial Regulator | | |
| Singapore | Integrated Financial Regulator | | |
| Australia | Banca Centrală a Australiei | Comisia pentru Valori Mobiliare şi Investiţii (ASIC) şi Autoritatea pentru Reglementare Prudenţială (APRA) | |
| **Europe** | Autoritatea Europeană de Supraveghere (AES) | | |

Source: author’s own processing following ASF data and (Taylor & Fleming 1999 Sep.)

Implementing single supervisory system through the establishment of Financial Supervisory Authorities took over all the functions and powers of regulation, authorization and establishment of institutions involved in the market of collective investment undertakings.

The recent updates occurring in the entire financial system aside to European market surveillance architecture reconfiguring by establishing a unique type of financial supervision have improved the coordination and information exchange between the markets and among the European institutions in order to adapt an effective implementation of European legislation in all the EU Member States.

Following the European path, Romania launched in 2012 the unification project over the capital market regulatory under an independent authority i.e. Financial Supervisory Authority of Romania. This would be true since the end of March 2013. The new authority had to take under a portfolio of around € 40 billion (approximately one third of the entire GDP of Romania estimated at 130 billion - of which only Bucharest Stock Exchange market focused about 23 billion (Petrescu 2013)), the remaining amount representing the value of total assets of mutual funds and investment, private pension funds and insurance. Instead, banking supervision will be integrated into the single supervisory model, which remains exclusively with the National Bank of Romania .

The last 10 years (2005-2014) accounted for the national capital market the main pillars of the capital market, having the strengthen to shift from poor developed markets towards emerging market status. The first steps in overcoming this statute started once the criteria established by the European Commission for Romania's accession to the European Union was met and its new status as a "functional economy" was enounced.

Given the pursued role of investment funds, we’ll analyze them from the two strands:

• attracting capital funds i.e. establishment of the fund itself by selling investment units to investors - as shown in Figure 1.1 .;

• placement of accumulated funds in various securities on the financial market – i.e. financing other companies - as shown in Figure 1.2 .;

**Figure 1. 1 Fund initialization scheme**

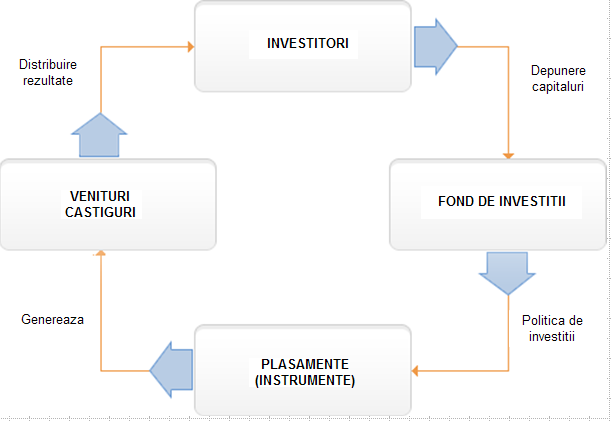
Source: author's own processing

**Figure 1. 2 Fund investing scheme**

Source: author's own processing

Based on these two activities, the structure of the investment funds organization follows the below scheme (Figure 1.3.):

**Figure 1. 3 Simplified scheme of investment fund functionality**



Source: author's own processing

On account of the way in which these investment funds are operating in the market, it is concluded that investment funds operate within three specific actions:

a) issuing fund units in order to attract investment capital - action that involves raising funds from investors on account of subscriptions for the issued units;

b) performing strategic investment allocations- the capital accumulation is placed according to a clearly defined investment strategy in various investment vehicles;

c ) investment multiplication through the redemption of fund units at the time of exit.

Since 1990, the investment fund industry has proven to be one of the components with the highest rate of growth of the financial sector in European countries (Enciu M., 2003), becoming in almost all European countries an important way of attracting significant share of the household savings.

The process of gradual migration of household savings from bank deposits classic was largely directed to investment funds use, which recorded gradually a higher growth rate of the total attracted assets. This situation can be explained mainly on account of lower interest rates on bank deposits, higher disposable incomes, increasing financial education, the development of capital market, but also on behalf of the advantages offered (e.g. better diversification of risk, cost savings , professional management etc.) and higher returns on investments.

Investment funds became debt financiers by the fact that, by their significance, they have a certain percentage of the portfolio placed in money market instruments issued by the state. Here, a particular importance rises over the money market funds functionality, which, as per their organization is considered to have the bulk of capital (80%) allocated on medium and short period monetary instruments, such as government securities , treasury bills , bank deposits, certificates of deposit and bonds.

Locally, these funds have grown in popularity only during the past years. While balanced funds attract most of the Romanian investors, money market funds registered in 2006-2010 an annual growth rate of 144.93% in average per year, preceded by fixed instruments funds at an annual rate of increase of about 34%. The money market dynamics started at the time with the decreasing of interest rates on treasury bills and bank deposits (i.e. 2005 - 2006). During that time, the situation led to the reduction of the money market funds share of 31.82 % in 2005 to just 20.20 % in 2006. Beside this, the underdeveloped fixed-income market has contributed to the impaired development of the Romanian money market funds in Romania (Filip A., 2008).

However, the 2007-2010 financial crisis has stimulated investors refocusing from other categories of funds that have gained ground in 2005-2006 towards the monetary market funds. Consequently, the money market funds grew up to a number of five funds in 2009 and to encompass 53,35% of the managed assets. The connection of money market funds with the banking sector (i.e. 5 local banks) has impacted the monetary market revival starting with year 2007. In addition, money market funds like BCR Monetar and Raiffeisen Monetar came to attract the largest number of investors in 2009-2010 (about 6 times higher in 2009, and by 10 times higher in 2010 than in 2008).

In the context of the statistical reported public debt, outlined in Table 1.8, at the end of 2014, Romanian mutual funds held a significant share of 5.7 % of public debt. Of this share, 2.5% being assumed by Erste Asset Management though its bond funds (issued on both domestic and foreign market).

The impact of the collective investments role in financing the public debt of Romania is displayed in Table 1.2. For further insight over this calculation, Appendix 11 is also available.

**Table 1. 2 Collective investments share in financing the public debt of Romania during 2005-2014**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Collective investments (OPC) share in financing the public debt (%) | **2005** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | Yearly avg rate |
| %OPC in total public debt | 2.71 | 3.23 | 2.72 | 1.48 | 2.94 | 3.55 | 3.60 | 4.14 | 6.17 | 7.19 | 3.77% |
| Mutual funds OPCVM | 2.10 | 2.45 | 2.28 | 1.36 | 2.83 | 3.44 | 3.51 | 3.95 | 5.94 | 6.90 | 3.48% |
| Close-end funds AOPC | 0.61 | 0.77 | 0.44 | 0.12 | 0.12 | 0.11 | 0.09 | 0.19 | 0.23 | 0.29 | 0.30% |
| Foreign investment funds FMS | na | na | na | na | na | na | 0.43 | 0.57 | 0.62 | 0.76 | 0.59% |
| % OPC in national public debt | 65.04 | 54.00 | 34.48 | 3.67 | 5.71 | 6.93 | 7.09 | 8.43 | 13.58 | 14.97 | 21.39% |
| Mutual funds OPCVM | 50.49 | 41.04 | 28.95 | 3.38 | 5.49 | 6.71 | 6.91 | 8.05 | 13.06 | 14.37 | 17.85% |
| Close-end funds AOPC | 14.56 | 12.96 | 5.54 | 0.29 | 0.23 | 0.22 | 0.18 | 0.38 | 0.51 | 0.60 | 3.55% |
| Foreign investment funds FMS | na | na | na | na | na | na | 0.84 | 1.16 | 1.35 | 1.57 | 1.23% |

Source: author’s own calculation using Finance Ministry data over Public Debt status

The increasing significance of managed investments in the local economy results to the fact that they were able to fund around 15% of domestic public debt (2014), being an important and stable source of covering the government budget deficit (Annual Report ASF, 2013), as it is holding a significant share in the investment portfolios of government securities and municipal bonds .

Collective investment schemes have become sponsors of debt by the fact that they have a significant part (about 80%) of their portfolios placed in medium and short state investments instruments – i.e. government bonds, treasury bills, bank deposits, certificates of deposit and bonds (Radu 2009b), rather than other investments.

Investment funds have become important players in the management of public debt (Călugăru & Cistelecan, 2007) and hence within the restriction of financing public debt (Radu 2012), as long as real aspects show that the number of issuances of government securities, certificates of treasury and municipal bonds it is significantly limited compared to the interest of these investment vehicles. The evolution of total assets managed by investment vehicles compared to the size of the national economy shows that, the collective investment undertakings significantly increased from 2.24 % to 5.70 % (marking a increase of about 3 times in the range 2009-2013), while the insurance sector stagnated.

**Tabel 1. 3 Total assets of managed investments as a percentage in GBP**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Categories of managed investment vehicles** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** |
| Insurance entities (SA) | 3.27% | 3.21% | 3.10% | 3.23% | 2.92% | 3.6% |
| Pension funds (FP) | 0.52% | 0.89% | 1.23% | 1.75% | 2.35% | 9.1% |
| **Collective investment vehicles (OPC)** | **2.24%** | **5.43%** | **5.08%** | **4.38%** | **5.70%** | **4.2%** |

Source: author’s own calculations using ASF data (2012, 2014) and [www.insse.ro](http://www.insse.ro)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Categories of collective investment vehicles OPC** | **2010** | **2011** | **2012** | **2013** | **2014** |
| **Collective investment funds (OPC)** | **5.43%** | **5.08%** | **4.38%** | **5.70%** | **4.2%** |
| Close-end funds | 0.03 | 0.05 | 0.07 | 0.10 | 0.13 |
| Mutual funds | 1.03 | 1.20 | 1.48 | **2.04** | **2.75** |
| Investment companies e.g. SIF | 1.37 | 1.19 | 1.09 | 1.12 | 1.04 |
| Public investment funds – i.e. Fondul Proprietatea | 2.89 | 2.57 | 2.52 | 2.36 | 1.99 |

Source: author’s own calculations using ASF data (2012, 2014) and [www.insse.ro](http://www.insse.ro)

This rising evolution of the collective investment undertakings is particularly due to the increase of capital inflows and to the rise of investors’ number. During 2014, closed funds and investment trusts had significant increases in the value of total assets (40 %), while the financial investment companies had a decrease in assets, with 2.4 % and respectively, 11.8% (ASF 2014).

Last 4 years demonstrated that Romanian capital market has joined European competition, reducing the fragmentation of the market from regulatory institutions unification of entities active in the capital market under the FSA. At the same time, adapting national legislation to the European legislative framework has allowed the removal of discriminatory barriers between EU states, allowing access and authorization of foreign investment vehicles on the local market, while outsourcing national funds in the foreign market.

We found that in the last period, the industry investment fund in Romania has registered a sustained rate of growth (both in the number of funds active in the market and the value of total assets managed by them), without being strongly affected by the contagion of latter economic crisis. Thus, despite the inconveniences arising on the global stock market in 2008, Romanian mutual funds recorded increases of over 86% up versus 2005 status, mainly due to rising capital inflows into equity and diversified funds.

## *Chapter 2. International context of Romanian Investment fund market*

Within the second chapter the study outlines a comprehensive analysis on identifying the premises of Romanian investment funds market and on evaluating the competitive advantages offered by the domestic market in the context of globalization and European market’s consolidation within a single capital market.

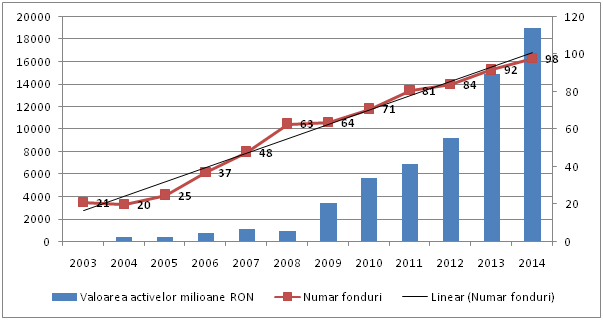
The results show that improving the attractiveness of mutual funds in Romania was outlined on account of the following aspects:

* the increase of total net assets in 2014 by 26.5% compared to 2013’s results, sets for Romania the best recorded results in the whole European industry. This result was obtained on behalf of an average growth rate of 11 percentage points above the average growth of the entire market (15.7% and 16.3% for the category UCITS funds and 14.3% for non –UCITS category);
* dominance of the European market with a 40% increase in assets UCITS mutual funds (from 2913 mil EUR in 2013, up to 4000 mil EUR 2014). This development is all the more remarkable as the national financial and banking intermediation contributed negatively to the GDP of Romania. Consequently, Romania’s market quote came out of the 6 Eastern European countries with a share of 0.0% (Slovenia, Slovakia, Bulgaria and Croatia), increasing the threshold to the medium level markets –i.e. those with a share of the European GDP at around 0.1% (Czech Republic, Greece, Liechtenstein, Malta, Turkey), and having the next target positions occupied by Portugal and Hungary by 0.2 %, respectively Poland with 0.4%;
* during the financial crisis, the Romanian collective investment undertakings had an atypical trend i.e. concentrating on the frontier markets, therefore including Romania. As a result, the Romanian market took this advantage and concentrated gradually towards monetary and bond funds, shifting their quotes from 59.36% in 2009-2010 to 21.39% of the mutual fund market.

Passed through two major crises that have damaged investor confidence (first in 1994 with the collapse FMOA and second in 2000 with the collapse FNI), Romanian investment funds faced a quite difficult battle to build up again the investors’ confidence ( Moroşan Gh., 2009).

However, starting with 2005, the attractiveness of Romanian investment fund market has increased surprisingly and since then, the investors’ number is changing annually, with an annual average growth of 39.71%, corresponding to a 4 times increase over the last 10 years (Chart 2.1).

**Chart 2. 1 Total net asset and investment funds number evolution in România during last 10 years**



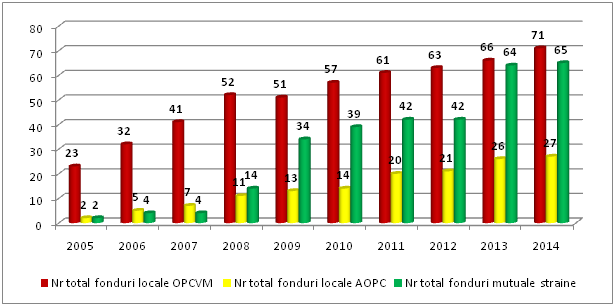
Source: authors own calculations using AAF data

Although Romania had to deal with the global recession in 2008, the activity of the investment funds declined only with 10% of total net assets. Investors did not get affected by this, moreover, their number increased by more than 2 times (i.e. 2.27) and also their net subscriptions by 36 % compared to 2007’s results. Thus, we can say that investors remained still interested in Romanian investment funds contrary to the situation seen worldwide.

Despite of the global economic recession period, Romanian investment fund industry recorded a growth rate supported in the number of investors, in the number of emerging market funds and as well with the increase of the managed assets. Moreover, starting with 2009, the mutual fund industry in Romania recorded the highest annual growth rates in the total assets, so in 2014 reached to a middle position in the European market, being ranked 13th of 28 European countries.

More exactly, starting with 2008, 11 new mutual funds and 5 new close-end funds gradually attracted new subscribers, so in 2014 reaching to comprise about 309.000 investors within 98 domestic funds ( 71 open and 27 closed). Besides these domestic mutual funds, AAF reports the presence of a significant number of foreign mutual funds. The number of foreign investment funds has been also annually increasing with an average of 15%, reaching today to equal the number of mutual funds, as evidences by Chart 2.2.

**Chart 2. 2 Structure of the Romanian investment fund market**



Source: author’s own processing using AAF, CNVM și ASF statistics

Of the total net assets managed by the Romanian investment funds, mutual funds have administered an average quote of 81% throughout the reviewed period, while closed investment funds managed the remaining 15%. Increasing the value of total net assets across the Romanian investment fund industry to 5.622 million RON (about 47 times higher than the total assets amount managed by the 21 funds in 2003), it was done mostly due to the new capital inflows of 2008-2010.

We find that the last 10 years have been very active for the domestic investment funds market (Appendix 5). Following the observed ascendend trend – in their number and in the total of the managed amounts - we can say that at the end of 2014, the industry was stimulated by the fact that total assets multiplied 43 times and the number of investment funds increased by 4 times the situation of 2005. Moreover, as proof of the Romanian capital market’s increasing attractiveness and openess, a significant number of foreign funds are active lately on the local market (e.g. from a number of two foreign mutual funds in 2005 up to 65 foreign mutual funds in 2014 (Figure 2.2)). As a consequence, all capital inflows of 2014 (approximately EUR 1 billion) and total net assets of over 5.7 billion EUR (5.717 million euros), ranked Romania as being the 13th state in Europe, standing at mid-table EFAMA of the 28th Member States.

Conducting an analysis of cycles for the Romanian mutual funds market experienced during 2006-2011 period (using quarterly observations), we find a strong cyclical behavior modification of the total assets managed by equity funds and money market funds. Their trends are opposites, while bond funds show low intensity fluctuation and balanced funds retain a steady evolving, as shown in chart 2.3.

|  |  |
| --- | --- |
| **Chart 2. 3 W dynamics of the mutual funds market during financial crisis period** | |
| **Total net assets per type of funds - global overview** | |
|  |  |
| **Total net assets per type of funds - European overview** | |
|  |  |
| **Total net assets per type of funds – ECE overview - 2005 - 2014** | |
|  |  |
| **Total net assets per type of funds – Romanian market overview** | |
|  |  |

Source: author’s own processing using ICI, EFAMA și AAF data (Appendix 27)

With different amplitudes, the above records presents a W trend for all investment funds in the same period of time i.e. 2008-2011 for global and European perspective, while in case of CEE and Romania’s analysis destabilizing impact was registered during 2012. Taking advantage of the expanding equity market, Romanian equity funds were favorites in investors’ allocations. Thus, it appears that the most dynamic sector of industry - equity funds - showed a significant tightening in 2007-2009 and 2011-2012, in conjunction with the relaunch of low-risk funds (money market and bond funds) as alternatives to preserve investors' portfolios.

Summarizing the conducted analysis of the Romanian mutual fund industry’s indicators during period 2005-2014, the results are the following:

* average investment per investor in the total open-end funds was around 29 thousands RON, with 17% greater than the average achieved in 2010;
* net capital inflow was at 993 million lei, realizing amid underwritings of over RON 5.727 million and repurchases of over 4.734 million lei;
* during 2013-2014, within the Romanian capital market there were 60 active mutual funds of which 20 bonds funds, 18 diversified funds, 17 equity funds, 1 money market funds and as well, other funds classified under "other funds";
* the number of investors in domestic mutual funds has significantly increased in recent years, reaching the level of 271.547 investors in 2013, with 12.46% more than in 2012. Of these, 9822 were institutional investors, increasing by 10.22% compared by 2012;
* the total net assets amount of domestic mutual funds by the end of 2011 was 6.780 million, which means an increase of 19.11% from the level recorded at the end of 2010;
* the growth rate of total assets of mutual funds experienced the same dynamic that the entire market, making it dominate of the market. Here we must recognize the significant share held by the five SIFs;
* under an inflation which felt below 1% in 2014 and quotas of bank interest rates below 2%, mutual funds have continued to develop drawing last year net subscriptions of nearly EUR 1 billion, reaching a level of assets of approximately EUR 4.4 billion and over 300,000 individual and institutional investors;
* the investors distribution among different fund categories shows that there is a concentration of attractiveness to funds with an investment policy geared towards fixed income instruments (e.g. bond funds). According to ASF data (2014), bond funds represented approximately 94.42% of the total assets managed by investment trusts Romanian;

## *Chapter 3. Analysis of Romanian mutual funds performance*

The third chapter is dedicated for performance evaluation of Romanian mutual funds highlighting the results of the several selected key indicators. Also, a comparative analysis was developed in order to define the benefits and risks assumed by these investment vehicles beside other available investment alternatives on the Romanian market within the last 8 years horizon from 2007 to 2014.

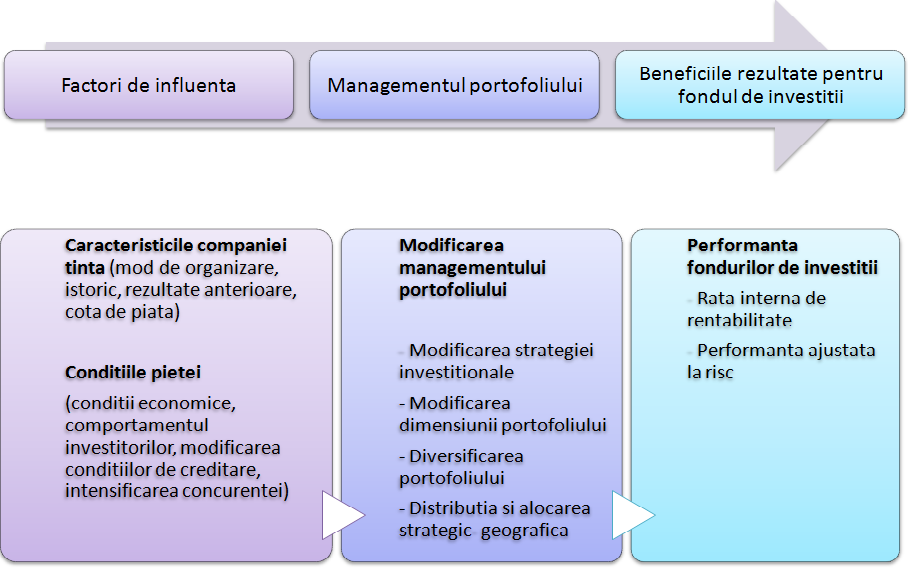
Assessing investment funds performance must take into account the interaction between investment funds and portfolio companies, and afterwards we can identify three categories of factors that might affect the results of investment funds (Figure 3.1) as described below:

• the characteristics and the results of the company included in the portfolio;

• the investment strategy changes of the fund (amendment allocations, changes in the portfolio distribution, etc.)

• market conditions as external factors influence both for the company's portfolio and the management strategy of the fund.

**Figure 3. 1 Determinants of the investment funds performance**



Source: author’s own processing

Starting from investor motivation, any form of investment must be justified in terms of three criteria (Bailesteanu 1998): profitability, liquidity and safety. Since profitability is a basic measure of the performance ( Filip 2008) that comes to define the added value derived from the value increase in the unit value of the fund assets, the other two elements complement the "magic triangle of investments" ( Bailesteanu 1998).

Alignment of the three items is not guaranteed and conflicts may be occurred between them, such as:

* safety vs profitability - a high degree of safety is often associated with low profitability, while considerable results are obtained mostly with high risks;
* liquidity and profitability - requires a high liquidity diminished returns;

We find that the binomial profitability - risk can not be dissociated and the onset of one of these elements is assured by the expense of the other, respectively, a level considered risk arises as the desire to obtain higher yields. Thus they were established in the literature a number of methods for measuring the performance of investments consisting of risk assessment as well as the evaluation of risk-adjusted returns.

While managing portfolios the investment funds performance is related to assessing the effectiveness of the managed portfolios. (Fairly 1999) associated the following potential benefits derived from unit funds ownership:

* increasing mutual fund asset value ( + Δ%ATN);
* dividends paid by the portfolio company for the relevant share holding in the capital;
* capital gains earned by the investment fund after investment activity.

The option of choosing the best measures for assessing the performance of investment funds by the criterion of profitability - risk is a fundamental statement of performance measurement adequacy calculation. Most research on explaining the performance of investment funds ( Giles , Alexeeva & Buxton 2003) ( Chan et al. 2009) , ( Sanchez & Sottorio 2009) ( Haslem 2010) ( Shi 2013) identified and agreed that following approaches express unitary the performance evaluation, according to the table structure 3.1.

**Table 3. 1 Measures in assessing the investment funds performance**

|  |  |
| --- | --- |
| *Standard indicators* | *Alternative indicators* |
| Sharpe rate  Treynor rate  α Jensen | Sortino rate (Sortino & Price, 1994)  Entropy rate  Modigliani squared rate (M2)  Pederson-Satchell rate  Omega index  VaR şi VaR conditional (CVaR)  Non-parametric models (e.g. Data Envelopment Analysis)  Multifactorial models (Fama & French, 1993; Carhart, 1997;) |

Source: author’s own processing using (Pedersen & Rudholm-Alfvin 2003), (Filip 2008), (Nițu 2009), (Luckoff 2010) referrences

To avoid data exhaustivity, we appreciate to use within the research the traditional rates to relate the performance evaluation, due to the fact that local historical records are barely developed since 2000. At the same time, due to the fact that the majority of the alternative methods are specific to the US fund market, we encounter difficulty in transposing them to the domestic market. We recognize the shortcomings of traditional measures for assessing performance, but consider them appropriate to use such appreciation rates for the domestic investment fund market as long as these investment vehicles benefit from a diversified portfolio differentiated only by the degree of exposure in assets and a market risk near total risk the portfolio. Thus, this situation is equivalent to the application of the classical rates i.e. Sharpe, Treynor and Jensen rates.

The aim of our research is to examine the classical rates performance measurement (Sharpe, Treynor and Jensen) and to get an overview of the hierarchy based over the domestic mutual funds market . In determining these rates it was necessary to obtain coefficients of correlation and volatility, including standard deviation for each category of the mutual funds - equity funds (abrrevatiated here after as FDA), diversified funds (abrrevatiated here after as FDD) and funds bond (abrrevatiated here after as FDO). We exclude from the analysis the money market funds as their yield is folded in relation to the exposure of monetary instruments included in the portfolio and which confers a relative stability.

To assess the measures of mutual funds performance the database considered was provided by the Association of Asset Managers Romania, the Financial Supervision Authority for the period 2007-2015, considering domestic fund categories - 74 active mutual funds on the Romanian market.

Methodogically, we focused on analyzing the performance of each category of funds as benchmarks using comparable indicators in relation to their exposure in the market. In this respect, to assess the performance of the equity funds and diversified, we will consider that progress benchmarks indices BET and BET -FI. Instead, for low risk funds (i.e. money market and bonds funds), the most representative benchmark for their performance is the gain associated with an investment in a bank deposit capitalization for the period of calculation. Therefore, we used the average interest rate for 3-month deposit rate, the yield of government securities on 6 –months, treasury bills profitability, all calculated according to the Romanian Central Bank statistics.

Also, the performance analysis of local mutual funds considers assessing the indicators provided by the Association of Asset Managers Romania and by patterns of performance evaluation risk-adjusted (relative to rates Sharpe, Treynor and Jensen). For investors, the variables related to performance and risk funds are the most important criteria for the selection of any investment placement.

The data analyzed are reported in monthly ranges of the last 10 years, i.e. 2007-2015. For issuing relevant comparisons between the evolution rates of return and risk associated with the local mutual funds, we considered the BET index in assessing the market volatility, monthly average interest rate of government bonds as a measure of the lowest risk rate and the inflation rate to assess changes in the value of the purchasing power of money. Data were retrieved and analyzed based on AAF, CNVM, ASF, BNR and INSSE records.

While the study focuses on the period between 2007-2015, we considered opportune to breakdown the performance analysis over 3 sub-periods: 2007-2009 , 2010-2012 and 2013-2015 - intervals corresponding to the onset of the global capital market crisis, financial crisis - the debt crisis period, as well as the revival period. Thus, the performance analysis is thorough observation into returns, volatilities and correlations between times of instability (2007-2013) and the period of economic recovery, aiming to identify possible interdependencies between profitability indicators calculated and economy.

Derived records expose the following evidences for the risk-performance analysis of FDA funds, as presented in table 3.3.

**Tabel 3. 3 Best 3 performances of FDA funds in Romania 2007-2015**

|  |  |  |  |
| --- | --- | --- | --- |
| Time period | *Sharpe rate* | *Treynor rate* | *Jensen rate* |
| 2007-2009 | Active Dinamic  Raiffeisen Prosper  BT Maxim | Active Dinamic  Raiffeisen Prosper  BT Maxim | Active Dinamic  Raiffeisen Prosper  Certinvest Maximus |
| 2010-2012 | ERSTE Equity  OTP Avansis  Certinvest Maximus | ERSTE Equity  OTP Avansis  Certinvest Maximus | ERSTE Equity  OTP Avansis  Raiffeisen Prosper |
| 2013-2015 | ERSTE Equity  BT Maxim  Raiffeisen Actiuni | ERSTE Equity  BT Maxim  Raiffeisen Actiuni | ERSTE Equity  BT Maxim  Raiffeisen Actiuni |
| Overall period  2007-2015 | Certinvest XT Index  ERSTE Equity  BT Maxim | Certinvest XT Index  ERSTE Equity  Raiffeisen Prosper | Certinvest XT Index  ERSTE Equity  Raiffeisen Prosper |

Source: author’s own processing

According to the high exposure in shares, equity funds have generated results below the market average until 2012 except ERSTE Equity Romania fund which has improved its profitability- risk scores from 2010-2012, registering positive values for all three calculated rates. Period 2013-2015 outlines the relaunch of equity market, e.g. 6 of the 10 funds included in the analysis leading to positive rates of performance. Thus, the records of Sharpe rate, Treynor and Jensen rates unitary define the top three equity funds with returns in excess of the assumed risk, namely: (1) ERSTE Equity Romania fund, (2) BT Maxim and (3) Raiffeisen Actiuni.

Considering the balanced funds performance analysis, for the past 3 years we see that in the most cases they have followed the benchmark (i.e. the yield of the bank deposit rate of 13%) which represents a minimum in terms of a conservative approach. In contrast, only part of the diversified funds have exceeded the best performing funds with low risk over the past 3 years, e.g. Carpatica Global , Erste Balanced RON and Raiffeisen Benefit .

Chart 3.1 shows the FDD fund performance evolution against the market dynamics (represented by the annual change in BET) and inflation. Herewith we observe as well the W dynamics in 2007-2012 range, being strongly influenced by the global financial crisis (2007-2009) and its enlargement towards the debt crisis in the next period (2010-2012).

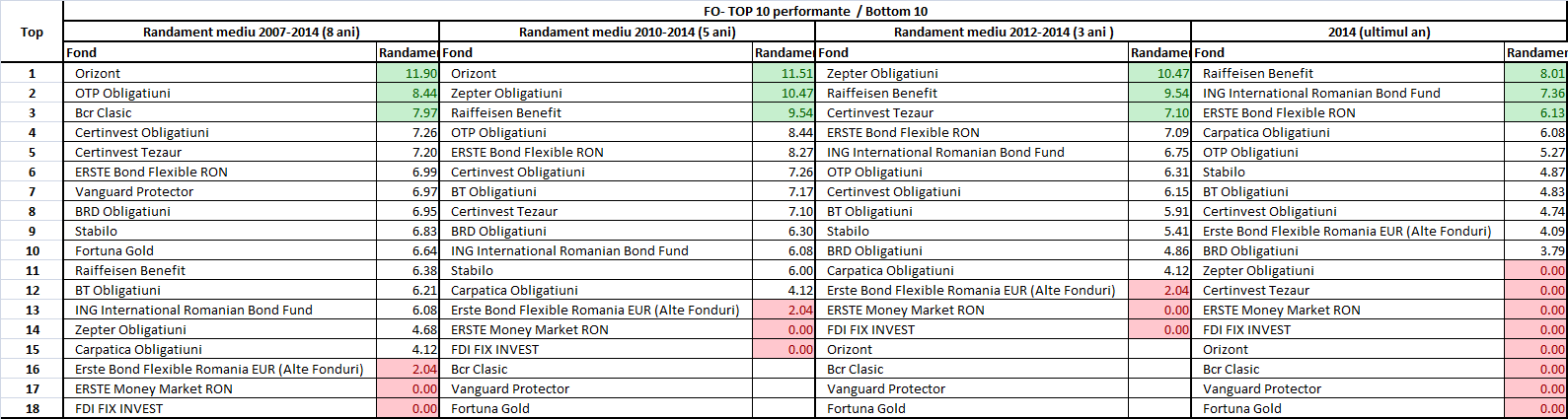
**Chart 3. 1 FDD performance evolution vs inflation rate and benchmark rate**



Source: author’s own processing

During the financial market turmoil, investors' preference for low-risk instruments has created opportunities for bond funds which proposed the highest average returns across the analyzed investment horizon. If the average annual return on mutual funds was 3.88% on an long term investment (8 years), bond funds had to remunerate the subscribtion to these instruments at 6.91%. The same positive spread has been proposed by medium-term and short term, with an annual average rate of return of 7.16% (5 years investment), of 5.86 % (3 years investment) and 5.43% (for the last year 2014), higher than the suggested rate of other collective investment undertakings, all surpassing even the remunerative rate of the traditional bank deposits of 2.90 % (2014). Thus, we find that for bond funds the most attractive yields (see Table 3.5) were generated by Horizon funds, OTP Bonds and BCR Clasic for long-term investments (8 years). Zepter Bonds and Raiffeisen Benefit supplement the performing funds with an average annual return of about 10% for 5 years investments.

**Table 3. 5 FDO performances in Romania, 2007-2014**



Source: author’s own processing using AAF statistics

Bond funds show a strong correlation to money market instruments (coupon rate of government bonds, the attributed rate for treasury bills and the rate for bank deposits) (Table 3.6), for which the performance is in excess of 80 % of these rates. Recognized as fixed income investment instruments, bond funds give better stability compared to equity funds and balanced ones.

**Table 3. 6 Determinants of FDO performance**

|  |  |
| --- | --- |
| **Correlation coefficients of FDO against indicators** | **CORREL** |
| Rata de remunerare a obligatiunilor guvernamentale | 0.894915 |
| Rata atribuita certificatelor de trezorerie | 0.986529 |
| Rata dobanzii bancare (12 luni) | 0.955762 |
| Variatia anuala BET (decN/decN-1) | -0.7628 |

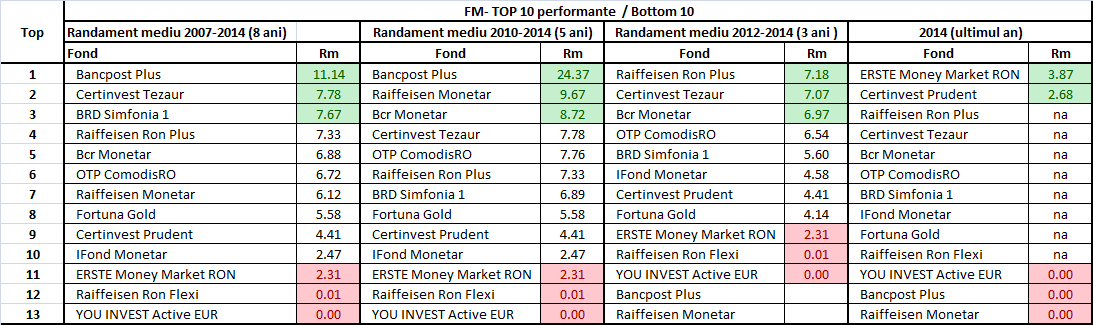
Source: author’s own processing

We note, however, that these funds are inversely correlated with the stock market (correlation coefficient of -0.7628), respectively market instability does not dictate the evolution of bond funds performance in the local market. Under these conditions, the unitary value of the net assets is more stable in the case of fixed income funds (bonds) compared to equities and diversified funds, giving investors regular income under a reduced risk of investing.

The starts of the investment funds in the post-crisis period (after 2009), the local money market funds have generated higher net gains on bank deposits, becoming the principal catalyst that has supported the development of the mutual funds industry (Dumitriu 2015). Thus, in the last year, the average earnings brought by bank deposits was about 3.32%, while the most representative money market mutual funds - Certinvest Prudent and ERSTE Money Market RON obtained yields of about 5% (e.g. 5.31% -June 2014 - Prudent Certinvest, 4.93% - the period January to March 2014 for ERSTE Money Market RON).

Within the analyzed period, the money market funds have achieved higher returns over inflation and better results than traditional bank deposits in 2009 and 2010. With lower exposure to risk, these types of funds were preferred by investors during the economic crisis, proposing rates of return of up to 24.37 % during the financial crisis (Table 3.7).

**Table 3. 7 FDM results between 2007-2014**



Source: author’s own processing using AAF statistics

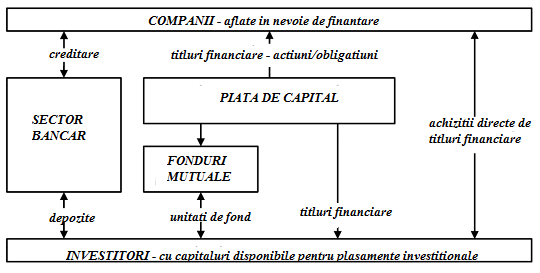
Considering the potential fulfillment and the restoration of the investment climate stability, we believe that investors will return to the temptations obtain higher earnings by shifting their actions and changing their position towards equities and equity funds. We expect that the market will see investors’ movement from collective investment towards low risk investment vehicles and gradually diversified to stock funds. Alike (Moses 2015) considers that the main determinants of investors shifting toward risk and are increasing their interest in financial planning. As the level of financial education will increase, customers of investment funds will be able to accurately define performance expectations and risks that may occur. Consequently, it is assessed that the risks taken will rise, and implicitly will develop those investment funds assessed for higher risks (i.e. equity and diversified funds).

## *Chapter 4. Financing alternatives ensured by mutual funds industry*

Chapter four is oriented toward identifying the benefits offered by investment funds as financing alternatives to those entities in need for funding, thus in financing the economic growth. The research is developed as a case study being carried out for private equity investments example within the Romanian market. This alternative investment vehicle present the most comprehensive range of operations carried out by investment funds and their example can expose both the benefits and tradeoffs attached to this financing alternative financing. Methodogically, the analysis covers all stages of investment funds related to demarcation of the target entity, from the selection, evaluation, implementation, monitoring until the multiplication of investment while liquidation is in place. In this regard, the data considered are real and exemplifies the case of a local pharmaceutical company, namely SC SICOMED SA, which benefited three capital inflows from investment funds side and whose business was restructured under Zentiva name. This example has become a particular one defining best how private equity funds provide financing and add value to an entity. For example, following funds involvement, Zentiva new merged entity announced a turnover of 11 times higher after Sicomed was acquired. However, the takeover’s success was not fully accompagned for all levels - it has been marked also by a serie of compromises that have included various restructuring strategies.

Thus, we found that following investing and financing cycle are emerging on a two-way relationship. Both traded funds and target companies may influence investors' expected performance. In other words, there is a rebound effect between the partners involved in this financing mechanism while involving investment funds. This connection is best described by Luckoff figure, below presented.

**Figure 4. 1. Financing cycle**

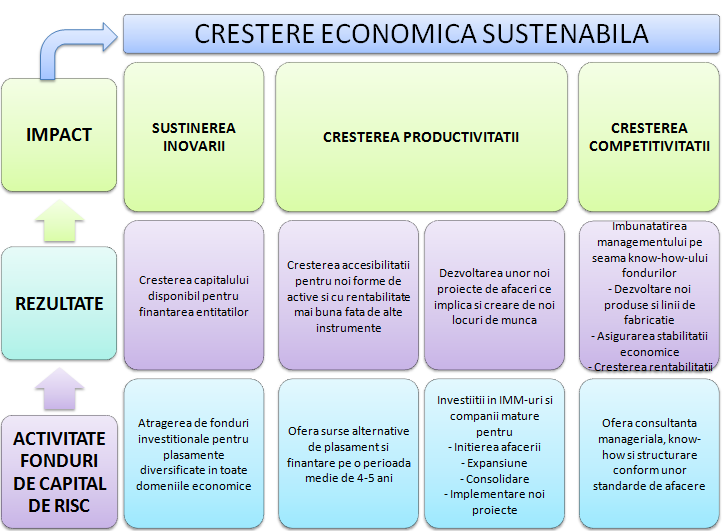


Source: author’s own processing using (Luckoff 2010) referrence

For a better representation of investment funds financing cycle our analysis will be spreaded within private equity market. As a source of external financing, private equity funds foreshadows a partnership between the investment fund and the beneficial of the invested capital through a financing contract that will be based on either an issue of shares or bonds. Consequently, private equity capital intervention takes the form of a investment parnership by purchasing securities issued by those companies in need of capital funding.

From a macroeconomic perspective, EVCA and Frontier Economics have identified the business benefits of private equity funds based on three indicators briefly presented in Figure 4.2 .

**Figure 4. 2 Interconnections between private equity funds and economic growth**



Source: author’s own processing using Frontier Economics, 2013, p. 15 referrences

Summarizing, the potential impact of private equity investments may be defined by:

* supporting and promoting innovation as long as the investments support an excess of 80% of the budgets for research and development and innovation, all being around 40% of the capital raised from risk capital financing;
* increasing productivity by implementing new technologies, products or services. New developments and innovation implementation in production and management become effective solutions to use limited resources for multiplying effects;
* increasing competitiveness as a direct result of the competitive advantages arising from implementation of new technologies.

In Romania, private equity financing alternative began to develop only after 2000, being a young sector but with an extremely high growing potential. Even if this market is at an early stage development, it has already registered examples that proved to be profitable and able to develop the European market wide (Vasilescu Giurcă & Simion 2009).

Eyeing the Romanian market, international players such as Advent International (holds the largest investments in Romania with investments of hundreds of millions of euros in companies like Brewery Holdings, Vodafone, Euromedia, Terapia and Dufa), AIG, GED Enterprise Investors, Innova Capital Oresa Ventures have not underestimated the market’s potential and succeded to ensure earnings of tens of millions of euros and multiplications up to 126 times (e.g. the case of Flanco and Flamingo merging within Oresa investments financing).

In a simplified approach these funds have accessed Romanian market and have multiplied their initial investments up to 5 times (Radu 2010b) as shown in Table 4.2. and Appendix 21.

**Table 4. 2 Summary of main private equity investments in Romanian market and their results**

* ADVENT INTERNATIONAL

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Financing entity*** | ***Sector*** | ***Strategie*** | ***Investing amount*** | ***Multiplied amount*** | ***Take over partner*** | ***Investing period*** | ***Multiplying coeficient*** |
| Dufa | Productie de lacuri si vopseluri | *Buyout* | (2004) 18 mil EUR | (2008) 50 mil EUR | Bengross | 4-5 ani | 2.78x |
| Terapia Cluj | Productie si distib medicamente | *Achizitie si delistare* | (2003) 49,5 mil USD | (2005) 324 mil USD | Ranbaxy India | 2-3 ani | 6.5x |
| Mobifon Connex | Servicii telefonie mobila | *Dezvoltare capital* | (1997) 85 mil USD | (2004) 2,5 -3 mld USD | Telesystem International Wireless Vodafone | 8-9 ani | 29.4x |

* AIG INVESTMENTS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Financing entity*** | ***Sector*** | ***Strategie*** | ***Investing amount*** | ***Multiplied amount*** | ***Take over partner*** | ***Investing period*** | ***Multiplying coeficient*** |
| Astral Telecom | Servicii de telefonie mobila | *Buyout* | (mai 2007) 80 mil USD | (2009) 1,6 mld EUR | France Telecom, Deutche Telecom | 2-3 ani | 20x |

* GED Capital Investments

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Financing entity*** | ***Sector*** | ***Strategie*** | ***Investing amount*** | ***Multiplied amount*** | ***Take over partner*** | ***Investing period*** | ***Multiplying coeficient*** |
| SICOMED | Productie si distributie medicamente | *Management replacement* | (2000) 6,8 mil EUR | (2005) 41,6 mil EUR | Zentiva | 5-6 ani | 6.11x |

* ORESA Investments

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ***Financing entity*** | ***Sector*** | ***Strategie*** | ***Investing amount*** | ***Multiplied amount*** | ***Take over partner*** | ***Investing period*** | ***Multiplying coeficient*** |
| FLANCO FLAMINGO | Distribution | *Fuziune/ exit partial* | (1997) 300 000 EUR | (2006) 38 mil EUR |  | 9-10 ani | 126x |
| LA FANTANA | Distribution | *Buyout* | (2001) 3 mil EUR | (2007) 35 -40 mil EUR | Innova Capital (secondary buyout) | 6-7 ani | 11.67x |

Source: author’s own processing

Generally, these foreign investment companies have invested in domestic companies belonging to the same sectors within the most relevant examples are the followings: for telecommunications (eg. Mobifon Connex tradeoff to Vodafone, Astral Telecom sale to Orange, Digital Cable Systems takeover by RDS RCS), for financial services (we have the case of Intercapital Invest, Kiwi Finance, Libra Bank, Credisson), for chemicals and pharmaceuticals (Terapia Cluj takeover by Ranbaxy, Sicomed - Zentiva case, Labormed - Shreea, Lupin, Dr Reddy's Laboratories), the industry of consumer goods (Bere Miercurea Ciuc - Brewery Holdings, as well as Vel Pitar, La Fantana, Oriflame), for electrical and electronic distribution (Flanco - Flamingo, Domo), in tourism services (Happy tours, Continental Hotels), paint industry (Policolor, Dufa), etc.

As an external funding solution, private equity funding has become a considered financing alternative while the bank loans conditions have been restrictive (Galeteanu 2009).

With short-term interest rates of 13.1% and 11.8% (for 3 months EUR interest rates) and of 7.7% and 9.7% ( for 10 years long term rates), 2008-2009 period surprised a weaker economic activity for the global market due to a lack of liquidity. Moreover, capital market listing has become barely viable source of financing starting from February 2015 through Aero quotation for small and medium companies. Until then, private equity funding was available to support companies to cover their illiquidity issues.

According SEEPEA, the fastest private equity investments growing was recorded in 2007 when investment rose by over 400% after one year's growth rate has exceeded only 60% of the local market. As a fact, the Romanian companies have captured the private equity funds attractiveness, being amounted at 156 million EUR and an average funding of 12 million RON for each targeted entity (Table 4.3.)

**Table 4. 3 Evolution of private equity funds in Romania**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Indicatori** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Investiții efectuate de fondurile de capital de risc in companiile românești (mii EUR) | 156050 | 122584 | 82865 | 80338 | 48075 | 24276 | 48450 |
| Ritmul de creștere al investitiilor effectuate (∆%) |  | -21.45 | -32.40 | -3.05 | -40.16 | -49.50 | 99.58 |
| Numar companii finantate | 13 | 20 | 17 | 11 | 9 | 8 | 10 |
| Finantare de initiere a afacerii *Start-up* | 1 | 2 | 1 | 0 | 0 | 0 | 1 |
| Finantare de expansiune, dezvoltare si consolidare *Growth* | 3 | 10 | 12 | 10 | 8 | 7 | 6 |
| Finantare prin achizitie titluri *Buyouts* | 9 | 8 | 4 | 1 | 1 | 1 | 3 |
| Finantare medie pe companie (mii EUR) | 12003 | 6129.2 | 4874 | 7303 | 5341 | 3034.5 | 4845 |

Source: author’s own calculations using EVCA și SEEPEA statistics

Among the most attractive areas for private equity investments, energy, pharmaceuticals, telecommunications, financial services and retail trade provide the highest attractiveness, all 5 areas accumulating 50 % of the new invested amounts throughout the period 2007-2013 (Chart 4.1).

**Chart 4. 1 Sectorial distribution of the private equity investments in Romania**



Source: author’s own calculations using EVCA și SEEPEA statistics (Anexa 19)

The best exit results were related to amounts invested in Romanian companies. More exactly, it was registered within the Healthcare sector, with significantly multiplied final amounts. At the same time, the same sector generated a maximum exit value of EUR 14.965 thousand EUR (2009), becoming the the most attractive domain for private equity capital portfolio investments.

Given that the stock market will keep liquidity levels at least at the scores obtained in 2012, the next period appears to be the dynamic for the investment funds market. Alike, attracting funding will provide support for new investments and portfolio investors will step up their assets allocations within the domestic market (Radu & Nistor 2010). Thus, the background to achieve a constant demand for investment funds allocations, the funding mechanism has to prefigure benefits for both funded companies and as well for investment fund’s investors.

## *Chapter 5. Empiric analysis of Romanian mutual funds performance valuation*

Empirical investigations using the multifactorial regression models and Data Envelopment Analsys method have substantially complemented our study and their results are significant in outlining the development of Romanian investment funds.

In the first part, the developed econometric model, quantifies and explains the performance of the Romanian mutual funds considering an eight indicators panel data within a monthly evolution between time period 2006-2015, distinctively for equity funds and balanced funds market. The driven results consistently demonstrate a significant positive effect of the NAV persistance, risk and return’s rate, market share and market conditions over the Romanian investment funds total net assets growth. On the other hand, the reduced historical evidences and investor’s moderate financial literacy have become factors that are dampening investment funds dynamics. Beside this, the fifth chapter provides a novelty approach of performance evaluation of mutual funds using the non-parametric method of DEA analysis.

Research is representative thus founded the investment fund efficiency analysis method nonparametric Data Envelopment Analysis – DEA. Thus, the research enhances the investment funds efficiency analysis within a new founded method that has not yet been applied for the Romanian market.

In assessing the performance of mutual funds, DEA approach consists in building performance indices and scores by incorporating multiple factors of input and output variables within the model. Namely we refer to:

* inputs (fed into the model as variables of effort) i.e. cost of funds (redemption fees, consultancy fees, administrative expenses, operating expenses, etc. ), measures of risk (market volatility and dispersion of returns) and valuation of funds sizing (market share, the volume of total assets managed and their inflows);
* outputs ( described as results) i.e. expected return or expected yield in excess of the risk free rate, stochastic dominance indicators and performance indices (Sharpe, Traynor, Jensen α), all properly correlated with the investment funds type that they are influencing.

Printre avantajele tehnicii DEA în evaluarea performanţei fondurilor mutuale, se pot număra următoarele aspecte:

* non -parametric method based on mathematical linear programming technique, which does not take into account the random estimation errors nor their distribution;
* DEA measures the performance of a fund in relation to its category best performance and reporting them agains a "best results frontier border";
* provides information on the causes of inefficiency funds, devising ways to divert funds to optimum efficiency;
* offers improvement alternatives for each input-output variables by marking the efficiency borderin relation to the fund with the best results.

The exposed benefits of the DEA method will ensure effective identification of the investment funds in each analyzed category or within the entire market, so it will facilitate the capital allocations orientation toward investment alternatives with the best yields and thus protecting inefficient capital of those variants.

In order to define the efficiency of investment funds in Romania per category of funds, we investigated a sample of 82 investment funds (52 mutual funds, 15 closed-end funds and 15 foreign funds) through an input oriented DEA model for which we have considered both hypotheses i.e. with constant returns to scale (CRS) and variable returns to scale (VRS).

The selected sample represents 44% of the total number of undertakings for collective investment in the Romanian market during 2007-2015 that includes 65% of the open-end investment funds, 38.46% of close-end funds and a share of 22.39% of foreign investment funds. Instead, by referring to the number of investment funds existing at the level of 2014 (a total of 144 funds), the sample comprises a majority of 56.94%.

The efficiency indicators of investment fund records were reported considering the literature evidences (M. Eling, 2006; Babala et al., 2009; Roman MM, CM Suciu, 2013; Manta AG, Bădircea RM 2014) and their dimensioning was defined by cost and risk indicators for inputs and result indicators for the output variable.

The inputs of the model are defined by indicators that cover up the vector "risk - cost - size" being symbolized with I1, I2 and I3. They are represented differently for each category of funds in relation to the most representative elements. The outputs of the model are indicators that describe the “effects or the results" which we consider appropriate in sizing the risk-adjusted performance (i.e. Sharpe ratio, Treynor and Jensen) with respect to each of the analyzed funds (i.e. FDA, FDD, FDO). The structure of the models is briefly evidenced in table 5.2.

**Table 5. 2 Input – output variables of DEA efficiency testing model**

|  |  |  |  |
| --- | --- | --- | --- |
| **FDA efficiency testing model** | | | |
| **Input** | | **Output** | |
| I1: Cost indice *Ic*  I2: Risk elements  I3: Size measures: *market share, lnNAV, ∆%NAV* |  | | O1: Risk-adjusted performance measured through Jensen / Treynor / Sharpe rates |
| **FDD efficiency testing model** | | | |
| **Input** | | **Output** | |
| I1: Cost indice  I2: Risk elements  I3: Size measures: *market share, lnNAV, ∆%NAV* |  | | O1: Risk-adjusted performance measured through Sharpe and Treynor rates |
| **FDO efficiency testing model** | | | |
| **Input** | | **Output** | |
| I1: Cost indice  I2: Risk elements  I3: Size measures: *market share, lnNAV, ∆%NAV* |  | | O1: Risk-adjusted performance measured through Sharpe rate |

Source: author’s own processing

By analyzing the correlation matrix of the risk and cost indicators, we found that there is a strong correlation between them which favors the construction evaluation model taking into account a 4 indexes structure based on three inputs and one output.

To establish a common evaluation score, we proceeded to use a measurement scale in order to define the effectiveness (Table 5.3.):

**Table 5. 3 Efficiency scale**

|  |  |  |
| --- | --- | --- |
| **Calculated scores** | **Evaluation** | **Symbol** |
| SE ≥ 80% | High efficiency |  |
| 80% ≥ SE ≥ 50% | Above average efficiency | C:\Users\Ioana_Florin\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\CQW8PB81\attention-icon-2332-large[1].png |
| SE ≤ 50% | Poor efficiency |  |
| Source: author’s proposal | | |

Assessing the effectiveness of Romanian investment funds during 2007-2014 period needed a divided analysis within three groups e.g. mutual funds category (i.e. UCITS), close-end funds ( non-UCITS) and foreign funds investment funds (abr. FS) all being present and authorized to operate on the market in Romania. By applying DEA evaluation model of efficiency the analysis will be orientated towards identifying the best performing fund category and the funds with the best results obtained during the last 7 years for each category of these three.

**Table5. 4 Efficiency scores per investment funds categories**



Source: author’s own calculations

The usage of DEA methodology applied within input oriented variant has outlined, as expected, the same trend observed in assessing the performance of funds. The mutual funds performance is marked by the financial crisis between the years 2008- 2011, thus, amid retraction of the market the efficiency scores follow the same trend.

DEA investigation reached to report the following remarks:

* effectiveness analysis of the collective investment undertakings in Romania during 2007-2014 was the most fruitful period time in terms of the overall market results, while 2009 and 2011 generated the highest scores of inefficiency;
* the latter financial crisis has opened investment fund market in Romania for foreign markets as international investment funds succeded to manage a great part funds over the local market. Pioneer funds are the best example of foreign investment funds that have been very active within the domestic market during 2008-2014 offering high return rates;
* economic decline of 2009 (-6%) has not fully destabilized the investors’ confidence in the Romanian collective investment schemes, keeping for them an average level of efficiency of over 80 %;
* closed funds shares, except SIF and FP, proposed also good yields like Certinvest Arta Romania, Certinvest Leader, Hermes and Matador, being able to offer better yields than common funds (following as if the years 2009 and 2013);
* mutual funds have been pretty volatile being marked by a strong dropdown in 2009 and 2011, but have managed to adjust a place on the efficiency frontier of the Romanian market above average. Compared with the best yields we identified the followings:

|  |  |
| --- | --- |
| *Mutual funds* | *Best performance funds* |
| Equity funds | Carpatica Stock, OTP Avansis şi Erste Equity Romania |
| Balanced funds | BT Clasic, Carpatica Global, OTP Balansis |
| Money market funds | Bancpost Plus, iFond monetar, Erste Money Market RON |
| Bond funds | BT Obligaţiuni, Certinvest Obligaţiuni, Orizont şi Stabilo |

However, due to the complexity of efficiency concepts, the literature has not reached to identify and to appreciate the complete economic efficiency through a single indicator. Therefore, our results will be limited to these two methodologies and will cover only the Romanian market segment of mutual funds during the analyzed period.

# FINAL REMARKS AND FUTURE RESEARCH PERSPECTIVES

Last 10 years have proven that Romanian capital market has joined European competition by reducing its fragmentation by unifying the regulatory institutions under the FSA (starting with 2011). Adapting national legislation to the European legislative framework has allowed the removal of discriminatory barriers between EU states, allowing access and authorization of foreign investment vehicles on national territory at the same time national funds have been outsourced in the foreign market. Consequently, the Romanian investment funds market has been sustained with a constant growth rate both in the number of active funds and in terms of the total managed assets, without being affected the by the financial crisis contagion.

Although the macroeconomic context has imposed a resizing effect to the national market of investment funds, we have identified that the market is following an upward trending to maturity. By acceeding its status from frontier market into emerging area, Romanian mutual fund market was reformed and as a consequence started to gain capital within market competition.

The undertaken documentation during this research period has shaped a comprehensive study on evaluating the Romanian mutual fund market size and identifying the potential growth of this industry. In our opinion, the Romanian market offers various opportunities as it provides positive signals in attracting investors from both local and foreign markets as long as the domestic market was preferred and halted during recession time against other developed economies.

Motivated by the fact that not very numerous researches have been carried out over Romanian mutual fund market, we have undertaken this current study in terms of evaluating the radiography of the domestic market in order to understand the implications of these investment vehicles. Thus, the conducted research over the last 10 years evidences is significantly contributing to mutual funds research literacy within the following inputs:

* + - applying and adapting a consistent and wide sample of methods and quantitative techniques for sizing the Romanian mutual fund market, testing and evaluating performance and identifying the main determinants of investment funds development;
    - aligning specific methods of microeconomic efficiency analysis i.e. DEA to assess the best performance alternatives as well as identifying potential optimal portfolios;
    - analyzing the most recent data derived from statistical evidences of national regulatory authorities. The included data are comparable to European and international evidences, being reported to statistics of EFAMA, EVCA and ICI.

Under these circumstances, the practical approach of this research is highlighted by assessing the internationalization degree of the Romanian mutual funds market, evaluating its effectiveness analysing the main driving factors and inhibitors of the investment fund industry in Romania.

The conducted research suggests considering the following aspects in order to attract investors to support national mutual fund market and implicitly the local economy:

* in the coming period, especially on a medium term, i.e. during 2015-2017 period, the major challenge will continue to constitute the national capital market anchoring to the international market while simultaneously supporting the revival of lending activity and rebuilding investors trust into these investment vehicles;
* attracting both domestic and foreign capital within the local investment market becomes the real path towards the consolidation of investment funds while supporting market competition;
* promoting investment funds to individual investors as an alternative to traditional saving forms;
* supporting an active stock market that maintains a direct interaction between capital owners and those in need of resources for business development;
* regaining investors’ trust in stock market instruments while promoting caution and reluctance of both investors and national issuers as these aspects signifinactly restricts the liquidity of the market;
* supporting an universal stock market as the next step of market consolidation. Given that the current liquidity is increasing and macroeconomic balance and economic growth are above the EU average, Romania's stock market prefigures truly stable conditions.

We acknowledge that this research is restricted to local market and its results can not be extended to other markets, but it provides a comprehensive and useful guidance material to anyone interested in investments. At the same time, the theme is attractive to all specialists and this research is foreshadowing a complex radiography of the national investment fund market.

As this topic will continue to be debated, our future studies could be directed towards widening the research on the determinants of efficiency and inefficiency. In this way, we can validate if the current results are relevant and the observed units are truly efficient or inefficient in relation to other investment vehicles.

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