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Abstract: The paper analyses common Russian practice of assessment of the effectiveness of the unit investment fund portfolio management based on the risk/return tradeoff. The paper identifies characteristics, advantages and disadvantages of various portfolio risk measures, and introduces the approach to risk assessment based on the analytical coefficient calculations.

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Keywords: equity indices; efficient market hypothesis; portfolio risk measures; unit; investment funds; management company; analytical coefficients

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1 Introduction

For a management company, management efficiency assessment is an important part of the investment process. A thorough management efficiency analysis helps identify the reasons for deviation from the benchmark, as well as assess portfolio risks. The timely analysis allows to adjust the current strategy when it is necessary. Developing criteria of the portfolio management efficiency might affect fundamental approaches to portfolio strategies.

Management companies make regular analyses of management efficiency (in-house, or inviting other unit investment funds) to fulfill a wide range of their own tasks, including management of funds of funds. Since more than a dozen of funds of funds operate in Russia today (*http:// www.nlu.ru* of June 27, 2010), the in-depth analysis of UIFs' management efficiency is especially actual.

In the authors' opinion, the assessment technique should not BE only quantitative, but also reveal the risks hidden in the implemented strategy. This approach seems to be especially important in the context of the analysis of UIFs' performance over the last several years. Identifying funds which implemented risky strategies during the pre-crisis years could help to avoid great losses at the beginning of the world financial crisis.

Development of efficiency assessment techniques is based on a wide range of knowledge of the stock market, as well as of the investors' psychology. A deep and comprehensive analysis of the information on the stock market is necessary for the correct assessment.

The analysis of Russian and foreign literature on the subject has revealed key issues related to the development of the measuring system for portfolio

management efficiency. First of all, these issues include measuring portfolio risk. At the present time, different approaches to choosing benchmark for management performance exist, and there is no shared vision on the risk/return tradeoff computation. The necessity to further develop methods of portfolio management evaluation and other related problems inspired the authors to take a closer look on the subject.

The paper is structured as follows. Section 2 considers theories of the equity investor behavior based on risk and return preferences, Section 3 analyses Russian stock market trends, Section 4 presents the empirical results, and Section 5 gives final remarks.

2 Literature review

During the last decades, intensive research was carried out basing on synthesis of economics and psychology. The human behavior in economic environment was analyzed in view of subjective psychological factors. A large number of works deal with explanation of investor behavior; among them, two most important concepts should be mentioned. The first one is the expected utility concept based on the assumption of rational human behavior which involves maximizing the expected utility, and the second is the rational investor concept, based on investor's subjective probabilistic asset assessment basing on the expected return. Here an investor is willing to acquire the assets which promise the highest return at the existing risk level, or the assets suggesting the lowest risk related to the desired return.

However, in practice investors' behavior deviated from that being expected under the concepts. Experts in cognitive psychology D.Kahneman and A.Tversky in their well-known work "Judgment Under Uncertainty: Heuristics and Biases" (Kahneman, Tversky, 1982) come to the conclusion

that investors' behavior in the stock market is boundedly rational. The discrepancy between the real market players' behavior and the rational investor concept drew attention of Russian researchers as well. A.Goryashko (2006) gives the following examples of investor bounded rationality in the stock market:

1. Investors' attitudes toward risks concerning probable gains may be quite different from their attitudes toward risks concerning probable losses.
2. Investors frequently do not want to risk (even when mathematical expectation is positive), if the alternative allows to avoid any losses at all.
3. At the same time, investors are ready to risk if losses are unavoidable.
4. Investors would prefer a variant with indeterminate value of financial position, rather than a game with positive mathematical expectation of deviation from this position.
5. Investors' attitude to the risk depends on the previous performance.
6. The choice of a particular investment decision is also connected with individual perception of the length of the time period.

Over the last years a large body of similar empirical evidence has been collected. It is obvious that formal characterization of behavior is not enough, the theory should also explain why the real investor behavior differs from rational.

Since the efficient market hypothesis assumes rational investor behavior (i.e. investors' ability to determine the fair asset price basing on all available information), the investors should be risk-averse. They are ready to risk only provided that they can get appropriate compensation by possible gains. The wide spreading of the efficient market theory gave rise to the first index funds, their portfolios reflecting the stock index. This approach realizes the idea of passive management of a well diversified portfolio. It is based on the assumption that any attempts to outperform the benchmark are vain.

Practice, as well as further research, revealed drawbacks of this hypothesis. These are, first of all, various market anomalies: calendar effect, small firm effect, neglected firm effect, etc. In practice, market anomalies are commonly exploited for developing active portfolio strategies which can outperform a passively managed portfolio.

However, if all investors consider the market to be efficient, nobody will get engaged in technical and fundamental analysis, preferring passive management strategies. The market can be efficient only when the majority of investors consider it as inefficient, seek new investment ideas and develop active trade strategies on their basis. Besides, probability calculations used on the basis of the efficient market theory to analyze financial markets do not take into account that random dispersion significantly differs from normal, and a principally different approach to investment decisions is required here.

The random walk hypothesis which became popular in the middle of the 20th century, suggests applying price logarithms instead of price values in estimations. An assumption was made that logarithm increments are independent random variables, their probability distribution being close to normal. The random walk hypothesis was not accepted first, but later it became an underlying concept in the efficient market theory. According to our calculations, distribution of sequences of financial data is significantly different from normal by a clearly marked peak and "heavy" tails. Besides, the higher frequency of real distribution near the mean value is characteristic for financial markets in different time scale.

A number of Russian researchers carried out surveys checking the efficiency of the Russian stock market. G. Dyadenko (2008) made a number of tests applying the Durbin-Watson criterion (detecting the presence of

autocorrelation), z-statistics, Spearman's rank correlation coefficient and other methods, and came to the conclusion about the efficiency of the Russian stock market in a weak form. In the opinion, the fact that over 5 years some Russian funds outperformed the market index proves that there is no medium form of informational efficiency on the Russian stock market. Under these conditions super-profits can be yielded by applying fundamental analysis.

I.Kazionnykh (2008) analyzed a number of works studying the form of informational efficiency of the Russian stock market. Most researchers applied event analysis to check the hypothesis about the semi-strong form of market efficiency, and found no evidence supporting it. Some researches (B.Aliokhin, 2004, et al.) used autocorrelation analysis tools. Their findings are different: some of them agreed that the market is efficient, at least in a weak form, others did not find enough evidence of that.

In our opinion, autocorrelation analysis is not the best method for detecting a weak form of market efficiency. This analysis describes only short-term market inertia, but can not detect the long-term effect, i.e. older prices influence on further price dynamics though this influence is reducing gradually with the lapse of time. In the last years, both Russian and foreign researches have used rescale analysis (R/S analysis) and Hurst index to check the hypothesis.

The mentioned approaches are the tools of the fractal market hypothesis, which has become the alternative to the classical efficient market theory. Benoit Mandelbrot, the author of *The Fractal Geometry of Nature* published in the mid-1960s of the last century, is called the founder of the hypothesis. The fractal market hypothesis explains the frequently observed leptokurtosis of return distribution. The cause of this distribution is investors' unlinear reaction to information. They may ignore disconnected current news until a

trend has established. However, after the trend has developed, their behavior will take account of all accumulated information.

The coherent market hypothesis (CMH) describing a nonlinear statistic model was developed by T.Vaga in 1991. It assumes that probability distribution of market returns based on fundamental market conditions and certain sentiments, also called "group consciousness". The theory of social imitation developed by E. Callen, D. Shapero (1974) for polarization of social opinion underlies the hypothesis. However, lack of reliable information on market participants' sentiments and fundamental economic conditions does not allow to apply it in practice. The market often is in transition, when neither coherence, nor random walk can be observed. At the same time we admit that the classification of market phases offered by T.Vaga enhances our knowledge and promotes the theory of the market.

A few years ago B.Kuznetsov (2002), a Russian researcher, suggested the synergetic market theory. He applied phenomenological theory of phase transitions by P.Ehrefest and L.Landau and synergetic theory by H.Haken.

3 Data and methodology

At the present moment the Russian stock market lacks for long-term investors, so speculative trading prevails, and more informational transparency is required. High liquidity offered by short-term investors can not stabilize the market. In the situation when there is no relationship between short-term and long-term trends, non-linear fractal processes develop: the investors assess the company's assets within a certain range of fair prices; this range is not stable, of course, and changes when affected by new information. If a trend meets investors' positive expectations, the investors start buying securities eagerly.

However, the investment activity does not boost at once in response to new information. This fact proves that the market “remembers” the previous trend.

With the purpose to detect a long-term inertia effect on the market, we are going to analyze how steady Russian market trends are. We apply mathematical tools. Our hypothesis is that the Russian market dynamics follow certain trends, rather than being a sort of Brownian motion. To check the hypothesis, we use R/S analysis and the resulting index suggested by Hurst. This approach to fractal time series was first suggested by B. Mandelbrot.

Estimated Hurst index for the main Russian market indices RTS and MICEX is around 0.7. The Russian stock indices are trend-disposed to a certain extent. The trend is not clearly marked, but can be noticed. The main conclusion is that the long-term inertia effect exists on the Russian market, as well as on other developing and developed markets. The Hurst index computed on the basis of closing prices increase gives evidence of some trends for the Russian stocks. At the same time, dynamics trends analyzed basing on the maximum and minimum day prices are much stronger. It is not surprising: though investors usually pay special attention to closing prices, the analysis of price fluctuations gives more objective and useful information for identifying a trend, so Hurst index is higher here.

Some researchers of trends in the American stock market found that the Hurst index tends to increase when computed at longer time intervals between estimation of return. Our survey of the Russian stock market also confirms this hypothesis, though this tendency is not strongly expressed.

Confirmation of the hypothesis about long-term market inertia means that markets are more complicated than the efficient market hypothesis assumes.

Another example of disagreement of the efficient market theory with real life is discrepancy in theoretical and actual prices. In particular, it is rather difficult to explain the origin and burst of financial bubbles in the efficient market terms.

At the same time, it should be noted that neither efficient market theory, nor fractal market theory can solve the most important risk management problem — forecasting time and scale of price rise or decline. In our opinion, the main tendency in rethinking approaches to stock markets over the last two decades is further understanding of complex and unlinear nature of the market. The fractal, coherent and synergetic market theories reflect this idea. However, the construction and development of the new theory requires great amount of time and effort of the scientific community

The Russian market dynamics shows high correlation with dynamics of other developing and developed markets. Moreover, the correlation will increase due to emergence of new unit investment and bank-managed funds.

Table 1. Dynamics of indices of developed and developing markets [3]

Index	**Country**	**Currency**	**Amount of stocks**	**February 26, 2011**	**Change, % February 26, 2011 – December 31, 2010**
DJ *Industrial*	USA	USD	30	12130.45	+4.78
S&P 500	USA	USD	500	1319.88	+4.95
FTSE 100	UK	GBP	100	6001.20	+1.72
DAX	Germany	EUR	30	7185.17	+3.92
CAC 40	France	EUR	40	4070.38	+6.98
Korea SE Kospi	Republic of Korea	KRW	100	1963.43	-4.27
BOVESPA index	*Brazil*	*USD*	*64*	66902.53	-3.47
OMX Helsinki 25	Finland	EUR	25	7424.79	-3.09

[3] The source: Thompson Reuters

Bombay SE Sensitive	India	INR	30	17700.91	-13.69
Hang Seng	Hong Kong	HKD	42	23012.37	-0.10
Swiss Market Index	Switzerland	CHF	20	6537.20	+1.57
MSCI EM	Developing markets	USD	n/d	1099.46	-4.69
Warsaw SE WIG-20 Single Market	Poland	PLN	20	2,673.52	-4.83
MICEX	***Russia***	***RUB***	***30***	1 747,72	+3.54
Shanghai SE Composite	China	CNY	902	2878.57	+2.51
Amsterdam Exchange AEX	Holland	EUR	25	366.77	+3.44
RTS	***Russia***	***USD***	***50***	1933.66	+9.23
Bucharest SE BET	Romania	RON	10	5,691.89	+5.61
CROBEX	Croatia	HRK	25	2.250,38	+6.61

Since exchange rate fluctuations considerably influenced the index dynamics, we show the national currency of indices. Some difference in index dynamics on the Russian stock market is caused not only by currency fluctuations, but by differences in the indices' structure as well.

4 Empirical results

In developed, more efficient markets, industry price trends form, and this fact allows to obtain useful information for implementing active portfolio strategy. As a rule, when price dynamics of a certain industry is higher than market benchmarks, it is an evidence of international investors' interest to this industry, while the contrary dynamics signals about problems of the companies engaged in the industry. It is necessary to note that the industry dynamics analysis should be based on stock prices, rather than on industry indices. The dynamics of the industry indices can be distorted by outstanding positive or negative dynamics of a particular company, for example, in the result of merges and acquisitions, or for other reasons. In our opinion, median

values should be used (rather than mean) to achieve representativeness of the analysis results.

Generally speaking, the correct composition of industry indices is an important issue in the investment analysis. The choice of adequate indicators for investment performance is equally important. At the present time, there are no techniques for risk/return tradeoff computation. Introducing the GIPS (Global Investment Performance Standards) has been a progressive step in promoting trust management activity in Russia. However, only few Russian managing companies submit their results on the GIPS basis; e.g., *Alpha Capital*, *Aliance Rosno Asset Management*, etc. Their practice of selecting composites and benchmarks deserves special attention.

Table 2. Comparison of composites and benchmarks of two managing companies[4]

Alliance Rosno Asset Management		***Alpha Capital***	
Composite	***Benchmark***	***Composite***	***Benchmark***
"Blue chips"	RTS index	"Blue chips"	MICEX index
"System aggressive"	RTS index	"MICEX index"	MICEX index
"2-tier equities"	RTS index-2	"small-cap equities"	RTS index -2 (rub)
"Resource companies equities"	RTS weighed index of industry indices (according to industry proportion in RTS index)	"Neftegas"	MICEX– Oil and Gas
		"Metallurgy"	MICEX– Metals and Mining
"Non-resource companies equities"	RTS weighed index of industry indices (according to industry proportion in RTS index)	"Electroenergetics"	MICEX– Electric Energy
		"Telecommunications"	MICEX– Telecommuni-cations
"Bonds"	Corporate bonds MICEX index considering coupon yield, before 31.12.2006 - Index TRI High Grade	"Bonds plus"	Index TRI High Grade
"High-yield Bonds"	Corporate bonds MICEX index considering coupon yield, before 31.12.2006 - Index TRI Corporate Composite		
"Bonds Plus"	Corporate bonds MICEX index considering coupon		

[4] *allianzrosno.ru, alfacapital.ru*

	yield		
"Balanced Superconservative "	20% RTS index + 80% corporate bonds MICEX index considering coupon yield (before 31.12.2006 - 80% Index TRI High Grade)	"Conservative balanced"	80% TRI High Grade + 20% MICEX index -10
"Balanced Conservative"	30% RTS index + 70% MICEX corporate bonds index considering coupon yield (before 31.12.2006 - 70% Index TRI High Grade)		
"Balanced Aggressive"	50% RTS index + 50% Index corporate bonds MICEX index considering coupon yield (before 31.12.2006 - 50% Index TRI High Grade)	Balanced	50% TRI High Grade + 50% MICEX index
		"Alpha-Capital Mixed Investments"	
"Pension Reserves - Conservative"	10% RTS index + 90% Index TRI High Grade (before 30.12.2006 – deposit in Sberbank ("Pension DA Sberbank of Russia" (in rubles) in 2005 г., "Pension deposit in Sberbank of Russia" in 2006 г.))	"Pension Reserves Conservative"	95% index TRI High Grade + 5% MICEX index -10
" Pension Reserves – balanced"	35% RTS index + 65% TRI High Grade	"Pension Reserves"	80% TRI High Grade + 20% MICEX index -10
" Pension savings"	35% RTS index A1 equities + 65% TRI High Grade (before 31.12.2006 – inflation rate based on Goscomstat RF)	"Pension Savings"	65% index TRI High Grade + 35% MICEX index A1 - weighted
"Insurance reserves"	7% RTS index + 93% composite TRI index (20% corporate, 30% regional, 50% federal bonds) (before 30.06.2007 - 93% TRI High Grade)	"Reserve"	MIBID
"HT Sector Russia 1"	No benchmark		
"HT Sector Russia 2"			
"HT Sector Russia 3"			
"Futures on RTS index"	RTS index		

As Table 2 shows, benchmarks for several composites are computed on the basis of several indices. The comparison of benchmarks chosen by the two managing companies shows different approaches to estimation of the stock market dynamics. *Alliance Rosno Asset Management* prefers RTS index, while *Alpha Capital* chooses MICEX index. Besides different index structures, these benchmarks are computed in different currencies (RTS is

computed in USD, MICEX in rubles). Approaches to choosing benchmarks for "2-tier equities" ("small-cap equities") are also different: *Alliance Rosno* uses the index itself, while *Alpha Capital* takes the exchange rate-adjusted index. There are other differences as well.

Criteria for choosing and computing the benchmark for a composite are given in "The rules of computation of the MICEX index" and "The rules of computation of the RTS index". The RTS index is computed on the basis of the latest equity prices, the MICEX index — on the basis of weighted average equity prices of the last 10 transactions. Though in computation of the MICEX index weighted prices are used, the result in most cases will be close to the closing prices of the time interval under study, with exception to some harder-to-sell equities, but since the proportion of these securities is not high in the index, they can be neglected, and we consider that in general this approach gives a more exact assessment of the current market situation.

But still the MICEX index can appear to be an inadequate benchmark, e.g. for dynamics analysis of a mixed investment fund, since its portfolio comprises both equities and bonds. Though benchmarks usually are computed using both equity market (MICEX, RTS, sometimes MICEX-10) and bond market (often TRI High Grade) indices, application of RTS and MICEX indices as the adequate basis for benchmarks can be put under question.

The matter is that the role of oil and gas producing companies is so significant in the Russian economy, that their stocks amount to about 50% in the MICEX and RTS index baskets. Even the limit of maximum 15% of stocks per one company in the RTS index basket can not improve the situation. Thus, the management companies, on the one hand, have to take the market index structure as the basic pattern, but, on the other hand, reduce the proportion (in comparison to the index) of oil and gas companies in their portfolios.

The survey of portfolio composition of open-end equity funds found that the average proportion of oil and gas stocks in a portfolio does not exceed 33%, whereas their proportion in RTS and MICEX indices is more than 49%.

Table 3. Comparison of four major sectors in MICEX, RTS indices and open-end equity funds[5]

Equity market indices	**30.09.2010**			
	1	2	3	4
MICEX	53.09%	17.62%	15.4%	6.27%
RTS	49.23%	18.79%	15.46%	8.06%
Equity funds				
Agana – Extreme	29.92%	13.27%	13.13%	11.02%
Agora – Equity Market	49.57%	17.60%	11.4%	4.47%
Ak Bars Capital — Ak Bars Equities	32.15%	19.01%	15.54%	8.17%
Alemar – Equity Fund	19.46%	9.88%	5.01%	1.28%
Alpha Capital — Equities	41.70%	18.69%	20.95%	3.90%
Alliance Rosno – Equities	27.03%	11.37%	8.82%	15.78%
AMK – RESO Leader	28.24%	3.59%	13.87%	6.72%
Astercom – Equity Fund	14.80%	6.01%	15.01%	31.24%
Aton – Equity Fund	31.34%	22.15%	15.69%	7.46%
Baltinvest – Equity Fund	4.59%	8.41%	14.02%	42.47%
Binbank – Equity Fund	38.70%	4.54%	21.16%	17.09%
VTB – Equity Fund	49.16%	12.69%	7.84%	11.42%
Gasprombank – Equities	49.94%	13.73%	4.44%	6.68%
Dokhod – Equity Fund	39.26%	4.15%	12.46%	10.64%
Invest Capital – Equity Fund	34.04%	18.36%	10.40%	13.06%
Interfin – Equities	11.28%	7.18%	9.39%	43.39%
MDM – Equity World	46.62%	18.13%	13.33%	7.77%
Mercury – Equities	26.47%	14.21%	29.4%	17.15%
Otkrytiye – Equities	45.68%	20.09%	14.19%	5.83%
Raiffeisen – Equities	34.72%	16.55%	21.44%	3.50%
Region – Equity Fund	59.29%	7.60%	12.46%	2.80%
Renaissance – Equities	27.62%	16.23%	17.08%	8.86%
North West – Equity Fund	48.96%	18.51%	10.9%	5.16%
Solid Invest	16.54%	5.75%	13.72%	17.81%
TKB BNP Pariba – Premium. Equity Fund	19.53%	11.63%	24.65%	9.40%
Troika Dialogue – Dobrynya Nikititch	35.78%	18.51%	11.54%	5.37%
Univer-Equity Fund	6.73%	9.80%	18.16%	16.07%
UralSib – Fund First	50.12%	16.88%	11.08%	3.83%
Median	**33.10%**	**13.50%**	**13.53%**	**8.52%**
Mean	**32.83%**	**13.02%**	**14.18%**	**12.08%**

Oil and gas sector (column 1), financial sector (column 2), metallurgy sector (column 3) and power engineering sector (column 4).

[5] The source: Investfunds.ru, micex.ru, rts.ru

At this conjuncture the management companies, as a rule, do not try to stabilize the fund structure through diversification, and usually focus on 10-12 main marketable equities, though there are much more equities meeting this criterion on the market. The 2010 open-end equity funds performance demonstrates that the managers were in no haste to get rid of torpedo stocks, though they had such opportunity when the crisis started in autumn 2008. Moreover, most management companies were implementing passive strategy in summer 2006, when developing markets were deteriorating. Hence, the short list of securities in funds' portfolios can not be explained by lack of liquidity.

In our opinion, liquid securities in portfolio should be managed actively, while less liquid stocks should stay under passive management. As the analysis shows, many managers today prefer rather passive strategy in managing blue chips, and have no second tier stocks in the portfolio. We should also note a lower proportion of metallurgy, power engineering and financial sectors in portfolios compared to the Russian index baskets.

For the purpose of further study of the investment characteristics of Russian open-end equity funds, we carried out a comparative analysis of their activity using Sharpe ratio, volatility index, coefficient of determination R2, beta coefficient and current yield.

Table 4. Analytic coefficients of open-end equity finds[6]

Equity funds	31.01 2011				
	Sharpe ratio	**Volatility Index**	**R2**	**beta**	**Current yield**
Agana – Extreme	-0,10	10,00%	93,18%	0,88	14,16%
Agora – Equity Market	-0,08	10,64%	97,35%	0,95	18,72%
Ak Bars Capital — Ak Bars Equities	-0,10	9,03%	86,89%	0,76	13,25%
Alemar – Equity Fund	-0,11	11,14%	79,11%	0,90	23,72%

[6] The source: Investfunds.ru

Alpha Capital — Equities	-0,11	9,96%	91,41%	0,86	20,70%
Alliance Rosno – Equities	0,01	12,00%	93,29%	1,05	29,47%
AMK – RESO Leader	-0,08	11,05%	84,30%	0,92	16,73%
Astercom – Equity Fund	-0,03	7,27%	51,26%	0,47	22,93%
Aton – Equity Fund	0,01	11,30%	94,46%	1,00	35,62%
Baltinvest – Equity Fund	0,03	15,04%	71,03%	1,15	25,82%
Binbank – Equity Fund	-0,08	9,20%	87,15%	0,78	19,34%
VTB – Equity Fund	0,01	10,18%	92,32%	0,89	31,84%
Gasprombank – Equities	-0,07	10,41%	94,76%	0,92	17,93%
Dokhod – Equity Fund	-0,04	8,49%	91,64%	0,74	16,60%
Invest Capital – Equity Fund	-0,12	7,73%	86,15%	0,65	19,21%
Interfin – Equities	-0,06	11,73%	75,64%	0,93	41,67%
MDM – Equity World	-0,16	9,29%	89,27%	0,80	18,03%
Mercury – Equities	0,01	11,15%	77,21%	0,89	25,36%
Otkrytiye – Equities	-0,03	9,96%	94,93%	0,88	14,40%
Raiffeisen – Equities	-0,10	11,42%	96,13%	1,02	18,75%
Region – Equity Fund	0,07	10,39%	91,39%	0,90	14,62%
Renaissance – Equities	-0,04	11,15%	92,04%	0,97	24,42%
North West – Equity Fund	-0,06	10,65%	95,70%	0,94	19,21%
Solid Invest	-0,11	12,02%	83,10%	0,99	14,38%
TKB BNP Pariba – Premium. Equity Fund	-0,11	12,38%	84,32%	1,03	28,96%
Troika Dialogue – Dobrynya Nikititch	-0,07	11,43%	95,49%	1,01	25,20%
Univer-Equity Fund	0,22	10,31%	85,48%	0,86	36,22%
UralSib – Fund First	0,14	7,93%	88,11%	0,68	20,93%

Sharpe ratio is negative for most funds, this fact proves their low level of yield in comparison with risk-free assets. However, in the cases when the coefficient value is positive (though low) we may speak about high investment risk of these funds, as well as about their higher yield, which is proved by high values of the current yield coefficient (Aton – Equity Fund, Univer-Equity Fund, VTB – Equity Fund). The volatility index of the majority of the funds is not high; and this fact reflects relatively low investment risk.

Coefficient of determination R2 shows the relationship between fluctuations of the MICEX index (reflecting the situation on the stock market) and dynamics of UIFs' unit price. Coefficients close to 100% (Agora – Equity Market, Aton – Equity Fund, Raiffeisen – Equities, Troika Dialogue – Dobrynya Nikititch) indicate strong relationship between the unit price and fund index dynamics.

The Beta coefficient is a measure of systematic or non-diversifiable risk. For funds with a beta higher than 1 (Baltinvest – Equity Fund, Alliance Rosno – Equities, TKB BNP Pariba – Premium. Equity Fund) systematic risk is higher than average. For other funds a beta is close to 1, that reflects a strong dependence of their yield on the market situation, in particular, on fluctuations of the MICEX index.

In our opinion, there is a certain correlation between the values of analytic coefficients and industry structure of unit funds' portfolios. The industry structure of VTB – Equity Fund, Gasprombank – Equities, UralSib – Fund First is similar to the structure of stock market indices, so these funds execute conservative investment strategy and demonstrate high performance in terms of risk and return tradeoff. At the same time, the analysis of the coefficients shows good opportunities for the funds dealing not only with oil and gas sector, but investing in financial sector, metallurgy and power engineering as well.

5 Conclusions

As a result of research, high correlation between Russian stock market dynamics and that of developing and developed markets was detected. This fact indicates that the Russian stock market has entered the world financial area. Furthermore, Russian stock indices, as well as shares, tend to follow trends, as the Hurst index method indicates.

Comparative analysis of industry structure of open-end UIFs portfolios indicates that the proportion of oil and gas shares in portfolios is much lower than that in the MICEX and RTS indices. This fact reflects a growing interest of fund managers to investments in financial, metallurgical and electric companies, this interest affecting the choice of shares and portfolio structure.

In general, the analysis of performance of Russian open-end UIFs based on analytic indicators, such as Sharpe ratio, volatility index, coefficient of determination R2, beta coefficient and current yield, suggests that most of the funds execute conservative strategies using stock indices as a benchmark, while fund managers who prefer active strategy use new, more universal tools for measuring performance.

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