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RUSSIAN MUTUAL EQUITY FUND PERFORMANCE: SELECTIVITY, TIMING AND PERSISTENCE

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Russian Mutual Equity Fund Performance: Selectivity, Timing and Persistence

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Abstract

Along with exceptionally rapid development of the Russian equity market the industry of Russian equity mutual funds has experienced tremendous growth both in terms of net assets value and number of funds. This research provides the performance analysis of Russian equity funds during the period of 2003-2006: authors examine security selection and market timing skills of fund managers as well as persistence of the mutual fund performance. The research did not identify a statistically significant positive Jensen-alpha performance measure for mutual funds, which means that fund managers do not possess superior security selection skills. Treynor & Mazuy and Henriksson & Merton models were employed to test for market timing skills of Russian equity fund managers. Henriksson & Merton model determined small positive market timing skills, while Treynor & Mazuy model did not support this conclusion. Authors argue that the Russian mutual fund industry specific characteristics (such as a large portion of cash in portfolios, skewness of Russian equities return distribution to the right) and usage of a monthly data (as opposed to a more frequent data) have their influence on the accuracy of the examination of market timing skills. The research also showed that there is some performance persistence in one year periods, while there could not be found any persistence in longer periods.

1. Introduction

A mutual fund industry is one of the largest financial intermediaries in the world. There are some obvious benefits of investing via mutual funds that make many investors prefer this method of capital allocation. A mutual fund can be considered as the easiest and cheapest way for private investors to invest in a stock market, without being exposed to great non-systematic risks. A mutual fund allows an investor to hold a part of a well-diversified and professionally managed portfolio and also provides decreased liquidity risks by the right to sell shares at any time. In spite of these benefits the question whether mutual fund managers are able to add value to their investors consistently still remains ambiguous in the research literature.

In recent years at the same time with the development of financial markets, mutual fund industry has emerged in the Russian market. Still despite a rapidly growing popularity of capital allocation into mutual funds in Russia, little research has been done so far on the local mutual funds industry.

In our paper we would like to research a risk-adjusted performance of mutual equity funds. The first research question that intrigued us when we decided to undertake the study is whether managers of Russian mutual equity funds possess selection skills and, consequently, are able to provide higher abnormal returns. We would like to find evidence on whether the funds, either individually or as a group, provide investors with performance that surpasses that of a broad, equity index over this sample period. To examine selection skills, also referred to as micro forecasting or security analysis, Jensen-alpha measure will be applied.

The second research question analyzed in the paper is whether Russian mutual equity fund managers possess an ability to time the market or in other words forecast the price movements of the general market as a whole. Applying methodologies developed by Treynor & Mazuy (1966) and Henriksson & Merton (1981) we examine how successfully Russian fund managers can predict general market trends by changing their funds' risk-exposure.

The third research question that is dealt with in the paper is whether the performance of Russian mutual funds is persistent. With the help of econometrical tools we want to find out whether past performance is a predictive factor for a future performance of the mutual fund. We are interested to find evidence whether differences in performance between funds persist over time and whether this persistence is consistent with the ability of mutual fund managers to earn abnormal returns.

The given paper is structured in the following way. In the next chapter we provide a short overview of the development and the current stage of the Russian mutual fund industry. Chapter 3 provides an overview of previous researches made on selection and timing skills of fund managers

and performance persistence of mutual funds. Chapter 4 describes methodologies employed to examine research questions. Chapter 5 describes the data set of mutual equity funds employed in the research. Chapter 6 provides empirical results. Chapter 7 discusses and analyzes the results and Chapter 8 concludes.

2. Russian mutual fund industry overview

Russian market of collective investment began to form in 1992-1993 during the time of "voucher" privatization, when voucher investment funds were founded; their primary objective was to gather vouchers from a population and invest them in stocks of privatized companies. Unfortunately, due to the poorly thought legislation and an economic base voucher investment funds (numbered at around 500 in 1993) proved to be unable to survive and later mostly because of legislation procedures were transferred into Joint Stock companies – investment companies (Sedash, 2006).

Development of the mutual funds market started in 1996, when the appropriate legal regulatory base was created and pioneers in the mutual fund sector began to appear. Nowadays Russian mutual funds can be considered as one of the most reliable and transparent institutes in the Russian capital market. Mutual funds are required to disclose information in the press about their net asset value, increase in asset value, balance sheet, etc.

From the very start of operations of mutual funds in Russia there has been no single instance of fraud, as there is stringent control from the Federal Commission on the Securities Market (FCSM) and there are very strict rules governing activities of management companies (Sedash, 2006).

Similar to the worldwide practice there are several types of mutual funds in the Russian market: open funds, interval funds, and closed funds. One important distinction between Russian and foreign mutual funds should be noted: in majority of western countries the term "mutual fund" is equivalent to an "open-end fund", while a "closed-end fund" is included in a definition of investment company (Sedash, 2006). In Russia, on the other hand, mutual funds could be of three different types: open, interval and closed mutual investment funds. Thus, according to the current legislation a mutual fund may be divided by the time factor (open, interval and closed) and by types of investments (stocks, bonds, money market, and mixed investments, indices, real estate (with exception of open and interval mutual funds) and high risk (venture) funds.

In the given paper we analyze only open equity funds, which invest in Russian stocks. In an open mutual fund purchase and sale of fund's shares is performed on the daily basis on investor's

demand, and consequently termination of shares takes place every working day based on investor's request. In such funds share value and value of net assets are calculated daily. It is noteworthy that open mutual funds are allowed to purchase shares only in a Russian currency, and are publicly traded at (Moscow Interbank Currency Exchange (MICE) and the Russian Trading System (RTS)), while other mutual funds can also hold bonds of the following countries: the USA, UK, the Republic of Cyprus and Germany, as well as bonds of European bank of Reconstruction and Development.

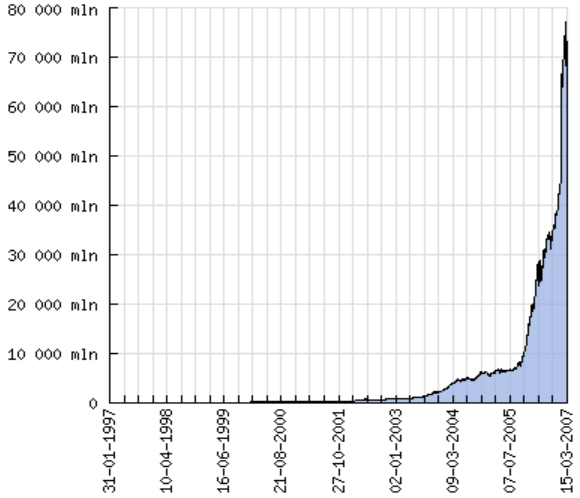
Significant progress in development of the Russian mutual fund industry occurred in 2004-2006. It is ascribed to the rapid growth of the securities market and to perspectives created for the industry of collective investment in connection with pension reform. In addition, a positive role in growth of interest to mutual funds from the point of view of investors was played by improved economic environment during recent years. This also includes decline in interest rates on bank deposits, a continuous USD depreciation respective to ruble (until recently USD was the main form of personal savings in Russia) (Sedash, 2006).

Moreover, a regulatory base facilitates a development of mutual fund industry. Mutual funds are not considered to be a legal entity; but a structure which is managed by a licensed management organization. This arrangement allows removing double taxation issues that undoubtedly makes less attractive for investors mutual funds' competitors: Russian investment companies and governmental pension funds. Even in case of dividends, open mutual funds are obliged to receive dividends in full, without any tax withdrawing.

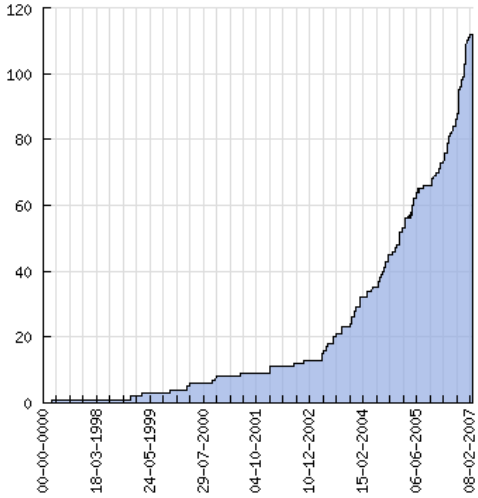
In the end of March 2007 the total value of assets under management of all investment funds in Russia has been 518,7 billion rubles (15 billion euros), there has been 668 different mutual funds. 112 Russian open equity funds managed 72 billion rubles (2 billion euros). In the Graph 1, one can trace the rapid development of asset value and number of open mutual investment funds in Russia since 1997.

Graph 1.

A) Total value of assets managed by open equity funds



B) Number of the open mutual investment funds in Russia



Source: http://pif.investfunds.ru/analitics/statistic/market_profile/

One of indicators that show the level of the development of the investment fund industry in a country is the ratio "assets of funds to GDP". For example, in the USA this ratio was 46% in 2000 (Sedash, 2006). In March 2007 the similar number for Russia has been around 2%. This statistics implies that there is a great potential for development of the Russian mutual fund industry.

3. Literature review

The following chapter will give an overview of the researches conducted on the mutual fund performance: evaluation of selection and timing ability of fund managers, and the persistence of mutual funds performance.

3.1 Previous literature on Performance evaluation

The studies of mutual funds performance started in the 1960s, when Sharpe suggested the model relating the returns on financial assets to a benchmark of market portfolio (Sharpe, 1965). The Sharpe ratio measures the fund excess return earned per unit of risk exposure.

$$Sharpe \quad 's\_ratio \quad = \frac{\overline{R}_i - R_F}{\sigma_i}$$

where $\overline{R}_i$ is the mean of mutual fund return, σ_i is the standard deviation of returns, R_F is the risk free return. If the fund's Sharpe ratio - the slope of the line between the fund and the risk-free

asset in the risk-return graph - is higher than the slope of the capital market line, we can conclude that the fund has outperformed the market.

Later in year 1968, Jensen suggested another fund performance measure. Jensen's alpha is given in next regression:

$$R_{it} - R_t^F = \alpha + \sum_{k=1}^{K} \beta_t^k \bullet (R_t^k - R_t^F) + \varepsilon_t$$

where R_{it} is the mutual fund return, R_t^F is the risk free return, , R_t^k is the return of the benchmark portfolio. Jensen's alpha (α) is interpreted as the difference between excess mutual fund return and excess return of the passive market portfolio. A positive and statistically significant Jensen's alpha proves that a mutual fund outperforms the market and that an active management creates the additional value for investors.

Nowadays there are two main different approaches of performance evaluation of mutual funds developed: return-based (e.g. Gruber, 1996) and portfolio-based (e.g. Daniel, 1997). The return-based literature applies the mutual fund returns, while the portfolio-based approach employs a passive benchmark portfolio that replicates the fund portfolio risk characteristics. If there is a positive difference between the fund and the benchmark portfolio returns, this indicates that the fund managers have superior skills or knowledge that allows them to outperform the benchmark portfolio.

The most of existing empirical evidence shows that the U.S. mutual funds have on average neutral or negative risk-adjusted performance. For instance, Gruber (1996) tried to examine Jensen alpha by applying a four factor model with the market, size, growth, a bond factors. Gruber have found that the U.S. mutual equity funds underperformed comparing to an appropriately weighted average of the four factor benchmark portfolio indices.

Daniel et al. (1997) took a portfolio-based approach and used as a benchmark the return on a passive portfolio that is matched to the fund equity holdings quarterly on the basis of book-to-market, size, and one-year momentum characteristics. Daniel et al. have found that the performance achieved by managers of actively managed funds is not significantly greater than the difference between expenses/fees on a fund management and expenses of passive index funds.

In the research literature Jensen-alpha is probably the most popular measure of mutual fund performance. However, one of the weak points of the Jensen-alpha measure is that it is dependent on the choice of a benchmark and a model applied. Research conducted by Lehmann and Modest (1987) have indicated that Jensen measure differs significantly dependent on whether the Capital

Asset Pricing Model (CAPM) or the Arbitrage Pricing Theory (APT) were employed. Later Grinblatt and Titman (1989, 1994) also examined alternative benchmarks to prove that Jensen measure differs significantly if different benchmarks are applied.

Cuthbertson et al. (2005) in the analysis of the "top" and "bottom" performers of UK mutual funds, using a 'bootstrap' methodology, have found that both the superior and inferior performance should be attributed to the skills of managers, not merely luck. However, this holds only for a small number of "extremes" – namely the very top performers and the very bottom performers.

In contrast to above mentioned researches, Christensen (2005) in his research have found that Danish mutual funds possess neither selection, nor timing skills: the performance of these funds in comparison to benchmarks has been either neutral or negative.

The common conclusion in the research literature is that mutual funds in the US (Jensen (1968), Malkiel (1995), Detzler (1999) and in Europe (Otten and Bams (2002) – (cross country analysis including Germany, UK, Spain, France, and the Netherlands) have proved that mutual funds have not been able to generate higher abnormal risk-adjusted returns.

On the contrary, in gross - not risk-adjusted returns - superior performance can be identified (e.g. Otten and Bams, 2002), but excess return is simply equal to the additional expenses related to a fund management and an information acquiring. Baker et al. (2005) have analyzed the stock picking skills of mutual fund managers with respect to returns. The authors found evidence that managers of mutual funds possess some stock-picking skills mainly based on the superior ability to gather and interpret available information. This kind of a conclusion is also supported by Grossman and Stiglitz (1980) theory of informational efficient markets, where informed players like mutual fund managers are compensated for their additional knowledge.

Besides, Dahlquist, Engström and Söderling (2000) have based on the studies of Swedish mutual funds made a conclusion that: 1) larger equity funds tend to perform worse than the smaller ones; 2) performance is negatively related to the management fees; 3) actively managed funds tend to achieve better results than the passively managed ones.

3.2 Previous literature on Timing ability of fund managers

Performance evaluation based on the selectivity in terms of the Jensen measure is usually referred to as micro forecasting or security analysis. The market timing skills is the ability to forecast the price movements of the general market as a whole and is referred to as macro forecasting.

First models examining the mutual fund's managers timing ability have been introduced several years later after the introduction of performance valuation models. One of the oldest models, which was suggested to test the market timing ability (Treynor and Mazuy, 1966), still remains very popular. Treynor and Mazuy (1966) have used a quadratic CAPM extension (described in detail in the next chapter) find that in 56 cases out of 57 mutual funds null hypothesis of timing ability should be rejected. Further on, Veit and Cheney (1982) find that in neither bull nor bear markets fund managers change their chosen management strategy and priorities, but even if they do – their timing ability turns out to be unsuccessful and fruitless.

These conclusions were confirmed by another model popular in literature, which was jointly developed by Henriksson and Merton (1981). Several years later, using these and more extended techniques Hendricks, Patel and Zeckhauser (1993) confirmed again that the US mutual funds do not possess timing abilities.

On the other hand, Bollen and Busse (2001) analyzed the daily data of mutual fund returns and found that if daily return data employed, the mutual funds show strong evidence of ability to time the market. On the other hand, research done by Kosowski et al (2006) of mutual funds showed that there are a lot of skillful good performers and bad timers.

Overall, several researches analyzed the ability of mutual funds to time the market and most of them seem to agree with the fact that funds do not possess timing ability.

3.3 Previous literature on performance persistence

Another important question that has been raised in the research literature is persistence of funds' performance, based on past results. Studies by Hendricks et al (1993) confirmed that previous top-performing funds are also likely to stay among the top-performers in the nearest future. Grinblatt and Titman (1989) found evidence regarding the persistence of both well-managed and badly-managed funds' returns. This phenomenon has been given a name of "hot hands".

To test whether mutual fund returns are persistent Goetzmann and Ibbotson (1994) have developed a Winner-Loser test, which examines whether top and worst performers in one period remain the same in the following. The authors found the existence of performance persistence in both the raw and risk-adjusted returns of mutual funds. The persistence was found for the time interval from 1 month to 3 years. Brown and Goetzmann (1997) found that the persistence depends on the length of the time span studied.

Gruber (1996) found that the past performance actually conveys the information to investors on ability of a fund manager to perform: the top performer in previous period is expected to perform better than average in the future. Zheng (1999) examined this phenomenon employing the measure developed by Grinblatt and Titman (1992) and found that indeed investors should pay attention to past performance while deciding on capital allocation.

Sharpe (1995) in his paper "The styles and performance of large seasoned U.S. mutual funds" examined performance of 100 largest US mutual funds. He employed quadratic programming to determine the sensitivity (betas) of a fund to market indexes ("return style analysis"). Then he ranked risk-adjusted excess returns (alphas) and tried to detect whether past alphas are somehow related to future alphas. Similarly, Carhart (1997) in his research "On persistence in mutual fund performance" employed a sample of stock mutual funds and used the four-indexes model to predict high-performing funds. Both of them reached the conclusions that past performance contains information about future year-to-year performance in raw returns. Nevertheless, most of this persistence turned out to be due to the differences in fund fees and exposures to the common risk factors.

On the contrary to the all previously discussed researches, Christensen (2005) conducting research on Danish mutual funds did not find persistence of fund performance. Christensen summarizes that most conducted researches did not find performance persistence in European mutual funds, however, on the other hand, most of the U.S. researches on mutual funds identified performance persistence.

4. Methodology

In this section we present models that are applied in the analysis. In our research methodology we follow some previous researches (e.g. Christensen 2005). First, we describe the CAPM security market line model and Jensen-alpha measure, which are applied to analyze the selection skills of mutual fund managers. Then we define the Treynor & Mazuy and the Henriksson & Merton models that will form the basis for the analysis of timing abilities of mutual funds. Next we present models that we use to examine persistence in the mutual fund performance.

4.1 Performance evaluation models

One of the commonly used models for analyzing the performance of portfolios and, consequently, mutual funds is Jensen's (1968) measure of performance. Even though the measure

was suggested in the 60-ies, it is still used in many modern academic papers. For instance, Christensen (2005) and Cuthbertson et al. (2005) use this method to perform their analysis in different markets. Even though this methodology has been criticized e.g. by Roll (1978) on the grounds of benchmark selection or by Jensen (1972) himself regarding a biased evaluation for market timers, it is still the most widely used evaluation measure of the mutual fund performance.

We employ in analysis the capital asset pricing model (CAPM), which historically has been one of the most used and famous asset pricing models. Here a basic development of the model is provided. Firstly, the equilibrium in the capital asset pricing market (CAPM) is considered (Jensen 1968):

$$E(\tilde{R}_j) = R_f + \beta_j \left[E(\tilde{R}_M) - R_F \right]$$

Where $E(\tilde{R}_j)$ - expected one period return; R_F - the one-period risk-free interest rate; $\beta_j = \frac{\text{cov}(\tilde{R}_j, \tilde{R}_M)}{\sigma^2(\tilde{R}_M)}$ - the measure of risk (systematic risk), which the asset pricing model implies is crucial in determining the prices of risky assets. $E(\tilde{R}_M)$ - the expected one-period return on the market portfolio, which consists of an investment in each asset in the market in proportion to its fraction of the total value of all assets in the market.

The choice of benchmark has been extensively discussed in the research literature. In the security market line only one benchmark is applied and this implicitly assumes that funds follow some clear specific investment target that can be represented by a single benchmark. Hereafter we plausibly assume that Russian mutual equity funds invest only in their stated target - Russian market equities - and duly use the most famous Russian market index (RTS – Russian Trading System) as a benchmark.

However, the presented model does not provide any information on the manager's ability to deliver higher than a market return. Moreover, in the reality it is impossible to observe expected values. Thus the model has been further developed into the following equation:

$$\tilde{R}_{jt} - R_{Ft} = \beta_j \left[\tilde{R}_{Mt} - R_{Ft} \right] + \tilde{e}_{jt}$$

Expected values have been changed into realized ones and a random error term $\tilde{e}_{jt}$ has been added, which has an expected value of zero. This error term has a large importance for the evaluation of the forecasting ability: if a manager has an ability to deliver an abnormal high return, he will tend systematically to select securities, where $\tilde{e}_{jt} > 0$. Further this error term has been divided

into into α_j, which measures the ability of the manager to forecast the prices of securities and $\tilde{u}_{jt}$ which is a white noise error term. Below the final expression of the model is presented:

Equation (1)

$$\tilde{R}_{jt} - R_{Ft} = \alpha_j + \beta_j \left[\tilde{R}_{Mt} - R_{Ft}\right] + \tilde{u}_{jt}$$

If this new measure alpha (α_j – the intercept) is positive, the manager of the fund is considered to have the ability to perform better that the market average; if the α is equal to zero, then the fund has the same returns as if it was a simple market-like portfolio of randomly selected stocks; and if the measure is negative, the fund performs worse that the market.

Jensen (1968) applied his model in a study of the performance of the 115 U.S. funds in the period of 1945-1964. He found no evidence that mutual funds' managers possess ability to deliver abnormal higher returns.

Jensen alpha measure of fund performance also has another drawback: a common time variation in risks and risk premiums that may be confused with average performance. In general, if portfolio betas may vary over time, then there will be omitted variables problem in the regressions, which results in biased coefficient estimates.

It is obvious that portfolio betas can change either because the portfolio weights are managed or because the underlying asset betas change or simply because portfolio weights change with the change of relative prices. Ferson & Schadt (1996) note that movements in beta may be driven by the flow of money into a mutual fund; consequently, larger cash holdings imply lower betas.

There are several procedures that have been proposed to cope with the problem of time varying betas and to uncover timing ability of managers. Two important examples that are often used in the return-based literature are Treynor and Mazuy (1966), henceforth referred to as the TM model, and Henriksson and Merton (1981), Henriksson (1984), henceforth - the HM model.

4.2 Market timing models

Performance evaluation, which anchors on the selectivity analysis using Jensen measure, usually is considered in terms of micro forecasting or security analysis contrasting to macro forecasting, what aims to forecast price shifts of the whole market. In other words this is called market-timing (Fama 1971).

If fund managers modify the fund beta (β) according to their expectations of growing and falling markets, β_j becomes a decision variable which will not be constant. The mutual fund

managers' ability to time the market has significant implications for their performance. A number of methods were suggested in the literature to test the timing ability of fund managers. In our research we apply the Treynor and Mazuy (1966) and the Henriksson and Merton (1981) methodologies to validate the robustness of the results on the mutual fund performance.

According to the established rules in Russia, mutual equity funds can not sell short in the market and are not encouraged to invest the large portion of their assets in the money market. Moreover, general rules also imply that a mutual equity fund will not buy bonds. Therefore, the main hedging instrument that an equity fund has is to reduce its beta in bear markets. Consequently, market timing plays an important role in a mutual fund portfolio management.

Treynor and Mazuy (1966) suggested that if a mutual fund manager could time the market, she would hold a greater proportion of the market portfolio when she expects the return on the market to be high and vice versa. In fact, she would change the portfolio β according to the market return as $\beta_{jt} = b_{j0} + b_{j1}(\tilde{R}_{Mt} - R_{Ft})$ and substituting this relationship into the security market line equation we find:

Equation (2)

$$\tilde{R}_{jt} - R_{Ft} = \alpha_j + \beta_{j0}\left(\tilde{R}_{Mt} - R_{Ft}\right) + \beta_{j1}\left(\tilde{R}_{Mt} - R_{Ft}\right)^2 + \varepsilon_{jt}$$

which is the quadratic Treynor and Mazuy equation. Compared to the standard security market line model, equation has a new term, which is the excess market return squared. If b_{i1} is positive and significantly different from zero, we recognize manager's ability to time the market and like in the security market line model if α_i is positive and significantly different from zero, we distinguish manager's selection skills.

The other model that is used in the given research to analyze mutual fund managers' ability to time the market is the methodology suggested by Henriksson and Merton (1981), so called option approach. In this method the fund manager is assumed to receive a binary signal, which takes only two opposing values. Based on these two opposing signals, the fund manager chooses one of two values of the portfolio β, and this extends the standard CAPM security market line specification to the following equation:

Equation (3)

$$\tilde{R}_{jt} - R_{Ft} = \alpha_j + \beta_{j0}\left(\tilde{R}_{Mt} - R_{Ft}\right) + \gamma_j Max\left(\left(R_{Ft} - \tilde{R}_{Mt}\right), 0\right) + \varepsilon_{jt}$$

where the new term γ_j represents an informational benefit that turns out to be an advantage, represented by a no cost put option on the market portfolio. Henriksson and Merton (1981) suggest that if α_j is positive and significantly different from zero, selection skills of the fund manager are identified and if γ_j is significantly positive the fund manager is proved to have a timing ability.

Classical the TM and HM models are known to suffer from a number of theoretical drawbacks. The timing tests are subject to restrictive assumptions of the linear beta function (TM) and beta switching (HM). Thus, if a manager departs from these behavioral assumptions, these measures will not reflect the timing ability correctly. Goetzmann, Ingersoll and Ivkovic (2000) note that the HM and TM timing models rely on the premise that there is no co-skewness between the assets held in the portfolio and the benchmark index. Jagannathan and Korajczyk (1986) show that if the average stock in a mutual equity fund is more option-like than the average stock in the market, a quadratic regression of the HM model can result in a significant positive timing coefficient even if there is no any market timing skill. Thus, it is difficult to make a distinction between inherent co-skewness created by the superior timing skill and co-skewness occured strictly due to the composition of the fund portfolio relative to the market.

All these mentioned methodological problems have their influence on the accuracy of the models used to examine the market timing skills and should be taken into account. However, using two various models will enable us to deliver sufficient quality estimations of the market timing ability of Russian mutual equity funds' managers.

4.4 Performance persistence models

To test whether mutual fund returns are persistent a Winner-Loser test will be used, following Goetzmann and Ibbotson (1994). We divide the sample period into sub-samples and then rank funds according to their performance in a particular period. We identify winners (*W*) and losers (*L*) in each sub-period and analyze how many winners in a former period turn out also to be winners in the following period. Specifically, we plan to split our sample period up into three intervals each representing a one year period.

For the first sub-period we rank the funds and identify losers as those funds with a return below the median return of mutual equity funds that are included in the research sample, and winners as those funds with a return equal to or higher than the median return. An equivalent ranking is performed for the second sub-period. Based on these rankings we determine the number of funds

being winners (losers) in both periods and the number of funds being winners (losers) in the first period and losers (winners) in the next period.

Based on this Winner-Loser categorization, we develop two-way tables and calculate a LOR-statistic, which is a Log Odds Ratio test defined as:

Equation (4)

$$LOR = \ln\left(\frac{WW * LL}{WL * LW}\right)$$

The odds ratio will be equal to 0 under the alternative-hypothesis of existing performance persistence and then the *LOR* statistic will be positive that will indicate positive persistence, while a negative *LOR* statistic indicates negative persistence. On the contrary, if *LOR* statistic will appear to be equal to 0, then there will be no evidence on performance persistence. The significance of the *LOR* statistic can be tested as a *t*-statistic given as:

t-statistic = $LOR/\sigma_{LOR,}$

which approximately follows a standard normal distribution, where σ_{LOR} is given by:

$$\sigma_{LOR} = \sqrt{\frac{1}{WW} + \frac{1}{WL} + \frac{1}{LW} + \frac{1}{LL}}$$

5. Data

In our analysis we use monthly data on a closing value of shares and NAV (net asset value) on the open equity mutual funds for the period from December 2002 to the end of 2006. The use of monthly data implicitly assumes that hybrid fund managers are using a one month horizon in making allocation decisions.

We gathered our data from the home page of the Russian mutual fund organization (www.investfunds.ru, www.rbc.ru, and official websites of mutual funds). The important feature of the Russian mutual fund industry is that most of the funds were established during the years 2004-2006, while only 9 funds were present at the end of 1999, thus this kind of financial intermediary and service is rather new and indeed a very rapidly developing financial sector.

We exclude from our analysis funds which have less than 30 observations for the given period; otherwise, our regression estimates will be of not satisfactory quality and will not supply us with a sufficient longevity that is required for the performance persistence part estimation. Thus, 36 funds pass through our filtering, that helps to detects the funds with history and experience in the field. The descriptive statistics for each mutual fund used in the regression analysis is available in Table 1 (Appendix 1). Later in the analysis, descriptive statistics for funds are adjoined with regression

results that estimate primarily focus industries for each and every fund, see Table 4 (Appendix 2). Next, it is important to note that the database that we use in our analysis and regressions is free from survivorship bias. Moreover, starting from the year 1999 there actually was only one open equity mutual fund that ceased to exist – "*Нефтегазовая отрасль – акции*", and this was not because of underperformance. The mutual fund has lost its license and, thus, has been liquidated because of having an incorrect investment structure that goes against existing laws and because of not having enough licensed managers.

As a main benchmark for analysis we employ the RTS index, that has sufficiently long history and includes all big companies (with large turnover and high liquidity) listed on the Russian Stock Exchange, as well as RTS 2nd division , RTS oil, RTS telecommunications, RTS metal & mining, RTS industry are applied for a more detailed analysis. Charts given in Figure 1 (Appendix 1) represent the dynamics of the rapid development of these market indexes during last years.

There is a difficulty of selection of risk-free interest rates for the Russian market before the start of the year 2003. We employ 1-year maturity return rates of Russian Government Treasury bonds (GKOs) as a proxy for risk-free investment rate, obtained from the web page of the Central Bank of Russia. The data on GKOs is available only since January 2003. Graph plotting the historical interest rate level is presented in Figure 2 (Appendix 1). All the variables in our analysis are denominated in rubles.

6. Empirical Findings

In this section we present our empirical results. First, we present results obtained from regression analysis and evaluate the selectivity skills of Russian mutual fund managers, then we investigate their market timing abilities. Finally, we consider whether mutual fund performance is persistent.

6.1 Performance evaluation results

First, we estimate the Jensen measure of performance based on the standard CAPM security market line given by equation (1) in the methodology part. We estimate the security market line for each of the 36 mutual funds. Then using panel data regression we estimate the security market line for all mutual funds.

Equations are estimated by Newey-West corrected standard errors regression in order to account for potential serial correlation and heteroskedasticity. In Table 2 (Appendix 2) we present our estimation results.

The general conclusion from Table 2 is that 60% of mutual funds have been able to outperform their passive benchmarks. The Jensen measure in most cases is positive, however, not statistically significant. Only one mutual fund *"КИТ - Российская электроэнергетика"* has been able to show statistically significant positive Jensen alpha (10% confidence level). However, "the positive selection skills" might be attributed not to a superior selection ability of the fund management company, but to the immense growth of the electricity power industry companies on the Russian stock exchange during last years.

Overall, the previous findings that claim that overall mutual funds do perform in best cases neutrally or even underperform the passive market benchmark also hold in case of Russia. One can see from Figure 3 (Appendix 2), which summarizes frequency distribution of estimated Jensen alphas for each particular fund, that the most of α's lie in the neighborhood of zero.

However, the figure has a positive skew that could be explained by the fact that the most of the mutual funds show neutral and a little bit negative risk-adjusted performance; however, on the other hand, there are positive extremes, very well performing funds like the *"КИТ - Российская электроэнергетика"*.

Panel data regression for all Russian mutual funds showed no statistically significant selection skills of Russian mutual fund managers (see Table 3, Appendix 2). Overall, the results indicate that Russian equity mutual funds (except for one extreme) did not show significantly positive Jensen alphas and have not been able to out-perform the market. On the other hand, most funds have performed neutrally i.e., they have been able to obtain gross returns that are just only sufficient to cover their expenses, leaving the fund members with net returns that are not significantly different from the passive benchmark returns.

The estimated beta coefficient for all mutual funds is 0.66 (significant at 1% confidence level), which shows that mutual fund performance on average is less volatile than the Russian equity market index, at the same time funds has almost the same return level with the RTS index.

Regressing mutual fund returns on various industry indices we have been able to estimate what industries mutual funds are more eager to invest into. We determined that Russian equity mutual funds commonly invest in an oil & gas sector, telecom and industrial sector. On the other hand, we found that Russian mutual funds do not invest that much in a metals & mining sector. Results

(significant at 5% confidence level) showing in which industry each particular fund tends to invest are presented in Table 4, Appendix 2). It is interesting to note that using this methodology we prove that industry specific funds follow their official investment strategies (e.g. telecommunication funds invest in telecommunication industry, etc.).

6.2 Market timing results

The estimation results on market timing skills are obtained from equation (2) and (3) and presented in Table 5 and Table 6 (Appendix 3) respectively. Again t-statistics are based on Newey-West corrected standard errors to correct for potential serial correlation and heteroskedasticity. In this case it is particularly important to obtain heteroskedasticity consistent standard errors, because adding a quadratic term to the regression equation (2) imposes a heteroskedasticity type of problem into the model (Christensen 2005).

Compared to the analysis in previous chapter as well as reviewed in literature, Table 5 and Table 6 do not provide much new evidence on selectivity. We infer that most of the estimated α's are positive and not significantly different from zero.

Testing for market timing skills of Russian equity mutual fund managers, we find that only five investment funds have been able to time the market (at 10% significance level). Positive timing ability of mutual funds *"АВК - Фонд связи и телекомуникаций"* and *"Сообразительный"* has been confirmed by both the Treynor & Mazuy and Merton & Hendriksson models. Positive timing ability of *"Интраст Фонд акций"*, *"Метрополь Золотое Руно"*, *"Риком Акции"*, *"Русс Инвест паевой фонд акций"* has been confirmed by the Merton & Hendriksson model, while superior timing skills of *"Петр Столыпин "* mutual fund were detected by the Treynor & Mazuy model.

Negative timing ability of *"Атон - Фонд акций"* mutual fund has been confirmed by both the Treynor & Mazuy and Merton & Hendriksson models. Ferson and Schadt (1996) claim that "a negative timing coefficient may arise if the manager has the perverse ability to predict market moves systematically in the wrong direction." This makes little sense, because an investor could profit by trading against such a manager.

We also run panel data regression to estimate market timing ability of all mutual funds. The Treynor & Mazuy (TM) model did not show any evidence of positive or even negative market timing ability. On the other hand, the Hendriksson & Merton (HM) model estimated a small positive market timing ability of Russian equity mutual funds. The coefficient is estimated to be equal to

0,104 (at 10% significance level), see Table 7 and Table 8 (Appendix 3). Based on this evidence, we can not clearly make any conclusions on Russian mutual funds market timing ability. Some funds showed positive market timing, while most of the funds performed neutrally as far as market timing is concerned.

The timing results obtained in this study are much in line with Muravyev (2006), who applies a simple simulation strategy for timing ability research and finds that Russian mutual fund managers do not posses superior timing ability skills.

6.3 Performance persistence

We try to find whether the mutual fund performance in Russia is persistent or not, using the winner-loser test, equation (4). Results obtained from the Log Odds Ratio test prove that there is a significant positive correlation between a latter and the former period persistence for years 2005-2006 (see Table 8), but no persistence in performance can be found in the period 2004-2005 and in the longer period of years 2004-2006.

7. Discussion and Analysis

Conducted research shows that we can not accept the hypothesis (at 10% significance level) that Russian equity mutual fund managers possess superior security selection and market timing skills, and, consequently, can deliver higher abnormal returns to the investors. The question whether mutual fund investors get some value added for their money spent on management fees still remains open.

Our research estimated not statistically significant positive security selection skills of Russian managers. However, this can be attributed to the conditions of booming Russian stock market for the period of analysis (2003-2006). Over the years 2003-2006 the Russian market grew more than five times. Statistically it means that for most Russian equities return distribution is skewed to the right and has mean greater than zero for almost all stocks. Consequently, there is a positive bias on constant term Jensen alpha estimates in the linear regression.

For example, Barinov (2003) in his paper examined the performance of Russian mutual funds before the year 2003, when the market was not growing so much rapidly. He found that the Jensen alphas for mutual funds are significantly lower in bearish market conditions, contrary to the opinion of some investors who believe that investing in mutual funds offers some insurance against downward market movements.

Analyzing the cash flows to Russian mutual funds, Barinov finds that the investors while choosing to invest into a mutual fund pay much more attention to the general market growth than to the abnormal return of a particular fund. He found that the positive relationship between the market return and the cash inflows to mutual funds is more pronounced than that between the abnormal return of a particular fund and the cash flows. Barinov argues that Russian equity fund managers have few incentives to try to find investments that will boost abnormal returns, as the inflow to their fund is anyway more dependent on the overall market tendency. One can argue that the dependence of cash flows on the general trend but not on the performance of a particular fund results in lack of incentives for Russian fund managers to deliver higher excess returns, which might partly explain the reported insignificance of the Jensen-alpha estimates.

Conducted estimations show that most Russian equity funds have a beta coefficient lower than one. This implies that fund managers choose equities that move differently than the whole market. Lower than a unit β values are in line with descriptive statistics: the average funds' standard deviation is lower than the market standard deviation. At the same time, the overall mutual equity funds' returns are almost at the same level as the RTS index, which means that mutual funds have high returns with a risk level which is lower than that of the whole market.

Small betas can partly be explained by the peculiarities of a NAV calculation by most Russian mutual funds (Muravyev 2006). Every fund has its own methodology of calculating NAV. However, most Russian mutual funds use as they call it a "fair" asset price, which is not the price of a last transaction but the mean weighted one. This aggregation leads to the positive correlation between today's NAV and yesterday's market index return (Muravyev 2006).

Small betas can also be attributed to the fact that almost all Russian equity funds according to quarterly reports hold up to 20% of their portfolios in cash (Muravyev 2006). Is not clear what factors make Russian fund managers hold so much cash. For example, Muravyev argues that keeping only 5% of assets in cash would be enough to satisfy the liquidity risk. Following Ferson & Schadt (1996), one of the potential explanations of large cash holdings is an ever growing money inflow invested into mutual funds by the public that is attracted by the booming Russian equity market. Consequently, it takes some time for managers to allocate the new money.

Edelen (1999) finds that the increase of the portfolio weight on cash causes the estimated market timing coefficients in the HM quadratic regression model to be biased downward. This can be a potential explanation of why the HM model estimated a much lower market timing coefficient in comparison to the TM model.

The panel data regressions (both HM and TM models) for all Russian equity mutual funds testing for the market timing ability of fund managers showed an opposite alpha coefficients (security selection) and gamma (market timing). Treynor & Mazuy model have not showed statistically significant at 10% confidence level positive security selection skills and negative timing. On the contrary, Henriksson & Merton model showed not statistically significant at 10% confidence level selection skills, but statistically significant small positive coefficient on timing skills of Russian mutual fund managers.

Several researchers have found similar feature that estimated alpha and gamma coefficients have opposite signs. For example, Jagannathan & Korajczyk (1986) show that naive strategies may exhibit option-like characteristics and hence have timing coefficients and alphas with opposite signs, as well as exhibit abnormal performance. Goetzmann, Ingersoll, and Ivkovic (2000) having applied the HM and TM models, and their adjusted test to a sample of 558 U.S. mutual funds in the period from 1988 to 1998 indicate that estimates of alpha and gamma move in opposite directions, i.e. the increase in the number of positive alphas (in the adjusted test) is accompanied by the decrease of positive timing coefficients for both the CAPM and Fama-French model (1998) with the 3 factors (market return, size and book-to-market factors). In addition Kon (1983) and Henriksson (1984) report a negative correlation between the selectivity and timing performance measures. While Pfleiderer (1983) noticed that a negative correlation could be induced by intra-period trading.

In our research we were using monthly data to examine the market timing ability of equity fund managers. However, some researchers argue that there is a potential pitfall for the research accuracy in using monthly data. For example, Goetzmann, Ingersoll & Ivkovic (2000) and Bollen & Busse (2001) provide evidence that the use of monthly data may fail to detect timing ability using the TM and HM models if timing decisions occur at a more frequent interval. Thus, the authors suggest that researchers do not find a market timing ability because they are using a monthly data to extract timing skill when managers are engaged in the more frequent timing decisions. Testing market timing ability of Russian equity funds managers using the daily or weekly return data might be another interesting topic for further research.

The question of choice of the correct model for estimation of timing ability of mutual fund managers remains open, as well as the choice of the right benchmark model. For instance, Goetzmann, Ingersoll and Ivkovic (2000) indicate that the specification based on the Fama-French three-factor model is less biased than those based on the CAPM. However, the intention of the authors was to test the market timing skills using the generally accepted CAPM model and the

question of comparison between the CAMP and Fama-French three factor model in terms of better and more accurate detection of market timing skills might be investigated in a further research.

Another improvement of the timing models is proposed by Glosten and Jagannathan (1994), who provide conditions under which the sum of the timing and selectivity components of performance can correctly estimate the average value added by a manager, thus using the sum of components of performance would result in more plausible results.

The conducted research showed that the past performance may convey partial information to potential mutual fund investors about future performance. Like some other researchers (e.g. Brown & Goetzmann (1999) found performance persistence in two out of three 3-year periods; Hendricks et al (1993) found performance persistence for next two to eight quarters) we found performance persistence only in particular periods for the particular time. Following this line, we agree with Giles at al (2002), who finds that the importance of persistence depends on both the time horizon and the sector in which the mutual fund is invested.

If we accept the hypothesis that the past performance contains to some extent valuable information on the future performance (which was only partly supported by our research), than we argue that the regulation should enforce each mutual fund to provide information on past performance measures regularly and clearly. It would be great if a user friendly information source on performance of mutual funds would be created, which would enable investors to make more efficient capital allocations. Moreover, stating terrific past performance in marketing communication to potential investors, mutual funds should have an obligation to emphasize that the past performance can not provide any guarantee for the future performance.

Regarding the possible future research in the field, it would be interesting to analyze funds after several years, when more monthly observations could be obtained for regressions. It also would be interesting to examine mutual fund performance not only in conditions of a booming market like in the period 2003-2006, but in conditions of a bearish or stagnating trend. One can expect intensified competition between mutual funds in the future and possible increasing consolidation, as there are definite economies of scale to be utilized by bigger management companies having several mutual funds.

8. Conclusions

This paper has examined the security selection and market timing skills of Russian equity mutual managers and persistence of mutual fund performance. The conducted research showed that on average Russian mutual fund managers do not possess superior security selection skills, although there was one fund identified that had statistically significant positive Jensen-alpha measure, what means that fund managers could indeed successfully select the best performing stocks in the period. However, this fact should be attributed mostly to the official strategy of this fund to invest in shares of power generation companies – which grew enormously in value during the research period – not to some superior security selection skills of fund management.

Two different models – suggested by Treynor & Mazuy and Henriksson & Merton – were employed to test for market timing skills of Russian equity fund managers. Running these models for particular funds we identified eight funds with statistically significant positive market timing skills, while only superior timing ability of two funds was supported by both models. Running a panel data regression for all funds together, the Henriksson & Merton model determined small positive market timing skills, while the Treynor & Mazuy model did not support the hypothesis of fund managers' ability to time the market.

We argue that large portion of cash in Russian mutual funds' portfolios; the skewness of Russian equities return distribution to the right, and usage of a monthly data (as opposed to a more frequent data) could influence the accuracy of the examination of market timing skills. The question of choice of the more appropriate model (e.g. Fama-French 3 factor model) and the market benchmark (e.g. not RTS) for the estimation of timing ability of mutual fund managers could be an interesting topic for further research.

Finally, we conclude that there was positive fund performance persistence between years 2005-2006, while no performance persistence has been detected in other periods.

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Appendix 1: Descriptive statistics on the Russian economy and Stock market

Table 1.
Funds descriptive statistics

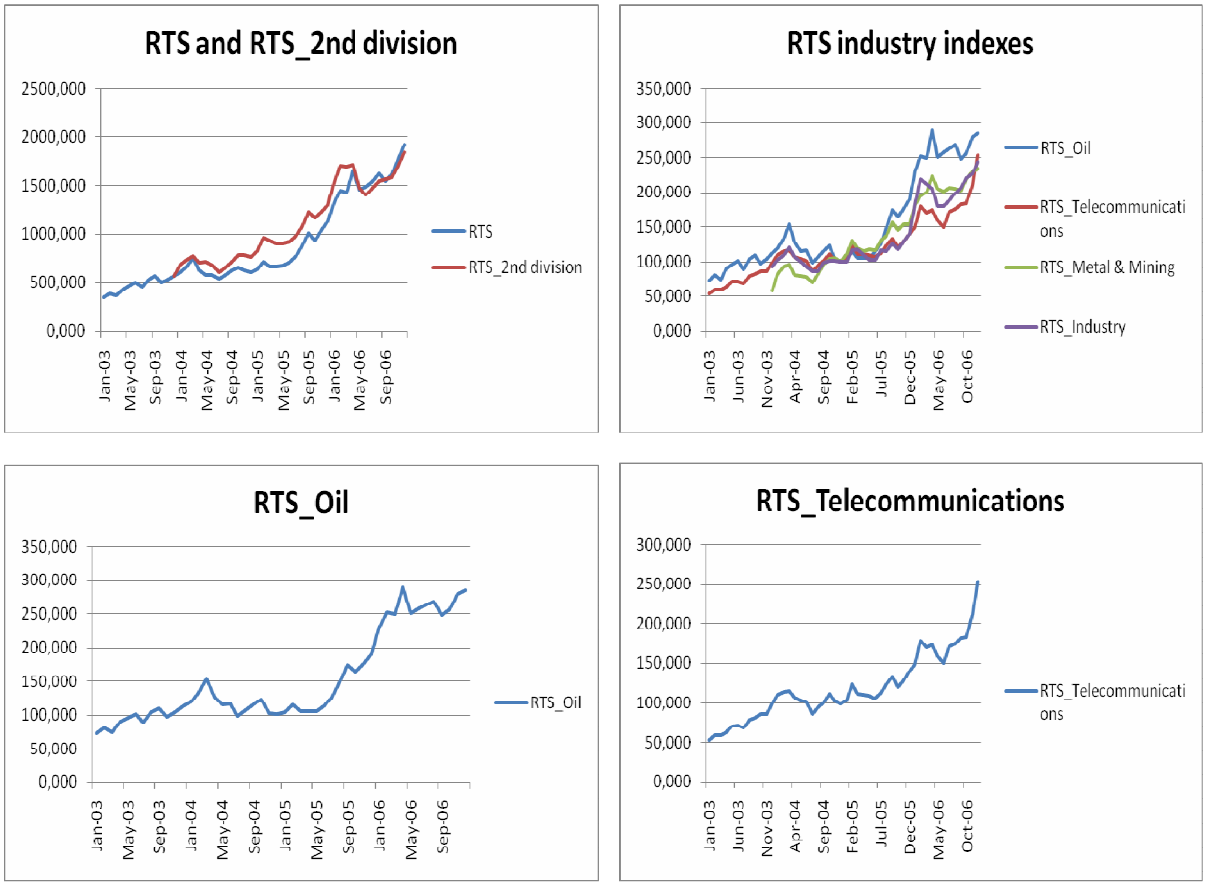
This table presents descriptive statistics for each and every fund that is included in our analysis, through period of Jan. 2003 and Dec. 2006. In the first and second column general information is reported: fund name and date of market operations start up. The third column reports average monthly return of fund since Jan. 2003. The forth column presents total fund size denominated in Russian rubles. Exchange rate at 31.12.2006 was equal to: 0,0289 RUB/EUR. The fifth column calculated standard deviation in monthly returns. The sixth and seventh columns conclude with lowest and highest monthly achievement for the reviewed period. *Source: www.investfunds.ru*

Fund name	Date of Establish-ment	Average monthly rate of return (%)	Size (in Rubles) At Dec. 2006	Standard deviation (monthly)	Min Monthly return value	Max monthly return value
АВК - Фонд акций	12.2003	1,53%	15785764,28	3,86%	-6,23%	13,49%
АВК - Фонд привилегированных акций	12.2003	2,29%	38519900,00	5,67%	-8,30%	10,75%
АВК - Фонд связи и телекомуникаций	09.2003	1,93%	34394870,00	7,36%	-12,42%	21,33%
АВК - Фонд ТЭК	09.2003	2,41%	147081830,00	6,81%	-9,49%	21,25%
АК БАРС - Доходный	12.2003	1,62%	35932790,00	5,93%	-12,49%	11,22%
Альфа-Капитал Акции	04.2003	3,32%	2770048790,00	7,12%	-11,72%	17,54%
Альянс Росно – Акции	07.2003	3,10%	694982570,00	7,14%	-11,40%	16,27%
Атон - Фонд акций	07.2004	4,13%	800361850,00	6,60%	-10,33%	15,61%
Базовый	07.2001	3,70%	235544160,00	7,05%	-8,87%	15,86%
БКС- Фонд Перспективных Акций	05.2000	2,20%	291954797,10	4,92%	-7,46%	11,35%
Долгосрочные взаимные инвестиции	09.1997	2,36%	97857500,00	6,44%	-13,74%	15,36%
Ермак – фонд краткосрочных инвестиций	11.2000	3,02%	103940720,00	7,10%	-10,87%	20,78%
Интраст Фонд Акций	07.2004	2,78%	31480731,52	4,69%	-4,84%	10,44%
КИТ - Российская нефть	01.2003	2,72%	525121020,00	5,92%	-9,29%	17,10%
КИТ – Российская Электроэнер-гетика	01.2003	3,79%	1477289590,00	7,06%	-11,69%	23,64%
КИТ - Российские телекоммуник-ации	04.2003	2,16%	230671750,00	6,43%	-14,71%	18,89%
КИТ - Фонд акций	08.2003	2,42%	694678030,00	5,92%	-10,34%	17,35%
Метрополь Золотое Руно	12.2003	2,97%	112553780,00	7,25%	-11,82%	26,25%
Мономах-Перспектива	12.1999	3,50%	360879460,00	7,17%	-13,30%	15,19%
ОЛМА - фонд акций	04.2004	2,55%	28821650,00	7,55%	-10,00%	15,79%
Открытие-Акции	01.2004	1,64%	68562960,00	6,58%	-13,71%	15,67%

Паллада – акции		2,78%	153109020,00	6,00%	-9,31%	14,93%
Петр Багратион	07.2003	5,94%	30155347,46	17,44%	-8,07%	90,86%
Петр Столыпин	01.2000	3,39%	4365618940,00	6,93%	-10,25%	18,05%
ПиоГлобал Фонд Акций	02.1997	2,61%	669817320,00	7,23%	-12,13%	13,79%
Пифагор - фонд акций	12.2003	2,36%	14928620,00	4,98%	-7,45%	12,87%
Регион Фонд Акций	06.2003	3,14%	108883190,00	6,27%	-9,74%	12,16%
Риком – акции	06.2004	3,63%	174062420,00	7,12%	-7,27%	23,24%
РУСС-ИНВЕСТ паевой фонд акций	09.2004	2,25%	57540570,00	4,78%	-5,57%	13,53%
Солид-Инвест	04.2000	3,90%	743853020,00	7,38%	-13,37%	17,79%
Сообразительный	03.2004	2,00%	5260390,00	7,00%	-10,42%	17,46%
Стоик	06.2003	3,25%	1193976050,00	7,53%	-9,95%	20,64%
Стремительный	03.2004	2,09%	5088900,00	8,13%	-14,04%	17,54%
Тольятти-Инвест Акций	04.2004	2,16%	28823580,00	6,09%	-10,82%	13,44%
Тройка Диалог - Добрыня Никитич	06.1997	3,60%	17646615730,00	6,70%	-13,05%	12,74%
ЦЕРИХ Фонд Акций	11.2002	3,26%	54270570,00	6,60%	-14,56%	14,03%

Figure 1.
RTS indexes

This figure plots RTS indexes (Russian stock indexes for different industries) for period from January 2003 until Januart 2006 on a monthly basis. *Sourse: www.rts.ru – Russian trading system. Stock exchange.*



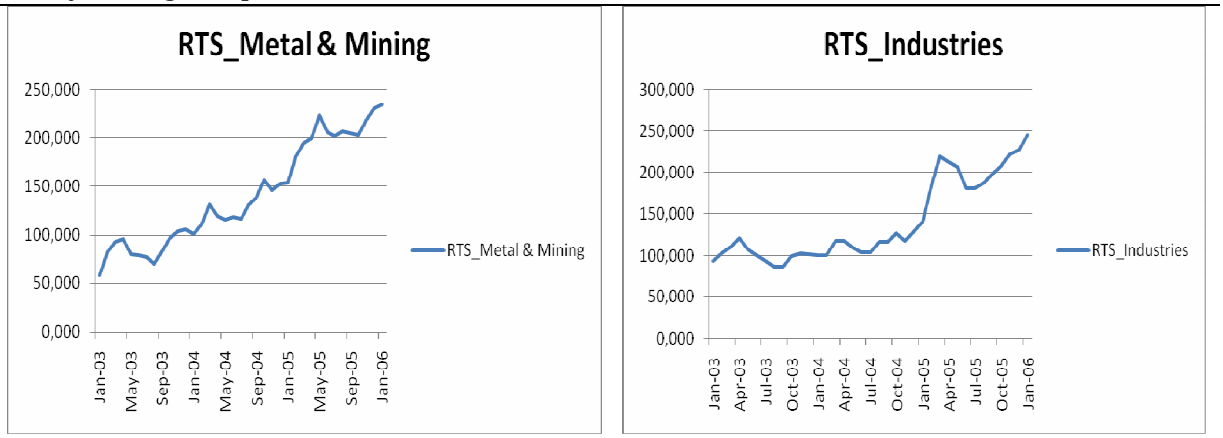
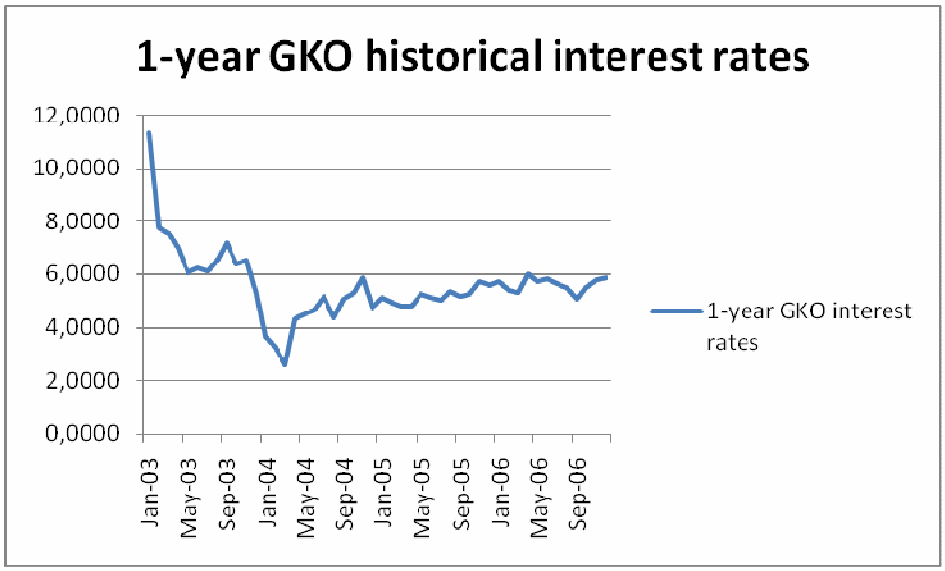


Figure 2.
GKO's historical interest rate level

One plots the historical interest rate level on Russian Government Treasury bonds (GKO's) that we employ in our analysis as a proxy for risk-free interestrate in Russian rubles. *Source: www.cbr.ru - Central Bank of Russian Federation.*



Appendix 2: Performance evaluation

Table 2.
Summary statistics of the Jensen measure for each fund
The security market line model

In the first column we present particular fund. Jensen measure for every fund is reported in the second column, with relevant P-Value in the third column. Beta estimates are present in the fifth column. All the corresponding P-values are Newey-West corrected.

Fund name	Jensen Alpha	P>|t|	Beta on RTS	P>|t|
АВК - Фонд акций	-.0639203	0.844	.3519495	0.000
АВК - Фонд привилегированных акций	-.1717408	0.725	.6106429	0.000
АВК - Фонд связи и телекомуникаций	-.2152283	0.817	.5571282	0.000
АВК - Фонд ТЭК	.1097784	0.842	.6796851	0.000
АК БАРС - Доходный	-.8075513	0.148	.5989005	0.000
Альфа-Капитал Акции	.1696398	0.672	.7965358	0.000
АльянсРосно - Акции	-.1502245	0.681	.8137461	0.000
Атон - Фонд акций	.0606255	0.815	.8448121	0.000
Базовый	.5306762	0.169	.7529073	0.000
БКС- Фонд Перспективных Акций	.2334642	0.642	.4198467	0.000
Долгосрочные взаимные инвестиции	-.5893817	0.144	.6924535	0.000
Ермак – фонд краткосрочных инвестиций	.0141254	0.980	.7061802	0.000
Интраст Фонд Акций	-.0611383	0.877	.5606379	0.000
КИТ - Российская нефть	.2320659	0.639	.5644356	0.000
КИТ - Российская электроэнергетика	**1.344997**	**0.042**	.5533032	0.000
КИТ - Российские телекоммуникации	.2284277	0.806	.4395031	0.000
КИТ - Фонд акций	.1755568	0.762	.5756428	0.000
Метрополь Золотое Руно	.6042103	0.535	.5804588	0.000
Мономах-Перспектива	.3819846	0.521	.7386084	0.000
ОЛМА - фонд акций	-.6274035	0.514	.8103245	0.000
Открытие-Акции	-.9575157	0.117	.6708947	0.000
Паллада – акции	.1691525	0.684	.5997754	0.000
Петр Багратион	3.530207	0.262	.5715535	0.000
Петр Столыпин	.1277013	0.262	.5715535	0.000
ПиоГлобал Фонд Акций	-.6961363	0.560	.789356	0.000
Пифагор-фонд акций	.3565384	0.617	.4731052	0.000
Регион Фонд Акций	.4077388	0.427	.6641567	0.000
Риком – акции	.0698273	0.877	.8023743	0.000
РУСС-ИНВЕСТ паевой фонд акций	-.0235962	0.970	.4536516	0.000
Солид-Инвест	.5999358	0.182	.7897374	0.000
Сообразительный	-.327728	0.662	.6820197	0.000
Стоик	.2925329	0.612	.8008506	0.000
Стремительный	-.6813306	0.368	.8405732	0.000
Тольятти-Инвест Акций	-.6006857	0.159	.6878549	0.000

Тройка Диалог - Добрыня Никитич	.5136057	0.293	.7287635	0.000
ЦЕРИХ Фонд Акций	.2753103	0.601	.700636	0.000

Table 3.
Summary statistics of the Jensen measure for the whole mutual fund industry.

Results are obtained using Panel data controlling for heteroskedasticity using the Generalized least squares (GLS) estimator.

	Jensen Alpha	P-value	Beta on RTS	P-value
Russian funds (36 funds)	.1498418	0.257	.6599046	0.000

Figure 3.
Frequency distribution of estimates Jensen Alpha's

The estimated Alpha's from security market line are grouped into intervals of values. The figure gives the percent distribution of the Alpha's.

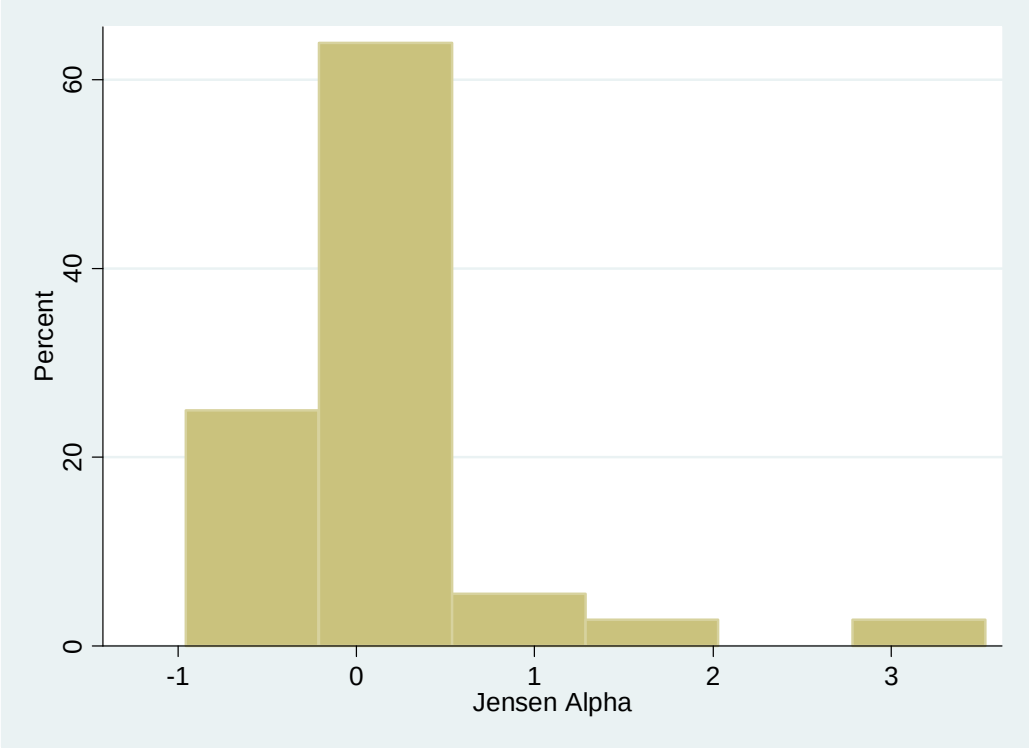


Table 4.

Summary statistics for each fund, indicating primarily investment industry.

By adding into Newey-West regressions additional RTS indexes (RTS oil, RTS utilities and telecommunication, RTS metals and mining, RTS industrial) we obtain statistics for industries on which each fund is focusing. In the table below, are presented results with statistical significance at the 5% level. In the second column are listed indexes with which every particular fund significantly correlates. The forth and fifth columns report corresponding betas and P-values.

Fund name	Index	Beta on RTS	P>|t|
АВК - Фонд акций	Oil&Gas	.2439973	0.040
АВК - Фонд привилегированных акций	Oil&Gas	.3902116	0.000
АВК - Фонд связи и телекомуникаций	Oil&Gas Telecom	-.1022916 .8616593	0.072 0.000
АВК - Фонд ТЭК	Oil&Gas	.5262445	0.002
АК БАРС - Доходный	Oil&Gas	.3637735	0.001
Альфа-Капитал Акции	Oil&Gas Telecom	.4384746 .1663177	0.000 0.068
АльянсРосно - Акции	Oil&Gas	.5533763	0.000
Атон - Фонд акций	Oil&Gas Telecom	.4044507 .1559253	0.001 0.043
Базовый	Oil&Gas Met&Mine _cons	.3070975 .1603449 .7103017	0.000 0.003 0.061
БКС- Фонд Перспективных Акций	Oil&Gas Telecom	.2256394 .2490349	0.008 0.002
Долгосрочные взаимные инвестиции	Oil&Gas Telecom	.4244953 .1745909	0.000 0.068
Ермак – фонд краткосрочных инвестиций	Oil&Gas Telecom _cons	.4381152 -.0543678 .6383612	0.000 0.003 0.073
Интраст Фонд Акций	Oil&Gas Industry	.2342655 .1407296	0.018 0.003
КИТ - Российская нефть	Oil&Gas	.4233691	0.001
КИТ - Российская электроэнергетика	_cons	1.69512	0.013
КИТ - Российские телекоммуникации	Telecom	.7036879	0.000
КИТ - Фонд акций	Oil&Gas Industry	.2338585 .3012606	0.025 0.011
Метрополь Золотое Руно	Telecom Industry	.5106663 .3161064	0.001 0.001
Мономах-Перспектива	Oil&Gas Telecom	.2916663 .4086543	0.000 0.000
ОЛМА - фонд акций	Oil&Gas Telecom Met&Mine Industry	.4599881 .2995941 -.2150142 .1847092	0.000 0.000 0.038 0.009
Открытие-Акции	Oil&Gas Telecom Industry	.3686492 .2161138 .1712458	0.008 0.054 0.036
Паллада – акции	Oil&Gas Telecom Met&Mine	.2464552 .3321262 -.1208467	0.001 0.007 0.054
Петр Багратион	Oil&Gas	.2725768	0.005

Петр Столыпин	Oil&Gas	.5350265	0.000
	_cons	.690185	0.042
ПиоГлобал Фонд Акций	Oil&Gas	.4899184	0.000
	Telecom	.2483406	0.006
Пифагор-фонд акций	Oil&Gas	.2646945	0.019
Регион Фонд Акций	Telecom	.346416	0.000
	Met&Mine	.1835545	0.000
Риком – акции	Oil&Gas	.3616131	0.019
	Telecom	.2609922	0.025
РУСС-ИНВЕСТ паевой фонд акций	Oil&Gas	.1481233	0.036
	Telecom	.2742532	0.051
Солид-Инвест	Oil&Gas	.43642	0.000
	Telecom	.27394	0.019
	_cons	1.100417	0.046
Сообразительный	Telecom	.2427182	0.034
Стоик	Oil&Gas	.510572	0.000
	Met&Mine	.1514223	0.001
Стремительный	Telecom	.4178514	0.004
Тольятти-Инвест Акций	Oil&Gas	.1902204	0.030
	Telecom	.2109832	0.007
	Industry	.188446	0.033
Тройка Диалог - Добрыня Никитич	Oil&Gas	.4501754	0.000
	_cons	1.431574	0.004
ЦЕРИХ Фонд Акций	Oil&Gas	.3305546	0.000
	Telecom	.2545879	0.006
	_cons	1.048974	0.087

Appendix 3: Evaluation of Timing ability

Table 5.
Summary statistics on selection and timing ability (Treynor and Mazuy (1966) model).

Selectivity is measured by Jensen's Alpha, which is reported monthly in the second column, with corresponding P-value in the third column. The forth column are fund betas, with P-value for them in the fifth column. The timing ability parameter is presented in the sixth column, while evidence for timing ability requires Beta RTS^2 to be positive and significant. All the corresponding P-values are Newey-West corrected.

Fund name	Jensen Alpha	P>|t|	Beta RTS	P>|t|	Beta RTS^2	P>|t|
АВК - Фонд акций	-.4433847	0.466	.3382111	0.000	.005553	0.435
АВК - Фонд привилегированных акций	-.1887894	0.745	.6100257	0.000	.0002495	0.954
АВК - Фонд связи и телекомуникаций	.2183638	0.837	.5691193	0.000	-.0062295	0.620
АВК - Фонд ТЭК	**-1.426094**	**0.061**	.6432821	0.000	**.0189118**	**0.063**
АК БАРС - Доходный	-.1989968	0.799	.620933	0.000	-.0089054	0.407
Альфа-Капитал Акции	-.2053669	0.593	.784554	0.000	.0052599	0.413
АльянсРосно - Акции	-.285653	0.594	.8088547	0.000	.0019352	0.710
Атон - Фонд акций	.4615241	0.139	.893675	0.000	**-.008569**	**0.039**
Базовый	.9797852	0.112	.7716115	0.000	-.0062214	0.324
БКС- Фонд Перспективных Акций	.6423778	0.369	.4368769	0.000	-.0056646	0.341
Долгосрочные взаимные инвестиции	**-.7901425**	**0.070**	.6840923	0.000	.0027811	0.577
Ермак – фонд краткосрочных инвестиций	.3916718	0.459	.721904	0.000	-.00523	0.501
Интраст Фонд Акций	-.3437792	0.495	.5261886	0.000	.0060413	0.174
КИТ - Российская нефть	-.3660097	0.506	.5395273	0.000	.008285	0.149
КИТ - Российская электроэнергетика	1.247634	0.194	.5492483	0.000	.0013487	0.894
КИТ - Российские телекоммуникации	.991106	0.290	.4638715	0.000	-.0106974	0.358
КИТ - Фонд акций	-.4351475	0.413	.5589714	0.000	.0088934	0.293
Метрополь Золотое Руно	.1287341	0.875	.5632444	0.000	.006958	0.432
Мономах-Перспектива	.6104261	0.328	.7481224	0.000	-.0031645	0.754
ОЛМА - фонд акций	-.0896867	0.946	.8621508	0.000	-.0103918	0.249
Открытие-Акции	-.1526967	0.835	.7003885	0.000	**-.0116552**	**0.051**
Паллада – акции	-.2866125	0.531	.580794	0.000	.0063136	0.126
Петр Багратион	5.84064	0.299	.6550028	0.001	-.0330154	0.355
Петр Столыпин	-.3489143	0.313	.7585856	0.000	**.0066024**	**0.077**
ПиоГлобал Фонд Акций	-.4242815	0.421	.8006781	0.000	-.0037659	0.636
Пифагор-фонд акций	.1566025	0.844	.4658666	0.000	.0029258	0.638
Регион Фонд Акций	.1761511	0.739	.6557921	0.000	.0033093	0.548
Риком – акции	-.4266638	0.576	.7501631	0.000	.0098644	0.429
РУСС-ИНВЕСТ паевой фонд акций	-.3056509	0.724	.4195812	0.000	.0058197	0.466
Солид-Инвест	.7833464	0.151	.797376	0.000	-.0025407	0.704
Сообразительный	**-1.853621**	**0.053**	.6295682	0.000	**.0223463**	**0.007**

Стоик	.1486626	0.812	.7962266	0.000	.0020026	0.801
Стремительный	-.5073538	0.579	.8465535	0.000	-.0025478	0.819
Тольятти-Инвест Акций	.1974584	0.751	.7647817	0.000	-.0154248	0.111
Тройка Диалог - Добрыня Никитич	.58391	0.229	.7316915	0.000	-.0009739	0.913
ЦЕРИХ Фонд Акций	**.7716736**	**0.095**	.7213082	0.000	-.006876	0.401

Figure 4.
Frequency distribution of timing ability estimates applying Treynor and Mazuy (1966) model

The estimated Betas on excess market return squared from the extended by Treynor and Mazuy security market line are grouped into intervals of values. The figure gives percent distribution of the Betas.

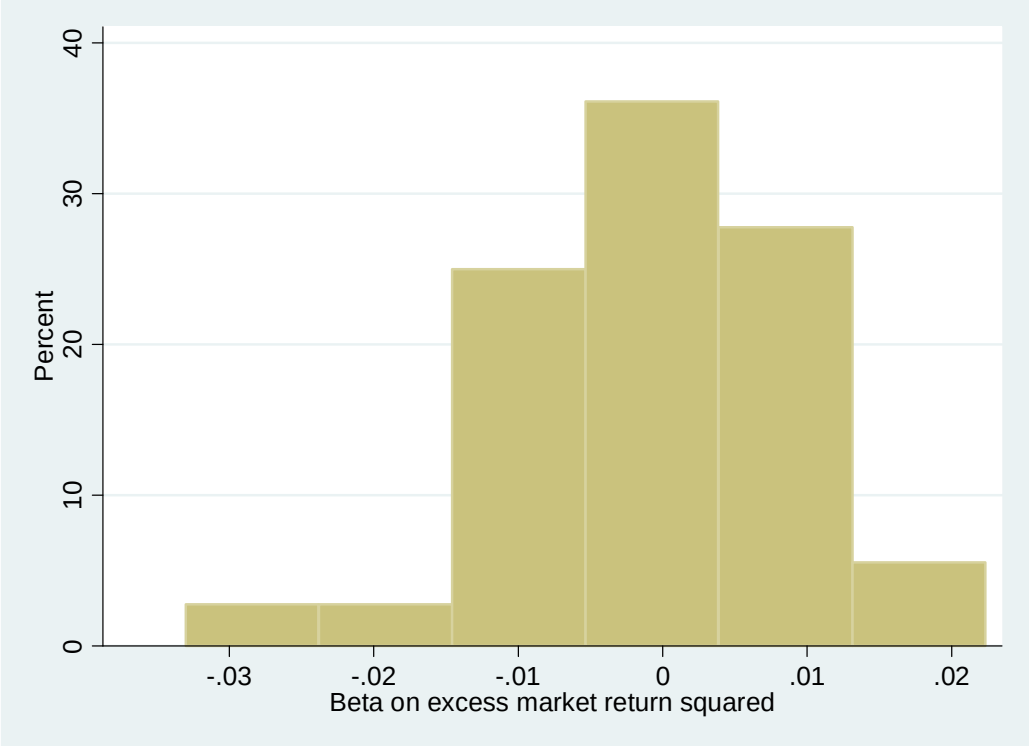


Table 6.

Summary statistics on selection and timing ability (Henriksson and Merton (1981) model).

Selectivity is measured by Jensen's Alpha, which is reported monthly in the second column, with corresponding P-value in the third column. The forth column are fund betas, with P-value for them in the fifth column. The timing ability parameter is presented in the sixth column, while evidence for timing ability requires Beta RTS_max (one represents all the positive monthly fluctuations as percentage difference between opening and closing points) to be positive and significant. All the corresponding P-values are Newey-West corrected.

Fund name	Jensen Alpha	P>|t|	Beta RTS	P>|t|	Beta RTS_max	P>|t|
АВК - Фонд акций	-.745623	0.4	.2381378	0.022	.195469	0.380
АВК - Фонд привилегированных акций	-.363848	0.593	.5785703	0.000	.0550841	0.694
АВК - Фонд связи и телекомуникаций	-.1556612	0.896	.5665646	0.028	-.0167369	0.958
АВК - Фонд ТЭК	**-2.365452**	**0.053**	.3223477	0.079	**.6337903**	**0.066**
АК БАРС - Доходный	-.3340849	0.749	.6779466	0.000	-.1357599	0.641
Альфа-Капитал Акции	-.6291441	0.252	.6718939	0.000	.2189231	0.246
АльянсРосно - Акции	-.7629021	0.243	.7146316	0.000	.1716329	0.238
Атон - Фонд акций	.4702847	0.297	.9390427	0.000	-.1414216	0.287
Базовый	.6874386	0.385	.7777612	0.000	-.0425165	0.813
БКС- Фонд Перспективных Акций	.4409465	0.669	.4527419	0.000	-.0562725	0.794
Долгосрочные взаимные инвестиции	**-1.082043**	**0.070**	.6143447	0.000	.1336175	0.474
Ермак – фонд краткосрочных инвестиций	.162225	0.845	.7296606	0.000	-.040167	0.886
Интраст Фонд Акций	**-1.164971**	**0.040**	.306732	0.000	**.3810627**	**0.001**
КИТ - Российская нефть	-.8662644	0.309	.3903012	0.008	.2978848	0.178
КИТ - Российская электроэнергетика	.2296391	0.855	.3764691	0.065	.3025031	0.349
КИТ - Российские телекоммуникации	.8098722	0.469	.5302315	0.034	-.1593568	0.604
КИТ - Фонд акций	-.8787433	0.300	.408038	0.016	.2978071	0.290
Метрополь Золотое Руно	-.9682717	0.274	.31793	0.131	**.4508874**	**0.102**
Мономах-Перспектива	.383625	0.669	.7388684	0.001	-.0004449	0.999
ОЛМА - фонд акций	-.1450122	0.938	.9117627	0.000	-.1583098	0.625
Открытие-Акции	.2424628	0.765	.8709691	0.000	**-.3432183**	**0.085**
Паллада – акции	-.5678972	0.347	.4829201	0.000	.1998997	0.184
Петр Багратион	6.347945	0.376	1.027387	0.140	-.7893491	0.486
Петр Столыпин	-.6181147	0.238	.6601902	0.000	.2022772	0.123
ПиоГлобал Фонд Акций	-.4528829	0.533	.8279226	0.000	-.0659742	0.761
Пифагор-фонд акций	-.2289593	0.804	.3753553	0.017	.1678833	0.429
Регион Фонд Акций	.1106458	0.884	.6160951	0.001	.0832264	0.698
Риком – акции	**-1.533259**	**0.108**	.459052	0.003	**.5280082**	**0.071**
РУСС-ИНВЕСТ паевой фонд акций	-1.022924	0.290	.2246007	0.104	**.3429709**	**0.089**
Солид-Инвест	.4934675	0.531	.7728574	0.000	.0288759	0.896
Сообразительный	**-3.328276**	**0.023**	.1829837	0.389	**.8676661**	**0.011**
Стоик	-.3786587	0.618	.6962486	0.000	.1840312	0.428
Стремительный	-1.268956	0.245	.7428423	0.000	.1699232	0.562

Тольятти-Инвест Акций	.0585372	0.948	.8264775	0.000	-.2163419	0.432
Тройка Диалог - Добрыня Никитич	.3444795	0.634	.7019495	0.001	.0458697	0.857
ЦЕРИХ Фонд Акций	.5720168	0.382	.7476773	0.000	-.0804716	0.741

Figure 5.
Frequency distribution of Gamma estimates applying Henriksson and Merton (1981) model

The estimated Gamma's from the extended by Henriksson and Merton security market line are grouped into intervals of values. Positive Gamma shows that fund managers are able to assess adequately information in the market and make correct decisions. The figure gives percent distribution of the Gamma's.

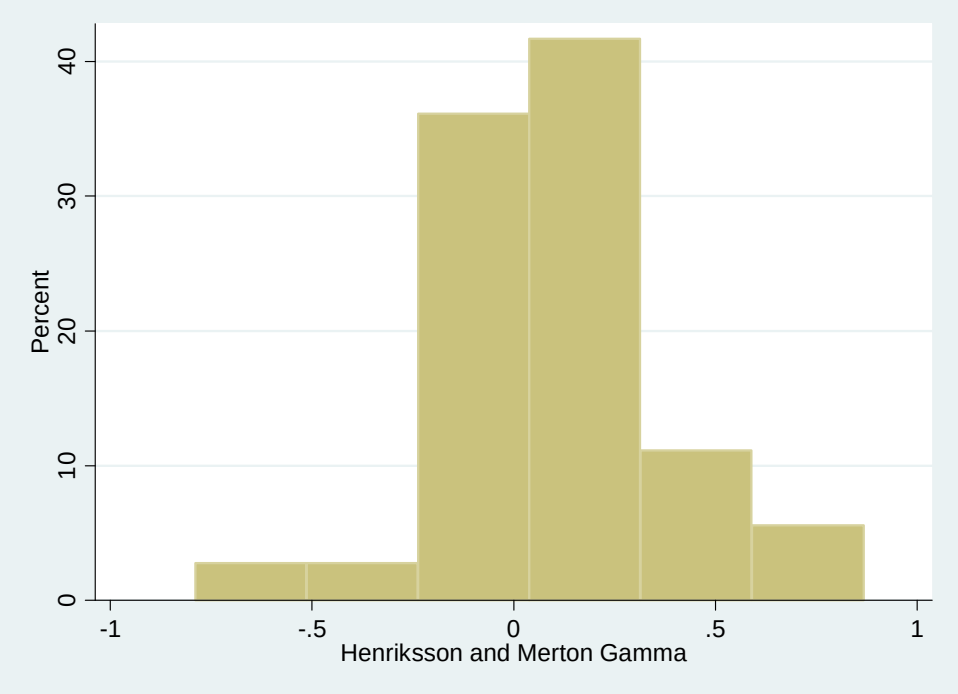


Table 7.
Summary statistics of the Jensen measure and timing ability for the whole mutual fund industry using Treynor and Mazuy (1966) model

Results are obtained using Panel data controlling for heteroskedasticity using the Generalized least squares (GLS) estimator. The column six represents beta for variable RTS index squared.

Treynor and Mazuy (1966) model	Jensen Alpha	P-value	Beta on RTS	P-value	Beta on RTS^2	P-value
Russian funds (36 funds)	.1587637	0.368	.6602886	0.000	-.0001302	0.939

Table 8.
Summary statistics of the Jensen measure and timing ability for the whole mutual fund industry using Henriksson and Merton (1981) model

Results are obtained using Panel data controlling for heteroskedasticity using the Generalized least squares (GLS) estimator. The column six represents beta for variable RTS index using only positive monthly return.

Henriksson and Merton (1981) model	Jensen Alpha	P-value	Beta on RTS	P-value	Beta on RTS_max	P-value
Russian funds (36 funds)	-.2196019	0.369	.5986941	0.000	.1042265	**0.072**

Appendix 4: Performance persistence

Table 9.
Log Odds Ratio test.

The sample is split up into 3 intervals 2004.01-2004.12, 2005.01-2005.12, 2006.01-2006.12. LOR is Log Odds Ratio test defined as LOR=ln((WW*LL)/(WL*LW)).

Total return	WW	LL	WL	LW	LOR	P-value
2005-2006	14	12	1	1	5.123964	0.001
2004-2006	7	7	7	7	0	0.99
2004-2005	8	7	6	7	0.287682	0.71