

INFLUENCE OF NEW FACTORS ON THE RUSSIAN STOCK MARKET

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Abstract. The current study examines the influence of unqualified investors' operations on pricing processes in current conditions of the Russian stock market, to assess the reliability of market efficiency theory in terms of a massive influx of irrational investors (unqualified investors). For the period of 17th September 2013 to 12th January 2021 we applied approaches of technical analysis namely: logical inference, selection and grouping information, data analysis, and generalization. To determine the influence of irrational investors' operations on a pricing process in the Russian stock market.

The current study proposes using the noise trading model for forecasting prices on the Russian stock market, and to explain the pricing process in the market. Furthermore, this result can be used to analyze trends and behavioral patterns in the Russian stock market.

Keywords: fair pricing, rational investors, irrational investors, unskilled investors, fundamental factors, non-fundamental factors, interest rate, inflation, market efficiency theory, noise trading theory.

Introduction

The financial literature discussed the factors that change the stock price, the effect of each factor or group of factors on the stock price, and on the investors' savings.

This topic is particularly discussed in periods of sharp changes in stock price such as The Asian financial crisis, the Global financial crisis, the economic recession after the annexation of Crimea, and the Coronavirus pandemic. These periods carry new factors that had no effect on the stock price in economic stability periods.

Nowadays, in conditions of restrictions imposed by the economic close after the Coronavirus pandemic, a trend of price change has actually been formed in both the local financial market and international financial markets, as a result of investors' buy/sell decisions to specific financial assets.

Price trends create opportunities for rational investors to get abnormal returns, guided fundamental and technical analysis the rational investor estimates, the factors that affect the securities price, and the fair price of the security. Thus, the rational investor achieves abnormal return by taking investment opportunities in securities that overvalued, or undervalued.

Studies of Al Saady W. (2020), Semenkova E. (2018), and Podgorny B. (2017) indicate that there are a large number of irrational investors (speculators) in the Russian stock market. The current study examines if this could influence the change in the pricing model in the Russian stock market, and whether following market efficiency theory would be appropriate when a rational investor chooses analysis tools and models.

Literature Review

Neoclassical finance theory embraces that underlying paradigm asserts that financial systems in equilibrium. So, the investors circulate their capitals to achieve the highest rates of return. In other words, the paradigm states that the stock value reflects the present value of the firm's expected future net cash flows capitalized appropriately Modigliani F. and Miller H. (1958), Fama E. (1970), and Weston F. (1989).

Alfano S. et al. (2020) argues that investor is not rational paying attention to his own signals, and disregard the other signals, even when these other signals can be inferred from prices.

Hirshleifer T. et al. (2008) assume that investors have bounded rationality and they focus exclusively on a firm's reported earnings, while ignoring other numbers and economic signs.

Focusing more immediately on the subject of the study (the Russian stock market), Podgorny B. (2017) concludes that professional investors (dealers, institutional investors, and assets managers) are mostly speculators.

Lomakin I. et al. (2018) point that a large proportion of foreign investors in the Russian stock market are speculators looking for arbitrage opportunities in international markets. Mirkin Ya. et al. (2015) carries a mention that there is a large number of speculators in the Russian stock market. Thus, a fair estimate is that the majority of investors in the Moscow Exchange can be regarded as speculators.

The current study discusses the influence of irrational investors' operations on a pricing process in the securities market, it considers the application of the main provisions of the efficient market hypothesis in current conditions.

Data and methods

Under the influence of fundamental factors, changes take place in the Russian stock market, forming a new reality for investment.

The current study analyzes the effect of the following fundamental factors on the paradigm of pricing in the Russian stock market:

- 1) The joint effect of the volatility of the interest rate and inflation on the Russian stock market;
- 2) The effect of income tax on individuals deposits on the Russian stock market;
- 3) The Effect of adding individual investment accounts (IIS) on the Russian stock market;
- 4) The behavioral motive that increases the risk tolerance.

The study sample covers the period from 17.09.2013 to 12.01.2021. The monthly data of the MOEX stock index and individual investment accounts were collected from the official website of the Moscow Exchange (RTSI Archive), the monthly data of inflation, and interest rate were collected from the newsletters of the Bank of Russia. Tax data were collected from the official website of the Ministry of Finance of Russia.

The natural log of the ratio of the closing prices was used for the monthly index frequencies to produce a time series of continuously compounded returns, such as that:

$$\text{Log } R_t = \text{Log} \left(\frac{P_t}{P_{t-1}} \right) \quad (1)$$

Where $\text{Log } R_t$ – the natural log of closing prices; P_t , and P_{t-1} represent the value of the index at time t and $t-1$, $t \in \{1, 2, \dots, X\}$. Where X represents a natural number for any month during the study period.

- 1) The joint effect of the volatility of the interest rate and inflation on the Russian stock market:

The analysis of the interest rate dynamics as a basic instrument of monetary policy from 17.09.2013 to 12.01.2021 shows that the interest rate high volatility is positively related with increase/decrease of inflation.

Figure 1 shows the relationship between inflation and the interest rate from 17.09.2013 to 12.01.2021 creating a unique opportunity for the market investors to get a practically risk-free return.

The interest rate is 4.25%, while the annual inflation is 4.4% according to the Central Bank of the Russian Federation [Newsletters of the Bank of Russia A, B]. Based on this information, the current study estimates a slight increase in annual inflation until the middle of the first half of 2021.

It is clear that the convergence between the interest rate and inflation increase the investors' risk tolerance in the Russian stock market. Therefore, changes occur in the financial market. Thus, low-interest rates joint with high inflations are creating a new investment reality. As a result, the Russian stock market gets more attractive to the capital of the irrational investors.

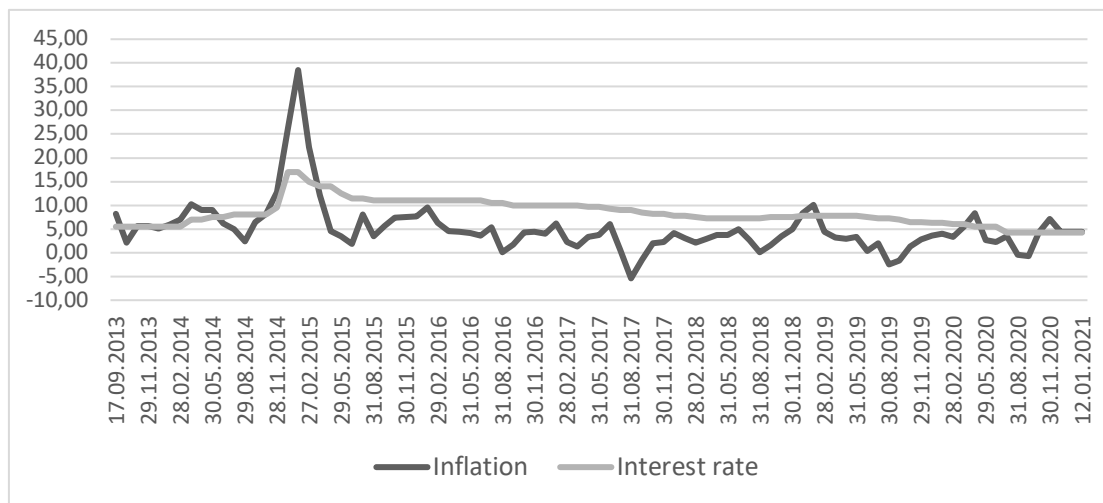


Figure 1. The relationship between the inflation and the interest rate of the Central Bank of the Russian Federation

Source: Newsletters of the Bank of Russia [Bank of Russia A, B].

2) The effect of income tax on individuals deposits on the Russian stock market:

Another reason attracting unqualified investors to the Russian stock market is adding an income tax on individuals deposits in the commercial banks.

Guided by the principle of fair taxation, since the beginning of 2021 an income tax has been established for deposit holders on the interest income they receive. The tax rate is equal to the income tax rate (i.e., 13%), however, the object of taxation is a percentage of interest on deposits in commercial banks that exceed the non-taxable interest income¹. Undoubtedly, changes in the tax law will motivate an influx of unqualified investors to the Russian stock market.

Also, it can be assumed that the restrictive procedure as a result of the COVID-19 virus limited the demand and the current consumption. In this regard, there is an increase in Russian citizens' savings, on the other hand, they were motivated by attractive investment opportunity to deposit in individual

¹The non-taxable amount of income is set at the average interest income on the deposit in the amount of 1 million rubles for the taxation period from 01.01.2021.

investment accounts(IIS)², that are used by unqualified investors to invest temporarily in risk-free funds.

3) The Effect of adding individual investment accounts(IIS) on the Russian stock market:

Adding IIS makes the Russian stock market more attractive to investors. So, it is easy to notice that at the end of 2018 there were 597 thousand investors in IIS accounts. In August 2019 the millionth IIS account was registered on the Russian stock market, then in December 2019, the number of IIS accounts reached 1.5 million. This notice provides empirical proof on the IIS account as an attractive instrument in the Russian stock market.

It should be noticed that investment in SII that is overly popular in the market now could be so risky because what is happening is unsustainable. The Global financial crisis 2007-2009 and the Big depression 1929-1932 happened because debt growth rates were unsustainable creates paradigm shifts that most investors get caught overextended doing something overly popular and get really hurt. On the other hand, the institutional investors (such as Sberbank and VTB Bank)are expert enough to understand these shifts. Thus, they navigate them well or at least protect themselves against them.

4) The behavioral motive that increases the risk tolerance:

There are always unsustainable forces that drive the stock market paradigm. In the Russian stock market from 17.03.2015 and 11.11.2020 the MOEX returns are stationary between 0.8 support and 1.2 resistance limits as shown in figure 2.

Furthermore, the MOEX returns volatility increases in periods of financial crises namely: the economic recession after the annexation of Crimea from 21 November 2013 to 11 February 2015, and the coronavirus pandemic from 20 February 2020 till now, but the MOEX returns do not break the limits of support and resistance limits mentioned above.

Thus, the use of technical analysis and fundamental analysis will lead the investors to achieve abnormal returns in the market. Also, this result gives solid evidence to reject the weak-form efficiency in the Russian stock market. As the return series is stationary.

²Individual investment accounts IIS: is a class of retail investment arrangement first introduced in 1999 in U.K., the accounts have favorable tax status. Payments into the account are made from after-tax income, then the account is exempt from income tax and capital gains tax on the investment returns, and no tax is payable on money withdrawn from the scheme. [the Ministry of Finance of Russia, 2020]

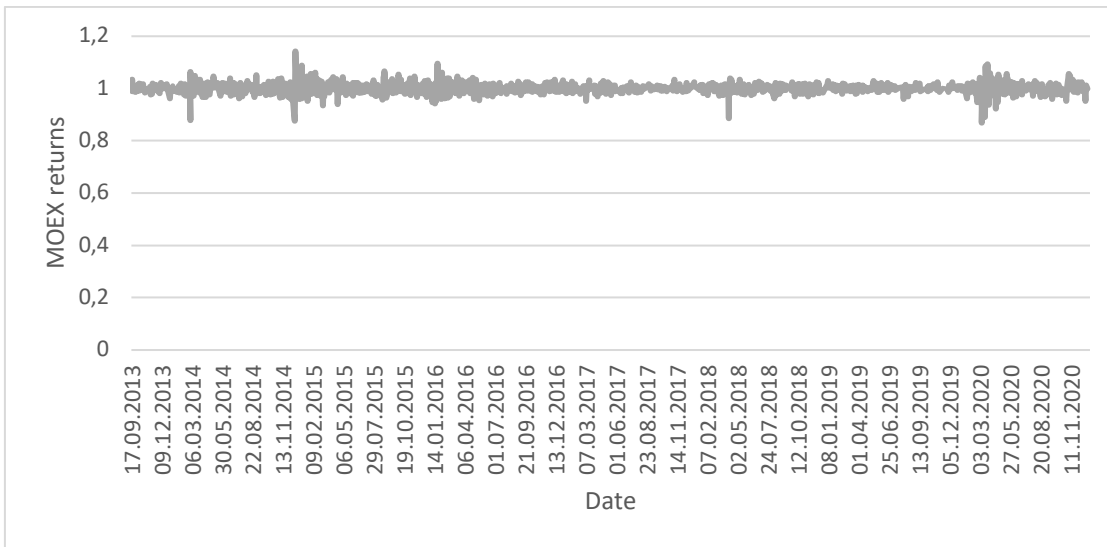


Figure 2. MOEX returns volatility from 20.11.2020 to 29.12.2020

Source: Source: Prepared by authors (Moscow Exchange, 2020A)

While At the end of November 2020, a non-financial factor affected prices in the Russian stock market, when the investors in the Russian stock market were dominated by global positive news about vaccine development against the COVID19, and the recent news of U.S.A elections.

Figure 3 shows an increase in risk tolerance of the investors in the Russian stock market from 20.11.2020 to 29.12.2020. Due to the U.S.A elections results and the news about the vaccine against COVID19. As MOEX returns remained relatively positive during that period and broke the resistance limit 1.2 three times.

This result spots the light on that the unsustainable forces that drive the Russian stock market paradigm. Stay long enough for people to believe that they will never end even though they obviously may end at any time. As in our case, an investors' emotions changed due to the positive news.

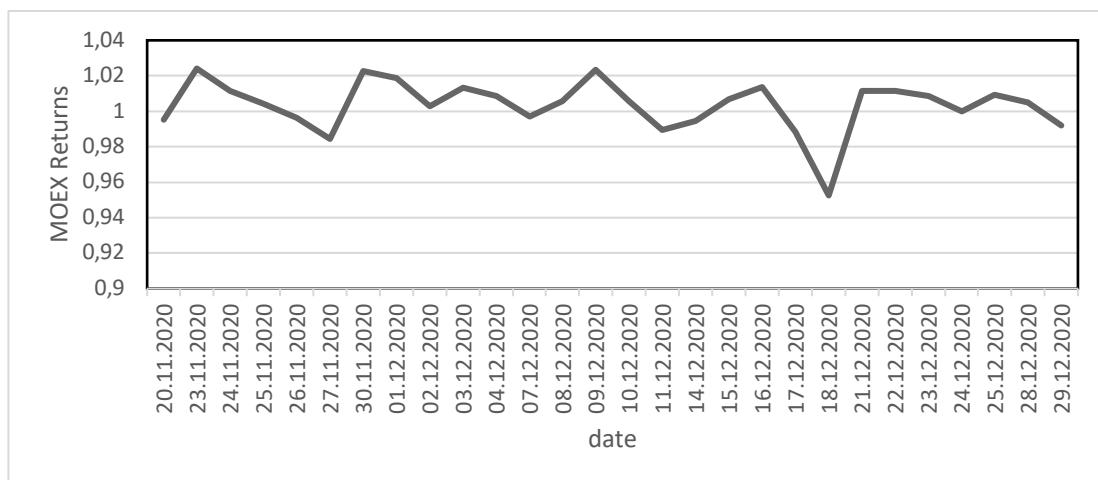


Figure 3. MOEX returns volatility from 20.11.2020 to 29.12.2020

Source: Source: Prepared by authors [Moscow Exchange, 2020B]

Discussion

The current study discusses the basic concept that determines the ability of the market to establish a fair (equilibrium) price of financial assets.

According to the market efficiency theory of Fama E. (1963), when evaluating information structures, and the process of editing stock prices according to new information, the main hypothesis is the rational behavior of investors.

Factors as an announcement of new information cause volatility in the stock prices. Starting an anomaly in the market efficiency theory Watts R. (1973), and Benartzi S. et al. (1997). Therefore, the new information drives an arbitrage chance between the market price and the fair price.

Thus, the rational investor gets a chance to achieve abnormal returns by buying shares when their fundamental valuation is lower than fair price (the market undervalues the shares), and selling shares when their fundamental valuation is higher than it is fair price (the market overvalues the shares).

Fama E. (1996) argues that according to the market efficiency theory, a long-term return anomaly are economically and statistically marginal. So, arbitrage chances are limited and difficult to access, However, the current study argues that is right if the market investors are rational, as the market efficiency theory assumes. But in the Russian stock market the results of Mirkin Ya. (2015), and Alsaady W. (2020) assume that the majority of investors are speculators (irrational investors).

The current study argues that the influx of unqualified investors into the Russian stock market will raise the numbers of irrational investors, whose financial decisions follow emotions, conjectures, rumors, crowd orders, blind faith, and so on.

Guided by such estimates, most often irrational investors reinforce existing anomalies in the market. As a result, the market price of overvalued share will rise, while undervaluation will fall, and arbitrage operations of the rational investors will never bring the share price to its fair value.

Figure 5 shows fundamental factors that increase the share of unqualified investors in the Russian stock market in a generalized form.

In 2020 those factors lead together to a security price increase of 6.7% in the Russian stock market, taking into account factors such as March collapse due to falling in the crude oil prices and lockdowns around the world to limit spreading the COVID19.

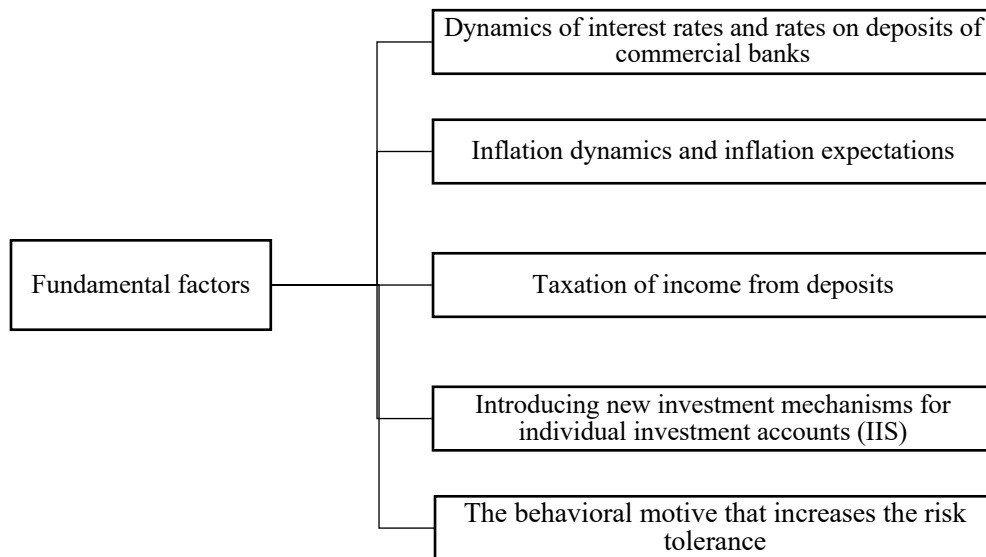


Figure 5. Fundamental factors that increase the share of unqualified investors in the Russian stock market.

Source: Prepared by authors.

Taking this result into account, the current study assumes that testing the Russian stock market efficiency will never show its effectiveness, even in a weak form of efficiency, as a result to prevalence of irrational investors in the market.

Therefore, a different pricing paradigm seems promising in the Russian stock market, namely the theory of noise trading De Long B. and Magen K.(2009), Schleifer K.(2009), Wildman J.(2003), the current study suggests that use of noise trading theory can explore those models of price behavior, which large market operators impose on irrational investors.

Conclusion

The current study examines the influence of unqualified investors' operations on pricing processes in current conditions of the Russian stock market to assess the reliability of market efficiency theory in terms of a massive influx of irrational investor.

Low-interest rates joint with high inflations, the new income tax on individuals' deposits, and the individual investment accounts(IIS) are creating a shift in the Russian stock market paradigm, as they make the Russian stock market gets more attractive to the capital of the irrational investors.

Furthermore, the MOEX returns volatility increases during periods of financial crises create an opportunity for the experienced institutional investor (who can carry the risks of investing in an inefficient market) to achieve abnormal returns at the expense of irrational investors whose financial decisions follow emotions, guesses, rumors, crowd orders, and blind faith, etc.

Testing the Russian stock market efficiency will never show its effectiveness, even in a weak form of efficiency, as a result to prevalence of irrational investors in the market.

This study suggests that use of noise trading theory can explore those models of price behavior, which large market operators impose on irrational investors.

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