**BE315E FINANSIERING OG INVESTERING**


# TRADER DECISION MAKING: CASE STUDY FOR IRRATIONAL TEHNOLOGIES

BY

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SPRING 2007

# ABSTRACT

Process of decision making is a difficult question in any area. It always lies in between object of decisions and psychology. As we found in this research trader decision making is not excluded. While it stays always important question as defines and changes a lot. In financial trading it involves fundamental, technical analyses, choice of strategy, set of risk control. In this paper we studied irrational technologies as an approach to decision making on financial markets.

Irrational technologies were found and applied by Urij Ichkitidze on Russian financial market in the years of 2001 – 2007 and is now under experiment. The aim of this paper was to try to prove application of this new idea by its detail description, comparing with a more generally accepted and usual way; analyze its performance and results for the stated years.

For this there was gathered a theoretic review of existing financial scientific trends in order to find a place for the studies idea. There was collected data on Russian financial market for the purpose of taking into consideration environment where approach was applied. It was followed by description of core idea of irrational decision making which has a deep insight in psychology of trader. Then there was presented thoughts that we managed to collect of other traders decision making processes, it turned out be unclear area for themselves. Finally we presented results of application of irrational technologies, the experience if Urij Ichkitidze for the stated period.

Results of the research showered difficulties for traders in understanding their decision making – collecting and interpreting data, forecasting and acting, selling/buying. Irrational technologies were proved applied and successful, were proved different from usual approach, were considered hard and daring technique.


**Key words:** decision making, financial markets, irrational technologies, intuition, trader.

# ACKNOWLEDGEMENTS

*I would like to express my gratitude to Urij Ichkitidze who made this research possible due to his ideas and help, made work on this paper interesting and made me learn and understand lots of things.*

*I would like to thank my supervisor Øystein Gjerde who let and helped me to write this paper on such unusual topic and fulfill this research the way I wanted.*

Bodø, May 22, 2007

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# 1. INTRODUCTION

*In this chapter we ground relevance of studying irrational technologies as a new trend in financial science, we define problem statement of this paper as an attempt to prove application of this trend by the description, comparing and analysis of its background in trading on Russian financial market by Urij Ichkitidze.*

## 1.1. RELEVANCE

If we take a closer look at financial dimension – it is an eternal dispute of theory and practice. History of financial theoretical background begins with its first attempt to explain reality of market functioning, efficiency hypothesis - rational investor, random price walk, equilibrium tools (capital asset pricing model, Black-Shoeles option pricing model etc.). Then came financial bubbles (bubble in American stocks in the 1920s, Dot-com bubble of the late 1990s, Nifty Fifty stocks in the early 1970s, Taiwanese stocks in 1987, Japanese stocks in the late 1980s) which brought public attention to the matter as much as big gains and big losses. They are one of the main empirical problems for efficiency hypothesis, the most quoted examples of classical approach failures, and the incontrovertible evidence for the opponents. I won't judge their real importance. As I will not defend any of the trends I will later describe in the paper. The same way as I did you can study materials on financial theories and debates and see a large gap in understanding between practice and theory.

New trends emerged to explain bubbles, and other fickle postulates of the classical approach and graspless empirical cases, and to find new ways of treating market and trading (behavioral finance, chaos and fractal theory, reflexivity approach, irrational technologies).

## 1.2. PROBLEM STATEMENT

In the paper I aim to study one of the new trends of financial approach to capital market understanding. It will demand a close theoretical consideration and a strong empirical verification. The purpose of my research is to *check practical application of the theory. Based on the case study of the company performance detect core difference of its way to meet investments decisions from the classical approach upon irrational expectations.*

This paper bears practical meaning while the studied approach is more of a practical application. Theoretic basis is introduced in order to understand the place of the new trend in historic and

scientific perspective. All the rest of collected information is used for its description and analysis in order to see how it is implemented and how could be different.

## 1.3. BACKGROUND

The new trend that I am going to investigate is the reflexivity approach and irrational technologies applied on the Russian capital market by Urij Ichkitidze, Saint-Petersburg, Russia.

- 1999, he found out about the reflexivity theory as all the others from The Gorge Soros book Alchemy of Finance, first published in 1987. He was a student at that time but felt it was interesting for him.

- 2000, he worked as a financial analyst in the AVK investment company.

- 2003, he worked as a trader in the investment company Altra, studied philosophy and psychology.

- 2004, he founded the reflexivity.ru project and became trader on the market of options and futures. From that time till December 2006 the project return on investment amounted up to 712%.

- January - December 2004 – return is 115%, 2,94mln. rubles. The largest return of the strategy was achieved during November - December period, market trending down. RTS index fell by 18% and the project return amounted to 70% (hedging strategy).
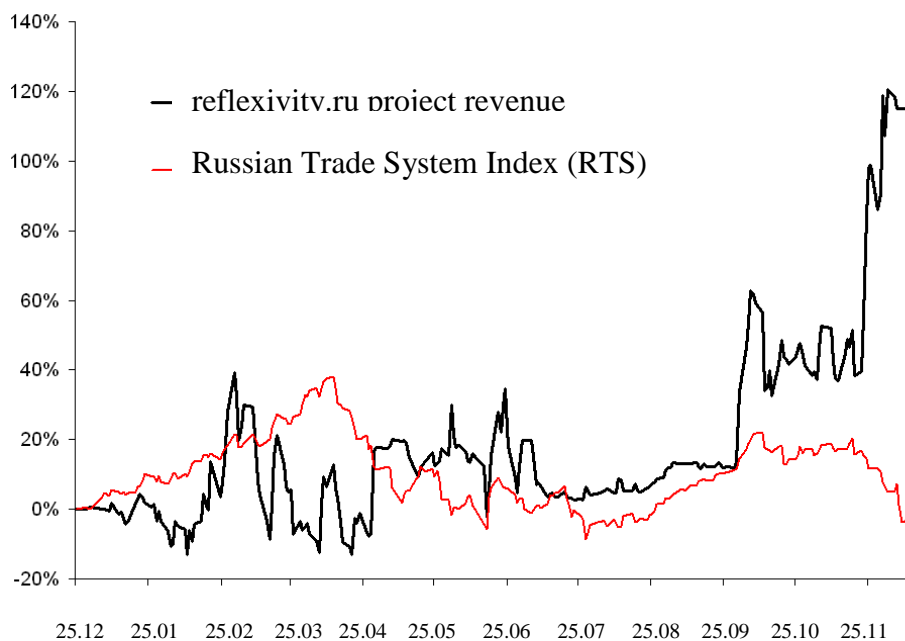


*Figure 1. Results of the reflexivity.ru strategy for 2004 (www.reflexivity.ru)*

- January 2005 - first quarter 2006 – return is 499%, 11,103mln. rubles. During this period return was earned upon a long-term Russian stock up-trend and was higher that RTS index.
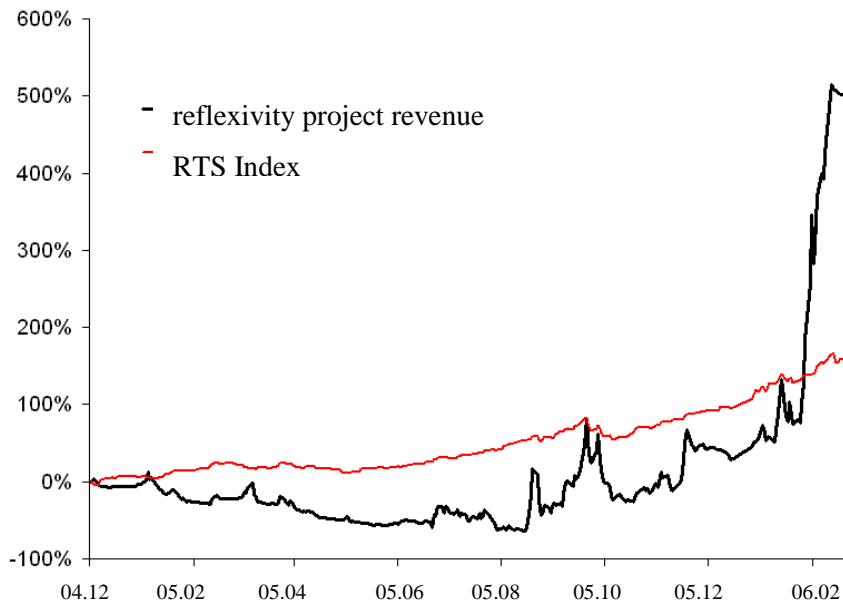


*Figure 2. Results of the reflexivity.ru strategy for 2005-2006 (www.reflexivity.ru)*

- 1 April – 29 December 2006– return 96%, more that 6mln. rubles. Upward Russian stock trend.
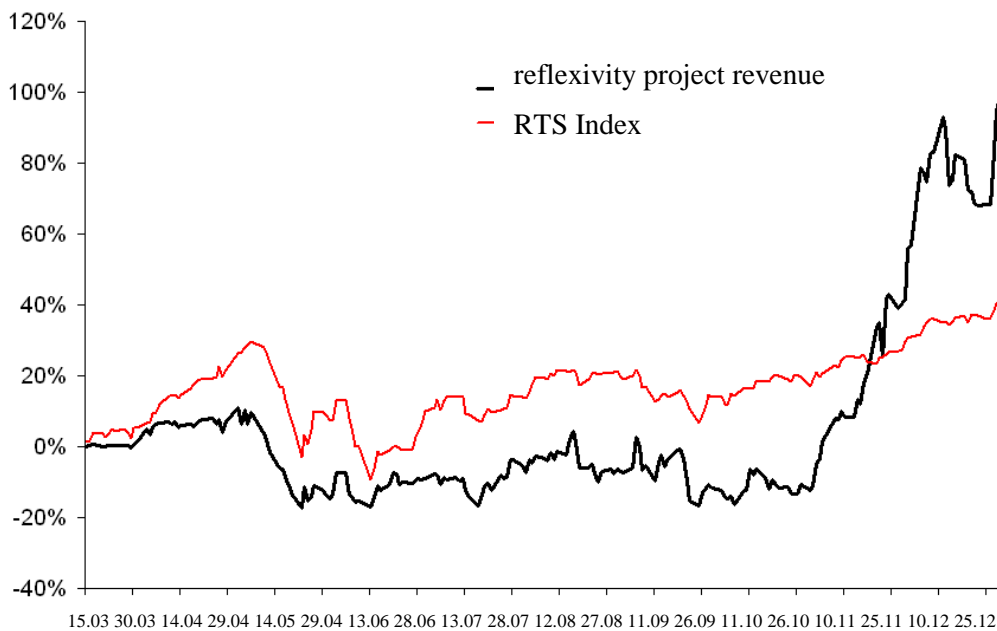


*Figure 3. Results of the reflexivity.ru strategy for 2006 (www.reflexivity.ru)*

- January – April 2007 – strategy followed the up trending Russian stock market, oil industry. But oil prices decline, overall Russian stock market decline made it clear, that this hypothesis was not proved true and state 15,6% loss.
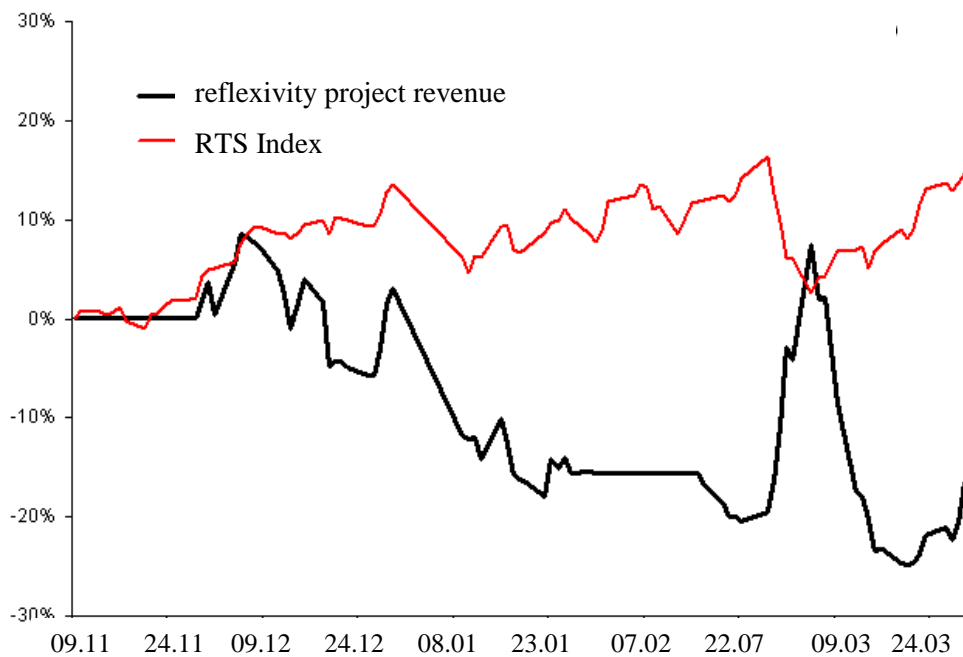


*Figure 4. Results of the reflexivity.ru strategy for 2007 (www.reflexivity.ru)*

Those results looked fascinating for a deeper insight on how it is done, when and who could achieve such results. At the same time with leading the project Urij holds a research upon the strategy. It would be more correct to say, that the project bears practical, experimental meaning for the theory. So it was just a matter of time that waited for such an overview of the results – both theoretical and practical dimensions of the case. And shall I be honest – unlikeliness of the returns, their financial supportability, scientific justification with emphasis on extraordinary psychological schools, and non-stop abyss between "seeing is believing" for financial academicians made it clearly ready for a research like this.

## 1.4.  Logic of the Research

In order to fulfill the aims traced before I shall command:

- a drawing of a theoretic perspective of finance of today and define the place of reflexivity and irrational technologies, find the roots and reasons of their origin and actuality. summing up of the theoretical material available to describe process of trading decision making process like fundamental and technical analysis;

- explanation of the methodological background for empirical data collection and research design;

- data presentation – theory and practice in finance sometimes are poorly connected, thus theories introduced in the theoretical chapter of the paper ground descriptive models of the financial market functioning and the model seen for the principal by the case studied here. I see such explanations for this – first, that it is due to the financial dimension characteristics mentioned above, that practice and theory are often disconnected; or that this process is deeply practical and individual so that each trader decides how he is doing it on his own and upon his own experience. While for the purpose of the research there was not found much of the theoretical material that could describe the process of trader behavior, stages of his decision making and variants of his strategies – all the information about this process was placed in the empirical part as collected by the means of interviews and search of the secondary data sources;

- analysis. this chapter bears premium significance answering the problem statement – finding out how reflexivity and irrational technologies applied bring those results in practice. this will be executed by *detailed description of the method of the investment decision making in accordance with the external factors (fundamental analysis of the experiment environment) and comparing it to the more classical approach and common results;*

- conclusion gives final results of the strategy, of the research on the whole, estimates limitations and takes a look into possible future development scenarios.

# 2. THEORY

*This chapter presents an overview of financial scientific trends, their development and connection from rational hypothesis and effective markets, to behavioral finance and chaos theory. It defines then place of the studied idea. Finally it gives a ground description of irrational technologies with their foundation on principles of reflexivity theory and its core notion in intuition development through personal development of a trader.*

This chapter is an attempt to make a review of the scope of existing trends of financial theories upon financial market functioning like rational hypothesis, efficient market, random walk hypothesis, behavioral finance, chaos theory and fractal theory applied for financial markets. As the central notion of the paper is trader decision making all these trends are introduced in order to show development, variety and joints of theoretical ground for decision making on financial markets. They are all connected by the course of history and subject of research. I have to note that usually they are neither presented this way in the classical books on finance, nor in any finance history collection, the scope presented here is rather a study of different sources prepared specifically for the purpose of this research. This theoretical review serves for the purpose of a search for the origins of development of the new trends and I would say dimensions, as they cover not only finance but several scientific areas.

The case of this paper takes for theoretical background reflexivity theory introduced by George Soros, and irrational technologies, introduced by Urij Ichkitidze. Appearance of these trends reflects very well the logic of the financial science historic development - from theoretic assumptions and hypothesis for explanation of the functioning of the capital markets and their participants which simplified real game in order to ground emerged explanations, up to their first practical refusing, inability to explain those practical cases and criticism and new trends as attempts to study finance as a deeply practical dimension from other points of view. Those points of view had to take in scope other dimensions like psychology and physics and try to introduce new explanations for real notions as believed that assumptions and simplifications made the previous classical generally accepted theory irrelevant. Thus reflexivity was developed by Goerge Soros as a philosophical deduction, he intended to apply it for explanation of the general logic of the historic development and used it to justify some phenomenon of capital markets and stressed upon the role of its participants. Irrational technologies developed in Russian reality (presented in the empirical part of the paper), nevertheless and all the more searched for explanation of the real situation and taking into consideration emotional traits of market participants, concentrating already on decision making process. Urij accepts chaos theory as theoretical justification of the general laws (this theory has in scope very general physical

patterns and broad statistical investigations) and capital markets in particular, develops idea of reflexivity on financial markets and applies deep psychological background for investor/trader decision making.

That is a perspective. Its description lets us find and understand place of irrational technologies on the field of finance, its theory and practice. Theory and practice is a very complicated for finance question. Mostly they are so much far away that do not each other to exist – academics don't care what is going on in the reality, practitioners prosper without any theoretical support. For me development of irrational technologies is one of the examples, when practice was first explained by theory and then this theory influenced creation of the new practical approach – some kind of interaction. I suppose that we are not to wait anything more from these relations, while even though in the case of irrational technologies financial theory had a great influence for the practical approach, usually theory is no more than some kind of variable or constant that exists outside of the practical reality. Practitioners looking every day at the price, index, volume charts don't ask themselves a lot about where is the true equilibrium and what would a rational investor, their colleague do – no one is going to prove a theory of rational behavior and random walk if he sees a trend. The same is that no one will exclude emotions and feelings as a noise, because they know how it works and influences, when a trader is tired or not concentrated, when moves of big players first influence price, then traders' actions, when on Friday everyone is already on weekend, and Monday everyone is still there. Finally everyone understands that it is big names, big moves and big news that rule over the market and the a fare price that should reflect a fare value of the company – lots of them are over- or under priced and effective equilibrium takes a lot of time to turn them back to the true value (and the smaller the market, the bigger is this influence).

It is supposed that in the theoretical part of the master thesis we present existing scientific justifications for our research and we have the turn of our own point of view expression in analysis and conclusions, but I would have to mark that in the research here author's point of view starts already form the theory collection. This is due to the fact that there exist no list of scientific trends that argue for true explanation of how traders make decisions. It was only author's deduction that these theories are essential (probably there are more of the classical and alternative approaches omitted by this research), that it is necessary to have this review in order to define the place and goals of the new studied trend. There was not found any scientific source describing trader decision making as a process – of collecting information, analyzing it, applying tactics, hedging risks; only some separate mentioning and references in macroeconomics and

fundamental analysis, risks in the general financial theory, technical analysis. While the core goal of this paper is to investigate a new method of making investment decision, we have to take all that into consideration; but if analyzed all those steps in detail it would far away from the scope of this paper. So we in the empirical part we shall describe the process of decision making avoiding a too detail description; and for that purpose we won't present theoretical background for fundamental and technical analysis, risks and tactics here – as it has already been mentioned it is more an empirical than a theoretical data and it would be irrelevant to describe the whole theory of risks or options in order to use them very briefly later.

As this paper does not bear for a ground aim any criticism of any piece of the existing range of financial theories today, its theoretical part should not be treated as a logical development of what was wrong to what is right. Precisely, it will follow the historical trend of the financial theories development from the hypothesis of the effective market and rational expectations to the reflexivity model and irrational technologies only because it represents the natural way of their development. Any other layout of these theories would be, to my mind irrelevant, because would not catch the intuitional origin of their perception. Everyone knows that all began with efficiency theory. So I shall start with it. Moreover, I would insist, that only the existence and its strong recognition by the academicals made it possible for the new ideas to appear and to criticize. Description of the alternatives always begins with the disposition of the ground idea, which they criticize fist and then turn to the development of the new solutions to the situations that could not be explained by the existing background.

As a matter of fact, it is a classical way of the scientific motion. We try to give explanations to the life around. It turns out to be so complicated and tangled that we make assumptions, and display reductive versions. Naturally, they are not able to draw a complete picture of the world, they fail. Those failures form a basis for criticism and origin of something new. Finally there emerge a theory which includes all the ones existed before it in itself. It contains much less assumptions and much more complexities. That is nature's way.

## 2.1. EFFECTIVE MARKET HYPOTHESIS

In the world of finance this path begins with *effective markets hypothesis.* The solid postulates formulated in the USA by Fama in 1960s. Effective markets are because

- they give the true value of displayed assets, reflect fare prices, so fare prices give equilibrium and optimal resource allocation;

- deviations if any are random (random walk hypothesis), and no group of investors should be able to consistently find under- or overvalued stocks using any investment strategy, beat the market by earning abnormal returns; in addition, random walk hypothesis implies also that the evaluation of the prices cannot be predicted, and forecasting is impossible;

- prices accurately reflect extant information and participants expectations (there distinguish weak, semi-strong and strong sets of market information efficiency), prices change only in reaction to new information and rest unchanged in absence of it, so as new information is unpredictable price deviations are unpredictable – random walk; market prices already reflect all available information;

- participants are rational players and market suggests that a passive market portfolio buy-and-hold strategy finally gives the best result.

This is how generally efficient markets are presented in classical books on finance like Damodaran A., 2002, Kolb Robert W., 1996, Bodie Zvi, 2005.

Many tests and evidence have been brought as far as the theory was attacked first (event study, portfolio study, experimental studies on rationality). It is natural dew to the eventual proposition of efficiency – passive strategy without a big hope for larger than normal or none at all earnings. In addition there emerged cases that could be considered as controversial evidence for the theory, which could not be explained by its background and thus were called market anomalies (abnormal risk-adjusted returns, P/E effect, small-firm-in-January-effect, book-to-market ratios, post-earnings-announcement price drift). Here, I believe, lies the cornerstone of the never-ending debates between theorists and practical men on the financial arena. Many theorists, though never sometimes tried themselves in practice, argue that they are right and that their efficient market rules the world. At least in the world of financial academy. Thus, Fama and French explain the stated examples of efficiency failures by, for example, the fact that they may be related, or that can be manifestations of risk premiums or other. Practical men again bring forward new facts – theorists bring theoretical explanations.

## 2.2. BEHAVIORAL FINANCE

*Behavioral finance* is one of the trends that tries to explain yet unexplained. They approach criticism of the efficiency theory not at its ground postulates but rather from one side only – psychological characteristic of investors. Nevertheless it draws a lot of evidence against, but I would say against that sole postulate but not the whole theory. Here is the way behaviorists describe efficiency hypothesis in order to state their criticism subsequently. The following description and criticism are taken from the Introduction to behavioral finance, Andrej Shifler, 2000.

1) investors are assumed to be rational and hence to value securities rationally. As soon as they learn information about fundamental values of securities they respond to it upon rational risk-neutral attitude based on the financial instruments such as discounted cash flow of the net present value and thus bringing prices to their new equilibrium.

2) to the extent that some investors are not rational, their trades are random and therefore cancel each other out without affecting prices. this proposition relies fully on the assumption that strategies of the irrational investors are uncorrelated.

3) to the extent that investors are irrational, they are met in the market by rational arbitrageurs who eliminate their influence on prices. arbitrageurs prevent underpricing from being long-term by simple sort trading of under- overpriced securities.

Criticism. Preposition that investors are fully rational in their actions and decisions is hardly sustainable. For example, some react to irrelevant pieces of information. As the role of relevant information is crucial to complement the efficiency theory, we cannot underestimate it; and it in its turn gives a profound issue to dispute. Information is to a very high extent variable phenomenon, it relevance depends on time, source, its perception. All this affects the decision investor, even rational investor comes up with. Investors follow advices of financial celebrities, fail to apply financial instruments, fail to diversify, sell winning stocks, hold on to loosing ones and other.

- investors rationality preposition of the efficiency hypothesis is challenged by the research in the field of behavioral finance by a supposition that on the process of decision making people look not at the levels of final wealth, but gains and losses relative to some reference point, which displays loss-aversion. For example, notorious reluctance of the investors to sell stocks that lose value; or, investors' aversion to hold stocks generally. This phenomenon is best described by the Prospect theory of Kahneman and Tversky (1979). It brings evidence,

explains and mathematically simulates investors' behavior at decision making stage; investors' preferences and beliefs conform to the psychological evidence rather than the normative economic model ("investor sentiment"). The same was proved ad summarized by a research about feeling in investor decision-making (evaluating equity and stocks) by Lucey Brian and Dowling Michael (2005) for the Journal of economic surveys who based on Loewenstein, Schwarz, Zajonc, Isen, Bower, Damasio, Forgas, Thaler, Bentham, Simon and many others who wrote and investigated role of emotions in humans rationality and behavior.

Psychological evidence would be fatal for the efficient market, but for the second and the third proposition of the efficiency theory, which are both questioned by behavioral finance.

- irrational investors rather deviate in the same way – investors would not trade randomly, but on the contrary many of them would tend to buy same securities at roughly the same time; the "noise traders" behave socially and follow each others' mistakes by listening to rumors, for example; common judgment errors far from uncorrelated random mistakes.

- and the proposition of the efficiency hypothesis about the effective arbitrage trading doesn't stand the critics of the behavioral theory. real-world arbitrage is risky and thus limited, even here psychology of decision making prevents arbitrageurs from bringing only rational and economically approved deeds on scene. first, often securities have no close substitutes and thus there's no risk less hedge for the arbitrageurs (imperfect substitutes).

On the whole behavioral approach together with the Prospect theory (Kahneman and Tversky, 1979) approach investor behavior from its irrationality and examples brought forward by their research (like personal traits as forecasting, overconfidence, conservatism, sample size neglect and representativeness; dependence of the decision making upon framing of the questions, regret avoidance and other) explain a lot of biases in the theoretical explanation revealed by practice. Anyway behavioral trend pointed out importance of the role of investor and his decision making, that was - some biases can be explained by it, it can influence stock market functioning. We shall come back to it later.

## 2.3.  CHAOS THEORY, FRACTAL THEORY

Another necessity for a new paradigm in order to answer numerous questions was put forward by Edgar Peters and *theory of chaos and fractals* applied for financial markets (Edgar Peters, 1991).

He stresses on the extreme simplicity with which theorists of efficiency and rationality try to propagate explanation of reality.

- equilibrium. equilibrium is impossible in real world, it is a lack of emotions, it is tidiness and order not applicable for explanations of what is going on, it is death. linear equations that give a sole right solution. while life as more a like a nonlinear dynamic system with numerous equilibriums and critical levels under certain different conditions (logistic equation, Lyapunov exponent tests on indexes give evidence that capital markets are nonlinear dynamic systems);

- time. time is ignored as if markets and economies didn't have memory and events of today didn't influence future, in contradict to the long-term memory, trends and correlations and feedback effects (Herst statistics and tests on financial indexes of USA, Germany, U.K. and Japan showed trends availability);

- decision making. it is believed that we are irrelevant to what happened to us in past and that we don't play any role in shaping our expectations for future and future. it is believed we are rational and choose always correctly, never risk-seeking, subjective, react at once (linear reaction), predictable (investors' fundamental analysis gives them approximation of a range of fair prices, not a sole one, and investors sentiment over other investors' decisions revealed by technical analysis, thus investors' deductions create and hold a trend from today till tomorrow, till it hits an upper range and shifts) ;

- in addition, Peters introduces fractals structure (self-referential systems, geometry of chaos), and sensitive dependence on initial conditions (slight changes in initial variables lead to a far greater variability in future). fractal nature of the financial markets and its sensitiveness to initial conditions were tested on S&P 500, U.K., German and Japanese indexes and it finally contradicts  the efficiency market theory as well as its financial instruments like capital Asset Pricing Model, Arbitrage Pricing Theory, Black-Shoeles option pricing model, which depend on normal distribution.

Those critics and tests observe that in real life there are most likely no independent variables, but only one large interdependent complex system, applicable to the capital market too. Truly, we can draw a real mountain using laws of Euclidian geometry; we can't say history and experience play no role in our actions or in us. We won't agree to being not subjected by making emotional decisions, especially in the conditions of uncertainty, especially when a lot depends on this choice. We hardly resemble any of us the model human - rational investor.

## 2.4. REFLEXIVITY THEORY

*Reflexivity approach* continues the row of the efficiency hypothesis critics. It develops ideas of unreliability and failures of the classical approach and includes following common with the previous studies traits.

- one of the implications of the Peters research is that investors' behavior and fair price judgments influenced price changes. Behaviorists also pointed out as one of deductions importance of investor decision making for price changing process. Oppositely to the passive role of a rational participant of the capital market alternative to the efficiency hypothesis studies intuitively and consequently gave a decisive force to an investor.

- Peters' research on chaos theory also stressed upon complexity and interdependency of events, multiple equilibrium, trend development oppositely to the random walk, fare prices that reflect all information and effective markets which always react to this information.

These ideas keep on in reflexivity theory given a philosophical explanation and empirical evidence. In introduction to "The Alchemy of Finance", 2003 George Soros defines reflexivity as interference between two functions – participants' thinking and the situation in which they participate. In the situation participants, first, cannot have a perfect knowledge of the situation – what needs to be a fact to make knowledge possible, is in fact, contingent on the participants' view of the situation; second, acting they influence the given situation - participants' decisions relate to the future, and the future is contingent on the participants' decisions in the present. There is a circular logic, or circular feedback – we can't say that we have a concrete knowledge about future, because we are acting now, and our present deeds constitute to the state of future. Even if it happens, that expectations correspond to what really happens – to say that the expectations were made upon certain knowledge, is to deny reflexivity.

Soros Alchemy is an empirical work. He starts description from examples of his career success, analyses history – facts and their consequences, mostly financial anomalies (bubbles, volatility). He wrote all these by the time when he has already achieved undisputable success and prove. So that his work could be much criticized by academies, but could not be disbelieved as had for its background – history. His book provides a concept for explanation and justification, which finally bears no scientific reclamation. When he for the several times published his work he always doubted and explained his motivation, each time he changed some justifications for the

appearance of his idea. More precisely, to the last editions he said that they were needed because had a great success, because of his own success and celebrity. He later on argued that it was the aim of his life to justify scientifically, philosophically his experience, success and failures, his understanding of the world history, economy and capital markets functioning. The idea of dual process first seemed universal, then applicable only by special occasions, then reversed and reformulated. Anyway it is a point of view, a research of a practitioner, successful practitioner who believed theory to be somewhat important, who continually tested his ideas in his own life. Of course, if we try to apply it for casual circumstances we could argue that George Soros was a powerful player and could test any ideas he wanted, he could influence markets and make them do what he wanted – the following example is presented in About reflexivity of the financial market downloaded November 2006 from http://www.reflexivity.ru:

Let us consider a situation when there is a $Q_0$ stock volume on the market, and there are stock price expectations on the level of $P_f$. Then the market stock price reaches the area of the rational behavior according to these expectations. Let there be a crazy investor on the market who expects the fare stock price twice as big as the one shown by the market. Everyone tells him that it is crazy, that the market price optimal reflects market information and the stock cannot cost twice larger as it does. But he follows his expectations. He owns start capital $w_0$ and is ready to take a risk on it to defend his expectations. Creditor taking into account all his risks gives him loan for risky rate. And so, the crazy investor shows the demand for the stock and buys the stick volume $Q$, drives market stock price increase from $P_0$ to $P_1$.
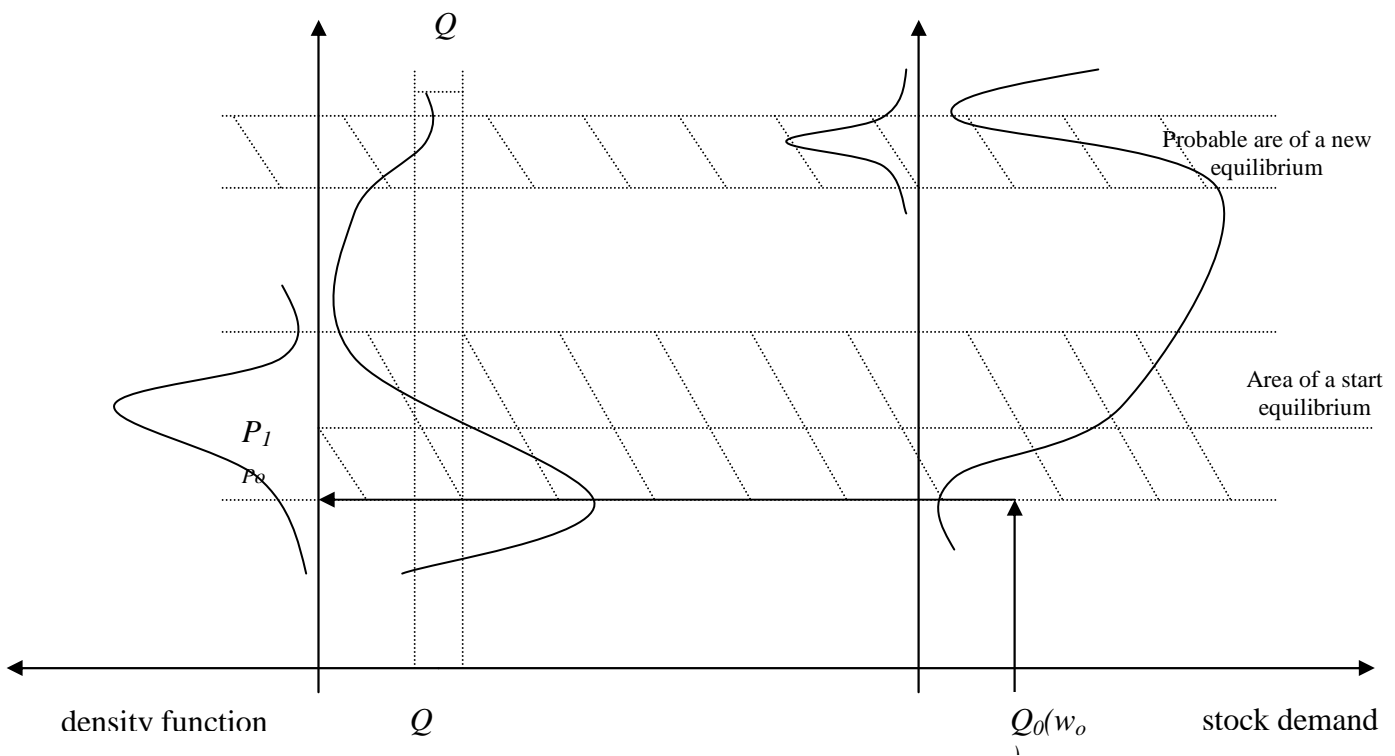


*Figure 5. Interference of the investors on the market with different expectations of the market price*

In this situation the crazy investor is in the reflexivity behavior area, and all the rest are in the rational. Thus the crazy investor creates an impulse – changes the market stick price by the change of his own demand fir the stock.

It is obvious that in this case the market equilibrium depends on the volume of the investor start capital. The more he owns the more he can change the price.

Afterwards the reflexivity behavior of the investor can either get developing, or eliminate. The first will happen if the same impulses from his side and from the side of other participants will lead to the price increase till the critical point of the other investors' expectations. This will change their behavior from rational to irrational and will lead to a collapse on the market when demand will extremely exceed supply and the prices will fly even higher. The new equilibrium will be only at the point where crazy investors will change their behavior for rational, consequentially the decrease of the demand will balance the reflexivity exceed of the demand from the part of the previous "kings" of the market.

Thus, by the reflexivity behavior market flows from one state to another. During this transition we can state considerable wealth redistribution between participants: those, who create impulse, in case of their success get profits; those who react too late - lose. This transition is the reflexivity process, where the previous stick price increase provokes its increase in future, and a market stock price trend appears as a result (market price at the process is auto correlated).

According to this mechanism we can say that the market stock price is the result of a certain fight of the market participants for the right to defend their expectations. The impulse creation can make the investor a king and lead to a defeat, in case the market starts going opposite towards him. The trend direction is defined generally by the market. Being in equilibrium, meaning, that the rational expectations of the participants dominate we cannot forecast the direction of the future trend we can only try to formulate it. But when the reflexivity process becomes more powerful, we can say that it most likely will continue, than stop. This creates persistence of the market price on the market.

We see in this example that reflexivity is temporary process on the market, in other words it is a trend. This example notes active role of investors in this process. This assumption was supposed to explain capital market bubbles. Soros also argued that even if reflexivity was not a permanent process and after trends reached their tops or downs markets usually turned back to its equilibrium during these processes there took place large capital redistribution between investors, between companies, plus levels of equilibriums could finally change.

The importance of this idea is indefinite. Academicals criticized it and didn't treat seriously. Practitioners knew that trends exist before this idea appeared and didn't need much explanation for it. I suppose we are still to see and understand it in future.

Urij Ichkitidze, the trader whose work experience constitute the case studied by this paper, took ideas of Soros' reflexivity for the further research and development of his own approach (Reflexivity concept on Russian market 2004, About reflexivity of the financial market 2005). And I believe that in his research reflexivity found another application than just a bubble explanation, central became its general logical implications. Apart from philosophical basis provided by George Soros he introduced a new idea – idea of irrational technologies and combined their application. At the same time with trading he carries out his own research and apart from empirical data I use his materials as theoretic basis also. But the to the same degree as Soros explained in his work that it was an attempt to arrange his experience to the theoretical frame, as none of the existing for the moment trends was neither sufficient nor satisfactory to his mind to be applicable for his experience, is Urij's research a way to find a theoretical basis for his view and manner to approach general life logic and to make decisions on financial markets in particularly. It is in the process of elaboration, foundation and testing in practice – it shouldn't be treated by academics as proclamation of a universal clue for explanation of all the peculiarities of today's finance and denial of the rational theory right for existence and functioning; it is one of the new attempts of a practitioner to explain his way of understanding and working with a backup of financial results. Moreover irrational technologies oppositely to reflexivity are a practical study of a trader decision making.

Irrational technologies have lots in common with other new trends of psychological, financial, philosophical trends, as broaches each of these dimensions – as it is usual for new trends to become more general, because modern science has developed to such specific areas that only an inverse process of generalization gives opportunity to scientifically explain complex real world phenomenon. It has its own specific traits – as one of the recent financial trends it studies the role of human emotions and feelings, traditionally excluded from the scope of scientific approaches as an irrelevant noise and so often recently noted as important factor for financial markets and for decision making in particular. It takes into consideration real world processes with real human participants and their real decision making. I could assume this is due to the practical approach, because only practice oppositely to modeling and simulating does not allow excluding of some factors.

## 2.5. IRRATIONAL TECHNOLOGIES

Even classical books on finance often finally state that rational hypothesis has lots of drawbacks because human behavior is the less described by rational systematic thinking, decision making and acting. More often it is based upon emotions and unconscious forces. For example, Shapkin A.S., Shapkin V.A. (2006) in Portfolio investments management, analyzing behavior of a financial manager mark that rational economic human described by classical economics is too limited in his actions and is then unreal. They argue that philosophy gives a more complete foundation for emotional human:

- he acts upon aims that are not in the range of efficiency and rationality, but are guided by human ideals and values;

- logic of the rational thinking works in the situations well know for a person, when he clearly understands his goals and capital;

- rational thinking approaches everything from the point of view of efficiency, thus taking into considerations means but not aims as life guidelines and common sense.

Thus a lot of research upon the role of investors' emotions and feelings in evaluation and decision-making presented in this chapter conclude that it can not be ignored as a noise. I would ague that upon the described above philosophical description from the point of view of a classical book on finance emotions and feelings influence human behavior not only in the process of decision making but also from long-term goals, lifetime values, whole system of understanding and approaching the world. Rationality as described simplifies human personality assuming that his behavior is always motivated by efficiency, that a human is able to percept information objectively and thus human behavior is pattern and stable, what according to the same philosophic description could be possible in a situation well known for a decision-maker, but probably not under pressure, risk and uncertainty. This, to my mind, makes rational decisions a special case of the common irrational human behavior.

In general philosophical ground of irrational technologies is close to general criticism of the classical economics and finance. It argues with it both ways:

- from the point of view of its general laws (equilibrium, fare prices, passive role of investor) and assumes the chaos theory (interdependence, time line, trends) and reflexivity (mutual

influence of investor perception and opinion on price, and of the price and market situation on investor valuation) as theoretical grounds for market functioning;

- and from the point of view of rationality (ignoring trader emotions and feelings as noise) as the only true way of interpreting investor behavior on the contrary it states upon the importance of this factor and moreover builds its systematic approach on the experiments with human feelings and emotions, profound psychological investigation.

We come back here to the importance of the human emotions and feelings, because *irrational technologies* is a psychological dimension. It was implemented by Urij Ichkitidze to describe the method he uses on financial markets (Intuition in investments decision making 2006). As I already mentioned this approach which we defined as a case studied by this paper is in essence an investment decision making of one trader, and is one of the rare examples in financial practice based upon theoretical background, theories of chaos and reflexivity. These two ideas as described before have common traits, both as new trends try to approach real situations, cover different dimensions while propose a much broader and complicated understanding of the applied financial markets and general logic of being. These ideas combined and transformed motivated development of irrational technologies – chaos theory was taken as a theoretical basis, while ideas of reflexivity, to my mind, became a part of irrational technologies.

As we shall see irrational technologies do not just take emotional constituent of a human nature into consideration for the analysis of decision-making process, do not accept the fact that it influences human actions; do not try to find out common patterns of this influence on order to predict biases from rationality because of this uncontrollable factor. Irrational technologies accept it as given and approach it from the opposite direction – *take financial situation as environment and investigate activity of emotions in it, their reactions to decisions of a trader and possibilities to control them and make them work for the aims of the trader*. Emotional constituent is a strong bias factor in any decision making, thus from the point of view of irrational technologies it becomes a strong supporting, decisive, powerful factor.

For the investigation of this decision making process one needs a very deep emotional involvement (for this is implemented experimentally, non of the theories can explain and predict emotions and feelings otherwise but empirically, especially it has never been done for the purposes of financial trading), clear understanding of the environment – financial situation, application of some psychological deductions and trends. Theoretical and philosophical basis for the studied approach has already been laid out. Emotional involvement – empirical data will be

presented in the empirical part together with the description of the financial situations when experiments took place and decisions were made. For this description I shall use a bit of technical and fundamental analysis, tactics and risk hedging as classical parts of trader decision making and traditional ways of description and analyzing financial situations for trading. Psychological trends applied in irrational technologies and their core concepts are presented further.

Let me start its description far from finance by an example.

A man doesn't have a car, but he really wants to buy it. He wants to have a good car, for example the one he likes – Volvo S80. So let a purchase of this car be his aim for this example. In the context he has some limitations:

- not enough money, even to take a loan (this is a fact);

- the fear that the he will break the new car, or that it gets stolen, and he does not want to spend money for insurance (expectations, that provoke fear);

- he thinks, it would be less expensive for him to use metro or public transport, than to spend money for fuel and other (expectations and beliefs).

So taking into consideration these limitations, the man sort of wants to buy Volvo S80, but limitations don't let him do it (no money, fears, negative expectations). And thus, concentrating on limitations, the man decides to buy a cheap car giving up his goal and acting in the field of his possibilities surrounded by limitations.

This example lets us define irrational technologies as technologies, that make people achieve aims which lie out of the bounds of his present possibilities. And rationality, on the contrary is behavior within given possibilities. Back to the example, the man behaved rationally when he bought a cheap car, while if he decided to buy the car he wanted, he would have to eliminate his limitations. Thus, breaking bounds on the way to achieve the goal is the application of irrationality, irrational technologies.

What are limitations?

1. Limitations form mans possibilities, which mostly mean "I know how". I want to make reparation works in my flat, but I don't know how to do parquert-work – I pay money to workers, and so I get what I wanted.

But if I get paid only $1000 for my job, I cannot afford to buy Volvo S80, even if I take a loan. How can I overcome this obstacle, if was never paid more? For this a man needs to get through his limitation of "I don't know how", employ irrational thinking.

Innovations, scientific progress are in breaking boundaries of "I don't know how". We use irrationality constantly in our lives, but mostly for special occasions and unconsciously. In economics, irrationality wasn't crucial until the speeds of doing business and innovations became very high and turned into competitive advantages.  Last 10-15 years accelerated competition to the level of constant innovation, renewal, irregularity. In the circumstances rational expectations loose their sense, for the future now has to be done and not predicted – and thus you either watch, what is going on, either do it. The new economy makes application of irrational technologies crucial, the underlying principal.

The same principal can be applied for financial activity. It is the area characterized by high speed of changes and processes, that demands high speed and quality of understanding those changes, finding out where they come from and which circumstances they behold, and, of course, reacting. You react first – you win, you grasp the wind changes – you gain success. Especially if you choose between financial markets those, which are most volatile and risky (for example, options and futures, for example, new emerging markets, like IT technologies, for example, small developing markets, like Russia) which finally give the highest returns and losses.

2. Risk and losses talk about negative results, which are extremely unwanted especially on big bets. This is one of the obstacles for developing irrational approach. Why limitations are the regular and ordinary? Salvation of those questions lies eventually inside of a personality.

3. Internal limitations reveal in the self patterns of what we like and what we don't like. This constitutes our personality and forms patterns of our perception. We aim to get what we like, and hide from what we don't like, and we spend a lot of energy on this process. The patterns of our perception make us weak, as if there are things that like and don't like, then we can easily be attracted to those that are positive or hurt through those that are negative. Thus we can be manipulated by someone, or something – by circumstances. The aims of irrational technologies is to learn not to spend forces for the conflict of giving patterns and for a further fight for what we like and escape of what we hate. We have to manage to understand our patterns, to recognize them and look at them from a side; at the moment when they come into play understand it, and just analyze, not to follow blindly what they tell us, not to spend energy for it. And with time the power of patterns over our actions weakens and we can

decide our selves independently from internal preferences. In economics those preferences are wealth and poorness, income and loss.

4. If a person manages to get through his preference limitations, the only limit for will be a fear, because in the irrational world everything will be unstable, unpredictable, constantly changing. Consequently from the irrational point of view we seek not a wealth, but the ways to reach it; thus we try to reach a goal without blindly wanting it, but through a process of self-development and experiment. Rationality on the contrary makes wealth the only goal, and that is a preference, seeking for what we want and escaping what we don't.

5. Introduction to the concept of reflexivity starts with comprehension of perception. Perception is based on experience. Perception of the object by a subject depends on his attitude and action towards the object. Perception is a function of action – *P=f(A)*. Perception is all we hear, we understand, expect, want etc If there is a non-unique perception mind chooses to percept what is easier for it. Perception is a choice, the choice; we constantly do without thinking, by feelings. We see what we want to see. *Consciousness of the choice is the main question of irrational technologies.* Perception depends on context. Perception is a habit, it works automatically. To make the process conscious is difficult, it is the limitation.

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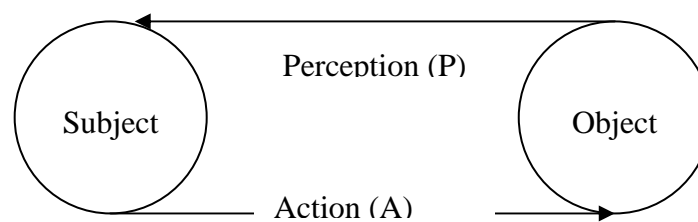


*Figure 6. Mechanism of Reflexivity*

6. Perception is defined by motivation. Motivation derives from source and goal. Source is unconscious, goal can be managed. Unconsciousness provides experience, if we manage to carry motivation/goal out of experience, unconsciousness will provide a new experience and ability to reach new goals. Thus goal attainment fully depends on a person, the extent to which he manages his motivation.

**Aim out of**

Appearance of
new experience

**Aim within**

Appearance of
new experience

Experience

Source

Unconscious
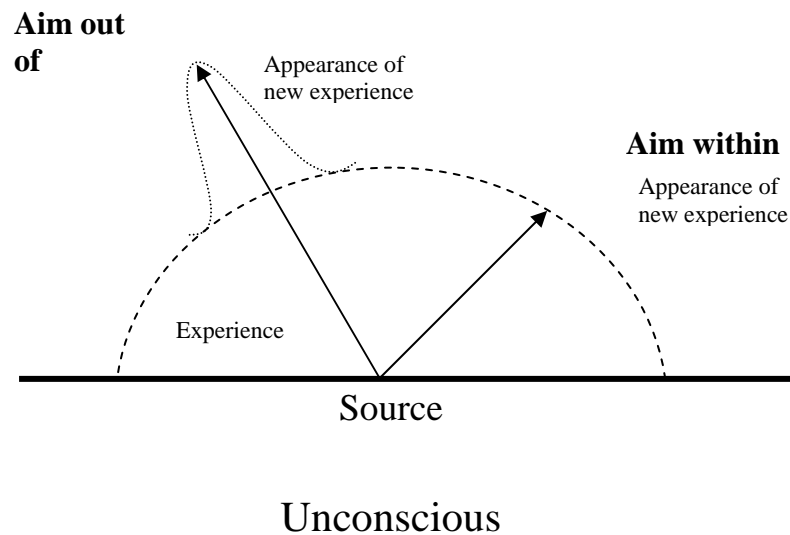
*Figure 7. Inn-motivation and appearance of new experience.*

Rational behavior on the contrary, assumes that objective perception is dogmatic, that reality is objective and does not depend on personality. Hence limitations are real and independent from personality.

So it follows that a person has a choice for his motivation, whether to stay inside experience and live in a world of believability and expected outcomes, or to try experimentally to follow unconsciousness and get a new experience and innovation. A person able to act irrationally and get new experience, make people around feel it and follow is a leader. Consequently a leader creates a wave, a trend.

Two postulates of reflexivity theory developed and so interpreted by Urij for their application in irrational technologies, they help to establish and understand logic of philosophical justification: fist, explain why those limitations can be overcome; second, describe the challenge of the situation that wy shall get then. And to my mind they finally state how ideas of reflexivity can be applied in practice:

1. First, as it has already been stated, reflexivity is interference between two functions, situation and participant. they influence one another. so that a situation rules over a person, but a person rules over situation also. this changes a lot in understanding of the role of a person and his power over reality as of an active player. this means that a person can not only obey some circumstances but also decide what they will be like himself. and if he is given a

situation, he can influence given circumstances and achieve more, if there is something more that he wants .

2. Second that due to the mutual influence of a person and situation, future depends on present – present choice defines future. this means that future is undefined and there can be multiple outcomes, depending of the choice of the participant in present. due to the complexity and interdependency of events, multiple equilibrium, trend development reality becomes unstable, volatile and you have to be prepared for unexpected results of your choice and environment reaction cooperation. this means that forecasts become useless – you can't foreseen which of the alternatives will take place, but you can choose and prepare a backup. choice here is usually made upon intuition and wishes, aims, no other indicators will work then, there won't be time for systematic analysis and rational dogmatic approach, this case will demand uncommon decisions and actions.

Thus, reflexivity in scope of irrational technologies regards limitations as dependent of the person and reflexivity assumes any person can overcome those limitations, there are two following prepositions from it: stop setting goals within experience and realize his own internal boundaries of experience (patterns of perception); learn to manage motivation. As a part of irrational technologies there exist some methods to learn to do it (like psychotherapeutics, or coaching).

And thus reflexivity in scope of irrational technologies explains why if emotional human behavior can be unpredictable and forecasting, rational logic ineffective.

Features of reflexivity emerge on financial markets. Financial market is also a system of limitations where a person aims to receive something. All the limitations like stocks price, exchange rates, derivatives variations are created by expectations, predictions, perceptions of investors and by the fact that their investment capital is limited. The role of internal limitations on financial markets is very important and using irrational technologies can considerably increase feedback from financial activity.

While irrational technologies are first implemented and tested this is more in the scope of empirical part of this research, in addition presented empirically it gets easier for explanation. We place only a couple of most evident to our mind examples of typical limitations of the financial traders which overcame make studied decision making different from traditional:

1)    fear of losses, doubts, lose of self-assurance. Those limitations come with new players, the ones who survive manage to overcome them, and otherwise it doesn't work. As a part of

the technology strategy irrational trader always knows where to hide if danger is coming. Fear of losses means that trader is not ready to lose and does not know how to escape difficult situation. Hence, fears make people nervous and fail to choose the right decision.

2)   forecast – is a limitation, that holds a person directed toward a certain future situation and one chosen strategy; if any variant is possible a person chooses one of them either unconsciously changing the situation or consciously influencing an object and holding it were he wants. there are assumptions that explain why rational forecast is impossible. first, is that any forecast can be denied by the future behavior of the system. second, best known and scientifically based rational financial technologies - fundamental and technical analysis of financial markets and financial situation, which includes collection of data, its elaboration, logical analysis, evaluation of risks, forecasting and scenario planning, stability analysis applied for forecasting are limited if percept information and the way of its interpretation fully depends on personality, his actions, preferences, intentions, experience, hence only a part of all information as available for a person (usually a small part). interpretation and evaluation provoke errors which disimprove analysis. third, if participants of the situation seek to reverse the forecast, it will certainly be reversed. it is advantageous to defeat forecasts on financial markets, because those who forecasted – loose, and those who reverse it – win. this is the way motivation to deny forecasts works. thus, forecasts are limitations, which a priori don't let people act despite their expectations.
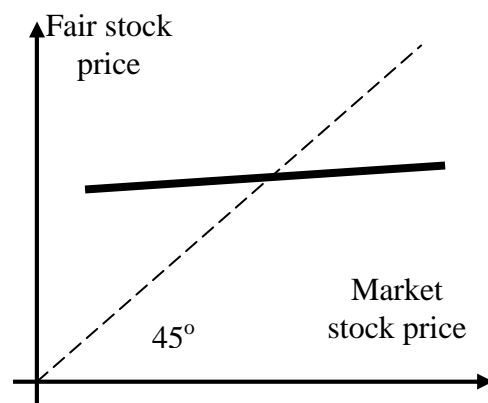


*Figure 8.  Market and fair stock price equilibrium in rational models on financial market*
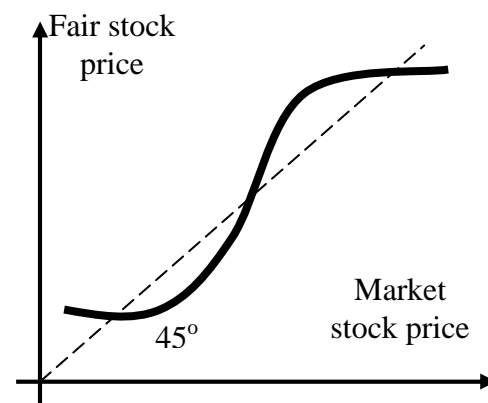
*Figure 9. Market and fair stock price equilibrium in reflexivity models on financial market*

Capital markets and their participants act in the same reality where independent and objective expectations are unavailable. We assume then that fare price is a function of the market price of a

stock and there can be several equilibriums. This makes price very dependent from investors' desire to value it on a certain level. Fare price is not a limitation; it is a limitation that depends on investors.

What to do in the situation, when we cannot predict or valuate future incomes and probabilities? How then will decision making of a trader look like? Ichkitidze and Ryzov (2005) described a model of the process of formation of expectations of the participants of the financial market according to reflexivity. While it is impossible to represent expectations independently from participants' behavior, in order to get those expectations reasonably valid they need to include extant information together with expectations of the behavior of the participants. Thus the model provides us with not a sole alternative of expectation, but a range of valid expectations, each of which can be credible in future in case if they are proved by a certain trend of the market price on the market. Thus, we identify all possible trends of the price and state that each of them is equally credible before an experiment.

During the experiment, stocks market trading, the trend of price distribution will be revealed. Another experiment will give another trend, which will reflect the choice of the participants of the experiment. Here is the core idea – that the choice of the trend of the price of the stock on financial market is not limited, it reflects what participants finally choose. So here investor does not relay on the rational expectations, but makes a decision being aware that trend he chose can equally be proved or disposed. The choice itself is made subjectively upon the criteria of economic optimum, when other participants make the same choice. The principal of success here is to make this choice before the others.
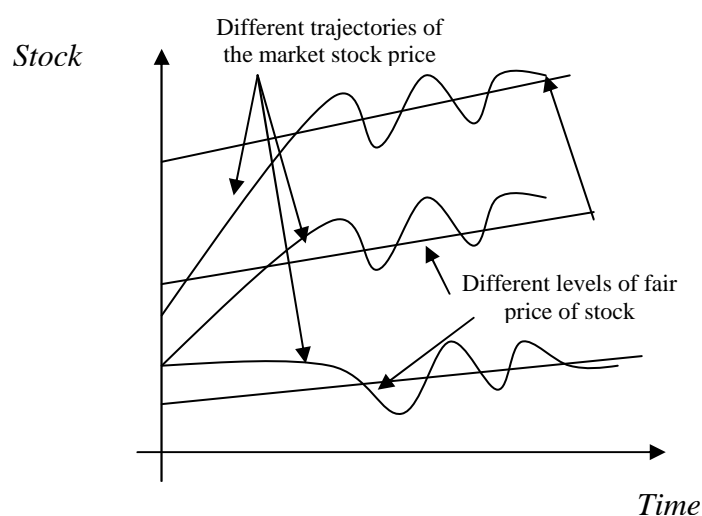


*Figure 10. Set of trajectories market and fair price equilibrium*

Work of irrational technologies on financial markets consists of continuous repeat of the following stages: recognition – goal – experiment through failures.

- recognition emerges understanding of intuition, senses, way of reasoning, helps to get a pure information from markets without injection of personal fears, expectations, experience; helps to follow but not forecast.

- goal is what a person wants to know as a result of experiment. Income cannot be a goal, only a result of a successful experiment. Goal of an experiment is new experience. Urij states example from his experience: he uses as a goal verification of the hypothesis of a trend direction, and the best way is if the trend has been percept intuitively, not rationally.

- experiment is a certain formulated set of actions for a trader defined for different states of financial market for a fixed time period. In order that an experiment becomes more effective the ratio of the potential profit to the potential loss was no less than 2 to 1 (or 4 to 1).

Frequent iteration of the three stages constitutes application of irrational technologies on financial markets, it is presented in the empirical part of this paper.

We shall describe the whole decision making and mark its differences from classical approaches later on in the empirical part. Here we described some of its peculiarities which became evident upon theoretical background. What can we say about the studied case now?

It is a new trend, developed from opposition to the classical theories of effective market and rational investor, because of its failures to explain financial market functioning like bubbles, volatility, under- and overpricing because of assumptions which simplified real situation. It has common traits and some background with other emerged financial ideas like behavioral finance, chaos theory which also criticize classical approach and state upon taking into consideration emotional constituent of investors and dynamically developed markets as complicated systems. Next approach we studied was reflexivity elaborated by George Soros for explanation of his understanding of capital markets which he empirically tested upon his own experience. It in its turn proposed a philosophical logical basis which presupposed a mutual influence of a situation and its participants first, and markets/pries and investors as a special case. Development of this deduction came in accordance with main conclusions of behavioral finance and chaos theory even so its author was not a lot aware with those ideas.

Anyway postulate of reflexivity was taken into a further research by Urij Ichkitidze and was implied in the investment decision making method of irrational technologies. We concluded that this decision making demands theoretical basics, psychological basics and psychological involvement. For the theoretical background Urij took chaos theory and reflexivity postulates,

which agreed upon multiple equilibrium markets as non-linear time dependent systems, and mutual influence of markets and their participants. Irrational technologies approached emotional constituent of a personality from an opposite side than behavioral finance and as it has ever been done before – it didn't base upon it as an uncontrollable bias factor, on the contrary it investigated financial situation as a given environment and emotions and feelings as a controllable variable; and treated human personality and human actions as a set of limitations ("I don't know how", perception, experience, fear of risks and losses and other). So, psychological basis approached personality from the point of view of limitations and from the idea that participants can influence situation and overcome those limitations. And when they overcome limitations they get control over emotional bias and make choices consciously and face volatile environment where they decide experimentally and intuitively. We shall come back to the detail description of this process of decision making in the empirical part, where we shall also compare it with more traditional approaches and analyze results that the trader received using this method.

# 3. METHODOLOGY

*In this chapter we implied methodological bases, defined concept and type of research as a case study, described the kind and ways of data collected. It is also explained challenges that were met at stages of secondary and primary data collection.*

The purpose in this chapter is to define the type and method of research, some philosophical background, data collection and analysis procedures in order to answer the research question of the Master Paper properly. According to Silverman (2005) methodology is "a general approach to studying research topics", and Mason (1996) claims that it should reflect 'an overall research strategy'. Methodology is referred to as 'a combination of techniques used to inquire into a specific situation' (Easterby-Smith *et al.*, 2002). In other words, chosen methodology defines the methods used in the research process.

Methodological process starts with identifying problem statement that was determined for this paper in introduction. Traditionally the problem of constructing the "architecture" and methodology of a research problem – research design – is guided by the research problem. The graphical presentation of the concept is illustrated in the Figure below (Thiaetart R. A. *et al* 2002). Constructing the research problem is an essential step that serves as a basis for research process and methodological choices that are made within. On the other hand consideration of the research problem and methodological choices itself influence how the research problem will be constructed, hence it is a circular process.
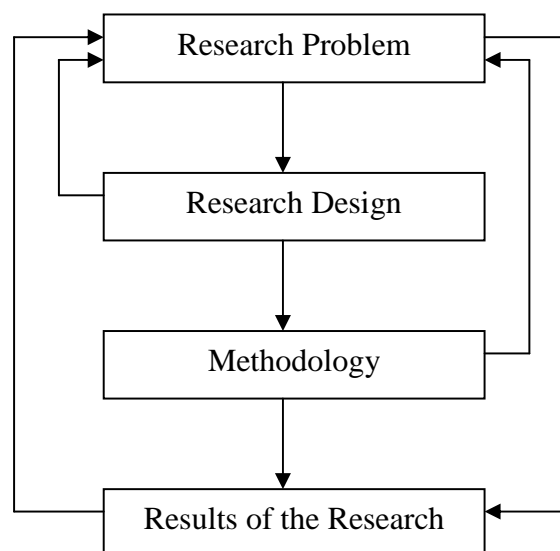


*Figure 11. Construction of the research problem as an essential part of the research process (Thiaetart et al., 2002)*

Constructing research process turns out to be a recursive process without any strict rules. Different skills of the researcher have an impact on it, such as skills of intuition, precision, imagination and perception of realism. The problem for this paper was defined upon a general aim – to try to prove applicability of the new theoretic and practical approach to financial decision making, and according to the circular logic showed in the picture their were formed the so called research questions. It is more precisely defined meaning. They vary according to their subject, aims and research approach adopted. The subject of the research might be a study of content or an analysis of a process. Aims need to describe, to explain, to predict and to establish a norm. These three kinds of questions can be combined in numerous ways. Thus a research question involves a combination of a subject (what to study), a purpose (why, for what end), and a process (how to proceed). For this paper: (what) we study decision making process; (why) because it is a new trend and we want to investigate it and prove that it is applicable; (how) we describe the process of decision making in detail and compare it with the classical way of doing; then we go through the experience of applying this approach in practice and try to compare it with the other possible traditional experience; we analyze results and compare them too. This will let us make conclusions upon the studied approach in accordance with the goals of this paper.

## 3.1.  CONCEPT OF THE RESEARCH

Our investigation is represented in the framework of the concept of the *Research Spiral* (Hauan, 2005), which show relations between chosen methodology and the aims of the research. According to the concept, we should begin with finding the facts about research question: for this paper this will be description and experience of the decision making studied. Then, using a methodological approach, we transform these facts into data, which we can structure, analyse, and make it more oriented towards the aims of the research – the questions formulated to be answered in the analysis. Afterwards, with the help of analytical methods and number of techniques, the data collected is converted to the information placed in the empirical chapter, which is strictly oriented to the research problem and with its help it is possible to answer the research questions or move to another level of question formulation. Hence the difference between two almost similar meanings, data and information, is that information gives us ability

to answer the problems of the paper; it is structured according to our needs whereas data is more disembodied. For example, our notes (records) after interviews are data. To transform them into information we have to structure them, give clear formulation, and make selection of fruitful and rich data for rich information design. Realization and understanding of this information will provide us with a new knowledge about the issue. And knowledge, in its turn, is applied to practice by a set of actions directed to solving an issue. This knowledge in our case is answers for the problems of the Master Paper.

This was the example of one spiral cycle. However, the completion of one cycle initiates beginning of the next research cycle with new facts, giving the basis for new problems and new data. Thus, we can see that the cycles form a spiral where the researcher gradually moves from one level to another, higher one, in the course of work upon the research under consideration.

The graphical presentation of the concept is illustrated in the Figure 2 (adapted from Hauan 2005).
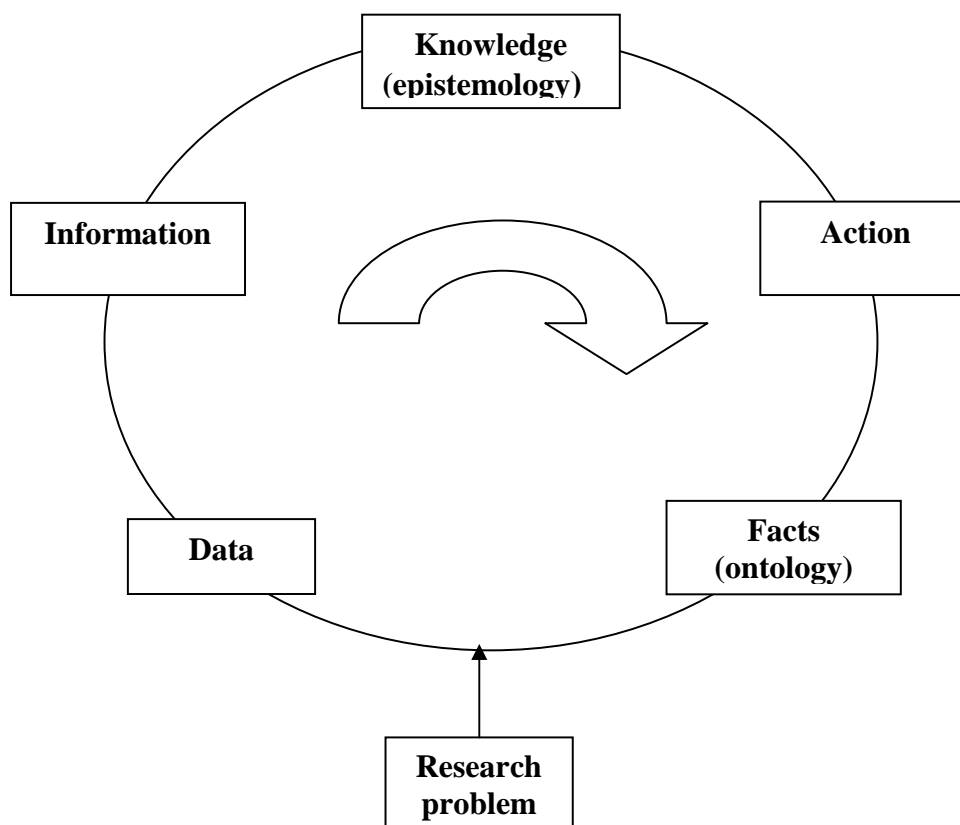


*Figure 12. Research Spiral concept (adapted from Hauan 2005).*

According to the classification of scientific problems, represented in the Figure 3, our research

is empirical not conceptual.

**Scientific**
**problem**

**Empirical**                                    **Conceptual**

Data                                             Ideas
Observation                                      Models
Measure                                          Proposition
Analysis                                         Theory
Evaluation                                       Methods
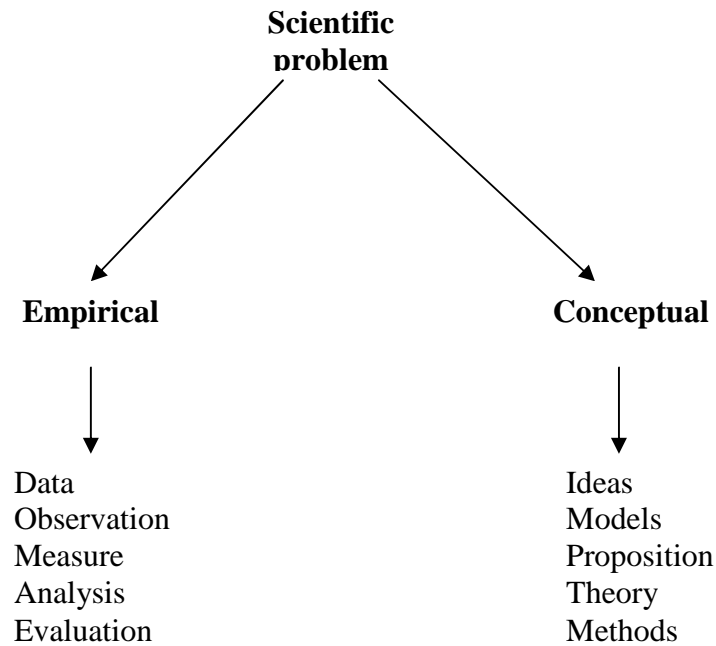
*Figure13. Empirical or conceptual Science problems (Hauan, 2005).*

All steps described above (data collection, observation, measure, analysis, evaluation) are implemented in the Master Paper. Analysis and conclusions of received data will be the result of our research; not new theories or models (new theory is under research question of this investigation).

## 3.2. RESEARCH DESIGN

Research design - by Green and Tull (1975), "specification of methods and procedures for acquiring the information needed to structure or to solve problems". It is about organizing the research – data collection, analyzing, interpretation of the results. So we shall try to understand and describe the relationship between data and theory for our certain research; to identify the philosophical dimensions that will help to organize the process of data collection and interpretation, to choose the methods for our research that will lead to the required aims.

### 3.2.1.  TYPE OF THE RESEARCH

If we try to classify our research upon its outcome, as its usually done to identify the type of research, we devote our research, firstly, to the pure one, as theories of the financial decision making will be examined in a historic perspective of existing financial background (rational hypothesis, effective markets, behavioural finance and other). Plus our research reflects the idea of an applied research, as it is an investigation of a concrete problem, a case, based upon a consolidate data collection, application of the theory and its practical applicability – theory of reflexivity and irrational technologies for financial decision making. And it can be called both descriptive and explanatory, because we describe the case studied and try to explain how it works.

### 3.2.2.  RESEARCH PARADIGM

As a researcher, should we take a position of positivist or social constructionist?  The philosophical paradigms always underline practical research, each of them has its strengths and weaknesses, but nevertheless the correct choice of the paradigm helps the researcher to choose methods for the research and identify general approach to the research design, data collection and interpretation.

Positivists focus on facts, causality and fundamental laws through formulating hypotheses and testing them. Thus positivist position states broadly upon the quantitative methods and data types, it engages wide range of both amounts and sources of data and the ways and tools for its interpretation. But at the same time it is general, inflexible and outside. It helps to understand what was and what is, but doesn't give a basis for evaluation or prediction, for linking to theories, for interpretation human actions.

Social constructionism is most of all concentrated on a human, his particularities, understanding and interpretation. So for the research it seems more appropriate, because we study one person and his understanding, way of doing and interpreting. In addition we choose social constructionist position in order to avoid both concentration only on quantitative details of the problem and going to broad far away from the studied case. We provide a qualitative research - central tasks for the paper are to understand and interpret new trend from its theoretical and practical dimensions; to evaluate its applications and results; compare them with traditional

ways. And we finally hope this will help to understand development of financial theoretic background and contribute to evolution of new trends.

### 3.2.3.  CHOICE OF RESEARCH STRATEGY

Now, basing upon the outlined steps of the research strategy choice we link our concrete strategic research moves with philosophical foundations that we stated before.

1.  Independence or involvement of the researcher

    We are not conducting an action research, usually described as being fully involved in the process, thus influencing the research and providing subjective interpretation. So to the degree of involvement in our research we can call it a cooperative inquiry, for we focus on personal actions, feelings, perceptions of traders, we make them work to answer our questions and reveal required problems. This is feasible under the social constructionist position.

2.  Large or small samples

    Upon the social constructionist approach we can't use large samples, as those mostly are provided for the positivistic researches. While our study uses qualitative primary data that bases upon examples of certain traders in a certain country (Russian capital market) – it investigates descriptive questions by the use of interviews. This follows the definition of a case study, because we go in-depth n studying a new trend of decision making, we are not trying to generalize it, but to compare and state why it is applicable.

3.  Theory or data first

    The idea of pre-understanding is important for the interviews, to prepare, design correctly interviews we need a thorough work with the theory and secondary data sources, sometimes with primary data in order to prepare new interviews. Only this way it will lead to a successful data gathering during the interviews and the following process of its interpretation. Plus upon the social constructionist position of the grounded theory, when ideas come from the data first collected, the researcher should be mostly open for the new knowledge and directions of the thoughts after interviews, reflections and investigations upon the data collected and theory after applied. The cycle of interpretations and

understanding - the hermeneutic cycle is the process by which we return to a text or to the word and derive a new interpretation every time, for every interpreter. (Ross 2004).

4.  Experimental design or fieldwork

    Case study is a fieldwork method, it contains investigation of a certain phenomenon within a real life context and implication of qualitative methods of data collection and interpretation. As the studied approach is new and has a short term of application and testing - one of the primary aims of the research is to gain some knowledge and understanding of the situation, so case study method states best for the research design.

5.  Universal theory or local knowledge

    Social constructionist position claims that the theory should be understood in the context, and not universally. That is why we shall study Russian market first and then follow decision making in its perspective, we shall acquire local knowledge and make as general conclusions as possible.

6.  Verification / falsification

    The idea of Karl Popper about falsification and very useful, indeed, but we anyway adopted verification approach lot this paper. The stated idea says that however many verifications will be found it is enough to have one falsification fact to deny an idea. Thus we shall follow the first way and try to find as many as possible ways to prove a new trend by, in particular – comparing, detail description, taking into consideration environment.

The steps of the research strategy choice proved the choice of the philosophical basis of the social constructionism being adequate for our research with the use of both quantitative and qualitative methods, secondary and primary sources of data for acase study.

## 3.3.  DATA COLLECTION METHODS

Quantitative methods framed within the positivistic position assume a clear certain research of a certain numbers and certain places with the usage of certain statistical limitations and tools, otherwise they would lead to bias and thus failure of the research.

Qualitative methods are much less strict, so much more flexible. They propose a kind of iterative process which presuppose when some analysis takes place during the process of data collection (it is convenient at interviews to check new ideas which appear).

As we also know those two types of data collection rarely are pure and contain mostly characteristics of both. This we find to be true for this paper, as we mostly collect qualitative data by the use of in-depth interviews and secondary descriptive data; and at the same time during one of the interviews we collected quantitative data for interpreting results of the new studied trend. Qualitative data is sometimes more difficult to collect and to interpret, but it lets us investigate qualitative facts, opinions, attitudes, understand reasons of actions and compare them.

### 3.3.1. SECONDARY DATA, CHALLENGES OF RESEARCH

Secondary data is information which already exists and is accessible, like statistics, reports, and previous research results. Typical examples are public statistics, government and consulting reports, publicly available reports from such private groups as foundations, publishers, trade associations, unions, articles in trade magazines and newspapers, business newsletters, and other accounts that are at least one step removed from the initial data source by the researcher or some other "filter" (Aaker and Day, 1990). Also internal sources may be regarded as secondary data: sales reports, budgets, and reports form business travels, trade fairs (Naslund, 2002).

No marketing research study should be undertaken without a prior search of secondary sources. There are several grounds for making such a bold statement (http://www.fao.org):

- Secondary data may be available which is entirely appropriate and wholly adequate to draw conclusions and answer the question or solve the problem. Sometimes primary data collection simply is not necessary.

- It is far cheaper to collect secondary data than to obtain primary data. For the same level of research budget a thorough examination of secondary sources can yield a great deal more information than can be had through a primary data collection exercise.

- The time involved in searching secondary sources is much less than that needed to complete primary data collection.

- Secondary sources of information can yield more accurate data than that obtained through primary research. This is not always true but where a government or international agency has undertaken a large scale survey, or even a census, this is likely

to yield far more accurate results than custom designed and executed surveys when these are based on relatively small sample sizes.

- It should not be forgotten that secondary data can play a substantial role in the exploratory phase of the research when the task at hand is to define the research problem and to generate hypotheses. The assembly and analysis of secondary data almost invariably improves the researcher's understanding of the marketing problem, the various lines of inquiry that could or should be followed and the alternative courses of action which might be pursued.

- Secondary sources help to define the population. Secondary data can be extremely useful both in defining the population and in structuring the sample to be taken. For instance, government statistics on a country's agriculture will help decide how to stratify a sample and, once sample estimates have been calculated, these can be used to project those estimates to the population.

**Advantages and Disadvantages of Secondary Data**

For many research questions and objectives the main advantage of using secondary data is the enormous saving in resources, in particular time and money (Ghauri and Grønhaugh, 2002). In general it is much less expensive to use secondary data than to collect data by yourself. Consequently, it is reasonable first to check secondary data available on the subject of master thesis. After analysis of secondary data it was decided to start obtaining primary data for the research.

Whilst the benefits of secondary sources are considerable, their shortcomings have to be acknowledged. There is a need to evaluate the quality of both the source of the data and the data itself. The main problems may be categorized as follows (Green, P.E. *et al*, 1993):

1. Definitions: the researcher has to be careful, when making use of secondary data, of the definitions used by those responsible for its preparation. It should be noted that definitions may change over time and where this is not recognized erroneous conclusions may be drawn.

2. Measurement error: when a researcher conducts fieldwork he is possibly able to estimate inaccuracies in measurement through the standard deviation and standard error, but these are sometimes not published in secondary sources. The only solution is to try to speak to the individuals involved in the collection of the data to obtain some guidance on the level

of accuracy of the data. The problem is sometimes not so much 'error' but differences in levels of accuracy required by decision makers.

3. Source bias: researchers have to be aware of vested interests when they consult secondary sources. Those responsible for their compilation may have reasons for wishing to present a more optimistic or pessimistic set of results for their organization.

4. Reliability: the reliability of published statistics may vary over time. It is not uncommon, for example, for the systems of collecting data to have changed over time but without any indication of this to the reader of published statistics. Geographical or administrative boundaries may be changed by government, or the basis for stratifying a sample may have altered. Other aspects of research methodology that affect the reliability of secondary data is the sample size, response rate, questionnaire design and modes of analysis.

5. Time scale: most censuses take place at 10 year intervals, so data from this and other published sources may be out-of-date at the time the researcher wants to make use of the statistics. The time period during which secondary data was first compiled may have a substantial effect upon the nature of the data.

Whenever possible, researchers ought to use multiple sources of secondary data. In this way, these different sources can be cross-checked as confirmation of one another. Where differences occur, an explanation for these must be found or the data should be set aside.

In our research we use various kinds of secondary data – various Internet web-sites, internet archives, magazines and reports laid out in internet. Information collected from the internet was mostly used in describing a theoretical background, finding examples for those theories prove and refutation; for understanding principles of fundamental and technical analysis, as essential parts of financial decision making; and for preparing an overview of the Russian capital market today.

There was also used a big deal of a published secondary data, especially for preparing the most possibly general and objective review over the history if financial academicals background, for description of Russian financial market. We also studied all materials prepared by Urij Ichkitidze, describing and analyzing the new trend, grounding his approach for both theoretical and empirical parts of this paper.

Anyway the most problem that occurred during collecting secondary data was that *the problem studied was not either fully no partially revealed in internet or published resources*. There was

found sufficient data for theoretical review, but as it was mentioned in the theory chapter it was anyway authors' responsibility to collect and connect them all together thus making a kind of historic review for financial scientific basics of market functioning. But as it also noted this review was necessary for definition and reveal of a place, differences, roots and understanding of principles of a new studied trend of reflexivity as a theoretic base for the studied decision making by irrational technologies.

There also was found more or less sufficient data upon Russian market, by the means of internet, reports of big Russian investment companies and exchanges, by collecting data about fundamental analysis on Russian market from different internet sources, by some published sources of a recent kind of description of personal experience and historic review of a young Russian financial market.

The core notion of this paper – trader decision making turned out to be only some kind of fiction that exists only in minds of traders and was either never tried to be laid out on paper or somehow hidden. Classical books on finance limited their way for decision making by description of rational hypothesis and some by setting examples of its refutation. Books on financial decision making contained either scientific approach to investments, capital investments, Net Present Value (NPV) calculations and corporate finance; or to trading strategies in technical analysis, without any connection or appeal to fundamental analysis, trading techniques, risk controls and other stages or steps of trading. Thus the whole process was only revealed by primary data.

There was even made a special data collection by the means of the Central Saint-Petersburg library International division special order of search in the US and British colleges and universities internet limited entry bases. *But the found data contained only pieces of information demanded for our research,* some articles about decision making, feelings and emotions on financial markets and investor and trader decision making. Most of them came from the area of behavioral finance which as we stated in the theory part has a certain way of approaching studied matter quite different from the studied approach. None of them were actually concerned with the core and the whole process of decision making, trader behavior, none of them connected aims, strategies, techniques, choices, results of decision making, tools used and structures and systems of decision making, or trading, financial market approach in general. There were studied sources of scientific exploration of technical analysis, as of a set of practical tools. And there was made small review of basics of fundamental analysis which mostly covered not a description of a classical way of making fundamental analysis but this analysis for Russian market.

Thus as it was noted in theory chapter it was limited to the collected and structured review of financial scientific trends and description of the studied ideas of reflexivity and irrational technologies. *The studying of the core notion of decision making was left for the empirical part* where it was described by secondary and primary data which could not be called theory and constituted part of theoretic basis because is itself under research. And as this research is mostly concentrated on detecting differences of a new approach empirical and analytical parts are more aimed to description of some special tactics applied in the studied decision making and not to presentation of some well-known fundamental and technical analysis techniques, or trading strategies – calculations of combinations of stocks bought/sold, of options and futures mixes, stop-loss risks control orders and other. Attention is mostly bought to the whole system of decision making process and of its emphasis on intuition and emotions control.

As one of the aims of this paper was to study a new trend in decision making and to find its particularities by comparing with traditional or classical ways, it became a part of data collection to find classical approach in published or internet sources, financial scientific and practical materials. *Finally the process of trader decision making was only composed and described by the results of primary data collection* by the means of interviews with traders themselves. Data for the studied approach was sufficiently presented by secondary published and internet materials received form Urij Ichkitidze and interviews with him.

So even at the level of data collection the availability of data sources and materials limits us to a study of decision making by Russian way, as there were taken interviews only with Russian traders who worked on Russian market. This probably makes research more environmentally concentrated and common. We shall come back to it in the analytical part and in conclusions while revealing limitations and further propositions for the research.

Finally there is no big concern on reliability of secondary data because the most used sources were classical books on finance which reliability is supported by years of existence and reputable names of their authors. Sources used for Russian market description are also quite reliable because data was taken from official websites of large reputable Russian investment companies and exchanges. Secondary data for description of the studied case was taken from the author himself, and the only point that we could probably note is subjectivity of the trader himself. But this is under consideration of analysis chapter and is rather one of the questions of the research.

### 3.3.2.  PRIMARY DATA

Nature of primary data.

The primary data is the data, collected by the researcher himself. When it is not enough of secondary information to solve the problem or answer the research question, the researcher needs to gather data by using special techniques (Easterby-Smith *et al.*, 2002). Primary data is collected by researcher by using one or another data collection technique. According to Riley *et al.* (2000) the range of primary data collection methods includes social surveys (questionnaires), structured interviews, unstructured interviews, focus groups, observations, participant observations and others, the items listed according to the level of personal involvement of the researcher starting from the lower, and according to the size of respondent group starting from the larger. The advantage of primary data is that it is tailored for particular research and therefore more reliable. The disadvantage is that primary data collection can be very costly and time-consuming.

In our work we try to use the most appropriate methods in our case. Participation observation is hardly appropriate in our situation at least considering the time limits that we face. On the other hand, social survey is not quite appropriate for us either because we are not aiming at operationalisation of the categories related to the question under consideration, but more likely at understanding, with an opportunity to change the questions asked with new information gained. Hence, we choose interviews as a main method of collecting primary data.

For this paper we interrogated 4 interviews. 2 interviews we held with Urij Ichkitidze with the purpose to first, have a general understanding of his approach and the way he sees it; second, to describe in detail his experience of these 3 areas when he used his way of making financial decisions during his practice of 4-5 years. There was taken an interview with a financial trader of one of the large investment companies on Forrex market Fibo-Group. And finally there was taken an interview with a trader who uses more traditional approach for making financial decisions on capital markets of stocks and options. Each interview constituted another step toward understanding the problem of this paper, and each new interview was founded on the knowledge and analysis provided by previous primary data collection in accordance with secondary data. Thus there was not constructed any strict form of interview, which used several times could finally provide quantitative data; on the contrary we each interview depended on the previous and had a free changing during interview forms and questions.

Those interviews were mostly guided by the interrogated persons themselves in order to get let them describe their reality and understanding. And *the only problem for primary data collection was that questions stated for interviews were almost never clearly and strictly answered* – thus the collect data could not be used to fully reach set for this paper aims of comparing studied and more generally accepted approaches of trader decision making. But this question is seen and considered in the analysis and conclusion parts. Those interview guides are provide in the Appendixes 1-4. Detail description of each of the interrogated trades, of the background, of the collected information is presented in the empirical part of this paper.

## 3.4.  VALIDITY, RELIABILITY AND GENERALIZABILITY

### 3.4.1.  VALIDITY

The concern of validity should be seen in the light of assuring safeguards against the ubiquitousness of human error (Tschudi 1989). Validation of the qualitative research is not a simple question to discuss, while this term was primarily used for quantitative investigations. We will understand it according to Kvale (1989) who argues that "validation involves checking the credibility of knowledge claims, of ascertaining the strength of the empirical evidence and the plausibility of the interpretations". For construct validity we shall use different sources of evidence and provide a ground explanation of how and why we are sure this way of interpreting information will prove applicability of the new trend studied.  For internal validity we shall provide a wide description of the environment of the case (Russian capital market). For external validity we shall provide a range of limitations to which the research conclusions can be appropriate.

### 3.4.2.  RELIABILITY

For proving reliability of the collected data we provided several interviews with unconnected to each other people and first laid collected information in the empirical part in order to get its objectivity from the authors' point of view. In addition information was gathered in Russia, native for the author country and language, which already eliminates probability of misunderstanding a lot.

### 3.4.3. GENERALIZABILITY

As we have already stated for the external validity we in conclusion when we shall have a whole pictures of the research we shall determine limitations to which the results and deductions can be generalized and interpreted.

## 3.5. ETHICAL ASPECTS

We are very concerned with the point of investigating the case without hurting any of the involved parties. Thus we use the materials and information provided by interrogated persons only after their permission. And we state for presenting only that information which holds no harm for privacy of the interrogated and involved persons.

So, for this chapter we provided a logic and description of the methodological approach to the research conducted for this paper. First we stated importance of the problem statement that was fulfilled in introduction and its guidance to the whole investigation. Then we described research spiral as the core notion of the method of collecting, interpreting and analyzing data. In addition we agreed upon 6 points that our research is a case study under social constructionist paradigm, because we collected qualitative data and study perception and understanding of decision making of several traders in-depth in order to compare them with the case under consideration of this paper – irrational technologies and reflexivity approach to financial decision making. Finally we described data collected (secondary, primary, interviews), discussed problems occurred during each kind of data collection and proposed validity, reliability and generalizability of the research.

# 4. EMPIRICS

*Structure of data presentation is as follows:*
1. *presentation of Russian financial market, with its history and present structure review,*
2. *description of trader decision making process by irrational technologies with emphasis on intuition development, with the use of primary and secondary data collected,*
3. *other traders opinions,*
4. *graphical and table summary of the experience Urij Ichkitidze for the years 2001 – 2007 in application of irrational technologies approach in trading on Russian financial market.*

This chapter is a natural continue of the methodological part where explained methods that were used to collect this data and especially emphasized some challenges that we met during this research. Information here is structured the following way:

1. description of Russian financial market, its history and today's structure and functioning important for trading and speculating, revealing possibilities and barriers that it provides and sets. emphasis on taking into consideration Russian market reality was made because first, this master thesis is presented in Norway where Russian financial market is not well known; second, because it is still young and developing and is then particular in some dimensions; third, because the aim was set at the beginning of the research and stated in introduction – to study decision making and try to prove applicability of the new trend of reflexivity and irrational technologies by taking into consideration environment of the studied case. the data is presented the way it was collected for it is to be analyzed and applied later in the following chapter.

2. description of the process of the studied decision making with emphasis on its whole structure and connections of each step (technical analysis, fundamental analysis, setting aims, using financial tolls for financial strategies, risk control) and not detail investigation, but just a brief mentioning of each well-known step like calculation of options and futures combinations or calculation of risks accepted, those techniques can be found in classical books on finance; and emphasis on psychological dimension of making decision on financial market, self-development of the trader. here we use primary and secondary data collected and structure and present it graphically to make deductions and conclusions more visible and obvious.

3. interviews with other traders. it has to be noted that decision making is mostly a rather personal question, mostly not clearly understood by a trader himself, so it was difficult to

find those who were ready to talk and moreover to answer questions understanding themselves and their ways of making decision. thus the collected data does not fully reflect the kind of data that was needed for the research, while anyway seems to be useful and is presented the way it was collected on interviews and the deductions upon it are to be made later on.

4. empirical data upon 4 investment periods and some prehistory. this data was very accurately handled to be presented together for each period and is a result of a detailed interview and a secondary data from the Urijs' term paper data adaptation. it is also mostly graphically presented and carefully explained while it constitutes the core interest of this paper and is to be deeply analyzed.

Further in analysis data will be interpreted, interconnected, connected with theory part, understood and will be followed by some deductions, conclusions, propositions, limitations and authors' justifications.

## 4.1.  RUSSIAN CAPITAL MARKET

Due to the fact that research is taking place in the Russian reality and on the Russian capital market it is essential not only to point it out as one of the limitations of the generalizability of the global conclusions upon peculiarities of trader decision making and challenges for the classical finance, but also to describe this reality. May be it is itself one of the challenges for the classical finance. To my mind it is needed, also because no one else but Russian traders, analysts, professionals know more and better about Russian market, as it is young and developing, so yet small and dangerous. More or less unknown for foreign investors, because it bears not so much interest for them, has not so much power to influence other areas in the world around (contrary to the US or Great Britain, for example). Plus, this description is essential for the further fundamental analysis for investment decisions and understanding of financial activity on Russian market, for it taking into consideration external factors of the investigated financial situation. We won't take in detail, because it will be out of the scope of this paper as we have to concentrate here on the process of decision making. So we have to have enough information to understand forces that guide the market, are important for trading and make a small review of structure.

Information for the demanded description is collected from different sources – journals, books, interviews, reports. It is presented as it is for the turn of its elaboration will come in the analytical part.

We shall start here with the views of professional, experienced, high-level traders, who talked frankly to the author of the Guidance for the Russian capital market (2001), Vadim Arsenjev, who is an ex financial reporter of the famous Russian newspaper Kommersant, but did not announce their names.

Russian market deals often dishonestly. Rich and powerful investors can easily manipulate market prices, in addition they have a big psychological importance for small traders and brokers, who follow decisions of those investors while, assume them to make right decisions, or use insight information. In any case for those big investors it is enough just to agree upon a stock and it'll go up.

Calmness is the second characteristic so indispensable for the market after intuition. Information is the most important for markets, but you have nothing to do there without intuition. All traders on the Russian market use intuition for no less than 50% of the decision making. Very often people fail holding information, and those acting by intuition succeed – the less information people collect the better intuition works. When you see how people lose all their money just for nothing you start believing in some forces that rule over.

Forex market demands extreme concentration of intuition, experience, unconscious reaction, self-control due to the fact that informative and analytical background here is nearly the same for all. In addition as information plays decisive role, it often is frankly speculated.

Many economical factors influence capital markets – inflation, gross national product, real interest rates, balance of payment indicators, which in their turn influence moods of nations and their actions. But all those indictors are based upon numbers, which either first do not reflect real situation or are manipulated by government and high levels of business. So such an analysis often is not effective. There are other fundamental factors that clearly influence financial market – indexes of so called emerged markets, American and English markets, oil and gas prices, as the main indicator of economic situation in Russia.

## 4.1.1.  HISTORY OF THE RUSSIAN STOCK MARKET

25 December 1990 Russian Government announced regulations of the Joint-stock companies for privatized firms and new emerged enterprises. It regulated authorities of the stockholders' meeting, committee of directors and management of the company.

28 December 1991 Russian Government announced regulations of the stocks emission and circulation and stock exchanges, and proclaimed that all it is subordinate to the Russian Ministry of Finance.

1 January 1994 by the order of privatization of the Russian Government Property there emerged stocks issuers, intermediaries – financial companies and brokers, stock exchanges, investment funds.

May 1994 Professional Association of the stock market dealers organized Russian Trade System (RTS) which gave opportunity to trade on-line, which later on in 1996 became the well-known index of the Russian stock market indicating condition of the country's economy. For a long time it was left aside unused because most of the transactions were agreed offshore. In December 1994 Russian company Sun Interbrew issued first American Depositary Receipts (ADR) which allowed Russian companies to get investments from abroad. By the end of 2000 more than 50 of large Russian enterprises have issued ADR of different levels.

By November 1995 Russian Government and Russian President have passed stocks of the best Russian enterprises to the big Russian Businessmen. By the results of the auctions in extremely short terms in Russia there emerged private financial-industrial empires, which by their power, economical significance could be compared to the huge western corporations. Their owners were named oligarchs. And they say that these powerful men, who played their own interests ruling over the countries economy and politics, lead Russia to the crisis of 1998. It is also said that this crises and collapse on British, American and European markets was provoked by Asian crises. By the end of December RTS was only going down. Foreign investors considered Russian market economically attractive before, even though risks were high due to ineffective legislation, unstable economic and political situation revenues were very high. After this crises trends went down and risks became higher, risks exceeded revenues and foreign investors withdrew from the Russian market, and this aggravated crises. In addition to that Russian GPD descended and Federal Budget revenues amounted to 51% of the planned budget and taxes didn't cover 40% of the planned (because of the illegal production and sales of alcohol and because of the fact that

the largest part of economy worked in the "shadow sector"). Government budget deficit was covered by the issue of new government short-term bonds. Export decreased, import grew. Russian export based mainly upon natural recourses prices for which fell in 1998 from 18$ to 13-14$.

By the August of 1998 during one year Russian stocks lost more that 4,7 times in their value, trade volumes fell sharply down and many stocks became illiquid. By 17 August Russian Government announced implementation of a range of measures for normalization of the economical and budget policy – by 2003 RTS grew from 60 points in 1998 to 570 points. After default Russian stock market holds a small choice of stocks – there are the most liquid and stable like those of RAO ES, Gazprom, Sberbank - and all other stocks.

## 4.1.2. RUSSIAN FINANCIAL MARKET TODAY

On the whole if we consider Russian market from the point of view of fundamental analysis, it is guided by the 2 main forces: world natural resources prices, and political reforms of the Russian Federation. As against to traditional western rules Russian stocks' prices do not reflect market values of the enterprises they represent, and their annual reports do not give a lot of credible information. They are better indicators of the corporate transparency and general forecasts of the industry. Forecasting by NPV perspective calculation is irrelevant because of the wrong numbers in those reports, because of the high risks and volatility. So detail analysis of each enterprise for investing or more over for speculating is irrelevant, because there are largest and strongest names mostly in natural resources industry that are a lot covered with news and public attention, which play big roles in economical and political situation of the country and sometimes themselves constitute news about Russian economy and politics. Most of the games on the capital market are concentrated about those names. One of the most important characteristics for trader here will be liquidity. It is also explained by the factor that Russian market is yet poorly organized for investment attraction and thus holds more a speculative meaning. Anyway trading volume of the secondary market is small compared to the amount of issued stocks, and amount of the stocks placed for trading is up to 15-20% from issued amount; from thousands of Russian stocks 90% of trading volume includes 100 issuers and more than a half of them come from the oil and gas industry.

Derivatives markets exist from the very beginning in 1991 and develop rather fast from 2002 but amount of derivatives is still small. Trading is concentrated on 4 trading floors - Moscow Interbank Currency Exchange (MICEX), united future contracts market (Forts), Saint-Petersburg Currency Exchange, "Saint-Petersburg" Exchange. Derivates are future contracts for stocks of oil and gas enterprises, for currency, gold price, oil, indexes.

Due to the specifics of the natural resources supported economy of Russia the list of 200 largest Russian enterprises consist of 33 oil and gas, 20 metallurgical,42 electrical energy, 40 media, 14 mechanic enterprises and 14 banks. The biggest are RAO Gazprom, NK Lukoil, RAO ES Russia. All together that could be only in the list of 40 largest American corporations. this is due to the high risks connected with Russian economy and political situation.

The following descriptions of the Russian Trade System (RTS) and FORTS (Futures and Options on RTS) is downloaded from http://www.rts.ru/?tid=544 11 May 2007 – the official website of the Russian Trade System.

RTS Classic Market is the only trading platform in Russia that allows for settlement in foreign currency. Access to RTS Classic Market is equally accessible by both Russian and foreign investors. The main advantage of the Classic market is the absence of the requirement to deposit securities and cash assets before the beginning of trading. This allows for the high efficiency of the trading process. However, the trading and settlement platform of the Classic market gives the maximum advantage to those market participants that operate with large lots of securities and trade high volumes. Trading in 8 "blue chips" is performed in the order-driven mode (orders can be submitted through the Gateway), other securities can be traded in the quote-driven mode (orders cannot submitted through the Gateway). The prices of the Classic market are quoted in US dollars and serve as the benchmark for foreign companies investing in Russian securities and depositary receipts. RTS Classic market data is used in calculation of RTS Index, the main indicator of Russian securities market. RTS classic market - December 2006 market data and classical market best sellers are presented in Appendix 5.

The futures and options market (FORTS) gives all types of investors a widest range of possibilities to hedge risks on the securities and currency markets and to perform arbitrage in derivatives contracts. FORTS product line includes the contracts on RTS Index, "blue chips", interest rates, US dollar exchange rate.

The RTS Stock Exchange calculates and publishes RTS Index and three other Indexes that we don't use in this paper. To calculate an index the total market capitalization of constituent stocks

is divided by the total market capitalization of these stocks at the initial date and then multiplied by the initial value of the index. Market capitalization is calculated based on current stock prices, number of shares outstanding and free-float factor. RTS Index and RTS-2 Index differ in list of stocks used to calculate the index (list of the sticks of RTS Index is presented in Appendix 6). It is calculated in real-time mode. The RTS Index is calculated based on 50 most liquid and capitalized stocks picked by the RTS Information Committee experts. The constituent list is being reviewed every three months. The RTS Index serves as the underlying value for the futures contracts in FORTS (Futures and Options on RTS).

Now that we have a general description and understanding of Russian capital market which shall constitute environment of our further research we have to note, that it is a public accepted written in books and magazines view that was elaborated as a historic perspective. No need to say that it is still very recent and young; it is to the high degree subjective, especially if we try to bring the same analysis in force for the nowadays perspective, especially if we turn to the fundamental analysis made by a trader. Fundamental analysis when used by a trader is fulfilled his own way and is interpreted his own way.

## 4.2. STUDIED TRADER DECISION MAKING

### 4.2.1. DEFINITION OF INTUITION

The following description is based upon the secondary information from Intuition in investments decision making, term paper, Ichkitidze Urij (2006). As we can see by the name of the term paper it is concentrated on intuition, because Urij himself emphasizes that his approach is different due to the use of intuition. Thus the term paper was aimed to explore possibilities of intuition if you use it in decision making on financial market, if it is effective; to understand what prevents traders from using intuition.

In the rational approach emotions and feelings are mostly ignored as a noise, intuition as unexplained for rational behavior the same way as emotions are more probably ignored. Generally intuition is interpreted as an ability of a mind to analyze incoming information faster and more correct than usually, to find decisions quickly without thinking. Kaneman defined intuitive and controlled ways of perception in a field of perspective theory – making decision at

uncertainty conditions. Osho "Intuition", Lora Daj "Practical Intuition in business", Lubov Orlova "10 steps towards development of intuition" approach intuition as an adviser which helps to understand something unexplained and find decisions when it seems impossible and which is a part of each person and is mostly hardly noticed. By irrational technologies one can consciously develop and understand intuition.

### 4.2.2.  STEPS FOR DEVELOPMENT OF INTUITION

1) *Recognition of aims and limitations.* According to irrational technologies aim has to be carried out from experience, unconsciousness. When a person wants anything he always imagines this object, but this image is mostly a result of experience. Thus if a person wishes anything – he wishes something from his experience. So one has to learn to separate aims and experience. One has to see is aims from aside, not living only with a thought to get it, but to understand that this is his aim and to keep watch over it.

   For this a person has to recognize the aim first. What do I have as a goal? What experience and limitations can restrain it? What do I do? Why? What are fears? What will be if I do something not like always? What shall I feel then? Will it hurt? So one has to reject the answers provided by experience and choose those that he wishes, to understand his wish and choose it independently from constrains, to manage his own choice upon his wish and not experience, limitations, convictions. Coaching training can help to develop recognition. Recognition in everyday life can also influence this development – if one asks himself what he does just because he does, what will be if stops doing it, is it really what he wants?

   So, as a result of recognition a person sets his experience, convictions, limitations aside and decides what he wants upon his wish and not upon his possibilities, conditions.

2) The second stage is to understand that the aim he found is really the aim he wishes. *Separation. Verification by experience.* The aim has to be concrete. For example, I want money, 1 million euro in a year. Plus, in order to reach the aim a person has to be ready to refuse some persuasions, stereotypes, attitudes, has to make an experiment and take a risk. In addition, it is important that a person understands that he has this aim, but leaves without it happily, just recognizes that it is and thus approaches it without needing it hardly. As a result of separation a person can overcome his limitations and experience.

Verification comes by itself in life. For example, you want money, 1 million of euro – you receive an offer to be paid 10 thousand euro a month, but to work 12 hours a day, each weekend, to do something you don't want and to have a hard boss. If you didn't separate your aim and life, and all you want is money – you accept, but if you understand what job you want, you refuse.

Finally a person overcomes his experience, fears, the limitations we stated in the theoretic part of irrational technologies and recognizing his wishes, feelings, actions, he starts doing what he wants. Then he becomes more sensitive to his intuition. He does not follow all his emotions toward aim, but observes them from aside and is able to choose what to do not according to emotional impulses, and then he clearly hears his intuition. Intuition is different from emotions impulses, emotions usually follow some dominant for a moment or for a period wish and together with experience constitute a noise, which prevents from understanding those hardly usually noticeable signals of intuition.

3) *Contemplation.* When a person observes his aim and actions from aside he does not repeat his experience, but holds an experiment and witnesses what is going on. In this experiment he can follow his intuition because then he is able to hear it then. Intuition gives pieces of information which a person logically can interpret.

4) *Overcoming fear. Following intuition. Taking responsibility for all consequences.* So the better you managed to control over your emotions and limitations the clearer you get signals from intuition – images, thoughts, pictures, dreams, wish, all they are intuitive of they are spontaneous and unreasoned. With the next step a person is tested if he can follow those signals, if he is able to trust them. These signals are accompanied by a choice whether or not you choose to follow them, and by uncertainty, and thus by fears and ordinary troubles to do something new, to overcome laziness. When a person follows intuitive way and overcomes uncertainty he receives a new experience and changes something in his world around. Some consequences of this new experience can be negative, can be percept as negative and thus a person is tested whether he is able to be responsible for all consequences and hold on to the chosen way.

5) With the fifth step if a person managed to hold on to intuitive way he gets a better understanding of it and now clearly realizes *intuitive connection with aim*, observes what is going on  and collects new experience. Then he either holds on to it, or follows a fear and returns back to the beginning.

6) Once a person realizes that he *reached his aim.* It can be not yet observable but a person clearly understands that it is reached and that everything is going on the way he wanted, and it is him who made it to be this way.

Those steps constitute experiment which takes time and forces for changing and overcoming and should be repeated and developed.

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│       recognition of aims and limitations     │
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│        separation. verification by experience │
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│       overcoming fear. following intuition. taking │
│          responsibility for all consequences.  │
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│            intuitive connection with aim       │
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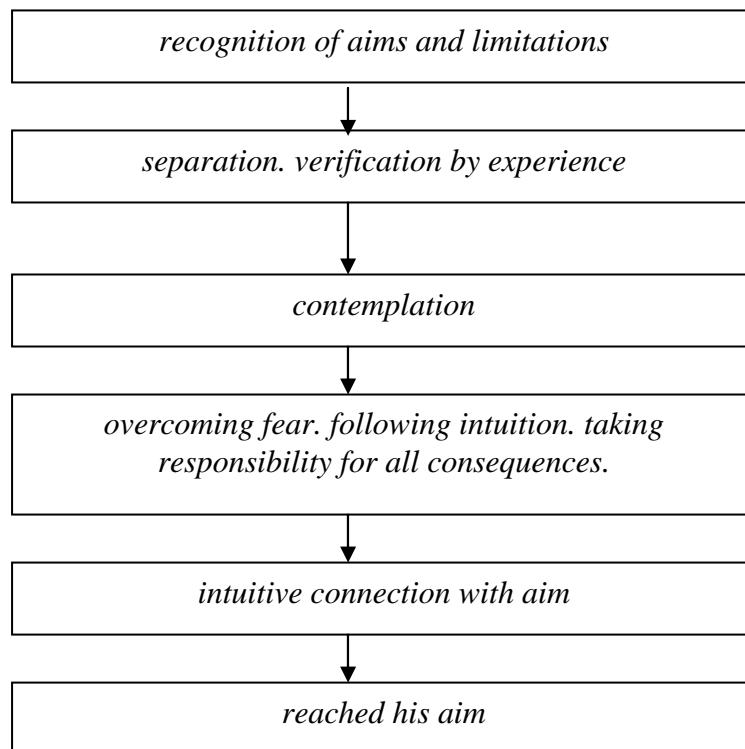
*Figure 14. Stages of intuition development as a part of decision making by irrational technologies*

### 4.2.3.   USE OF INTUITION BY OTHER TRADERS

In his paper "Intuition in investments decision making" (2006) he provides explorations and deductions with the basic aim to find out if traders use intuition in their decision making, what they think about it in general, and do they actually and finally understand it. We use results of this investigation here as a secondary data.

Investigation "What prevents traders use intuition in making financial decisions" took place 2006. There were interrogated 9 traders. Here is a brief summary upon the taken interviews and conclusions made by Urij as a part of his investigation.

*What is intuition? Do you use it? Did it help?* Intuition is when you want to do something, when you clearly understand what you want and need to do, but when it is not based upon any logic and is unexpected. Some traders say they probably use it, together with analysis, unconsciously; some admit that they know for sure that they use it. Traders notice that some can hear intuitive signals, but don't use then. Mostly those who say that use intuition (like 50%, or less, or sometimes) and that it helped once or was right and not used – notice that they do it accidentally without any control over it, and do not know how to make it work. Some notice that probably intuition is clearer when you are calm. Some agree that intuition could help to work on market more effectively, but they confuse intuition with experience and state that intuition could be positive when based upon experience. Other mix it up with emotions, which often also give unexpected signals, but opposite to intuition are reasonable, but those reasons are missed – Urij calls it manipulated unconscious impulse.

*What disturbs from using intuition?* Generally traders mostly accept existence and participation of intuition in work and that it could increase effectiveness, but understand it to be difficult, they don't know how it can be used and controlled or sometimes identified. In addition they define some limitations and barriers that stop them like plans and forecasts, moods of their colleges, previous fails of intuition, risk management, logic and reason, responsibility to explain results to chiefs – losses as well as too high revenues, expectations and fears, emotions and stress.

One trader described market as an always stress situation where you have to control over your emotions over yourself to stay calm and conscious; plus he marked that your attitude towards money and revenues disturbs a lot – you have to be ready to loose and gain. In order to learn to accept those situations you have to practice and learn, control and observe your emotions. He explains his way to hear intuition as a way to feel energy of market, to concentrate on yourself and incoming information, you have to know yourself – what and how to do if you get intuitive signal. As obstacles for using intuition he distinguished example from his life when he had too much work and stress and did not have enough force to make conscious choice, some attitudes from educative process, value system, level of energy and internal freedom. But he sees development of intuition and conscious choice as the only way to live and work.

## 4.2.4.  TRADER DECISION MAKING BY URIJ ICHKITIDZE

The following description is drawn by the results of the first interview with Urij from 19.04.07 (Appendix 1), Urij's paper Concept of Reflexivity on the Russian Capital Market (25.10.2004).

*General questions on theoretic base.* Reflexivity is a theoretical base, in practice it defines that rational hypothesis is irrelevant, that market has trends and you can work with them and beat market. It is more a general philosophic basis. Chaos theory is a scientific explanation for time dependence and investor – market interdependency. Irrational technologies are a process of decision making applied different or special because of the use of classical tools and intuition, general structure, connected with reflexivity just because I use them both. If we turn back to Soros reflexivity – we won't find description of his decision making, there is a book "Soros about Soros" where he writes that making decisions he followed some signals but it is not formalized, not stated.

*Description of the process of decision making.*
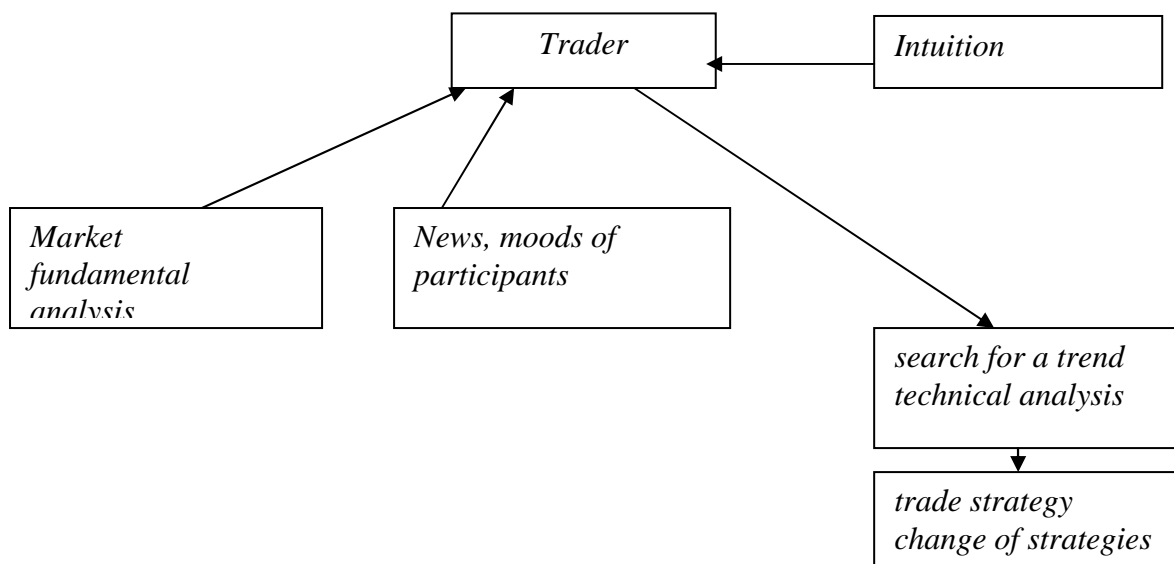


*Figure 15. General logic of decision making by irrational technologies applied by Urij Ichkitidze*

As a part of world fundamental analysis Urij monitors USA economics, Dow Jones Index, Morgan Stanley capital international's emerging markets free index - MSCI EMF Index (see Appendix 7), MSCI Russia model (see Appendix 8 and Appendix 9).According to the last stated model it became possible to classify factors that influence motion of the Russian capital market as follows:

1. world capital market trend, where USA influences most;

2. development of the Russian economy, gold reserves of the Central Bank and Eurobonds rate.
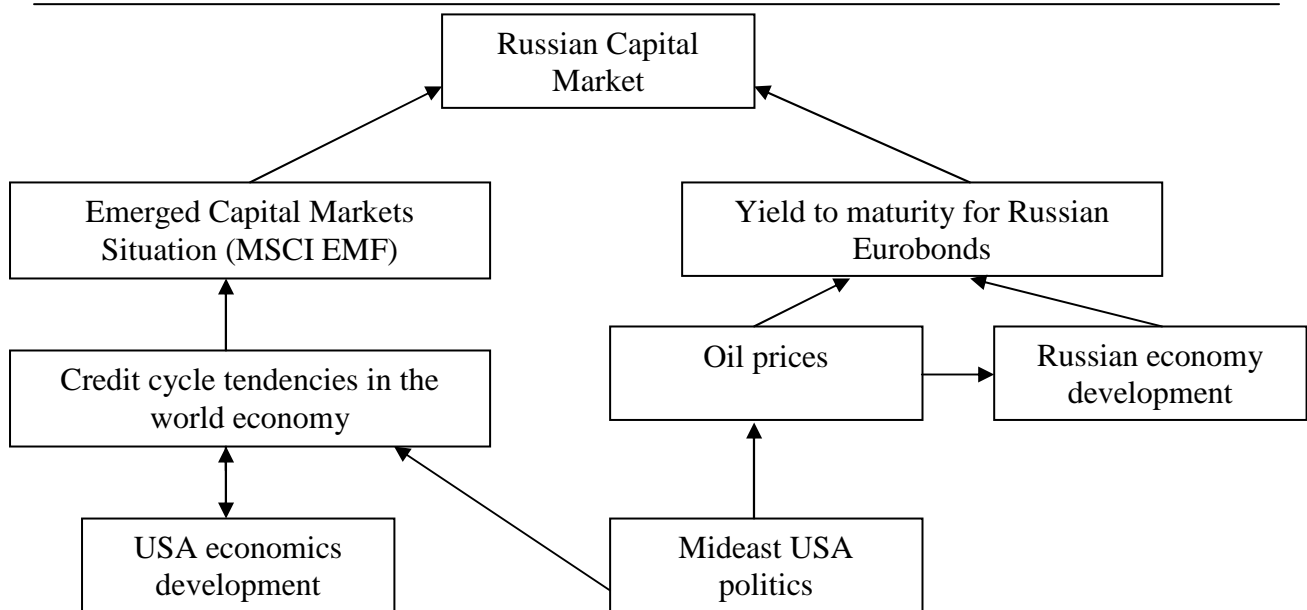
*Figure 16. MSCI Russia Index Factor Model*

In addition this model makes it possible to identify how some events influence the market, such as social, political and economic news, which especially socially and politically cover moods of market participants and play big role in motion of the capital market especially in Russia, oil prices, inflation, Gross Domestic Product (GDP).

But according to the reflexivity concept interpretation of the fundamental, historic, political and social factors is very subjective and in the present moment influences the way future goes on and thus cannot be treated for forecasting or planning. This collected information can be used for analysis of the past events and motions, market development and trends, thus as it has been done for elaboration of the MSCI Rus model (see Appendix 9). By the results of this elaboration it became possible to analyze dynamics of the Russian capital market development from 1999 to 2004. It was based upon the factors of the MSCI Rus model – the MSCI EMF index, yield to maturity of Eurobonds of Russian Federation and also USA economics. As it was stated it became also possible to analyze influence for the notion of different events like for example arrest of P.Lebedev in July 2007 corrected the modeled index a lot; arrest of the Russian oligarch Michael Xodorkovsky in October 2003 influenced decrease of the RTS for more than 20% while influence of other factors was close to 0%. But the closer we are to the present the less it is possible to analyze such events.

Urij makes fundamental analysis as a source of information for intuition, as a part of the recognition step and continuously in decision making. Then is no need for fundamental analysis

of each stock, as it was stated Russian market is characterized by "blue chips" and their liquidity as the most important for speculation on capital market. Thus after collecting information Urij starts looking for a trend and intuitive signals for trading.

Next step is to define strategy for the chosen trend. Anyway trade strategy is usually a set of rules for opening and closing transactions, which strictly define actions of a trader in different situations. Following MTS is one kind of such strategies, following trend or going opposite to a trend is another. When a strategy is chosen deviations from it are impossible and are a violation of a discipline. One of the main functions of the trade strategy is risk hedging. It lets limit risks by setting a maximum acceptable loss, like 5-10% of the sum on the account. In addition trade strategy helps trader to orient himself in a large amount of changes and information that come from market.

Because of the dependence of the chosen strategy traders have to do what is stated, thus there appear a kind of a "crowd effect" and thus traders behavior, opening and closing transactions according to the signals that come from market and the way they are interpreted by strategies, becomes predictable. So from this point of view it is profitable to be not usual, unexpected, as Urij defines it make decisions irrationally. Here is the connection to the part where we described intuition and steps of its development – to act not upon given to everyone information and strategy set in advance, but according to your intuition and wishes. So by irrational technologies approach we can add some steps in decision making and finally get the following structure:

| recourses review, starting investment period |
| --- |

↓

| aim – 100% annual<br>modeling how it can be achieved |
| --- |

↓

| fundamental analysis<br>MSCI Russia model<br>factor analysis<br>social, political, economic news |
| --- |

↓

| taking into consideration dual<br>influence – the moods of participants;<br>other traders strategies and behavior |
| --- |

↓

| technical analysis ("blue chips")<br>search for a trend<br>done mostly by moving averages, Japanese candlesticks charting |
| --- |

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| use of the collected information not for a forecast but for intuition;<br>there is no certain equilibrium, any price is possible – experiment –<br>stages of psychological work, intuition development;<br>no certainty, working in uncertainty by intuitive signals |
| --- |

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| strategy (mostly options, futures)<br>control of risks |
| --- |

↓

| change of strategy during experiment<br>by constantly following intuition |
| --- |

*Figure 17. Decision making by irrational technologies*

## 4.3.  INTERVIEWS WITH OTHER TRADERS

### 4.3.1.  INTERVIEW WITH KOZYREV ANTON, FIBOGROUP FOREX MARKET TRADER

FiboGroup Ltd  was founded in 1999 and now holds 5 companies in different countries of the world. The main activity is provided on Forex market and on the market of options and futures. FiboGroup Saint-Petersburg together with its main activity in Forex presents courses on Forex

open for everyone became so popular lately. For me it seemed interesting to find out how decision in trading is presented for teaching, this means that is more or less generally accepted. In addition it was interesting to see differences for the particularity of the market. There were also studied the proposed for studying materials.

In general probably because of teaching and having material for lectures the trader did not answer exactly on the stated questions. The importance of the theoretic basis for practical matters and for studying was not revealed, and everything I could understand was that probably because it is Forex – market had no logic. Thus the biggest attention was paid to the process of decision making – strict following the strategy. Each trader must necessarily develop his own strategy and hold on to it without breaking discipline, because each new trader has the largest problem – psychology, emotions, which can to be controlled if a reader is experienced and the only way to overcome it of a young trader is to follow strictly his strategy. The main idea of the whole game was not to lose money.

For studying there given a lot if material on fundamental analysis, including USA indexes and a small overview of Russian market; mostly on technical analysis; a very small overview on psychology for conclusion. Intuition was defined only like experience, thus could be used only by experienced traders.

The final decision making included continuous review of capital, losses and gains; control of risks, possible revenues and losses calculations; use of fundamental and mostly technical analysis. The most problem was seen in psychology as it prevented young traders from following plans like hoping for luck, waiting for big losses with a hope that market can turn and not fulfilling stop-loss orders and some other.

### 4.3.2.   INTERVIEW WITH ANDREI DRONIN, OLMA GROUP TRADER

The OLMA Investment Group was founded in 1992, at the beginning of the voucher privatization program and the inception of the Russian Securities Market. OLMA currently has the largest retail client base in Russia with over 6,000 customers. Several of its Institutional and high-net worth clients invested in "second-tier" Russian enterprises or small caps. OLMA has also actively started working on the Russian Derivatives Market and is one of the leading market makers in the Developing FORTS exchange (Futures and Options).

Andrej Dronin works for the OLMA Saint-Petersburg division, he works only with futures and options. As it has already been described Russian derivatives market is also limited and is yet developing, as usual OLMA works only with the most liquid ones – RAO ES, Lukoil and others. As a trader on derivatives Andrej works from 1992, from the beginning of market in Russia.

For theoretic basis Andrej considers only the options theory and the techniques of their calculation, using different options strategies and combinations, understanding advantages and disadvantages and risks of each; because even if a trader sometimes finds the right direction of market development he can fail at options strategy choice. For macro analysis he monitors news, others in his division monitor each day analytics of the main company that come from Moscow; and in general their interest in macro factors is limited to the periods of options and derivatives existence, that is a quarter, and for option strategy technical or fundamental analysis is interested for information if there market is up or down in general. They are not going to trade opposite to market then, but anyway they are looking for good options combinations according to these trends. This collected information is used for such a forecast as to play for market up or markets down.

Price expectations and probabilities of their ups and downs are made upon experience, intuition, some understanding of the market situation, it was said like in card games, in poker – you just define it because you monitor the game. Sometimes you see volatility; it can be caused by moves of big trade houses and their insight information, and start playing on it. Sometimes you get information about market trend and you start following it and plying up.

Chosen strategy defines revenues, you make it so that you can know in advance how much you can loose and win, if you want a big bet you are to have a big risk, nothing can happen accidentally – you calculate everything when you choose strategy. Strategies and revenues are more or less averaged too what everyone uses. You don't need to change strategy, you choose one and you just wait for a market to go your direction, plus you look for hedging options. Thus you define and control your losses and your gains. If you choose uncertain area and play there, you use your experience and senses and define prices and expectations by chance. You bear your risks yourself, but there is a risk management that anyway controls it and makes reviews.

## 4.4. EMPIRICAL DATA ON INVESTEMENTS PERIODS

### 4.4.1. BEGINNING OF THE EXPERIMENTS BEFORE INVESTMENTS PERIODS

This description is a revision of secondary data from Intuition in investments decision making, term paper, Ichkitidze Urij (2006) practical part. He starts following the presented way of development of intuition from 2001.

*Recognition.* March-July 2001. Urij worked as analyst in investment company, well paid, he finished university. He understands that makes good forecasts, but his brokers are dissatisfied and state upon incorrectness of his forecasts. This job seems to become routine, he understands that ha can not do it for the whole life.

*Aim.* To understand who and if he is right. He opens his own account for large for him then sum of 60 thousand rubles with the use of credit leverage. If he reaches 100% annual then he is right, if not – then his forecasts are wrong.

*Experiment.* Nothing was earned nothing was lost. He bought if he thought it was going to increase, and sold if he thought it would decrease. October 2001 he bought stocks and anticipated them to increase for 10-20% and then fall sharply. When they grew he received 30% revenue. And thus the situation developed according to the forecast he sold at once, but during 2 months (November – December) opposite to the forecast stocks grew for 100%. During this increase he sold according to his forecasts and finally got 20 thousand left. He was disappointed and stopped market activity.

*Conclusion.* His forecasts were wrong, there is something to be changed.

*Recognition.* During the experiment he felt he was changing inside partly provoked by the training of coaching. There were controlled dreams. When he was selling according to his forecasts he felt like the market was teasing him, he agreed with defeat only at the top of the trend. He assumed trends on markets, and tested it on Mechanic Trade System (MTS) and decided to deny forecasts.

*Aim.* Aim is to check 2 hypothesis. First is to work upon MTS and trend. Second is not to wish the aim, but to make an experiment and not to depend upon it, but control it. For the last months he could carry his aims out of expectations and wish more than he could then.

*Experiment.* march 2002. He opened the experiment with 51 thousand which was a lot taking into consideration previous loss. When during the first 2 days of his work he received 60% revenue he felt cool, and after then at march-may he got losses up to 50%. But he followed the chosen MTS strategy. Together with it he provided fundamental analysis of the US situation and found a trend to decrease. This hypothesis was approved by MTS and sold. He felt he could first catch world trends in economics and prove them by his deals.

After that April – May period was pressed by losses up to 50%, pressing on work, PhD studding. Then he managed to control over his dream, this frightened him and he could not repeat it after that. In 10 days he regained 51 thousand on the account. Market began falling and he refused his MTS strategy, market changed unexpectedly for him and losses grew. He felt he betrayed his aim. One of the reasons that he refused his strategy was an advice of one of experienced traders about market activity, that freighted him and made change his mind. Later he understood that it was really fear and distrust in himself that made him deny his aim. He had 10 thousand on his account.

*Conclusion.* The stated hypothesis was right, but he had not enough forces to bear pressing during the experiment, as a result he became frightened and refused the aim. The reason for this fear was dependence of money – losses depressed, revenues drew crazy. At decision point he chose small revenue without risk to his strategy and paid for it. Thus one has to believe in himself, disregarding to difficulties, not listening to anyone or anything, only in yourself.

*Recognition.* June 2002. He could not afford to live and pay for the account for the salary he had, he was nervous and wanted revenge, thus he decided he was not ready to continue then and took a vacation. There he realized that he could achieve more and this understanding and opportunity gave him forces to go on. When he came back he found out salaries were increased and he could in 2 month continue to pay for his account and come back to market. For that he wanted to understand himself – what he wished from it now – to know the truth and use money as a tool. He felt he took responsibility for his work on market.

*Aim.* August 2002. He had 42 thousand on his account. After vacation he was strong and sure, he felt he was doing what he wanted independently to anything else. Aim was intuitive – RAO ES stocks would by the end of the year be 4.40 to 2.80 at that tome, this hypothesis was to be checked with the use of risk limitation by MTS. If it was right – there would be 200-300% annual, if not risks were minimized. The aim was not to gain money, but to check if he could bear experiment.

*Experiment*. He traded by MTS, he bought and sold if it decreased to minimize risks. Once he felt he was going to believe that this fall will continue, but risk minimization made him indifferent to losses and he had no fear then; he did not waited for the aim he just followed the chosen strategy, at the minimum price he backed up risks and when the market turned he bought again. By the beginning of December RAO ES reached 4.40 and his account amounted to 130 thousand.

*Conclusion*. He could hear himself and stand up to difficulties. He reached the aim. He understood how to work with market.

*Recognition.* December 2002 – January 2003. He feels he tested forces and looked over his life, what he wanted, what lacked. He saw important dreams.

*Aim*. He wanted a change in personal life. He didn't want money, he had them. He understood the way to work in the market and wanted to follow his strategy. He needed a big aim and following the strategy.

*Experiment.* As he wanted he paid attention to the market as much as he had for the working hours a day and lived by his private life. On market he worked by the set strategy, but losses anyway depressed. He had RAO ES 1.5 and RTS 250 for an aim and hedged risks. In March 2002 he fulfilled his account and had 300 thousand then. But opposite toward his idea market grew and in May – June he stopped the chosen strategy and had 50% loss. He needed money then a lot, he could not understand for himself if he had really learned anything on the market, he had problems on work, in private life – he was depressed and began to play on market just for money using trend strategy. Finally by the middle of June he earned no more than 10% and took a vacation.

*Conclusion.* He understood he was really lost. His job didn't satisfy him at all, was small and strangled, he outgrew it, but stable place and salary, certainty were holing him up to it. Second, he had to make a choice in his private life. Third, he could find himself on the market.

*Recognition*. Vacation helped him to solve problems in private life, he aggravated a conflict following his intuition. Second, when he came back to work he fired, he decided that wanted to be a trader. Third he has written a text that helped him to understand himself and economics better. Thus finally he felt much stronger and could catch calmly intuitive signals again.

*Aim*. He wanted everything from life. He had chosen to work as a trader.

*Experiment*. He had a dream that RAO ES went from 10 to 8.8 and set it as an aim. In addition he saw a good situation in Rostelecom stocks and earned 30% revenue and sold it at once with the first fall. RAO ES fell and he sold it too. He had 300 thousand on the account. He was first in the competition for a best trader held by the RTS exchange and the whole company where he worked found out about it. He was surrounded by public attention. It was more than 2 month before the final of the competition. So he wanted to win and increased his bid and risks twice, he had no clear idea and traded by trend and MTS. He lost a lot by volatility and the end of December he managed to regain part of losses and was 6 in the competition. By the end of 2003 he lost as much as he earned. He fired and became a trader in another company and dealt up with his private life.

*Conclusion*. While you have not solved problems that are not quite connected with market like job or private life they will turn you down and disturb from effective work. In addition you cannot treat your work on market as something stable and formalized, market is much more complicated and can punish. Non of the rational – "I know how" technologies works on market, cannot help to beat it. Intuitive signals do help. In addition unreadiness to big earnings takes too much energy for accepting it, when this energy goes away it goes away with the earned money.

### 4.4.2.   INVESTMENTS PERIODS REVIEW

Investments periods are presented the way they followed each other, there are 4 of them. They cover the studied performance from January 2004 by March 2007 and depict practice, strategy, decision making, general approach of trading on financial market by Urij Ichkitidze. The following material was collected by the matter of interview with the trader and secondary data from the Intuition in investments decision making, term paper, Ichkitidze Urij (2006) practical part.

Each Investment period begins with analysis of capital, setting an aim of 100%, collecting fundamental data and looking for a trend – modeling how the aim can be achieved. Together with data collection listening to intuition and trying to get its signals both for self understanding and development and for making decisions on the market.

The data is presented the following way:

1. Graphical presentation of investment period with RTS Index and reflexivity.ru Index/return index of the studied case with explanations;

2. table of fundamental analysis, technical analysis, transactions, trend explanations, strategy change, results;

3. graphics of stocks used in strategies (see Appendix 10 – RAO ES, Appendix 11 – Gazprom, Appendix 12 - Lukoil);

4. psychological description of analysis, decision making according to introduced schema of experiment with intuition applied on financial market.
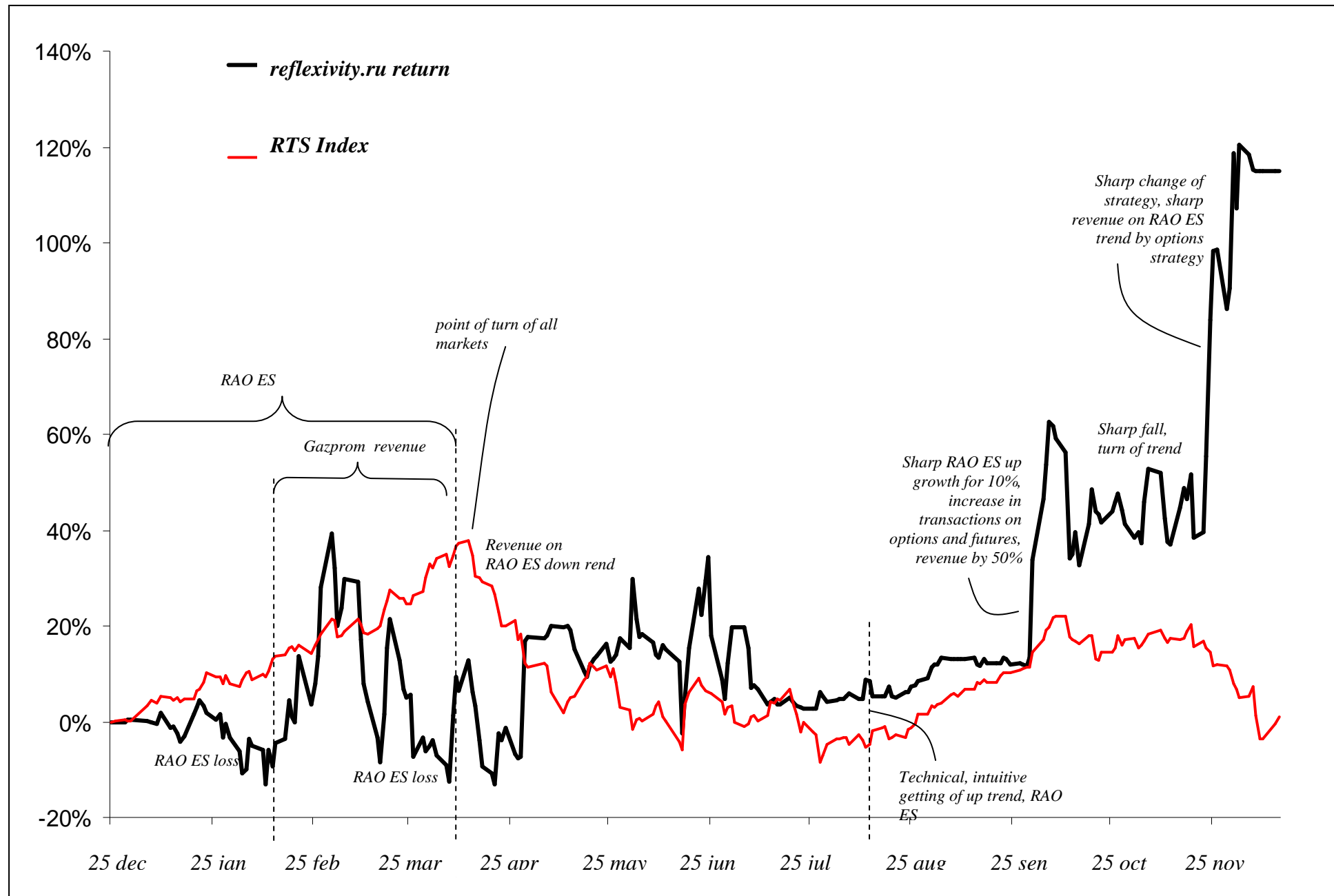
*Figure 18. Graphical presentation of the I investment period*

*Table 4.1 I investment period strategy January 2004 – December 2004 by irrational technologies applied by Urij Ichkitidze*

| *I period January 2004 – December 2004* | | | |
|---|---|---|---|
| *Month/ year* | *trend, stock* | *technique* | *Result/ return on capital/ approximate* |
| Fundamental factors: world markets are growing fast, economics and GDP of USA are growing, oil prices are growing, Russian economics is growing, MSCI EMF is growing (see Appendix 7). The growth  and conviction came from the previous year. | | | |
| Dec-mar 2004 | Play on RAO ES up | Bought RAO ES stocks futures. Work with small stop-loss – 1-1,5% of the point of entry. If stop-loss was wrong and the price turned back up – then tactics stop-loss to stop loss, fast return to buy. In January there was sold a set of options with 15 may execution. But technically RAO ES was not changing (see Appendix 10), had a sidewalk trend – thus the strategy was lossmaking. | 5% |
| Jan-mar 2004 | Play on Gazprom up | Bought futures at the end of February with the stop at 2-3%, saw as an aim up trend for 1-2 month, when stated losses on RAO ES. | 10% |
| Middle of April – point of turn of all markets, MSCI EMF, Dow Jones, RTS, technical analysis. | | | |
| Mar-Apr 2004 | Turn of market, RAO ES down trend | Bought RAO ES with short stop-loss, turn of market, execution of stop-loss. Fast sell with stop-loss of 1-2%. Risk speculation. | 15% |
| Apr-Sep 2004 | Play on RAO ES up trend | At the end of July technical analysis and intuitive feeling of the up market trend. Futures and options on RAO ES, small stop-loss 1-2%. going by trend, using credit leverage, increasing transactions. RAO ES grew sharply for 10%, transactions were sharply increased, return grew by 50% in Sep-Oct. Area of high risks – revenue or loss of 40%. | 30% |
| Oct-Dec 2004 | Sharp change of strategy, play on RAO ES sharp fall | Work with up trend. At the end of November sharp unexpected fall. Exit of the bought transactions by stop-loss, analysis during one day and opening of down trend transactions with spot-loss of 1-2 %. In one day, when fall continued bought options put with a strike of 0.5 ruble lower than present then price (at 8.5 rubles). | 70% |

The investment period was closed, because the aim of 100% was achieved (115% return on capital).

*Recognition.* Life is like starting from beginning, Urij is a trader in an Investment company Altra, he works for his account, for account of his company and clients. This is work is harder than the previous one, he is afraid he can fail. Plus he feels it interesting to check what he really can do, find out, fight and play now after he left his previous work.

*Aim.* He bears limitations from the previous period in his private life, but this aim goes on the second stage, because of the new job, but stays very important. In work he aims to achieve 100%, his boss says that 50% is good.

*Experiment.* He tried new strategies with options and it turned to be successful, he tried something new overcoming a fear of new. In February he had positive moves in his private life and work went on back stage. Now he feels he needs money for living, responsible for his family and his victory on market becomes very important for him, it becomes a strong motivation.

There comes first understanding of conscious use of intuitive signals. Some dreams helped to solve problems in private life. Urij developed some tactics to understand intuition. One of them was to stay alone and "*feel hands*" if something was wrong or right in his strategy, those signals were mostly right. Another technique was to *follow unexpected, sudden senses*. In April RAO ES was growing, everyone including Urij himself waited for it to continue to grow, and it grew for 8-10%. Then when he found out that all his colleges bought a lot it seemed alerting, but he anyway was waiting for further growth and didn't change transactions. Then suddenly market starts falling, he closes some transactions with risk control, but waits for growth. Decrease continues, then one suddenly jumps up and the market is closed up. Next morning price falls, more than a half of the previous growth is turned, plus Urij understands that he feels fear. They way to work with *fear is to identify it and go in for it*. Thus he closes all bought transactions and opens sell as much as it is safe. Market falls for 30% in three weeks and he has about 30% revenue in 5 month in new firm. Market refuted his and general trading expectations, he managed to notice it and follow his fear at once.

Another technique that worked in that example was *reading from market,* when there come more that one signal about anything, like he felt fear and observed things happening then. Fear just made him act the time it was necessary.

In July he took vacation and lived by his private life without thinking a lot about market and work in general. He felt market and followed clear feelings, nothing disturbed whom from

understanding it, he solved problems in private life. He did not see any falling in market then and closed transactions for down trend. He called it the fifth step in developing intuition and feeling energetic connection with market. He could *think about it* possible next development and could understand his own feeling about it, he knew they were right. He came back from vacation full of forces and understood he would let market go then, he called this technique – *interconnection with an object*. No special strategy was used, following market moves with risk control, accumulate losses first in order to get new intuitive signals. He then expected decrease, but found a small growth. Then one of his colleges whom he trusted said the market would continue to fall, it seemed interesting to him and he called this a technique of *believing someone you think personally developing,* and he increased bought transactions controlling risks. Finally market grew for 10% and due to large bets he earned 20-30%. He felt then sure about working with market and secure with money for his family and accounts.

Using this strategy he got some problems with the superiors who wanted no risks in trading, while he that time had comprehended loss. So he stopped experiment for the companies' account and decreased revenue expectation to 50%, and his work started limiting him. By November he was fully expecting growth, but prices suddenly fell for 2-3% and closed some transactions as risk control. He remarked the fact that market was going opposite to expectations and closed transactions for up trend. In addition he noticed sudden Forex market change. In a few days when falling continued he increased sharply sell transactions and hedged risks. While market was fluctuating he had to decide whether to follow down trend chosen strategy or to fix positions and close transactions. He used technique of imagining market development and trying to identify his own feelings about it. He felt he feared the second variant of continuous falling and chose it; he understood later how hard it was then, he had to trust in his strategy completely because risks were high, prices for the out options grew by 5 times in 2 days. Falling was hard for everyone, he felt he could not accept larger revenues and closed transactions with more than 100%. Technique of *doing something advancing*; starting doing something before you have it, and then it comes to you.

*Conclusion.* Irrational technologies worked. He consciously used some techniques on financial market, he just did what he wanted and set an experiment while he had no idea in the beginning of the year how it would go and end, how he would achieve aims, but did. He kept separate his aims and experience on market and in private life. He realized he felt fear and went on it, but was not just afraid and doing nothing.

*Figure 19. Graphical presentation of the II investment period*

*Table 4.2 II investment period strategy period December 2004 – March 2006 by irrational technologies applied by Urij Ichkitidze*

| Month/ year | trend, stock | technique | Result/ return on capital/ approximate |
|---|---|---|---|
| **II period December 2004 – January 2006** | | | |
| Fundamental factors did not change from the previous year – markets were growing. | | | |
| Jan-mar 2005 | Play on RAO ES down trend | Conviction/hypothesis/experiment that market is going to start and continue form the previous year falling. Strategy on moving averages on RAO ES. Clear strategy, diversification and risk control, but the market was not falling, was volatile and sidewalk +/- 15% | -25% |
| Apr-aug 2005 | Change for up trend, losses on sidewalk trend ROA ES | In the middle of march - beginning of April change of strategy for up trend while the previous strategy was turned out to be wrong. Work with RAO ES and Lukoil up markets, because of intuition and oil prices up trend (from $30 to $60). Lukoil was lost. Bought options and futures for ROA ES up trend, but it stood up to sidewalk trend (technical analysis) and the strategy was lossmaking and risky. | -50% from the beginning |
| Aug-feb 2005-2006 | Play on RAO ES up trend | The expected growth began and losses were covered. By October – November up trend became evident and transactions were increased. | 40-60% |
| Feb 2006 | Continue on RAO ES up trend | Conviction on strong up trend and bought options with strike on 16000 at the present then price of 14000, the bet on options was 1 to 10, was got very exact. | 500% from the beginning |

The investment period was closed, because the aim of 100% was achieved (499% return on capital).

*Recognition.* Urij had a child born. He needed market for money then and was very self-assured and increased risks.

*Aim.* To live freely and do what he wanted. Not to depend on work and earn 100%.

*Experiment.* First test hypothesis of market falling. Risk control and accumulating losses for getting signals that hypothesis was wrong, follow market and observe feelings. He called this technique of *killing illusions.* It works when you have some strong expectations and cannot separate them from aims and getting clear intuitive signal you consciously follow those expectations, but you stay aside and it is important to notice when market defuses these expectations. This hypothesis turned to be wrong, but losses were controlled, anyway hypothesis was denied and previous feelings of over self-assurance were eliminated. Work in the company became no more interesting and limiting and at the end of March he fired to nowhere. Thus he overcame fear of a new stage in his life and of holding up to a stable place and salary; he wanted to write and started writing even though no one paid for it. He stated later that it helped to get the next strong intuitive signal about further market growth. The only thing that disturbed was desire for money. Thus he bought a lot and had extreme risk, he hoped for quick regain from market, but it fell and losses amounted to 50%. He was depressed.

He accepted fails, understood that it was right and understood that he wanted to spend less time for work (2-3 hours a day). Thus he continued following the intuitive signal about growth and remarked its prove by Lukoil growth, then Gazprom grew, but RAO ES was standing still. But losses depressed. Anyway at this time he felt he was doing everything right, he founded Reflexivity.ru and held some lections in university. Finally RAO ES grew a bit and he covered his loss. After a conference in Moscow he came up with intuitive signal about RAO ES growth – 18 rubles to 10 rubles then. Rage made him challenge market, thus when market grew for 30% his angriness made him continue, through small market drawbacks; he felt market very well and used interconnection technique. Finally RAO ES grew to 22 rubles and he had 499% by one year and a quarter.

*Conclusion.* He did not know how he would pass the year and achieve the aim, but he did what he wanted and used technique on financial market and succeeded.
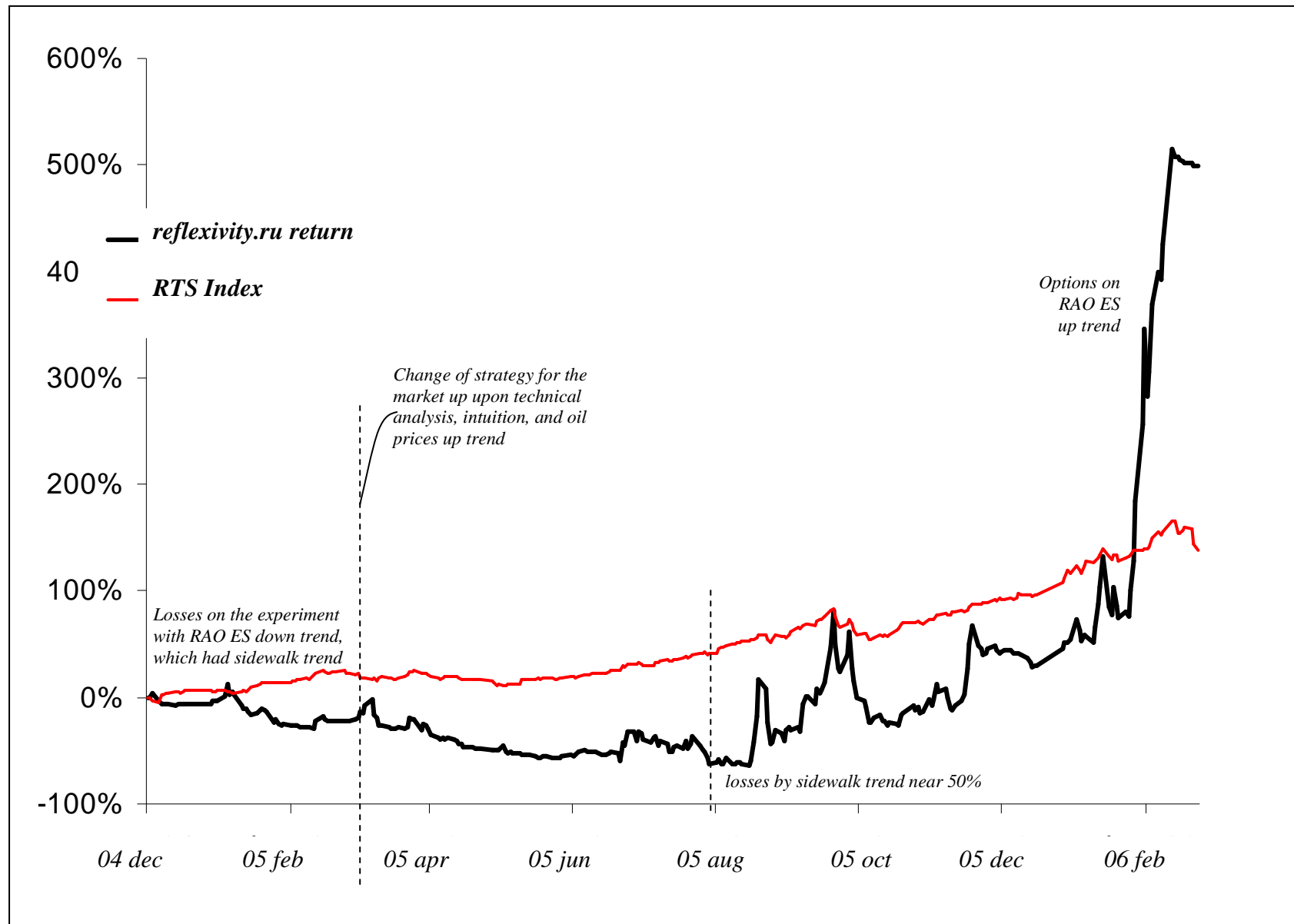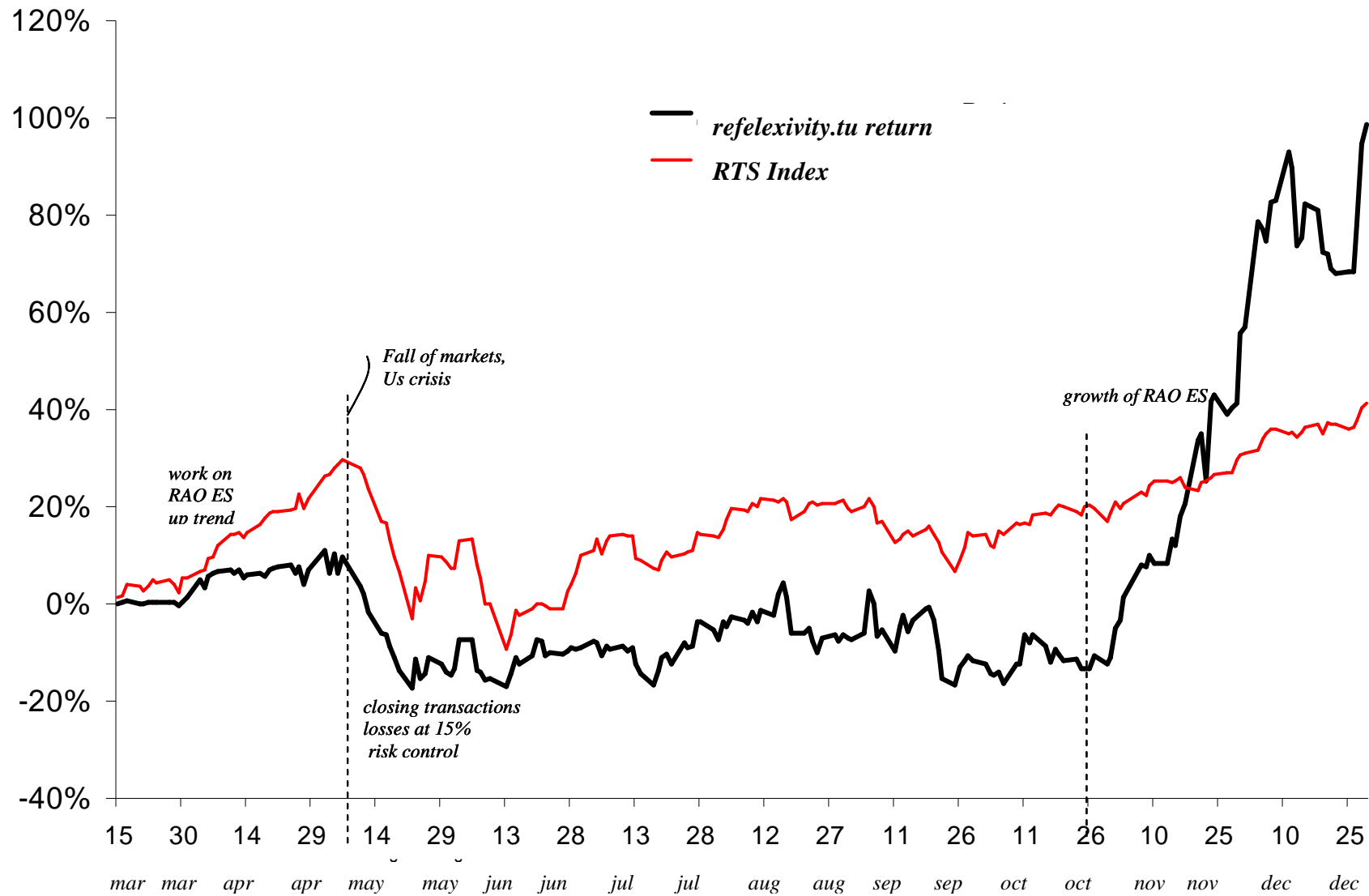
*Figure 19. Graphical presentation of the III investment period*

*Table 4.3 III investment period strategy January 2004 – December 2004 by irrational technologies applied by Urij Ichkitidze*

| III period March 2006 – December 2006 | | | |
|---|---|---|---|
| **Month/ year** | **trend, stock** | **technique** | **Result/ return on capital/ approximate** |
| Fundamental factors – markets were growing. | | | |
| Mar-may 2006 | Play on RAO ES up trend | Strong conviction that due to the very good fundamental situation markets are going to grow. Reasonable work on up. from the 9 may fall of markets and closing transactions, losses are no more then 15%. Testing hypothesis. | -15% |
| May-oct 2006 | Losses on the sidewalk RAO ES trend, play on up trend | Continue to work on up trend, increasing transactions, controlling risks. Still strong intuition of growth. | |
| Oct-dec 2006 | Play on RAO ES up trend | Strong growth from November. Hold on to the previous transactions and bought options call and futures with strike 1000-2000 higher of the present then price. Intuition and understanding of strategy of a big market player, no force to get further revenue and closing transactions. | 98% |

The investment period was closed, because the aim of 100% was achieved (98% return on capital).
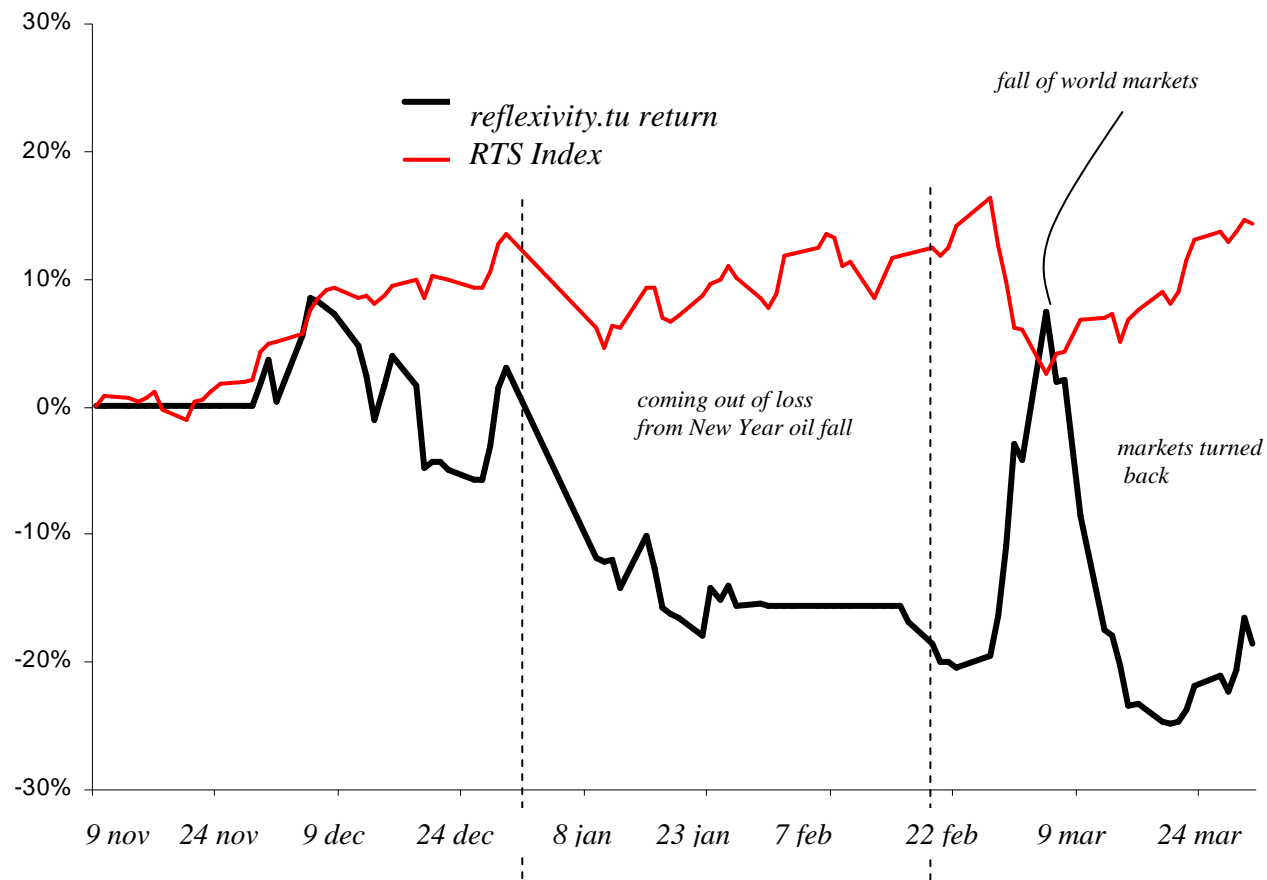
*Figure 20. Graphical presentation of the IV investment period*

*Table 4.4 IV investment period strategy January 2007 –March 2007 and is going now by irrational technologies applied by Urij Ichkitidze*

| IV period January 2007 – March 2007, is going now | | | |
|---|---|---|---|
| *Month/ year* | *trend, stock* | *technique* | *Result/ return on capital/ approximate* |
| No ideas about world markets and fundamental factors. USA economics is slowing down. Oil prices fall. | | | |
| Jan-feb 2007 | Play on Lukoil and Gazprom up trend | Before New Year idea about oil up trend, after New Year it fell. Transactions were closed. | -15% |
| Feb-Mar 2007 | Play on RAO ES down trend | 26 February – all world markets fell for about 10%. by technical analysis this fall was identified and stocks were sold and gave revenue, trend was supposed to continue, experiment. Then markets turned and grew up (see Appendix 7 MSCI EMF), transactions were closed by moving averages. | -5% |

The investment period is going on.

Thus, in this chapter we set before the findings we gained in the course of primary and secondary data collection concerned with trader decision making. First we made an overview of Russian market and its history; then we concentrated on the studied decision making process of irrational technologies description and understanding of its structure, system and interconnection of its levels; then we introduced data from interviews with other traders, which seemed to us more generally accepted and traditional; finally we presented a review of the 4 investment periods Urij had in his practice with graphical presentation of work on market and its results, strategies applied and with an emphasis on psychological development of the trader.

# 5.  ANALYSIS

*In this chapter we connect theoretical and empirical reasoning, by emphasizing on the core principals of irrational technologies, their application in the practice of Urij Ichkitidze and their differences in usual understanding of decision making by traders. We prove application of irrational approach by detail analysis of its experience on the Russian financial market for the period of 2001 – 2007. We prove it difference from more generally accepted way.*
*We state upon unclearness of this question for traders in general.*
*We analyze psychological ground of irrational technologies.*

We start this chapter here by turning back to the beginning. If we open up introduction and see for the logic of the present research we shall find the following structures: theory, methodology, empirics, analysis and conclusions. It is early to talk about conclusion now but we can review the previous chapters and the results of the research we got by now and have written in those chapters. The point is that the logic, the constitute, meaning for the whole paper and the connection of each of them now described only in introduction were like guidelines and final aims for this investigation. But it actually turned out to be difficult to follow them exactly because of some challenges that were met due probably to the particularity of the matter chosen for this master thesis – trader decision making.

## 5.1.  THEORY REVIEW

First challenge was absence of a historic or scientific review of all financial trends that was demanded for the purpose of this research. Books mostly described each idea independently, criticized each other and no further. Thus the summary presented in this paper is a full responsibility of the author. We tried to connect them by logic of historic development and thus finally to find a place for something new.

The trends of rational hypothesis, behavioral finance, chaos theory and reflexivity followed each other. The rational hypothesis by some time became irrelevant, unable to explain a lot on financial markets, like those of high and extremely high returns, financial bubbles, large volatility. This circumstance made new explanations emerge. Behavioral finance tried to base new explanations upon trader behavior, studied a trader as a human being and emphasized upon emotions and feelings that influenced his decisions especially in situation of uncertainty – common situation on financial markets. They challenged rational hypothesis by testing that humans are not rational, cannot be rational, especially under uncertainty, especially traders in most always crises situation on financial markets. Their findings and deductions were largely supported by statistical explorations of Perspective Theory.

Chaos theory challenged effective market hypothesis from the point of time interdependence and trend development fully denied by classical theory. Chaos theory applied on financial markets as behavioral finance also presented a more practical way of understanding financial markets. While academicians stated upon the unique equilibrium and fare prices that reflected all information and finally as a consequence upon possibility of no or never beating markets; practitioners proved prices to develop in trends and deviate from a fare price, be constantly volatile, what could be identified and give possibility to speculate and gain.

Idea of reflexivity is rather new comparing to those of chaos theory and behavioral finance, and cannot be called a complete theory. But anyway it also presents another view of practitioner. It is obvious that George Soros managed to gain a big success on financial markets; this may be one of the matters why his idea became known and can be trusted. It kind of proved already. There is no clear formulation of reflexivity or scientific prove and justification, we won't discuss it no longer. It was interesting for our research because it constituted basis for development of another new trend of financial market approach – irrational technologies. As it has been described in theory part reflexivity became the core idea for Urij Ichkitidze for development of his own way of making decision on financial markets and he connected it with his own ideas which he called irrational technologies.

As previous emerged trends irrational technologies refused to accept unique equilibrium hypothesis, fare prices, rational independent participants of financial market motion. Oppositely it emphasized upon trend development and thus time interdependence grounded by chaos theory; on irrationality of traders described by behavioral finance, who do not act in reality like robots and can not exclude their feelings and emotions from influencing all their actions and decisions made on financial markets as well; on idea of mutual dependence and influence of markets and its participants introduced by reflexivity. Reflexivity not only motivated development of Urijs' approach like other trends and like a challenge to classical theory, but also constituted some basic principals of irrational technologies.

In general we have to bring attention to the core idea of irrationality – idea of irrational behavior, of a special behavior different from others. While rationally accepted humans act and thus decide always logically and reasonably and always independently from circumstances, his own emotions and feelings and all the rest connected to it. Irrational human is and by all means seems to be more realistic, because he acts in accordance to his emotions and feelings, which are partly influenced by situation and environment, partly by his convictions and character, partly by moment impulses, partly by what we are used to call in general intuition partly by a lot of other

factors. Irrational technologies go further than just acceptance of the nature of human emotions, it as stated presupposes a different behavior of a person, different from others and as a source of this difference it takes emotions and feelings.

As it has been described in theory approach of irrational technologies is opposite towards that of behavioral finance. If behaviorists explore humans' emotions from the point of view of noise, disturbance, bias for rational, reasonable, logical behavior in some circumstances and environment and try to finally forecast how and why human decisions are biased in some situations from what it usually, generally, classically accepted to be. Like for example, by the classical economic basic it is considered that each person acts with the dominant aim of making the best for himself; evaluates each situation from the point of view of the best and largest use and utility for himself. In reality it often turns out to be not exactly so, or even opposite – people sacrifice consciously or unconsciously because of convictions, situations that may be involve someone they love, just by chance, or unintentionally; people fail because of moods and weather, because of some thoughts and absent-mindness, because of tiredness or lack of knowledge; in situations of uncertainty, stress and crises people can finally act so unexpectedly that none of them or us could ever forecast. Behavioral finance thus model situations and search for how different circumstances are interpreted in actions. They investigate all this as given.

Irrational technologies on the contrary approach emotions and feelings as a source of human force and individuality, and more important as a controllable factor. In addition to general ideas of market functioning like trends, interdependence and volatility, irrational technologies are found on the postulate of reflexivity that states that there is a mutual dependence of situation and its participants. Generally and especially rationally it is accepted that situation rules over a person, that circumstances is something given and we learn and try to forecast them, plan and slave. Reflexivity states that future cannot be forecasted because we as participants influence it in present and change by our actions, at the same time present and future expectations and many other factors influence our actions now. This interdependence denies relevance of forecasts, connects future to present and vice versa, and in addition it explains ability of a person to influence present, future, situation, circumstances. On financial markets it is shown by the mutual influence of prices and traders, and is presented by George Soros in examples of his own career, success and failures in Alchemy of Finance.

Rational behavior can be foreseen, even emotional reactions to some circumstances are over consideration now and patterns can be elaborated for them. Thus human behavior becomes predictable. If we forget about rationality we can state that emotional behavior is average,

general and usual. It is a matter of each person to decide whether he wants and cares about being or behaving ordinary, but on markets predictability means that your actions are known and foreseen by your competitors; on financial markets that you work like many others and gain on average. Irrational technologies seek for different, irrational behavior. On market it constitutes a competitive advantage. In life it means for each something for our own.

Irrationality is in behaving not according to emotions, but over controlling them, not letting yourself to be controlled by them, stepping aside and making *conscious from emotions choices*. What happens if we separate our consciousness from emotional screen? It is something like when being calm and concentrated, in addition strong and daring, because in practice it is difficult - emotions have a big power over personality and separation from them and control over them takes time, forces, motivation.

Emotions are seen by irrational technologies as one of the limitations, or more concrete as one of the sources of limitations or barriers. For example, risks, doubts and possible losses, uncertainties are connected with fear, which is rather difficult to control and set aside. Our preferences are connected with what we want and like, they are also difficult to move, in this case you have to understand that it is something you do because you like it and consciously do it just because you decide to do or not to do it, not because your feeling tells you that it is something you have to do.

Another limitation for conscious choice is experience, convictions, beliefs that come with lifetime and from society. We generate a habit to percept reality as it is easier; easier is when you know how and when it does not change. Thus experience sets a limit and to do something new we have to overcome this barrier, for example to set an aim that is out of our knowing and possibilities for a moment. Doing so you fulfill your ability to control over situation by acting not only in the limits that are set by circumstances but by setting aim out of them and by achieving getting out of them, changing them. On financial markets participants influence price movements by their moods, price influences their moods. In life circumstances give a person possibilities, he seeks how to make something that is over this possibilities. Here it is difficult to set this aim out of your possibilities and experience. Dare to do something you don't know how to achieve. In this situation you need a strong motivation for that. That what we explained in the theory chapter by driving motivation out of your experience, by the function of perception reality from the point of view of this motivation – not setting a barriers for your wishes but searching for ways to achieve it.

Thus you will make a conscious choice which will be based not upon limitations but your initial wishes. If then you manage to maintain consciousness of choice without emotional noise you will catch your intuition. This is generally the idea of developing intuition and using it by irrational technologies. And by irrational technologies usage of it in making decisions on financial markets gives you competitive advantage of behaving irrationally, uncommonly, differently and of achieving aims that are out of your possibilities then – beating financial markets – by listening to your intuition.

## 5.2. METHODOLOGICAL REVIEW

As it was stated in the methodological chapter there were met some challenges on data collection. If now we turn back again to introduction and look at the data that was supposed to be collected in accordance with the aims of the research we shall see that the purpose of proving applicability of the new trend we searched for comparing it with a more generally accepted one. For that we strived to find any secondary data upon trader decision making but as it has been explained was not fulfilled. There was not found any source of secondary published or internet sources of information that described decision making as a whole process.

Thus we changed our strategy and tried to reveal it by primary data collected by means of interviews with traders. Thus first interviews were composed the way to recover stages of decision making. And when it became clear there was composed an interview that bore a purpose of collecting information for comparing by those stages (see Appendix 4). But another problem for it was that none of the questions stated could be answered strictly and clearly.

As we have already assumed this all is due to the matter studied. Decision making is a rather personal technique, often not clearly understood by trader himself. Everyone does it his own way.

## 5.3. COMPARISON

There are certainly certain traits we can define and underline in behavior of traders interrogated by us and by Urij. Starting up with mostly no clear understanding of the way they themselves make decisions except for probably assurance of irrelevance of theories. Practitioners in finance are used to denying need for any theoretic bases and our research proved their disinterest to

academicals' world. For example Andrej Dronin emphasized that he sees no more than the tools of technical analysis and options theory. Anton Kozyrev did not answer anything about theoretic bases; he stated that technical analysis was important and he could not remember anything else useful. Materials given to students began by fundamental factors and no other theoretic explanation. Thus they do not care about rationality and effective markets; they see trends and follow them. They at once deny all that academicians fought for a long time.

Traders mostly seem to be lost in their strategy. Starting with that they can not clearly define whether and how they ever use fundamental analysis, how they make forecasts then. Of course, if everyone says we have a growth, we shall play in growth – and that is all of the fundamentals. Then we clearly see here the pattern behavior, which we described as a competitive disadvantage on financial market. It can be foreseen, especially by big players, and until you have insight you will not know when the game will be over.

Almost everyone understands that uses intuition or some other senses of market, which they connect to emotions, unclear impulses, experience, mostly experience. Andrej simply admits that if situation is uncertain he defines prices and terms "just like that", when situation is unclear on fundamental and technical levels he acts like in a game. For the question – how do you then define final price for option combination – he says – like in poker, I see the market and I define. Anton stated that only experienced trader can use intuition in making decisions. This probably could be assumed as understanding of what intuition is, but after our definition of experience as a barrier it sounds contradictory.

By the results of the summary of the Urijs' research upon use and understanding of intuition by traders in making financial decisions, we can see that most of traders admit that they probably use intuition, but anyway are afraid of it because it fails, it often gives opposite to rational reasoning advices.

It is interesting that they all define those intuitive signals as something unreasonable and unexpected, thus probably understanding of the core idea of intuition, and even say that probably it could help on the market, because sometimes is so right, but do not pay attention to developing and learning to listen to it, understanding why it could be so and then, which signals are intuitive and which impulses are emotional reactions in order to learn to interpret intuition and understand reasons of emotions and do not let them disturb.

If we turn to opinions of the traders from the book Guidance to Russian capital market who worked on Russian market when it was very young, volatile, risky, unruled, they all then tend to

emphasis that used intuition, that followed senses and dreams. It clearly was spontaneous and irregular, but they believed in it more than in strategies, analysis and forecasts.

Traders seem to tend to rational decision making, because they all emphasize on control of emotions as one of the main traits of professionalism and experience. But this aim is completely unrelated to the possibilities they could get by controlling emotions, none seeks for self-understand and listening to intuition so. All believe in reason and suppose that control of emotions can help to better realize market situation and make more logic decisions, hold on to the chosen strategy. Like Anthon stresses upon importance or even infeasibility of deviation from strategy; and sets examples how young traders loose money because of emotions.

Moreover none of traders seeks for understanding of the original reasons of those emotions. Like for example Anton repeated the main guideline for traders – not to loose money, and it is a clear dependence of losses, emotional stress for all decisions. Like in Urijs' research traders realize limits that stop them following intuition, like reason – fear that intuition will be wrong, that it now goes in opposite direction with general logic and forecast, or moods of their colleges. They have for a ground reason that later if they acted upon the logic they could explain losses by following strategy and not some signals no one sees and understands.

Another interesting fact is that they are even frightened of abnormal gains, not only losses; they base it by necessity to finally explain them to their superiors. This is one of those barriers that traders don't even try to look for big gains. They at once prove it by inability to play on big risks in companies as we saw in Urij's experience when he stopped playing on his strategy for the companies account when his boss did not accept losses and risks. That is what we stated as one of the barriers of experience and perception. The main idea is that they do not accept to bring aims and motivation out of possibilities, experience, "I know how" to trying to achieve more. Traders know how to earn as much as it is demanded, as much as all others earn, as much as it is average and necessary; they know how to control risks and limit losses; they know how to follow accepted strategies. In addition as we stated before they are afraid of consequences, because it is different, because it is unusual and demands responsibility.

Empirical data proves here the way irrational technologies approach decision making and stages described for development of intuition and overcoming barriers is different form academically accepted, from practically accepted by the majority of traders. It is also proved that people can not act rationally, that their actions are anyway guided by emotions, some signals and senses.

Traders admit existence of intuition and its participation in their decisions, mostly unconscious, of barriers, of its unpredictability and inexplicability, of its effectiveness sometimes.

The core idea here is that they do not pay attention and forces, even more they don' t want, think about, are not motivated to it, to developing intuition, to understanding those signals and trying to follow them and become more effective on market.  They hold on to their strategies and disciplines, controls of risks and forecast, to what all the others say and believe that this helps to fight emotional impulses and act rationally, because only strategies and forecasts are rational, because if everybody says so – it is right. They are satisfied with average gains and bring more statistical evidence to the general experience proving then that it is the right thing to do and the right way of thing to go.

The core idea here is that they are afraid of doing something new, not average, different, because it is responsibility, because it is hard, because it is change. The reasons are deep in humans' psychology and are revealed in financial activity, in trading.

We then can prove that it is the more generally accepted and used approach to decision making on financial markets. We can prove that irrational behavior is really irrational, because usually people stay inside given circumstances and do not demand more. Like traders who have plans in forecasts in their companies, who follow strategies and control over risks and stay inside those circumstances. Of course, it does not mean that it is universal, we at least can say so because there is our case study, because of the secondary data of Urij's research their was a trader who understood origin of his emotions and intuitive signals, understood barriers that stopped him not already from using those signals but from getting them.


## 5.4.  DISCIPTION


Decision making by irrational technologies is a conscious decision at every step, conscious about collecting information by the means of fundamental and technical analysis and usage of it for development of intuition. It is a conscious search for intuitive signals and a conscious interpretation and following them, conscious understanding and overcoming barriers for hearing intuition. It is a conscious aim setting. It is a conscious monitoring, interpreting and finding reasons for them, and control over emotions. It is in addition flexibility to market changes by not holding on to one strategy; it is risk control and understanding reasons of losses – bearing risks

for higher gains. Finally it is working out of given circumstances and changing situation in accordance to wishes.

Thus the idea of irrational technologies is to set aims and beat market. It is to act upon intuition, as the source of information for reaching that aim and thus making decisions in trading. It is deciding not upon strict forecasts and holding then on to them. It is collecting information for intuition and acting according to it, this lets a trader see and understand market, trends, trend changes earlier that it could be done by fundamental and technical analysis; thus gain acting faster, more exact, in accordance to market moves. It is not holding to situation of know how, but following intuitive signals and doing something not planned, not forecasted, not logically reasoned by analyses, not the way you would usually do. This way is mostly more risky. But the main idea is that it demands a lot of personal work and development, acting a lot in personally extreme conditions.

Urij began setting aims out of the circumstances  and possibilities that he had, by understanding what he wanted, not knowing that moment how to reach it, but starting to look for new ways to do it, as we have data form 2001. For him it is the first stage of development intuition. As I understand it, it is like bringing forward motivation for acting so, you find what you want and it becomes a strong motivation for going through all other stages and bearing all risks and difficulties. You may want to gain more than normal, or to have much more money for yourself and family, or to test a hypothesis. Aim then is connected with gains on financial market, but may have different ground. You start doing so when there are circumstances that you don not agree with, and you do not slave, you change them. All you have to do here is to understand that it is situation and it is your wish, if it does not fit this situation you change situation, for that your wish becomes your motivation.

He worked in a company as analyst but his forecasts did not satisfy his superiors. In this situation he did not slave and started to work like they demanded, he understood he did not want it, on the opposite he started making more risky and aggressive experiments. He opened his account; he made experiments with his forecasts on it, where he bore his risks himself and was fully responsible for its capital. He began by testing his forecasts, then by testing new for him MTS strategy, then by testing himself – if he could separate his aim from his life. Later on if other jobs became too narrow for him he left, sometimes to nowhere, not knowing where and how he would work and earn money, but knowing it was his wish and he would find ways to reach it. He always had his wish as motivation. Form 2004 he began setting aims of 100%, even though his superiors demanded 50%. As we said usually trading is afraid of big gains, because for big risks

they bear. Urij again did not slave that situation, he continued his experiment for his own account even when superiors demanded less loss and risk. He finally left this job also and started working on his own without that barrier.

We stated a lot that irrational decision making brings no forecasts. We can see that there can be no forecast if something you are going to do is something you do not yet know how to do. In this case you set an aim and start acting.

We also underlined that here by irrational acting in order to set a goal and start reaching it, you need to overcome a barrier of your experience and convictions. When Urij first started making experiment with his account, his experience and generally accepted beliefs his circumstances said that if he worked in the company, he had to do like his superiors wanted. When he first set an aim to separate his wish and life, his experience told him that it was not yet possible, in addition that it was hard and risky. When he first set an aim of 100%, his experience all around him said it was abnormal gain, usually it was not possible.

For that, the second stage after recognition of your wish/motivation and setting aim out of circumstances, is separation of your life an that aim. You have for sure not once noticed, that if you strive hardly for something, you think only about it, you upset if you fail. It is a normal psychological reaction to be emotionally dependent in everything you do to your strong wish. Here you have to start controlling, understanding your emotions. If you fear, or are upset, or are very happy – you have too find reasons for that, and understanding those reasons not to let those emotions be too high. Stay calm and see how you make steps towards your aim.

When after fail in the first experiment he was upset, he managed to understand that he was upset because of this fail, but that actually he received a lot from that experiment. In March 2002 when he was testing MTS strategy his losses amounted to 50%, this depressed him. If he followed his emotions he would have left that experiment and state it failed. In May he was depressed not only by losses but by other things in his life, this took his forces and he followed emotions, he left experiment. Vacations helped to recover forces. Not once he followed emotions when finally gained, or when he participated in a trader competition and was a leader for a while, even positive emotions made him dependent of the result, he did not manage to separate his life from them then and could not control emotions. He failed both times after it. When in 2004 he began to work as a trader in a new firm, he understood he had a fear of loosing and did not let it control over him when he had losses, when he gained. If he did not do it in the beginning once he could leave his strategy, when he had big losses and go to an end of reaching the set aim of 100%.

Each time he had losses and needed money, he set his depressing emotions about it aside and continued experiments, did what he wanted, thus he opened reflexivity.ru and participated in lections and conferences, when he needed money, had big losses and felt it was crises.

The third and the forth stages of development of irrational acting is connected to intuition. When you then have a strong motivation and a certain aim, and you manage to set aside emotional reactions by finding reasons for them and controlling them, mostly because not depending on the aim; you then are calm and can hear intuitive signals. Here you have to learn to interpret them. Like traders said - intuition often goes in opposite direction with your logic; or that once it was wrong and you are afraid to follow it again. The idea is to admit barriers that disturb from hearing intuition and admit that it is right even if results seem bad for you.

As we said intuition is different from emotional impulses, and to clearly identify those emotional impulses, when setting aside emotions and finding their reasons understand their nature. As we said it is hard and demands a lot of forces, and even when you know these steps have to be done, you may became just tired and fail then. As one trader said he once became too depressed and could not understand his intuition more for that time. There are more of such barriers. Like traders said, if intuitive signals and general logic go in opposite direction they do not follow intuition. We explained why. If intuitive signal tells to do something that seems very risky, traders fear it and do not follow. If they emotionally depend on losses, money, gains traders follow emotions and not intuition. If they are depressed, may be have some problems separate form their work, they lose control.

When Urij set first experiment in 2001 and got negative results, he clearly understood his upset emotions about fail, but he understood his wish and intuition, which said it was right and continued experiments. When after that he set an aim to test MTS or the first time, and try to check himself, and finally had too much losses and became depressed for that, for problems on work – he understood that all these emotional reactions made him leave experiment, which was intuitive way. When all seemed bad, intuition said it was right and if he had forces to control and set aside emotions then he could lead experiment to the end. Next time he met such a situation and had 50% loss, he followed intuitive signal in March 2002 and the chosen experiment on MTS, and some intuitive dreams and regained.

So he elaborated some techniques to help to go over emotional reactions and to understand intuitive signals. For example he managed a risk control and became indifferent to turn of market opposite to his expectation and when market turned back after that again he could continue

following the chosen strategy with minimum losses. Thus he did when in December 2002 he gained 3 times on his account standing to the intuitive signal of RAO ES up trends and trading on MTS. He understood that problems independent from his work, like private life disturbed him, and solved those problems because they were also important; he did not let those emotions control over situation on work. He understood that cool emotions about gaining made him think he knew all then and disturbed him from acting calmly and hearing intuition, that there was much more to learn. Doubts because of losses that he had later were also controlled, reasons for them found did not let disbelief in intuition.

He started to understand emotional reactions for movements on market. Like if he had a fear of a trend turn, in April 2004 he and his colleges expected up trend for RAO ES, but he felt fear that it would turn. He did not let this fear control over, make him nervous and depressed, he staid calm, searched for information and signals and understood this fear was intuitive signal and followed it. He gained on that fall. In that situation he also learned to follow unexpected signals like the alerting feeling that he got when found out all his colleges expected up trend and bought a lot. On the last stages of developing intuition you begin to understand an object. You are so clear about your own emotions and intuition, that you imagine development of market and realize your feelings about different situation; you chose those that seem good. This technique was used at the end of the first Investment period, when he was expecting growth, controlled risks, and market fell a bit – it was going opposite to his expectations, he imagined market to go up and go down, he noticed he was afraid it would go down and thus changed his strategy. He clearly trusted his intuitive motion and technique to go in for fear that used before, in addition transactions were risky; he gained nearly 100%. This meant that market turned as his intuition told him.

Another technique he developed was to overcome expectations, when he clearly understood that he was waiting for a trend, he knew it was not intuitive but was very strong. He followed it with a strict risk control and it turned out to be wrong, that he lost minimum but could forego that strong expectation that disturbed him from understanding of intuition.

Results of Urij's practice show that the strategy applied whatever it was turned to be successful. Before investment period he started from 60 thousand on his account. It was then that he started experiments. He could not fulfill them for companies account because it demanded risks and losses, plus it brought large gains. As we stated all this is not accepted by investment companies.

He had losses and gains, up to 10 thousand and back to 60. The first large gain was from 40 thousand to 130 thousand, before the first investment period. It was a result of the first negative experiment, the second experiment, when he had not enough forces and the third one, when he already could use some techniques and met some situations that he had already experienced, like fear, unexpected market moves, losses and their back up with risk control and knew how to deal with them. He gained because he had an intuitive signal about RAO ES price and for the third try managed to lead it through barriers of fear, losses.

At the first investment period his aim grew from testing hypothesis to gaining 100%. He did not make a forecast. He started, as it was described, with search for a trend. Trends come; they come with some signals on fundamental factors or by techniques, or just by chance. In March 2004 he like others expected RAO ES growth, but when got an intuitive signal about turn with the help of collected technical information, with the help of a technique of understanding intuition of following unexpected signals and gong into fear, he changed his strategy for down trend following intuition and gained about 30%. After vacation in July he did not have intuitive signal, followed market moves. Then by analysis and intuitive technique of feeling the market – imagining it development and understanding his feelings about it, he found a growth. His intuitive signal became stronger because he believed an advice of a person whom he trusted; he managed it as one of the techniques of understanding intuitive signals. He gained 30%. After that due to the use techniques of understanding intuition by unexpected moves of market, by fear, by feeling market development he played very risky on options, went opposite to his all others expectations, played on market turn and RAO ES fall, believed intuitive signals and gained about 100%.

The second period he started by experiment with his expectation, he understood it was not intuition but just an expectation; he used a technique to overcome it by letting follow and controlling risks. He found an intuitive signal which was supported by fundamental information. He had losses up to 50%, he needed money, he had an intuitive signal of up trend and because of that need played very risky in hope for a fast gain. Emotions controlled him. He understood it, accepted losses, continued to do what he wanted – held lectures, participated in conference, wrote articles and intuitive belief became stronger in crises situation. It was that strong that when market began to grow rather fast, he knew it would continue. Anton Kozyrev emphasized that traders can bear deep losses hoping for a luck, but cannot bear high gains, because are afraid that the market will turn. Urij followed his belief and held on to a top growth and fulfilled options combination with risky strike prices (see II investment period).

At the third period he clearly had an intuitive feeling for growth and held up to it for the whole period, he controlled risks and like he did before stood through market turns and falls (see III investment period). He used as one of the techniques to overcome emotions, fears of losses controlled risks.

Each time when intuitive signals became strong he increased transactions for risky positions. Those times, if clearly understood it was intuitive feeling it turned out to be right. Together with that clear understanding he had to take a strict control over emotions, by all described techniques. As I understand it, it is like being very honest to yourself – if you fear, say to yourself stop and find a reason for it, then by the use of technique go in this fear. If you wait for something, say stop and test it with certain control of losses, then you find out if it was right or wrong and go on. Act not for money, then you are not afraid of losses, if they happen you understand why; act for testing your intuition and then you do not depend on the result, you are not upset or driven mad by negative or positive moves, you control them and continue testing. You feel something in a situation does not satisfy you, like your job is too small for you as it was in Urij's example; you do not find excuses and justifications for yourself, like hiding for safe place and stable salary because you are afraid of change and new, of uncertainty, but you change this situation and get rid of this job as of limitation. If you will have this limitation you will spend your forces for being upset that you are limited, for not making what you want, this will disturb you from understanding intuition and going on. Plus you will have no motivation for it then. You will act by part of your own abilities. And each time you follow intuitive signal you have to be ready to be sure to go through crises in yourself because of spending forces on control of emotions, going over habits and conviction into uncertainty, not giving up for your own excuses; because in experiment you risk to lose what you have and you have to ready for it.

# 6.  CONCLUSIONS

*In this chapter we infer that we proved application of irrational technologies of financial market by its description, comparing and results analysis. We define limitation and proposals for further research.*

## 6.1.  SUMMARY OF THE RESEARCH

This research aimed to prove application of irrational decision making in trading. Irrational technologies were explained as a new trend backed up by chaos theory of market functioning, opposed to the rational hypothesis and effective markets. It developed with the use of ideas of reflexivity introduced by George Soros as a summary of his experience on financial markets and his understanding if logic of market functioning and development. Irrational technologies were introduced by Urij Ichkitidze and his practice and decision making was chosen for a case study of this master thesis.

It was decided to prove application of this idea by its detail study and comparing.

We started in theoretic part by making a review of financial scientific trends and finding the place of irrational technologies as of a new idea of making decision on the market. As we saw classical approach could not explain market moves and did not let practitioners gain and beat market. New trends of behavioral finance and chaos theory grounded market functioning upon not rational behavior of traders and trend development of prices, time dependency. Reflexivity added its idea of mutual dependence of market and its participants. Accepting those deductions irrational technologies proposed a way how acting not rationally a trader could make decisions and beat market.

We considered it a new, unusual decision making and proposed to compare it with a more generally accepted one. When collecting data for a description of a classical decision making we found out it was not formulated. There was not found such a description in classical books, in other sources of secondary data like financial articles, financial magazines, and websites. Most of the available information was in the area of behavioral finance which concentrated upon investigations of trader emotions, revealing their most common patterns as a bias factor for their rational decision making. Other sources on financial decision making concerned making decisions on investments, capital investments, studied corporate finance not trading. Sources on decision making in trading described technical tools and some strategies. Thus the plan was changed and we tried to find out the structure of the process of decision making from traders

themselves. First interview was constructed in order to get a general understanding of the picture. Then their was made a list of questions that revealed stages of trader decision making (fundamental analysis, technical analysis, risk control, strategies) but there was not received satisfying answers for comparing. We assumed that decision making turned out to be a personal question, individual for each trader first, and something not clearly understood by a trader himself, second.

Anyway there was collected enough information for having a general understanding of traders approach; and there was collected enough data upon the studied case. There was handled over a lot of secondary data, and there was held 2 interview with the trader about his general understanding of his decision making and about his practice.

In the empirical part we discussed Russian financial market, described decision making by irrational technologies, and gave some information collected from other traders, laid out graphical presentation of Urijs' practice.

We can conclude that irrational decision making is different from some generally accepted principles. We found out that traders usually not clearly understand how they make decisions. They probably use a bit of fundamental analysis, use technical tools, tools for calculation of strategies and risk controls, and they mostly can not explain how they forecast and decide upon prices.

Irrational technologies emphasize upon irrational behavior. They state that humans' actions cannot be rational because one can not exclude emotions, feeling, beliefs, moment impulses and other psychological factors from their behavior. On average humans act emotionally. Irrational behavior supposes acting by control of emotions and following intuition, for that by the principle of reflexivity influencing circumstances by changing them and striving for the initial aims that reflect your wishes.

It starts by overcoming limitations of situation when you have anything dissatisfying in it, when you understand that you wish more than it can give you. Setting aim out of your possibilities for that moment you get a motivation to go on. Usually it involves risk, because if you start doing anything out of possibilities, your experience, something new, that you never did before and don't how to do – it is a situation of uncertainty, where forecast except for your aim are impossible. You cannot forecast if you don't know how it is going to be. Here you go on by acting towards your aim, because you are motivated.

In this uncertainty you act upon intuition and there irrational technologies emphasize that following intuition you can reach your aim out of your possibilities. It demands a big work inside oneself. And we investigate application of these technologies on financial market.

As we proved by empirical findings traders mostly agree upon using some intuition, senses, and feelings in making decisions. They admit that often make forecasts just like that, or use dreams, or some unexpected, unexplained impulses and knowledge. This is close to our definition of intuition as of an unexpected, unreasoned certain knowledge. But as we found traders do not understand those signals, they confuse them with emotions, they don't know how and when to follow it and when not to. None of them identifies and uses it consciously as it is supposed by irrational technologies.

Irrational technologies investigate certain stages for development if intuition. First, as we stated it is setting an aim according to your wishes and according to the circumstances you are in and further actions for changing this situation in accordance to your motivation. As we saw Urij started setting such aims when his superiors were not satisfied with his work and he felt he was right. Thus he first set an aim to make an experiment and test whether his forecast were right, then to test new MTS strategy, then to follow first intuitive signals, then to gain 100% on financial market.

Empirical findings showed that such aims and motivations for traders, like higher than average gains are irrelevant. As we said setting such aims involves overcoming habits, experience, convictions, and prejudices. Such barriers for traders are habits for average returns, experience of getting average returns. In addition to that overcoming usual situation bears fears, as we said fears of new, uncertain, change. For traders such fears are fears of risks, losses, of necessity to explain those losses and abnormal gains to superiors.

Next stage in development intuition is separation of aim and life. You are controlling it and not vice versa. Aims, wishes if especially they are strong involve all your life in emotional reactions to getting it and failing. Those emotional reactions disturb from understanding intuition. Empirics prove that traders do not try to understand intuition and confuse it with emotions. Emotions unlike intuition are reasoned – a trader is afraid of losses, he holds on to no risks, chooses to have small gains to big risks. He does it because he of that fear, because of this dependence. He holds up to a stable place in the company where he works and follows discipline in order to satisfy superiors.

Those are a few examples, there are a lot of sources of emotions that disturb from understanding intuition, they are studied in Urijs' practice. His experience proves that emotions is one of the barriers for clear understanding of intuition. Traders notice that they probably better understand their intuition when they are calm. For irrational technologies that is a principle, starting from fear of setting aim and doing something new of you don't know how in uncertain situation, to separating yourself and your wish of the aim, to following intuition.

There are other barriers that disturb form following intuitive signals even when you get them. Empirics proves that traders very unclearly understanding what intuition is anyway see what really stops them from using it. These are logic reasoning, plans and forecasts, their and their colleges' expectations. Intuition can often go in opposite direction with logic and expectations. Urij experienced this in his practice and used such techniques as go in fear, go opposite his expectations following intuitive signal – following unexpected, reading from market, imagining market development and feeling yourself, testing strong expectations with strict loss control – collecting information for prove of intuitive signals, holding on to intuitive belief in crises situations with a control of risk of operations on market. Thus when you follow intuition and it leads you to bad results but you feel you were right (like was with Urij on his first job, like in his first experiment) it is important to understand your feelings and your intuition, they are different, and if you control your feelings they won't disturb you from understanding intuition.

So we compared and proved decision approaches to be different. As we see irrational technologies suppose understanding of areas that are mostly unclear for traders. This understanding is intended to lead to a more effective work on market, to bigger than average gains by a faster, more flexible, more exact reaction to market changes, their grasping at their beginning and following. Usually traders analyze and forecast by fundamentals, techniques and experience and sometimes use intuition if it helps for those tools; irrationally they act by intuition and use fundamental and techniques for development of intuitive signals. Application of this approach has been proved by analysis of Urijs' practice on financial market.

We saw that he gained more than average (about 100%) each time he set that aim and for that he followed intuitive signals. We saw that he consciously developed intuition and consciously followed it. We can repeat that it is a hard process, it demands a lot in overcoming, much forces for that, for holding on to beliefs in crises situations. And we saw it on Urijs' experience when he had difficult times following intuition, following motivation and not letting circumstances emotionally depress him and control unlike when he failed in first experiments because had not enough forces. He failed a lot further because of the described barriers. And we prove that he

started from setting aim out of possibilities, not making forecast and acting upon intuitive signals, and reached the aims set. He followed thus stages of irrational technologies.

And for conclusion I would see it the following way, when in such a studying and experimenting, as it has been stated by Urij, that market does not let you go and think you know and can everything, you will never finish learning and fighting.

## 6.2.  LIMITATIONS AND PROPOSALS FOR RESEARCH

Here we defined limitations that came up from the beginning and those that turned out during investigation.

1. We suppose a trader decision making study to be a matter of a separate research, which should involve a careful elaboration of interview guide in order to get strict answers especially for those questions which are unclear for traders themselves. We could suggest using methods of psychographics usually applied in marketing researches for reaching by questioners areas unconscious for interrogated themselves.

2. We suppose this research could be limited to the Russian practice and reality. There was made a full description of Russian financial market in order to make further description of trading understandable. We can assume that Russian market grew and has now a lot developed but anyway is young and particular, and experience on other markets could be very different. There was not found a lot justification that such research was made for other markets. Otherwise we could use this material for comparison. Thus for this paper we state upon Russian decision making and hope it to be continued in other countries and areas (other financial markets), to be further compared and developed.

3. We could also suppose that the studied 7 years of trader practice (2001 – 2007) is not a sufficient term for ground proves. The set for prove results (gain of more than 100%) were achieved more than 3 times, thus we can take them as a prove for our research. But probably a ground formalization of the studied idea demands a longer period, kind of statistical prove and scientific justification. Anyway the area is deep and unexplored and is a long way to go. Psychology comes in all business areas, it is important for marketing, management and we cannot underestimate its importance for finance.

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# APPENDICES

## APPENDIX 1. INTERVIEW WITH URIJ ICHKITIDZE

**INTERVIEW 19.04.07** – the aim of this interview is to receive a general picture of the decision approach  and theoretical strategic ground, to understand the role of irrational intuitive feedback.

1) Your approach is based upon George Soros Alchemy, at the same time with examples from his experience and some theoretical explanation did he describe how he made investment decisions as a trader? Did you use this information? Connection between irrational technologies and reflexivity is only that they are connected as you understand and apply them? Your approach is reflexivity or irrational technologies?

2) How do you approach financial situation? Do you use a fundamental analysis? How do you choose market/stocks for investments? How do you choose strategy? How and why do you choose options and futures? How do you think other traders do it?

3) How do you make decision? Do you use a technical analysis? Where is the edge between intuition and technical analysis? Change a strategies as one of the advantages, how do make a decision to change strategy – by intuition or upon technical analysis?

4) Russian market today– what do you think about it? What will be if everyone on the market would behave intuitively, irrationally?

5) Investment period – how do you define it (when you start and finish it)?

**INTERVIEW 27.04.07** – the aim of this interview is to describe in detail the studied decision making through all its stages:

1) Analysis of resources, risks, negotiations with clients.

2) Setting aim – 100%, modeling the way to achieve this aim, looking for a trend.

3) Fundamental/ factor analysis, which factors, models?

4) Taking into consideration behavior/moods of crowds/investors.

5) Technical analysis.

6) Use of the collected information for a forecast/intuition.

7) Strategy.

8) Change of strategies.

9) Graphical explanation

## APPENDIX 2. INTERVIEW WITH URIJ ICHKITIDZE IN RUSSIAN

**19.04.07** – цель этого интервью получить общую картину подхода к принятию решения и теоретической стратегической основы, понять роль иррациональных технологий и интуиции.

1) Ваш подход основан на Алхимии Сороса, помимо примеров и некоторого теоретического объяснение этих примеров, он излагал свой подход к принятию решений? Вы использовали эту информацию? Связь между иррациональными технологиями и рефлективностью только та, что они связаны для Вас в Вашем понимании? Ваш подход – это иррациональные технологии или рефлексивность?

2) Как вы подходите к финансовой ситуации? Вы проводите фундаментальный анализ? Как Вы выбираете рынок/бумагу для вложений? Как Вы выбираете стратегию? Как и почему Вы выбираете фьючерсы и опционы? Как по-вашему это делают другие игроки на рынке?

3) Как Вы принимаете решение? Вы проводите технический анализ? Где грань между интуицией и техническим анализом? Смена стратегий, как одно из преимуществ, как Вы принимаете решение о смене стратегий – интуитивно или на основе технического анализа?

4) Российский рынок сегодня, каким Вы его видите? Что будет, если на рынке все будут вести себя непредсказуемо, интуитивно?

5) ИП – как Вы понимаете, что Вы его прошли и когда его нужно начинать?

**27.04.07** – цель этого интервью – получить детальное описание процесса принятия решения по всем его уровням:

1) Анализ ресурсов, рисков, переговоры с клиентами.

2) Постановка цели – 100% годовых, моделирование способа достижения цели, поиск тренда.

3) Фундаментальный/факторный анализ, какие факторы, модели?

4) Принятие во внимание настроения толпы.

5) Технический анализ.

6) Использование собранной информации для составления прогноза, интуиции.

7) Стратегия.

8) Смена стратегии.

9) Графическое представление.

## APPENDIX 3.  INTERVIEW WITH KOZYREV ANTON, FIBOGROUP TRADER /IN RUSSIAN)

**24.04.07** - the aim of this interview is to receive a picture of the generally accepted now on the Russian market approach to the trader investment decision making, way of data collecting and analysis, the way accepted for study.

1) Teaching, do you explain theoretical approach to market functioning to students (the rationality hypothesis)? Do you think it is important for a trader, for making decisions on the market in practice? Do you think theoretical basis defines/changes anything for a practical approach?

2) Describe decision making process the way you explain it to students. How do you see it yourself? Describe steps, use of fundamental/technical analysis.

3) Russian markets, what can you say about it today? What about its factor analysis?

4) What do tell students about intuition in making decision?

**24.04.07** – цель этого интервью – получить описание общепринятого, предполагаемого для обучения на российском рынке подхода к принятию инвестиционного решения трейдером, способа сбора и анализа информации.

1) При обучении Вы объясняете студентами теоретический подход к функционированию ранка (гипотезу рациональности)? Считаете это важно для работы трейдера, для принятия решений на рынке на практике? Как Вы считаете, теоретическая основа что-нибудь определяет, меняет в практическом подходе?

2) Опишите процесс принятия решений таким, каким Вы его преподносите студентам. Как Вы его сами понимаете? Опишите этапы, использование фундаментального/технического анализа.

3) Российский рынок сегодня, каким Вы его видите? Как складывается на нем факторный анализ?

Что Вы говорите студентам по поводу интуиции в принятии решений?

## APPENDIX 4. INTERVIEW WITH ANDREI DRONIN, OLMA GROUP TRADER

**07.05.07** – the aim of this interview is to describe a process of decision making.

1) About you – with which stocks and instruments do you work? How long do you work?

2) Are you responsible for a whole cycle of decision making?

3) A question about theory – do you accept any of the existing theories (rational investor hypothesis and effective market, chaos theory)? Do you think investors/traders are rational? Is market efficient, doe it reflect fare prices? To your mind, are there any factors/forces, which influence price deviation from its fare price? What do you think – does theoretical basis of financial market changes/defines anything in the process of decision making, approach to the market?

4) Do you use fundamental analysis? How do you think it defines/directs your choice? Which factors do you use for fundamental analysis? How do you monitor them? How do you choose a stock and an instrument, do make a factor analysis of each stock? What is your opinion about Russian capital market?

5) Do you use technical analysis?

6) How do you hedge risks?

7) Which strategies do you use, how do you choose a strategy? How long do you hold up to the chosen strategy, why an dhow do you change strategy?

8) How much revenue do you set as an aim? How often do you achieve it? Which maximum revenue did you achieve? How? What do you think – you can beat the market only by chance?

9) Do you make a forecast upon the collected information? How do you define probability of for this forecast? Is it long-term? Can you make unplanned unexpected decisions upon, for example, technical analysis? What can make you refuse the planned forecast?

10) What do you do with your emotions through the whole cycle of decision making? Do you control them? What do you do if they interfere in the process? Do you think, they always disturb? Did they ever help you to make a decision? Your decision making – is it unemotional deductions and conclusions, do you take into consideration your intuition or any other unexplained signals?

 In general, how did you come up to this decision making, which you use now?  There is no a teaching book for traders, what do you think about you're approach, is it a more generally accepted one, or is it somehow different from the classical way? Is there influence of the Russian environment?

## APPENDIX 4.  INTERVIEW WITH ANDREI DRONIN, OLMA GROUP TRADER IN RUSSIAN

**07.05.07** – цель интервью – составить описание процесса принятия решения трейдером.

1) О Вас - с какими бумагами Вы работаете? Сколько лет Вы работаете?

2) Вы ответственны за весь цикл принятия решения?

3) Вопрос относительно теории – Вы придерживаетесь какой-нибудь из существующих финансовых теорий (гипотеза рационального поведения инвестора и эффективного рынка, теория хаоса)? Вы считаете, инвесторы/трейдеры рациональны? Рынок эффективен, отражает справедливые цены? По Вашему мнению, есть какие-то факторы/силы, которые влияют на изменение цены от ее равновесного значения, какие? Как Вы в принципе считаете – теоретическая основа финансового рынка что-нибудь определяет в процессе принятия решения, в подходе к рынку?

4) Вы применяете фундаментальный анализ? В какой мере Вы считаете он определяет/направляет Ваш выбор? По каким факторам Вы проводите фундаментальный анализ? Как Вы их отслеживаете? Как Вы выбираете бумагу, Вы проводите факторный анализ каждой бумаги? Ваше мнение о фондовом рынке России сегодня?

5) Вы применяете технический анализ?

6) Как Вы страхуете риски?

7) Какие стратегии Вы применяете, как Вы выбираете тактику? Как долго Вы придерживаетесь выбранной стратегии, по какой причине и как Вы меняете стратегию?

8) Какая доходность является Вашей целью? Как часто Вы ее достигаете? Какой максимальной доходности вы достигали? Как? По Вашему мнению, рынок можно побить только случайно?

9) Вы составляете прогноз на основе собранной информации? Как Вы определяете вероятность этого прогноза? Насколько он бывает долгосрочный? Бывает, что Вы принимаете внезапные незапланированные решения, например, на основе технического анализа? Что может заставить Вас отказаться от рассчитанного прогноза?

10) Как Вы поступаете со своими эмоциями во всем цикле принятия решения? Вы их четко контролируете, что Вы делаете, если они все-таки вмешиваются в работу? Вы считаете, они всегда мешают? Они никогда не помогали Вам в принятии решения? Ваше принятие решения – это холодный расчет, Вы уделяете внимание интуиции, или каким-то другим необъяснимым подсказкам?

11) В целом, как Вы пришли к тому способу принятия решений, какой Вы применяете сейчас? Нет такого учебного пособия, которое обучало бы принятию решений для трейдеров, как Вы представляете свою стратегию – более общепринятой, или чем-то отличной от классического подхода? На это как-то влияет то, что Вы работаете на российском рынке?

## APPENDIX 5. RTS CLASSIC MARKET: DECEMBER 2006 MARKET DATA
*(downloaded from http://www.rts.ru/?id=13355 11 May 2007)*

In December 2006 the total trading volume on Classic market equaled 1,18 million US dollars. RTS Index closed on December 29th, 2006, at 1921,92, 8,17% up on November 30th, 2006.

**December 2006 Classic Market Best Sellers**

| Ticker | Company name, share type | Trading volume, USD | Share in total volume,% |
|---|---|---|---|
| EESR | RAO UESR, Common | 300 002 776 | 25,42% |
| GAZP | Gazprom, Common | 261 617 958 | 22,16% |
| LKOH | LUKOIL, Common | 116 443 313 | 9,86% |
| SBER | Sberbank, Common | 90 281 593 | 7,65% |
| GMKN | MMC "NORILSK NICKEL", Common | 67 443 637 | 5,71% |
| SNGS | Surgutneftegas, Common | 43 663 714 | 3,70% |
| PLZL | OJSC "Polyus Gold", Common | 43 073 512 | 3,65% |

## APPENDIX 6. The list of securities employed in the RTS Index calculation valid from March 15 to June 14, 2007
*(Downloaded 11 May 2007 from http://www.rts.ru/?tid=620)*

| № | Ticker | Name | Number of issued shares | Free-float factor(Wi) | Restricting coefficient (Ci) | Weight as of February 15, 2007 |
|---|--------|------|------------------------:|----------------------:|-----------------------------:|-------------------------------:|
| 1 | AFLT | **Aeroflot, common** | 1 110 616 299 | 0,20 | 1 | 0,34% |
| 2 | AVAZ | **AvtoVAZ, common** | 27 194 624 | 0,20 | 1 | 0,26% |
| 3 | BANE | **Bashneft, common** | 170 169 754 | 0,20 | 1 | 0,30% |
| 4 | BANEP | **Bashneft, preferred** | 34 622 686 | 1,00 | 1 | 0,22% |
| 5 | CHMF | **JSC "Severstal", common** | 1 007 701 355 | 0,15 | 1 | 1,13% |
| 6 | EESR | **RAO UESR, common** | 41 041 753 984 | 0,15 | 1 | 4,32% |
| 7 | EESRP | **RAO UESR, preferred** | 2 075 149 384 | 0,90 | 1 | 1,13% |
| 8 | ENCO | **SibirTelekom, common** | 12 011 401 829 | 0,40 | 1 | 0,31% |
| 9 | ENCOP | **SibirTelekom, preferred** | 3 908 420 014 | 1,00 | 1 | 0,18% |
| 10 | ESMO | **CenterTelecom, common** | 1 578 006 833 | 0,35 | 1 | 0,23% |
| 11 | GAZP | **Gazprom, common** | 23 673 512 900 | 0,40 | 0,2618193 | 15,00% |
| 12 | GMKN | **MMC "NORILSK NICKEL", common** | 190 627 747 | 0,35 | 1 | 6,84% |
| 13 | IRGZ | **Irkutskenergo, common** | 4 766 807 700 | 0,10 | 1 | 0,26% |
| 14 | IRKT | **IRKUT Corp, common** | 978 131 612 | 0,35 | 1 | 0,20% |
| 15 | LEKZ | **Lebedyansky, JSC, common** | 20 411 300 | 0,20 | 1 | 0,19% |
| 16 | LKOH | **LUKOIL, common** | 850 563 255 | 0,60 | 0,6467383 | 15,00% |
| 17 | MGNT | **OJSC "Magnit", common** | 72 000 000 | 0,20 | 1 | 0,33% |
| 18 | MSNG | **Mosenergo, common** | 28 249 359 700 | 0,10 | 1 | 0,38% |
| 19 | MTLR | **Mechel , common** | 416 270 745 | 0,15 | 1 | 0,36% |
| 20 | MTSS | **MTS OJSC, common** | 1 993 326 138 | 0,45 | 1 | 4,92% |
| 21 | NLMK | **NLMK, common** | 5 993 227 240 | 0,15 | 1 | 1,33% |
| 22 | NNSI | **VolgaTelecom, common** | 245 969 590 | 0,40 | 1 | 0,36% |
| 23 | NNSIP | **VolgaTelecom, preferred** | 81 983 404 | 1,00 | 1 | 0,19% |
| 24 | NTMK | **NIKOM, common** | 1 310 002 966 | 0,10 | 1 | 0,17% |
| 25 | NVTK | **NOVATEK, common** | 3 036 306 000 | 0,25 | 1 | 2,34% |
| 26 | OGKC | **JSC "OGK-3", common** | 29 487 999 252 | 0,35 | 1 | 0,83% |
| 27 | PKBA | **Baltika Brewery, common** | 159 170 667 | 0,10 | 1 | 0,42% |
| 28 | PLZL | **OJSC "Polyus Gold", common** | 190 627 747 | 0,35 | 1 | 2,02% |
| 29 | RBCI | **RBC Information Systems, common** | 119 260 000 | 0,20 | 1 | 0,16% |
| 30 | RITK | **RITEK, common** | 99 750 000 | 0,40 | 1 | 0,22% |
| 31 | ROSN | **OJSC "NC "Rosneft", common** | 10 598 177 817 | 0,15 | 1 | 7,77% |
| 32 | RTKM | **Rostelecom, common** | 728 696 320 | 0,20 | 1 | 0,67% |
| 33 | RTKMP | **Rostelecom, preferred** | 242 831 469 | 1,00 | 1 | 0,45% |
| 34 | SBER | **Sberbank, common** | 19 000 000 | 0,40 | 0,8828589 | 13,58% |
| 35 | SBERP | **Sberbank, preferred** | 50 000 000 | 1,00 | 0,8828589 | 1,42% |
| 36 | SCON | **The Seventh Continent,** | 75 000 000 | 0,25 | 1 | 0,28% |

|    |       | common | | | | |
|----|-------|-------------------------------------|----------------|------|---|-------|
| 37 | SIBN  | **JSC Gazprom Neft, common**        | 4 741 299 639  | 0,05 | 1 | 0,60% |
| 38 | SNGS  | **Surgutneftegas, common**          | 35 725 994 705 | 0,25 | 1 | 6,07% |
| 39 | SNGSP | **Surgutneftegas, preferred**       | 7 701 998 235  | 0,70 | 1 | 2,62% |
| 40 | SPTL  | **North-West Telecom, common**      | 881 045 433    | 0,40 | 1 | 0,32% |
| 41 | SVAV  | **Severstal-avto, common**          | 34 270 159     | 0,35 | 1 | 0,22% |
| 42 | TATN  | **Tatneft, common**                 | 2 178 690 700  | 0,30 | 1 | 1,56% |
| 43 | TATNP | **Tatneft, preferred**              | 147 508 500    | 1,00 | 1 | 0,24% |
| 44 | TRNFP | **Transneft, preferred**            | 1 554 875      | 1,00 | 1 | 2,08% |
| 45 | UFNC  | **Ufaneftekhim, common**            | 275 330 608    | 0,40 | 1 | 0,19% |
| 46 | URKA  | **JSC Uralkali, common**            | 2 124 390 000  | 0,20 | 1 | 0,41% |
| 47 | URSI  | **Uralsvyazinform, common**         | 32 298 782 020 | 0,35 | 1 | 0,44% |
| 48 | URSIP | **Uralsvyazinform, preferred**      | 7 835 941 286  | 1,00 | 1 | 0,20% |
| 49 | VSMO  | **"VSMPO-AVISMA Corporation", common** | 11 529 538  | 0,25 | 1 | 0,49% |
| 50 | WBDF  | **WBD Foods, common**               | 44 000 000     | 0,35 | 1 | 0,46% |

## APPENDIX 7. MSCI EMERGING MARKETS FREE INDEX
*(downloaded May 10 from http://www.russell.com/us/glossary/indexes/msci_emf_index.htm)*

Morgan Stanley Capital International's market capitalization weighted index composed of companies representative of the market structure of 26 emerging market countries in Europe, Latin America, and the Pacific Basin. The MSCI EMF Index excludes closed markets and those shares in otherwise free markets that are not purchasable by foreigners. Countries include:

Argentina, Indonesia, Poland, Brazil, Israel, Portugal, Chile, Jordan, South Africa, China, Korea, Sri Lanka, Colombia, Malaysia, Taiwan, Czech Republic, Mexico, Thailand, Greece, Pakistan, Turkey, Hungary, Peru, Venezuela, India, Philippines.

Currency: US dollars
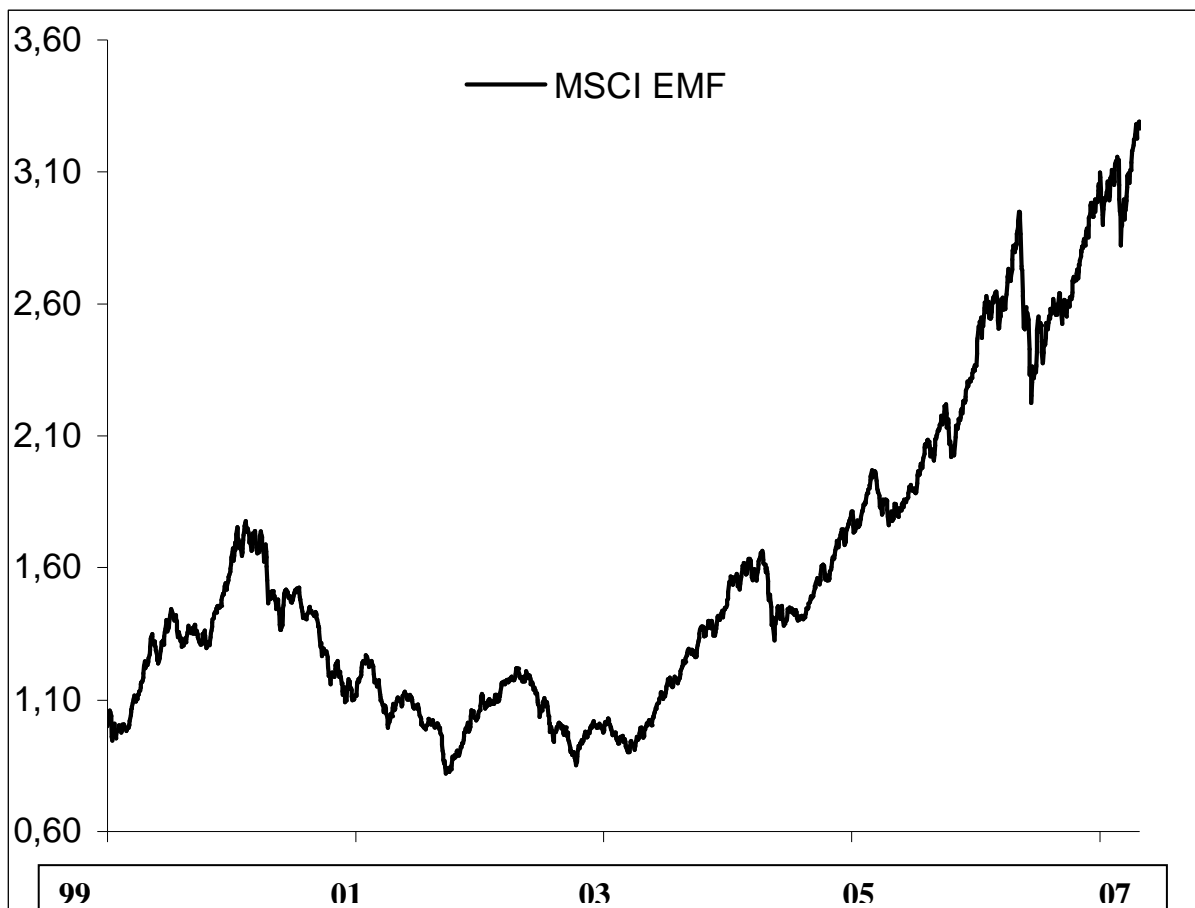
## APPENDIX 8. MORGAN STANLEY CAPITAL INTERNATIONAL'S, MSCI RUS

**About MSCI** *(downloaded May 2007 from www.msci.com/pressreleases/archive/MSCI_May05_STPR.pdf)*

MSCI (www.msci.com) is a leading provider of equity, fixed income and hedge fund indices, and related products and services. MSCI estimates that over USD 3 trillion is benchmarked to its indices on a worldwide basis. MSCI is headquartered in New York, with research and commercial offices around the world. In 2004, MSCI acquired Barra, Inc. (www.barra.com), a global leader in delivering risk analytics, performance measurement and attribution systems and services to managers of portfolio and firm-wide investment risk.

Morgan Stanley, a global financial services firm and a market leader in securities, asset management, and credit services, is the majority shareholder of MSCI, and Capital International Inc., part of the global investment management group of The Capital Group Companies, Inc., is the minority shareholder.

**Msci Standard Index Series May 2005 Annual Full Country Index Review**

**Geneva, May 12, 2005.** MSCI, a leading provider of international equity, US equity, fixed income and hedge fund indices, announced today changes to the MSCI Standard Index Series that will be effective as of the close of May 31, 2005. These changes result from the May 2005 Annual Full Country Index Review, including a full review of the free float of all constituents. As a reminder, the objective of the Annual Full Country Index Review is a systematic re-assessment of the various dimensions of the equity universe, whereby securities may be added to or deleted from the MSCI Standard Index Series in order for each country index to be as close as possible to the 85% free float-adjusted market capitalization representation target at the industry group level. The list of changes in constituents for the MSCI Standard Index Series as well as an updated methodology book have been posted on MSCI's web site at http://www.msci.com/stdindex..

After conducting a public consultation during March 2005, MSCI decided to modify the current definition of the universe of securities that should be eligible for inclusion in the MSCI Russia Index and in the MSCI China Index. The universe of securities underlying the MSCI Russia index is now composed of securities of companies incorporated in Russia and listed on the Russian Trading System (RTS) or the Moscow Interbank Currency Exchange (MICEX), as well as depository receipts listed in markets outside Russia, such as London or New York. The MSCI China universe now also includes China Private Enterprises (P-Chips) listed on the Hong Kong Stock Exchange.

Effective as of the close of May 31, 2005, 278 securities will be added to the MSCI Standard Index Series. These additions bring the representation of their respective industry groups in their respective countries closer to MSCI's target of 85% of free float-adjusted market capitalization. The largest additions in the MSCI World Index are Sprint Corporation (USA), Capital One Financial (USA), KDDI (Japan) and Research In Motion (Canada). Mobile TeleSystems ADR (Russia) and VimpelCom ADR (Russia) are the largest inclusions in the MSCI Emerging Markets (EM) Index. The Annual Full Country Index Review will also lead to the deletion of 30 securities.

As previously announced, MSCI will increase the Limited Investability Factor (LIF) currently applied to the MSCI Taiwan Index from 0.75 to 1 as of the close of May 31, 2005.

MSCI's annual review of the free float for all constituents of the pro forma MSCI ACWI Index will result in changes in Foreign Inclusion Factors (FIFs) for 573 securities in 47 countries. Ninety-four FIF changes result from the second phase of the increase of the LIF for the MSCI Taiwan Index. FIFs adjust the market capitalization of securities for free float available to foreign investors. These changes reflect the evolution of shareholdings, changes in Foreign Ownership Limits (FOLs), changes in Limited Investability Factors (LIFs) or the reclassification of certain shareholders.

The results of the May 2005 Semi-Annual Index Review for the MSCI Small Cap Index Series, the MSCI Global Value and Growth Index Series, the MSCI US Equity Indices, the Morgan Stanley REIT Index, as well as the Annual Index Review for the MSCI Pan-Euro and Euro Indices and the MSCI China A Index have also been posted on MSCI's web site at www.msci.com.

 The updated methodology book includes, amongst other things, an updated set of minimum size guidelines used for additions to and deletions from the MSCI Standard Indices, an updated GICS structure and revised definitions of the Russian and Chinese underlying universes. All changes in this newly released methodology book are effective immediately.

Please find below a list of the largest additions to the MSCI World and Emerging Markets (EM) Indices.

## APPENDIX 9. CONCEPT OF REFLEXIVITY ON RUSSIAN CAPITAL MARKET (25.20.2004) URIJ ICHKITIDZE, MSCI RUSSIA INDEX MODEL
*(downloaded November 2006 from www.relexivity.ru)*

Our experience of on Russian capital market from the year 2000 let us to define sources of reflexivity motion on the Russian market. It lets us concentrate on the trend motion on market and ignore all the informative noise, that constituted so much Russian analytics today.

For definition sources of reflexivity process on Russia market we shall analyze dynamics of the MSCI Russia Index (see Appendix 8) from 1999-2004 which has a strong correlation with RTS Index.

The MSCI Russia statistical investigation showed that there are two factors that its motion: the MSCI EMF Index and the yield to maturity for Eurobonds of Russian Federation. According to this findings we founded a factor model, which finally showed 15% bias for this economic model.

The built factor model is multiplicative, as a result there goes the dynamic series of the related MSCI Rus reduced to 01.01.1999, and as factors there go dynamic series of the related MSCI EMF Index reduced to 01.01.1999 and dynamic series of the portfolio revenue invested at 01.01.1999 in Russian Eurobonds with redemption by 2008.

Mathematically the model is as follows:

$I_{rus}(T)$ – basic index of the MCSI Rus series at the moment T;

$I_{rus\_model}(T)$ – model index of the series $I_{rus}(T)$;

$I_{emf}(T)$ – basic index of the MSCI EMF series at the moment T;

$I_{rusglb28}(T)$ – basic index of the yield to maturity for Eurobonds of Russian Federation;
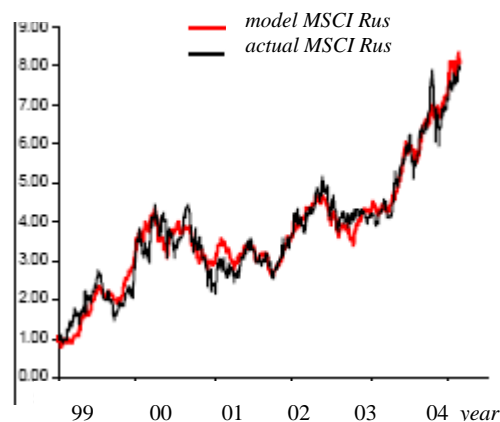
$$I_{rus}(T) = I_{emf}(T) \cdot \left[ \alpha + \beta \cdot I_{rus\,glb\,28}(T) \right] \cdot \varepsilon(T)$$

the factor model has the following –
$$where\ \varepsilon(T) = \frac{I_{rus}(T)}{I_{rus\_model}(T)} - \bmod elbias$$
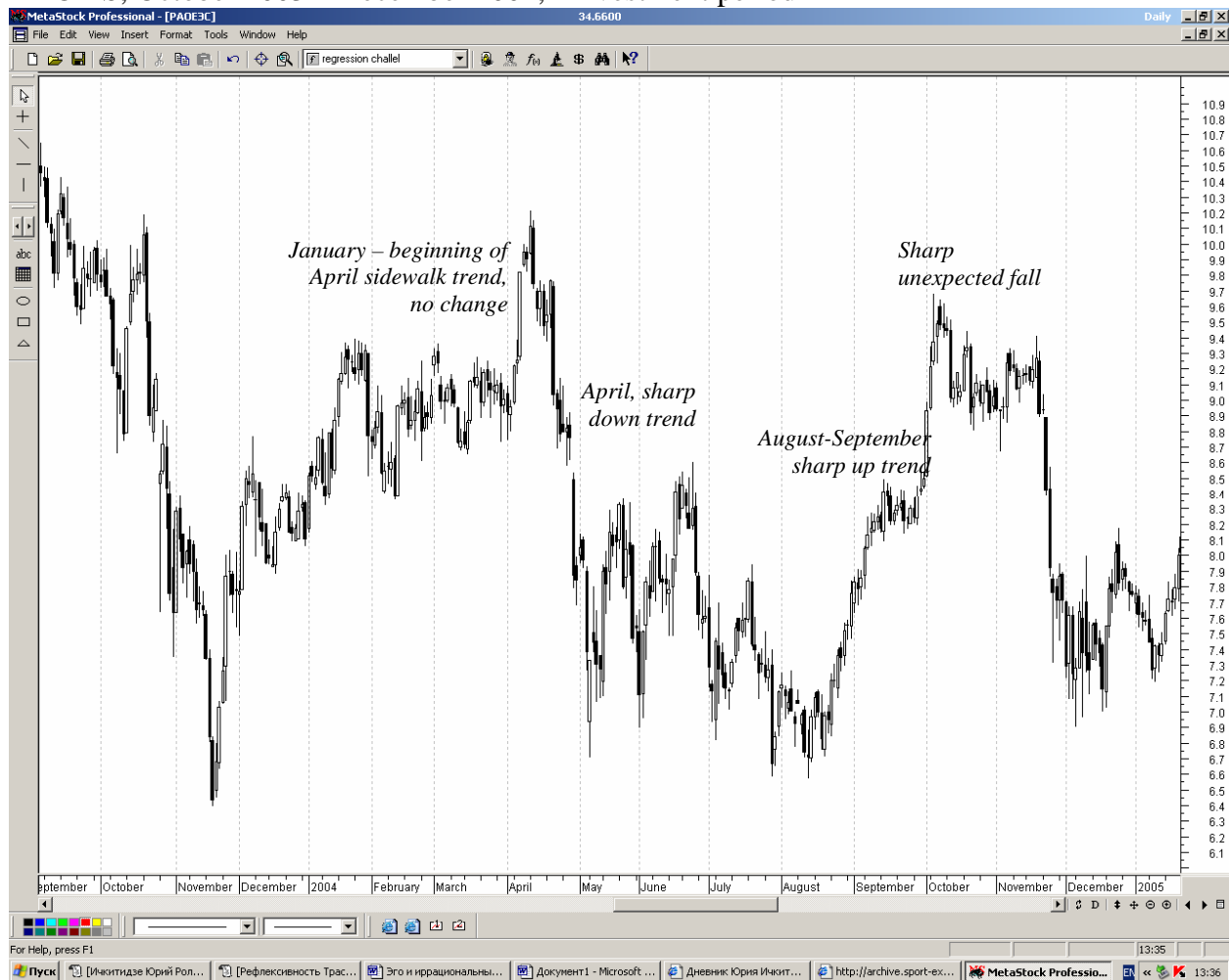
$$by\,1999 - 2003$$

$$\alpha = 0.21916, \beta = 0.73076\ (by\ the\ least\ square\ method)$$

The comparing dynamics of the actual series $I_{rus}(T)$ and the modeled $I_{rus\_model}(T)$.
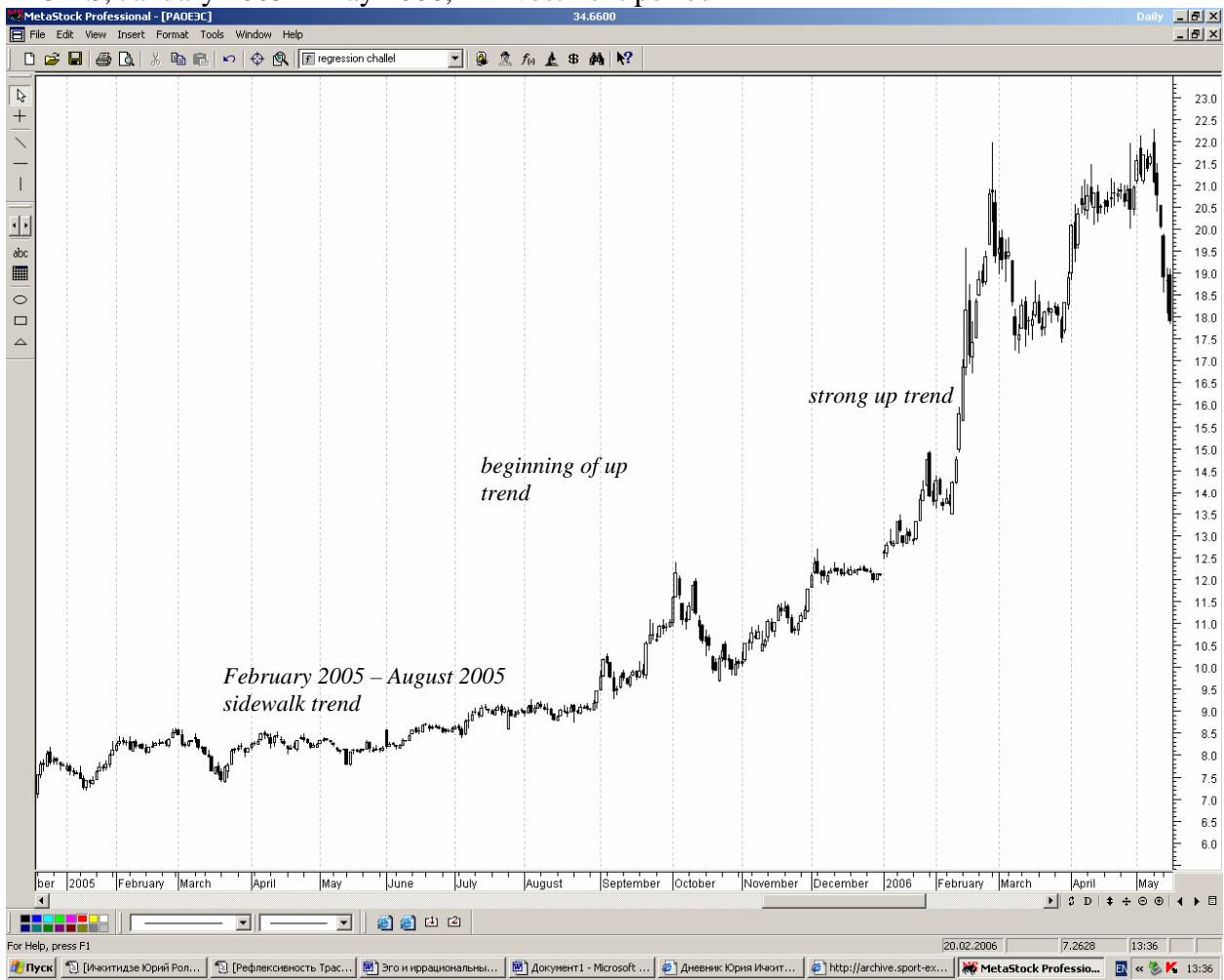
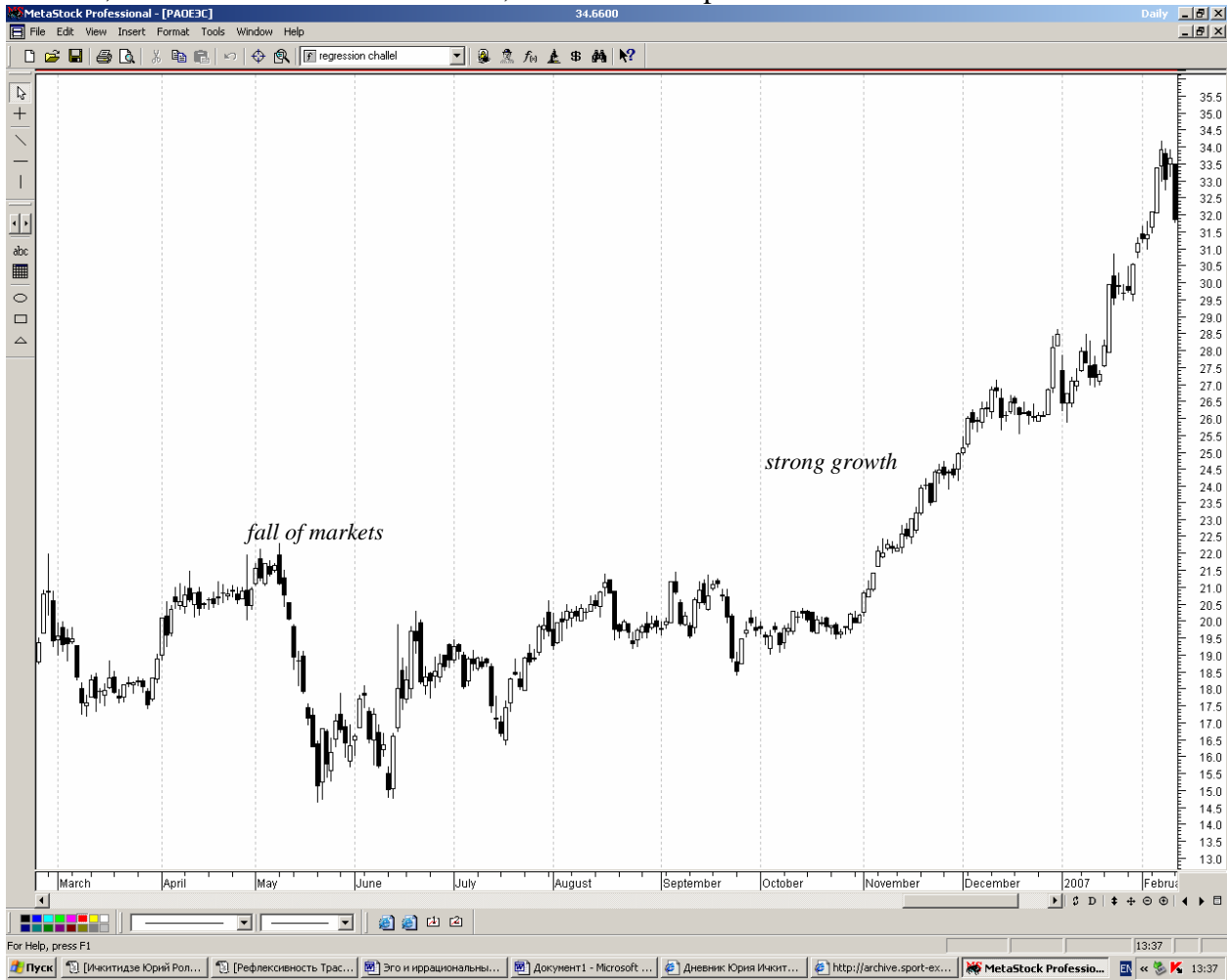## APPENDIX 10. RAO ES STOCKS, DYNAMICS FOR 2004-2007

RAO ES, October 2003 – December 2004, I investment period

RAO ES, January 2005 – May 2006, II investment period

RAO ES, March 2006 – December 2006, III investment period

RAO ES, January 2007 – March 2007, IV investment period

## APPENDIX 11. GAZPROM STOCKS, DYNAMICS FOR 2004-2005, 2007

GAZPROM, January 2004 – December 2004, I investment period



GAZPROM, January 2004 – December 2004, I investment period