

# Essence, risks and control of uncertainties in the process of making investment decisions

## Esencia, riesgos y control de incertidumbres en el proceso de toma de decisiones de inversión

Marina B. IANENKO [1](#); Lazar A. BADALOV [2](#); Yury A. ROVENSKY [3](#); Galina A. BUNICH [4](#); Elena B. GERASIMOVA [5](#)

Received: 18/03/2018 • Approved: 26/04/2018

### Contents

- [1. Introduction](#)
  - [2. Literature review](#)
  - [3. Materials and methods](#)
  - [4. Discussion](#)
  - [5. Conclusions](#)
- [Bibliographic references](#)

#### ABSTRACT:

The economy is under investing is commonly understood as the part of resources (of all types), which goes to current consumption, and is used to meet future needs. Currently, the domestic economists as their foreign colleagues consider investments as long-term investments of capital in various sectors of the economy, infrastructure, social programs, protection of the environment. An important element is investment in fixed capital. They include new construction; reconstruction and technical re-equipment; acquisition of buildings, structures, machinery, equipment.

**Keywords:** impact of risk, investment, decision making, risk management.

#### RESUMEN:

La economía no está invirtiendo se entiende comúnmente como la parte de los recursos (de todo tipo), que va al consumo actual, y se utiliza para satisfacer las necesidades futuras. Actualmente, los economistas nacionales, como sus colegas extranjeros, consideran las inversiones como inversiones a largo plazo de capital en varios sectores de la economía, infraestructura, programas sociales, protección del medio ambiente. Un elemento importante es la inversión en capital fijo. Incluyen nueva construcción; reconstrucción y reequipamiento técnico; adquisición de edificios, estructuras, maquinaria, equipo

**Palabras clave:** impacto del riesgo, inversión, toma de decisiones, gestión del riesgo

## 1. Introduction

Real investments are divided into three main areas: business investment in fixed capital, housing and changes in inventories (investments in material assets).

Investments have the following essential features:

- in all cases, the purpose of the investment – receiving certain benefits (profit, income, economic benefits, another useful effect);
- one who invests, ready for these benefits, abandon the current consumption of certain resources;
- as benefits expected to obtain in the future, the investment process takes place in conditions of risk and uncertainty.

Thus, the adoption and implementation of investment decisions becomes a strategic moment, as these decisions become a special character for the investor:

- after making the investment, i.e., investment of resources in the assets of the company, they are connected and you can't easily return a profit, he changed the species nested in the assets of the enterprise financial and other resources. Solidity of cost means their distinctive long-term involvement in the production process of distraction on a long term large amounts of all kinds of resources;
- this investment should be profitable throughout the entire period of operation involved in the economic activities of the assets, and the investor is entitled to expect rate of return that would be comparable to the yield he would have received by investing these funds in other (alternative) investment areas;
- investment decisions are strategic decisions of the type that determine, in many cases, future recurrent costs of the enterprise (it is clear that the acquisition of a particular type of equipment is put forward corresponding requirements used in the production of raw materials, materials, workforce, etc.);
- investment decisions objectively connected with uncertainty and risk, making it possible to select inefficient capital investment plan.

To achieve the desired results, minimize uncertainty and risks, managers must take into account all the factors that affect the final adoption of this investment decision.

---

## 2. Literature review

Considerable attention to fundamental analysis as the method of valuation of securities and predict their behavior given in the monographs by A. Damodaran ("Investment evaluation") (Damodaran, 2008), S.P. Pratt ("Cost of capital") (Petrushkin, 2010), E.A. Helfert ("Technique of financial analysis") (Helfert, 2003), W.F. Sharpe ("Investments"), A.G. Gryaznova and M.A. Fedotova ("Valuation of enterprise (business)") (Goh, 2006) and others.

A significant contribution to the study of the securities market and development of the theory of investments generally made by the Nobel laureates G. Tobin (1981) (Tobin, 2010), Marković (1990), M. Shouls (Yashin & Kornilov, 1997), R. Ingle (Black & Scholes, 1973), and some of other foreign H.G. Alexander, W. Sharp, J. Aleksander, J. Bailey (1999), J. Lintner (B. Graham Security Analysis. The Classic 1934 Edition / B. Graham), D.J. Murphy (Mukhametshin, 2009), J. Mossin (Markowitz, 1952), N. Ross (Romanov, Lugev, 2006). and domestic scientists as B.I. Alyokhin (2006), N.I. Berzon (2012), V.A. Galanov (2010), E.F. Zhukov (2009), V.N. Edronova (2008), D.A. Endovitsky (2010), Ya.M. Mirkin (2011), I.P. Nikolaeva (2012) and other scientists.

However, a number of problems associated with the use of fundamental analysis for making investment decisions and forming investment portfolio (the problem of choosing measures systematic risk ranking of the securities in the investment portfolio, objective take investment decisions) remain unresolved, which determined the need for this study.

---

## 3. Materials and methods

Methodological basis of research are principles of systemic analysis in order to reflect the nature, the elements and causal relations of the phenomena and systems. In the process of the dissertation research were widely used such methods of scientific knowledge, as the analytical, economic and statistical, as well as methods of economic-mathematical modeling. Information and the empirical base of the research were statistical data of the state bodies,

as well as analytical information of the Federal state statistics service, Central Bank, Ministry of economic development, Ministry of Finance, the Federal service for financial markets Moscow interbank currency exchange, Russian trading system, investment companies and news agencies.

Scientific novelty of research consists in development of theoretical positions fundamental analysis, and to develop methodological and practical recommendations on increase of efficiency of its use for making investment decisions taking into account the specifics of modern Russian stock market securities.

## 4. Discussion

### 4.1. Study of the classification of investment risk

Business of almost any economic entity is subject to risk and uncertainty.

Usually uncertainty is the incompleteness and inaccuracy of information about conditions of activity of the enterprise, the implementation of the project. Risk is understood as the possibility of the occurrence of conditions leading to negative consequences.

Investment risk is an integral part of the overall financial risk and represents the likelihood (risk) of financial loss (loss of at least part of their investment), income from investment or additional investment costs.

In General, the nature of investment risk can be classified according to various criteria. Table 1 shows a possible classification of investment risks. It should be noted that the classification criteria may be substantially more than is presented in the table, here are only the main ones.

**Table 1**  
Possible classification of investment risks.

<b>N</b>	<b>Classification sign</b>	<b>Types of investment risks in accordance with the classification</b>
1	In terms of the application of investment activities	- risks of financial investments; - risks of real investments;
2	On forms of ownership on investment resources	- risks of public investment; - risks of private investment; - risks of foreign investments; - risks of joint investments;
3	On a nature of participation in investment	- risks of direct investment; - risks of indirect investment;
4	On organizational forms	- risks investment programs and projects; - risks of an investment portfolio;
5	On an investment period	- risks short term investments; - risks of long-term investment;
6	On a regional basis	- risks of investing within the state; - risks of international investing;
		- general economic risks;

7	On a scale of risks	<ul style="list-style-type: none"> <li>- industry risks;</li> <li>- brand risks;</li> <li>- risks associated with an individual investor;</li> </ul>
8	On an instalment	<ul style="list-style-type: none"> <li>- risk of the missed benefit;</li> <li>- the risk of reducing the yield;</li> <li>- the risk of direct investment losses;</li> </ul>
9	According to the degree of possibility of predicting the risk	<ul style="list-style-type: none"> <li>- predicted risks;</li> <li>- unpredictable risks;</li> </ul>
10	According to sources	<ul style="list-style-type: none"> <li>- systematic (external or market) risks;</li> <li>- unsystematic (internal) investment risks;</li> </ul>

Source: Prepared by the authors.

The individual listed in the table risks to consider in more detail:

**1. Two main types of investment risk stand out depending on the application object of investment activity is the risk of financial investment (risks on securities market) and the real investment risk (risks associated with the implementation of projects, construction risks).**

The risk of financial investment – the probability of inefficiency or insufficient efficiency of investment operations at the time of the transaction, due to the inability to forecast future prices (for financial instruments (assets) and future dividends) by investing in financial instruments (assets) involving the acquisition of rights to participate in management of the Corporation and debt rights in the state securities and corporate securities, Bank deposits (shares, bonds, promissory notes and other securities and instruments), etc. in the stock and money markets.

This risk is associated with ill-conceived selection of financial investment instruments, financial difficulties or bankruptcy of individual issuers, unanticipated changes of conditions of investment, direct deception of investors, etc.

The risk of real investment – is the probability of inefficiency or insufficient efficiency of investment projects at the beginning of their implementation, due to the peculiarities of life cycle, type, geographical location and characteristics of the customer, the subcontractors, the necessary raw materials and component parts, etc., the inability to forecast prices and volumes in the future (for financial instruments (assets) and future dividends) by investing in tangible and intangible assets, as a rule, directly involved in the production process (in the creation and reproduction of fixed assets, including land plots with long-term amortization; working capital investment in inventories, securities and instruments, etc.).

The risk of real investment is associated with a failed location determination of the object under construction, disruptions in the supply of construction materials and equipment, substantial price increases for Investment goods, the selection of unqualified or unscrupulous contractor and other factors, delaying the commissioning of the object of investment or reducing the income (profit) in the process of its operation.

**2. Forms of ownership on investment resources risks are subdivided into risks of public, private, foreign and joint investment.**

The risks of public investment – the probability of investment losses (negative changes in the value of assets), while investments of assets made by Federal and local authorities and management in the form of means of budgets of all levels, extra-budgetary funds and borrowed funds, as well as state enterprises and organizations in the form of equity and debt.

The risks of private investment – the probability of investment losses (negative changes in

the value of assets) the investment of funds by individuals and enterprises, non-state forms of ownership, especially collective.

Risks of foreign investing – the probability of investment losses (negative changes in the value of assets) in investment by foreign citizens, legal persons and States.

Risks of joint investment – the probability of investment losses (negative changes in the value of assets) the investment of funds by the subjects of this and foreign countries.

### **3. The nature of participation in investment allocate the risks of direct and indirect investments.**

Risks of direct investment – the probability of investment losses (negative changes in the value of assets) as a result of inefficiency or lack of effectiveness of the investment object and (or) irrational investment in the case when the choice of object of investment is done directly by the investor. Such investments typically include real investment in the material object. Mainly direct investment carried out prepared to investors with sufficient information about the investment object and familiar with the mechanisms and organizational forms of investment.

Risks of indirect investments, that is, the probability of investment losses (negative changes in the value of assets) due to bad investments or lack of income when investing, characterized by the presence of the intermediary investment Fund or a financial intermediary. This probability is usually associated with an incorrect rating or a bad choice of the investor or investment Fund for investments. Such investments typically include portfolio investments. Not all investors have adequate skills for the effective selection of investment facilities and its subsequent management. In this case, they acquire securities issued by investment or other financial intermediaries (e.g. investment certificates of investment funds and companies) who place accumulated thus investment funds in the most effective from their point of view, the objects of investment, participate in the management of, and the proceeds are distributed among the certificate holders.

### **4. Organizational forms, all the risks are subdivided into risks of investment programmes and projects and risks of the investment portfolio.**

Risks of investment programmes and projects – the probability of ineffectiveness or lack of effectiveness, including social investment programmes and projects at the beginning of their implementation, due to the peculiarities of their life cycle, type, geographical location and characteristics of the customer, subcontractors; supplying necessary raw materials and component parts, etc., the impossibility of predicting future prices, sales volumes (for products and services (assets), future dividends), the social impact in the future. The risk of the investment project is divided into types depending on the ways of financing, the range and variety of products, competitive strategy (state, region, industry, company), etc. the risk of the economic entity that implements the investment project, and the risk of the investment projects themselves are to a large extent manageable.

Risks of the investment portfolio – the probability of reducing the quality (the ratio of “yield-risk”) investment portfolio at the time of its formation, due to the inability to forecast future prices (for financial instruments (assets) and future dividends) by investing in financial instruments (assets) in the equity and money markets (includes various forms of investments one investor, the state entity).

## **4.2. Qualitative and quantitative approaches for risk analysis of investment projects and control of uncertainties**

For the analysis of investment risks, in particular risks of investment projects, is commonly used both qualitative and quantitative approaches.

The main task of the qualitative approach is to detect and identify possible risks. Then to describe and to value the potential damages and to offer a system of anti-risk measures, calculate their value.

Qualitative risk analysis of the investment project is at the stage of development of the

business plan. In the process of qualitative analysis of project risks it is important to investigate their causes and factors contributing to their dynamics, which is associated with the description of possible damage from manifestations of project risks and their valuation.

With the help of anti-risk measures to manage the risk of the investment project. It is important to choose ways to reduce project risk, as it is the correct risk management to minimize losses that may occur during implementation of the investment project, as well as to reduce the overall riskiness of the project. Thus, the qualitative analysis includes the assessment and management of risks.

The methods of risk management typically include: diversification, risk aversion, compensation, localization.

Diversification is one of the most important areas of risk reduction. We usually speak of diversification, suppliers and consumers, and expand the number of participants in risk transactions. To reduce the risk of enterprise activity, it is desirable to undertake the production of such goods and services, for which demand changes in opposite directions. Distribution of project risk between its participants is an effective way to reduce it. The most logical thing to do is responsible for a specific type of risk those of its members who possess more accurate and better able to calculate and control the risk. Allocation of risk is made in the development of the financial plan of the project and contract agreements. The assignment of risk can be achieved through diversification as in the space providers and space users.

Among the methods of evasion from risk occupies a special place of insurance risk. Distinguish between investment insurance and political risk and investment insurance, and commercial and financial risks. Foreign insurance practice uses the full insurance of investment projects, however, in Russia while it is possible to only partially insure project risks: buildings, equipment, personnel, etc.

Compensation risks substantially similar to insurance. It provides for the establishment of certain reserves: financial, material, information. As information resources is the acquisition of additional information (for example by conducting more detailed market research). Financial reserves can be created through the allocation of additional funds for unforeseen expenses. The material provisions imply the creation of a special stock of raw materials, components.

Localization refers to the allocation of risks of certain types of activities, which can lead to the localization of risk, such as the creation of a separate company or subsidiary of the company to implement a new risky investment project. In addition, to improve the sustainability of the investment project and reducing its risk can be modified by the participants, in particular by including, in the case of venture capital firms that specialize in funding risky, especially for innovative projects.

The main results of the qualitative risk analysis are:

- identifying specific project risks and its causes;
- analysis and the value equivalent of the hypothetical impact of the mentioned risks;
- range of measures to minimize damages and their valuation.

Quantitative risk assessment of investment project associated with the numerical determination of the values of the individual risks and risk of the project as a whole. Quantitative analysis often uses the tools of probability theory, mathematical statistics, theory of operations research. A quantitative analysis of project risks is a continuation of qualitative research and involves:

- the presence of carried out basic calculation of the project;
- to conduct qualitative analysis.

Thus, the task of quantitative analysis is the numerical measurement of the extent of the impact of changes in risk factors in the project, check on risk and behaviour performance criteria of the project.

Later in the quantitative analysis we will consider decision-making in conditions of full and fractional uncertainty at the level of individual projects.

### 4.3. Technology control uncertainty and make informed investment decisions

Consider investment decisions using net present value (NPV). Decision-making based on the use of this indicator through the following sequence of actions, which should:

1. To predict demand and to the expected revenue (income) from the  $j$ -th project  $E(R_{jt})$  in period  $t$ .
2. To predict costs (evaluate them) and to get  $E(C_{jt})$ .
3. Calculate  $E(NCF_{jt}) = E(R_{jt}) - E(C_{jt})$ .
4. To determine the discount rate for this project given the risk, based on the definition  $r_{ij} = r_t + \text{risk premium}$  for the  $j$ -th project, where  $r_t$  is guaranteed the discount factor at year  $t$ . Moreover, the risk premium is determined on the basis of expert assessments. As an example, consider the following Table 2.

**Table 2:** Discount factor for project risk.

The nature of the project	Risk premium, %
Low-risk	3
Middle-risk	6
High-risk	9

Source: Prepared by the authors.

5. To obtain the expected net present value of the  $j$ -th project  $E(NPV_j)$  according to the formula (1):

$$E(NPV_j) = \sum_{t=0}^T \frac{E(NCF_{jt})}{\left(1 + \frac{r_j}{100}\right)^t} - C_{0j} \quad (1)$$

If  $E(NPV_j) > 0$ , then the  $j$ -th project should be accepted and conversely, if  $E(NPV_j) < 0$ , then the  $j$ -th project should be rejected.

The uncertainty associated with the lack of information about probabilities of States of the environment (nature), called "hopeless" or "bad".

In such cases, to determine the best decision using the following criteria: maksimaks, Wald, savage, Hurwitz, the principles of Bayes – Laplace criterion for the Hodge–Lehmann criterion Germeyer,  $BL(MM)$  – criterion, the criterion works, the criterion of indifference.

Criteria maksimaks. It can determine the strategy that maximizes the maximum payoffs for each state of nature. It is the criterion of extreme optimism. The best solution is recognized, which gives the maximum gain, equal to the ratio (2):

$$M = \max_{1 \leq i \leq m} \max_{1 \leq j \leq n} a_{ij} \quad (2)$$

It is easy to see that for the matrix  $A$  the best solution is  $A_{12}$ , which gives the maximum gain.

It should be noted that a situation requiring the use of such a criterion, in the economy in General are not uncommon, and are not only blindly optimistic, but the players put in an impossible position where they have to be guided by the principle of "either sink or swim".

Maximin criterion of Wald. From the standpoint of this criterion, the nature is seen as aggressive and deliberately acting enemy like those who oppose in strategic games.

The application of this criterion is warranted if the situation in which a decision is made the following:

1. On the possibility of occurrence of the external states  $P_j$  know nothing;
2. You have to reckon with the emergence of various external states  $P_j$ ;
3. The solution is implemented only once;
4. It is necessary to exclude any risk.

The rule of decision in accordance with the Maximin criterion ( $MM$ -criterion) can be interpreted as follows: the matrix wins is chosen the least of the results of each line, after you must choose the option with the highest value. That is, you select a solution which achieved value (3):

$$W = \max_{1 \leq i \leq m} \min_{1 \leq j \leq n} a_{ij} \quad (3)$$

In accordance with the Wald criterion, all of the most unfortunate results to choose the best. Chosen so options completely eliminate the risk (this property allows us to consider a Maximin criterion is one of the fundamental). This situation means that the decision maker might face worst result than the one on which he focuses. Reinsurance is a position of extreme pessimism, designed for the worst case. This strategy is acceptable, for example, when the player is not so interested in big luck, but want to insure themselves against unexpected losses. The choice of this strategy is determined by the ratio of the player to the risk.

Criterion savage's minimax risk. The choice of strategy is similar to strategy selection on the basis of Wald, with the difference that the player is not guided by the matrix of winnings  $A$ , and the risk matrix  $R$ .

The appropriate criterion savage selection rule is interpreted thus: in each row of the risk matrix is the most important, and then chooses the minimum of the found values.

Thus, you select a solution that is value (4):

$$S = \min_{1 \leq i \leq m} \max_{1 \leq j \leq n} r_{ij}. \quad (4)$$

The requirements of the situation in which the decision is to coincide with the requirement of a Maximin criterion. The Hurwitz Criterion. Trying to take the most balanced position, Hurwitz suggested an evaluation function that is somewhere between the point of view of extreme optimism and extreme pessimism.

The Hurwitz criterion is applied when:

1. about the probability of occurrence of state  $P_j$  know nothing;
2. with the advent of state  $P_j$  to be reckoned;
3. implements only a small number of solutions;
4. allowed some risks.

A selection rule according to the Hurwitz criterion, as follows: in each row of the payoff matrix is selected the smallest and largest values, which then are weighted according to the value of the coefficient of pessimism  $p$  ( $0 \leq p \leq 1$ ) (the minimum value is multiplied by the value of  $p$  and the maximum at  $(1 - p)$ ). After you have selected the greatest of all the received values.

According to this criterion, the strategy in the matrix  $A$  selected in accordance with the value (5):

$$H_A = \max_{1 \leq i \leq m} \left\{ p \min_{1 \leq j \leq n} a_{ij} + (1 - p) \max_{1 \leq j \leq n} a_{ij} \right\}. \quad (5)$$

It should be noted that when  $R = 0$  the Hurwitz criterion coincides with maxim criterion (i.e. we take the point of view of the gambler, who hopes that "get" the most favorable case), and when  $p = 1$  is transformed into a Maximin criterion of Wald.

Because it is very difficult to provide quantitative characteristics for both optimism and pessimism that are present when making decisions, most often used this criterion with the coefficient of pessimism is equal to  $p = 0,5$ .

If we apply the Hurwitz criterion to the risk matrix, the selection rule changes: choose each row of the risk matrix the maximum and minimum values, and now multiply the maximum value by the value of the coefficient of pessimism  $p$ , and the minimum of  $(1 - p)$ . After adopted the strategy corresponding to the smallest of the results obtained.

That is, the choice of strategy is determined by the value (6):

$$H_R = \min_{1 \leq i \leq m} \left\{ p \max_{1 \leq j \leq n} r_{ij} + (1 - p) \min_{1 \leq j \leq n} r_{ij} \right\}. \quad (6)$$

Needless to say, when  $R = 0$  the choice of strategy is carried out on the condition of the least of all possible risks ( $\min r_{ij}$ ), and when  $p = 1$  the criterion savage's minimax risk.

The criterion of indifference. In conditions of uncertainty it is assumed that all possible States of the environment (nature) are equally probable. This criterion identifies the alternative with the maximum average result, that is, selects the value corresponding to condition (7):

$$\max_i \sum_{j=1}^n (1/n) a_{ij}. \quad (7)$$



The Criterion Of Bayes – Laplace. This principle departs from the conditions of total uncertainty. It assumes that the possible States of nature can be achieved with probability  $P_1, P_2, \dots, P_n$  provided that  $P_1 + P_2 + \dots + P_n = 1$ . Bayes in 1763 suggested to be equal to the probability of individual States of nature. In 1812, Laplace summarized this principle in the case of different probabilities. This principle refers to alternative methods of decision-making under uncertainty. Note that the principle of the Bayes Laplace makes sense to use if it is possible to assess the probabilities of individual States of nature.

This assumes that the situation in which the decision is characterized by the following circumstances:

1. The probability of occurrence status  $P_j$  known and do not depend on time.
2. The solution is implemented (theoretically) infinitely many times.
3. For a small number of implementations of the solutions allowed some risk.

The need for the second condition due to the fact that when events are repeated many times, the law of large numbers, according to which maximizes the average result. Therefore, the total (infinite) implementing any risk is virtually eliminated.

The corresponding selection rule can be interpreted as follows: the matrix of winnings is complemented by another column containing the expected values of each row. From the resulting column select maximum value.

Therefore, the selection is made based on the value (8):

$$BL = \max M_i, M_i = \sum P_j * a_{ij}, \text{ when } i = \overline{1, m}. \quad (8).$$

Accordingly, the criterion of Bayes-Laplace is more optimistic than the Maximin criterion, but it requires a lot more awareness and a sufficiently long implementation.

---

## 5. Conclusions

So, to summarize, we can say that investing is not a simple investment of money, as it seems at first glance. This, above all, a thoughtful and responsible step that determines the future status of the investing entity. This step inherently do with uncertainty at various levels and thus requires further study of the investment project using a variety of criteria, giving the opportunity to clarify the situation and make the decision that will best meet the investment strategy.

It is very important to consider the environment in which the project is implemented, it is necessary to conduct both qualitative and quantitative analysis (risks country, regional, sectoral, and project investment).

To improve the quality of decisions it is necessary to apply several criteria of project efficiency, especially important in a situation when the originally selected criterion does not give full confidence for final choice of solution.

In the absence of information about the state of the environment theory does not provide unambiguous and mathematically rigorous recommendations on the selection of decision criteria. This is due more to the weakness of the theory, and the uncertainty of the situation. The only reasonable solution in such cases is to try to obtain additional information, in the absence of which the decisions are theoretically not well justified and largely subjective.

Although the application of mathematical methods and does not give a completely accurate result and it is somewhat subjective (due to the arbitrariness of the choice of the criterion for the decision), it nevertheless creates some streamlining at the disposal of the DM data set, the set of States of nature, alternative solutions, wins and losses with various combinations of state "environment decision". Such an ordering of representations of the problem itself contributes to the quality of decisions.

---

## Bibliographic references

Black, F. (1973). The Pricing of Options and Corporate Liabilities. *Journal of Political Economy*, 81(3), 637-654.

Damodaran, A. (2008). *Investment assessment. The tools and techniques of assessment of any assets*. Moscow: Alpina Business Books.

Goh, P. (2006). *How really stock market works: A Secret guide for investors "partisan"*. Dnepropetrovsk: Balance Business Books.

Helfert, E.A. (2003). *Technique of financial analysis: A Way to create business value*. Saint Petersburg: Piter.

Markowitz, H.M. (1952). Portfolio Selection / Harry M. Markowits. *Journal of Finance*, 1, 71-

Mukhametshin, T. (2009). Brokerage activity on the international securities market: current trends and regulatory issues. *Stocks and bonds market*, 15, 47-50.

Petrushkin, N.V. (2010). Efficiency of separate directions of budget support of agricultural production in the region. *Regionology*, 1, 108-116.

Romanov, V. (2006). Evaluation of the fundamental value of the company. *Stocks and bonds market*, 19, 15-18.

Tobin, G. (2010). *Monetary policy and economic growth*. Moscow: Librokom.

Yashin, S.N. & Kornilov, D.A. (2006). Some aspects of the methodology of portfolio analysis. *Finance and credit*, 2, 64-72.

- 
1. Peter the Great St.Petersburg Polytechnic University, Saint Petersburg, Russia
  2. Plekhanov Russian University of Economics, Moscow, Russia, E-mail: [lazarbadalov@rambler.ru](mailto:lazarbadalov@rambler.ru)
  3. Plekhanov Russian University of Economics, Moscow, Russia
  4. Plekhanov Russian University of Economics, Moscow, Russia
  5. Financial University under the Government of the Russian Federation, Moscow, Russia
- 

Revista ESPACIOS. ISSN 0798 1015  
Vol. 39 (Nº 31) Year 2018

[Índice]

[In case you find any errors on this site, please send e-mail to [webmaster](mailto:webmaster)]