
AICEI PROCEEDINGS

“THE CHANGES ARISING FROM EU MEMBER CANDIDATE STATUS”

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Abstract

The capital presents one of the development factors of the national economy. Considering its limitations, however, permanent efforts have been made, both in theory and practice, to find new ways (instruments) to provide capital needed for achieving the developmental goals of the corporations, and indirectly, of the national economy. Thus, various types of securities have emerged as a source of capital, on the one hand, and as an investment instrument, on the other, by which the corporations make fructification of a part of their capital by investing in other corporations, national- and international-wide.

Taking into account the complex nature of the securities, the capital fructification by investing in certain security portfolio requires extensive analysis in order to determine the optimal ratio between return and risk, two major components in the process of analysis and estimation of the efficacy of such investments.

Key words: *securities; efficiency of securities investment; return and risk; securities portfolio.*

Introduction

The integration of the Republic of Macedonia to the European and the international community entails wide range of changes that needs to be made in our economy. One such change is the need for faster and permanent development of the capital market. This need becomes even more relevant if taking into account the degree of (under)development of the Macedonian capital market.

In the developed world, in addition to the own capital from internal sources, and using credits from commercial banks, there is an evidence of exploiting other financial instruments as source of capital, such as wide range of securities (shares, bonds, etc.), lease, franchise, etc. The benefit from using such financial instruments is twofold, that is first, it brings additional capital, and second, it creates an opportunity for foreign capital investments in the economy by the means of portfolio, foreign direct investments, joint ventures, etc., hence, taking advantage of all benefits that foreign capital provides to the given economy.

The efficiency of the process of capital market development is not only contingent upon its institutional development component, but also upon the degree of information available to the investors, either individuals or legal entities, on the alternative sources of capital, on the one hand, and the alternative method of placing available funds, on the other, all of which aimed at deriving additional benefit. Thus, this paper is addresses exactly to this phenomenon.

Securities, their necessity and importance to the economy

Basic incentive of any individual, as well as any legal entity is their own growth, i.e. development which inevitably brings about development of the national economy and the society, as a whole. The growth, same as the development of the entities, depends on myriad of factors, but they are the only one that could be specified, or materialized through investments. The investments, on the other hand, observed as such, constitute a complex category entailing a need to be clearly and accurately defined. At first, in the

theory, the investments were defined only from the aspect of creating real material goods. Later on, such definition of the investments was expanded, covering the term of financial investments, that is long-term financial investments, which, in turn, include long-term credits and investments in long-term securities issued by other entities.

In the financial theory, the securities are characterized by dichotomy. They appears to be a source of financing the investment activity of the entity, as one party to the agreement, and an investment instrument for the counterparty, that is an alternative for increasing the capital regardless of the type of entity (individual or legal entity). The need and the importance of the securities in our environment is even more emphasized, considering the economic changes that occurred in 1990s of the 20th century in the South Eastern European countries, including the Republic of Macedonia. Such changes, inter alia, also implied a need of adequate functioning of the capital market, entailing, in the past, present and future, permanent conception of the capital market from any aspect: conception of the regulations concerning this area, introduction of investment (financial) instruments, which are well-established on the international capital market, and implementation of the necessary network of institutional entities for smooth functioning of the capital market.

For this purpose, the Macedonian Stock Exchange was established in 1995, which was first of a kind in our country. At first, the stock exchange worked as non-profitable joint stock company, but with the new amendments to the Securities Law in 2001, it started generating profit. Any foreign and domestic individuals and legal entities may become shareholders of the stock exchange, with the ownership by shareholder being limited to 10% of the core capital of the Stock Exchange (the capital stock is valued at Euro 500,000).¹

The movement of prices of shares on the stock exchange is monitored by so-called stock exchange index, which quantitatively measures the daily changes in the market prices relative to a base period, as well as relative to the preceding day, month, year etc. On November 1, 2001, the Macedonian Stock Exchange commenced calculating and publishing own stock exchange index, known as Macedonian Stock Exchange Index

¹ Currently, the stock exchange is constituted of 20 shareholders, as follows: 8 brokerage houses, 8 banks, 1 insurance company and 3 private persons.

(MBI-10).² In order to power up the trade in securities through the stock exchange, the Government introduced wide range of tax relief, such as: tax payment of 50% of the gross dividend, by January, 2006, the capital gain tax was completely repealed, avoiding of double taxation, etc. Observing the trade in securities through the stock exchange, it is evident that it has been increasing over time, but the volume is not satisfactory, yet; see Table 1.

Table 1. Total turnover on the stock
exchange
from 1996 to 2004

	Total turnover
1996	35,790,000
1997	1,101,000,000
1998	4,764,168,266
1999	1,552,771,065
2000	7,780,523,404
2001	28,800,112,104 ³
2002	5,760,022,420
2003	2,309,500,000
2004	2,752,000,000

Source: National Bank of the Republic of
Macedonia, Annual Report 1996, 1997,
1998, 1999, 2000, 2001, 2002, 2003 and
2004.

² At first, the Macedonian Stock Exchange Index (MBI) was calculated as a price, non-weighted, average of the value of the five most liquid shares, and on January 4, 2005, a new Stock Exchange Index MBI-10 was introduced, which weighted by market capitalization, ensures more realistic presentation of the price movements on the stock exchange.

³ The high turnover value registered in 2001 is a result of the sale of Macedonian Telecommunication.

Investments are exceptionally complex category, irrespective of the type of investment, real or financial investments. The complexity of the financial investments or investments in securities involved in stock exchange operations, primarily arises from the variety of types and subtypes of securities different by their income and risk. Also, it has to be mentioned that when discussing this type of investments, we actually speak about portfolio investments, with a single and simple reason to reduce the investment uncertainty and risk. The intention of combining various types of securities, having in mind their return-to-risk ratio, is to maximize the return at a given risk level or to minimize the risk at a given return level.

Return and risk in securities investments

The investment decision for making certain type of investment is adopted only if such investment is considered to be cost-effective (justified).

The same rule applies to both real and financial investments, according to which their efficiency is estimated by the amount of return (cash flow), but in environment of uncertainty and risk. In other words, efficiency means return on investment at given risk level. Hence, the return (desired rate of return) and the risk appear to be the major components in the efficiency analysis. The risk measurement and coverage method in real investment is the main focus of the capital budgeting, while in the financial investment, it is a subject to the portfolio theory and management. What is more specific for the financial investments is that the financial investment efficiency is primarily made in the context of portfolio, i.e. aimed at portfolio diversification. Accordingly, in the portfolio theory, the basic premise is the answer to the question which portfolio is efficient, that is, how could we achieve efficient diversification or efficient portfolio.

As stated above, the return and the risk to such return are major components in the analysis and the assessment of the financial investment efficiency. Hence, this part of the paper will mainly address to the return and the risk in the context of portfolio.

The paper of Harry Markowitz "Portfolio Selection" published in 1952, launched a new era in the financial theory and practice, and consequently, in the field of investment theory. Prior to the occurrence of the new approach, the decision on including a certain

type of security in the portfolio was made on the basis of its performances (return, risk), which, in turn, are determined by analyzing the performance of the legal entity that issued such securities, analyzing its financial statements, as well as the dividend policy itself. Unlike such approach, the modern portfolio theory entails that the portfolio construction is based on the effect of the inclusion of that particular security in the portfolio on the basis of *expected rate of return and standard deviation of the overall portfolio*. Observing the portfolio, the investor is not concerned with the developments of any security individually, but the rate of return and the risk in *portfolio context*. "Analogue to this, the risk and the return on any individual security should be analyzed in terms of its effect on the risk to and the return on the portfolio it belongs to".⁴ The establishment of such principle could primarily be of economic, and sometimes of legal nature.⁵ Starting from the fact that the expected rate of return, estimated as a mean value (either arithmetical or geometrical mean value), and the standard deviation are a basis for making investment decision, one can conclude that such approach is primarily based on statistics.⁶

Harry Markowitz, laid down, for the first time in the financial theory, the portfolio decision-making model. Starting from the basic assumptions of this model⁷, it could be concluded that "an asset or asset portfolio will be efficient only if there is no other asset or asset portfolio that ensure higher rates of return at same (or lower) risk level, or lower risk at same (or higher) expected return."⁸

Return on portfolio is estimated as a mean value in either absolute or relative amount. The mean value of the return on investment, on the other hand, is estimated as an arithmetic or geometric mean value. Most frequently, in both practice and theory, it is

⁴ Brigham F.E. and others: "Financial management: Theory and practice", ninth edition, Harcourt College Pub., 1999, p.169.

⁵ In some countries, the law may require from the financial institutions, such as banks, pension funds, insurance companies, investment funds, etc. to hold diversified portfolio.

⁶ The statistics allows for making analysis and decisions by reducing the bulk of information to several which would be useful, and primarily, in numerical terms.

⁷ For more information on the basic assumptions underlying the Markowitz's model see: Really .F., Brown C. K.: "Investment analysis and portfolio management", seventh edition, Harcourt College Publisher, 2002, p. 211.

⁸ Idem, page 211.

calculated with the relative value of the return (desired rate of return) estimated as an arithmetic mean value.

Compared to the rate of return on assets, estimated as a sum of the product from the potential expected rates in respect of that particular asset and the probability to be achieved:

$$E(R_i) = \sum_{j=1}^m P_j R_j$$

- R_j - expected rate of return, with the j representing a potential outcome;
- P_j - probability at j outcome,

the expected rate of return on portfolio $E(R_{port})$ is a weighted arithmetic mean of the expected rates of return on those particular assets in the portfolio, where the share of those particular assets in the total invested value in the portfolio appears as a weigh. Mathematically speaking, it could be presented as follows:

$$E(R_{port}) = \sum_{i=1}^n W_i E(R_i)$$

- $E(R_{port})$ - expected rate of return on portfolio;
- $E(R_i)$ - expected rate of return on those particular securities;
- W_i - share of those securities in the portfolio;
- n - total number of assets (securities) in the portfolio.

It should be noted that the share of the particular assets is found to be a quotient of the investment value in that particular asset (security) including the total portfolio value, where their sum is to be 1.

With respect to the **risk** to the financial investments (securities), there are two types of risk: stand-alone and portfolio risk. The names themselves indicate that the stand-alone risk is linked to the particular type of security, while the portfolio risk is a synergic effect of the set of different types of securities in the given portfolio.

There are several risk-related alternative measurements. The most distinguished risk measurement, in both theory and practice, is the standard deviation (or variance),⁹ as a statistical measurement of the dispersion of the rate of return around the expected value. Thus the higher its value is, the higher will be the dispersion of the expected rates, implying higher uncertainty (risk) in deriving future benefits.

Standard portfolio deviation is derived from the following formula:

$$\sigma_{port} = \sqrt{\sum_{i=1}^n w_i^2 \sigma_i^2 + \sum_{i=1}^n \sum_{j=1}^n w_i w_j Cov_{ij}}$$

where:

- σ_{port} - standard portfolio deviation;
- σ_i - standard security deviation;
- Cov_{ij} - portfolio covariance.

The lower risk of the portfolio, presented by the standard deviation, is a result of the different movements of the desired rate of return on the particular securities included in the portfolio in different cycles of the economy. In other words, portfolio as a set of different assets should be seen as more than usual sum of these assets. Thus this indicates that the portfolio risk is a function of the standard deviation of the particular securities and the degree of their inter-correlation, measured by the correlation coefficient r ¹⁰, which could be derived from the formula used for estimating the standard portfolio deviation. The effect of the correlation coefficient on the portfolio risk is contained through the covariance, mathematically calculated using the following formula:

⁹ The standard deviation and the variance are considered to be one and same risk measurement, since the variance represents a square of the standard deviation.

¹⁰ The correlation coefficient r ranges from -1 to +1. When the correlation coefficient value equals -1 we discuss risk-free securities portfolio ($\sigma_{port} = 0$), and when $r = +1$, we discuss a portfolio the risk of which cannot be distinguished from the risk of the particular assets contained therein. Yet, extreme cases +1 and -1 are possible only in theory, whereas in the practice, this coefficient has positive value, however, less than +1. For example, in the case of shares, it most frequently ranges from +0.5 to +0.7.

$$\text{Cov} = r_{ij}\sigma_i\sigma_j$$

where r_{ij} is a correlation coefficient between the securities and i, j .¹¹ As noticeable from the equation itself, the covariance depends on the level of the standard deviation of the securities contained in the portfolio and on the correlation coefficient, indicating the *direction* of movement of the rates of return on the particular securities and the *degree* (level) of interdependence or independence of the rates of return. Such dependence makes the covariance low, also in high values of standard deviation in the particular securities, when the correlation coefficient is low (indicating movement of the rates of return as random walk). This very case emphasizes the significance of the correlation coefficient vis-a-vis portfolio risk. Although the portfolio contains securities with high standard deviation, seen as an individual case, owing to the low positive value of the correlation coefficient, the risk of the portfolio will be relatively low.

In the financial practice, as a rule, the diversification, i.e. the increase in the number of securities in the portfolio reduces the portfolio risk. Yet, observing from the perspective of investor's economic logic, one can ascertain that any diversification is not maximum justified if taking into account the level of interdependence of the particular assets. Any diversification having a correlation degree with positive value, which at the same time allows its value to be as lower than +1 as possible, will be considered cost-effective. Consequently, the investors, whether individual or institutional entity, when planning their financial investments should rely upon the premise to allocate their own available funds to different industries within the national economy, as well as outside its boundaries, for the purposes of obtaining as lower value of the correlation coefficient as possible.

¹¹ The effect of the correlation coefficient on the portfolio risk could also be identified by using graphic method. For more information on this method see Boskovska D.: "Efikasnost pri finansiskite investicii", Ekonomski razvoj, God.7 Br.1-2-3, Ekonomski institut, Skopje, 2005, page.151-152.

Conclusion

Analyzing individually, the financial investments (primarily referring to securities investments) are aimed at generating profit, whereas observing from the viewpoint of the economy, the objective is to engage their available funds, not only nation-wide, but also worldwide. Such instruments allow for reallocation of available funds from the household to the real sector, which is the driving force of the economic development. Considering the problems the Republic of Macedonia faces with, concerning the insufficient level of available capital, there is a need of higher exploitation and implementation of such capital market instruments. This, on the one hand, entails structuring of the capital market itself, implementation of the respective regulations for its smooth functioning, as well as more information on the performances of such type of investment available to the individuals and legal entities.

In our country, the foreign capital was invested primarily through the privatization of the socially-owned and public companies (ESM, Macedonian Telecommunications, etc.), by purchasing major or minor part of the capital of existing companies, rather than by setting up new facilities, so-called greenfield investments, the capital of which would be created by issuing securities or stakes. This should be an incentive for making greater efforts aimed at attracting portfolio investments, but in new economic facilities, in the future period. Moreover, when addressing the issue of creating capital for the corporations by issuing and selling securities in our country, taking into consideration the current practice and level of development of the Macedonian capital market, we can refer only one type of securities - and that is shares. Therefore, there is a need of further capital market development by implementing other financial instruments (corporate bonds, financial derivatives, etc.) used by the corporations, as well as the social and economic community.

References:

1. Boskovska Diana: "Efikasnost pri finansiskite investicii" ("Financial Investment Efficiency), Economic development, God. 7 No. 1-2-3, Economic Institute, Skopje, 2005.
2. Brigham F.E. and others: "Financial management: Theory and practice", ninth edition, Harcourt College Pub., 1999.
3. Nestorovski Metodija: "Ekonomija na investicii" ("Investment Economy"), Faculty of Economics, Skopje, 2000.
4. Really. F., Brown C. K.: "Investment analysis and portfolio management", seventh edition, Harcourt College Publisher, 2002.
5. Statistical documentation of the National Bank of the Republic of Macedonia, Annual Reports for 1996 to 2004.
6. William Sharpe: "Risk, market sensitivity and diversification", Finance Analysts Journal, jan. - feb., 1995.