



THE EVALUATION OF LOW AND MEDIUM RISK INVESTMENT TOOLS IN LITHUANIAN FINANCIAL MARKET

Daiva Jurevičienė¹, Erika Avižinytė²

^{1,2}*Vilnius Gediminas Technical University, Faculty of Business Management,
Saulėtekio al. 11, LT-10223 Vilnius, Lithuania
Email: daiva.jureviciene@vgtu.lt; entelmal@gmail.com*

Abstract. The article emphasizes the importance of low and medium risk investments tools performance evaluation in Lithuanian market. Main risks, possible classification and comparison of low and medium risk investments tools in Lithuania are presented. Using experts' suggestions considering risk and return are a couple of possible investment portfolios are presented for investors anticipating high risks. All proposed portfolios were diversified and non one suggests investment only into one tool. It is expected that scientific recommendations made on the basis of the analysis will be helpful for all personal investors to understand main features, real risk and return of conservative investments tools.

Keywords: Lithuanian investments tools, low and medium risk, rate of return, conservative investments portfolio, diversification.

JEL classification: G110.

1. Introduction

Banks provide a lot of opportunities to borrow and consume till the middle of 2007 when economy of Lithuania rapidly grew. This encourages people for more risky investments in pursuance of grater return and not to take thought how to pay back debts. The recent global financial crisis shows that a number of households have no savings; conversely they have large debts instead. This influences public interest in personal finance management, savings and consumer control. People directed their activities towards saving and get involved into the investment activities to avoid unexpected situations and possible money shortage in the future.

All types of investments differ according to their strategies, areas, terms, conditions and other features. This article reveals that the most important factors of choosing the correct instrument are the risk and the return on investment. Undertaking a big risk an investor expects a higher yield, however, taking additional risk can present a different growth in return. So it is important to every investor to choose the optimum between his required return and accessible risk.

The problem is that majority of investments chosen by individuals attribute to low and medium risk investments, however main researchers related to investment tools with the highest potential profit. Due to this phenomenon low and medium in-

vestment tools have been chosen as a subject of this article.

The aim of the study is to evaluate personal low and medium risk investment tools in Lithuanian financial market after comparison of investments characteristics. This research differs from others as it concentrates on conservative investments, analyzes risk and possible profit of low and medium investment tools. The article reveals how important it is to have profound analysis on the investment and the professional advice in order to obtain the balance between risk and return even being conservative.

The research methods applied are following: systematic and comparative literature analysis, sampling method, generalization method, Kendall's coefficient of concordance, and visualization method of the main evaluation indicators and mathematical statistics method to analyze quantitative data.

The main problem and limitations – there is lack of publications about low and medium risk investments, as most authors analyze the stock market and other high return investments. Only a few of them discussed this topic more deeply. Moreover, only the main low and medium risk investments tools and few possible portfolios are evaluated in this article, due to the volume limit of the paper.

2. The concept of investment and classification of investment tools

The subject of investment has an old history in economic thought dating back to the origin of the discipline, as it has been with the humanity even before the Economics emerged as a discipline (McCloskey 2010). The term “Investment” is derived from the Latin word *Invest*, which means to put. Nowadays, there is no one single definition, which would define the investment. Different sources give different interpretations of the concept expression.

Law on Investments of the Republic of Lithuania (1999) states that Investments are cash and by other laws and regulations assessed tangible, intangible and financial assets which are invested to obtain from the object of Investment profit (income), social result (in the field of education, culture, healthcare, etc.) or to ensure the implementation of functions of the state. The main definitions of Investments are presented in Fig. 1.

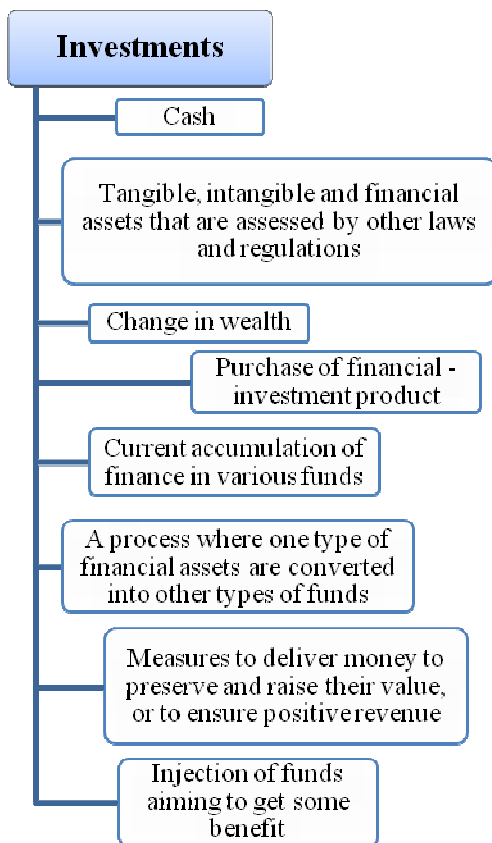


Fig. 1. Various definitions of investments (source: compiled by authors according Dzansi 2011; Kancerevyčius 2009; Rakauskienė, Bikas 2007; Smalenskas 2007; Norvaišienė *et al.* 2008; Rutkauskas, Stankevičius 2006, Law on Investments... 1999, Cibulskienė, Butkus 2007)

Moreover, these definitions could be highly applicable for all participants of financial system and as complemented by Dzansi (2011), who says that Investment – is a change in individuals, firms or nations wealth. However later definition it is not designed for individual investments and more attitudes should be taken into account. Some pay attention to the economic substance of Investment, whereas others relate Investments to savings held in various funds. Investment in economics means creation of capital or goods capable to produce other goods or services. It appears to have some common facets. Any Investment is characterized by three main features:

- investment is something that you have to sacrifice at the time being,
- investors hope to gain profit in the future;
- investing is always associated with risk.

The first feature means that investor shall reduce existing consumption and eliminate unnecessary costs. It is clear that a rational investor will never postpone consumption today if the expectations concerning the future gains are negative. Hence, the mere hope for the benefit in the future could motivate investor to save at the time given. Every asset an investor might consider due to its annual return does its ownership enable to receive any further income (Vaitiligan 1996). This explains the second feature of the Investments. Finally, the third feature of Investments states that each investment is more or less risky. The safety and risk factors are two sides of the same coin. Safety in an Investment means minimal risk of loss; on the other hand, risk in an Investment means a measure of uncertainty about the outcome (Kapoor 2009). There is a trade-off between the risk and return, and the investor chooses assets on the basis of his or her attitude to risk.

Despite different approaches to Investment and its definitions, in this article Investment is defined as a personal money commitment in order to earn a financial return in the future. This approach suits best to understand Investments and their evaluation according to the three main dimensions discussed above.

Different information sources provide slightly different classification of low and medium risk investment tools. Investors have diverse objectives, and those objectives require various investment instruments. The most important is to choose the investment objective and financial means corresponding to the goal. The longer the period the better and the better s expected return as the result of the investment (Kancerevyčius 2009). Most investors usually focus only on profitability, but to achieve something more in contemporary world

this is not enough. There is a tendency in Lithuania that potential investor who tries to compute and evaluate investment risk, usually chooses any from conservative tools. Rakauskienė and Bikas (2007) stay that all personal savings could be divided into two groups: for long-term use and investments. This is explained by a fact that personal savings could be used for various purposes – one part for daily or future consumption and the second one for investments and return expectations. Conservative investor can choose among a big variety of investment tools or to invest in a diversified investment portfolio (Weber *et al.* 2012). It is worth to compare other opinions about investment tools classification. Kapoor *et al.* (2009) examine different types of investments according five factors – safety, risk, income, growth and liquidity. Each of them is really important for an investor and has a significant influence of investment decisions making. They rank common and preferred stocks as well as real estate among low and medium risk investments tools. The safest and less

risky according to Kapoor *et al.* (2009) are bank deposits and government bonds. One of the most risky from above mentioned tools is real estate because of its really low liquidity.

Valatkevičius (2012) offers different risk and return classification of. He stays that the least risky are deposits and cash in bank saving accounts, as there is quite small probability that big bank could bankrupt. Unfortunately, the return for these tools is the lowest among others alternatives. The next to cash are government treasury bills, government and corporate bonds. On the more risky side are stocks of domestic and foreign companies. Contrary to Rakauskienė, Bikas (2007) as well as Kapoor *et al.* (2009), Valatkevičius (2012) do not include companies stocks into conservative investments and treat them as risky ones. Summarizing more detailed classification of investment tools is presented in Fig. 2 covering personal factors of savings and investments together with investment motives of the individuals.

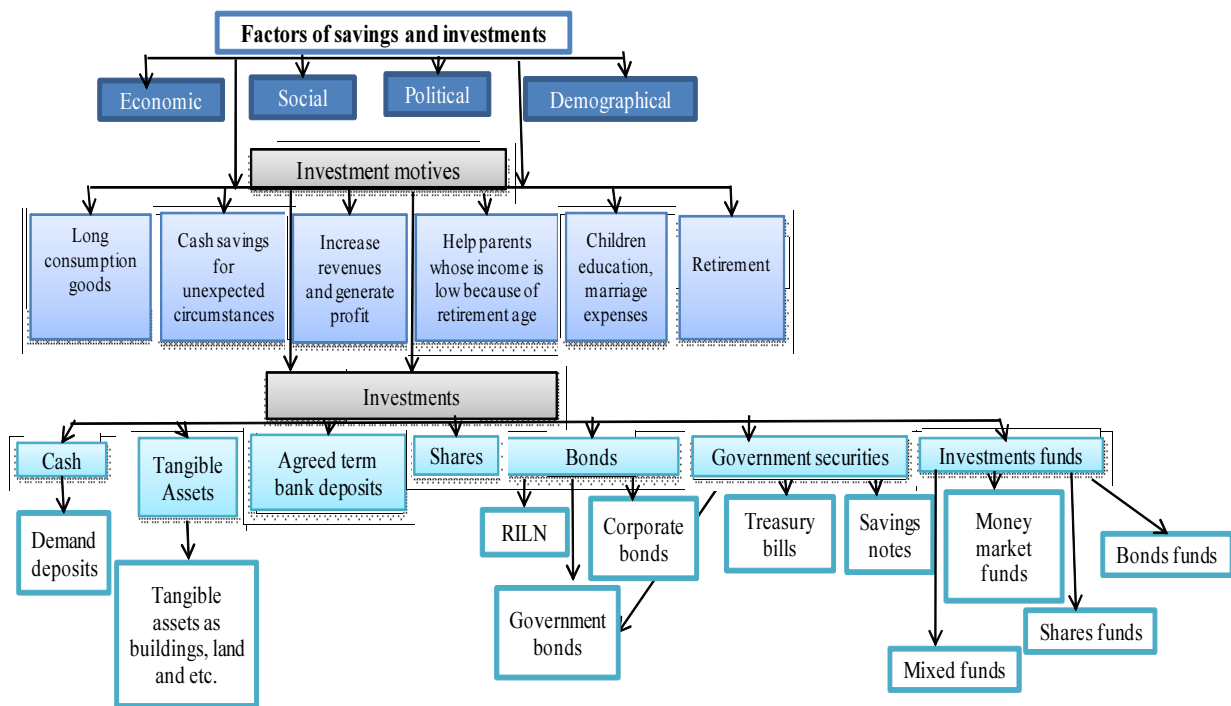


Fig. 2. The allocation possibilities of personal investments (source: compiled by authors)

Primarily, economic, social, political and demographic factors drive savings and investments decisions of individuals, which are influenced by various investments motives. These motives could be as follows: to buy long consumption goods, increase revenues and generate profit from investments, help parents whose income is low due to retirement age, invest into children education, save for marriage expenses, accumulate some funds for own retirement or have some assets for unexpected circumstances and etc.

In order to accomplish these goals, investors should have some funds which could be divided into a number of investment groups. The most liquid are cash or demand deposits held in financial institutions, but usually they offer very low or even none return. In addition agreed term deposits could be placed in financial institutions, which could differ in a number of ways – due to currencies, terms and types.

Bonds could be divided into government and corporate. RILN¹ bonds are related to corporate (bank issued) bonds, but usually are separated by bankers as they provide more possible gain undoubtedly related to higher undertaken risk. Unfortunately in Lithuania, there is no any company, which offers corporate bonds currently, so only Government bonds will be analysed hereafter. Moreover, RILN (or equity related bonds) as well as shares are also excluded as they are linked with shares which neither are attributed to conservative tools as they are related to fluctuations in the market. Moreover, investor needs a good financial background investing in stocks as there is no guarantee about the revenue.

The Government of Lithuania issues more securities such as Savings notes and Treasury bills, which could offer bigger return than bank deposits. And finally, money market funds would be chosen either for the analysis hereafter (Pritchard 2012).

Investments into fixed asset as real estate require really huge funds, long decisions and computations. These assets are illiquid so investor should anticipate more risk in case of money shortage even though the prices in the mortgage market currently were comparable low.

So, thereafter agreed term bank deposits, Lithuanian Government bonds, Treasury bills, Savings notes and Liquidity (money market) funds will be analysed.

3. The methodology for investment tools evaluation

The objective of any investor is to choose investments that best suit their wishes and possibilities and would ensure a positive return. Investors with regard to their needs, usually choose an investment that involves some risk. The main goal for all investors is to achieve only positive return. However, the higher the yield of investment, the bigger risk must be anticipated. The golden rule is – the potential return on any investment should be directly related to the risk the investor assumes (Martineau 2009).

The experts' survey was used in this study to compare professional opinion with classifications of low and medium risks investment tools discussed in theoretical part. Moreover it ensures a comparable optimal conservative investment tools portfolio for the further analysis.

Usually an individual investor making investment decisions contacts a financial advisor, who provides information about the two key eco-

nomical factors involved – investments risk and return. After consultations investors select a portfolio which combines relatively low risk and moderate returns with a smaller proportion of higher risk investments (Mariann *et al.* 2011). Nevertheless individual differences in preferences generally attempt people to optimize their wealth and be guided by self-interest, their existing wealth 'reserve', and their position in the life cycle (Lewis, Morals 2000).

Expert survey is appropriate to evaluate all low and medium investment tools return and risk and is suitable as it gives quite fast results with low costs. In addition it creates an opportunity to compare different opinions. The experts for the survey are chosen according to familiarity with the subject, possibility to give a fair and individual opinion and have an unblemished reputation. Scientists believe that the optimal size of experts is from 8 to 10 as a very large number complicates consensus formation and prevents optimal desired result (Prioritetinė Lietuvos... 2008). This number of experts is enough to reach 85–90 percent of confidence level.

One expert from each of 8 main (operating in Lithuania) financial institutions which offer low and medium risk investment tools participated in survey. The largest investment portfolios are managed by 6 banks and 2 branches of foreign banks according to the list of the Bank of Lithuania: AB Swedbank, AB Medicinos bank, AB Siauliu bank, AB DNB bank, AB Citadele bank, AB SEB bank, Nordea Bank Finland PLC and Danske bank A/S. The requirements for selected experts from these financial institutions are as follows:

- university education in economics or finance,
- not less than 3 years experience in a financial institution with saving and investment products,
- daily communication with the clients,
- a financial brokerage licence.

The questionnaire was constructed from three main parts:

- the general information about the survey, to collect basic demographic information about participants and
- the main part of questionnaire comprised of 5 direct questions, divided in three groups:
 - 2 questions particularly related to perceptions about risk and return of investment tools,
 - 2 questions about knowledge level of clients in the field of investment products and the most common choices and

¹ RILN – reference item linked note – debt securities, which are linked with some share index.

- 1 question about optimal proportion of investments in expert's opinion under given conditions.

Experts were asked to place 20 000 Lt or equivalent in Euros (5 792.40 EUR) for a conservative investor for short time period – 1 year in June, 2013 in investments listed in the OMX Vilnius exchange. The aim is to offer the best diversified portfolio for a client that could ensure the biggest return and acceptable level of risk.

Survey was conducted in May, 2013. The questionnaire was sent via e-mail along with a letter to encourage participation.

It is needed to calculate Kendall's coefficient of concordance for more than 2 experts to check whether evaluations of experts are similar enough and could be compared with each other (Burinskienė, Rudzkienė 2009). Respondents' estimates are ranked and hypothesis whether expert's answers are similar is confirmed or rejected.

The analysis of foreign and Lithuanian scientific literature showed that there are several key factors determining the performance of low and medium risk investment tools: administration fee, performance fee, rate of return and risk. Administration fees are applied to investment tools. Bank deposits are not liable to such fees, but such tools as bonds may anticipate additional fees which eventually reduce the investment revenue. Such additional fees are: storage fee, fees for securities transactions, exchange fees, funds management fees and others. Usually these fees are calculated as a percentage of invested funds and charged once a year. They are easily comparable, as the bigger the fee, the bigger is the cost of investments. Return on investment – one of the most important indicators – is a profitability of portfolio. Investment performance – is the percentage of change of fund unit of account in the selected period. Jokšienė, Žvirblis (2011) stay that average investments performance is generally measured by profitability in a single period. Average annual return is estimated as an indicator to monitor the investment tools performance during the year. Usually the return of investments is presented in percentage. The bigger the percentage, the bigger is the revenue of the investment.

There are some different types of return to be calculated and compared: the nominal yield, real yield and average yield of the investment. However, real profitability is needed to be calculated to evaluate the influence of inflation rate. It should be emphasized that, the real yield is lower than the nominal if there is inflation in the market (Rutkauskas, Stankevičius 2006). Calculations of average yield are based on the arithmetic average. To calculate the yield for historical number of years

the annual yields calculations must be prepared using the arithmetic average. This indicator is useful and relevant in calculations of others indicators such as standard deviation or Sharpe ratio.

The risk of investments could be evaluated using several of methods. There is a possibility that the expected return on the investment portfolio would not be earned and is evaluated by calculating investments return Standard deviation (Kapteyn 2011). Average standard deviation shows how investments actual annual returns may vary from the average (expected) return. As Standard deviation is a statistical indicator that evaluates how profitability of investments funds departed from the mean: how many percent more or less than the average yield of investment tool value ranged over a period of time (Kucko 2007) – the higher the rate, the higher the value of the investment volatility risks.

Another risk assessment method is Sharpe ratio. The Sharpe ratio is a measure of the excess return (or risk premium) per unit of risk in an investment asset or a trading strategy. The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the risk taken, the higher the Sharpe ratio numbers the better. A negative Sharpe ratio indicates that a riskless asset would perform better than the analysed security. This ratio has become an industry standard as it is a simple measure and it can be used to compare different strategies (Rutkauskas, Stankevičius 2006). On the other hand, risk evaluation method is not perfect and there are some disadvantages, which must be also taken into consideration. The Sharpe ratio uses only the Standard deviation as a measure of risk. This can be tricky calculating the Sharpe ratio for asymmetric returns because the Standard deviation is most appropriate as a measure of risk for strategies with approximately symmetric return distributions. Also the Sharpe ratio is based on historical data, and as performance in the past is not always an indicator of future results, investors should not rely only on this measure to assess trading strategies.

4. The comparison of low and medium risk investment tools in Lithuanian financial market

As the main goal of all investors is to earn the revenue from investments (Parker, Fischhoff 2005) the return of investments options were analysed. The interest rates are taken from the reports of the Bank of Lithuania and other financial institutions (AB DNB bank Money market fund reports 2013; AB DNB bank reports 2013; AB SEB bank reports 2013; Nasdaq OMX Baltic 2013; Statistics Lithuania 2013).

As it was mentioned, experts expressed their opinion about low and medium risk investment tools and investors behaviour and offer investment portfolios for the next year. The performance of constructed portfolios during last six months could be already evaluated and compared.

Calculated Kendall's coefficient of concordance varies from $W=0,64$ for the first question, to $W=0,93$ to the fourth. This value of coefficient is quite good as $W=1$ means full compatibility of experts answers, so in this research experts answers are comparable enough. In the last question of the survey experts were kindly asked to indicate the best proportion of investments according defined conditions. Experts should split 100% of fund to investments products including securities listed in OMX Vilnius to offer the best diversified portfolio for a client that could ensure the biggest return and acceptable level of risk. Each expert offered the best portfolio according to the market conditions and their personal opinion. Comparison of experts proposed portfolios and actual results for half a year are presented in the Fig 3. to evaluate recently performance of chosen low and medium risk investment tools.

1	<ul style="list-style-type: none"> ▪ 50% Savings notes ▪ 40% Government bonds ▪ 10% 3rd pillar pension funds 	82.78 LTL
2	<ul style="list-style-type: none"> ▪ 100% Savings notes 	50.00 LTL
3	<ul style="list-style-type: none"> ▪ 80% Government bonds ▪ 20% 3rd pillar pension funds 	115.56 LTL
4	<ul style="list-style-type: none"> ▪ 100% Money market fund 	20.20 LTL
5	<ul style="list-style-type: none"> ▪ 50% Savings notes ▪ 10% 3rd pillar pension funds ▪ 40% Money market fund 	46.86 LTL
6	<ul style="list-style-type: none"> ▪ 10% Bank deposits ▪ 20% Savings notes ▪ 10% 3rd pillar pension funds ▪ 60% Money market fund 	47.50 LTL
7	<ul style="list-style-type: none"> ▪ 15% Bank deposits ▪ 80% Savings notes ▪ 5% 3rd pillar pension funds 	64.29 LTL
8	<ul style="list-style-type: none"> ▪ 50% Bank deposits ▪ 30% Savings notes ▪ 10% Money market fund ▪ 10% 3rd pillar pension funds 	88.80 LTL

Fig. 3. The comparison of performance of Low and medium risk investment tools portfolios made by Experts suggestions during June – November 2013

There are some important features in the choices made by the experts (Fig. 3):

- 3 experts from 8 decided to offer to allocate funds in bank deposits to be sure, that if investor needs money before the maturity, he could withdraw a part and leave the rest till the end of the maturity.

- One expert from 8 offered to place 50% of assets into bank deposit, as the interest rates for bank deposits in his bank were much higher compared to other financial institutions.

- Moreover, 6 from 8 experts suggested for investor invest money into State savings notes.

- One expert offered to invest 100% of assets only into State savings notes – due to the required maturity (short-term).

Comparing interest rates of one year bank deposits with the interest rates of one year State savings notes, latter are higher (Lithuanian Savings notes prospect 2013).

- Only two experts offered Government bonds due to only one year investment period. Government bonds could be more profitable investing funds for the entire period (Annual overview... 2013).

- Furthermore, none of experts suggested investments into Lithuanian corporate bonds – as none of Lithuanian Companies bonds are listed (Nasdaq OMX Baltic 2013).

- None of experts suggested investments in to Lithuanian treasury bills – they fit for large investors. For individual investors savings notes are more appropriate.

- As experts were informed that hypothetical investor wishes to leave some money for future savings, 6 from 8 experts offered to invest a part of money (from 5% to 20%) into conservative 3rd pillar pension funds.

- Finally, 4 experts indicated money market funds as investment option.

It is important to mention, that such proposals of experts could be inspired by the products offered by financial institutions experts represent – if his institution does not offer liquidity funds the expert do not offer this option for investor. This is not very surprising as the main task of each expert is to sell bank products to the customer and get profit.

In such cases usually investor could lose a part of money due to the supply of investment tools in a chosen financial institution. So, before investing money into any investment tool each investor should carefully revise all possible options.

Suggestions of experts were caused also by interest rates or returns of investments at the moment of the survey (May, 2013). The average interest rates for one year agreed term bank deposits were 1.16% (The Bank of Lithuania 2013). Interest rates were different in different financial institutions, but as hypothetical investor could choose

any bank for placing deposit the average interest rates were used for analysis. The State saving notes at that period were offering 0,5% for one year period. Lithuanian government bonds in the secondary market offered 1,1% return, as only half of the period of bonds were left till the maturity. So the only option was to invest in the secondary market if investor invests only once and wants to withdraw money on June, 2014. As none of experts indicated Lithuanian corporate bonds or Government treasury bills, these investment tools were excluded (The Republic of Lithuania Treasury... 2012). As all experts indicated that investments should be in LTL currency only DNB bank liquidity fund from money market funds was analysed (money market fund offered by bank SEB is in Euros). The value of one money market fund unit was 1297,10 LTL on the 1 June, 2013. All experts agreed that investments for short period preferably comprise from one currency and in litas to ensue the goal of investors – higher interest rates, as interest rates on investments in litas are higher. Moreover the currency exchange fees will be excluded.

Fig. 3 shows the best succeeded results in the investment portfolio of the third expert till the 1st of December, 2013 (80 % in Lithuanian government bonds and 20 % in pension funds). The total return was 115, 56 LTL or 0,58 %. The second best portfolio was suggested by the last expert – 88,70 LTL return or 0,44%. The third place belongs to the first expert suggestion – 82,78 LTL return.

Consequently all investments are positive, but it is important to mention, that the inflation was not evaluated over this period. Moreover, investments into government bonds will face additional depository fee – 0,15%. The best returns till the December, 2013 were for bank deposits (as they do not have any additional fees) and Government bonds. The return on Lithuanian State savings notes was only 0,25% for a half year (Fig. 3). In addition, the best result was succeeded by AB DNB bank pension fund from all four conservative pension funds options.

To sum up, diversified portfolios, which were offered by the experts, seem to be more rational and profitable investment options for personal investors than investments only into one investment tool. If investor would have been placed the entire amount into bank deposits, the total return after half a year would be 116 LTL and is slightly bigger than 115,56 LTL return from diversified portfolio (Fig. 3), but this is just due to the average interest rate. In majority of main financial institutions interest rates for fixed term deposits were even lower. Returns of 5 experts' portfolios are

higher than 50 LTL so it would be better solution compared to investment only into State savings notes. Investment only into Government bonds could generate 110 LTL returns, which is bigger than suggestions of seven experts but also investor anticipates higher risk compared with other tools. In addition, money market fund so far generated quite small return – only 20,20 LTL, so diversified portfolios would be better in 7 cases from 8.

Finally, all these returns are so small, that would not cover the inflation, so the total return could be negative in the end of all investment period. Naturally if individual decides to invest his money into low or medium investment tools he loses less money due to inflation, compared to not investing, and be unable to earn any return. So these investment tools are suitable only for conservative investors, which prefer to avoid risk and agree with nearly no return. Those, who wish to earn any, should probably choose much riskier investments.

5. Conclusions

The risk tolerance is a key feature in financial behaviour. It is the level of risk that an individual is willing to accept and reflects to investor's values, beliefs and personal goals. In the scientific literature there are lots of possible models to define the level of risk, but usually market changes vary quickly in a very short period and the prices could deviate so heavily, that to define the real level of risk is very complicated. The following common risks are related to low and medium risk investments tools: inflation, interest rate and currency exchange rate risk. At the meantime, the biggest risk is inflation, as analysis of proposed portfolios performance showed that none could cover inflation rate in Lithuania in one year period. The evaluation of low and medium risk investment tools carried out contained the following stages: finding the most important evaluation indicators, processing data of these indicators for low and medium risk investments during five years 2009-2013, portfolios formation and calculation and comparison of nominal and real return.

Accomplished analysis and evaluation of low and medium risk investments tools revealed that real return of all investments in Euros over the last five years period was negative and did not cover inflation and various additional fees of investments. While low and medium risk investments tools in litas during the last five years showed better results real return of deposits was negative. Also it was proved that positive results were influenced only by high interest rates which were before global economy crisis.

The expert survey shows that diversified portfolios were more profitable than investments only into any one low or medium risk investment tool. Such results were reached using the questionnaire method with 0,81 average of Kendall's coefficient of concordance. The biggest total return from diversified portfolios in half a year was 0,58 % (portfolio of government bonds (80%) and 3rd pillar pension funds (20%). Return on portfolios suggested by 4 from 8 experts in half a year was more than 50 LTL and is better compared to investments only into State savings notes with 50 LTL return. Return from Money market fund was only 20,20 LTL.

It is reasonable for individuals to take investment advice before choosing among variety of possible options offered by financial institutions and signing a contract. Professional consultations could help to define the rate of risk tolerance and diversify the portfolio to generate the highest rate of return due to current market conditions, but investors should be aware that a representative of a certain financial intermediate always proposes its own (i.e. its banks) products.

It would be helpful if commercial banks or The Bank of Lithuania publish regularly adequate information about real return of low and medium risk investment tools to provide individuals the possibility to evaluate the results and compare the data. Clients should be informed about real investment returns even if it is negative to be sure that they make decisions understanding future return and possible risks.

The survey shows that investors, who concerns only about possible return, should take riskier investment options, as conservative investments could not promise positive return at the moment.

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