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APPROACH TO PERSONAL BEHAVIOUR FINANCE

1. Introduction

In the middle of the last century economists were interested in both what drives individuals in making saving and consuming decisions and what impact have the economy growth and expectation about the future for the person's saving ratio. The most important theories that tried to analyse behaviour of economics, individuals' savings and consumption were: the theory of reasoned action formulated by American scientists I. Ajzen and M.A. Fishbein, J.M. Keynes' savings, M. Friedman's constant income theories and F. Modigliani's and R. Brumberg's life cycle hypothesis. The personal behaviour has the most important impact for later theoretical and empirical investigations. In general it meant a new paradigm in investigating consumption and savings and became a basis for the majority of dynamic models used for such an analysis.

The life cycle hypothesis is still a considerable theoretical instrument in macroeconomic analysis as it helps the economists to take into consideration such important factors as wealth and expectations about future income while making households' consumption decisions. Besides, it is necessary to point out that economics behaviour depends on life cycle and micro and macro factors' of countries economy either. So when the economists seek to comprehend the aggregate consumption and savings behaviour they start from the life cycle hypothesis.

This article analyses the dynamic of households' savings ratio and impact of individual behaviour on savings and investment decisions making.

2. The saving's finance

One of the most important keystones of British economist J.M. Keynes' common theory is the interrelationship between the size of consumption and national income. According to Keynes, the psychology drives that "households increase their consumption when their income grow, but not at the same rate as income rise." So, one of the conclusions of this "law" is that the proportion of the national income, which depends on the saving, increases during the growth periods of economy ["Fifty..." 1999].

But in 1942 S. Kuznets showed that this theory mismatches with the empirical facts. The long-term savings to income ratio was stable during a long period and a number of other economists analyse this paradox. M. Friedman presented hypothesis of stable income in 1957. The main idea was that individuals' income consists of two parts: one is stable, another is temporary. And the first one is the most important in making consumption and saving decisions. Friedman was against Keynes' opinion and asserted that this conclusion was made on the basis of empirical observations. The majority of economists accepted Friedman's idea and for a number of year hypothesis of stable income were prime among prevalent common saving's theories.

But three years before Friedman announced this saving's hypothesis F. Modigliani together with R. Brumberg had introduced the life cycle hypothesis. They stated that households seek to maximize usefulness of consumption. According to this theory a person tries to keep his consumption on the same level for the whole life, but his earnings (income) differ from time to time due to changing circumstances; in good years one earns more, in bad years for economy or during retirement one earns less. Even when the level of earnings is various, individuals will try not to change their way of living. So, people will adopt their consumption due to their changing expected income (or expected average income during the whole life). It means that individuals save more when they earn relatively more and save less when their income relatively lowers ["Fifty..." 1999].

The main difference between these two approaches is the maturity of planning period. According to Friedman this period is infinite and in Modigliani and Brumberg's theory the planning period is finite, it means that people save only for themselves.

Supplementing Keynes' ideas it can be said that the life cycle hypothesis explains why growing aspirations about income increase shift the size of consumption and not expecting the income increase or fear of its decrease lowers the consumption level. In the first case people spend more, hoping to pay back loans in the future when their income will grow. Also people will spend more in good times expecting that there would be no need to save for "a rainy day" because the future seems to be perfect. And on the contrary, when individuals think that economic problems arise in the future, they consume less and lay aside for the unemployment period, etc.

Though the life cycle hypothesis is pure microeconomic theory, Modigliani together with others later showed that this idea could be adopted in the macroecono-

mics, too. For example, like in earlier mentioned constant incomes hypothesis, the aggregate savings rate is constant in long period and that capital gain affects the consumption level slowly. But some macroeconomic conclusions differ from previous theories and one of the most important is that aggregate savings firstly depend on the rate of economy growth. When economy grows fast, people do not feel necessity to save due to expected increase of income in the future. The savings rate is burden. And on the contrary, when income and economy grow slowly, individuals need to save more from their earnings, therefore the savings rate is higher.

During last decades the personal finances and especially the decision making over the life cycle became of great interest among economists and financial institutions. E.P. Davis and R.A. Carr from Nebraska University investigated the differences in personal budget formation during various stages of life-cycle [Davis, Carr 1992]. They realized that the majority of young families have their budgets and in written form, while elder people are not so active, but those who have, make them for seven months and longer.

A comprehensive research was made by K. Milligan [Milligan 2004] who found out that the portfolio share of financial assets increases sharply with age, while indicators of risk tolerance appear to decrease.

3. Behaviour of savings

I. Ajzen and M.A. Fishbein created the theory of reasoned action in 1975, the essence of which is that in the society exist various standards and subjective norms that have influence on confidence, and our behaviour is the result of self-created standards [Ajzen, Fishbein 1975]. But this model was criticized as it does not reflect behaviour control [Sheppard et al. 1988]. This idea I. Ajzen realized in 1985 in the theory of planned behaviour, the main idea of which is that behaviour of a human being is predictable and could be controlled. Therefore the ideas of this theory could be used while predicting personal saving's decisions and analyzing saving's behaviour.

Economic behaviour theory has come into existence after a sufficient number of proofs have been collected due to empirical and experimental researches claiming it is not the infinitive rational attitude which plays the most important role while predicting economic decisions. As further studies have demonstrated, it is possible to form and employ psychological ideas foreseeing economic decisions. Economic behaviour is defined as a combination of psychology and economics, which particularly focuses on the investigation of the market with definite participants acting and their limit, as well as complexity of human possibilities. Behaviour theory refers to scientific investigations on human and social cognition and emotional deflection. In fact, the investigations are crucial for a better comprehension of economic decisions and their impact on market prices, saving's returning and resource allocation. This field mainly addresses to the estimate of financial institution rationality and its shortage.

Investigating dweller behaviour, a classical life cycle hypothesis was being improved adding different variables, e.g. family size, transformation of consumption, reasons of willed wealth, which, virtually, influenced the hypothesis [Shefrin, Thaler 1988] beginning with the so-called "self-control" [Thaler, Shefrin 1981] essence. Behaviour theories are really included into economy, as they never state saving and consumption to remain steady and personal economy behaviour is interpreted as genuine attachment to economic resources. They declare people to be rational and informed so that to make their own decisions however. Even more – consumers construct rules and regulations themselves not laying stress on their educational backgrounds. Behaviour theory firstly focuses on financial management strategies and customers formed inspirations and limits. In addition, the theories point out a feature being not capable of resisting temptation of money spending.

According to R.H. Thaler and H.M. Shefrin a natural person is like a planning and working organization and "planning is related to life utility" [Thaler, Shefrin 1981]. The authors believe that natural people frequently follow the rules limiting their possibilities to spend, though there can be examples of the circumstances or their own decisions, e.g. to save money for Christmas, holiday, etc. On the other hand, at times the rules are simply enforced, for instance, avoiding borrowing or limiting it for peculiar items. Moreover, the rules cause better conditions for house savings bringing good results; though, it is a complicated requirement to make one's welfare better. In this case persons themselves frame their spending facing a constant conflict between the present and future satisfaction of their needs. The later lets them obtain a higher level of utility and, therefore, is more preferable. Basically, for an increased use in the future, a consumer tries to drop one's safety constructing regulations for budget himself.

Referring to behaviour theories, saving of money and wealth enhance savings, then a proper saving mechanism is in use, i.e. when life insurance and retirement benefits, etc. are granted for people to undertake obligations. As empirical studies have demonstrated, people tend to use their money in current accounts less as it comes to the wealth, i.e. accounts typically contain a great deal of family assets with a particular reason, e.g. funds for children education, etc.

Behaviour theories try to model the most suitable saving decision. In fact, every theory pays attention to institutions having their impact on citizens saving. Neoclassical economic theory lays stress on the function of institution influencing economy costs and saving utility. Hence, institutions' function in such a sense that they make spending to be reduced and savings use is clear, forming one or another saving promoting or limiting system.

Saving theory attitude towards institutional function in the saving process is based on households' savings forms in institutional processes aiming at people's saving. As highlighted in institutional theories, there are institutions which play an important role for households' behaviour, support the dweller trust for the state and financial market institutions promoting their saving and investing activeness [Neale 1987].

M. Sherraden proposed a welfare theory based on wealth and pointing out the institutional function dealing with wealth saving [Sherraden 1991]. As scientists put it, wealth saving is an outcome of institutions' activity including obvious relations, regulations, promotions and allocation. It is rational for people having the access to these institutions that "agreements provide with a plenty of possibilities and promotions saving the wealth. They take part in pension projects because of simplicity and they are attractive and easy to register, though, it is not a reason for a better decision, instead, more essential choices are done in social politics and people participate in the admitted models" [Sherraden 1991].

Behaviour economics and behaviour finances have improved recently. D. Kahneman was appointed for Nobel Prize in Economics for the input to behaviour theory in 2002. In spite of this, the field open to an alternative for a logic and quantitative "wonderful person" remains controversial [Altfest 2004]. Academic opinions vary on behaviour manners and finances, which also influence personal financial planning. The later falls into two parts – one of them characteristic with normative features and the other with positive ones; however, it is believed that management of people's finances varies in comparison with how they should act. Differing from ideal actions could be defined as a cognition error caused by not proper knowledge, lack of abilities, weak and improper comprehension as well as led by inner feelings and emotions to recognise the process.

A. Bernatzi and R. Thaler have performed an experiment demonstrating the lack of basic knowledge and rough actions on personal finance planning [Bernatzi Thaler, 1995]. Widely spread certain instalments into pension projects in the USA are treated as frequently used in financial planning and investing. Various people of different ways of life are involved in tax concession and they often employ the investing alternative selected by the employer. The goal is particularly fundamental and motivating, i.e. to save money for retirement.

The employees should choose out of investment alternatives so that one could live for his aims, say modern investment theories and the common principles of personal financial planning. Bernatzi and Thaler's experiment showed diversification of most people and their actions that ignore characteristics of diversifying means. Simply they select, e.g., out of two share funds and one stock fund to invest two thirds into share funds and one third into stock one, whereas the other institution suggests allocating vice versa.

Therefore, ignoring the difference between ideal and real action is not useful for personal financial planning aiming at helping people with their financial procedures. Virtually, this difference let behavioural economics and finances be included into studies of personal financial planning.

4. Personal objectives in investment decisions

A personal finance is the funds a household or person receives as income and spends. Income and spending process need to be thoroughly planned.

The financial planning process involves the translation of personal objectives into specific plans and finally into financial arrangements to implement those plans. The following is a brief overview of logical steps in the process [Hallman, Rosenbloom 2003]:

1) gathering information and preparing personal financial statements,
2) identifying objectives,
3) analyzing present position and considering alternatives,
4) developing and implementing plan,
5) periodic review and revision.

Also the development of personal financial policies to help guide a person's financial operations is involved in the planning process.

Personal savings and investments become of significant importance for millions and even billions of people all over the world. The basic problems that arise for people are as follows [Jureviciene, Klimaviciene 2008]:

– how much money one has to save for the future,
– what kind of risks one needs to insure,
– how to invest one's savings,
– when it is necessary to retire.

Recently, the financial planning community has focused intently on determining optimal portfolio withdrawal rates and portfolio rebalancing strategies for individual investors in a world of uncertainty. Meanwhile, the rest of the financial services industry has moved forward to a different conversation. The context is that we have moved away from the pre-1950s paradigm of assigning risk (for example, where speculative investments are given to executives and safe investments assigned to widows and orphans), through the 1950s to the 1970s modern portfolio theory paradigm (where risk is controlled mainly by diversification), to the emerging dominant paradigm (where risk can be segregated and traded to the entity most able and willing to bear that risk). In the economists' language, markets are becoming more complete [Hogan 2007].

Life-cycle investing is an approach to managing individual wealth that is based on the now current theoretical understanding of personal finance and the product innovations made possible by the translation of option theory to financial product innovation at the institutional level. In life-cycle investing the main measure of financial well-being is life-time consumption, not wealth. Thus, life-cycle investing is a multi-period model that uses hedging and insuring, as well as precautionary saving and diversification, as core strategies for managing personal wealth.

This contrasts with the current paradigm which focuses mainly on optimising end-of-period wealth, using mainly precautionary savings and various diversification strategies.

Under life-cycle investing, investors' personal wealth is specifically defined to be the sum of current financial wealth and the present value of their human capital – that is, what their labour will earn during their lifetime. Not surprisingly, then, coordination of portfolio strategies with the expected risk and return of one's human capital is the central consideration.

The hallmarks of the old and new paradigm are summarised in the chart created by financial economist Z. Bodie. As Table 2 illustrates, the risk management techniques of the new paradigm are different from the old paradigm approach of saving as much as possible and the hopes that, because mainly of diversification strategies, the portfolio will last for the whole of retirement regardless of trends in personal spending, longevity, inflation, and investment volatility. This different point of view is also becoming practical and reasonable, as well as theoretically correct, because product innovation is creating personal finance products that address these specific desires [Hogan 2007].

Table 1. Summary of old and new paradigm for personal financial management

Feature	Old paradigm	New paradigm
Measure of welfare	Wealth	Lifetime consumption
Time frame	Single period (stocks seems safe in long run)	Many periods (stocks are risky in short and long run)
Risk management	Precautionary saving Diversification	Precautionary saving Diversification Hedging Insuring
Retail investment products	Cash Insurance policies Mutual funds	Targeted accounts (e.g. tuition--linked CDs) Structured standard-of-living Contracts
Quantitative model	Mean–variance efficiency and Monte Carlo simulation	Dynamic programming and contingent-claims analysis
Capital market expectations	Estimated from historical statistics	Inferred from current prices of financial instruments (swap curves and implied volatilities)

Source: [Bodie 2003].

A peek into the future under the new paradigm would reveal a variety of new personal finance products. Most obvious would be a lifetime inflation-indexed annuity, with a guaranteed floor and some participation in market appreciation – the so-called "structured standard of living" product. A further idea is to bundle an inflation-indexed annuity with long-term care insurance in order to eliminate adverse selection.

In life-cycle investing, a persons' total wealth is defined as the sum of their current financial wealth and the present value of their human capital – that is, what

their labour will earn during their lifetime. There is a key assumption that, in general, people like to smooth consumption across their lifetimes and that they especially want to avoid big downward swings in their standard of living [Bodie 2003].

In this paradigm, personal finance thus becomes an exercise in transferring consumption across time and across contingencies, throughout the entire life cycle of the individual. For example, retirement savings shift consumption from high earning years to years when the individual is no longer in the workforce. In contrast, student loans and mortgages allow the individual to consume more in the present by borrowing against income expected in the future. Health insurance is a vehicle for transferring purchasing power across contingencies – that is, from "good" times of robust health to "bad" times when medical care is needed.

In this context, the challenge of public policy and financial innovation is to create the products and the appropriate markets for making these transfers reliably possible for an individual citizen.

5. Households' savings in Lithuania

Economic, social, political and demographical processes of the state and in particular political and economic stability have considerable influence on savings' factors. In the stable social and politic environment householders may predict long term saving and investment strategies, i.e., it positively effects the state economic situation. Economic factors could be broke up into:
− the growth of state economy,
− economic stability,
− effective tax policy,
− household income raise (its increasing rate),
− consumption.

Economic categories such as salary, price level, inflation, and GDP directly influence the saving process.

Political factor could be grouped into:
− the state political stability,
− made political decisions,
− and their transparency,
− effective political management.

Moreover, these criteria cause business law legislation and establish conditions under which the state economy develops. Education, wealth status, occupation, lifestyle, age, sex are the social and demographic factors.

Individuals' income is the essential factor in the formation of savings; however, in the state of rapid economic growth all fundamental income resources were slow enough. In spite of GDP increasing rapidly, household financial income to GDP had a tendency to decrease. Household income to GDP fluctuated between 51.7%

in 1994 and 28.1% in 2004 (Figure 1). From 1999 to 2004 the household income to GDP was dropping and it experienced a slight rise since 2005 and nearly reached the same level in 2007.
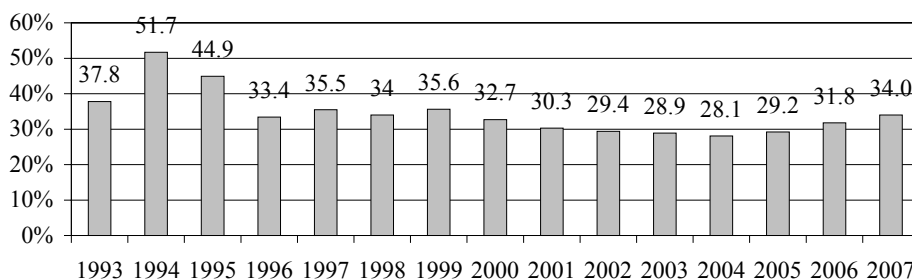

Figure 1. Household income to GDP

Source: the authors' estimation according to data of Department of Statistics of the Republic of Lithuania.

According to the data of the Department of Statistics, income growth was insufficient; households' consumption exceeds financial income. Salary growth rate is very slow in comparison with the state GDP growth rate.

Economic literature provides two ways of explaining savings fluctuations. One is the savings flow, i.e., the amount that households save, and the other is a part of savings saved in the previous period [Banks, Tanner 1999]. To define households' consumption and saving activity, the term "saving ratio" is used. It reflects the accumulated savings ratio to financial income received in the certain period [OECD 2004].

According to the financial income balance data the savings ratio is defined as the household saving: deposits and securities increase, changes of liabilities due to loans, real estate purchases and cash increase at household (money on hands) of the current period ratio to disposable financial income.

Having estimated saving process, savings ratio differs rather considerably during investigating period. Household saving ratio in Lithuania can be compared with other countries household saving ratio (Table 2).

Low saving ratio of private sector indicates Lithuanian household saving level to be insufficient, hence, they do not put funds for a retirement period. As J. Banks claims "few prime factors do exist influencing saving behaviour including receivable income in the future, the rate of return, age and demographical ratio of households. Substantially, the change of one of mentioned criteria could influence saving ratio transformation" [Banks, Tanner 1999] As savings are the key resource of inner finances stimulating the economics growth of the state, in the case of Lithuania they are rather insufficient.

Table 2. Household saving ratio (% of disposable household income)

Country	Year													
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
France	11.7	12.7	11.2	12.2	11.9	11.5	11.4	12.2	13.3	12.4	11.7	11.6	11.7	11.7
Germany	11.4	11.0	10.5	10.1	10.1	9.5	9.2	9.4	9.9	10.3	10.5	10.7	10.5	10.2
Italy	18.9	17.7	18.7	15.2	11.9	9.4	8.4	9.4	9.9	9.9	10.1	9.5	8.9	9.1
Japan	12.6	11.9	10.6	10.4	11.6	10.4	8.3	5.0	4.8	3.9	3.1	2.4	2.4	2.4
Norway	5.2	4.6	2.2	2.8	5.8	5.5	5.2	4.1	8.8	9.5	9.6	11.8	6.3	5.9
Sweden	11.8	9.1	7.8	5.8	3.6	2.1	3.2	8.4	9.1	9.0	8.5	7.9	7.0	6.9
USA	4.38	4.6	4.0	3.6	4.3	2.4	2.3	1.8	2.4	2.1	1.8	−0.4	−0.5	0.5
Switzerland	11.1	11.6	11.3	10.5	10.7	10.0	11.8	11.9	9.1	8.9	9.3	8.8	8.7	8.9
Lithuania*	11.1	6.1	−10.9	13.8	5.1	5.9	7.3	7.9	8.6	2.2	−2.5	1.7	−0.8	N.D.

* The authors' estimation according to Department of Statistics of the Republic of Lithuania.

Source: OECD Economic Outlook No. 79 – Statistical Annex Tables, www.oecd.org.

Such significant fluctuation of saving ratio was influenced by micro- and macro-economic factors, particularly general increase in cost of living, which causes changes in the household consumption behaviour and limits saving possibilities. The major reasons of the fluctuation of the saving ratio were as follows:
− extremely low household income, that results in inability to save,
− increased borrowing for real estate purchase influenced by the shift of prices before joining the EU,
− enhanced consumption caused by the economic growth and households' expectations of income and social wealth rise due to growth of economy,
− the worsening of demographical situation in Lithuania and increase in youth emigration.

Low household saving ratio in Lithuania indicates not only a high level of poverty, but also disproportional development of the state economy, misbalanced financial flows, household income to be slowly increasing and insufficient labour market supply.

According to investigation made in Lithuania, the main criterion for making invest-ment decisions are available funds. 35% of respondents have no practice in investing, they are absolutely passive. One third of respondents looks for a professional or consults their own friends and the last third have no idea about financial markets (Figure 2).

It is interesting to point out that neither young people (under 30 years) nor elder (over 50 years) have practice in investing and elder people even have no savings to invest. Respondents of the age 30-40 are the most active; their consumption demand is very high. Respondents of the age 40-50 have enough funds but they need more information about investing.

It is obvious that the main reason or source for investments are funds. Another factor having impact on investment decision making is education. Investigation

shows that the higher education the more need is for professional consultations (20.3% of respondents with university education and only 10.9% with secondary education). Married people seek both experience (24.7%) and funds (22.9%), while divorced especially need consultants – 22.4%.
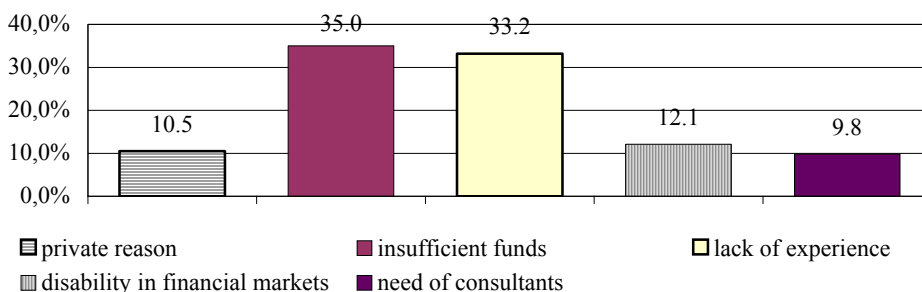

Figure 2. Circumstances that cause the investing of savings

Source: the authors' estimation according to Department of Statistics of the Republic of Lithuania.

Risk tolerance is another "side of coin". Selection of the investment instrument depends on the risk of the loss of savings. Investigation shows that majority of respondents are afraid to lose all or part of their money (Figure 3). This is caused by crises of financial intermediates in previous years.
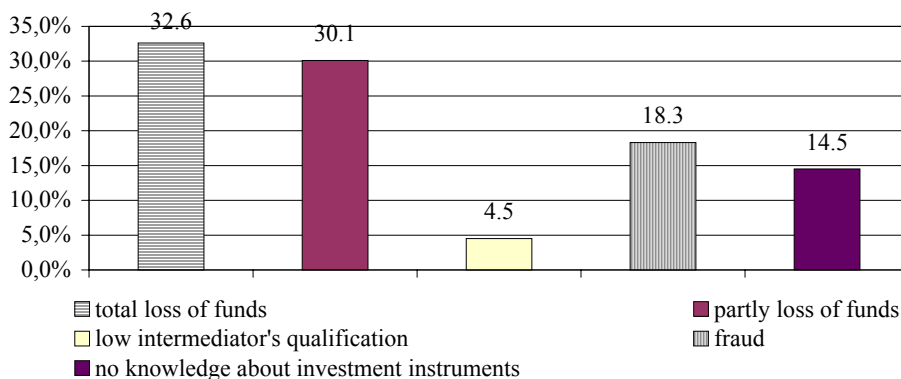

Figure 3. Reasons of fear

Source: the authors' estimation according to Department of Statistics of the Republic of Lithuania.

Respondents of the age over 50 years are especially afraid of fraud – 27.9%.
Respondents with lower education are afraid to lose their savings (23.6%), with higher education – low qualification of intermediates (30.5%). According to the level of income: people with lower income are afraid of fraud (32.4%), with higher – of low qualification of intermediates (32.3%).

Investigation shows that Lithuanians save for short term – up to one year (75.5%). Short-term savings are popular among the youngest people (20-30 years) and eldest (over 50). Also usually short term savings make citizens with lower income (500-2000 litas[1]). Long-term savings – up to 5 years – make only 24.5% of respondents.

6. The importance of forecasting system of savings

Taking into consideration the ideas of life cycle hypothesis, behaviour theory and the interrelationship between household savings and business investments one could predict the main directions of households' savings and means for their increase. It is possible to create a common system of managing and influencing the factors of saving. Such a system could influence the level of savings as one of the main sources for the growth of economy and origination of wealth of citizens in their retirement period.

Before the creation of such a system it is important to set up the main principles:

− complexity – it is important to estimate all possible outcomes (economic, social, demographic and political) before forecasting the level of savings;
− dynamism – it is important to evaluate the competitiveness of the market and changeability of savings during integration of Lithuania to the EU market;
− staginess – due to discreteness of savings stimulation and development of them should be done stage by stage;
− effectiveness – each stage of stimulation of savings should guarantee effective use of funds and influence the growth of economy.

The forecasting system of savings is an integrative one that covers three institutional levels: the state (government), financial intermediates and business units.

All these levels should operate in complex; the action of one institution should be supplemented by the action of the other. It is important to originate and approve a common governmental policy and long-term strategy for the improvement of individuals' living level through increase of households' savings and stimulating their turn for accumulating of wealth.

The government should create a system of stimulus through taxation. For the improvement of the legislation it is important to lower the taxes on gains from the securities, to simplify the declaration of income, etc. One of the main conditions of the effectiveness of covenantal policy in the area of savings increase is enlargement of intermediates – creation of investments, mortgage banks that could supply the market with new high liquid, low risk investment instruments. The business is the third level that is the dominant in formation of households' savings in the market economy. The long-term success of business depends on the level of its integration

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[1] 1 litas is equal to 3.4528 euro.

into social environment and the human factor plays the main role. The social responsibility of business could play an important part in improvement of savings environment.

7. Conclusions

The life cycle hypothesis and behaviour economics are still a considerable theoretical instrument and they help the economists to take into consideration such important factors as wealth and expectations of future income while making households' consumption decisions.

The considerable influence on savings' factors have economic, social, political and demographical processes of the state and in particular political and economic stability. Salary, price level, inflation, and GDP directly influence the saving process.

Low household saving ratio in Lithuania indicates not only a high level of poverty, but also disproportional development of economy, misbalanced financial flows and household income to be slowly increasing. Lithuanian households' saving ratio shows that private sector do not lay aside funds for a retirement period.

It is necessary to create a common system of managing and influencing the factors of saving. An integrative forecasting system of savings should cover three institutional levels: the state (government), financial intermediates and business units. Government should create a system of stimulus through taxation. For the improvement of the legislation it is important to lower the taxes on gains from the securities, and to simplify the declaration of income.

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