



INVESTIGATION OF INTERDEPENDENCE AND CHANGES IN LITHUANIA HOUSEHOLD CONSUMPTION AND ECONOMIC INDICATORS

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Annotation

In order to identify interdependence of Lithuania household consumption and macroeconomic indicators, an empirical study provided. Changes of Lithuania household budgets for 2007 – 2013 year determined by calculating chain indices, savings rate and its chain indices for 2008 – 2013 year also was calculated. After applying a polynomial trend the average disposable monthly income per member of the household, average monthly consumption expenditure per member of the household, LTL and savings rate (%) fluctuations in time where analysed. In order to establish a relationship between macro-economic indicators and income of household, consumption expenditure and savings rate, correlation and regression analysis performed. Main economic indicators were analysed: GDB, inflation, unemployment level and changes of labour income. For more comprehensive analysis of macro-economic indicators regression models were applied which show the changes in the macroeconomic indicators of changing them affecting the sizes of household income, consumption expenditure and savings ratio. It was found that household consumption expenditure are conditionally correlated with the Lithuanian macroeconomic indicators. The strongest relationship is between GDP, GDP per capita, and the monthly average wage (both gross and net) and average disposable income, average consumption expenditure per member of the household as well as the savings ratio. The analysis of household indicators revealed that in all cases much more accurate than the linear trend, fluctuations in time describes cubic trend, which means that both the average household income and consumption expenditure and savings ratio is not constantly growing size, they tend to fluctuate over the time.

KETWORDS: household consumption, macroeconomic indicators, correlation, regression, trend.

Introduction

The economic-financial crisis in 2009 and household's recession increased attention of economists and politicians on the economic mechanism, structure relationship and interaction. The main focus was put on the one of the main economic institutions - household consumption problem and the factors influencing effects, i.e. how households respond to income, income tax, property prices and other indices, how certain groups of users adapts to these changes; which consumer groups are more and which less exposed to certain economic and political changes. These and many other questions intensifies discussions between economists and practitioners about household consumption problems. Among the many factors affecting household consumption and its structure, demographic and social characteristics, household budget and other factors are analysed. Although consumption and the structural changes discussed often, but only a few studies empirically analyse consumption, its structure and dynamics as well as the relationships between these and economic variables. These empirical studies today are much more important for current and future economic fluctuations and changes in the social environment. Multidimensionality of household consumption structure and dynamics allows analysing it in many different ways. In particular, the phenomenon influenced by the economic environment changes. Changing household income and taxes, changing products and their prices

determines both the scale of consumption and structural changes. Second, household consumption affected by or affects by itself the economic indicators. Therefore, this topic is relevant to both the theoretical as well as practical point of view.

The object - household consumption and Lithuanian economic indicators.

The aim - to provide household consumption and economic indices in Lithuania for 2007 - 2013 year and identify their interdependence.

The objectives: 1. To structure the household consumption surveys. 2. Submit household budget index changes in Lithuania in 2007 – 2013 year. 3. Calculate the savings ratio for 2008 – 2013 year. 4. Determine the chain indices for the average disposable income, the average consumption expenditure per household member per month, and savings ratio (%). 4. Check relationship between macroeconomic indicators and household income, consumption expenditure and savings ratio.

Analysed macroeconomic indicators: GDP, GDP per capita, Inflation, the average wage (net and gross), registered unemployed, unemployment rate.

Research limitations - the lack of statistical data. The website of Lithuanian Statistics Department does not contain full details of household consumption, the time series data presented in a broken line. Information provided until 2008, which later interrupted and resumed in 2012. This is evident lack of information in 2009 - 2011 years (3 years). In addition, there is no information for 2013 year. It is therefore not possible to analyse the

patterns of consumption, as well as the age effect. In order to reveal the topic, missing data found in other sources (annals of Statistics, the Bank of Lithuania reports, etc.). However, it restricts the investigation, because not all the data is calculated and published.

Research methods - comparative analysis and synthesis of scientific literature, statistical and other data collection, classification, clustering, comparison, specification, elimination, generalization, modelling, analysis and synthesis of various economic indicators, mathematical calculations, graphical methods, modelling of economic processes, correlation analysis, regression analysis, logical comparative analysis and synthesis.

Presentation of the household consumption surveys

As household consumption expenditure is regarded as an important economic variable big attention in the economic literature is paid on consumption issues. In order to explain the causes of changes in consumption expenditure, there are many theories, but there is no consensus that would explain changes in consumption expenditure. Developed new theories/ models are based on several basic consumer models such as Keynes (1936) the absolute income hypothesis, Friedman (1957) permanent income hypothesis and Modigliani and Brumberg (1954) life cycle hypothesis. (Ramanauskas, Jakaitienė, 2007).

The household concept and economic functions are analysed by (1999), Aleknevičienė (2005), Vainienė, (2008), Collin (2003), Snowden, Vane, (2003), Langvinienė, Vengrienė (2005), Harvey (2004), Browning, Lusardi (1996), Vitunskienė (1997) and others. Researchers present pretty much interpretations of household concept and different classifies their economic functions. It is worth noting that the household concept is

constantly changing and is dependent on the political, social, historical and cultural factors (Katz, Weaver, 2002). Big attention to the consumption and other household economic functions paid by Pass, Lowes ir Davies, (1988), Friedman, (1957), Blanchard, (2007), Keynes, (2008), Werner, (2005). Household consumption expenditure classification and the importance for the economy reveals Werner, (2005), Rutkauskas (1999), Skominas (2006), Jurevičienė, Klimavičienė (2008). Miller (1996). Ramanauskas, Jakaitienė (2007) notes that household consumption expenditure are important to the national economy, because they most affect aggregate demand, consisting of consumption, investment and government expenditure, as it has the greatest relative weight in aggregate demand. Consumption essence of micro and macroeconomic level and the factors influencing it are analysed by Jackson, (2005), MassColell et al, (1995), Varian (1999), Deaton (1992), (2005), Vosyliūtė (2003), Jakutis, Petraškevičius et al.. (2005), Paunksnienė, Liučvaitienė (2009), Hardwick, Khan, (1990), Snieska, Čiburienė, Urbonas et al. (2005). Willman (2003), Barigozzi, Alessi ir kt. (2009), Skudelny (2009), Deaton, Erlandesen (2008), performed consumption structure and dynamics studies.

There is particularly few researches because this type researches are expensive and require considerable time and human resources. Most of these studies are funded by various stakeholders, and not publicly available. Consumption correlation with the macro-economic variables (public spending, taxation, price changes, etc.) was analysed by Kruger (2005), Kruger Perri (2004), Campbell (2003). In Lithuania more attention to household consumption pays Lisauskaitė (2010), Lydeka, Žaliauskas (2012). Systematized information on results about consumption research objectives, used methods and the results presented in Table 1

Table 1. Research on household consumption

Author, year	Research objectives	Research methods	Research results
Willman, 2003	Determine function for consumption: type and coefficients by using statistical data.	Regression and comparative analysis	Established particularly important relationship between household income, intuition of its future developments and consumption.
Erlandsen, Nymo 2006	Identify consumption and population structure by age in Norway	Aggregated macro level statistics.	It was found that changes in the age structure has significant and mathematically (quantitatively) significant impact on consumption.
Kuismane, Pistaferri 2006	Identify the relationship between the consumption and available information and habits of the household	Correlation and regression analysis	It was found weak positive correlation between consumption and its postponement due to uncertain future (potential risks). Households cannot predict their income changes, so income is not suitable for variable consumption prediction
Krueger, Perri 2008	Identify households respond to income shocks (Italian case)	Statistical forecasting	It was found strong correlation between income changes (especially in shock period) and reusable products. Weak relationship when analysing single-use products.
Barigozzi ir kt., 2009	Identify a household budget breakdown to costs (consumption)	Regression analysis	It was found that households generally intend in the same part of the income for consumption. However, households are not constant dispensing the consumption funds
Skudelny, 2009	Identify whether there are differences in consumption between the rich and the poor population of the country.	Regression analysis	Significant positive correlation in both cases
Slacalek 2009	Identify household budget breakdowns in different countries	Regression analysis	It was found that household welfare in different countries is changing in different ways, and changes in consumption cannot be generalized.

Krueger, Perri 2010	Identify households respond to income shocks (Italian case). Detailed and expanded 2008 years study	Regression analysis	It was found that there are economic variables that are strongly correlated with household disposable income and consumption.
Jappelli, Pistaferri 2010	Identify households respond to income shocks	Regression analysis	It was found that households react quite strongly to the change in income, while in the reduction of income are relatively unresponsive.
Lisauskaitė 2010	Identify personal income and consumption expenditure changes their structure and differentiation; Reveal Lithuanian personal income and consumption expenditure inequality and determine the coefficients of differentiation as indicators that reflect the public welfare and quality of life in specific expenditure groups.	Descriptive statistics	Identified the population propensity to consume, because very small part of income allocated to save and invest. Much of the spending to ensure critical needs rather than a healthy diet, clean environment, purposeful and create a full-fledged life
Lydeka, Žaliauskas 2012	After analysing theoretical principles of household consumption structure to investigate empirically consumption changes in Lithuania 2008 - 2011 year by demographic, social and economic variables.	Survey, correlation, regression analysis.	The hypothesis that by changing household incomes household consumption structure also changes. Household income changes affect not only the scale of consumption, but consumption structure and consumption of consumer goods to changes in individual groups. Bigger changes are detected when the household income is growing and the lowest when the household income decreased (affects concentration at the cost of the first necessity products)

As already mentioned research in the field of consumption requires considerable time, human and financial resources, and conducted quite rare and are financed by international or local, public authorities. Internationally, consumer surveys carried out by the World Bank, the OECD, the European Central Bank. At the state level, such studies are usually organized national central banks or institutions involved in the collection of statistics. It is important to note that because of the research limitations these studies are more static (done once, based on information available that time) than analytical.

In Lithuania, mostly surveys on the consumption, its structure and the household budget performed by the Department of Statistics. The household budget survey performed by Department of Statistics covers only received average income and consumption expenditure size setting (Department of Statistics, 2012). This static survey first conducted in 2004 and is performed once a year. „The main objective of the study is to collect information on household income and expenditure level, consumption, housing conditions in the various household groups to consumption pattern of the consumer price index data for the calculation of macroeconomic indicators (Department of Statistics, 2012). The last survey performed and generalized in 2008. While statistical survey performed correctly, the results and conclusions based on 5,000 to 6,000 random households data, but the study is limited. The data separated from household characteristics, i.e. do not analyse their specific, relevant household characteristics sections. As well as study more focused on quality and the household status study nor in household consumption and its relationship with other variables.

Lithuanian Department of Statistics since 2005 performs also Consumer Surveys (Department of Statistics, 2014). The study examine how consumers i.e. households trust the current economic situation; think about what their own financial situation changes during the last and the next 12 months. It also examined what households think about the economy and its further development. Saving, its changes and the possibility to save in the future is also one of the study areas. The aim –

“to prepare and publish comparable information on consumer purchasing intentions and their ability to save, as well as on how they assess the economic situation and its impact on the intentions” (the Department of Statistics, 2011). The economic situation and its changes characterized by the price, level of unemployment and the general economic situation. This survey is also static and limited.

Household surveys also organizes the Ministry of Environment. Last, detailed household composition, income, property, savings, quality of housing, wishes to improve, household credit, and of course the cost study was conducted in 2002 (Ministry of Environment, 2002). This study is more detailed and more analytical than the Department of Statistics surveys. However, the last survey conducted 10 years ago, so the results of this study and the findings could be questioned, since over 10 years has changed dramatically, both economic and political environment. Similar surveys organized by the Lithuanian Free Market Institute. Their surveys often based on the Department of Statistics presented statistics and / or organized by itself surveys.

Survey results on interdependence between Lithuanian household consumption and economic indicators and their changes

One household disposable income in 2013 amounted an average of 2,565 litas per month, while disposable income per household member - 1,126 litas per month (see. Fig. 1). In comparison with 2012 year disposable income per household increased by 8.2 percent (per capita - 10.8 percent). In the city, one household disposable income was 18.5 percent higher than in rural areas. In order to compare the different size and composition of household income calculated equivalent disposable income, which in 2013 amounted 1,651 litas per month. The maximum of the equivalent disposable income were in households consisting of three or more adults without children (2,011 litas) and two adults younger than 65 years (1998 litas), while the lowest - in households consisting of two adults with three or more

children and single person households (respectively - 1,141 and 1,258 litas). Disposable income in kind was significant only in rural households. Here, they amounted to 3.5 percent of total disposable income (urban households - only 0.8 percent).

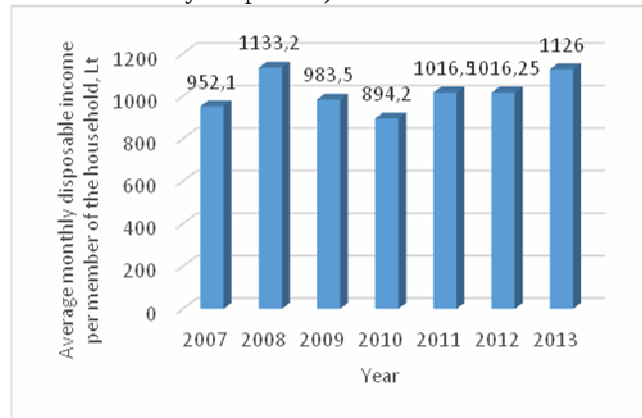


Fig. 1. Average monthly disposable income per member of the household for 2007 – 2013 year

In 2013 like in 2012, households had at its disposal 86 percentage of total monetary income. 52 percent of households' main source of income was from employment income. The old-age pension as the main source of income indicated 31 percent of households, from other social benefits by 11 per cent lived in households. In 2013 social benefits amounted 25.5 percent of total monetary income. Urban residents' income, social benefits accounted for 24 percent, rural - 29.7 percent. Within two years of social benefits part of total monetary income decreased by 3.4 percentage points.

For more than half (56 percent) of households the main source of cash income in 2013 was labour income. Income from wage labour as the main source of income has identified 52 per cent of households. For 42 percent of households were the main source of livelihood of social benefits. Compared with 2012, from social benefits living in households in the comparative share increased by 1 percentage point, from living labour income households also decreased by 1 percent. Especially many living on social benefits individuals were in households with one-person and two adults, of whom at least one was 65 years or older. Social benefits in old age was the main source of cash income to 80 percent of two adult persons, of whom at least one was 65 years or older, and 54 percent of single-person households, and other social benefits - respectively 4 and 11 percent above household types. As the rural population has more old people, one-third (34 percent) rural households' main source of income was the old-age pension.

Noticeable that the average disposable income per household member per month decreased significantly in 2009 even 13 percent compared with 2008. Especially low was in 2010 and this is the period of economic crisis. Since 2011 they began to grow, but has not yet reached the size of 2008.

The household budget survey results show that the average household consumption expenditure in 2012 was 854 litas per person per month (see. Fig. 2). Compared with 2008, consumption expenditure increased by 0.6

percent, or 5 litas per month. The evaluation of consumer price growth, consumption volume decreased 11.5 percent. The urban population average monthly consumption expenditure was 923 litas, rural population - 715 litas. Compared with 2008, the average increase consumption expenditure by 1.6 percent in the city, while in rural areas - decreased 2 percent. 2012 compared with 2008, increased household consumption expenditure on food, housing, water, electricity, gas and other fuels, health care and education, of which only the cost of housing for rent, water and energy increase exceeded the price growth.

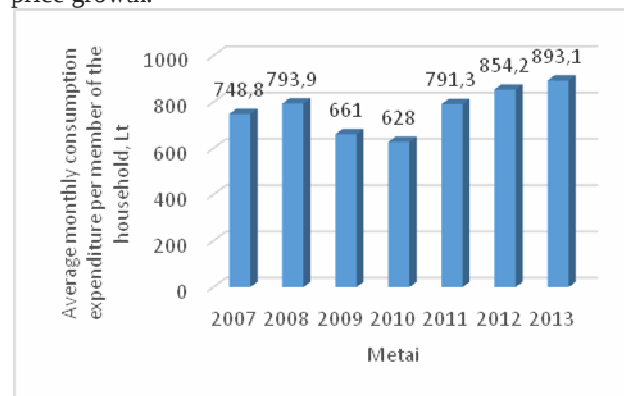


Fig. 2. Average monthly consumption expenditure per member of the household for 2007 – 2013 year

Households expenditure for food in 2012 (excluding the money spent in cafes, restaurants, canteens) used one-third (33.7%) of the total consumption expenditure. This amounted to an average \$ 288 per household member per month. Expenditure on food at home in 2012, compared to 2008, increased by 4.3 per cent, while their comparative share of consumption expenditure increased by 1.2 percentage points. Expenditure for food has led to an increase in growth of prices (food prices during this period increased by an average 12.9%), influenced by the fact that people often ate at home - decreased expenditure on food in cafes, restaurants, canteens. Expenditure on food at home, including free or from his farm obtained amounted 31.7 percent of total consumer expenditure in cities and in rural areas - 39.2 percent.

Consumer spending on housing, water, electricity, gas and other fuels amounted 153 litas per household member per month: in the city - 179 litas, the rural areas - 101 litas (respectively 19.4 and 14.1% of household consumption expenditure). Compared to 2008 these expenses increased by 51.2 percent, while eliminating the growth of prices increase was 12.6 percent. Expenditure on housing, water, electricity, gas and other fuels comparative portion of consumption expenditure, compared to 2008 increased by 6 percentage points (in the city - 6.7, in the countryside - 4 percentage points). The increase in the necessary expenditure without almost any increase in income people saved by reducing the expenditure on furnishing and household equipment, leisure and culture, cafés and restaurants. Expenditure on clothing and footwear and communications also decreased mainly due to lower prices.

2012 basic expenditure proportion of all consumption expenditure (expenditure on food, housing, water, electricity, fuel, health care and transport), compared to

2008, increased both in urban and rural areas accounted respectively 67 and 70 percent of all consumption expenditure.

Savings rate is a derivative indicator that shows the disposable income per household member monthly devote themselves (saves). Estimated savings rate given in Table 2.

Table 2. Savings ratio for 2007-2013 year

	Average monthly disposable income per member of the household, Lt	Average monthly consumption expenditure per member of the household, Lt	Savings ratio (%)
2007	952,1	748,8	21,4%
2008	1133,2	793,9	29,9%
2009	983,5	661	32,8%
2010	894,2	628	29,8%
2011	1016,5	791,3	22,2%
2012	1016,25	854,2	15,9%
2013	1126	893,1	20,7%

In Table 2, we see that in 2010 the savings ratio was the same as in 2008 (29.9 percent) while income decreased 21 percent. As a result, households reduced consumption expenditure by 20.8 percent, and the same share of income deferred for saving. It shows Lithuanian households psychological approach to the consumption.

Lithuanian people's savings rate increased especially 2008 - 2010 year and the maximum amount reached in 2009. Income in 2009 decreased by 13 percent, but expenditure reduced by 16 percent a higher proportion of deferred future use. This indicates that the decreasing income households reduced consumption expenditure and a higher proportion of income assigned for future consumption.

For more detailed analysis of household income, consumption expenditure and savings time series chain growth rates were calculated by formula $T_d = \frac{y_t}{y_{t-1}} \cdot 100$, where y_t – time series value for analysed time moment, y_{t-1} – value before analysed time moment.

We can see that average household income, consumption expenditure and savings ratio is not constantly growing in size, they tend to fluctuate over time.

Chain growth rates for average disposable income, consumer expenditure and savings rates for 2008 - 2013 year presented in Table 3 and Figure 3.

Table 3. Chain growth rates for average disposable income, consumer expenditure and savings rates for 2008 - 2013 year

	Average monthly disposable income per member of the household, Lt	Average monthly consumption expenditure per member of the household, Lt	Savings ratio (%)
2008	119,02%	106,02%	140,22%
2009	86,79%	83,26%	109,52%
2010	90,92%	95,01%	90,79%
2011	113,68%	126,00%	74,42%
2012	99,98%	107,95%	71,98%
2013	110,80%	104,55%	129,71%

Chain growth rates of average disposable income, consumer expenditure and savings rates for 2008 - 2013 year show that these indicators are moving irregularly, and neither one of them does not reach the 2008 level (see Figure 3).



Fig. 3. Chain growth rates for average disposable income, consumer expenditure and savings rates for 2008 - 2013 year

In order to establish relationship between the macro-economic indicators and household income, consumption expenditure and savings ratio correlation analysis used. The country's main economic indicators analysed gross domestic product, inflation rate, unemployment rate, labour income trend. Growing unemployment, declining wages and social benefits are the main challenges that the 2008 - 2014 year Lithuanian population is facing.

Rising unemployment decrease incomes and the ability to consume and save. Rising unemployment leads to many negative consequences. Unemployment reduces people's income, depresses the country's economy, and worsens public finances. Unemployment (especially long-term) is a very important variable that determines the overall personal and family situation. This is one of the most important causes of social exclusion, which includes not only material conditions but also the inability to participate productively in economic, social, political and cultural life.

Pearson correlation coefficient indicates a linear dependence (correlation) between the two indicators. The correlation coefficient r can take values in the range from -1 to 1; negative correlation coefficient indicates inverse dependence, and the positive - direct. Correlation in

absolute value closer to 1 shows stronger dependence. Lithuanian macroeconomic indicators presented in Table 4.

Table 4. Lithuania macroeconomic indicators for 2007-2013 year

	GDP, LT	GDP per capita, LT	Inflation, %	Average monthly net wages, LT	Average monthly gross wages, LT	Registered unemployed, tūkst.	Unemployment level, %
2007	100271,6	30853	5,8	1351,9	1802,4	64,4	4,2
2008	112893,7	35141	11,1	1650,9	2151,7	88,3	5,8
2009	93000,6	29210	4,2	1602	2056	210,6	13,8
2010	96682,9	30771	1,2	1552,4	1988,1	270,4	17,8
2011	107890,6	35344	4,1	1594,6	2045,9	228	15,4
2012	115026,5	38296	3,2	1651,4	2123,8	196,8	13,4
2013	120694,7	40612	1,2	1730,3	2231,7	172,5	11,8

As can be seen in Table 5, the strongest correlation is between GDP, GDP per capita and average wages (both gross and net) and the average disposable income, the average consumption expenditure per one household member and savings rate. Direct correlation indicates that by increasing average disposable income and average consumption expenditure increases GDP and average wages (gross and net).

Meanwhile, the savings ratio and GDP and GDP per capita, correlation are inverse, i.e. increasing savings

ratio determines decreasing of these indicators. It should be noted that the average disposable income per month per household do not correlate with analyzed macroeconomic indicators. It is therefore assumed that the assessment of households' budgets must be distinguished family or persons living together as individual research units. The household budget is to be considered as a single person living alone budget.

Table 5. Correlations between Macroeconomic indicators and household indicators

	GDP, LT	GDP per capita, LT	Inflation, %	Average monthly net wages, LT	Average monthly gross wages, LT	Registered unemployed, thous..	Unemployment level, %
Average monthly disposable income per household, Lt	-0,004	0,042	-0,076	0,674	0,654	0,278	0,270
Average monthly disposable income per member of the household, Lt	0,806	0,724	0,416	0,671	0,763	-0,412	-0,387
Average monthly consumption expenditure per member of the household, Lt	0,950	0,932	0,054	0,480	0,559	-0,336	-0,292
Savings rate, %	-0,629	-0,675	0,292	-0,020	-0,052	0,134	0,094

Note: significant correlations are marked.

For more detailed analysis of dependence between macro-economic indicators and household income, consumption expenditure and savings ratio regression analysis was performed. Linear regression model expressed by the equation: $y = a + bx$ where y is dependent indicator, and x - independent. In order to reveal the topic in the regression model as dependent variables y macroeconomic indicators were taken and x was income, consumption expenditure and the savings rate. Determination coefficient R^2 that shows the accuracy of the model is also calculated.

Created regression models presented in Figures 4-13. It was found that by increasing average income by one litas, GDP increases by 94,86 litas; GDP per capita increases 35,15 litas, average net wage 0,92 litas and gross salary – 1,20 litas. By increasing average consumption expenditure by one litas GDP increases by 101,39 litas; GDP per capita increases 41,02 litas, average net wage 0,59 litas and gross salary – 0,80 litas. By increasing savings ratio by one percent, GDP

decreases by 104673 litas and GDP per capita decreases by 46321 litas.

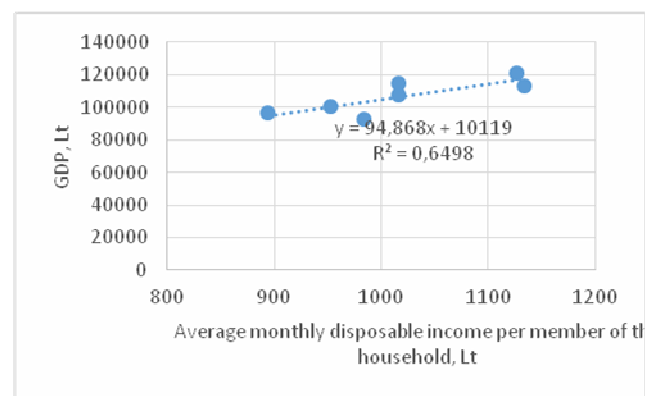
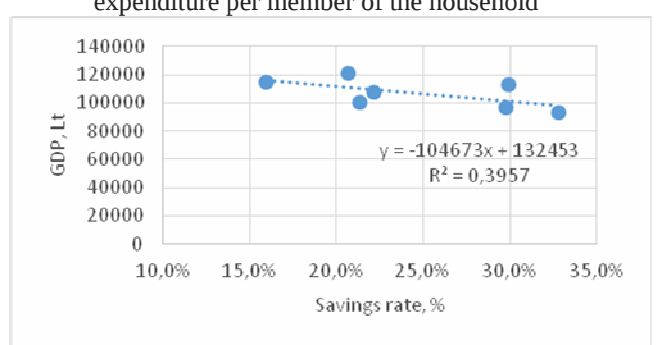
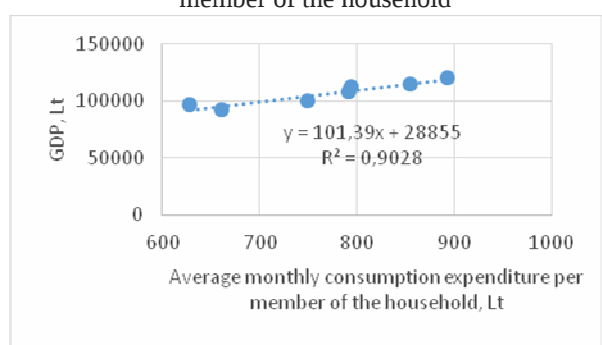
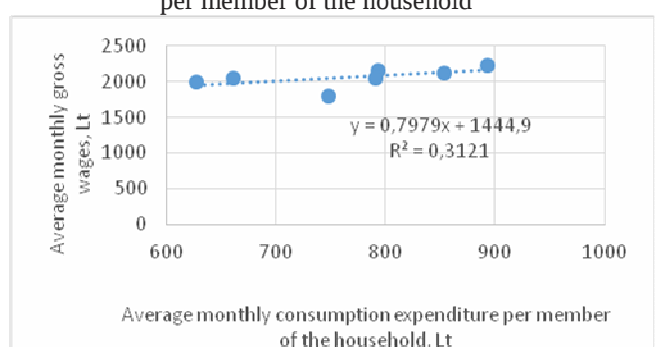
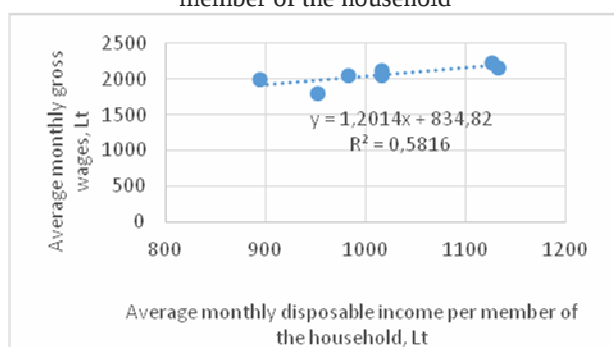
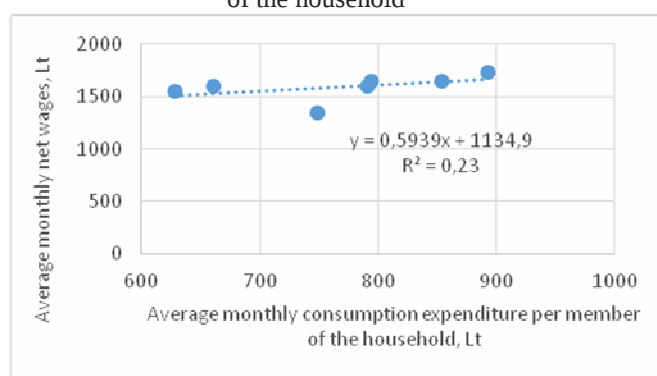
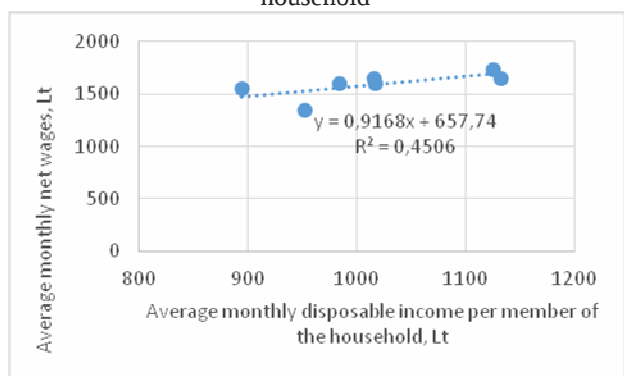
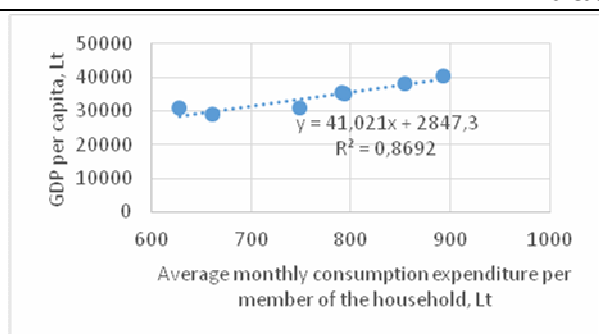
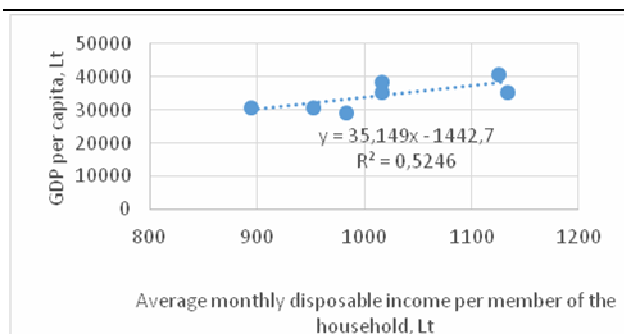


Fig. 4. Regression equation between GDP and average monthly disposable income per member of the household.



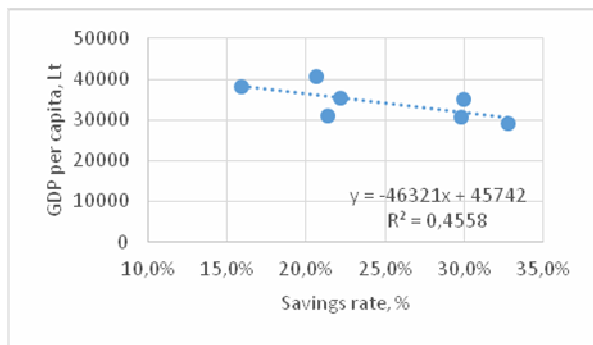


Fig. 13. Regression equation between GDP and savings rate

For more detailed analysis of household income, consumption expenditure and savings time series analysis was performed. One of the main goals of time series analysis is the prediction. The most popular prediction method is trend equation.

When analyzing three household budget indicators, we see that in all cases much more accurate than the linear trend, fluctuations in time describes the cubic trend (third order polynomial), this means that both the average household income and consumption expenditure and savings ratio is not constantly growing in size, they tend to fluctuate over time (see Figures 14 – 16).

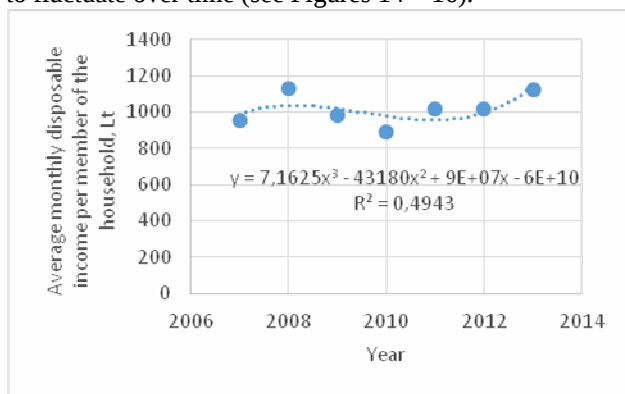


Fig. 14. Trend line for average monthly disposable income per member of the household

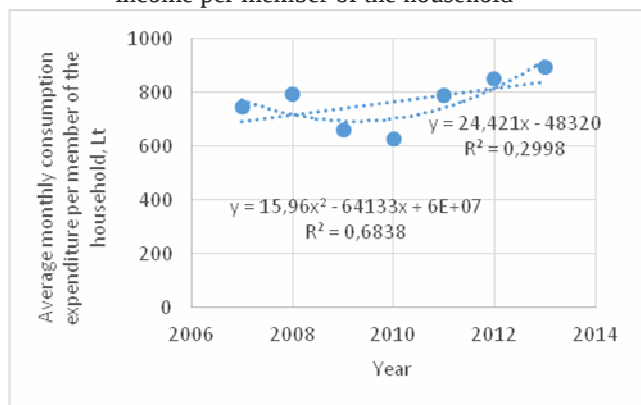


Fig. 15. Trend line for average monthly consumption expenditure per member of the household

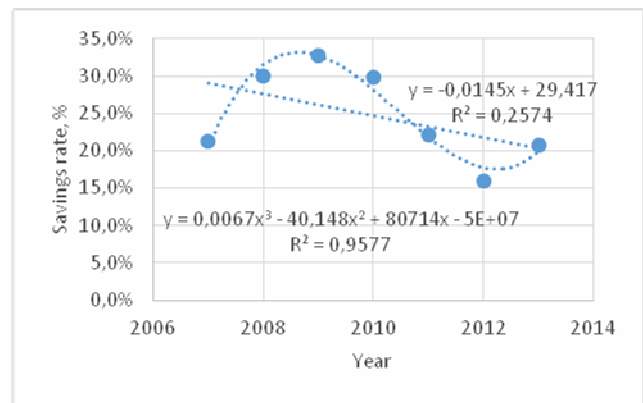


Fig. 16. Trend line for savings rate

Conclusions

There are quite many international studies on consumption, its structure and relationships with other economic variables internationally. However, these studies are specialized and/or episodic. They studied only certain aspects of the consumption or consumption relationship with another economic variable. Most studies based on an aggregate basis, macro-level statistics. There only few detailed micro-level and comprehensive studies. Scientists performing Lithuania various estimates, calculations and simulations usually uses standardized, general (in other words theoretical) factors and other factors. On many occasions, these standard sizes are applicable for advanced economies. For this reason, the Lithuanian consumer research would assess and clarify these figures. In other words, standardized sizes would allow to adapt it in Lithuanian economic case. In reviewing the existing research, it was observed that most researchers and practitioners agree that the consumption its structure and dynamics analysis is important, especially in the economic downturn period. Consumption is a key economic accelerator. In ineffective and unbalanced consumption accelerators also will not work effectively, which results stagnation or even recession in economics. Research that somehow touches consumption, its structure, dynamics and relationships with other variables are more statically in nature from than analytical and without disclosing household consumption and economic indicators relationship and change.

It was found that household consumption expenditure are conditionally correlated with the Lithuanian macroeconomic indicators. The strongest relationship is between GDP, GDP per capita, and the monthly average wage (both gross and net) and average disposable income, average consumption expenditure per member of the household as well as the savings ratio. The analysis of household indicators revealed that in all cases much more accurate than the linear trend, fluctuations in time describes cubic trend, which means that both the average household income and consumption expenditure and savings ratio is not constantly growing size, they tend to fluctuate over the time.

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LIETUVOS NAMŲ ŪKIŲ VARTOJIMO IR EKONOMINIŲ RODIKLIŲ TARPUSAVIO PRIKLAUSOMYBĖS POKYČIŲ TYRIMAS

Santrauka

2009 metais prasidėjusi ekonominė-finansinė krizė ir daugelio valstybių ūkių nuosmukis padidino ekonomistų dėmesį vienai pagrindinių ekonomikos institucijų, t.y. namų ūkio vartojimo problemoms ir jį įtakančių veiksnių padariniams, t.y. kaip namų ūkiai reaguoja į pajamų, pajamų mokesčio, turto, kainų ir kitų rodiklių pokyčius; kaip tam tikros vartotojų grupės prisitaiko prie šių pokyčių; kurios vartotojų grupės labiau, o kurios mažiau paveikiamos tam tikrų ekonominių ir politinių pokyčių. Namų ūkio vartojimo struktūros ir jos dinamikos tematikos daugialypiškumas jį leidžia nagrinėti vis kitaip. Visų pirma, šis reiškinys yra įtakojamas ekonominės aplinkos pokyčių. Kintančios namų ūkio pajamos ir mokesčiai, kintantys produktai ir jų kainos lemia tiek vartojimo masto, tiek struktūros pokyčius. Antra, namų ūkių vartojimas yra veikiamas arba pats veikia ekonomikos rodiklius. Taigi, ši tema yra aktuali tiek teoriniu, tiek ir praktiniu požiūriu,

Siekiant identifikuoti namų ūkių vartojimo ir makroekonominių rodiklių tarpusavio priklausomybę Lietuvoje, atliktas empirinis tyrimas. Naudojant duomenų padėties ir rodiklių sklaidos statistikos metodus pristatyti namų ūkių biudžeto rodiklių pokyčiai Lietuvoje 2007 – 2013 metais bei apskaičiuoti santaupų koeficientai 2008 – 2013 m. Pritaikius kubinį trendą (trečios eilės polinomą) atskleisti vidutinių disponuojamųjų pajamų vienam namų ūkio nariui per mėnesį, Lt, vidutinių vartojimo išlaidų vienam namų ūkio nariui per mėnesį, Lt bei santaupų koeficiento (%) svyravimai laike, t.y. grandinių pokyčių tempai. Siekiant nustatyti makroekonominių rodiklių ryšį su namų ūkių pajamomis, vartojimo išlaidomis bei santaupų koeficientu, taikyta koreliacinė bei laiko eilučių analizė. Vertinami pagrindiniai šalies ekonominiai rodikliai: bendrasis vidaus produktas, infliacijos lygis, nedarbo lygis, darbo pajamų kitimo tendencija. Išsamesnei makroekonominių rodiklių priklausomybės su namų ūkių pajamomis, vartojimo išlaidomis bei santaupų koeficientu analizei, sudaryti regresiniai modeliai, kurie

parodo kaip keičiasi makroekonominiai rodikliai kintant juos įtakojančioms dydžiams.

Nustatyta, kad namų ūkių vartojimo išlaidos sąlyginai turi ryšį su Lietuvos makroekonominiais rodikliais. Stipriausias ryšys yra tarp BVP, BVP, tenkančio viena gyventojui bei vidutinio darbo užmokesčio (tiek bruto, tiek neto) bei vidutinių disponuojamųjų pajamų, vidutinių vartojimo išlaidų, tenkančių vienam namų ūkio nariui bei santaupų koeficiento. Tiesioginiai ryšio rodo, kad didėjant vidutinėms disponuojamoms pajamoms bei vidutinėms vartojimo išlaidoms, didėja ir BVP bei vidutinis darbo užmokestis (bruto ir neto). Tuo tarpu tarp santaupų koeficiento bei BVP ir BVP, tenkančio vienam gyventojui, ryšiai yra atvirkštiniai, t.y. didėjant taupymo koeficientui šie rodikliai mažėja. Pažymėtina tai, kad vidutinės disponuojamosios pajamos per mėnesį vienam namų ūkiui, Lt nekoreliuoja nei su vienu nagrinėtu makroekonominiu rodikliu. Tokie makroekonominiai rodikliai kaip infliacija, registruotas bedarbių skaičius, nedarbo lygis neturi sąryšio su namų ūkių vartojimu. Analizuojant namų ūkių rodiklius, išryškėjo, kad visais atvejais daug tiksliau nei tiesinis trendas, svyravimus laike aprašo kubinis trendas (trečios eilės polinomas), tai reiškia, kad tiek vidutinės namų ūkių pajamos, tiek vartojimo išlaidos bei santaupų koeficientas nėra pastoviai augantys dydžiai, jie linkę svyruoti laiko atžvilgiu.

Tyrimo apribojimai – statistinių duomenų trūkumas. Lietuvos statistikos departamento tinklalapyje nėra pilnos išsamios informacijos apie namų ūkių vartojimą, pateikiamą nutūkstančia laiko eilute. Informacija pateikiama iki 2008 m., kuri vėliau nutūksta ir atsinaujina tik 2012 metais. Tai yra informacijos stoka akivaizdi 2009 -2011 metais (3 metus). Taip pat šios informacijos nėra jau 2013 metais. Dėl tos priežasties neįmanoma analizuoti vartojimo struktūros, taip pat amžiaus įtakos vartojimui. Siekiant atskleisti temą, trūkstanti duomenys buvo rasti kituose šaltiniuose (Statistikos metraščiuose, Lietuvos banko ataskaitose ir pan.), tačiau tai susiaurina tyrimą, nes ne visi reikalingi duomenys yra skaičiuojami ir skelbiami.

KEYWORDS: namų ūkių vartojimas, makroekonominiai rodikliai, koreliacinis ryšys, regresinis modelis.

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