

THE ECONOMIC SITUATION OF HOUSEHOLDS IN SELECTED EU COUNTRIES

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1. Introduction. The economic situation of households

In the classifications of consumption factors there are different types of criteria underlying extract [1]. In shaping the structure of consumption the main determinant is played by economic factors. They are instrumental in shaping consumption models [2], but should not be treated as the only factor to change consumer behavior. There are close relationships between income, consumption and savings in households [3]. In principle, consumption and savings are financed by income. And so the primary goal in the household is not only to meet current consumption needs, but also to meet the needs in the long term. Often, directing part of the proceeds toward the cost savings is associated with partial negligence of current consumption. The question about how those needs are to be implemented and to what extent determines usability assessment by members of the household [4]. An important task of the household is, therefore, to take a decision and to establish a hierarchy of needs and order of their meeting, depending on the multiple determinants that affect both the need and the level, and structure of consumption [5].

The economic situation of the household not always allows you to create savings. Their financial resources are mainly based on consumption, and subsequently allocated to savings and investments. The level of disposable income of households is a factor in determining the level of savings, the net assets and loans, and commitments. No matter what strategy the allocation of financial resources the household will take (branching, dual, parallel or sequential), earnings are a good starting point. You can treat disposable income as a determinant of inequalities that are unavoidable and even necessary to a certain extent – are in fact part of the incentive mechanisms in consumer behavior. The income situation of households directly determines the structure and the level of financial resources allocation [6].

2. Objective and research methods

The aim of the presented study is the assessment of the spatial variation of the financial resources of households in selected EU countries in 2012. Included in this study features are: revenue at the disposal of the gross savings, loans and liabilities and net financial assets of households.

Secondary data were used for the analysis of collected and published in the Eurostat database. These studies were designed to obtain an answer to the question what the level of household characteristics was analyzed in selected EU countries (in 2012) and the determination of the distance between Member States as regards the level of savings and debt. Statistical analysis of diversification has been carried out and variables have been tested in terms of one-and multidimensional.

Deterministic imputation methods based on measurement of similarity can be used as far as the similarities described by Euclidean distance or Mahalanobis distance [6] at work have been used in an attempt to observe the Mahalanobis dipping measure [2; 4].

A measure of the dipping Mahalanobis ($Mzan_p$) we call a function

$$Mzan_p(\boldsymbol{\theta}; P_n^p) = [1 + Q(\boldsymbol{\theta}, P_n^p)]^{-1} \quad (1)$$

where $Q(\boldsymbol{\theta}, P_n^p) = (\boldsymbol{\theta} - \bar{\boldsymbol{x}})^T S^{-1}(\boldsymbol{\theta} - \bar{\boldsymbol{x}})$

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Mahalanobis distance is a vector θ from the vector average \bar{x} , with the $\theta = \begin{bmatrix} \theta_1 \\ \theta_2 \\ \dots \\ \theta_p \end{bmatrix}$, $\bar{x} = \begin{bmatrix} \bar{x}_1 \\ \bar{x}_2 \\ \dots \\ \bar{x}_p \end{bmatrix}$,

$\bar{x} = \frac{1}{n} \sum_{j=1}^n x_j$, S is the matrix of covariances between contemplated p vectors, while the S^{-1} is the matrix inverse.

In a measure of the Mahalanobis was designated co-pilots for each point of a data set to be analyzed. Its coordinates are the values of the variables tested in 2012. Measure values dipping belongs to the interval from 0 to 1. Member States, which correspond to the higher value of this measure are located more centrally in the data set. It can be assumed that the analyzed features take in these countries typical values. A measure of the dipping of observation in the sample allows you to designate similar States due to numerical values of variables. The State, which corresponds to the highest measurement value dipping is the most central in the data set.

Used later in the analysis of value characteristics (level of gross disposable income, savings, loans and liabilities and net financial assets) in the households of the individual Member States of the EU are presented in tab. 1.

All of the characteristics analyzed are characterized by high volatility. A variable indicating the greatest differentiation is disposable income of households, for which the standard deviation of almost 2.5 times exceeds the value of the average. Positive values of skewness indicates a strong asymmetry of the positive. In order to obtain an answer, in which Member States analyzed the typical values characteristics take calculated measures dipping Mahalanobis (Tab. 3) with the model 1.

Tab. 1. Values in millions of euros (gross saving, gross disposable income, the amount of loans and liabilities and financial assets) of households in 2012

The State	Gross savings*	Gross disposable income**	Loans and liabilities***	Net financial assets****
Belgium	35768,20	234666,20	209898,81	816389,66
Czech Republic	230346,0	2174514,00	1245943,00	2646609,00
Denmark	63378,00	959017,00	2545066,00	2229143,00
Germany	301800,0	1835670,00	1551712,00	3372819,00
Estonia	422,96	9336,60	7512,60	6321,50
Ireland	8846,74	87144,19	172331,00	139914,00
Spain	70666,00	681074,00		877844,87
France	210086,1	1382363,00	837196,09	2832774,00
Italy	125317,0	1078992,62	1151948,00	2786692,00
Cyprus	1772,00	12959,40	710318,00	19790,37
Lithuania	641,68	72364,18	27249,70	54073,86
Luxembourg	3360,50	17046,70	24359,31	31702,09
Hungary	1233797,	16606167,00	8965786,00	18922067,00

* part of disposable income is not intended for consumption. If the savings are positive – unspent income is used to purchase assets to repay liabilities. If savings are negative-some assets are liquidated or certain obligations are growing.

** the income available to the household sector, gross is obtained as a result of correcting gross primary income by: taxes on income and property, contributions to compulsory social security, social insurance benefits, social assistance benefits and transfers.

*** arose from the past events of the obligation to forward in the future to another entity in the form of goods, services, money or other economic benefits.

**** the total value of the financial assets of the household less the value of its total debt.

Cont. of tab. 1

Netherlands	32891,00	306185,00	766506,00	1150632,00
Austria	24419,80	193439,50	167204,31	360919,40
Poland	49080,00	1029442,00	554673,00	806977,00
Portugal	14825,93	123318,80	150946,46	223233,94
Slovenia	2720,85	22823,92	10740,05	25346,97
Finland	10415,00	118961,00	125887,00	100173,00
Sweden	297781,0	2016029,00	2967962,00	5228013,00
United Kingdom	80168,00	1112873,00	1467970,00	3004054,00
Norway	183102,00	1359683,00	2451956,00	424571,00

Source: own calculations

Measure for Member States Norway and Sweden dipping reached the lowest values. Austria, Portugal and Ireland reported the highest level of all the features in the year 2012, while the lowest level occurred in the case of Hungary.

In order to analyze the spatial variation in classic statistical measure used variables were tested (Tab. 2).

Tab. 2. Numeric characteristics of variables

Variable	Gross savings	Gross disposable income	Loans and liabilities	Net financial assets
The Average	135528	1428821	1186967	2093639
The Median	42424,1	493629,5	632495,5	811683,3
Minimum	422,964	9336,601	101	6321,5
Maximum	1233797	16606167	8965786	18922067
The standard deviation	264177	3463063	1956340	4029150
Coefficient of variation	194%	242%	164%	192%
Skewness	3,728516	4,377047	3,267425	3,777899

Source: own calculations

These countries can be considered lagging due to the lowest and highest values of variables. Mahalanobis distance low values for the variables of gross savings gross disposable income have been observed for Spain and Italy. The highest measurement value dipping in 2012 respectively correspond to the countries: Sweden and Germany.

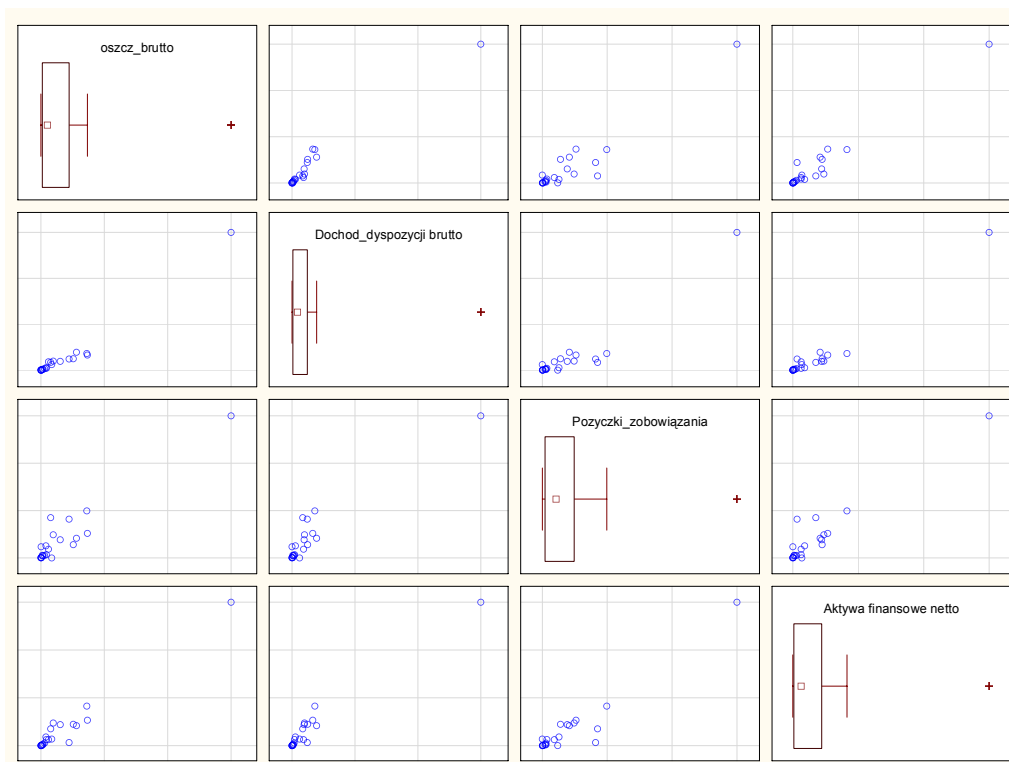
Measure dipping posted in table 4 has helped to make the classification of selected European countries due to the corresponding value of the measurement. For the purposes of analysis three measurement value class members have been defined and dipping into particular classes has been summarized (Tab. 4). The matrix chart (Fig. 1) indicates a positive relationship between the analyzed variables. It is statistically significant for a significance level of 0.05. The lowest value of the Pearson product moment correlation coefficient occurred in 2012 between the income and gross loans and commitments ($r = 0.94$) and financial assets and loans and commitments ($r = 0.95$). The value of the other coefficients of correlation were above 0.97. This indicates a very strong linear correlation between the characteristics of the examinees.

Countries belonging to the same class can be considered similar because of the numerical values of the analyzed variables. Most countries belong to class C. The calculated values of the measurements have allowed the EU selected order dipping due to the level of the analyzed features. This made it possible to extract groups of Member States, with a similar economic situation of households in 2012. European countries are characterized by a wide variety in terms of the economic situation of households. These differences may result from the level of economic development (e.g. the level of GDP, the public debt) and with different economic structures.

Tab. 3. Measure for the Mahalanobis dipping characteristics

The State	Mahalanobis distance for the variables		
	for all variables	gross savings gross disposable income	net financial assets loans and liabilities
Belgium	0,734653	0,398895	0,713368
Czech Republic	1,296497	0,779299	0,351678
Denmark	3,015958	0,722740	2,137248
Germany	2,736541	2,607927	0,489380
Estonia	0,850042	0,690127	0,628611
Ireland	0,724244	0,636695	0,519316
Spain	1,246012	0,275741	1,075134
France	1,950768	1,496580	1,154444
Italy	1,333607	0,322155	0,610250
Cyprus	1,085625	0,672968	0,945365
Lithuania	0,891566	0,751555	0,621078
Luxembourg	0,819756	0,652860	0,618637
Hungary	4,443389	4,438934	4,176703
Netherlands	0,844638	0,483171	0,235329
Austria	0,681007	0,506131	0,562549
Poland	1,189792	1,091216	0,325532
Portugal	0,708119	0,581283	0,544531
Slovenia	0,842431	0,668021	0,629993
Finland	0,791882	0,643666	0,546565
Sweden	3,120299	2,275857	0,953279
United Kingdom	2,158619	0,615355	0,322243
Norway	3,949050	1,011741	3,382996

Source: own calculations

**Fig. 1. Graphs matrix for the studied traits**

Source: own calculations

Tab. 4. The classification of Member States because of the measure values dipping

Class	Dipping measure value	The State
(A)	< \$ 0.00; 0.22)	Hungary, Norway
(B)	< 0.22; 0.44)	Sweden, Denmark, Germany, United Kingdom, France, Italy, Czech Republic
(C)	< 0,44; 0.66 >	Spain, Poland, Cyprus, Lithuania, Estonia, Netherlands, Slovenia, Luxembourg, Finland, Belgium, Ireland, Portugal, Austria

Source: own calculations

3. Conclusions

In conclusion, it can be stressed that in terms of the level of financial resources are the States in which the policy should tend towards aligning their chances to better meet the needs of the residents. The phenomenon of such delamination is typical for developed countries economically, but you should hope that in the future this should be reduced.

References

1. Adamczyk, G. (2002), Analiza dochodowych uwarunkowań konsumpcji w gospodarstwach domowych w latach dziewięćdziesiątych, Roczniki Akademii Rolniczej w Poznaniu, Poznań.
2. Donoho, D. L., Gasko, M. (1992), Breakdown Properties of Location Estimates Based on Halfspace Depth and Projected Outlyingness, The Annals of Statistics, 1992.
3. Markowski, K. (2000), Uwarunkowania decyzji inwestycyjnych gospodarstw domowych, Zeszyty Naukowe Uniwersytetu Szczecińskiego, Vol. 53.
4. Rousseeuw, P. J., Ruts, I. (1996), Bivariate Location Depth, Applied Statistics, Vol. 45.
5. Rudnicki, L. (2012), Zachowania konsumentów na rynku, PWE, Warszawa.
6. Rószkiewicz, M., Perek-Białas, J., Węziak-Białowolska, D., Zięba-Pietrzak, A. (2013), Projektowanie badań społeczno-ekonomicznych. Rekomendacje i praktyka badawcza, PWN, Warszawa.
7. Sikora, T. (2012), Zachowanie nabywców produktów luksusowych, Monografie i opracowania SGH, Warszawa, Vol. 590.
8. Sojkin, B. (1994), Determinanty konsumpcji żywności, analiza hierarchiczna, Zeszyty Naukowe Akademii Ekonomicznej, Poznań, ser. II.
9. Szwacka-Salmonowicz, J. (2003), Zmiany zachowań nabywców jako determinanta kształtowania strategii segmentacyjnych przedsiębiorstw przemysłu spożywczego w Polsce, Wydawnictwo SGGW, Warszawa.

Summary

The aim of this study is to analyze the financial situation of households in spatial terms (selected EU countries) in the light of the most important categories of economic well-being of a financial nature, i.e.: gross disposable income, gross savings, the amount of loans and liabilities and assets financial households in 2012 the material in this study were secondary data collected and published in the Eurostat database.

Keywords: households; disposable income; savings; loans and liabilities.

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