ANNA TURCZAK
Adjunct Professor,
Faculty of Economics and Computer Science
The West Pomeranian Business School in Szczecin, Poland

CHARACTERISTICS OF SAVING GENERATED BY THE BALTIC COUNTRIES

The aim of the paper is to determine the influence of particular factors on the diversity of the Baltic region countries in terms of the scale of gross national saving per capita. Two factors affecting the value of saving have been analysed in the paper: 1) the gross national disposable income per inhabitant (i.e. factor which measures the wealth of a given country) and 2) the part of saving in income (i.e. factor which represents the average propensity to save in the economy of examined country). Logarithmic method was used to assess the influence of the deviations of the said factors on the deviation of the value of saving per person.

Key words: *gross national saving; propensity to save; the Baltic region countries*
JEL: C65; E21; O11

1. Introduction

Saving – like income, consumption or investment – is a flow concept and occurs over a unit of time, whereas savings are a stock concept and are an amount accumulated at a particular point in time[1]. In this paper saving, not savings, will be analysed.

National saving is defined as the part of national disposable income that is not used for current consumption[2]. Thus, saving is a kind of sacrifice and that is

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[1] **Melvin M., Boyes W.,** Principles of macroeconomics. Boston: South-Western Cengage Learning, 2013, p. 183.

[2] European system of accounts (ESA 2010), 2013, European Commission, Luxembourg: Publications Office of the European Union, p. 273.

why can be regarded as foregone consumption. However, higher future consumption always requires earlier sacrifices[3].

When current disposable income is greater than current consumption, saving is positive. When current consumption exceeds current disposable income, savings is negative and is called dissaving[4]. The spending above income must be financed by borrowing or by using the stock of previously accumulated savings.

National saving is the sum of public saving and private saving[5]. Public saving is the saving of the government. When in a given year revenue exceeds spending and the government budget is in surplus, public saving is positive. But if the government runs a budget deficit, then public saving is negative and it means dissaving. Government saving consists of the budget saving of all levels of government – not only state government, but also regional and local.

Private saving is the saving of the private sector of the economy. Private saving can be broken down into saving done by households and saving done by business firms[6]. Household saving, also called personal saving, is saving generated by families and individuals.

The business sector save money in the form of retained earnings and depreciation allowances[7]. Retained earnings are the portion of profits not paid out to the owners and kept for continuing business uses[8]. Depreciation allowances are the funds that can be used to maintain, repair or replace the plant and equipment that have worn out or become obsolete. They can be also used to purchase additional plants and equipment.

Since private saving consists of household and business saving, national saving is made up of the saving of three groups: households, businesses, and the government.

Average propensity to consume is the proportion of total disposable income that is spent on consumption in a given period of time and average propensity to save is the proportion of total disposable income that is saved. Because disposable income is either consumed or saved, the fraction of income spent plus the fraction saved must add up to 1[9]. Propensity to consume and propensity to save are very important rates in economic research and are considered to be especially useful indicators for analysis of economies[10].

It is important to distinguish net national saving from gross national saving. Net national saving is gross national saving less depreciation. Whenever gross saving exceeds depreciation, net saving is positive. If gross saving is less than depreciation, net saving is negative.

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[3] **Loayza N., Schmidt-Hebbel K., Servén L.,** 1999, What drives private saving across the world? Central Bank of Chile Working Papers, No. 47, p. 4.

[4] **Schiller B.R., Hill C., Wall S.,** The economy today. New York: McGraw-Hill/Irwin, 2013, p. 185.

[5] **Hall R.E., Papell D.H.,** Macroeconomics. Economic growth, fluctuations, and policy. New York: Norton & Company, 2005, p. 43.

[6] **Schrooten M., Stephan S.,** Private savings in eastern European EU-accession countries: evidence from a dynamic panel data model. German Institute for Economic Research, Discussion Paper No. 372, 2003, p. 11.

[7] **Slavin S.L.,** Economics. New York: McGraw-Hill/Irwin, p. 115.

[8] **Schiller B.R., Hill C., Wall S.,** 2013, op. cit., 2011, pp. 209, 210.

[9] **McConnell C.R., Blue S.L., Flynn S.M.,** Economics. Principles, problems, and policies. New York: McGraw-Hill/Irwin, 2012, p. 655.

[10] **Verrinder J.,** Saving rates in Europe. Statistics in Focus, Vol. 33, Theme 2, European Commission, 2002, p. 1.

2. Research tasks

The interesting issue is how the Baltic region countries vary in terms of the value of achieved saving[11]. However, the absolute value of saving may not be the basis for comparisons between the countries, as it would be difficult to assess if this value is large or small. Hence, any comparison shall be made solely on the basis of relative values. It is possible – for example – to relate the amount of the saving of a particular country to the number of its inhabitants, thus creating the quotient constituting the desired comparative value.

The aim of the article is therefore to determine the influence of particular factors on the diversity of the Baltic Rim countries with regard to the scale of annual national saving per capita. Two factors affecting the value of **gross national saving per person**[12], namely the **gross national disposable income per capita**[13] and the **part of saving in income**, shall be analysed in this paper. The first factor measures the wealth of a given country and the latter represents the average propensity to save[14] in the economy of examined country. The mean values relating to the group of twenty eight the European Union member countries have been adopted as the basis for all comparisons. The values referring to the European Union will be compared with the results obtained for each of the examined countries and the final conclusions shall be drawn on those grounds.

The difference between the value of the analysed variable for a given country and the value of this variable for the European Union will be defined as a deviation for the purpose of this article. Such a deviation may be positive or negative. Thus, in each case the deviation is mentioned in this article, it shall be assumed as positive or negative deviation from the mean EU value.

Shall the wealth of a given country and its propensity to save be adopted as the variables affecting the value of saving per capita, it seems important to assess – for each of the discussed countries – the influence of the deviations of these two factors on the deviation of the achieved saving per inhabitant. In order to do so, **causal analysis** shall be conducted, enabling the examination of the structure of saving deviations in the economies of individual countries on relation to the mean EU economy.

To the main purpose of the article the following research tasks have been assigned:

1. Assessment of the gross national saving per capita in the analysed European countries against the mean value of this variable characterising the European Union.
2. Comparison of the gross national disposable income per inhabitant generated by the individual countries with the mean EU value.

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[11] As it was already mentioned, saving can be considered either gross or net. The net measure takes into account the consumption of capital assets during the production process, thereby reducing saving by the amount required to replace capital consumed. However there is a certain lack of harmonization between countries' measurement of consumption of fixed capital (even among EU countries), and therefore this paper concentrates on gross measures (Verrinder J., 2002, op. cit., p. 1).

[12] Further in this article terms "gross national saving", "national saving" and "saving" will be used interchangeably.

[13] Further in this article terms 'gross national disposable income', 'national income' and 'income' will be used interchangeably.

[14] Further in this article terms 'average propensity to save' and 'propensity to save' will be used interchangeably.

3. Assessment of the part of saving in income in each of the discussed countries in relations to the value of this measure regarding the European Union.
4. Causal analysis of the differences in the gross national saving per person in particular countries.

3. Methodology and data

The objective of the causal analysis is to determine how various factors affect a given economic variable, i.e. what the direction and degree of their impact is. Therefore, the causal analysis can answer the question whether a particular factor causes an increase or a decrease of the studied variable and assess how big the impact of this factor is[15]. **Logarithmic method** will be used to carry out the causal analysis.

The examined variable x (annual gross national saving per inhabitant) can be presented as a product of factors y (annual gross national disposable income per inhabitant) and z (the quotient of saving and income). The value of variable x for the European Union will be the basis of reference and shall be marked by x_{EU}. In turn, the value of this variable calculated for the i-th economy will be denoted as x_i.

Ratio $r_{i;x}$ in the form of $\dfrac{x_i}{x_{EU}}$ was constructed. Due to the fact that $x_i = y_i z_i$ and $x_{EU} = y_{EU} z_{EU}$, when dividing x_i by x_{EU}, the obtained result is:

$$\frac{x_i}{x_{EU}} = \frac{y_i z_i}{y_{EU} z_{EU}}, \tag{1}$$

where:

x_i, y_i, z_i - the values of variables x, y, and z referring to the i-th country;

x_{EU}, y_{EU}, z_{EU} - the values of variables x, y, and z referring to the European Union.

The same can be presented in a different way, namely:

$$r_{i;x} = r_{i;y} \cdot r_{i;z}, \tag{2}$$

where:

$$r_{i;x} = \frac{x_i}{x_{EU}}, \; r_{i;y} = \frac{y_i}{y_{EU}}, \; r_{i;z} = \frac{z_i}{z_{EU}}.$$

Taking the natural logarithms of both sides of the equation (2), the following expression can be obtained:

$$\ln(r_{i;x}) = \ln(r_{i;y} \cdot r_{i;z}). \tag{3}$$

Then, using the property stipulating that the logarithm of a product of two numbers is equal to the sum of the logarithms of these numbers, the equation presented below can be derived:

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[15] **Turczak A.,** Analiza przyczynowa różnic w wielkości nakładów na badania i rozwój w wybranych krajach Unii Europejskiej i świata [Causal analysis of differences in level of expenditures on research and development in selected countries of European Union and the world]. Studia ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, Vol. 276, 2016, p. 24.

$$\ln(r_{i;x}) = \ln(r_{i;y}) + \ln(r_{i;z}). \tag{4}$$

The next step is to divide both sides of this equation by the term $\ln(r_{i;x})$.

This results in the expression:

$$1 = \frac{\ln(r_{i;y})}{\ln(r_{i;x})} + \frac{\ln(r_{i;z})}{\ln(r_{i;x})}, \tag{5}$$

where:

$\dfrac{\ln(r_{i;y})}{\ln(r_{i;x})}, \dfrac{\ln(r_{i;z})}{\ln(r_{i;x})}$ – the impact of the deviation of y factor and the impact of the deviation of z factor on the deviation of x variable.

The final step is to multiply both sides of the equation (5) by the value of deviation calculated for variable x. The result is:

$$x_i - x_{EU} = (x_i - x_{EU}) \cdot \frac{\ln(r_{i;y})}{\ln(r_{i;x})} + (x_i - x_{EU}) \cdot \frac{\ln(r_{i;z})}{\ln(r_{i;x})}, \tag{6}$$

where:

$(x_i - x_{EU}) \cdot \dfrac{\ln(r_{i;y})}{\ln(r_{i;x})}$,

$(x_i - x_{EU}) \cdot \dfrac{\ln(r_{i;z})}{\ln(r_{i;x})}$ – the deviation of variable x caused by the change of factor y and the change of factor z.

In this paper, the causal analysis will allow to answer the question how the two factors influence the deviations of the annual saving per capita in the countries compared to the value characterising the European Union. The analysis will be conducted based on data from 2013. The data are collected in Table 1.

Table 1

Gross national saving, gross national disposable income and population in the selected European countries in 2013[16]

Specification	Annual saving (in mln euro)	Annual income (in mln euro)	Population* (in thous.)
Symbols	S	I	P
EU (28 countries)	2,480,506.8	12,914,770.9	505,734
Austria	75,275.2	307,618.6	8,496
Belgium	75,485.0	374,948.0	11,237
Bulgaria	9,115.1	41,066.6	7,268
Cyprus	1,500.5	16,026.8	1,192
Czech Republic	31,531.3	138,208.5	10,483
Denmark	61,393.3	253,134.4	5,638
Estonia	4,843.0	18,233.9	1,285
Finland	32,947.0	192,105.0	5,439
France	363,980.0	2,061,174.0	63,853
Germany	669,370.0	2,773,830.0	80,667
Greece	19,372.1	182,545.7	10,893
Italy	282,535.1	1,535,198.4	59,866

[16] Due to the fact that reliable data regarding the gross national savings in 2013 have not been published yet, the Table has not include: Croatia, Hungary, Ireland, Luxemburg, Malta, Poland, Romania.

Latvia	5,150.3	23,615.8	2,021
Lithuania	6,644.5	34,545.2	2,964
Netherlands	144,947.0	588,780.0	16,802
Portugal	26,058.3	164,464.7	10,610
Slovakia	14,971.8	69,364.8	5,422
Slovenia	7,915.0	34,795.6	2,060
Spain	194,851.0	1,006,462.0	47,888
Sweden	105,908.9	425,350.9	9,592
United Kingdom	181,784.1	1,846,823.1	64,229

* midyear estimates

Source: Eurostat database (date of access: 22.03.2017).

4. Analysis of the ratio constructed for the gross national saving per capita

The first task carried out is the evaluation of the scale of saving per capita in each of the studied countries in relation to the mean value of the measure in the European Union. The amount of saving per person for the i-th country and for the EU were calculated according to the following formulas:

$$x_i = \frac{S_i}{P_i}, \; x_{EU} = \frac{S_{EU}}{P_{EU}} \tag{7}$$

where:

$\quad x_i$, x_{EU} – gross national saving per capita;

$\quad S_i$, S_{EU} – gross national saving;

$\quad P_i$, P_{EU} – population.

Ratio $r_{i;x}$ was constructed by dividing the value x_i computed for the i-th country by the value x_{EU} referring to the European Union. The obtained results have been presented in Table 2.

Table 2

Gross national saving per capita

Specification	Annual saving per capita (in euro per person)	Ratio regarding saving per capita	Specification	Annual saving per capita (in euro per person)	Ratio regarding saving per capita
Symbols	$x = \dfrac{S}{P}$	$r_{i;x} = \dfrac{x_i}{x_{EU}}$	Symbols	$x = \dfrac{S}{P}$	$r_{i;x} = \dfrac{x_i}{x_{EU}}$
Sweden	11,041	2.251	Slovenia	3,842	0.783
Denmark	10,889	2.220	Estonia	3,769	0.768
Austria	8,860	1.806	Czech Republic	3,008	0.613
Netherlands	8,627	1.759	United Kingdom	2,830	0.577
Germany	8,298	1.692	Slovakia	2,761	0.563
Belgium	6,718	1.370	Latvia	2,548	0.520
Finland	6,058	1.235	Portugal	2,456	0.501
France	5,700	1.162	Lithuania	2,242	0.457
EU (28)	**4,905**	**1.000**	Greece	1,778	0.363
Italy	4,719	0.962	Cyprus	1,259	0.257
Spain	4,069	0.830	Bulgaria	1,254	0.256

Source: *Own computation based on Table 1.*

The highest value of saving per inhabitant of all the studied countries has been observed in Sweden – in 2013 saving per capita in this country was 125.1% higher than the mean value obtained for all the EU member countries. The lowest saving per person was recorded in Bulgaria – the value of this variable in Bulgaria equaled only 1/4 of the EU mean.

5. Analysis of the ratio constructed for the gross national disposable income per capita

The second task is the evaluation of the gross national disposable income per inhabitant in each of the analysed countries against the mean value computed for the European Union. The value of income per person for the *i*-th country and for the EU were calculated as follows:

$$y_i = \frac{I_i}{P_i}, \quad y_{EU} = \frac{I_{EU}}{P_{EU}} \tag{8}$$

where:

y_i, y_{EU} – gross national disposable income per capita;

I_i, I_{EU} – gross national disposable income.

Ratio $r_{i;y}$ was constructed by dividing the value y_i computed for the *i*-th country by the value y_{EU} referring to the European Union. Table 3 contains results of the relevant calculations.

Table 3

Gross national disposable income per capita

Specification	Annual income per capita (in euro per person)	Ratio regarding income per capita	Specification	Annual income per capita (in euro per person)	Ratio regarding income per capita
Symbols	$y = \dfrac{I}{P}$	$r_{i;y} = \dfrac{y_i}{y_{EU}}$	Symbols	$y = \dfrac{I}{P}$	$r_{i;y} = \dfrac{y_i}{y_{EU}}$
Denmark	44,898	1.758	Spain	21,017	0.823
Sweden	44,344	1.736	Slovenia	16,891	0.661
Austria	36,207	1.418	Greece	16,758	0.656
Finland	35,320	1.383	Portugal	15,501	0.607
Netherlands	35,042	1.372	Estonia	14,190	0.556
Germany	34,386	1.347	Cyprus	13,445	0.527
Belgium	33,367	1.307	Czech Republic	13,184	0.516
France	32,280	1.264	Slovakia	12,793	0.501
United Kingdom	28,754	1.126	Latvia	11,685	0.458
Italy	25,644	1.004	Lithuania	11,655	0.456
EU (28)	**25,537**	**1.000**	Bulgaria	5,650	0.221

Source: *Own computation based on Table 1.*

The highest value of gross national disposable income per capita has been observed in Denmark – in 2013 income per person in this country was 75.8% higher than the value computed for the entire European Union. In turn, Bulgaria recorded the lowest value of gross national disposable income per capita at that time – income per inhabitant in Bulgaria was almost five times lower than the EU mean.

6. Analysis of the ratio constructed for the saving value in relation to the income value

The third task is the comparison of the average propensity to save in the studied economies. To do this, the relation of gross national saving to gross national disposable income for each *i*-th country and for the EU were determined as follows:

$$z_i = \frac{S_i}{I_i}, \quad z_{EU} = \frac{S_{EU}}{I_{EU}} \tag{9}$$

where:

z_i, z_{EU} – the part of saving in income.

Ratio $r_{i;z}$ was calculated by dividing z_i value computed for the *i*-th country by the value z_{EU} referring to the European Union as a whole. The results of the calculations have been presented in Table 4.

Tabele 4

Gross national saving in relations to gross national disposable income

Specification	The part of saving in income	Ratio regarding the part of saving in income	Specification	The part of saving in income	Ratio regarding the part of saving in income
Symbols	$z = \dfrac{S}{I}$	$r_{i;z} = \dfrac{z_i}{z_{EU}}$	Symbols	$z = \dfrac{S}{I}$	$r_{i;z} = \dfrac{z_i}{z_{EU}}$
Estonia	0.266	1.383	Belgium	0.201	1.048
Sweden	0.249	1.296	Spain	0.194	1.008
Netherlands	0.246	1.282	Lithuania	0.192	1.001
Austria	0.245	1.274	EU (28)	0.192	1.000
Denmark	0.243	1.263	Italy	0.184	0.958
Germany	0.241	1.256	France	0.177	0.919
Czech Republic	0.228	1.188	Finland	0.172	0.893
Slovenia	0.227	1.184	Portugal	0.158	0.825
Bulgaria	0.222	1.156	Greece	0.106	0.553
Latvia	0.218	1.135	United Kingdom	0.098	0.512
Slovakia	0.216	1.124	Cyprus	0.094	0.487

Source: *own computation based on Table 1.*

Among all the examined countries, the highest ratio between the value of saving and income was observed in Estonia – in 2013 the quotient of saving and income was as high as 138.3% of the EU average. In turn, the lowest flow of saving in comparison with income was noted in Cyprus – the considered quotient was only 48.7% of the value of the relevant measure calculated for the entire EU.

7. Empirical results obtained from the logarithmic method

In the last part of this research the remaining stages of the logarithmic method will be performed. This will result in receiving information regarding the impact effect of the first factor and the impact effect of the second factor on the deviation of the analysed variable. The results for 2013 are shown in Table 5.

The importance assigned to the causes of the occurring deviations of the value of x variable for i-th country from the value of this variable for the European Union

Specification	Deviation of saving per capita	of which		Importance of the first factor	Importance of the second factor
		due to the higher/lower income per capita	due to the higher/lower part of saving in income		
Symbols	$x_i - x_{EU}$			$\dfrac{\ln(r_{i;y})}{\ln(r_{i;x})}$	$\dfrac{\ln(r_{i;z})}{\ln(r_{i;x})}$
Sweden	6,137 euro	4,174 euro	1,963 euro	68.0%	32.0%
Denmark	5,984 euro	4,234 euro	1,750 euro	70.7%	29.3%
Austria	3,955 euro	2,335 euro	1,620 euro	59.0%	41.0%
Netherlands	3,722 euro	2,086 euro	1,636 euro	56.0%	44.0%
Germany	3,393 euro	1,920 euro	1,473 euro	56.6%	43.4%
Belgium	1,813 euro	1,542 euro	271 euro	85.0%	15.0%
Finland	1,153 euro	1,771 euro	–618 euro	153.6%	–53.6%
France	796 euro	1,240 euro	–445 euro	155.9%	–55.9%
Italy	–185 euro	20 euro	–205 euro	–10.9%	110.9%
Spain	–836 euro	–871 euro	36 euro	104.3%	–4.3%
Slovenia	–1,063 euro	–1,799 euro	736 euro	169.3%	–69.3%
Estonia	–1,136 euro	–2,534 euro	1,398 euro	223.1%	–123.1%
Czech Republic	–1,897 euro	–2,565 euro	668 euro	135.2%	–35.2%
United Kingdom	–2,075 euro	448 euro	–2,522 euro	–21.6%	121.6%
Slovakia	–2,143 euro	–2,579 euro	435 euro	120.3%	–20.3%
Latvia	–2,356 euro	–2,814 euro	457 euro	119.4%	–19.4%
Portugal	–2,449 euro	–1,767 euro	–681 euro	72.2%	27.8%
Lithuania	–2,663 euro	–2,668 euro	5 euro	100.2%	–0.2%
Greece	–3,126 euro	–1,298 euro	–1,828 euro	41.5%	58.5%
Cyprus	–3,646 euro	–1,720 euro	–1,926 euro	47.2%	52.8%
Bulgaria	–3,651 euro	–4,038 euro	387 euro	110.6%	–10.6%

Source: *Own computation based on Tables 2, 3 & 4.*

As an example, the values obtained for Latvia shall be interpreted. Saving per person in Latvia in 2013 was 2,356 euro lower (i.e. 48.0% lower) than the mean computed for twenty eight EU countries. Had the gross national disposable income per person in Latvia been at the EU level, the annual saving per inhabitant would have even exceeded by 457 euro the EU mean, which would have been caused by higher average propensity to save. However, if the part of saving in income had been in Latvia as low as it was on average in the European Union, the annual saving per inhabitant would have been lower than in the EU considered as a whole by as much as 2,814 euro and this could have been attributed solely to a lower income per capita.

8. Recommendations for the Baltic region countries and the final conclusions

Table 6 presents the values of ratios concerning eight consecutive years of the period 2006–2013. These ratios were computed for the countries surrounding the Baltic Sea.

Gross national saving per person and the factors affecting saving – a comparison of the Baltic Rim countries (results for 2006, 2007, 2008, 2009, 2010, 2011, 2012, and 2013)

Higher saving in relation to income	**Estonia:** $0.768 = 0.556 \times 1.383$ [I] $0.727 = 0.515 \times 1.412$ [II] $0.653 = 0.470 \times 1.391$ [III] $0.553 = 0.434 \times 1.275$ [IV] $0.559 = 0.443 \times 1.262$ [V] $0.500 = 0.468 \times 1.070$ [VI] $0.507 = 0.453 \times 1.118$ [VII] $0.462 = 0.401 \times 1.153$ [VIII]	**Sweden:** $\mathbf{2.251} = 1.736 \times 1.296$ [I] $\mathbf{2.229} = 1.694 \times 1.316$ [II] $\mathbf{2.196} = 1.653 \times 1.329$ [III] $\mathbf{2.098} = 1.554 \times 1.350$ [IV] $\mathbf{1.725} = 1.362 \times 1.266$ [V] $\mathbf{2.013} = 1.492 \times 1.349$ [VI] $\mathbf{1.960} = 1.509 \times 1.299$ [VII] $\mathbf{1.874} = 1.486 \times 1.261$ [VIII]
	Latvia: $0.520 = 0.458 \times 1.135$ [I] $0.505 = 0.435 \times 1.161$ [II] $0.428 = 0.377 \times 1.136$ [III] $0.403 = 0.348 \times 1.159$ [IV] $0.561 = 0.390 \times 1.440$ [V] $0.350 = 0.411 \times 0.852$ [VI] $0.298 = 0.365 \times 0.817$ [VII] $0.231 = 0.294 \times 0.787$ [VIII]	**Denmark:** $\mathbf{2.220} = 1.758 \times 1.263$ [I] $\mathbf{2.102} = 1.734 \times 1.212$ [II] $\mathbf{2.107} = 1.749 \times 1.205$ [III] $\mathbf{2.126} = 1.767 \times 1.203$ [IV] $\mathbf{1.930} = 1.736 \times 1.112$ [V] $\mathbf{2.070} = 1.724 \times 1.201$ [VI] $\mathbf{1.893} = 1.669 \times 1.135$ [VII] $\mathbf{2.076} = 1.707 \times 1.216$ [VIII]
	Lithuania: $0.457 = 0.456 \times 1.001$ [I] $0.367 = 0.400 \times 0.919$ [II] $0.345 = 0.383 \times 0.902$ [III] $0.312 = 0.353 \times 0.885$ [IV] $0.252 = 0.357 \times 0.707$ [V] $0.260 = 0.385 \times 0.674$ [VI] $0.252 = 0.336 \times 0.750$ [VII] $0.225 = 0.302 \times 0.745$ [VIII]	**Germany:** $\mathbf{1.692} = 1.347 \times 1.256$ [I] $\mathbf{1.630} = 1.296 \times 1.257$ [II] $\mathbf{1.618} = 1.301 \times 1.244$ [III] $\mathbf{1.591} = 1.273 \times 1.249$ [IV] $\mathbf{1.530} = 1.263 \times 1.211$ [V] $\mathbf{1.466} = 1.215 \times 1.207$ [VI] $\mathbf{1.451} = 1.198 \times 1.211$ [VII] $\mathbf{1.387} = 1.203 \times 1.153$ [VIII]
	EU (28 countries) $\mathbf{1.000 = 1.000 \cdot 1.000}$	
Lower saving in relation to income	**Poland:** data not available yet [I] $0.353 = 0.374 \times 0.943$ [II] $0.350 = 0.375 \times 0.933$ [III] $0.340 = 0.372 \times 0.914$ [IV] $0.330 = 0.340 \times 0.969$ [V] $0.333 = 0.379 \times 0.881$ [VI] $0.275 = 0.319 \times 0.863$ [VII] $0.244 = 0.297 \times 0.823$ [VIII]	**Finland:** $\mathbf{1.235} = 1.383 \times 0.893$ [I] $\mathbf{1.316} = 1.388 \times 0.948$ [II] $\mathbf{1.384} = 1.400 \times 0.988$ [III] $\mathbf{1.473} = 1.382 \times 1.066$ [IV] $\mathbf{1.555} = 1.396 \times 1.114$ [V] $\mathbf{1.700} = 1.404 \times 1.211$ [VI] $\mathbf{1.691} = 1.361 \times 1.243$ [VII] $\mathbf{1.639} = 1.337 \times 1.226$ [VIII]

← **Lower** income per inhabitant   **Higher** income per inhabitant →

[I] results for 2013   [II] results for 2012   [III] results for 2011   [IV] results for 2010
[V] results for 2009   [VI] results for 2008   [VII] results for 2007   [VIII] results for 2006

Source: *Own computation based on Eurostat database (date of access: 22.03.2017).*

Estonia, Latvia and Lithuania are relatively poor and this is the main obstacle to increase the amount of their flows of saving. In case of Estonia, Latvia and Lithuania, the income per person is much lower than the EU average, which results in the saving per person also lower than it is on average

in the EU. Thus, the only way to raise national saving in those countries is the above-average increase in the propensity to save, facilitating the growth of income in the long-term perspective. Estonia, Latvia and Lithuania are on track to achieve this goal, as propensity to save in those economies exceeds EU average more and more every year (in 2013 this excess was slight in the case of Lithuania, however considerable in the case of Latvia and rather large in the case of Estonia). The only proper recommendation for those countries seems to be constant stimulation of the growth of their national saving rate, which would result in the increase of national income in the subsequent periods, followed by the further growth in the national saving and other positive changes in income. The analysis of data of 2006–2013 indicates that this was the actual scenario realised for Estonia, Latvia and Lithuania, as all three ratios – $r_{i;x}$, $r_{i;y}$ and $r_{i;z}$ – were growing in those countries. It is thus justified to expect that their national income will become closer and closer to the EU level.

The wealthiest of the countries surrounding the Baltic Sea, i.e. Sweden, Denmark, Germany and Finland, are definitely in a different situation. In 2006–2013, saving per capita was above the EU average in all those economies. Thus, it is clear that they also recorded income per capita higher than the EU average. It should also be noted that in the case of Sweden, Denmark, Germany and Finland the impact of the first factor – i.e. income per capita – is stronger than the impact of the second factor – propensity to save. Therefore, the fact that saving per inhabitant in these four aforementioned economies is higher than EU average results mostly from their being wealthier than the others.

It should also be highlighted that Finland – as the only country of the Baltic region – shows propensity to save that is smaller and smaller than the average value characterising the entire EU. Therefore, the flow of its national saving per capita is decreasing year by year, compared with the value obtained by other EU countries. Should this negative tendency continue, Finland would no longer enjoy national income per capita over 1/3 higher than the EU average. This would be the consequence of $r_{i;y}$ ratio declining as a result of decreasing $r_{i;z}$ and $r_{i;x}$, and the discrepancy between the income per inhabitant in Finland and the income per inhabitant in the EU will be shrinking ultimately.

Unfortunately, Poland's performance is the least favorable compared to other countries bordering the Baltic Sea. There are two reasons for the low value of the country's saving – both the relatively low income and small – comparing to other countries – propensity to save. The income growth will not accelerate, if Poland does not limit current consumption for the sake of raising the saving. Although throughout 2006–2013 the values of all three ratios ($r_{i;x}$, $r_{i;y}$ and $r_{i;z}$) increased, the levels of national saving per capita, national income per capita and propensity to save are still lower in Poland than the EU averages. In order to bridge the gap between Poland and the other Baltic countries, it is necessary for Poland to take many unpopular and difficult decisions (especially by the central government), namely reducing budgetary expenses and, additionally, eliminating the loopholes in the tax system. The result would be the increase in public saving (or actually the decline of public dissaving expressed as budgetary deficit). A number of incentives facilitating the growth of the rate of private saving ought to be launched simultaneously.

Poland should promptly take up that challenge as – according to data in Table 6 – it has the most to catch up with of all the countries in the Baltic region.

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ԱՆՆԱ ՏՈՒՐՉԱԿ

*Լեհաստանի Շչեցինա քաղաքի Արևմտապոմերանյան
բիզնեսի բարձրագույն դպրոցի տնտեսագիտության և ինֆորմատիկայի
ֆակուլտետի պրոֆեսորի ասիստենտ*

*Բալթյան երկրներում ձևավորված խնայողությունների
առանձնահատկությունները.–* Հոդվածի նպատակն է համա-
պատասխան գործոնների ազդեցության գնահատումը Բալթ-
յան տարածաշրջանի երկրների տարբերական առումով՝
բնակչության 1 շնչի հաշվով համախառն ազգային խնայողու-
թյունների ծավալի տեսանկյունից: Վերլուծության է ենթարկ-
վել խնայողության արժեքի 2 գործոն՝ 1. մեկ շնչի հաշվով հա-
մախառն զուտ եկամուտը /տվյալ երկրի բարեկեցության
գնահատման գործոն/, 2. եկամտում համախառն ազգային
խնայողության չափը /տվյալ երկրի տնտեսության՝ խնայողու-
թյանը միջին հակվածությունը/: Կիրառվել է լոգարիթմական
մեթոդ ազդված գործոնների շեղման ազդեցությունը մարդուն
առնչվող խնայողության արժեքի շեղումը գնահատելու նպա-
տակով:

Հիմնաբառեր. *համախառն ազգային խնայողություններ, խնա-
յողության հակում, Բալթյան տարածաշրջանի երկրներ:*
JEL: C65; E21; O11

АННА ТУРЧАК

*Ассистент профессора факультета Экономики и информатики
Западно-померанской высшей школы бизнеса в Щецине, Польша*

***Особенности сбережений, образованных в Бал-
тийских странах.—*** Целью данной статьи является опре-
деление влияния определенных факторов на различие
стран Балтийского региона с точки зрения масштаба вало-
вого национального сбережения на душу населения. Два
фактора, влияющие на стоимость экономии, были проана-
лизированы в статье: 1) валовой национальный чистый до-
ход на одного жителя (т.е. фактор, измеряющий благосо-
стояние данной страны) и 2) часть валового сбережения в
доходе (т.е. фактор, представляющий среднюю склонность
к сбережению в экономике данной страны). Использовался
логарифмический метод для оценки влияния отклонений
перечисленных факторов на отклонение стоимости сбере-
жения на человека.

Ключевые слова: *валовая национальная экономия, склон-
ность к экономии, страны Балтийского региона.*
JEL: C65; E21; O11