Income Smoothing Over the Life Course in The Baltic Countries

The aim of the paper is to assess welfare provisions in terms of a reduction of income volatility across an individual's life course. The research strategy is based on a novel method, which helps analyse policy responses from a set of perspectives: money flows through a tax-benefit system aimed at groups facing social risks; tax liabilities and benefit rights; income smoothing during different life-course phases, within different socio-economic contexts and social protection systems. The paper has an international dimension by taking a comparative view on the three Baltic countries. Institutional structures of state intervention into income redistribution are similar in the Baltic countries. Major share of resources for distributional institutions come via contributory social insurance systems. The analysis of households' income data revealed, that the income smoothing pattern in all three Baltic countries is rather similar as well and it is at the lowest scale among the main groups of EU countries. Differences between Baltic countries are smaller, than differences between these countries and other groups of coutries in the EU.

Key words: tax-benefits system, income smoothing, life course income distribution

1. Introduction

Income insecurity and inequality in the Baltic countries is in general quite high compared to other EU countries. This is in large part due to the weak redistributive roles of their national tax and social benefit systems. Baltic countries devote a considerably smaller share of public expenditures to social transfers and have rather low tax revenues. The ratio of social transfers to GDP varied across EU Member States from less than 15% in Lithuania to over thirty percent in France. Nine Member States – Finland, France, Denmark, Austria, Italy, Germany, Sweden, UK and Belgium – devoted at least 25% of GDP to social benefits, while Baltic countries spent less than 15% of GDP. The importance of social programs in redistributing incomes is well-known, and has been the subject of considerable scholarly attention. Traditional investigations of the tax-benefit systems highlight their role in a vertical and horizontal redistribution. However, this approach is limited due to welfare state development trends, when the majority of public revenues and expenses circulate among middle-class society and the redistributive advantage of the system seems doubtful. However, the welfare state also does perform the function of income smoothing over the life course, aiming to correct for the failures of financial markets (Barr 2001). The life-course approach allows to treat Welfare State as an instrument, where a person's income is smoothed from productive periods to less productive ones.

Life-course perspective examines patterns, experiences and timing within different scopes such as education, health, family and work (Cooke & Gazso, 2009). But the question arises, where does life-course perspective lays down in social policy agenda? On the theoretical level, the life-cycle term is used by Björklund & Palme (1996), Nelissen (1998), Bartels (2011), Hoynes & Luttmer (2011), Dinan (2015) and others. Other scholars preferably use life-course term and it includes authors such as Hicks (2004, 2007, 2008), Cooke & Gazso (2009), Brewer et al. (2012), Kvist (2013, 2016), Bouget et al. (2015), Van Vliet & Wang (2015). Other authors (O' Donoghue, 2001; Brewer et al., 2012) use these terms synonymously. Both definitions in social policy literature emphasize compensatory value against income volatility over the whole life course.

Alwin (2013) describes differences between life-cycle and life-course perspective. Life-cycle, from sociological perspective, refers to series of continuous life stages across the lifetime, which are socially constructed. Life-course perspective, on the other hand, marks transitions and trajectories across the lifetime, that includes changing environment, development, experiences and risk factors. Kvist (2016, p. 47) states, that life-cycle approach cannot be used in social investment and policymaking, because it is too homogeneous and secondly – it does not take into account the social issues and returns over time. To put it in other words, life-course paradigm is more appropriate to our income smoothing framework as it considers different generational characteristics as heterogeneous and complex ones.

Most importantly, life-course perspective is reasonable when speaking about various redistributive social protection policies. O'Donoghue (2001) indicates, that redistribution measurement over the life-course is more accurate, as it is less dependent on chance, different career trajectories and income mobility over the life. That is to say, life-course approach is more precise and "sensitive" to different life aspects, and, as a consequence, creates opportunities to implement more accurate social protection reforms. Hicks (2004) qualifies this picture by saying that life-course perspective is very useful in social policy field, because it focuses on participation of individuals in social institutions during their lives as well as interchanges resources between individuals and those institutions. It examines the roles of people relating to different kind of welfare institutions during lifetime period. Hicks (2007) adds that it is important to examine future-oriented social policy and its possible effects in the future as well as possible social and labour market trends. Furthermore, as reported by Cooke & Gazso (2009) the life-course perspective is also beneficial as it emphasizes the importance of social and economic context with personal experiences and decisions. Implementation of the life-course paradigm not only enables to see more accurate approach during life trajectories, it also allows to evaluate social protection effects in time. Tax and benefit institutional structures have to be adjusted with "life-course thinking" as they shape individual life trajectory and redistribute.

New post-communist welfare states, according to Taylor & Gooby (2004), have to challenge lack of solidarity and question welfare sustainability. The redistributive social policy mechanisms encounter challenges related with lack of solidarity and not being able to cope with the new social risks (Taylor-Gooby 2004). The problem of income redistribution justification is very relevant to Baltic countries, where inter-personal income redistribution is subject to suspicion and distrust, and as a consequence, it is difficult to legitimize the welfare state (Saar 2008). The investigation of the redistributive role of taxes and benefits is important as it questions population's trust and participation level in social security systems, which are crucial elements for sustainable social development.

For the purpose of state intervention justification, life course perspective for income redistribution analysis could be very relevant having in mind high income inequality and low level redistribution in the Baltic countries. The life course perspective allows presenting state intervention into income redistribution processes as an income smoothing, that is useful from pure self-interest aspire of individuals.

This paper seeks to reveal how social protection systems via tax and benefit system smooths income over the whole life-course period in Lithuania, Latvia and Estonia. The ultimate outcome would be to see how cross-country tax and benefit systems help to secure people from income volatility risks in order to prevents them from income insecurity.

Institutions of public revenue and social expenditures should enable individuals to reallocate consumption over their lifetime. Taxes and social benefits originally have both lost income compensatory effect in interpersonal income distribution as well as income smoothing effect in intrapersonal income distribution. They allow person to continue consumption of goods and services despite reduction of market income in life trajectory. Cash transfers generosity depends on redistributive policies. Research findings reveal that the most egalitarian welfare states combine three dimensions: universalism, low-income targeting and high transfer share (Brandy & Bostic, 2015). Other authors point out the importance of actual size of the benefits. Ferrarini el al. (2016) criticises traditional social protection profile by saying that there is not enough emphasis on the size of the benefits. In general, the redistributive impact of tax and benefit system depends on their institutional structure, size and progressivity. Institutional social protection structure plays a significant role to population well-being in various stages of life cycle.

We focus our paper on tax and benefit effects on personal income smoothing during the life course in Lithuania, Latvia and Estonia. Due to limited longitudinal data in Baltic countries, we use standardized annual data and investigate tax and benefit structure for different age groups. Our research is based on the Olivia framework as a standardized concept for social policy research, which helps to describe characteristics of individuals and institutions (Hicks, 2008). It is very dynamic approach as it looks at the whole personal life-course perspective and individual interactions with different institutions. As Hicks (2008) states, the framework is based on the idea of hypothetical made-up individual, named Olivia. We use two modules of simplified version of the Olivia framework. First of them seeks to explain income distribution institutions. Hicks (2008) names many types of institutions (ex. public institutions, government), but as long as this research main focus is income smoothing in Baltics via taxes and benefits, we analyse social benefits and personal income tax systems. Second, we analyse outcomes of these institutions, how do they affect to the income allocation in different age groups in Lithuania, Latvia and Estonia.

2. Methods and sources of data

We use the EU's Mutual Information System on Social Protection (MISSOC) data for a comparative analysis of social security institutions in the Baltic countries. MISSOC is annually updated series of national social security systems of the EU countries (European Commission, 2017). MISSOC data enables to do a very detailed comparative cross-country analysis of each Baltic country social protection system and to evaluate similarities and differences of institutional welfare structure. Furthermore, EUROMOD (Tax-Benefit Microsimulation Model for the European Union) provides a country reports about taxes and social contributions of each Baltic country. For this research EUROMOD country reports of year 2015 is used.

In order to investigate income smoothing effect of the tax and benefit systems in Lithuania, Latvia and Estonia, we the EU Statistics on Income and Living Conditions (EU-SILC) database. EU-SILC database is useful for this analysis because it allows to see different respondents by their personal ID and the household ID. Finally, the dataset enables to research various personal indicators such as income, age, paid taxes and social contributions and received benefits. As this research seeks to investigate social investment perspective over the life-course, data of 2010-2015 period was chosen to analyse Lithuania, Latvia and Estonia. The analysis of a five year period allows to see how welfare institutional structure of tax and benefit system has changed after the economic crisis up until 2015.

In order to analyse tax-benefit structure over the life course, following EU-SILC database variables were used: employee cash or near cash income, employers' and employees' social insurance contribution, personal income tax, unemployment benefits, old-age benefits, survivor benefits, sickness benefits, disability benefits, family/children related allowances and social exclusion benefits.

As the research focuses on a personal life-course level, all variables were analysed on a stylized individual level over different age groups. However, some of the variables were available only to a household level, particularly tax on income and social contributions, family/children related allowances and social exclusion benefits. In order to individualize each variable, some data adjustments have been made:

Family/children related allowances were divided by number of children in the family. In other words, all family and children related allowances were equally assigned only to household children, younger than 18 years old. *Social exclusion* benefits in EU-SILC data are given to the household level. As this analysis focus on a personal benefit level, social exclusion benefits were divided by household members so they were distributed equally on a personal level. *Tax on income and social contributions* were divided by rate of income of working household members. As mentioned above, this research focuses on a personal level, so existing data on tax on income and social contributions at household level was divided by rate of income of working household members manually. In order to do so, some variables were computed (employee cash or near cash income * tax on income and social contributions / sum of the household's employee cash or near cash income). This additional variable allowed us to see the amount of taxes and social contributions that was paid by each working household members equally.

All the data were weighted according to personal cross-sectional weight, which allowed to analyse the results for the entire population of each Baltic country. Furthermore, in order to prevent country specific differences prices and services, all tax and benefit results were divided by the percentage of average income in each country. In order to do so, average disposable income for each stylized individual of that age group was calculated (household's disposable income was divided equally for each family member). It means that even stylized individuals under the age or 18 years old were assigned average disposable income. Finally, tax and benefit averages were calculated for different stylized individual of different age group, representing the percentage points of average disposable income. All the empirical results of averages are annual.

There are some empirical data limitations. Firstly, there were no longitudinal data available on Baltic country tax-benefit systems or income. Due to limited database available, income smoothing in life-course perspectives are only based on different age groups and not over the life-course of one person. Secondly, some of the EU-SILC database variables were missing, such as employee social insurance contributions in Lithuania between the period 2006-2009 and limited the research scope.

3. Institutional analysis of taxes and social benefits systems

In this chapter we provide institutional structure of state intervention into income distribution in the Baltic coutries. Figures 1-3 represents institutional structure of the social benefits-tax systems in Estonia, Latvia and Lithuania.

Several social benefits like *maternity and paternity leave, child-care, family allowances* are allocated in the pre-employment age. All three countries have rather similar maternity protection systems. The amount of the benefits are equal to 100 % compensatory wage in Estonia and Lithuania, while in Latvia it is equal to 80 % of the previous gross. The period of maternity benefits payments are similar, with the longest period in Estonia. The structure of paternity coverage is the same as of maternity coverage in all Baltic countries. The Lithuanian paternity benefit structure guarantees the longest period of payment.

The parental benefits seem is more diverse in Baltic countries. The amounts of the benefits differ depending on payment period. It is equal to 100 % of compensatory wage in Estonia and Lithuania, while in Latvia parents can choose 1 year of 60 % compensatory wage or 1.5 years of 43.65 % of compensatory wage. In Lithuania parents are also able to choose 2 years of parental leave with 70 % of compensatory wage in the 1st year and 40 % in the 2nd year. Child-care allowance in Latvia is a tax-financed universal flat-rate benefit scheme, covering all permanent residents who raise children under 2 years of age. Child-care allowance in Estonia is paid to each child under 3 years and the smaller benefit amount between 3-8 years. The child-care allowance structure is more generous in Latvia that in Estonia, but the period of payment is much longer in Estonia than in Latvia. There are no specific child-care allowances in Lithuania.

Furthermore, special allowances for parents raising disabled children are guaranteed in all Baltic countries. The coverage depends on the level of disability in each country. The amounts of disability benefits for children varies and are much generous in Latvia, least – in Estonia. Latvia and Lithuania has longer payment periods for disabled children, compared with Estonia.

The most generous child benefits structure exist in Estonia and Latvia because of its universal coverage, while in Lithuania childcare benefit is means-tested depending on monthly family income. The amount of the benefit depends on the number of children and children age in the families.

Unemployment, sickness, disability benefits are paid during the working age. In all three Baltic countries, unemployment protection in ensured by compulsory social insurance schemes covering employees and providing earnings-related unemployment insurance benefit. Formulas for benefit calculation are different in each country. Estonia and Latvia apply different levels of reference earnings, while unemployment benefit in Lithuania comprises fixed and a variable components. The full amounts of the benefits are paid for 3 months in Latvia and Lithuania and for 100 days in Estonia. For the remaining months unemployment benefits decrease over time in each country. The duration of unemployment benefit payment period depends on insurance period in all three countries.

Paternity	Period of payment: 10 working days, 100 % of the reference wage
Maternity	Period of payment: 140 calendar days, 100 % of the reference wage
Parental	Period of payment: 435 days, 100 % of the reference wage
Child-care	under 8 years of age, 0-3 years - ½ x 76.70 euro; 3-8 years - ¼ x 76.70 euro

0–2, 3–6, 7–17	18–24, 25–55, 56–65	66–100
Survivor benefits for orphan children 1 family member: 50% of old-age pension; 2 family members: 80%, 3 or more family members: 100%	**Sickness-cash benefits** up to 182 days 70 % reference wage	
Child benefit 45 euro (1st and 2nd); 100 euro (3rd and the next) - universal	**Unemployment** 180 - 360 calendar days 50-40 % of reference earning	**Survivor benefit***
Disabled child benefit 270 % or 315% of the 25.57 euro	**Disability benefits** Old-age pension calculated on the basis of year + pension insurance coefficient	**Old-age pension***
Social assistance benefits 100% of the subsistence rate for the head of household and 80% for any other household member. The subsistence rate was 90 euro in 2015		
	Social insurance contributions Employees - 35.4%; self-employed- 33%	
	Personal income tax 20 %	

0–2	3–6	7–17	18–24	25–55	56–65	66–100

Figure 1. Cash flows model for Estonia

Source: constructed by the author based on MISSOC, 2015 and Euromod country reports, 2015

Sickness/healthcare protection. The institutional structure of sickness benefit systems are quiet similar in all Baltic countries with some differences in qualifying period. No qualifying period is required in Latvia. In Estonia, the qualifying period of 14 days, in Lithuania, it is longest (3 or 6 months). The amounts of the benefits are equal to 80 % of reference wage both in Latvia and Lithuania, in Estonia the amount is equal to 70 %. In case of accidents at work, there are no qualifying period in all countries. However, in case of occupational diseases, the qualifying period in Latvia is 3 years for permanent incapacity with no qualifying period in Estonia and Lithuania. In all Baltic countries the benefits are paid until recovery of permanent condition with the maximum of 182 calendar days in Estonia.

<table>
<tr><td>Paternity</td><td colspan="6">Period of payment: 10 calendar days, 80 % of the father's compensatory wage</td></tr>
<tr><td>Maternity</td><td colspan="6">Period of payment: 112 calendar days (14 additional days), 80 % of the mother's compensatory wage</td></tr>
<tr><td>Parental</td><td colspan="6">Period of payment: 1 year or 1.5 year; 1 year – 60 % of the compensatory wage, 1.5 year – 43.75 % of the compensatory wage</td></tr>
<tr><td>Child-care</td><td colspan="6">Period of payment: children under 2 years of age; 0-1.5 years – 171 euros; 1.5-2 years – 42.69 euros</td></tr>
<tr><td colspan="3">Survivor benefits for orphan children
1 child – 25% of parents' average monthly insured earnings
2 children -35%,
3 children - 45%,
4 or more children -55%.</td><td colspan="3">Sickness-cash benefits
For 182 days (or 364 days over 3 year period)
80 % of average reference wage</td><td></td></tr>
<tr><td colspan="3">Child benefit
11.38 euro (1st) / 22.76 euro (2nd) / 34.14 euro (3rd and the next) - universal</td><td colspan="3">Unemployment
for 3 months of unemployment – 100% of the set benefit
for 4-6 months – 75% of the set benefit
for 7-9 months of unemployment - 50 % of the set benefit</td><td>Survivor benefit*</td></tr>
<tr><td colspan="3">Disabled child benefit
106.72 euro or 213.43 euro</td><td colspan="3">Disability benefits
(I) 0.45 x reference earnings + (insurance records in years/max possible insurance record) x reference earning x 0.1
(II) 0.40 x reference earnings + (insurance records in years/max possible insurance record) x reference earning x 0.1
(III) fixed amount of 64.03 euro</td><td>Old-age pension*</td></tr>
<tr><td colspan="7">Social assistance benefits
49.80 - 128.06 euro per month (depends on composition of family)</td></tr>
<tr><td>0–2</td><td>3–6</td><td>7–17</td><td>18–24</td><td>25–55</td><td>56–65</td><td>66–100</td></tr>
<tr><td colspan="3"></td><td colspan="3">Social insurance contributions
Employees – 29.28%; self-employed- 27.08%</td><td></td></tr>
<tr><td colspan="3"></td><td colspan="3">Personal income tax
23 %</td><td></td></tr>
</table>

Figure 2. Cash flows model for Latvia

Source: constructed by the author based on MISSOC, 2015 and Euromod country reports, 2015

The institutional structure of disability benefits are relatively similar, but with different calculation formulas. The eligibility conditions for disability pensions depend on different levels of capacity to work. In Estonia there are 2 levels of incapacity, where in Latvia and Lithuania - 3 levels. Furthermore, the qualifying period is calculated according to personal age and required period of insurance in Estonia and Lithuania. 3 years of insurance are required in Latvia, which is the longest required period compared with other Baltic countries. The amounts of the benefits in Baltic countries depend on degree of incapacity, the qualifying period and additional parts in each country. Estonia includes pensionable service acquired until the incapacity to work, while Latvia includes the fixed amount State social security benefit. All the disability benefits in all Baltic countries are paid until the legal retirement age and recalculated into old-age pensions.

Old-age and survivors pension schemes provide income in retirement and in the case of lost breadwinner. The legal retirement age for standard pension is 63 years for men and 62.6 for women in Estonia. In Latvia the retirement age is 62.6 years, in Lithuania, 63 years for men and 61 years for women. The old age benefits depend on previous wages and the duration of contributions payment. The qualifying period in all Baltic States is 15 years of insurance record. The minimum pension of 149 euro per month (National pension rate) is guaranteed in Estonia. In Latvia the minimum pension benefits are different for pensioners with different periods of insurance records. There is no statutory minimum contributory pension in Lithuania.

Survivors' protection includes both survivors and orphans in the Baltic countries. The coverage is relatively similar in each country. The main eligibility condition is to be dependent by the deceased person, with additional possibilities for retired and disabled people in Lithuania. Furthermore, the required contribution for deceased insured person depends on the deceased person's age in Estonia and varies from no qualification period for person up to 24 to 15 years of qualification for person aged 63. Qualification period in Latvia is actual insurance period plus potential insurance period remaining until legal retirement age to at least 15 years. In Lithuania, people are entitled to the pension at time of death of the deceased person. The surviving spouse formulas differ according to old-age pension of the deceased (in Estonia), average gross monthly income in Latvia and periodical compensation for lost incapacity that the deceased would have received. Number of family member is also taken into account in Estonia and Lithuania.

Social benefits of social exclusion are in all Baltic countries. Lithuania has two types of social assistance benefits: regular benefit in case of need and social assistance pension. Latvia has social benefit named guaranteed minimum income benefit while Estonia defines the benefit as subsistence benefit. All the beneficiaries have to meet the requirements of job seeking and to be registered as unemployed in all the Baltic counties. There are no age requirements for social benefits in the Baltic countries, except in case of social assistance pension in Lithuania (the age requirement is the same as statutory retirement age). Means-related conditions for social benefit are very similar in all the countries – all possible types of received income and property of the household is taken into account. In Estonia, single person gets 90 euro, each minor person –72 euro per each other adult family members, where the amount differs according to household composition. In Lithuania, single person gets 102 euro, while a two person family with one child gets 255 euro, with two children – 326 euro, three children – 398 euro. In Latvia, example for a family with two children with neither partner employed is 176 euro per month.

Paternity	Period of payment: 1 month; 100 % of the father's compensatory wage
Maternity	Period of payment: 126 calendar days (14 additional days); 100 % the mother's compensatory wage
Parental	Period of payment: 1 year or 2 years; 1 year – 100 % of the compensatory wage; 2 year – 70 % of the compensatory wage in the 1st year and 40 % - the 2nd year

Survivor benefits for orphan children 50 % of the lost working capacity pension or old-age pension; 60-70 % of the lost working capacity pension (if deceased was not receipt of the old-age pension)	**Sickness-cash benefits** For 122 days; 80 % of reference wage (min – 25 % of SII; max – 3.2 of SII)	
Child benefit 28.5 euro (1st and 2nd) or 15.2 euro (3rd and the next) – means-tested	**Unemployment** 6 - 9 months; Fixed 102 euro + variable (previous earnings corresponding 40 % of the amount) components; For 3 months of unemployment - 100 % of the set benefit Remaining months – variable component reduced by 50 %	**Survivor benefit***
Disabled child benefit Light (I), moderate (II) or severe disability (III) I – 100 % of 105 euro II- 150 % of 105 euro III – 200 % of 105 euro	**Disability benefits** The basic part + the supplementary part + the supplement years of pension insurance	**Old-age pension***

Social assistance benefits
1st person in the family benefit is calculated as the difference between income and 100% x 102euro; for 2nd person in family - 80% x 102 euro; for third and following person in family- 70% x 102 euro;

0–2	3–6	7–17	18–24	25–55	56–65	66–100

Social insurance contributions
Employees – 38.90%; self-employed- 37.50%

Personal income tax
15 %

Figure 3. Cash flows model for Lithuania

Source: constructed by the author based on MISSOC, 2015 and Euromod country reports, 2015

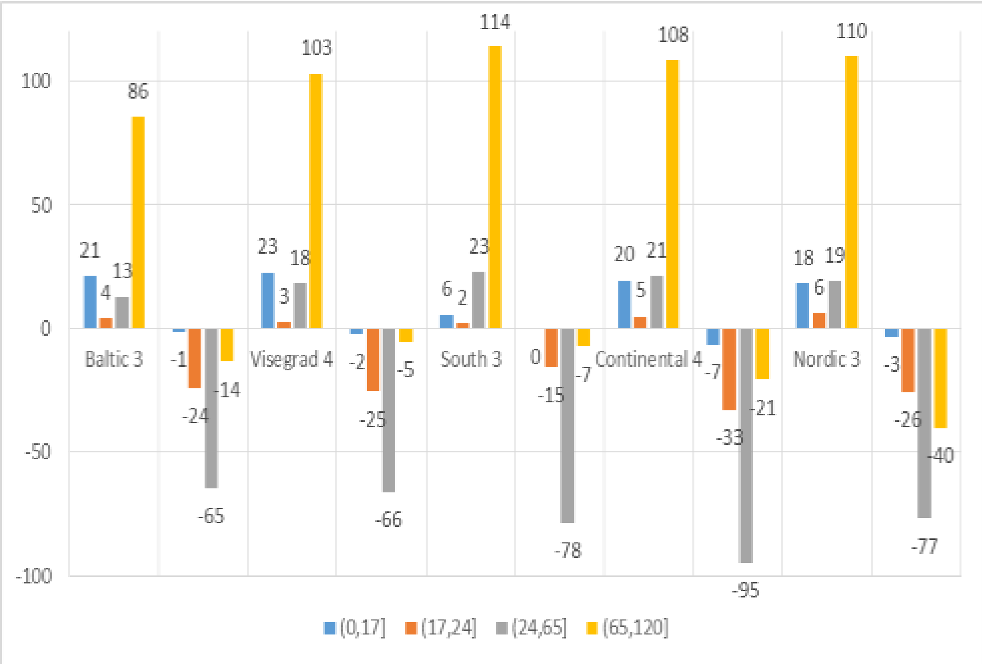
Social insurance contribution and personal income tax system in the Baltic countries. Social insurance contributions are relatively similar in the Baltic countries, with the highest rate in Lithuania. Overall, the sum base for social insurance contributions is equal to 35.4 % in Estonia, 34 % in Latvia and 40 % in Lithuania, paid by both employers and employees. For self-employed persons total sum of social insurance contributions is equal to 33 % in Estonia, 37.5 % in Lithuania and 27.7 % in Latvia.

The income tax unit in Baltic countries is applied on an individual level, however married couples are allowed to do a joint tax report if they want to in Estonia while some possible tax allowances for families are divided equally into two parts in Lithuania and family unit is defined in Latvia for tax allowance purposes. The main personal income tax rate is the highest in Latvia (23 %), following Estonia (20 %) and Lithuania (15 %). In Lithuania, the reduced tax rate of 5 % is applied to income from individual activities (except from "free occupations"), agriculture activity, from farming income. A fixed amount of tax rate is set by the local municipalities for income derived from activities under a business certificate in Lithuania.

There are basic and additional tax allowances in the Baltic countries. Taking into account standard allowance rate, the highest rate of 166 euro is exist in Lithuania, following Estonia (154 euro) and Latvia (75 euro). Furthermore, there are special tax allowances for disabled people in Lithuania and Latvia with no similar allowance in Estonia. Speaking about allowances for parents raising children, tax allowance of 165 euro is possible in Latvia and of 60 euro in Lithuania. In Estonia, tax allowance does not have exact allowance amount, but depends on standard allowance rate (154 euro) and taxable income of the children. Finally, special tax allowances for pensioners exist, with tax allowance of 220 euro in Estonia and 235 euro in Latvia. In Estonia pension allowances are applicable only for state pensions (i.e. old-age, disability, survivors). All state pensions are non-taxable in Lithuania. In Latvia, for non-working pensioners, non-taxable minimum (235 euro) allowance is applicable to pensions, while working pensioners the regular non-taxable minimum is applicable. It is important to note, that state pensions are not taxable in Lithuania. All things considered, it can be assumed that Lithuania has the highest tax allowances compared with other Baltic States, despite smaller tax allowance for parents with children. Latvia has the highest tax burden with the least tax reduction possibilities, while Lithuania and Estonia are relatively similar.

4. Income smoothing via tax-benefit systems

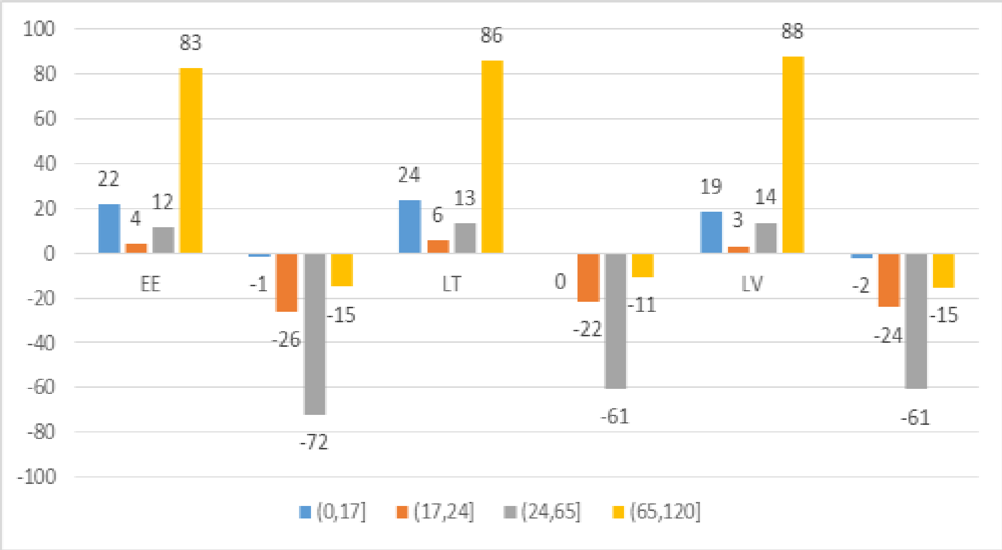
State intervention into income smoothing in the life course is much less in the Baltic countries in the context of EU area (Figure 4). Taxes/contributions in primary age and pensions benefits in old age are most powerful instruments of income smoothing. They both redistribute substantially less in the Baltic countries than in other groups of the EU countries, e.g. Nordic, Continental and even South. Pension benefits is much more important component of household disposable income even in the Visegrad group. Relatively small income smoothing from primary to old age lead to the wide spread of poverty of retired people in the Baltic countries. In general, low rate of income smoothing confirms macroeconomic data on low state intervention into income redistribution in the Baltic countries. However, income smoothing backward to the age up to 17 years old is rather high in the Baltic countries – in line of other groups of EU countries (Figure 4).



Notes: social benefits/taxes per recipient/payer in the household divided by disposable income per househod member; (+) social benefits, (-) social insurance contributions and personal income tax. Baltic 3 – EE, LT, LV; Visegrad 4 – CZ, HU, PL, SK; South 3 - EL, ES, PT; Continental 4 - AT,BE,FR,NL; Nordic 3 –DK, FN, SE

Figure 4: Total social benefits and taxes/contributions per recipient/tax payer as a percent of disposable income per household member in countries groups, 2015

Variation of taxes on income in the Baltic countries is mainly due to the much higher share of taxes and social insurance contributions in the income of households in Estonia (Figure 5). Because of that, we could expect highest income smoothing in Estonia. However, it is not the case. Social benefits ratio to disposable income of households with members in pre- and after- working age are very similar in all three countries. Moreover, income share from social benefits in old-age is lower in Estonia. Nevertheless, looking at the overall income smoothing via all social benefits and taxes/contributions on wages, differences between Baltic countries are lower, than differences between these countries and other countries' groups in the EU.



Notes: social benefits/taxes per recipient/payer in the household divided by disposable income per househod member; (+) social benefits, (-) social insurance contributions and personal income tax.

Figure 5: Total social benefits and taxes/contributions per recipient/tax payer as a percent of disposable income per household member in three Baltic countries, 2015

A more detailed look at social benefits from life course perspective in the Baltic countries reveals some specific characteristics of each country (Figure 6). Income smoothing backward from working age to the childhood is highest in Lithuania. However, it due to generous disability benefits. Income from other child benefits are weightier in Estonia and Latvia. During working age (18-65) period, the most important role of income smoothing lies to disability benefits in all Baltic countries. In Lithuania, disability as well as survivors benefits are more important in all other stages of life course. Research results illustrate, that unemployment protection does not play an important role in social security system all countries, especially in Lithuania. The role of social assistance benefits is very low in Latvia and Estonia, with more important role in Lithuania (Figure 6).

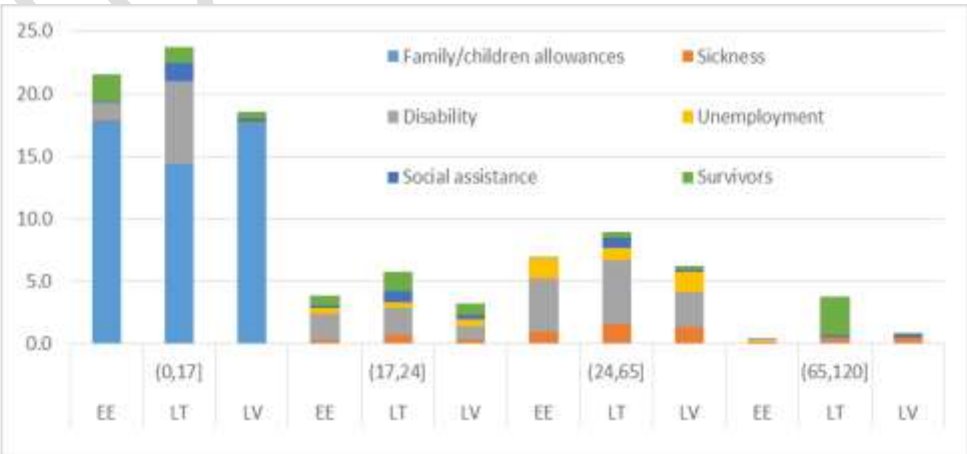


Figure 6: Social benefits per recipient as a percent of disposable income per household member in three Baltic countries, 2015

In all three Baltic countries, in the early childhood period (up to 2 years old) almost half of disposable income comes in the form of social benefits. In later life stages, the redistributive role of the states decrease substantially and, during the school age period, social benefits make just around 5 % of disposable income.

In the working age, in case of disability, relatively higher part of disability benefits in disposable income is in Lithuania than in other two countries. The unemployment benefits transfer income higher in Estonia and Latvia. However, in case of social exclusion, the amount of benefits are higher and they are more significant during childhood period in Lithuania.

Sickness benefits more often transfer income in later working age period in all three countries. Meanwhile, survivor's benefits are distributed during inactive period. In both childhood and early adulthood period, the survivor benefits are more significant in Estonia and Lithuania, than in Latvia. At the same time, during the retirement age – in Lithuania.

During the working age period, the personal income and social security tax burden is highest for 36-45 years old individuals in all the Baltic countries and make the largest share of disposable income.

The share of majority received social benefits have decreased in 2015 compared with 2010 in all three countries. A sharp decrease was of unemployment benefits, especially Latvia and Lithuania. This is due to the rather fast recovering of disposable income after economic crisis 2008. Increase of disposable income exceeds increase of social benefits. This means relative reduction of income smoothing role of the state.

Conclusions

Institutional structures of state intervention into income distribution are similar in all Baltic countries. Most of resources for distributional institutions comes via contributory social insurance systems. Nevertheless, there are some differences:

- The most generous child benefits structure exist in Estonia and Latvia.
- The period of maternity benefits payments is longest period in Estonia, while paternity is in Lithuania.
- Formulas for unemployment benefit calculation are different in each country.
- In Lithuania is longest qualifying period for sickness benefit.
- Minimum old age contributory pensions are in Estonia and Latvia, while Lithuania provide social assistance pension for those who receive very low contributory pension or are not eligible for it.
- The main personal income tax rate is the highest in Latvia, following Estonia and Lithuania. However Lithuania has highest tax allowances in the Baltic countries, despite smaller tax allowance for parents with children.

The analysis of households income data revealed, that the income smoothing pattern in all three Baltic countries is rather similar as well and it is at the lowest scale among the main groups of EU countries. Differences between Baltic countries are lower, than differences between these countries and other countries groups in the EU.

Low rate of income smoothing confirms macroeconomic data about low state intervention into income redistribution in the Baltic countries. Relatively small income smoothing from primary to old age lead to the wide spread of poverty of retired people in the Baltic countries. However, income smoothing backward to the age up to 17 years old is rather high in the Baltic countries – in line of other groups of EU countries.

Variation of taxes on income in the Baltic countries is mainly due to the much higher share of taxes and social insurance contributions in the income of households in Estonia. At the same time, social benefits ratio to disposable income of households with members in pre- and after- working age are very similar in all three countries.

Income smoothing backward from working age to the childhood is highest in Lithuania due to generous disability benefits, while income from other child benefits are weightier in Estonia and Latvia. In Lithuania, disability as well as survivors benefits are more important in all other stages of life course.

The personal income and social security tax burden is highest for 36-45 years old individuals in all the Baltic countries.

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