FUNCTIONAL AND PERSONAL INCOME DISTRIBUTION IN THE BALTICS: COMPARISON OF NATIONAL AND HOUSEHOLDS ACCOUNTS

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Abstract. In this paper we aim to cover the gap in analysis of functional distribution of National income at the macroeconomic level and personal income distribution at the microlevel. We compare the information provided in the National Accounts and in the EU Survey on Income and Living Conditions (EU-SILC) for the three Baltic states and in a wider EU context to establish the links between the economic prosperity at the macro level and income distribution at individual level. Comparative design helps identify differences in income structure and inequality within similar socio-economic conditions. As demonstrated, similar levels of per capita disposable incomes in the National Accounts in the Baltics hide higher levels of income inequality than conventionally shown in the EU-SILC. This is to a large degree due to high level of under-reporting of property income and is most acute for Lithuania.

Keywords: income distribution, National accounts, household income, SILC, Baltics, property income.

JEL Classification: D31; D63; E01; O11; O12.

1. Introduction

The Report of the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz *et al.* 2010) provided 14 recommendations to improve the measurement of societal progress. It argued for moving away from existing narrow economic measures such as Gross Domestic Product (GDP) to a broader range of indicators that better reflect multi-dimensional aspects of quality of life and well-being. The above mentioned Stiglitz Report recommends to "emphasise the household perspective" and to "give more prominence to the distribution of income, consumption and wealth". Arguably, the national aggregates and per capita averages of economic growth may mask the rise in living standards for some population groups and no change or declining living standards for others. The idea of linking functional and personal distributions of income was endorsed by major institutions such as the OECD (Fesseau *et al.* 2013) and the European Commission (Eurostat 2013a) and was widely supported within the academic field (see Section 2).

Three Baltic countries are the examples of successful economic integration into the richest part of the world. Their GDPs per capita in purchasing power parities have grown within the last two decades from around ½ to ¾ of the EU average.[1] Nevertheless, these countries remain among those with the lowest wages, pensions and disposable household income. These are also among the EU countries with highest rates of income inequality and poverty (Social Situation Monitor 2016). Hence, the case of the Baltics is particularly topical in the context of the Stiglitz Report and recommendations.

In this paper we aim to cover gaps in analysis of the functional and personal income distribution in the Baltics by comparing national and household-level accounts.

We compare the data on the functional income distribution from the National Accounts (NA) with the information on the personal income distribution available in the main synchronized source of micro level information at the EU level – EU Survey on Income and Living Conditions (EU-SILC). By uniting those two data sources the links between the economic growth on the macro level and income distribution on individual level can be revealed and analysed. Comparative design of the study helps identify differences in structure and dynamics of income on macro and micro level within similar socio-economic contexts. We use cross-country and decomposition analysis for evaluation.

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[1] Calculations by the authors based on Eurostat (2016a).

The structure of the paper is as follows. In Section 2 we review the literature and previous studies on the functional and personal distribution of incomes. Next, methodological issues related to the comparison of the data provided by NA and EU-SILC are presented. The results of the analysis are presented in Section 4. Paper concludes with the discussion of the main findings and both substantial and technical implications of reconciling micro and macro level accounts of income.

2. Links between functional and personal income distribution

The inquiry into the functional distribution of income – a topic investigated by the classics in economics A.Smith, D.Ricardo, T.R. Malthus (Atkinson 2009) – has come back on the economic research agenda with significant contributions by Glyn (2009), Dagum (1999), Bentolila and Saint Paul (2003), Gollin (2002), Feldstein (2008), Dafermosa and Papatheodoroub (2015), but also with the papers of IMF (2007) and the European Commission (2007). Equally, those concerned with the personal distribution have emphasized that there is no direct link of personal income accounts with factor shares. Atkinson (2009) agreed with Glyn (2009) in arguing why functional distribution of incomes is on today's research agenda, i.e.:

- to make a link between incomes at the macroeconomic level (national accounts) and incomes at the level of the household;
- to help understand inequality in the personal distribution of income;
- to address the concern of social justice with the fairness of different sources of income.

Functional income distribution is reflected in the estimates of the National Income (NI) and GDP. It is understood as incomes that are shared between the owners of production factors, i.e. labour, capital and land (Atkinson 2009). At a micro level personal incomes are measured using representative surveys on household incomes and living conditions (e.g. EU-SILC), or household budget surveys. However it has been noticed that incomes of populations subgroups, even the large ones, often diverge and lag behind the economic growth reflected at the macro level through GDP and NI (Bivens *et al.* 2014). As prompted by Atkinson: "The link between macro and micro is essential, and economics has suffered from allowing these to go their separate ways. Empirically, the national accounts need to be brought closer to micro-data on households" (Atkinson 2009).

The inconsistencies between the macro and micro level accounts on income are both technical and substantial. Technically, over the years macro and micro statisticians have tended to work separately leading to sometimes divergent results which can cause problem to users. The recent studies conducted by OECD (Fesseau *et al.* 2013) and Eurostat (2013a) highlight non-negligible differences between National accounts and survey data in terms of concepts and due to different data collection methods. Substantially, there is a question on the relation between the personal and functional income distribution. The question on how the economic growth is distributed and redistributed among households is both of academic and political interest and concern (Atkinson *et al.* 2011; Cingano 2014; Davis, Mishel 2014; Atkinson *et al.* 2011; Halter *et al.* 2014; OECD 2013; Ostry *et al.* 2014).

Indeed, inconsistencies and relation between the functional and personal income distribution is not only academically, but also politically relevant and sensitive. The NA framework provides no distributional information on income, critical for the design of economic and social policies. Surveys, such as the EU-SILC serve as main tool for social policy analysis, providing information about the distribution of income on the individual level. Hence the study of the income differences observed at the macro and micro levels may contribute to better informed decisions on the development of socio-economic policies.

In this article we focus on making a link between incomes at the macroeconomic level and incomes at the level of the household. Two reports of international institutions are essential for that. First, OECD publication "A Cross-Country Comparison of Household Income, Consumption and Wealth Between Micro Sources and National Accounts Aggregates" (Fesseau *et al.* 2013) and second – Eurostat report "The distribution of household sector accounts by category of household" (Eurostat 2013a).

OECD (Fesseau *et al.* 2013) paper presents a detailed picture of the extent to which statistical information derived from micro sources can be aligned to three national accounts aggregates (income, consumptions and wealth); 20 countries studied all (or part) of the components of adjusted disposable income. It showed that although micro data sources did not provide information for all components of household economic resources as defined in the NA, they provide information for most of the major components of the national accounts aggregates; although with some major gaps. As stated in the report: "Results show that there are a number of identified rea-

sons that can explain differences between micro and macro sources. Some of them were quantified and isolated showing finally that for most countries micro sources provide distributive information for most of the national accounts components but for some of them with quite significant gaps in total amounts". (Fesseau *et al.* 2013)

Eurostat report (2013a) provides results of similar exercise for the EU countries. The objective was to develop comparable indicators of the distribution of income, consumption and wealth that are consistent with the national-level information in the NA. The report by Eurostat focussed on the use of harmonised sources from within the European Statistical System. It investigated the similarities and differences between EU-SILC and NA data for household income. The breakdown exercise used data from EU-SILC and the NA for one income reference year (2008) to produce results for 26 of the EU-27 member states (Eurostat 2013a).

The latter study also revealed gaps and disparities between NA and survey estimates of incomes differed by source, across countries and income quintiles. By income source fair degree of alignment was noted between micro and macro totals for wages, salaries and cash social benefits. Highest inconsistencies and limited alignment was stressed for property income, while mixed income, taxes and social insurance contributions enjoyed a moderate degree of fit. Property income was demonstrated to be substantially under-reported in the survey data compared to the NA. Same concerns mixed incomes, taxes and social insurance contributions, although to a lesser extent. These findings are consistent with the results reported by the OECD. Importantly, Lithuania and Latvia stood out as the countries with the highest average gaps in the income aggregates as depicted in SILC versus NA; Lithuania also ranked worst according to disparity of the two data sources by income quintile. Estonia was among countries with moderate disparities between SILC and NA estimates and among 10 EU countries with lowest gap in the NA income aggregate derived based on SILC (at around 15%, versus around 23% in Latvia and 36% in Lithuania).

The above results raise a number of further questions. First, different degree of alignment of incomes by source and substantial under-reporting of property and mixed income at micro level may have a substantial impact on cross-country comparisons. For example, the share of the compensation for capital versus labour is known to be substantially higher in the Baltics compared to the old EU-member states (Razgūnė, Lazutka 2015). Hence the Baltics may be better-off at the household level than it is reflected in the surveys. It would be interesting to know how the countries rank according to micro versus macro per capita income estimates. Second, the previous studies only included separate data points in time. It would be important to see if the gaps and disparities in the micro-macro estimates are stable across years or are subject to year-on-year change. This would give an impression of either the differences in the micro-macro estimates are systematic (and hence can be adjusted for) or random (e.g. due to survey errors or changes in data collection and estimation procedures). Finally, ways to adjust for disparities would be both of academic interest and political relevance. The raised questions are further analysed aiming to expand previous findings and cover the gaps in the existing knowledge on functional and personal income distribution in the Baltics.

3. Data and methodology

EU-SILC is a multi-purpose instrument launched in 2003, which focuses mainly on income on micro level. Detailed data are collected on income components with a target population of non-institutional households. EU-SILC is not specifically a survey, rather it relies on the idea of a "framework" and the underpinning legislation common guidelines, procedures and classifications define the harmonised lists of target variables to be transmitted to Eurostat (2016b). EU-SILC is the main source of data for constructing harmonized socio-economic indicators and distributional statistics across the EU.

National Accounts are statistics focusing on the structure and evolution of national economies. They provide a framework for numerically describing and analysing, in an accessible and reliable way, the large number of economic interactions within an economy as a whole and for different sectors, including the "household sector".[2] In Europe, the international standards for national accounting are defined in the European System of Accounts (ESA). This analysis refers to ESA 2010 definitions (Eurostat 2013b).

We reconciled EU-SILC and NA data following methodology described in Eurostat (2013a) and in line with a methodological study by OECD (2015), albite with some exceptions. The reconciliation procedure included:

    a. In EU-SILC, the income reference period is the year prior to the data collection for most countries (except Ireland and UK), Hence information on income in EU-SILC was

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[2] In National Accounts the economy is divided into five mutually exclusive institutional sectors: a) Non-financial corporations sector, b) Financial corporations sector, c) General government sector, d) Household sector and, e) Non-profit institutions serving households (NPISHs) sector.

lagged by one year when comparing to NA data.

   b. EU-SILC per capita values were produced by dividing aggregate values by the weighted EU-SILC target population number. While the reference populations differ in the two data sources, no adjustments were performed to correct for this. SILC data excludes population living in institutional and collective accommodation. As reported by Eurostat (2013a) the share of institutional population is at around or below 2% in the vast majority of the EU member. For the Baltics, this share was reported to be 0.7% for Lithuania, 1% for Latvia and 1.2% for Estonia. Hence, the resulting discrepancy is expected to be non-significant.

   c. Reconciliation by income component was carried in five categories as identified in Eurostat (2013a): gross wages and salaries; mixed income and operating surplus; property income; social benefits in cash; current taxes and social insurance contributions. In order to reconcile with NA estimates, the income concepts include components that have been excluded from the standard EU-SILC income concept, i.e.: imputed rents (part of gross operating surplus in the NANA); non-cash employee income other than company car (part of compensation for employees in the NA); value of goods produced for own consumption (part of mixed income in the NA); interest payments on mortgage (part of property income paid in the NA). For detailed list of variables under each income component see Eurostat (2013a).

Two main indicators are used for looking at coverage and discrepancies between the two data sources. First, the coverage rate (CR) shows the extent to which the total amounts from the EU-SILC and the NA match with each other, when using similar definitions. For each NA income component x and country z the coverage rate is calculated as follows:

$$CR_{x,t} = \frac{EU \cdot SILC_{x,z\_weighted\_total}}{NA_{x,z}} * 100, \quad (1)$$

where the weighted total of the formula refers to variables grossed-up to the EU-SILC target population.

At the aggregate level a simple coverage rate can be of little help in quantifying the extent of the match between EU-SILC and NA because of the possibility of some income components with a

negative difference offsetting other income components with a positive difference. To quantify differences at the level of NA aggregates, the average gap indicator (AGI) is estimated. Following Eurostat (2013a) this indicator is computed as weighted average of the differences between the micro and macro amounts across the different components of the NA aggregate. With the same notation as used for coverage rates, the average gap indicator AGI for the country z is calculated as follows:

$$AGI_z = \sum_{x=1}^{k} \frac{|NA_{x,z}|}{\sum_{x=1}^{k}|NA_{x,z}|} * |100 - CR_{x,z}|, \quad (2)$$

where: the NA aggregate is made up of a given number of components k and $\dfrac{|NA_{x,z}|}{\sum_{x=1}^{k}|NA_{x,z}|}$ is a weight for each of the components.

4. Findings

Below the main findings are presented on the three questions raised after discussing the current state of research on reconciliation of micro and micro data on income distribution. First, we look at how the countries rank according to micro versus macro per capita income estimates. Second, the analysis looks at whether the gaps and disparities in the micro-macro income estimates are stable or volatile across years. Finally, we look at ways to adjust for disparities of income at micro and macro level and its impact on inequality measures and cross country orderings of the three Baltic countries.

4.1. Differences in country orderings: a macro-micro divide?

Within the EU context the two most common measures used for measuring and comparing economic performance at the national and personal levels are, correspondingly, the GDP per capita presented in NA and disposable income calculated based on the EU-SILC. GDP per capita is a much wider concept of income compared to disposable income, i.e. incorporating depreciation, indirect taxes, employer contributions, etc. Figure 1 demonstrates how these two micro and macro level measures compare.

As shown in Figure 1, there is a wide gap comparing the GDP per capita and mean net disposable income. The latter estimate is at a level around twice below the GDP per capita (coverage rate at 47.5% on average). Nevertheless, the ranking
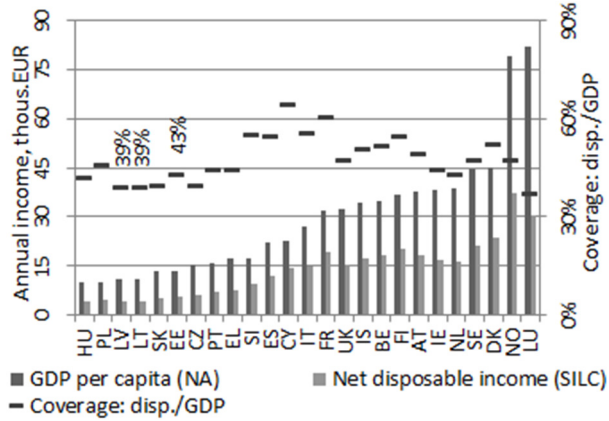
Fig. 1. Ordering and coverage of the EU countries according to GDP and net disposable income, 2012 (Source: authors' calculations for available countries)
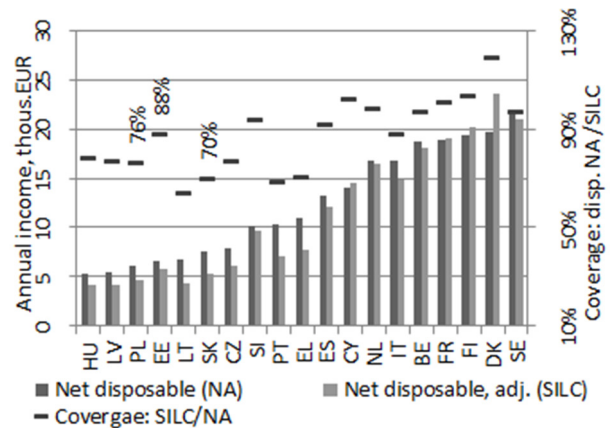*Note:* Rank correlations (Spearman's Rho) = 0.9564

Fig. 2. Orderings and coverage of the EU countries according to net disposable incomes, 2012 (Source: authors' calculations for available countries)
Note: Rank correlations (Spearman's Rho) = 0.9825

of the countries remains relatively stable (rank correlation at 0.96). Compared at nominal levels, the three Baltic countries rank among the worst off in the EU. Some re-ranking only happens among the better-off countries, e.g. France out-performs the UK, Iceland and Belgium according to net disposable income while it is worse off taking GDP per capita into account. Nevertheless, despite a wide gap between the two measures the cross country comparisons using both estimates are quite robust independent of the measure used.

A more close equivalent of the net disposable income in the EU-SILC is net disposable income estimates attributed to households in the NA (see Fig. 2).

As shown in Figure 2, the rankings and coverage rates of micro and macro estimates fit much better taking net disposable income into account. The coverage of the net disposable income in EU-SILC is at around 87.4% on average comparing to NA. Disposable income is under-estimated in EU-SILC in most countries. The latter is also true for the Baltics, with highest gaps in estimates of disposable income (coverage at 64%) in Lithuania. Differences in the micro-macro coverage rates among countries form a pre-requisite for possible bias in cross-country comparisons if discrepancies are not adjusted for.

Nevertheless, there is again a high level of rank correlations when comparing countries using disposable income (Spearman's Rho = 0.98). Hence at the EU level the ranking of the countries will only be affected in few cases. E.g. Lithuania ranks better by its net disposable income at the macro level compared to Latvia and Estonia, while at the micro level disposable income is reported to be highest in Estonia.

To sum up, at an EU level looking at the prosperity of countries using income-based indicators at macro or micro does not make much difference for the country orderings at the EU level. However, differences in the rankings of three Baltic states were noted, as well as different coverage rates of income by source in SILC compared to the NA. We look into these differences in the next section.

4.2. Stability of the gaps in macro-micro estimates in 2006–2012

Further we look at income dynamics and stability of coverage and gaps across the Baltics and in a wider EU context. Dynamics of the disposable income at a macro and micro level is shown in Figure 3.

As visible from the below graph, there are substantial differences in dynamics of disposable income in the three Baltic countries across years. Country ranks by disposable income were stable between 2006–2012 as depicted at the micro level in SILC. However, they diverge at a macro level (NA estimates). Macro and micro estimates correspond most closely for Estonia – showing both similar levels and trends. For Latvia there is a gap in levels, while trends are similar in the two sources, i.e. increase in disposable income up to 2008, a drop between 2009–2010 and a slight recovery thereafter. For Lithuania there is both a gap in the levels of disposable income at macro versus micro level and differences in income dynamics. I.e. at a macro level a moderate drop in income is only recorded in NA in 2009, while the level of disposable income bounces back already in 2010. At a micro level further drop in disposable income is recorded in 2010, similar in its magnitude to the situation in Latvia and Estonia. A swift recovery of

income recoded in NA for Latvia and Lithuania result in the re-ranking of the country to perform best among the three Baltic States, while at a micro level this is not the case.
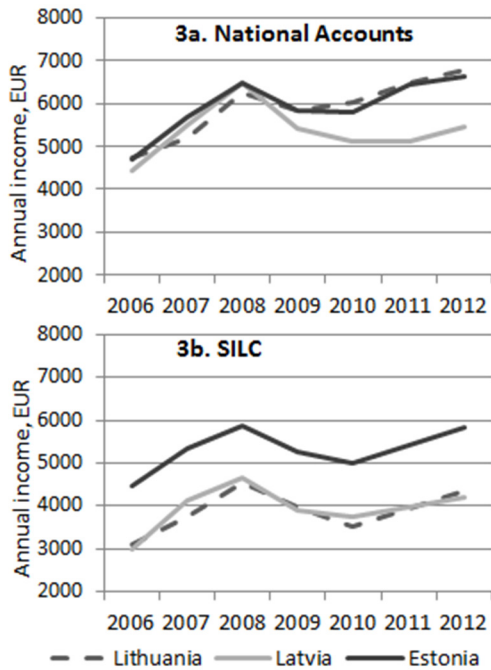

Fig. 3. Dynamics of disposable income across years in National Accounts and SILC (Source: authors' calculations for available countries)

So what was the story for the differential income dynamics in the Baltics and how does it compare to the rest of the EU? Figure 4 shows the average aggregate gap indicator (AGI) for the period of 2006–2012 for available countries in the EU. The AGI reflects the sum of gaps between all the income components, not allowing the gaps to balance out each other. Hence the close gap between indicator's minimum and maximum values reflect relative stability of the macro-micro income indictors across years. To note, the 2006–2012 period reflects a highly volatile economic situation in most of the EU countries. Hence the results in Figure 4 should be interpreted an upper-range of volatility, while macro-micro discrepancies may be expected to be lower within a more stable economic environment.

Figure 4 shows the spread of the average income gap at a macro and micro level across the EU countries during the period of 2006–2012. Both the levels of the gaps and their stability across years differ. AGI ranges from less than 20% in Finland, Estonia and Sweden to around and over 50% in the Czech Republic, Hungary and Slovakia. In Latvia and Lithuania AGI was at, correspondingly, 35% and 39%, which is quite substantial.
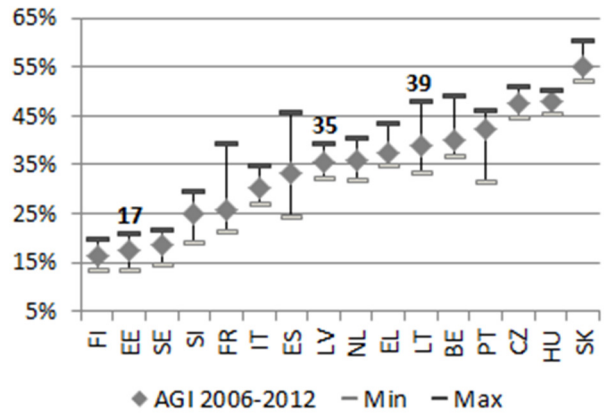

Fig. 4. Average gap index (AGI) in NA and SILC over all disposable income components and its minimum and maximum values in 2006–2012, % (Source: authors' calculations for available countries)

The stability of the gaps (and correspondingly coverage) by different income components is reflected by the minimum and maximum value the AGI indicator takes within the analysed period. Most of the investigated countries show relative stability of the gap ratios, including Estonia and Latvia. While in Lithuania, as well as some other countries such as France or Spain, the gaps between micro and micro level estimates are less stable across years. Substantial and statistical reasons behind such variation require further attention. We look at the case of the Baltics and disaggregate AGI by income component (Fig. 5).
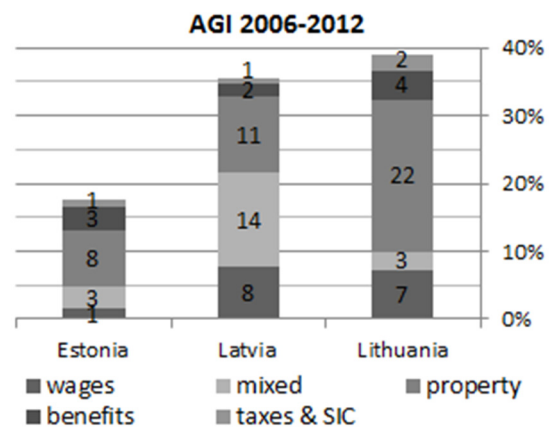

Fig. 5. Average gap index (AGI) by income component in 2006–2012 (Source: authors' calculations)

Disaggregating by income component, in all the Baltic countries gap in property income constitutes a large, if not major, share of discrepancy between income estimates at macro and micro level. It is highest in Lithuania, accounting for 22% on average between 2006–2012. In Latvia, there is also a high gap in mixed income estimate (14%

between 2006–2012). Furthermore wages, taxes and social insurance contributions are underestimated in Lithuania and Latvia by further 9% on average between 2006–2012. Benefits are reflected most accurately in all three countries with a discrepancy of 2–4%. The fact that property income is poorly reflected in the micro level surveys has previously been documented both for the Baltics and in a wider EU context (e.g. Eurostat 2013a). Similar, but to a lesser extend concerns self-employment income. So what if we adjust for discrepancies? And how would it help explain the macro-micro divide in income based indicators of economic performance across the three Baltic states?

4.3. Distributional implications of adjusting micro-level income towards NA

There is little if no research on a distributionally sensitive way to align income as reported at micro and macro levels. Previous attempts by Eurostat (2013a) and OECD (2013) were performed in a distributionally neutral proportional way, aligning incomes by population groups in some cases. Distributionally neutral adjustments are transparent and easy to implement. However, they may not account for different degree of inequality of income by source. E.g. property income is known to be distributed more unequally compared to wages and salaries. While more research is needed to perform distributionally sensitive adjustments, we further adjust incomes as reported in the EU-SILC to cover the gaps with the macro level aggregates. All income components in the EU-SILC are adjusted proportionally across the board to match the corresponding totals reported in the NA. The distributions of the total disposable income before and after adjustments are depicted by the Lorenz Curves (Fig. 6).

While adjustments are performed in a simple way, results highlight several important trends. First, there is an increase in inequality in all Baltic States if adjusted for mismatch between NA and the EU-SILC. Adjustments to match macro level aggregates have a more profound effect in Lithuania and is less substantial for Latvia and Estonia. This is due to a wide gap in property income (see Fig. 5), which is highly concentrated in the Lithuanian SILC data. Hence when adjusting proportionally by income source, the under-reported part of the property income is assigned to a narrow group of recipients.

A more detailed account of distributional changes by income decile and using other distributional characteristics is presented in Table 1. It can
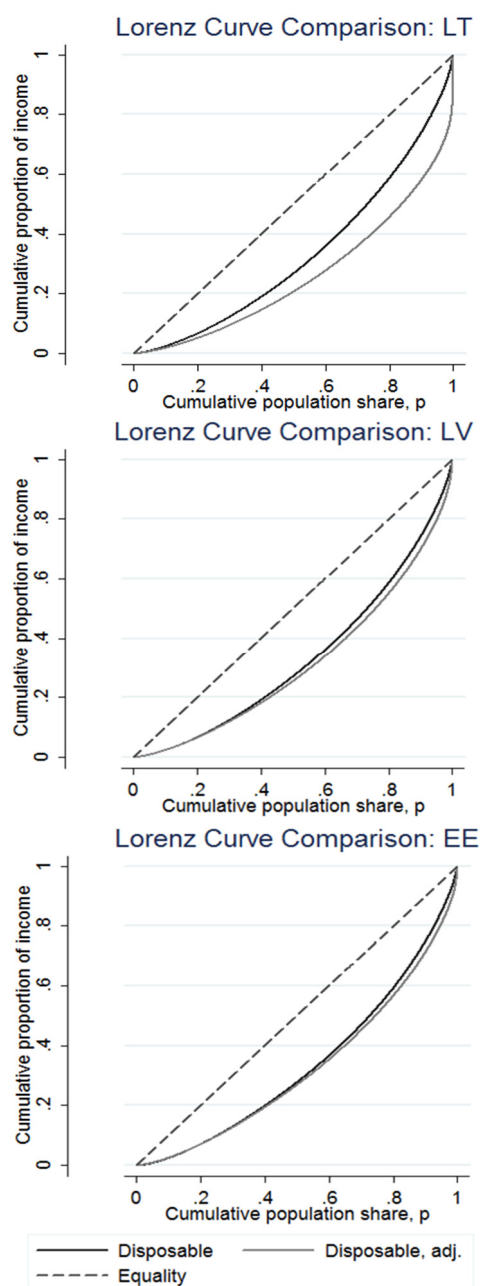

Fig. 6. Lorenz curves of disposable income before and after adjusting EU-SILC to align with NA totals
(Source: estimated by authors)
Note: Not equivalized income.

be seen that adjusting for gaps in income by component in Lithuania contributes to increase in the Gini by around 14 points, and an interquintile ratio (S80/S20) by almost 70%. Changes for Latvia and Estonia are less dramatic. I.e. in Latvia Gini increases by around 3.5 points, S80/S20 by around 10%; in Estonia Gini increases by around 2.6 points, S80/S20 by around 7%. As highlighted above, these differences are mainly due to high under-reporting of property income, which is highly concentrated in a small population group in Lithuania as reported in the EU-SILC.

Table 1. Distributional statistics of EU-SILC disposable income: original and adjusted to NA totals (Source: estimated by authors. Note: Mean and median income in annual terms in EUR, not equivalized)

Disp. income:	Lithuania		Latvia		Estonia	
	Orig.	Adj.	Orig.	Adj.	Orig.	Adj.
Decile shares:						
D1	2.7	2	2.6	2.4	2.6	2.5
D2	4.4	3.3	4.5	4.2	4.8	4.5
D3	5.5	4.3	5.8	5.4	6.1	5.7
D4	6.9	5.2	7	6.2	7.2	6.7
D5	7.9	6	8.2	7.3	8.3	7.5
D6	9.1	7.1	9.3	8.4	9.5	8.5
D7	10.5	8.2	10.5	9.8	10.6	9.8
D8	12.3	9.7	12.2	11.5	12	11.5
D9	15.2	12.2	14.9	14.7	14.8	14.5
D10	25.5	42	24.9	30.2	24.1	28.8
Median	3043	4475	3021	4533	3737	5421
Mean	3566	6860	3438	5843	4186	6825
Gini	33.6	48.5	32.5	37.7	31.2	35.7
S80/S20	5.8	10.3	5.6	6.8	5.3	6.1

Interestingly, Lithuania and Estonia compare in its mean income after adjustments are performed, while Latvia lags behind. This brings in line adjusted EU-SILC and NA estimates (see Fig. 3). However at the median the disposable income in Lithuania remains close to Latvia, and at a substantially higher level in Estonia. The latter two estimates help explain divergence between NA estimates of per capita incomes and their micro level means. I.e. adjustment by income components helps aligning the means, but even our distributionally neutral alignment highlights important implications for levels of inequality in Lithuania. I.e. we might be close to Estonia in the level of the mean disposable income, but with much higher level of inequality. This is despite, arguably, more liberal Estonian regime (Norkus 2012).

While NA and EU-SILC divergences were taken at their face value, technical and substantial reasons for those need to be further investigated, especially what concerns property income reported as both macro and micro levels. There is also a need for more distributionally sensitive way to adjust income by component between micro and macro sources of data on income.

5. Conclusions

The Report of the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz *et al.* 2010) provided a number of recommendations to improve the measurement of societal progress. Among other recommendations the importance of the household perspective for analysing the economic growth was highlighted. This paper aimed to cover gaps in analysis of the functional and personal income distribution in the Baltics by comparing national and household-level accounts.

Three Baltic countries are the examples of successful economic integration into the richest part of the world. These are also among the EU countries with highest rates of income inequality and poverty. One argument for going beyond national income and wealth aggregates was that per capita averages of economic growth may mask economic inequality, e.g. the rise in living standards for some population groups and no change or declining living standards for others. The above analysis demonstrated that this might be the case speaking about the three Baltic countries. In the Baltics, similar levels of per capita disposable income hide higher levels of income inequality than conventionally shown in the EU-SILC. This is mostly due to high level of under-reporting of property income and is most acute for Lithuania.

As Lithuanian macro level economic estimates (GDP and net disposable income per capita) raised up to the level of Estonia (the frontrunner of the region for many socio-economic indicators), the growth is not spread proportionally among the population groups. A person at the median of the Lithuanian income distribution is substantially worse-off compared to that in Estonia and even somewhat worse-off compared to that in Latvia. When aligning the estimates to account for underreporting of property income and other income sources in EU-SILC, the levels of inequality in Lithuania increase dramatically with a high level of income concentration in the top income decile. Such high degree of inequality may undermine country's further development and economic growth prospects. Notoriously the levels of income redistribution through public interventions in Lithuania is at the lowest levels within the EU context and among the Baltic countries; levels of capital taxation are also among the lowest (Eurostat 2014, 2015). These need to be strengthened.

With regards to cross-country comparisons the paper also demonstrated little effect of using NA or EU-SILC based per capita estimates. With

regards to the prosperity of countries across the EU using income-based indicators at macro or micro does not make much difference. However, different coverage rates of income by source were noted in the EU-SILC compared to the NA. Accounting for gaps in coverage of income components in EU-SILC may substantially change the picture of the socio-economic progress in the EU, especially for countries with higher shares of capital and property income. Detailed study of the income differences observed at the macro and micro levels may contribute to better informed decisions on the development of socio-economic policies.

From a methodological point of view there is a need to gather more robust detailed information on property income in the EU-SILC. Within the Baltic context this is especially topical for Lithuania. Also alignment of EU-SILC components with NA aggregates should be considered, e.g. when constructing survey population weights. Procedures to adjust micro and macro data in distributionally sensitive way should be developed.

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