Distributional Income Indicators in a Micro-Macro Data Integration Perspective

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The opinions expressed in this paper are the sole responsibility of the authors and do not necessarily reflect those of Eurostat or countries.

Paper Abstract

The European Commission aims to bring the social indicators on a par with the macroeconomic indicators within the European economic governance framework. An important part of the strategy is availability of harmonised EU level statistical indicators – integrating macro and micro data - covering the distributional aspects of household income, consumption and wealth (ICW). The information is crucial to understand the social impacts of economic developments and policies and economic impacts of social developments and policies. During recent years Eurostat has carried several experimental projects to investigate the joint distributions of ICW micro data coming from household surveys and relevant micro-macro data links. This work of a testing and experimental nature on improving methodological harmonisation between household surveys is creating a concrete basis for estimating the distributions of national accounts aggregates using survey data.

Contents

Summary

The estimation of joint distribution of Income, Consumption and Wealth is more and more needed as the inequalities are increasing; the phenomenon requires insights coming from micro-data.
The perfect dataset embedding simultaneously information on the three dimensions is missing therefore it is necessary to bring closer different existing micro data collections This can be achieved thanks to techniques more or less elaborate; already existing results go in the sense of the economic theory. Such exercises also require a strong plausibility check, as they rely on strong assumptions. One natural benchmark is the data coming from National Accounts for consistency and comparability verification.

The regulation on the European System of National and Regional Accounts (ESA 2010,) foresees delineation of the Household sector (before the data on Households were reported together with data on Non Profit Institutions Serving Households). However the Household sector in the National Accounts framework has not the same population coverage as micro-data surveys, in particular, non-institutional households (not-covered in the EU-SILC), and the unincorporated enterprises (only party covered in the EU-SILC). These together with specific data measurement errors (for instance, poor coverage of wealthiest part of the population in the EU-SILC) are referred in the paper as generic differences between the data sources. The impact of generic differences is income component specific as well as country specific.

In addition, to the generic differences between the National Accounts (NA) Household sector and EU-SILC reference population; there are specific differences that are identified in the paper. In particular, it is possible to conclude that the methodology and data between EU-SILC and NA household sector, reasonably well lines up for employment income (excluding employers' social contributions), social benefits other than social transfers in kind, and social contributions and taxes on income paid. However, medium or low conceptual links are identified for self-employment income, property income, and taxes on wealth paid. As expected the data expressed in coverage rates for these items are diverse across the countries. Further plausibility tests and investigations are needed for these income components.

Low or no conceptual links are identified for income from household production of services for own consumption, property income paid; employers' social insurance contributions (these three income components are not part of Disposable Income definition in the EU-SILC); as well as pension from individual private plans, (this income component is not part of Disposable Income definition in the NA).

Introduction

The European Commission has stressed the need to bring social indicators on a par with macroeconomic indicators within the macroeconomic governance. A key part of the strategy is the availability of harmonised statistics at EU level covering the distributional aspects of household Income, Consumption and Wealth (ICW), considering and taking into account the work already done by researchers, the EU Member States, OECD, and ECB.

The efforts should help the preparation of integrated analyses, putting together macroeconomic and social indicators that allow for appropriate assessment of the social impacts of economic policies and the economic impacts of social policies.

There is nowadays a move towards better collection of the information at household level. At macro-economic level, the National Accounts provide aggregated figures for household sector and evolution of the material living standards of the 'average household' however no information on their distribution across the population.

Nevertheless, it is not sufficient to have the aggregated macro level statistics for household sector as obtained from National Accounts. Further information is needed on: how income wealth and consumptions are distributed across the population? Who benefits from economic growth, who is driving the economic growth? Whether savings or debts are having similar development patterns for the poor and rich populations during the economic shock? These and many other questions cannot be answered using the national accounts alone. Most importantly is to see the effect of the economic developments and policies on the different income groups of households, putting the most emphasis on vulnerable part of society and on other side the richest part of society. Distributions matter a lot: high indebtedness for housing purposes in the lower income range has been recently proven to be damaging for the whole economy, for instance.

The information on the population could be obtained using different micro data sources. The process towards the modernisation of Social Statistics in the EU is continuing and Member States are putting tremendous efforts to adapt to the changes brought by high and various data needs, although they face limited resources and collect timelier. These efforts go into the direction of producing more precise and more efficient statistics for policy making. It involves also higher comparability of the variables and methodology between different surveys. The foreseen changes would help making more direct links across different micro data sources.

The first part of the paper is addressing the ICW distributions for households from Social Statistics perspective. The second part of the paper is devoted to discuss the issues related to micro-macro data gaps for income.

1. ICW distributions – social statistics perspective

When analysing information carried out by micro-data, users often express the need for extending as much as possible the scope of variables available in one single dataset. Indeed doing so should increase the possibility of explaining more comprehensively the sociological and economical phenomena. When it comes to the households' economical behaviours, income, consumption and wealth (ICW) cannot be regarded as independent from each other; the official statistics already provide some pieces of information about the distribution of each dimension but scarcely include elements of the three dimensions in the same micro dataset. As data on ICW distributions necessarily goes through the use of micro-data, it is essential to focus on the sources of information at the EU level regarding these three dimensions. So far, the three available surveys on ICW are the EU Statistics on Income and Living Conditions - EU-SILC (income), the Household Budget Survey - HBS (consumption) and the Household Finance and Consumption Survey - HFCS (wealth). The three of them essentially aim at gathering information on one of the dimensions, along with socio-demographic and possibly partial information also on the other dimensions. The surveys are run in different manners and different periodicities in the EU (HFCS only in the euro area). For instance, the EU-SILC is conducted every year, whereas the periodicity of the HFCS is for most of the countries every three years and HBS data - collected either yearly or less frequently at national level - are transmitted to Eurostat every 5 years. Beside the tremendous effort of modernisation already undertaken by the Member States, the foreseen changes would help in making more direct links across different micro data sources. As regards the wealth side, there are ongoing discussions under the auspices of European Statistical Forum1 to promote, at the national level, better cooperation between the National Statistical Institutes (NSI) and the National Central Bank (NCB) on the implementation of the Household Finance and Consumption Survey (HFCS).

The main data source for the evaluation of poverty and inequality in the EU is EU-SILC. The headline indicator to monitor the poverty target in the Europe 2020 strategy is the 'at risk of poverty or social exclusion' AROPE indicator[2]. It should be noted that so far indicators on poverty in the EU are mainly based on the income and do not consider the stock dimension (assets and liabilities). As the EU-SILC mainly aims at measuring accurately the bottom of the

[1] The European Statistical Forum was created in 2013 as a governance body in the relations between the European Statistical System and the European System of Central Banks.

[2] It measures the share of the total population which is at risk of poverty or social exclusion, it refers to the situation of people either at risk of poverty (measures relative monetary poverty), or severely materially deprived (measures absolute poverty based on set of items persons have or have not) or living in a household with a very low work intensity. The data source is EU-SILC (EU Survey on income and living conditions).

distribution, it does not oversample the richest part of the population, and would be less appropriate for an analysis targeting specifically the very top of the income distribution. Also it contains very limited – if any - insights on the consumption behaviours of the European households.

Thus, as consumption may be analysed through the Engel curve's theory,[3] HBS encompasses also general information on income. HBS provides the users with very detailed information at the household level on consumption expenditures, using diaries and COICOP classification for describing expenses made by the households. The data are transmitted to Eurostat every 5 years in most of the countries, which may pose an issue regarding timeliness, as the composition of consumption may be impacted by income shocks.

Finally the HFCS attempts to go further and to be even more comprehensive, as it collects variables on the different components of gross income, along also with very partial data on consumption. However, gross income does not fit the cross-country comparison, as fiscal systems widely vary across European countries and may strongly affect households' behaviours. It gives information on the repartition of assets (gross or net of debt) among households. Since the distribution of wealth is highly skewed, it is important to focus on the very top of the distribution in order to have the most accurate estimation possible. Some of the countries that have conducted the first wave of the HFCS in 2010 have tried to implement oversampling in order to address the issue. On the one hand it is essential to bear in mind that the quality of the analysis strongly depends on the sample when it comes to wealth; on the other hand, oversampling aims only at solving issues related to the measurement of wealth in the top of the distribution. Hence oversampling shall not aim at addressing other potential problems, such as underreporting or capital location in the context of the growing globalization. In other terms, indicators describing the broad distribution of wealth – such as Gini index or median - should be affected only slightly by oversampling. Another potential issue is the fact that, from an EU perspective, the HFCS is up to now limited only to euro area countries; we then have to cope with possible lack of information for those countries which do not belong to the euro area.

Why would one like to have at the same time income, consumption and wealth at the micro-level (i.e. the household level)? As stated in the Sen-Stiglitz-Fitoussi report, there is a growing need for focusing not only on income but also on consumption from the households' perspective. It is also important to focus on the notion of stock (therefore assets and liabilities) in order to analyse in a more comprehensive way the resources the households have at their disposal in order to finance their consumption. In the end, inequalities in terms of living conditions should be considered as a multi-dimensional issue whose analysis has to encompass the different variables describing the ability of the households to fulfil its needs.

[3] The Engels curve describes how expenditure varies with household income.

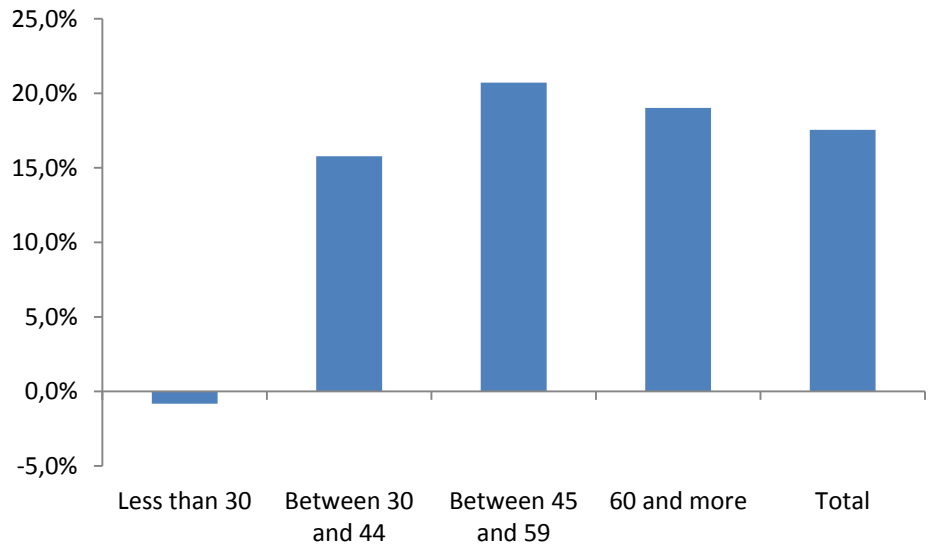
The first step towards a better integration of ICW variables as a whole in micro-data would be to have at one's disposal at the same time income and consumption, as saving rates may strongly reflect the ability of households to finance its consumption and accumulate wealth. The analysis would mainly focus on the tails of the distribution: on the one hand, low saving rates (possibly negative saving rates) may reveal households in situation of vulnerability. On the other hand, the question of the increase of wealth inequalities may be – at least partly – enlightened by saving rates: in case households with higher permanent income save a bigger fraction of their income than poorer households, it implies mechanically that the speed of wealth accumulation is higher for the richest households, thereby leading to an increase of the inequalities.

A first naïve approach consists of merging information coming from EU-SILC and HBS in order to calculate saving rates broken down by households categories (such as income quintiles, age groups or household types). Doing this requires to define consistently categories across the two surveys and to assume that the target populations for both surveys are the same. Then, for one given category c of households, the saving rate may be defined as follows:

$$s_c = \frac{\sum_{h \in c} Y_h - \sum_{h \in c} C_h}{\sum_{h \in c} Y_h}$$

where Y_h and C_h respectively stand for disposable income and consumption expenditures for household h.

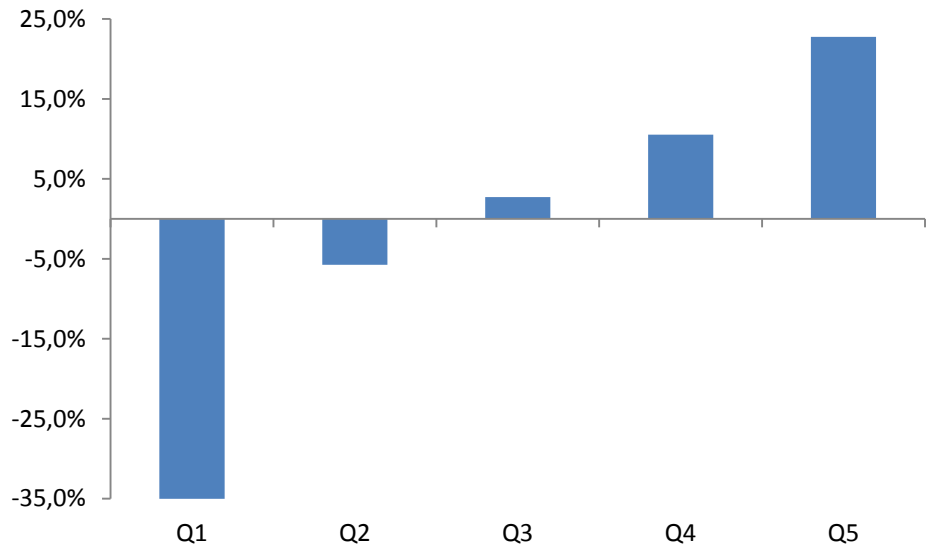
Figure 1 - Aggregate saving rate in the EU-28 broken down by age of RP



Source: Eurostat, EU-SILC and HBS surveys, 2010.

As shown on Figure 1, it is possible to analyse the question of saving rates among the population with respect to the life cycle theory. In the EU, the basic exercise shows that households whose reference person is less than 30 tend to consume more than they earn (on aggregate less than 1% of yearly disposable income), while the saving rate increases with age, reaching its maximum between 45 and 59. Then it decreases after 60, consequently to retirement and the expected drop in income. However, conversely to the basic life cycle theory, older people do not seem to dissave a lot, and even tend to keep on accumulating assets. Such phenomenon may be explained thanks to dynastic models which introduce a preference for bequests in the utility function of the consumer.

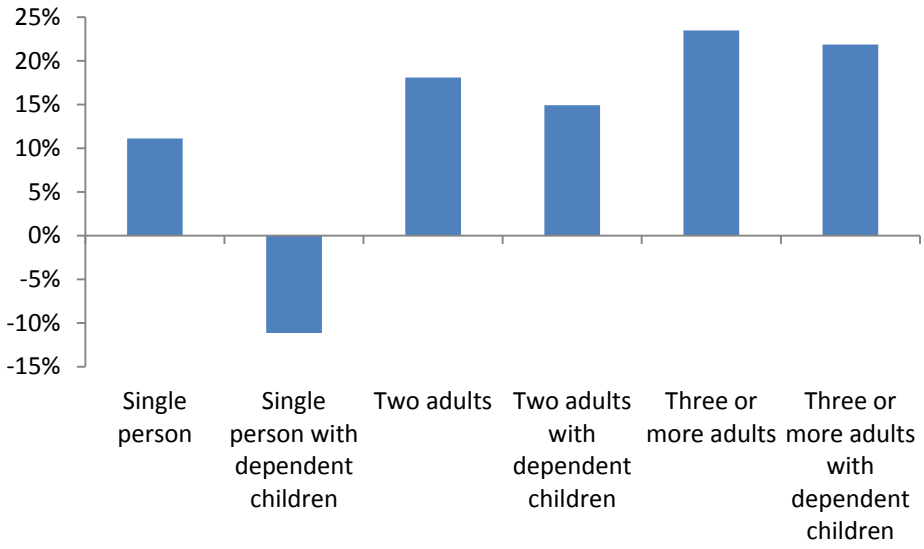
Figure 2 - Aggregate saving rate in the EU-28 broken down by income quintile



Source: Eurostat, EU-SILC and HBS surveys, 2010.

Figure 2 describes the aggregate saving rate broken down by income quintile; as expected, the saving rate increases as income rises which is consistent with the literature on the topic and the economical intuition. However, two questions arise from this figure: the first one is related to the fact that income is defined here as current disposable income, and not the permanent one. It is therefore not possible to conclude on the difference in accumulation speed along the permanent income distribution. One would need more insights on the persistence in income quintiles in the individual lifetime. Also related to the persistence in the income distribution, one would need to understand the sustainability issue in the first quintile, for which the strongly negative saving rate has to be financed through either indebtedness or asset sales. Therefore such a situation may only be temporary for one given household in this quintile.

Figure 3 - Aggregate saving rate in the EU-28 broken down by household type

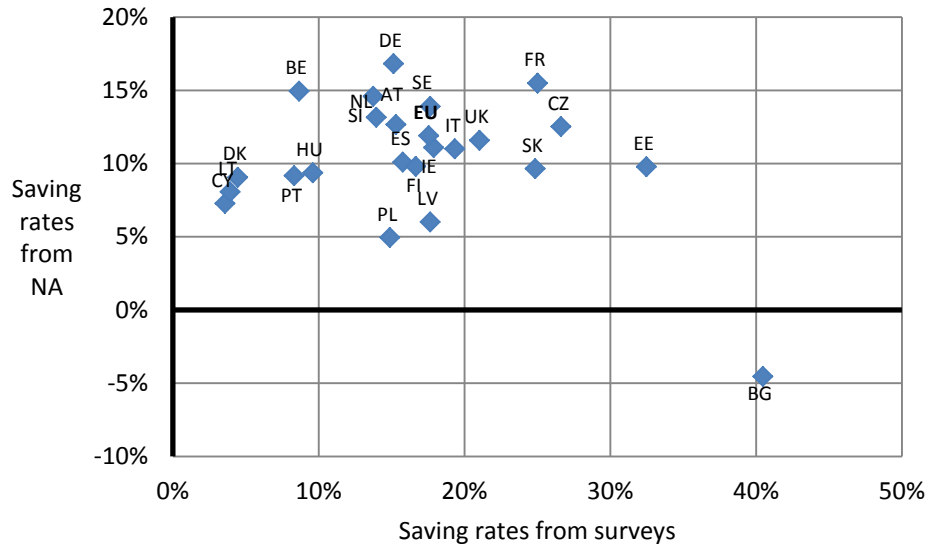


Source: Eurostat, EU-SILC and HBS surveys, 2010.

The composition of the household has also a huge effect over its ability to finance its consumption: as shown in Figure 3, single parents encounter huge difficulties in making ends meet, as they are in total strongly dissaving over one year (-11%). From this respect, saving rates may complement the information carried out by consumption unit.

The entire exercise relies on the (strong) assumption that the estimations coming from both surveys do not suffer from any underreporting phenomenon. Indeed, in case both surveys are affected by a uniform underreporting phenomenon (i.e. income and consumption are underreported in the same manner), this implies that the saving rate will be over-estimated. In the worst case (and most likely) scenario, the underreporting phenomenon is different across the two surveys, and in that case the effect over the saving rate is *a priori* undetermined. A first assessment of the reliability of the exercise consists of comparing the aggregate saving rates estimated through the surveys with the ones displayed by the National Accounts. Even if there are strong conceptual differences, we expect at least to show a link between both indicators, indicating some consistency between the different sources.

Figure 4 - Comparison of saving rates as given by the surveys and by the National Accounts



Source: Eurostat, 2010.

When comparing the saving rates coming from the different sources (see Figure 4) we can see that it seems not to be the case. Indeed, the figure shows no clear positive correlation between the two indicators, as it would have been at first sight expected. While the difference for the EU as a whole is -6 percentage points (18% for the surveys, 12% for the National Accounts), the gap may be bigger for some countries (-45 pp for BG, -23 pp for EE). Moreover, the absence of positive link leaves open the question of the validity of the exercise.

Therefore, moving forward with the question of ICW implies to build a framework that enables the conceptual comparison of variables coming from the National Accounts with the ones provided by the surveys. There is a need for a systematic approach that would enable the comparison between the different sources that would account for all potential conceptual differences, thereby providing a clear-cut answer to the question of the consistency of the different sources (hence also confirming the reliability of the exercise). This is one of the aims of the continuing work on the ICW project; the framework is sketched in the next sections of the paper.

2. Micro –macro links for the distribution of income

The initiative on linking micro and macro statistics on households is based on the necessity to understand the links between the circumstances/behaviour/well-being of a set of households characterised by chosen determinants (the number of persons within the household, the relative income level as compared to other households in the society etc.) and the situation of households as the institutional unit in the macroeconomic context.

Therefore, a first step of the exercise is to understand conceptual and generic differences in EU - SILC and NA as well as specific differences, in particular, for income components, and evaluate the conceptual comparability based on the underlining methodology. The methodology for implementation of the EU-SILC is described in the EU-SILC regulation[4] "Methodological guidelines and description of the EU-SILC target variables"[5], whereas NA methodology is described in "European system of accounts ESA 2010"[6]. The linkage between the two sources has already been discussed and developed in the Methodological working paper (2013) by Liviana Mattonetti Eurostat[7] that serves as a basis for the comparison of the methodology between the two sources. The Canberra Group Handbook on Household Income Statistics[8] is also used as a reference guideline is the analysis.

This part is organised as follows: description of the generic differences in the methodology of the EU –SILC and NA household sector (S.14); assessment of the conceptual links between GDI (Gross disposable income) components within EU-SILC and NA; the coverage rates for the GDI income components (in %) and their stability over time. The main aim of this work is to assess the conceptual comparability of income variables in the two data sources and show first results how well the data lines up for conceptually similar income variables in EU-SILC and NA.

[4] REGULATION (EC) No 1177/2003 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 June 2003 concerning Community statistics on income and living conditions (EU-SILC): http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003R1177&from=EN

[5] Available online of the Eurostat webpage: http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_statistics_on_income_and_living_conditions_(EU-SILC)_methodology_-_environment_of_the_dwelling

[6] Available online of the Eurostat webpage: http://ec.europa.eu/eurostat/documents/3859598/5925693/KS-02-13-269-EN.PDF/44cd9d01-bc64-40e5-bd40-d17df0c69334

[7] Eurostat, Liviana Mattonetti, European household income by groups of households, 2013: http://ec.europa.eu/eurostat/documents/3888793/5858173/KS-RA-13-023-EN.PDF

[8] Canberra Group Handbook on Household Income Statistics, Second Edition 2011, UN: http://www.unece.org/fileadmin/DAM/stats/groups/cgh/Canbera_Handbook_2011_WEB.pdf

2. 1. Description of the generic differences between micro and macro data

In the NA the presentation of the Households sector data follows the sequence of accounts and respects the accounting methodology in the framework. It includes accounts that are estimated at aggregated level for the purposes of NA but are not directly measurable in the context of social statistics, for example, employer's imputed social contributions, Financial Intermediation Services Indirectly Measured (FISIM) and property income attributed to insurance policy holders, operating surplus (including imputed rent). The interaction of households with other institutional sectors within the economy is recorded in the National accounts in a closed framework. The horizontal consistency across the accounts among the institutional sectors should be respected, as well as vertical consistency between the non-financial and financial part of the accounts within the institutional unit. National accounts are not specifically intended to cover material well-being aspects for the households.

On other side EU-SILC is designed to reflect the income and living conditions of the population and subpopulation groups.

The main generic differences between EU-SILC and NA could be attributable to the reference population differences and data measurement issues as described below.

(1) People living in the institutional households

While in National Accounts the population covered in households sector (S.14) "(..) consists of all persons, national or foreign, who are permanently settled in the economic territory of the country..." [ESA2010 11.05], in the EU-SILC the reference population consists of all private households residing in the country, and people living in the institutional households are therefore excluded. It should be noted, that the extreme wealthiest part of the population is not well covered by the EU-SILC data. The undercoverage of the wealthiest population could cause significant data gaps.

(2) Non-profit institutions serving households (S.15)

In National Accounts, "the NPISH sector (S.15) consists of non-profit institutions which are separate legal entities, which serve households and which are private non-market producers. Their principal resources are voluntary contributions in cash or in kind from households in their capacity as consumers, from payments made by general government and from property income. (…) NPISH sector includes: trade unions, professional or learned societies, consumers' associations, political parties, churches or religious societies (including those financed but not

controlled by governments), and social, cultural, recreational and sports clubs; and charities, relief and aid organisations financed by voluntary transfers in cash or in kind from other institutional units." [ESA2010 2.129 – 2.130]

According to the ESA2010 the annual sector accounts data refers to the actual households sector (S.14) as separated from non-profit institutions serving households - NPISH (S.15). Data should be provided backwards till 2012. However, some countries have been granted derogations from the ESA2010 data transmission program[9] and are providing S.14 data together with S.15.

Table 1 - Derogations granted for S.14 / S.15 split in ESA2010 transmission program

Derogations granted for S.14 / S.15 split in ESA2010 transmission program		
S.14 and S.15 to be provided as total S.14 + S.15 until expiration of the derogation	5MSs	First transmission in 2017
S.14 and S.15	1MS	Transmission at t+21months

No data on NPISHs are collected in the EU-SILC.

(3) Quasi-corporations

ESA2010 defines quasi-corporations as "entities which keep a complete set of accounts and have no legal status. They have an economic and financial behaviour that is different from that of their owners and similar to that of corporations. They are deemed to have autonomy of decision and are considered as distinct institutional units." [ESA2010 2.13(f)]
Most difficulties in identification of quasi-corporations relate to allocation of producer units between non-financial/financial corporations (S.11 and S.12) and households (S.14) sectors.
The inclusion of the quasi-corporations in the household sector in the national accounts and the country specific implementation rules have an influence on the scope and comparability of the household sector accounts within the National Accounts framework but also makes it difficult to compare with the micro data stemming from household surveys such as EU-SILC as the population covered by the two sources is not these same. Two main types of unincorporated entities - which are not defined in ESA2010 (and in 2008SNA as well) - but are essential for the quasi-corporations analysis are sole proprietorship and unlimited liability partnership:

(SP) Sole Proprietorship - type of business entity that is owned by one individual (natural person) and in which there is no legal distinction between the owner

[9] ESA 2010 Transmission programme of data: http://ec.europa.eu/eurostat/documents/3859598/5936561/KS-01-13-429-3A-C-EN.PDF/69e7e68c-661d-44dc-bef3-d0e560403722

and the business. The owner receives all profits (subject to taxation specific to the business) and has unlimited responsibility for all losses and debts.

(UP) Unlimited Liability Partnership - type of business entity in which two or more individuals manage the business collectively and who are personally liable for its debts.

Unlimited liability partnerships (UP) are not included in the survey data at all. Sole proprietorship (SP) are included, however the reliability of these data in the household survey is an issue to be considered.

International manuals specify only general principles underlying identification of quasi-corporations. From the theoretical point of view, it is not deemed useful to develop precise quantitative criteria for allocation of unincorporated units among relevant sectors. SNA2008 states that "experience has shown that countries have difficulty treating unincorporated enterprises owned by households as quasi-corporations. However, it is not useful to introduce additional criteria, such as size, into the definition of quasi-corporations owned by households. If an enterprise is not in fact operated like a corporation and does not have a complete set of accounts of its own, it cannot and should not be treated as a quasi-corporation however large it may be". [SNA2008 4.46]

In practice, however, thorough examination of unincorporated units for their compliance with general theoretical principles underlying delineation of quasi-corporations would require excessive resources taking into account that detailed information on these units' activities and management practices is not easily accessible. Thus, reliance on certain simplified benchmarks in order to take account for practical constraints seems inevitable for the purpose of practical delineation decisions.

Countries approaches to delineation and measurement of quasi-corporations in national accounts were investigated by the Eurostat-ECB Task Force on Quarterly Sector Accounts (TF-QSA) by means of ad-hoc questionnaire in 2010. The results were then integrated by using information from the survey on the compilation of annual households' current accounts conducted by Eurostat/OECD Expert Group on Disparities in National Accounts in 2011 for EU countries not included in the 2010 TF-QSA survey. The collected information were further verified and amended in the framework of relevant discussions in TF-QSA in 2013-2014.

Overall the results show heterogeneity in both relevance of unincorporated units among EU Member States and criteria for their classification among relevant institutional sectors.

Figure 5 - Share of persons employed in SPs and UPs combined in total employment by enterprises

Country	Total unincorporated units (% of total employment)
A	*59.2*
B	*41.9*
C	*38.5*
D	*34.9*
E	*24.3*
F	*23.8*
G	*21.8*
H	*21.6*
I	*18.8*
J	*18.8*
K	*17.1*
L	*16.7*
M	*13.2*
N	*12.3*
O	*10.2*
P	*7.6*
Q	*6.8*
R	*6.7*
S	*6.4*

Source: TF-QSA surveys, YYYY.

Table 2 - Member States practices with respect to determination of QC separate from Households

Description	Countries	Criteria range
No QC identified, all unincorporated enterprises are recorded in sector S.14	8MSs	-
Unincorporated units are allocated in line with legal form: all sole proprietorships are allocated into S.14, all partnerships to S.11/S.12	10MSs	Legal form only
Unincorporated units with simplified accounting allocated to S.14; unlimited partnerships with double entry bookkeeping obligation allocated to S.11/S.12	1MS	Legal form and double entry bookkeeping obligation
Number of employees is used as delineation criteria for both sole proprietors and unlimited partnerships	2MSs *(1MS combined with turnover)*	2 to 10 employees
Legal form and number of employees are used as delineation criteria for sole proprietors only; unlimited partnerships are fully allocated into S.11/S.12	4MSs *(combined with turnover)* *In 2MSs type of economic activity is also taken into account*	1 to 50 employees
Legal form and monetary threshold (turnover) is used as delineation criteria	3MSs *(1MS combined with number of employees)*	EUR 1.5 to 10 millions

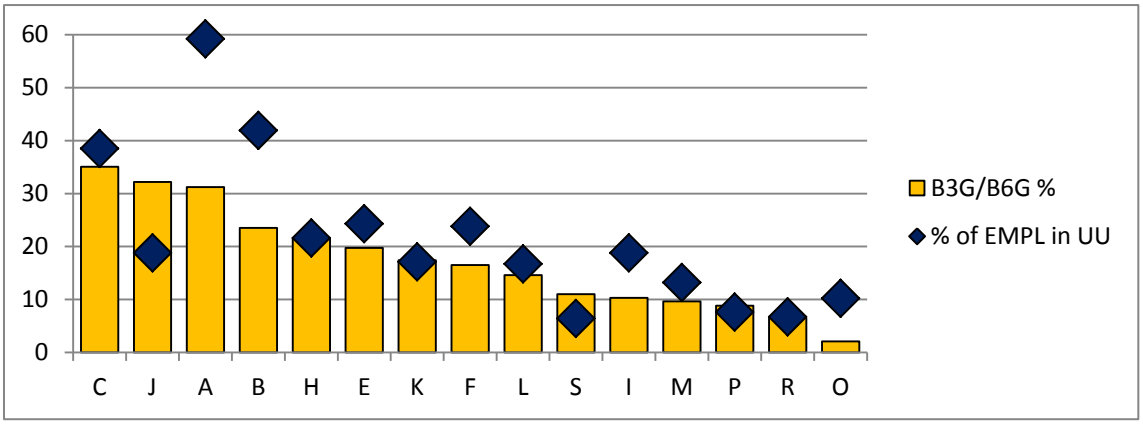
Source: TF-QSA document – Eurostat C1/NAWG/841

Relevance of Unincorporated Units for the calculation of household Gross Disposable Income

Given that on the basis of the information above in some cases it is practically impossible to allocate Unincorporated Units between S.11 and S.14 coherently within EU Member States, what are the practical effects of the inclusion of Unincorporated Units within S.14? The first step is to analyse the weight of this inclusion in the calculation of B6G. This can be done indirectly by comparing the results of 2011 TF-QSA survey and Sector Accounts data for the same year.

Following the definition of employers and own-account workers (S.141 and S.142) provided in ESA2010 manual – paragraph 2.122 – the "relevance" of mixed income in the calculation of B6G should be positively correlated with the share of persons employed in Unincorporated Units as a share of total employment.

Data shows the following:



Source: TF-QSA surveys and Eurostat Database, YYYY.

And the correlation between the two series is +0.77.

Is therefore the value of B3G for S.14 influenced by the "broad" delimitation of S.14 in ESA2010 in EU Member States where a high share of workers is employed in Unincorporated Units?

Mixed evidence emerges on this point: the effects of the broad delimitation of S.14 on the relevance of B3G within B6G components may depend also on the specific characteristics of unincorporated units within each country – number of employees, for example. Detailed info would be needed to properly answer the question above beyond use of indirect inference.

(4) Measurement issues in the data

EU-SILC data are based on survey/interview information in all countries, in combination with register information in several Member States especially for the income variables. A. B. Atkinson et al. (2015) argued that the use of register data might increase the comparability between data for income in the NA and EU-SILC; the primary analyses presented in the paper seem to confirm their point.

During the interviews there could be underreporting issues for the income variables. NA are compiled using many sources.

In EU-SILC, re-weighting that aims at addressing unit non-response is usually performed by calibrating the data on the aggregated information (for example on the household types obtained from CENSUS information). Imputations addressing item non-response are performed on an ad-hoc basis by NSIs using regression models and/or non-parametric methods, thereby making the assumption of a Missing At Random (MAR) mechanism.

In NA, imputations are made to create new variables where data simply do not exit (for example, in order to measure hidden economy), and data corrections are adopted to reach internal consistency and exhaustiveness [Eurostat, Mattonetti, p. 11].

Generally, the traditional household surveys have difficulties to capture well the income for the richest part of population.

2.2. Assessment of the conceptual links between disposable income components in micro and macro data

This part presents the methodological comparison between Disposable Income (GDI) as it is measured in the EU-SILC and NA. It should be noted, that both sources are treated equally in this exercise.

In EU-SILC ‘disposable income’ means gross[10] income less income tax, regular taxes on wealth, employees', self-employed and unemployed (if applicable) persons' compulsory social insurance contributions, employers' social insurance contributions and inter-household transfers paid [EU-SILC regulation].

In NA household gross disposable income[11] is calculated as a sum of compensation to employees, mixed income (gross), net property income and net current transfers, social benefits

[10] ‘gross income’: means the total monetary and non-monetary income received by the household over a specified ‘income reference period’, before deduction of income tax, regular taxes on wealth, employees', self-employed and unemployed (if applicable) persons' compulsory social insurance contributions and employers' social insurance contributions, but after including inter-household transfers received [EU-SILC regulation]

[11] The balancing items are established both gross and net. They are gross if calculated before deduction of consumption of fixed capital, and net if calculated after this deduction. It is more significant to express income balancing items in net terms, as consumption of capital is a call on disposable income which must be met if the capital stock of the economy is to be maintained [ESA2010; 8.06]

other than social transfers in kind, operating surplus (gross), less taxes on income and wealth and social security contributions.

Following, the comparison should be made between Disposable Income for EU-SILC and Gross Disposable Income for NA. For simplicity reasons both concepts will be referred to disposable income (DI) further in the text.

Methodological comparison of EU-SILC and NA DI components

The detailed methodological comparison of income components of DI in the EU-SILC and NA is presented in the Annex 1. The grouping of the income components was made for this - first comparison exercise. The results of the assessment are preliminary and need to be further discussed with the EU-SILC and NA experts. Following the analysis of the specific methodological differences between the DI components, the strong/ medium conceptual links are identified for: employee cash or near cash income (excluding employers' social contributions); social benefits other than social transfers in kind; and for taxes on income, and social contributions paid (excluding employers' social contributions). The medium/ low conceptual links are identified for: income from self – employment; property income; and taxes on wealth paid. These six income components are analysed in detail in this part of paper.

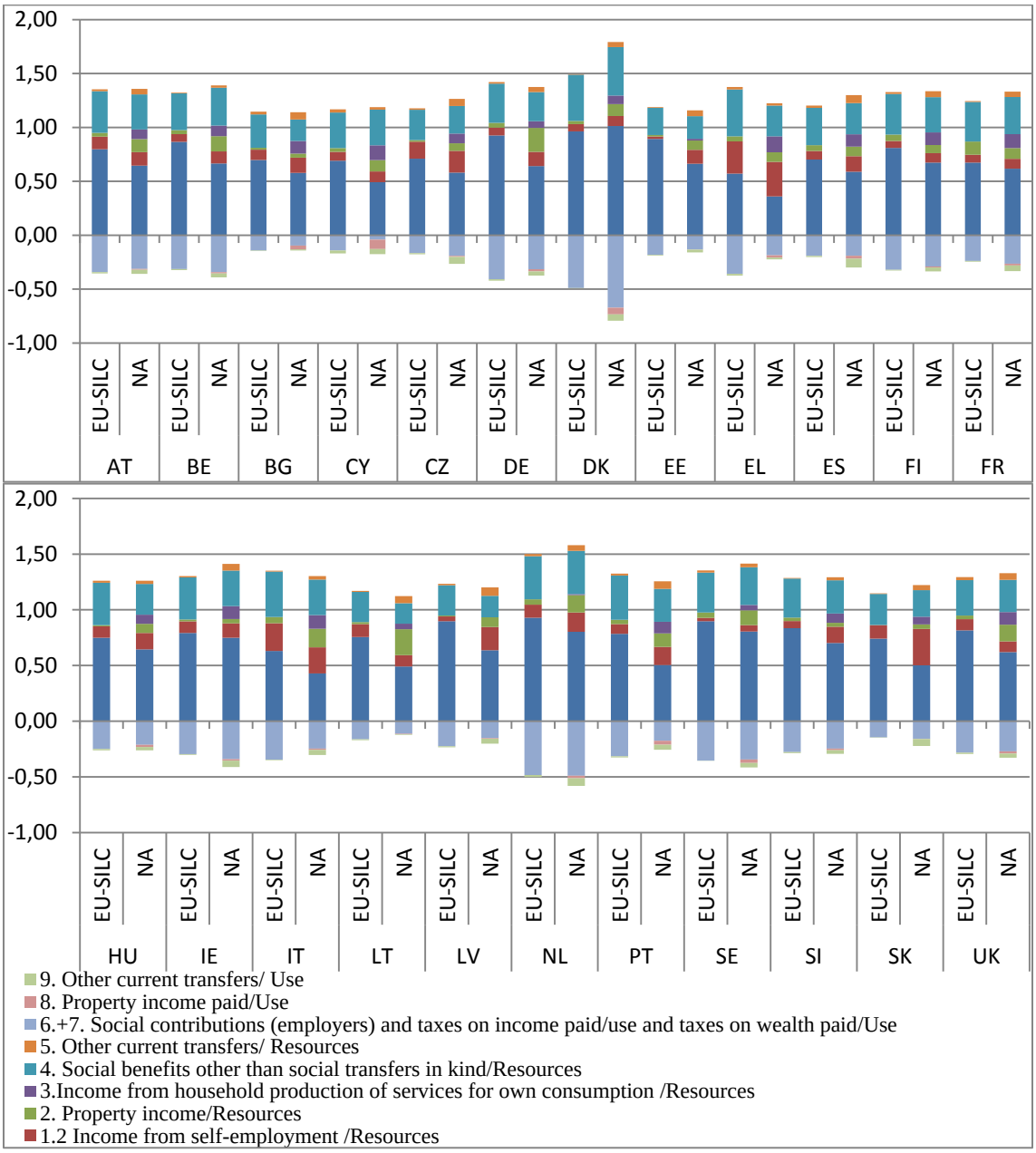
Although the main generic and specific differences are identified, the further analysis is needed to quantify their impact on each DI component.

Relevance of EU-SILC and NA DI components

In this part of the paper the relevance of each income component in total DI is discussed in both, the NA and EU-SILC DI. The analysis is based on 2013 data as shown in Figure 6. The EU countries included in the analysis are those for which the relevant detail data are available. Please note that the share of each income component in total DI might change over the time. The analysis of the changes of the shares of the income components is not part of this paper.

EU-SILC DI definition does not include the income from household production of services for own production, that is included in NA GDI definition. The relevance of this item in NA GDI is varying from country to country (from 0% in Latvia till 15% in Greece). In addition, the EU-SILC DI definition does not include the property income paid that is part in NA GDI. The share of the property income paid is smaller than 5% for all countries presented in the Figure 6, except for Cyprus (9%) and Denmark (6%).

Figure 6 - Share of each income component in EU-SILC DI and NA GDI, 2013,%



Data source: Eurobase (Eurostat) Non-financial transactions [nasa_10_nf_tr]; S14_S15 data for BG, DE, FI, IE and UK, for others S14; EU-SILC micro data; own calculations (based on the availability of the country data for each income component)

Figure 6 shows that in EU SILC DI employee income, social benefits other than social transfers in kind, and social contributions and taxes on income and wealth paid are the largest among the income components in all the countries. While the relevance of the employee income (excluding employers' social contributions) is the highest in all the countries also for NA GDI, the relevance of other income components is country specific and general conclusion cannot be made.

According to the NA data the largest share of employment income (excluding employers social contributions) in GDI is in Denmark (slightly above 100% accompanied by largest share of

social contributions (excluding employers social contributions) and taxes on income and wealth paid among the presented countries - 67%), the Netherlands (80%), and Sweden (81%); while the smallest shares of employment income (excluding employers social contributions) in the GDI are for Greece (36%). On other side the largest share of employment income in disposable income according to the EU-SILC data are for Denmark (96%), while the smallest shares are for - Greece (57%), Italy (63%) and France (67%).

The relevance of self-employment income varies across the countries for both NA and EU-SILC. The highest shares for the self-employment income in NA GDI are for Slovakia (33%) and Greece (32%); while in the DI EU-SILC the highest shares for the self-employment income are for Greece (30%) and Italy (25%).

The share of property income in NA GDI is highest for Lithuania (23%), Germany (22%) while the share of property income in the EU-SILC DI is highest for France (12%) and Finland (6%).

Share for social benefits other than social transfers in kind in total NA GDI are largest for Denmark (45%) and Finland (38%). While the relevance for social benefits other than social transfers in kind in total EU-SILC DI is the most significant for Denmark and Greece (both 43%).

The relevance of other current transfers received in NA GDI is relatively small in all countries, the highest shares being for the Check republic (7%), Spain (7%), Portugal (7%). Also the share of the other transfers received in EU-SILC DI is generally low, the highest being for the United Kingdom (3%).

The relevance of other current transfers paid in NA GDI varies between 0% in Bulgaria till - 8% in Spain. While this component in EU-SILC DI is lower than 2% in all presented counties.

The share of social contributions (excluding employers' social contribution) and taxes on income and wealth varies largely among the counties in both sources. The largest shares in absolute terms of it in NA GDI are for Denmark (-67%), the Netherlands (-49%), while also in EU-SILC DI the largest shares are for Denmark (-49%) and the Netherlands (-49%).

The coverage rates for the DI income components

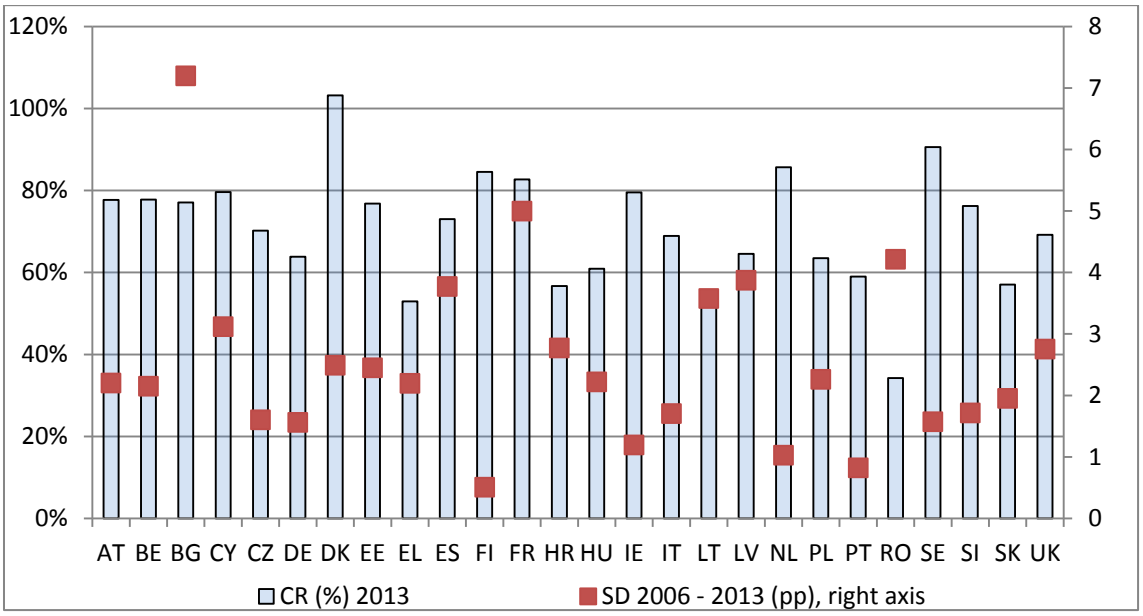
This part presents how well the data lines up from the both sources for DI and its components. The comparison between the NA aggregates with totals of the EU – SILC variables could be influenced by both the generic and specific differences in the EU-SILC and NA methodologies, as well as by their implementation practices in each Member State.

Further in the text the DI components are analysed. The comparison between DI components is based on both -the level of the coverage between the EU-SILC variables at aggregated level and corresponding accounts from NA (coverage rates, expressed in %) and their stability over time,

measured by standard deviation (SD)[12]. The both aspects should be taken into account for further development of the distributional indicators for the income.

Please see Annex 2, for detailed DI and DI components coverage rates and SD for the period 2006-2013.

Figure 7 - CR (2013) and SD (2006-2013) for total disposable income



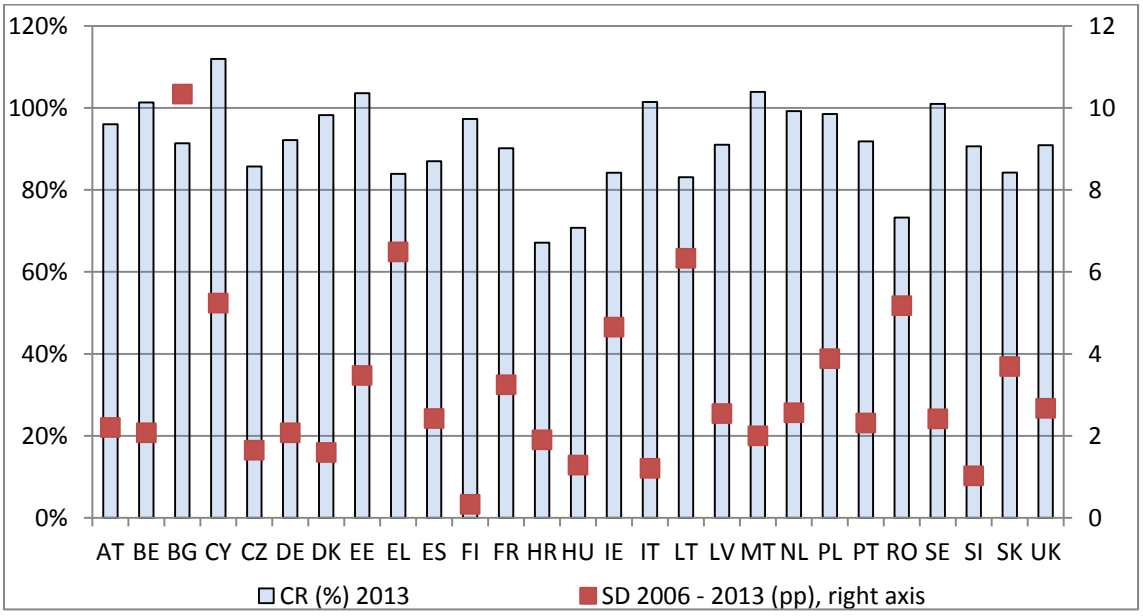
Data source: Eurobase (Eurostat) Non-financial transactions [nasa_10_nf_tr]; S14_S15 data for AT, DE, FI, and UK, for others S14; EU-SILC micro data; own calculations (based on the availability of the country data)

Figure 7 shows the coverage rates between the EU-SILC variables at aggregated level and corresponding accounts from NA (further in the text - coverage rates (CR)) for the DI. In 2013, the DI coverage rate for the EU Member States varies between 34% in Romania till 103% in Denmark, the average being 72% (calculated as simple average). The SD varies from 1 pp in Finland till 7 pp in Bulgaria.

It is expected, that the coverage rate for the employee cash or near cash income is high and stable, taking into account that the generic differences for this item is mainly referring to the differences related to the under - coverage of the wealthiest part of population in the EU-SILC. For this item, countries increasingly use administrative registers for EU-SILC data.

[12] The stability over time is measured as standard deviation (SD) for the coverage rates over the period from 2006-2013 (the availability of country data for these years are taken into account in the calculations). Low values (close to 0 of SD) means that the CR are stable over time, while high values of SD indicates that there is no stability of the CR.

Figure 8 - CR (2013) and SD (2006-2013) for employee cash or near cash income (excluding employers' social contributions)

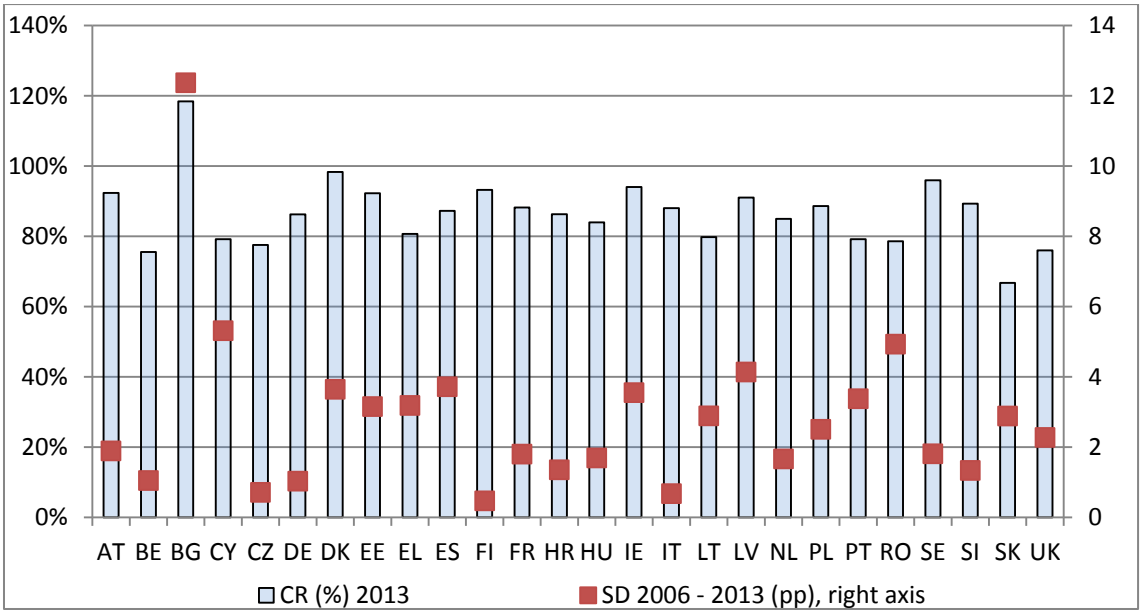


Data source: Eurobase (Eurostat) Non-financial transactions [nasa_10_nf_tr]; EU-SILC micro data; own calculations (based on the availability of the country data)

In 2013, the coverage rates for employee cash and near cash income (excluding employers' social contributions) is generally high – average coverage rate being 91% (simple average). However, the over-coverage (more than 100% for Cyprus; Malta; Estonia; Italy; Belgium and Sweden) should be analysed further as carefully as low coverage rates. The SD varies from 0 pp in Finland till 10 pp in Bulgaria.

It is expected that the CR for the social benefits other than social transfers in kind/resources are good, however the population differences might have impact on this item, mainly referring to the people living in the institutional households. Also for this item, some countries use might administrative registers for EU-SILC data.

Figure 9 - CR (2013) and SD (2006-2013) for social benefits other than social transfers in kind/resources



Data source: Eurobase (Eurostat) Non-financial transactions [nasa_10_nf_tr], S14_S15 data for AT; DE; IE ;UK;HR; others S14), and EU-SILC micro data; own calculations (based on the availability of the country data)

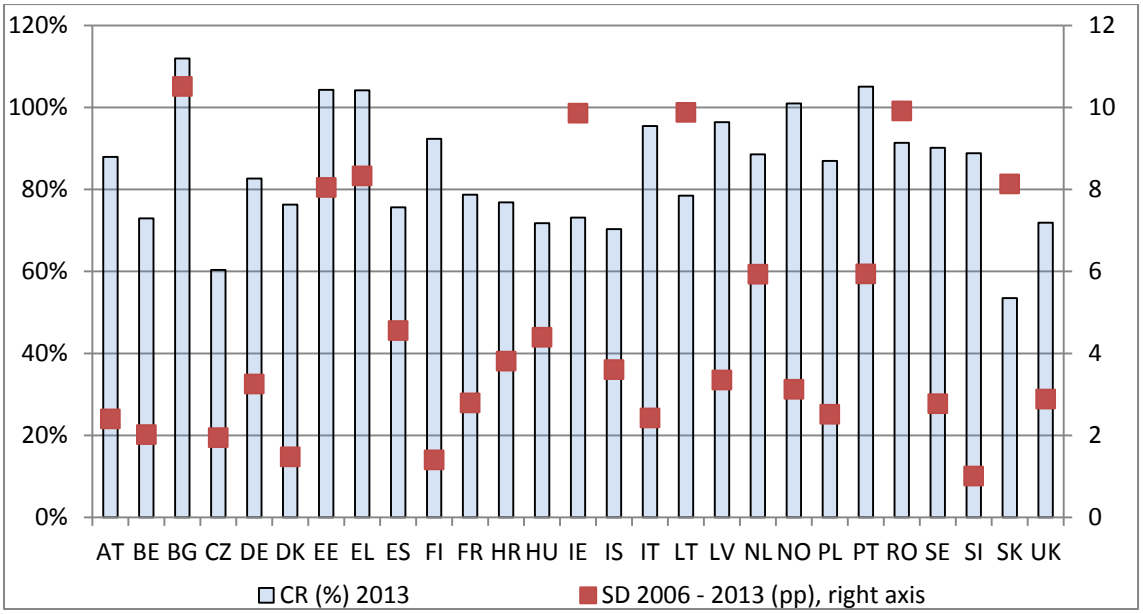
The CR for social benefits other than social transfers in kind are generally high – average coverage is 87% (simple average). However the over-coverage (more than 100% for BG) should be analysed further as carefully as low coverage rates. The SD varies from 0 pp in Finland till 12 pp in Bulgaria (only for 2 countries SD is higher than 5 pp).

Although the conceptual links for social contributions and taxes on income paid is evaluated as high/medium, the CR could be influenced by measurement error in the survey data (not coverage of the wealthiest part of population in EU-SILC).

The CR for social contributions and taxes on income paid (excluding employers' social contributions) are generally high – average coverage rate being 85% (simple average).

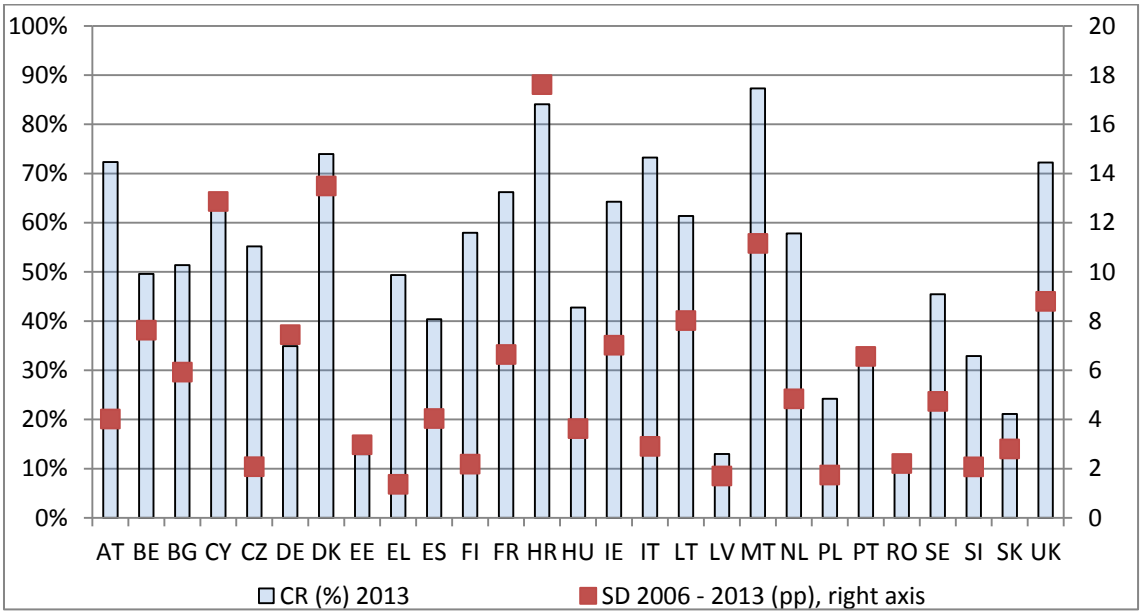
However, over the time there is more volatility than for cash or near cash income (excluding employers' social contributions) and for social benefits other than social transfers in kind. The SD varies from 1 pp in Finland till 11 pp in Bulgaria (for 7 countries SD is higher than 5 pp).

Figure 10: CR (2013) and SD (2006-2013) for social contributions and taxes on income paid



Data source: Eurobase (Eurostat) Non-financial transactions [nasa_10_nf_tr], S14_S15 data for AT; DE; IE;UK;HR ; others S14others S14) and EU-SILC micro data; own calculations (based on the availability of the country data)

Figure 11 - CR (2013) and SD (2006-2013) for income from self-employment



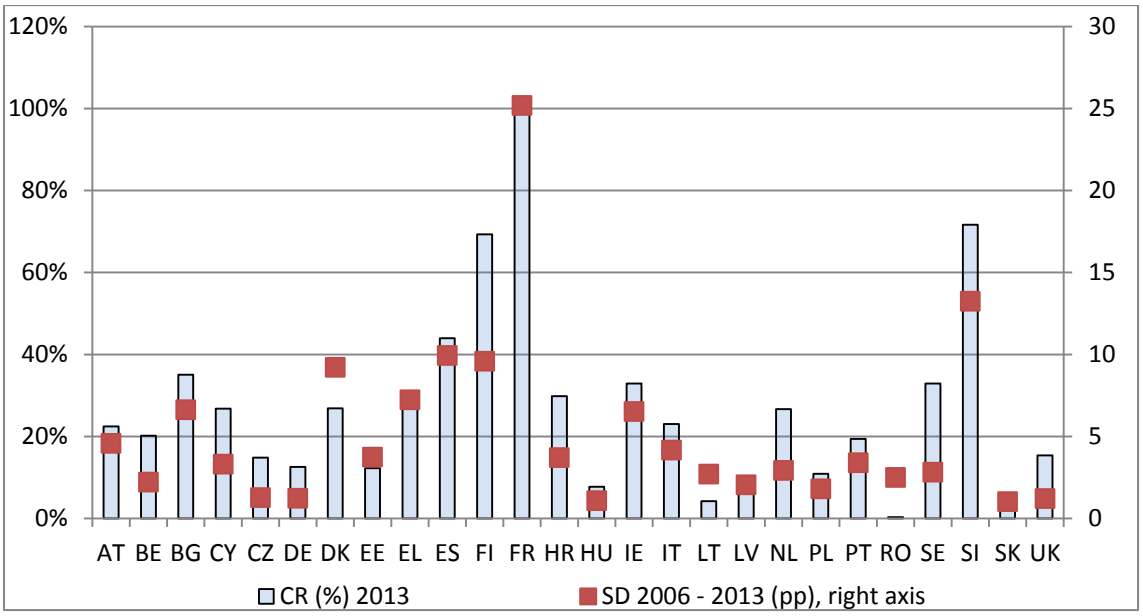
Data source: Eurobase (Eurostat) Non-financial transactions [nasa_10_nf_tr], S14_S15 data for;DE;IE;UK; ; others S14others S14) and EU-SILC micro data; own calculations (based on the availability of the country data)

The CR for income from self-employment (excluding employers' social contributions) are varying across the countries– average coverage rate being 50% (simple average). The highest CR are for Malta (87%), Croatia (84%), Denmark (74%), and Italy (73%), the lowest CR are for Romania (12%), Estonia and Latvia (both 13%). The self-employment income is not only having very diverse coverage rates across the countries, in addition, it is also volatile over the years. The SD varies from 1 pp in Greece till 18 pp in Croatia (for 12 countries SD is higher than 5 pp).

The conceptual links between NA and EU-SILC for property income is evaluated as medium/low. Similarly, to income from self-employment this income component is also subject to high impact of generic differences, in particular, for population coverage for the wealthiest part of the population.

The coverage rates for property income are low – average coverage rate being 29% (simple average). In 2013, the highest CR are for France (102%), Norway (73%), Slovenia (72%), and Finland (69%), lowest CR are for Romania (1%), Slovakia (3%), and Lithuania (4%). The SD varies from 1 pp in the Check Republic, Denmark, Hungary, Slovakia and the United Kingdom till 25 pp in France (high impact of the CR in 2006 for France, the SD for France for period from 2007 till 2013 is 6pp) (for 7 countries SD is higher than 5 pp).

Figure 12: CR (2013) and SD (2006-2013) for property income



Data source: Eurobase (Eurostat) Non-financial transactions [nasa_10_nf_tr], S14_S15 data for; AT; DE;IE ; HR,UK; others S14) and EU-SILC micro data; own calculations (based on the availability of the country data)

Conclusions

- The micro data show a positive correlation between current income and saving rates, as expected; the results are also consistent with respect to the life cycle theory. We are also able to detect sources of vulnerability for lone parents.
- The plausibility check does not enable to conclude at this stage. There is a need for closing the data gap between National Accounts and surveys.
- This analysis reveals the issues that need to be addressed for closing micro-macro data gaps for the European countries. Further plausibility tests, methodological work, as well as identification of the best practices for both data sources among the countries should be carried in order to develop robust distributional indicators for income based on EU-SILC and NA data.
- A proper assessment is needed for the impact of inclusion of quasi-corporations in household sector on the data gaps between micro and macro data. NA data show a strong positive correlation between shares of employed in unincorporated enterprises and the weight of mixed income (B3G) in the GDI (B6G).
- The results show that for income components that have high/medium conceptual links between NA and EU-SILC data lines up well in terms of coverage rates and stability over time: employee income (excluding employers' social contributions), social benefits other than social transfers in kind; and social contributions and taxes on income paid (excluding employers' social contributions). These income components are the most relevant for total EU-SILC income for all the countries analysed. However, this is not the case for the NA GDI income components; the country results are diverse.
- On other side the income components that have medium/low specific conceptual links are largely varying across the countries for both the coverage rates and their stability over time: income from self – employment, property income, and taxes on wealth paid. These income components should be scrutinised in detail before further distributional indicators are developed.

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Annex 1: Assessment of the conceptual links between disposable income components in EU-SILC and NA

	EU-SILC DI components	NA GDI components	Conceptual links between DI components within EU-SILC and NA
1.1 Employee income (wages and salaries)	PY010G: Employee cash or near cash income PY021G: Company car	D11/rec: Wages and salaries (in kind and cash)	**Strong/Medium (excluding employers' social contributions)**
1.2 Income from self-employment	PY050G: Cash benefits or losses from self-employment	B3G: Mixed income, gross	**Medium/Low**
2. Property income	HY090G: Interest, dividends, profit from capital investments in unincorporated business HY040G: Income from rental of a property or land	D4/rec: Property income:	**Medium/Low**
3.Income from household production of services for own consumption		B2g Operating surplus, gross	**No links**
4. Social benefits other than social transfers in kind received	HY050G: Family/children related allowances HY060G: Social exclusion not elsewhere classified PY090G: Unemployment benefits PY100G: Old-age benefits PY110G: Survivor' benefits PY120G: Sickness benefits PY130G: Disability benefits PY140G: Education-related allowances HY070G: Housing allowances	D62/rec: Social benefits, other than social transfers in kind	**Strong/Medium**
5. Other current transfers and other resources received	HY080G: Regular inter-household cash transfer received HY110G: Income received by people aged under 16 PY080G: Pension from individual private plans	D7/rec: Other current transfers	**Low/No**
6. Social contributions and taxes on income paid	HY140G:Tax on income and social contributions	D61/use Net social contributions D51/use: Taxes on income	**Strong/Medium (excluding employers' social contributions)**
7. Taxes on wealth paid	HY120G Regular taxes on wealth	D59/use: Other current taxes	**Medium/Low**
8. Property income paid		D4/use: Property income	**No links**
9. Other current transfers paid	HY130G: Regular inter-household cash transfer paid	D7/use: Other current transfers	**Low/No**

Annex 2: Coverage rates between the EU-SILC variables at aggregated level and corresponding accounts from NA

Data Source: Eurobase (Eurostat) Non-financial transactions [nasa_10_nf_tr], and EU-SILC micro data, own calculations; (based on the availability of the country data)

Total disposable income NOTE; NA S14_S15 for AT; UK; DE; IE; others S14

	2006	2007	2008	2009	2010	2011	2012	2013	SD pp
AT	68%	70%	71%	74%	74%	75%	72%	78%	**3**
BE	72%	72%	72%	73%	74%	74%	77%	78%	**2**
BG	54%	72%	74%	78%	69%	67%	71%	77%	**7**
CY	84%	79%	75%	79%	82%	85%	84%	80%	**3**
CZ	65%	66%	67%	68%	68%	68%	69%	70%	**2**
DE	66%	68%	68%	69%	68%	68%	66%	64%	**2**
DK	95%	99%	96%	98%	100%	99%	100%	103%	**2**
EE	70%	70%	71%	74%	72%	71%	76%	77%	**2**
EL	57%	57%	57%	58%	57%	53%	53%	53%	**2**
ES	63%	76%	77%	76%	74%	73%	74%	73%	**4**
FI	85%	86%	86%	86%	85%	85%	86%	85%	**1**
FR	66%	77%	78%	79%	80%	80%	81%	83%	**5**
HR				63%	59%	57%	55%	57%	**3**
HU	56%	57%	60%	59%	63%	62%	60%	61%	**2**
IE		78%	78%	81%	80%	79%	78%	80%	**1**
IS	100%	95%	101%	97%	99%	93%	93%	94%	**3**
IT	65%	65%	65%	68%	69%	68%	69%	69%	**2**
LT	54%	60%	59%	55%	48%	51%	54%	54%	**4**
LV	53%	60%	59%	60%	60%	63%	62%	65%	**3**
NL	83%	85%	86%	86%	86%	86%	86%	86%	**1**
PL	60%	64%	59%	58%	63%	63%	62%	64%	**2**
PT	61%	60%	59%	60%	58%	58%	59%	59%	**1**
RO	48%	43%	41%	47%	44%	44%	48%	34%	**4**
SE	86%	87%	91%	89%	89%	89%	89%	91%	**2**
SI	71%	71%	72%	73%	74%	74%	74%	76%	**2**
SK	57%	56%	58%	60%	59%	63%	59%	57%	**2**
UK		74%	77%	71%	69%	70%	69%	69%	**3**

1.1 Employee income (wages and salaries)/ Resources (NA S14=S14_15)

	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**SD pp**
AT	89%	96%	96%	96%	92%	93%	93%	96%	94%	**2**
BE	97%	95%	96%	97%	98%	98%	101%	101%		**2**
BG	79%	105%	114%	107%	95%	91%	95%	91%		**10**
CY	117%	106%	100%	102%	106 %	111%	109%	112%		**5**
CZ	82%	83%	85%	87%	87%	85%	84%	86%		**2**
DE	96%	98%	98%	98%	97%	98%	95%	92%		**2**
DK	94%	94%	94%	94%	97%	94%	96%	98%	96%	**2**
EE	94%	95%	95%	98%	98%	101%	102%	104%		**3**
EL	97%	99%	98%	95%	88%	85%	83%	84%	84%	**6**
ES	84%	93%	91%	90%	88%	88%	87%	87%	89%	**2**
FI	97%	97%	97%	97%	96%	97%	97%	97%	98%	**0**
FR	78%	85%	86%	86%	86%	88%	88%	90%		**3**
HR				70%	68%	65%	65%	67%		**2**
HU	67%	67%	68%	69%	68%	69%	68%	71%	70%	**1**
IE		71%	73%	75%	77%	79%	80%	84%	84%	**5**
IT	99%	99%	98%	98%	99%	99%	100%	101%		**1**
LT	96%	90%	87%	86%	73%	81%	82%	83%		**6**
LV	84%	89%	86%	86%	87%	91%	88%	91%	92%	**3**
NL	101%	106%	106%	105%	105 %	105%	106%	99%	100%	**3**
PL	95%	102%	90%	89%	95%	97%	95%	98%		**4**
PT	89%	88%	86%	88%	89%	90%	88%	92%	94%	**2**
RO	74%	66%	57%	67%	68%	72%	72%	73%		**5**
SE	94%	94%	96%	98%	98%	99%	99%	101%		**2**
SI	89%	88%	87%	89%	89%	89%	91%	91%		**1**
SK	83%	84%	90%	90%	88%	88%	79%	84%		**4**
UK		93%	99%	92%	93%	96%	91%	91%	93%	**3**

1.2 Income from self-employment /Resources; NOTE: NA S14_S15 for DE; UK and IE, others S14

	2006	2007	2008	2009	2010	2011	2012	2013	2014	SD pp
AT	68%	72%	71%	78%	77%	75%	66%	72%	70%	**4**
BE	49%	72%	58%	57%	60%	49%	49%	50%		**8**
BG	34%	39%	33%	45%	41%	35%	35%	51%		**6**
CY	87%	102%	96%	87%	80%	68%	68%	65%		**13**
CZ	49%	51%	54%	50%	50%	50%	53%	55%		**2**
DE	55%	54%	41%	42%	39%	35%	36%	35%		**7**
DK	71%	67%	48%	58%	69%	78%	99%	74%	82%	**13**
EE	16%	7%	7%	9%	10%	12%	12%	13%		**3**
EL	48%	47%	48%	51%	48%	49%	51%	49%	49%	**1**
ES	27%	40%	39%	37%	40%	37%	39%	40%	42%	**4**
FI	61%	63%	63%	57%	58%	60%	58%	58%	57%	**2**
FR	58%	50%	51%	51%	60%	67%	64%	66%		**7**
HR				66%	45%	41%	87%	84%	71%	**18**
HU	33%	34%	39%	42%	44%	43%	42%	43%	41%	**4**
IE		75%	77%	78%	74%	61%	61%	64%		**7**
IT	72%	74%	76%	81%	78%	75%	73%	73%		**3**
LT	33%	41%	39%	44%	45%	40%	51%	61%		**8**
LV	13%	12%	10%	10%	12%	14%	13%	13%	16%	**2**
MT	109%	115%	106%	103%	88%	88%	84%	87%		**11**
NL	41%	48%	53%	50%	54%	53%	55%	58%	57%	**5**
PL	22%	22%	23%	25%	27%	26%	25%	24%		**2**
PT	47%	47%	45%	39%	38%	31%	31%	31%		**7**
RO	17%	15%	13%	19%	16%	14%	14%	12%		**2**
SE	43%	38%	51%	54%	47%	50%	47%	45%		**5**
SI	30%	29%	33%	34%	35%	32%	29%	33%		**2**
SK	16%	16%	16%	14%	17%	22%	21%	21%		**3**
UK		90%	99%	88%	95%	90%	82%	72%	74%	**9**

2. Property income/Resources; NOTE: NA S14_S15 for AT;UK;DE;HR sector; others S14

	2006	2007	2008	2009	2010	2011	2012	2013	2014	SD pp
AT	9%	12%	11%	16%	21%	21%	15%	22%	19%	**5**
BE	24%	20%	17%	20%	19%	16%	20%	20%		**2**
BG	34%	26%	35%	44%	24%	22%	32%	35%		**7**
CY	31%	25%	20%	22%	24%	27%	27%	27%		**3**
CZ	12%	15%	13%	15%	15%	12%	14%	15%		**1**
DE	16%	14%	12%	15%	14%	14%	13%	13%		**1**
DK	18%	25%	6%	4%	8%	7%	3%	27%	24%	**9**
EE	6%	7%	9%	12%	8%	5%	17%	12%		**4**
EL	46%	29%	29%	42%	43%	40%	25%	29%	36%	**7**
ES	18%	42%	40%	53%	54%	43%	43%	44%	37%	**10**
FI	52%	47%	43%	59%	69%	61%	67%	69%	71%	**10**
FR	27%	94%	90%	100%	110%	104%	106%	102%		**25**
HR				21%	20%	20%	23%	30%		**4**
HU	6%	6%	6%	4%	6%	7%	6%	8%	6%	**1**
IE		46%	35%	36%	26%	25%	27%	33%	35%	**7**
IT	11%	13%	13%	16%	18%	20%	22%	23%		**4**
LT	2%	6%	11%	5%	4%	3%	3%	4%		**3**
LV	2%	5%	7%	4%	2%	5%	7%	7%	8%	**2**
NL	33%	30%	29%	25%	25%	23%	29%	27%	24%	**3**
PL	9%	8%	8%	9%	14%	10%	9%	11%		**2**
PT	10%	9%	9%	14%	12%	13%	16%	19%		**3**
RO	5%	6%	9%	6%	6%	4%	4%	0%		**3**
SE	34%	35%	33%	35%	29%	27%	30%	33%		**3**
SI	28%	28%	33%	36%	42%	42%	47%	72%		**13**
SK	6%	4%	5%	3%	4%	4%	5%	3%		**1**
UK		16%	16%	16%	13%	13%	14%	15%	14%	**1**

4. Social benefits other than social transfers in kind/Resources; NOTE: NA sector S14_S15 AT; DE; HR; IE; UK; others S14

	2006	2007	2008	2009	2010	2011	2012	2013	2014	SD pp
AT	93%	86%	89%	90%	90%	90%	89%	92%	92%	**2**
BE	77%	75%	77%	76%	74%	76%	77%	76%		**1**
BG	74%	89%	91%	101%	82%	90%	93%	118%		**12**
CY	83%	82%	81%	83%	84%	89%	97%	79%		**5**
CZ	77%	76%	77%	75%	76%	77%	76%	78%		**1**
DE	86%	88%	89%	87%	87%	88%	88%	86%		**1**
DK	86%	87%	90%	90%	93%	94%	95%	98%	94%	**4**
EE	83%	83%	84%	83%	85%	87%	89%	92%		**3**
EL	80%	77%	73%	72%	77%	72%	77%	81%	80%	**3**
ES	74%	81%	83%	82%	81%	82%	87%	87%	86%	**4**
FI	93%	94%	93%	94%	94%	93%	93%	93%	93%	**0**
FR	82%	86%	87%	88%	86%	86%	87%	88%		**2**
HR				85%	87%	83%	84%	86%		**1**
HU	80%	81%	81%	80%	83%	82%	83%	84%	85%	**2**
IE		85%	87%	91%	97%	93%	91%	94%	93%	**4**
IT	88%	90%	89%	89%	89%	89%	89%	88%		**1**
LT	82%	81%	83%	75%	76%	77%	82%	80%		**3**
LV	83%	84%	87%	90%	95%	94%	91%	91%	92%	**4**
NL	86%	89%	90%	90%	90%	89%	87%	85%	88%	**2**
PL	92%	93%	87%	85%	87%	90%	90%	89%		**3**
PT	76%	74%	70%	71%	70%	77%	78%	79%		**3**
RO	88%	83%	78%	74%	75%	74%	74%	79%		**5**
SE	92%	91%	93%	94%	96%	95%	96%	96%		**2**
SI	89%	90%	88%	91%	91%	88%	87%	89%		**1**
SK	77%	74%	76%	74%	72%	72%	71%	67%		**3**
UK		77%	75%	71%	71%	71%	75%	76%	75%	**2**

6. Social contributions and taxes on income paid/Use; Note: NA sector S14_S15 for AT;DE;HR; IE, UK; others S14

	2006	2007	2008	2009	2010	2011	2012	2013	2014	SD pp
AT	81%	86%	85%	90%	88%	87%	85%	88%	85%	**2**
BE	78%	76%	72%	77%	72%	74%	74%	73%		**2**
BG	88%	85%	100%	85%	111%	96%	106%	112%		**11**
CZ	64%	65%	65%	64%	65%	62%	60%	60%		**2**
DE	89%	89%	80%	81%	82%	83%	84%	83%		**3**
DK	76%	75%	75%	74%	75%	73%	76%	76%	72%	**1**
EE	97%	87%	99%	108%	111%	114%	106%	104%		**8**
EL	128%	119%	116%	118%	109%	116%	104%	104%	102%	**8**
ES	63%	73%	73%	78%	79%	76%	74%	76%	78%	**5**
FI	91%	88%	88%	89%	92%	91%	91%	92%	91%	**1**
FR	72%	76%	75%	75%	79%	81%	79%	79%		**3**
HR				84%	84%	75%	77%	77%		**4**
HU	65%	64%	64%	66%	55%	61%	65%	72%	68%	**4**
IE		45%	49%	51%	60%	61%	67%	73%	72%	**10**
IS	73%	71%	78%	72%	66%	66%	69%	70%		**4**
IT	92%	94%	92%	97%	98%	98%	94%	95%		**2**
LT	102%	81%	84%	88%	71%	70%	74%	78%		**10**
LV	91%	97%	99%	99%	96%	103%	94%	96%	99%	**3**
NL	93%	104%	103%	102%	104%	99%	100%	89%	89%	**6**
NO	91%	97%	91%	97%	95%	97%	93%	101%	97%	**3**
PL	92%	86%	83%	87%	88%	89%	85%	87%		**3**
PT	118%	108%	100%	100%	109%	112%	100%	105%		**6**
RO	91%	93%	89%	89%	91%	83%	61%	91%		**10**
SE	85%	83%	82%	89%	86%	87%	87%	90%		**3**
SI	89%	89%	86%	89%	89%	88%	87%	89%		**1**
SK	57%	58%	60%	45%	50%	41%	37%	53%		**8**
UK		70%	76%	72%	72%	77%	74%	72%	67%	**3**

7. Taxes on wealth paid/use; Note: NA sector S14_S15 for DE; HR; UK; others S14

	2006	2007	2008	2009	2010	2011	2012	2013	2014
BG	876%	342%	341%	325%	214%	151%	141%	122%	
CY	24%	28%	24%	24%	24%	25%	25%	46%	
CZ	40%	38%	43%	52%	67%	94%	94%	101%	
DE	79%	86%	82%	90%	87%	86%	85%	84%	
DK	63%	52%	52%	53%	54%	55%	54%	54%	53%
EL	2%	2%	2%	12%	11%	62%	85%	87%	214%
ES	21%	16%	15%	0%	0%	0%	13%	8%	6%
FI	25%	24%	26%	32%	29%	34%	30%	27%	31%
FR	10%	14%	12%	8%	9%	9%	10%	11%	
HR				0%	19%	18%	13%	14%	
HU	56%	55%	50%	50%	68%	68%	68%	63%	65%
IT	104%	107%	59%	55%	56%	52%	167%	140%	
LT	43%	57%	40%	121%	45%	39%	37%	36%	
LV	49%	118%	95%	121%	103%	79%	74%	67%	70%
PL	39%	38%	34%	34%	38%	37%	41%	32%	
PT	107%	126%	128%	119%	132%	144%	135%	130%	
RO	115%	93%	90%	96%	83%	79%	69%	71%	
SE	224%	337%	270%	295%	292%	318%	330%	320%	
SI	47%	39%	26%	26%	26%	25%	25%	25%	
SK	36%	30%	34%	38%	35%	35%	33%	33%	
UK		77%	79%	79%	80%	77%	76%	77%	75%