Methodological note Comparison of household income: European Union Statistics on Income and Living Conditions and National Accounts

Eurostat May 2018 The aim of this exercise is to acknowledge the conceptual and generic differences in EU - SILC and National Accounts (NA) related to measurement of household income The methodology for implementation of the EU-SILC is described in the EU-SILC regulation¹ "Methodological guidelines and description of the EU-SILC target variables"², whereas NA methodology is described in "European system of accounts ESA 2010"³. The linkage between the two sources has already been discussed and developed in the Methodological working paper (2013) by Liviana Mattonetti (Eurostat)⁴ that serves as a basis for the comparison of the methodology between the two sources. The Canberra Group Handbook on Household Income Statistics⁵ is used as a reference guideline is the analysis. The results and methods of the joint OECD –Eurostat Expert Group (setup in 2011 – and its successor, set up in 2014, the OECD Expert Group on Disparities in a National Accounts) are used in the analysis.

The conceptual differences could be grouped in two categories: generic and income component specific. Generic differences include the methodology differences that affect the methodological comparability between the two sources in general. Specific differences refer to the definition of each income component.

Generic differences

The main generic differences between EU-SILC and NA could be attributable to the reference population differences, delineation of household sector in the NA, treatment of quasi-corporations, and data measurement issues as described below. The generic differences are subject to country specific implementation rules of the NA and EU-SILC data collection, as well as national legal frameworks regarding the availability of the detailed information.

(1) Population differences

According to the National Accounts the reference population for Household sector (S.14) "(..) consists of all persons, national or foreign, who are permanently settled in the economic territory of the

¹ 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

² Methodological guidelines and description of the EU-SILC target variables: http://ec.europa.eu/eurostat/statistics-explained/index.php/EU statistics on income and living conditions (EU-SILC) methodology - environment of the dwelling

³ Eurostat, European system of accounts, European system of accounts ESA 2010, European Commission: http://ec.europa.eu/eurostat/documents/3859598/5925693/KS-02-13-269-EN.PDF/44cd9d01-bc64-40e5-bd40-d17df0c69334

Eurostat, Liviana Mattonetti, European household income by groups households, 2013: http://ec.europa.eu/eurostat/documents/3888793/5858173/KS-RA-13-023-EN.PDF Canberra Group Handbook Statistics. Edition 2011. UN: on Household Income Second http://www.unece.org/fileadmin/DAM/stats/groups/cgh/Canbera_Handbook_2011_WEB.pdf

country...".[ESA2010 11.05]. In the EU-SILC the reference population includes all private households residing in the country that have registered place of residence therefore people living in the institutional households or without registered place of residence are excluded.

Practical solutions to overcome this issue in the analysis of the data range from "naïve" adjustment of NA income by proportionally removing the income from not covered population in the micro source, on other side more precise analysis could be performed at national level based on additional information. In practice, "naïve adjustment" is the most common way of adjustment. Other way of dealing with this problem is to use "per capita" data; however it will limit the scope of data analysis.

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

According to the ESA 2010 the annual sector accounts data refers to the actual Households sector (S.14) as separated from non-profit institutions serving households - NPISH (S.15). In NA, "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." [ESA 2010 2.129 – 2.130].

According to the ESA 2010 transmission program⁶, the annual sector accounts data should be delineated and provided separately for household sector and NPISH starting from 2012.

(3) Quasi-corporations and mixed income (self-employed income)

The household income component in the National Accounts - mixed income, refers to remuneration for work carried out by the owner of unincorporated enterprise classified in the household sector or members of the family. It has both characteristics, those of wages and salaries, and of profit curried out by entrepreneur. In the EU-SILC it corresponds to the cash benefits or losses from self-employment, although it includes also property income received in connection with financial and other assets belonging to the enterprise, whereas it is not included in mixed income in the National Accounts.

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⁶ European system of accounts - ESA 2010 - Transmission programme of data: http://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-01-13-429-3A-C

In practice, there is an heterogeneity of allocation of unincorporated enterprises between quasicorporation and household sector across the Member States in NA, and possible underreporting of self-employed income in EU-SILC survey

In the NA framework, the issue of quasi-corporations relates to allocation of producer units between non-financial/financial corporations (S.11 and S.12) and households (S.14) sectors.

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)]

The inclusion of the quasi-corporations in the Household sector in the NA 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 sources.

International manuals specify only general principles underlying identification of quasi-corporations.

There is a substantial difference in both relevance of unincorporated units among EU Member States and criteria for their classification among relevant institutional sectors. For example, in some cases all quasi-corporations are allocated in Household sector, for others there is a monetary threshold used as delineation criteria. There are ongoing efforts to quantify and harmonise the allocation rules across the EU countries, however it could require further investigations. The consequence is that the household sector could be oversized (and so mixed income (B3) be higher than actual self-employment income) or, at the opposite mixed income could be lower than actual self-employment income: if self-employed are in enterprises classified in the corporation sector, their compensation will be included in withdrawals from the income of quasi- corporation (D422) that therefore can have nature of mixed income instead of being only property income.⁷

(4) Measurement issues in the data

In National Accounts framework, multiple data sources are used and integrated, data corrections are adopted to reach internal consistency. In a limited number of cases imputations are made to create new variables where the data do not exist, the most relevant being the Financial Intermediation Services Indirectly Measured (FISIM)⁸.

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⁷ Not to mention that some countries followed what ESA recommends: self-employed working in units classified in the corporation sectors are classified as employee and their income included in compensation of employees. This would lead to inconsistent comparison also for employee income.

⁸ ESA 2010 14.01: One traditional way in which financial services are provided is by means of financial intermediation. This is the process whereby a financial institution such as a bank accepts deposits from units wishing to receive interest on funds, and lends them to units whose own funds are insufficient to meet their needs. The bank thus provides a mechanism to allow the first unit to lend to the second. The unit lending funds accepts a rate of interest lower than that paid by the borrower. A 'reference rate' of interest is the rate at which both lender and borrower would be happy to strike a deal. The difference

EU-SILC data are based on survey in combination with information from administrative registers. The use of administrative registers is increasing among the Member States. The extreme wealthiest and poorest parts of the population are not well covered by the EU-SILC data. The under-coverage of the wealthiest population could cause significant data gaps.

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 national statistical institutes using regression models and/or non-parametric methods, thereby making the assumption of a Missing At Random (MAR) mechanism.

Inconsistencies between the data sources might rise also in allocation of illegal activities and estimates of underground economy in the National Accounts, and the data collected by surveys, that could show incomplete size and distribution of those activities.

Specific differences

The household income in National Accounts is defined by ESA 2010, while in EU-SILC it follows the EU-SILC legislation. In both sources, the common components of household disposable income are listed below, however their definitions differ in both sources; therefore the indicative evaluation of comparability of each income component is marked as low, medium and high (further information in Annex 1):

- Employee cash or near cash income (excluding employer's imputed social contributions) **High**;
- Income from self-employment **Medium**;
- Property income received **Medium/ Low**;
- Social benefits other than social transfers in kind received (excluding employer's imputed social contributions) **High**;
- Social contributions and taxes on income paid **High**;
- Taxes on wealth paid Low;
- Other current transfers received Low;
- Other current transfers payed **Low**.

between the reference rate and the rate actually paid to depositors and charged to borrowers is a financial intermediation service charge indirectly measured (FISIM). The total FISIM is the sum of the two implicit fees paid by the borrower and the lender.

The following income components are included in the National Accounts definition of GDI, but not in EU –SILC disposable income definition:

- Income from household production of services for own consumption;
- Property income payed;
- Property income attributed to insurance policy holders;
- Operating surplus (including imputed rent);
- Employer's imputed social contributions;
- Financial Intermediation Services Indirectly Measured.

Even though these components are included in the definition of gross disposable income according to the National Accounts definition, not all of them are relevant in the context of the households' material well-being, for example FISIM or property income attributed to insurance policy holders. This analysis do not take into account the employer's imputed social contributions, as it is not available in EU-SILC, in addition for Gross Disposable Income it is part of income and expenditure for households, therefore it is netted out.

The property income paid (interest on mortgage), imputed rent and employer's imputed social contributions are collected in EU-SILC, however they are not included in the definition of disposable income due to quality reasons as the collection of these income components in the survey are complicated or not possible. Pension from individual pension plan are included in EU-SILC disposable income definition.

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

EU-SILC Disposable income		Assessment of the conceptual links	NA Gross Disposable Income	
EU-SILC RESOURCES		between GDI components in EU-SILC and NA	NA RESOURCES	
1.1 Employee income			1.1 Employee income	
PY010G PY021G	Employee cash or near cash income Company car	 High - conceptual links for employee cash or near cash income (EU-SILC: PY010G and PY021G; and NA: D11/rec). No - links for employers' social insurance contributions (actual and contributions) 	D1/ Compensation of employees, rec Including D11/rec: Wages and salaries (in kind and cash) D12/rec: Employers' social contributions • D121/rec: Employers	
		imputed) as this income component is not included in EU- SILC disposable income. However as Employers' social contributions are included in NA DI definition both in resources (D121/rec and D122/rec) and use side (D661/use	 actual social contributions D122/rec: Employers' imputed social contributions (paid directly by employers). 	
*Although the values of employers' social insurance contributions (PY030G) and non-cash employee income (PY020G) are collected in the EU-SILC they are not included in the EU-SILC disposable income. * Employers' imputed social contributions are not collected in the EU-SILC.		and D662/use) for the calculation of DI income they are netted out and have no impact.		
	from self-employment		1.2 Income from self-employment	
PY050G	Cash benefits or losses from self-employment	3. Medium - conceptual links for self-employed income (EU SILC: PY050G; and NA: B3g).	B3g Mixed income, gross As this income, neither strictly wages nor profits alone, is referred to 'mixed income'.	
*Although the value of goods produced for own consumption (PY070G) is collected in the EU-SILC, it is not included in the EU-SILC disposable income components.		 Main differences: PY050G (EU-SILC) includes property income received in connection with financial and other assets belonging to the enterprise, whereas it is not included in B3g (NA). PY050G (EU-SILC) is net of interest paid on business loans, rents paid on land, other non-produced assets, and consumption of fixed capital, whereas B3g (NA) is not. The inclusion of illegal and underground activities has a significant impact on the NA total. 	*Conceptually, the closer variable to EU-SILC definition would be "net mixed income"- B3n (that is excluding consumption of gross fixed capital that is included in B3g).	

EU-SILC Disposable income		Assessment of the conceptual links	NA Gross Disposable Income	
	RESOURCES	between GDI components in EU-SILC	NA RESOURCES	
		and NA		
2. Property income			2. Property income	
HY090G	Interest, dividends,	4. Medium/Low - conceptual links for	D4 /	Property income:
	profit from capital	property income related to interest and	rec	D41/rec - interest;
	investments in	profits from capital investments in		D42/rec - distributed income of
	unincorporated	unincorporated enterprises, other		corporations;
	business	investment (EU-SILC: HY090G; and		D44/recother investment
		NA: D41/rec and D42/rec, D44/rec).		income ¹⁰
		NA : 1:00		D45/rec- rents (rent on land
**************************************		Main differences:	di FERI	and subsoil resources)
HY040G	Income from rental of	• Interest D41 in NA is adjusted for		
	a property or land	FISIM ⁹ , in accordance to the		ne payable on pension entitlements
		accounting concepts in NA;		s not specifically separated in the
		Withdrawal of income from quasi-	EU-S	ILC income variables.
		corporations is included in NA in		
		D42, whereas in EU-SILC it is		
		included in the income from self-		
		employed (PY050G).		
		Rental income from residential and		
		non-residential property is included		
		in the gross operating surplus (B2.g)		
		in the NA.		
		5. Medium / – conceptual links for rental		
		income on land and subsoil resources		
		(EU-SILC: HY040G and NA:D45/rec).		
		(LO-SILC. 1110400 and 141.D43/16c).		
		Main differences:		
		• HY040G (EU-SILC) includes both		
		income from property and land		
		whereas in D45/rec (NA) only the		
		part related to income from land is		
		_		
		included. As in NA the income		
		from property is included in		
		operating surplus (B2g), the		
		comparison made in this exercise		
		is a choice done by authors.		

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⁹ Financial intermediation services indirectly measured attributed to financial intermediaries for managing household deposits.

¹⁰Other investment income refers to:1) investment income attributable to insurance policy holders; 2) investment income payable on pension entitlements; 3) investment income attributable to collective investment fund shareholders. This income is not necessary cash income.

EU-SILC Disposable income		Assessment of the conceptual links between GDI components in EU-SILC	NA Gross Disposable Income		
EU-SILC RESOURCES		and NA	NA RESOURCES		
3. Income from household			3. Income from household production		
_	of services for own		of services for own consumption		
consumpti	on				
			B2g Operating surplus, gross		
	the value of imputed rent	6. No - links for imputed rent as this	In NA framework, the income from		
` '	is collected in the EU-	income component is not included in	household production for own		
	not included in the EU-	EU- SILC disposable income.	consumption ¹¹ is included in operating		
	sable income		surplus. This consists of services from		
•	s. Moreover imputed rents		owner-occupied dwellings (imputed rent) and any other production for own		
	C are computed only on ome, not on other		consumption. B2 is net of FISIM on		
	t household disposal.		interest for mortgages.		
dweilings	a nousenoia disposai.		interest for mortgages.		
4. Social be	enefits other than social		4. Social benefits other than social		
transfers i	n kind/ Resources		transfers in kind / Resources		
HY050G	Family/children related	7. High - conceptual links for social	D62 Social benefits, other than		
	allowances	benefits (EU-SILC: HY050G, HY060G,	/rec social transfers in kind		
HY060G	Social exclusion not	PY090G, PY100G, PY110G, PY120G,	List of risks covered ¹² : sickness;		
	elsewhere classified	PY130G, PY140G, HY070G and NA:	invalidity, disability; occupational		
PY090G		D62/rec).	accident or disease; old age;		
			survivors; maternity; family;		
	T T 1 4	M-: - 1:66	promotion of employment;		
	Unemployment	Main differences:	unemployment; housing;		
DV/100C	benefits Old age honefits	• The promotion of employment is	education; general neediness.		
PY100G PY110G	Old-age benefits Survivor' benefits	included among the social risks covered in NA, whereas it is not			
PY110G PY120G	Sickness benefits	collected, nor included among EU-			
PY130G	Disability benefits	SILC disposable income			
PY140G	Education-related	components.			
1 11400	allowances	components.			
HY070G	Housing allowances				
niu/uG	Housing anowances				

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¹¹ For micro statistics the broad definition of the income from household production for own consumption includes the services from owner occupied dwellings and from consumer durables owned, as well as own produced domestic services (Canberra Group Handbook, p14). In NA framework the latter two are not within the production boundary (ESA 2010: 1.29) and therefore not included in the NA framework. In EU-SILC these variables are not included in the disposable income definition.

¹² For social contributions and benefits (for cash benefits (D61) and in kind benefits (D62) (ESA 2010; 4.84)).

EU-SILC Disposable income		Assessment of the conceptual links	NA Gross Disposable Income	
EU-SILC RESOURCES		between GDI components in EU-SILC and NA	NA RESOURCES	
5.1 Other current transfers			5.1 Other current transfers	
HY080G	Regular inter- household cash transfer rec * In EU-SILC definition of disposable income, the both, regular inter- household cash transfers received (HY080) and regular inter-household cash transfer paid (HY130) are included, when summed at macro level, the residential inter-household payments are cancelled out.	 8. Low- conceptual links for other current transfers (EU SILC:HY080G; and NA:D75/rec). For the NA miscellaneous current transfers and regular inter-household cash transfers received (ESA 2010; D75/rec) there are existent but low links with EU-SILC variable – regular inter-household cash transfer received (HY080G). Main differences: In the NA- miscellaneous current transfers (D.75/rec) the cash and non-cash transfers are included whereas in the EU-SILC variable - regular inter-household cash transfers received, only cash transfers are included. The other difference is that the NA-miscellaneous current transfers (D.75/rec) includes also transfers in the scope of lotteries and gambling. 	D7/rec	Other current transfers D72/rec: Non-life insurance claims D75/rec: Miscellaneous current transfers received (in cash and in kind) D751/rec: current transfers from NPISH (voluntary contributions, membership subscriptions and financial assistance); D752/rec: current transfers between households (in cash and in kind) D759/rec: other miscellaneous current transfers (fines and penalties imposed by courts or law or quasi-judicial bodies)
5.2 Others			5.2. Others	
HY110G	Income received by people aged under 16	9. No - direct conceptual links for EU-SILC variable - income received by		
PY080G	Pension from individual private plans	people aged under 16 with NA DI components, as in NA there is no distinction for the income for persons		
*Income received by people aged under 16 is defined as the disposable income received by all housing members aged under 16 during the income reference period. It excludes: transfers between household members and income collected at the household level. *EU SILC variable PY080G includes regular pensions from private pension plans that refer to pensions and annuities received, during the income reference period. This variable is included in the EU-SILC DI definition.		under 16. 10. No - conceptual links for pension from individual private plans (EU SILC: PY080G) as it is not included in the definition of GDI in NA. In NA this this item is included in the benefits from life-insurance and allocated to the financial accounts.		

EU-SILC Disposable income		Assessment of the conceptual links	NA Gross Disposable Income		
EU-SILC USE		between GDI components in EU-SILC	NA USE		
		and NA			
6.Social contributions and taxes on income paid			6. Social contributions and taxes on		
		11 III: h		income paid	
HY140G	*Social insurance contributions refer to contributions by employees', the self-employed and if applicable, the unemployed, retired during the income reference period to either mandatory government or employer-based social insurance schemes (pension, health, etc.)	11. High - conceptual links for taxes on income and social contributions paid (EU-SILC: HY140G; and NA:D613/use, D612/use and D51/use). The both sources (EU-SILC: HY140G and D51/use) have close definition for the tax on income. Taxes on income refer to taxes on income, profits and capital gains. In NA the taxes on realised capital gains are included in taxes.	D61/ use D51/ use	Includes Employers' social contributions that is not included in the EU-SILC D611/use - employers' actual social contributions (correspond to flow D121/rec) D612/use - employers' imputed social contributions (correspond to flow D122/rec) D613 - households' actual social contributions D614 - households' social contribution supplements Taxes on income consist of taxes on incomes, profits and capital gains. They are assessed on the actual or presumed incomes of individuals, households, corporations or nonprofit institutions. They include taxes assessed on holdings of property, land or real estate when these holdings are used as a basis for estimating the income	
				of their owners.	
7.Taxes on wealth paid				es on wealth paid	
HY120G	Regular taxes on wealth Includes taxes that are payable periodically on the ownership or use of land or buildings by owners and current taxes on net wealth and on other assets.	 12. Low -conceptual links for taxes on wealth (EU-SILC: HY120G; and NA: D59/use). Main differences: In NA – other current taxes (D59/use) includes poll taxes, levied per adult or per household, independently from income or wealth, expenditure taxes, payment for licenses, taxes on international transaction. This information is not included in the EU-SILC variable – regular taxes on wealth (HY120G). In NA taxes on use of dwellings can be included in D2 (Taxes on production and imports). 	D59 /use	Other current taxes Includes current taxes on capital which consist on taxes payable on the ownership or use of land or buildings by owners, current taxes on net wealth and other assets (not mentioned in D29/use (which are paid by enterprises as result of engaging in production) or D51/use; as well as it includes poll taxes, levied per adult or per household, independently from income or wealth, expenditure taxes, payment for licenses, taxes on international transaction.	

EU-SILC Disposable income	Assessment of the conceptual links	NA Gross Disposable Income	
EU-SILC USE	between GDI components in EU-SILC and NA	NA USE	
8. Property income paid		8. Prop	erty income paid
	13. No - conceptual links for property income paid in EU-SILC and NA DI definition.	D4/ use	Property income D41/use: interest D45/use: rents
*Although the value of interest repayments on mortgage (HY100G) is collected in the EU-SILC, it is not included in the EU-SILC DI components.	Main differences The EU-SILC disposable income definition does not include property income paid.		
9. Other current transfers paid			r current transfers paid
*In EU-SILC definition of DI, the both, regular inter-household cash transfers received (HY080) and regular inter-household cash transfer paid (HY130) are included, when summed at macro level, the residential inter-household payments are cancelled out.	Main differences • For the NA regular inter-household cash transfers paid (ESA 2010; D752/use) there are existent but low links with EU-SILC variable – regular inter-household cash transfer paid (HY130G).		D.71/use: Net non-life insurance premiums (include actual premiums payable by policy holders to obtain insurance cover). D75/use: Miscellaneous current transfers (in cash and in kind) D751/use: current transfers to NPISH (voluntary contributions, membership subscriptions and financial assistance); D752/use: current transfers between households (in cash and in kind) D759/use: other miscellaneous current transfers (fines and penalties imposed by courts or law or quasi-judicial bodies)