Distributions of household income, consumption, saving and wealth

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BETTER POLICIES FOR BETTER LIVES

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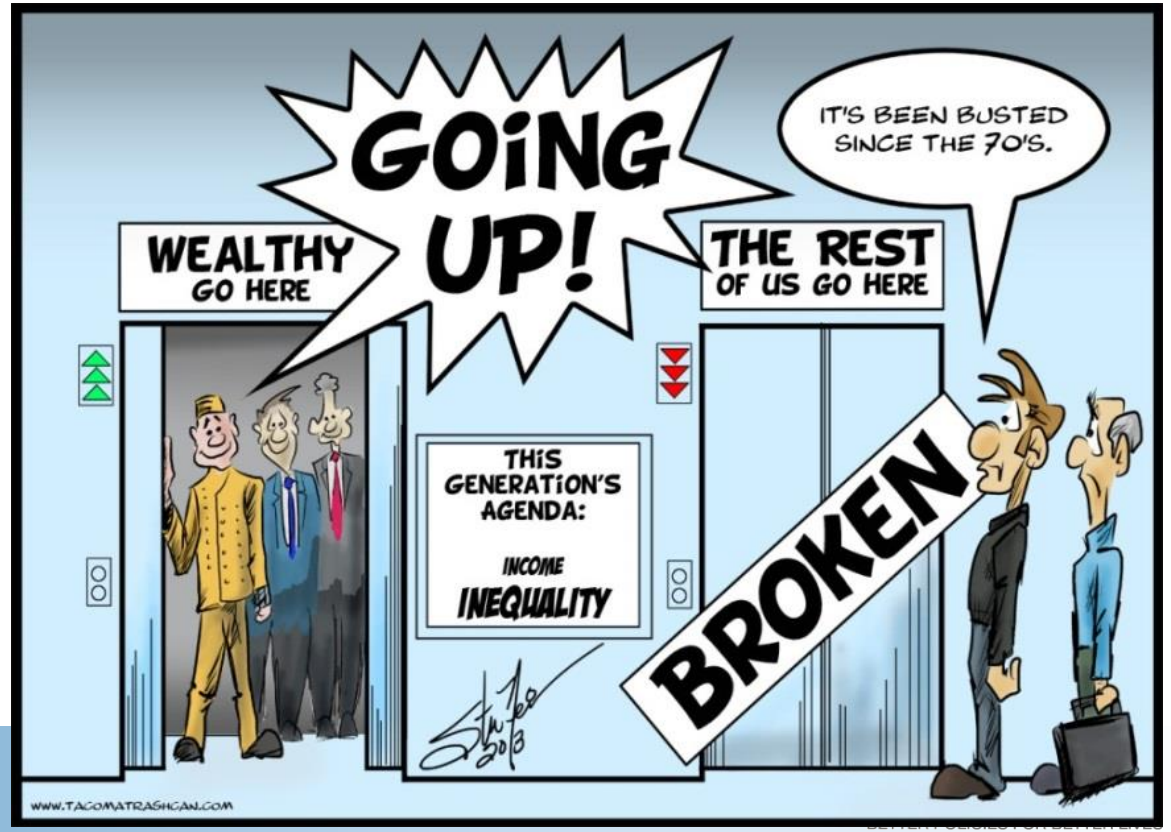

Introduction

Introduction

- Clear need for systematic, robust and comprehensive data on economic inequality
  - The information that "household income/wealth grew by X%" does not suffice anymore: distributional analyses becoming regular complements to analysis of economic trends …
  - … and is increasingly demanded in domains such as monetary policy, financial stability and, of course, social policy
  - The recent COVID-crisis and the current inflationary pressures in countries further stresses the importance of distributional information
- A lot of information is already available from micro statistics, but increasing emphasis on importance of alignment to macroeconomic aggregates
  - In 2009, the Stiglitz-Sen-Fitoussi report stresses the importance to extend macroeconomic statistics with distributional information
  - Various initiatives by international statistical community (e.g., OECD Expert Group on Distributional National Accounts); Expert Group on Distributional Financial Accounts) and academia (e.g., World Inequality Lab)

Main benefits of distributional national accounts

Distributional results aligned to national accounts complement micro results, by providing:

- More comprehensive picture of economic inequality, including elements not covered in micro statistics (e.g., social transfers in kind)
- Consistent information on three dimensions of economic well-being, i.e. income, consumption and wealth
- In line with important macroeconomic aggregates such as GDP, household disposable income, consumption and wealth, broadening scope for analyses
- Providing users with "drill-down" possibilities for key macroeconomic aggregates
- Capturing households and transactions that are typically underrepresented in micro data
- A high degree of international comparability

Distribution of income, consumption and saving

- OECD and Eurostat launched an Expert Group on Distributional National Accounts (EG DNA)
- Aim is to develop distributional results on income, consumption and saving
- Group developed template and guidelines, and engaged in three data collection rounds
- Calculations performed by members of the group: AUS, AUT, BEL, CAN, CHE, CZE, FRA, GBR, IRL, ISR, ITA, JPN, KOR, MEX, NLD, NZL, PRT, SVN, SWE, USA, …
- Centralized approach is developed to compile results for countries not engaging in work
- Several countries have started to publish their results
- Results have been included in online databases of OECD and Eurostat
- The work continues, focusing on improving the quality, granularity and timeliness

Distribution of wealth

- ECB launched an Expert Group on Distributional Financial Accounts (EG DFA)
- Aim is to develop distributional results on wealth for the euro area and EU countries
- Group consists of 19 EU countries, Eurostat and the OECD
- So far, calculations performed by the ECB with the help and guidance of member states; aim is to more actively involve countries in the compilation
- Experimental results are being discussed within the group
- End of 2022: Proposal to the ECB Statistics Committee regarding publication

Furthermore:

- Several (EU and non-EU) countries are already publishing distributional wealth results
- The OECD aims to set up an expert group to develop harmonized methodology for the compilation of distributional wealth results, in close collaboration with the EG DFA

Distributional results as part of the new SNA

- Proposal is to add a specific chapter on compilation of distributional results
  - Highlighting importance of distributional information
  - Discussing scope of the work
  - Presenting main balancing items
  - Presenting possible breakdowns
  - Highlighting specific issues in compilation of distributional results

Distributional results as part of new G20 DGI (1)

- 2007/08 global financial crisis stressed need for timely and accurate information for policy makers
- This led to first phase of the G20 Data Gaps Initiative in 2009 to explore data gaps and strengthen data collection in specific areas
- This included a recommendation on distributional results: *Statistical experts to […] compile distributional information alongside aggregate figures […]. The IAG is encouraged to promote production and dissemination of these data in a frequent and timely manner. The OECD is encouraged to continue […] to link national accounts data with distributional information.*
- DGI-1 concluded in 2015 and was followed up by DGI-2 with again a recommendation on distributional results: *The IAG, in close collaboration with the G-20 economies, to encourage the production and dissemination of distributional information on income, consumption, saving, and wealth, for the household sector.*
- DGI-2 concluded at end of 2021, but the need was recognized to follow-up on the successes

Distributional results as part of new G20 DGI (2)

- In 2021, the G20 initiated a new Data Gaps Initiative (DGI) to assist in closing new data gaps
- Specific ambitions in area of distributional results:
  - Extend country coverage
  - Improve granularity, timeliness and frequency of results
  - Further improve methodology, focusing on closing micro- macro gaps
- The G20 Finance Ministers and Central Bank Governors are expected to endorse the new DGI in the course of this year

Distributional results as part of new G20 DGI (3)

- Joint work by OECD (lead), ECB, Eurostat, IMF, UN and World Bank
  - Recommendation 8: Distributional results on income, consumption and saving in line with national accounts totals
  - Recommendation 9: Distributional results on wealth in line with national accounts totals
- Target:
  - By end-2024: Results for 2021, 2022 and/or 2023 at income/wealth quintile level
  - By end-2026: Annual results within 1.5 years after reference period at income/wealth decile level and, if possible, according to main source of income and household type
- Second best:
  - By end-2026: Results at least every 3 years, published within 4 years after reference period, at income quintile/decile level

Aim of the work

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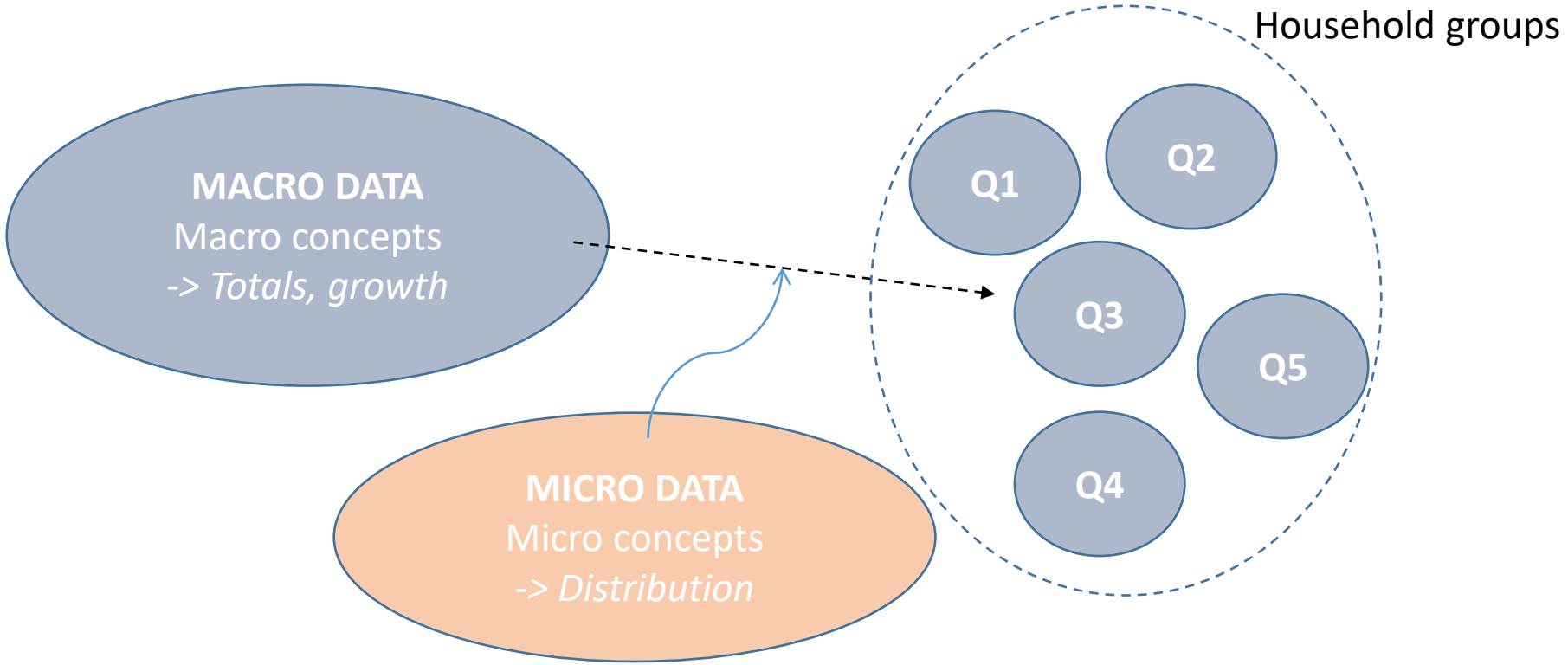
Develop methodology to produce **distributional** results for household **income, consumption and wealth** consistent with national accounts concepts using micro data sources



Scope of the work

- The unit of analysis is the household
- Focus is on private households, as institutional households (e.g., people living in prison, boarding schools, nursing homes) behave differently and results are not comparable (their results should be presented separately)
- Focus on equivalized results, i.e. taking into account different consumption needs of households of different size and composition
  - E.g., the consumption needs of a household consisting of two adults and three children will be larger than for a single person household
  - Households benefit from economies of scale (e.g. consumption of housing and food); no need to assign weight of 1 to each household member
  - The Oxford-modified equivalence scale can be used which assigns a value of 1 to the household head, 0.5 to each additional adult member aged 14 and over, and of 0.3 to each child (i.e., aged below 14).
  - Still discussion about the use of equivalence scales for wealth

(Possible) breakdowns

Income, consumption and wealth results broken down by:

- Standard of living on basis of current income and/or wealth (quintiles/deciles/percentiles)
- Standard of living on basis of permanent income (i.e., removing temporary income shocks)
- Main source of income
- Household type (number and age of household members)
- Regional
- Age of reference person
- Labour market status of reference person
- …
- *Also possibility of cross-classifications of the above, e.g. standard of living by age group*

Level of detail will depend on available information and quality of the results

Income and consumption concepts

HOUSEHOLD INCOME

Income resources (received):

- Self-employment income
- Imputed rent from dwellings
- Compensation of employees
- Property income

Income uses (paid):

- Property income (*e.g. interests paid on loans*)

= Primary Income (PI)

- Social benefits in cash
- Other transfers

- Taxes
- Social contributions
- Other transfers

= Disposable Income (DI)

- Social transfers in kind

= Adjusted Disposable Income (ADI)

HH. CONSUMPTION

Expenditure:

- Food
- Clothing
- Housing
- Health
- Education
- Transportation…

= Consumption expenditure (CE)

- Social transfers in kind

= Actual Consumption (AC)

Saving = DI - CE = ADI - AC

HH. SAVING

Wealth concepts

HOUSEHOLD ASSETS

Non-financial assets

Housing wealth
Non-financial business wealth

= Non-financial assets (NFA)

Financial assets

Deposits
Bonds
Loans
Equity
Life and non-life insurance technical reserves
Pension entitlements
Other accounts receivable

= Financial assets (FA)

HOUSEHOLD LIABILITIES

(Financial) liabilities

Loans
Other accounts payable

= Financial liabilities (FL)

Net financial worth (NFW) = FA – FL

Net worth (NW) = NFW + NFA

HOUSEHOLD WEALTH

Proposals in context of the SNA update

- Income:
  - Possibly envisage additional broader income concepts: including undistributed profits; (realised and unrealised) holding gains; …
- Consumption:
  - Proposal: Record consumer durables as separate (of which) category – they cannot be regarded as part of current consumption and may significantly affect savings
- Wealth:
  - Envisage broader wealth concept: Including social security pension entitlements
  - Proposal: Record stock of consumer durables as memorandum item

Overview of methodology

(with meta data from EG DNA exercise)

Step-by-step approach

Step 1
- Adjust national accounts totals

Step 2
- Determine relevant variables from micro data sources in relation to the national accounts variables

Step 3
- Impute for missing elements and scale the micro data to the adjusted national accounts totals

Step 4
- Cluster households

Step 5
- Derive relevant indicators for the household groups

Step 1
Adjustment of NA totals

Step 1: Adjustment of NA totals

- As the focus is on private households, adjustments may be needed to:
  - Remove amounts not related to household sector, e.g. non-profit institutions serving households (NPISH) (such as religious organisations, trade unions, charities, political parties)
  - Remove amounts related to institutional households, such as people living in prison, nursery homes, boarding schools, etc. Their results can be published in a separate category
  - Remove expenditure of non-resident households on the national territory (when included in the detailed consumption results)
  - Correct for expenditures of resident households abroad, either at the detailed level or at the aggregate level (dependent on recording in micro data items)

Step 1: Adjustment of NA totals

	% difference between adjusted and original national accounts' totals		NPISHs reported with households	Adjustment of non-resident households' expenditures on the territory
	Income[1] (average on B5, B6 and B7)	Consumption (actual final consumption)		
Australia	-	-	-	-
Canada (2015)	0.00	0.00	No	Yes
Czech Republic (2017)	-1.28	-1.80	No	No
France (2016)	-1.56	-2.73	No	Yes
Ireland (2015)	-0.39	-0.77	No	No
Israel[2] (2015)	-	-2.89	No	No
Mexico (2016)	0.00	0.00	No	Yes
Netherlands (2017)	0.00	0.00	No	Yes
New Zealand (2015)	0.00	0.00	No	Yes
Portugal[2] (2016)	0.00	-	No	-
Slovenia (2015)	-0.15	-0.20	No	Yes
Sweden (2015)	-0.13	-1.34	No	Yes
United Kingdom[2]	-	-	-	No
United States (2015)	-0.36	-2.80	No	No

1. The results show the simple average of the adjustments to primary income (B5), disposable income (B6) and adjusted disposable income (B7).
2. For Australia and the United Kingdom the percentage difference is not available as no information was provided regarding the original NA estimates. For Israel and Portugal information is only available for respectively consumption and income.

Step 2
Determine relevant variables in micro data

Step 2: Determine relevant micro data (1)

		CAN	CZE	FRA	GBR	IRL	MEX	NLD	NZL	PRT	SVN	SWE	USA
	Income	2015	2017	2016	2015	2015	2016	2017	2015	2016	2015	2015	2015
B2	Operating surplus		X	X	X	X	X			X	X		X
B3	Mixed income	X	X	X	X	X	X	X	X	X	X		X
D1R	Compensation of employees		X	X	X	X	X	X	X	X			X
D4N	Net property income received / Net property incon		X		X	X	X	X	X	X		X	X
D41R	Interest received (not adjusted for FISIM)			X	X	X	X	X	X			X	X
D42R	Distributed income of corporations			X	X	X	X	X			X	X	X
D44R	Investment income disbursements				X		X						
D41P	Interest paid (not adjusted for FISIM)					X	X	X	X			X	X
B5	**Balance of primary incomes**		**X**		**X**	**X**	**X**	**X**	**X**	**X**			**X**
D5P	Current taxes on income and wealth	X	X		X	X	X	X	X	X	X		
D61P	Net social contributions paid		X	X	X	X	X	X	X	X			X
D62R	Social benefits other than STiK received	X	X	X	X	X	X	X	X	X	X		X
D7N	Other current transfers (net)		X			X	X	X	X				
D72R-D71P	Net non-life insurance claims minus premiums				X	X	X	X	X				
D75N	Miscellaneous current transfers received		X			X	X	X	X	X			
B6	**Disposable income**		**X**		**X**	**X**	**X**	**X**	**X**				
D63R	STiK				X		X	X					
D63R1	Education				X		X	X		X			
D63R2	Health				X		X	X		X			
D63R3	Other				X			X					
B7	**Adjusted disposable income**				**X**		**X**	**X**					

Step 2: Determine relevant micro data (2)

	Consumption	CAN 2015	CZE 2017	FRA 2016	GBR 2015	IRL 2015	ISR 2017	MEX 2016	NLD 2017	NZL 2015	SVN 2015	SWE 2015	USA 2015
CP010	Food and non-alcoholic beverages	X	X	X	X	X	X	X	X	X	X	X	X
CP020	Alcoholic beverages, tobacco and narcotics	X	X	X	X	X	X	X	X	X	X	X	X
CP030	Clothing and footwear	X	X	X	X	X	X	X	X	X	X	X	X
CP040	Housing, water, electricity, gas and other fuels		X	X	X	X	X	X	X	X	X	X	X
CP050	Furnishings, households equipment and routine maintenance of the house	X	X	X	X	X	X	X	X	X	X	X	X
CP060	Health		X	X	X	X	X	X	X	X	X	X	X
CP070	Transport		X	X	X	X	X	X	X	X	X	X	X
CP080	Communications	X	X	X	X	X	X	X	X	X	X	X	X
CP090	Recreation and culture		X	X	X	X	X	X	X	X	X	X	X
CP100	Education	X	X	X	X	X	X	X	X	X	X		X
CP110	Restaurants and hotels	X	X	X	X	X	X	X	X	X	X	X	X
CP120	Miscellaneous goods and services		X	X	X	X	X	X	X	X	X	X	
P31DC	**Final domestic consumption expenditure**		**X**	**X**	**X**	**X**	**X**	**X**		**X**			
P33	Final consumption expenditure of resident households abroad					X	X			X			
P31NC	**Final national consumption expenditure**		**X**	**X**	**X**	**X**	**X**		**X**	**X**	**X**	**X**	
P4	**Actual final consumption**				**X**		**X**	**X**	**X**	**X**			

Step 3
Impute for missing elements and align the data to the NA totals

Step 3: Impute and aligning to NA totals

- Not all items/elements may be covered in micro data sources
  - Some items are specific to the system of national accounts (e.g., investment income attributed to insurance policy holders; financial services indirectly measures)
  - Some groups of people may not be covered in micro data sources (e.g., people without permanent address; people living in remote areas; people falling below thresholds; people in top end of the distribution)
  - Some sub-items may not be covered by micro data sources (e.g., income from informal activities; tips)
  - Imputations will be needed before linking the available micro data to the NA totals
- Furthermore, micro aggregates will normally deviate from the macro aggregates
  - It is important to bridge these micro-macro gaps in the best possible way

Step 3: Impute and aligning to NA totals

- Four methods available for imputing and aligning the micro data with the adjusted NA totals:
  - Method A: Simple calibration
  - Method B: Proxy by using the distribution of other item
  - Method C: Using exogenous information (e.g., socio-demographic information)
  - Method D: Imputations with no effect on distributional indicators (not recommended)
- It is important to first impute for missing elements on the basis of methods B, C and D, and to then close the (remaining) micro-macro gap on the basis of specific information on the gap or on the basis of Method A.

Step 3: Methods used by countries (1)

Code	Name	A	B	C	D
B2	Operating surplus	6		3	
B3	Mixed income	6			
D1R	Compensation of employees	5	2		
D41'R	Interest (not adjusted for FISIM)	3	1	1	
D42R	Distributed income of corporations	9	2		
D44R	Investment income disbursements	2	4	1	
-D41'P	Interest (not adjusted for FISIM)	1	2	3	
-D5P	Current taxes on income and wealth	9	1	2	
-D61P	Net social contributions	2	1		
D62R	Social benefits other than STiK	11	1	1	
D72R-D71P	Net non-life insurance claims minus premiums	3	2	2	1
D63A	Social transfers in kind - Education	2	3	5	
D63B	Social transfers in kind - Health	3	3	4	
D63C	Social transfers in kind - Other	1	5	4	

Step 3: Methods used by countries (2)

1

Code	Name	A	B	C	D
CP010	Food and non-alcoholic beverages	12			
CP020	Alcoholic beverages, tobacco and narcotics	12			
CP030	Clothing and footwear	12			
CP040	Housing, water, electricity, gas and other fuels	8			
CP050	Furnishings, hh equipment and routine maintenance of the house	12			
CP060	Health	9	2		
CP070	Transport	10	1		
CP080	Communications	12			
CP090	Recreation and culture	11	1		
CP100	Education	11		1	
CP110	Restaurants and hotels	12			
CP120	Miscellaneous goods and services	7	1		
P33	Final consumption expenditure of resident households abroad	3	4		

A. The issue of imputations

Imputations for Social Transfers in Kind (STiK)

- Concerns goods and services that are provided to households by government and non-profit institutions, either free of charge or at prices that are not economically significant
- Their provision is a direct alternative to providing households with a cash benefit to purchase these goods and services. For that reason, their inclusion in distributional measures leads to a more comparable and more comprehensive overview of income inequality
- Examples concern health care, education, housing, child care and elderly care
- Direct information on beneficiaries is often lacking, so imputations will be needed
- Two ways to allocate the amounts:
  - Actual value approach: Allocating values to households on the basis of the actual use
  - Insurance value approach: Allocating values on the basis of an insurance premium equivalence households would have had to pay to obtain the same service (protection)
- Almost all countries apply insurance value approach for STiK on Health and the actual value approach for the other forms of STiK

Example: Distribution of STiK on health

Country & year	Q1	Q2	Q3	Q4	Q5
Australia 2015	20.8	23.9	20.8	17.4	17.2
Canada 2015	17.5	21.9	21.0	20.6	19.0
France 2016	16.8	19.4	20.8	21.0	22.0
Ireland 2015	17.4	21.1	21.9	20.7	18.8
Israel 2015	20.4	20.6	19.9	19.6	19.4
Mexico 2016	22.8	21.5	20.9	19.7	15.1
Netherlands 2017	17.8	23.2	21.3	19.3	18.3
New Zealand 2015	17.5	22.3	21.3	19.6	19.3
Slovenia 2015	17.5	19.7	21.3	21.0	20.4
Sweden 2015	17.6	22.1	20.4	19.8	20.1
United Kingdom 2015	20.5	21.5	20.2	20.3	17.6
United States 2015	14.9	19.9	22.7	25.1	17.4

Distribution of STiK on health as % of income

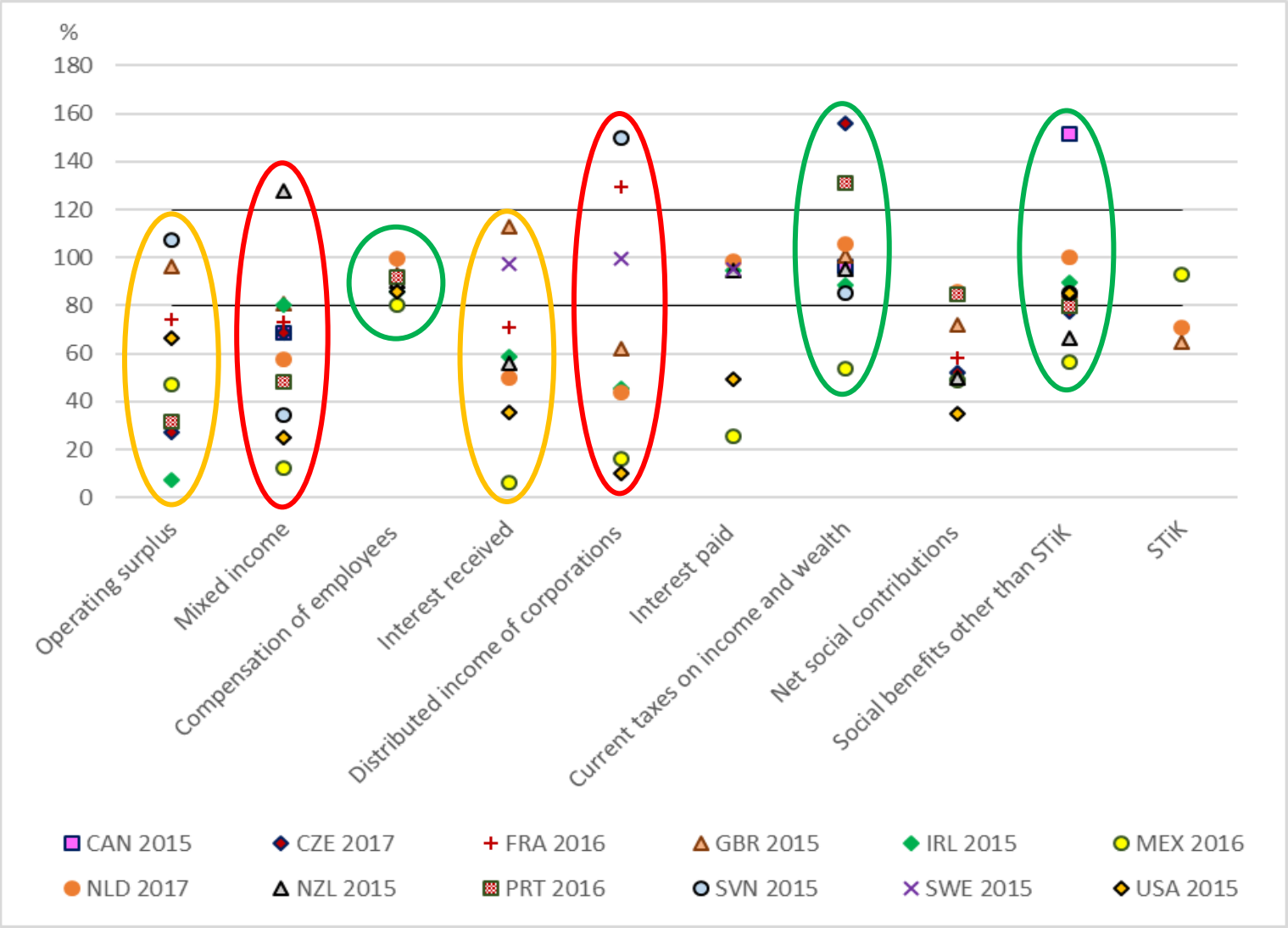
Country & year	Q1	Q2	Q3	Q4	Q5	Total
Australia 2015	26.4	19.4	12.5	8.0	4.3	10.2
Canada 2015	39.5	23.8	16.0	11.9	6.2	13.3
France 2016	21.7	16.3	13.1	10.4	6.1	10.9
Ireland 2015	23.6	22.1	15.4	11.2	6.5	12.7
Mexico 2016	10.9	6.9	5.0	3.2	0.7	2.7
Netherlands 2015	54.5	34.9	19.9	12.7	6.4	16.3
New Zealand 2015	32.7	22.4	15.0	10.4	5.6	12.1
Slovenia 2015	18.0	12.6	10.2	8.0	5.3	9.0
Sweden 2015	42.6	24.6	15.2	10.9	6.7	13.4
United Kingdom 2015	23.6	17.3	12.9	9.8	4.8	10.7
United States 2015	3.5	2.5	2.4	2.0	0.5	1.4

Imputations for inter-household flows and stocks

- Importance of taking into account inter-household flows and stocks
  - This may concern remittances, bequests, second-hand trade, loans, etc.
  - These may not show up in the national accounts' aggregates (as these will often be presented on a consolidated basis, i.e., cancelling out flows and positions within the household sector), but they may be very relevant for distributional analyses
  - E.g., for some household groups, current transfers from other households constitute a significant part of their income (e.g., students receiving financial support from parents)
  - Explicit adjustments will need to be made to account for these flows (and stocks)
    - Derive an estimate of total inter-household flows (and stocks) for each item
    - Allocate amounts to the relevant households on the basis of underlying information
    - N.B. Bear in mind that part of reported micro data may indeed refer to inter-household flows (and stocks)
  - This may involve imputations at both the macro and the micro level

B. The issue of micro-macro gaps

Challenge of micro-macro gaps - Income

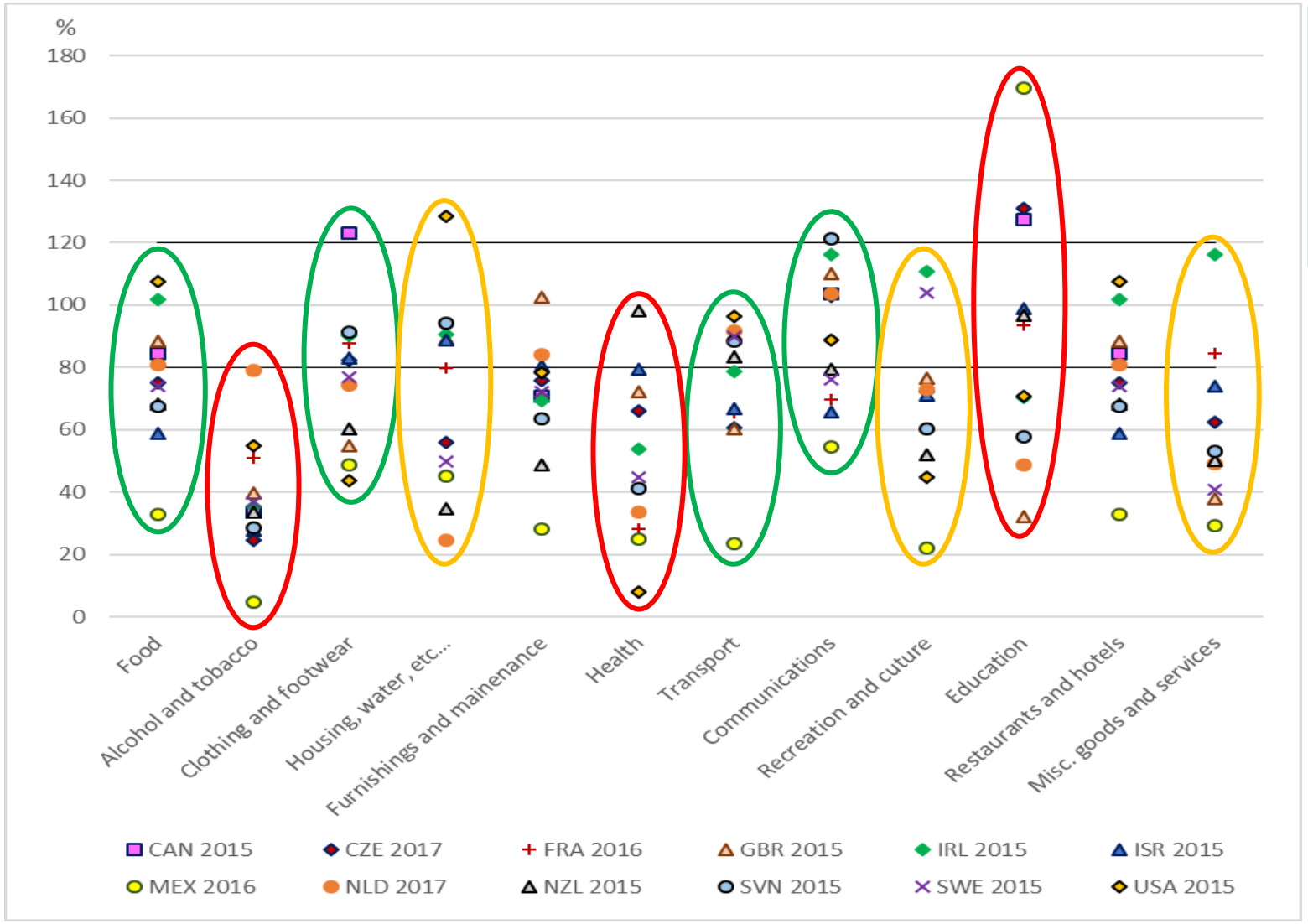


Relatively good alignment for
- Compensation of employees
- Current taxes
- Social benefits in cash

Poor alignment for
- Mixed income
- Distributed income of corp's

Also relatively large gaps for
- Operating surplus
- Interest received

Challenge of micro-macro gaps - Consumption



Relatively good alignment for
- Food
- Clothing and footwear
- Transport
- Communications

Poor alignment for
- Alcohol and tobacco
- Health
- Education

Also relatively large gaps for
- Housing, water, etc.
- Recreation and culture
- Miscellaneous good and serv.

A close collaboration is needed between social statistics' experts and national accountants to understand and close the gaps!!

Possible reasons for micro-macro gaps

Step 1: Adjustment of the NA totals

- The quality of the national accounts totals
- The quality of the adjustments to the NA totals

Step 2: Linking micro data source variables to the NA variables

- Assumptions regarding the conceptual and classification differences

Step 3: Imputation for missing elements and aligning data to NA totals

- The quality of the correction for the underground economy and illegal activities
- The quality of the micro data – Estimation errors
- The quality of the micro data – Measurement errors

Allocation of micro-macro gaps

- Underlying reason(s) for gap may vary across items
- Allocation to households may differ per cause and item

⇒ Important to analyse and allocate gaps at a detailed level

Guidance to allocate gaps:

- Confrontation of income and consumption (and wealth) data may point to possible gaps for certain households
- Literature provides information on common gaps and their allocation
- Time series analysis may help in analysing possible reasons

Step 4
Cluster households

Creating full sets of accounts

- As micro data may be used from multiple data sources, data may need to be linked to create full sets of accounts
- Subsequently, households can be clustered according to specific criteria, e.g. according to equivalized disposable income, main source of income or household type

Issue of linking information across data sources (1)

Step-by-step approach:

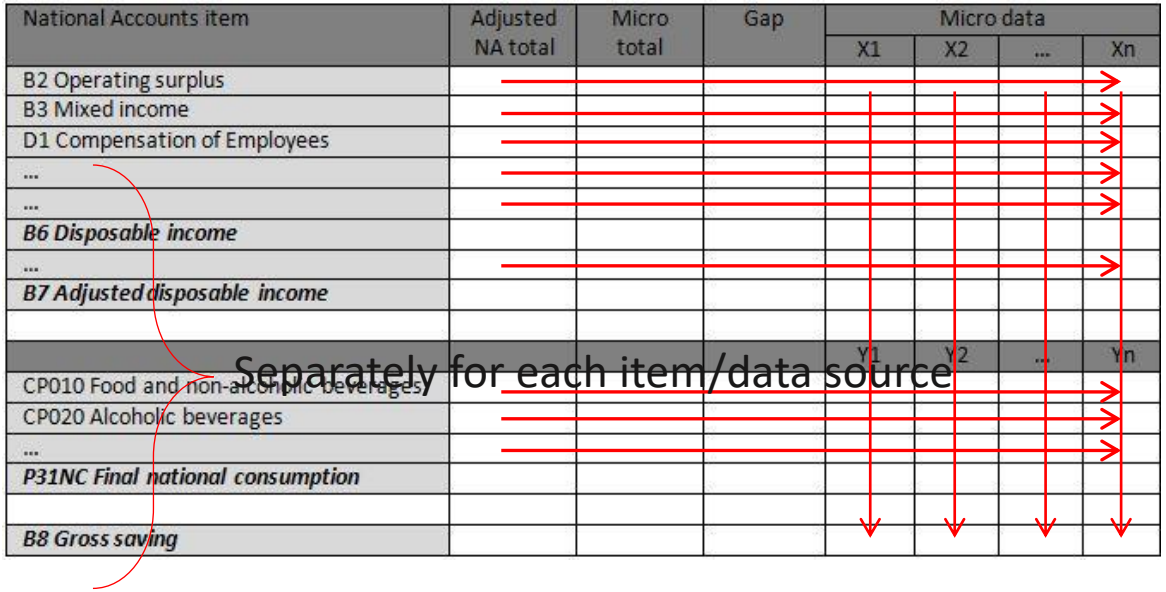
Step 1 – Adjust national accounts totals

Step 2 – Determine relevant variables from micro data sources in relation to the national accounts variables

Step 3 – Impute for missing elements and scale the micro data to the adjusted national accounts totals

Step 4 – Clustering households

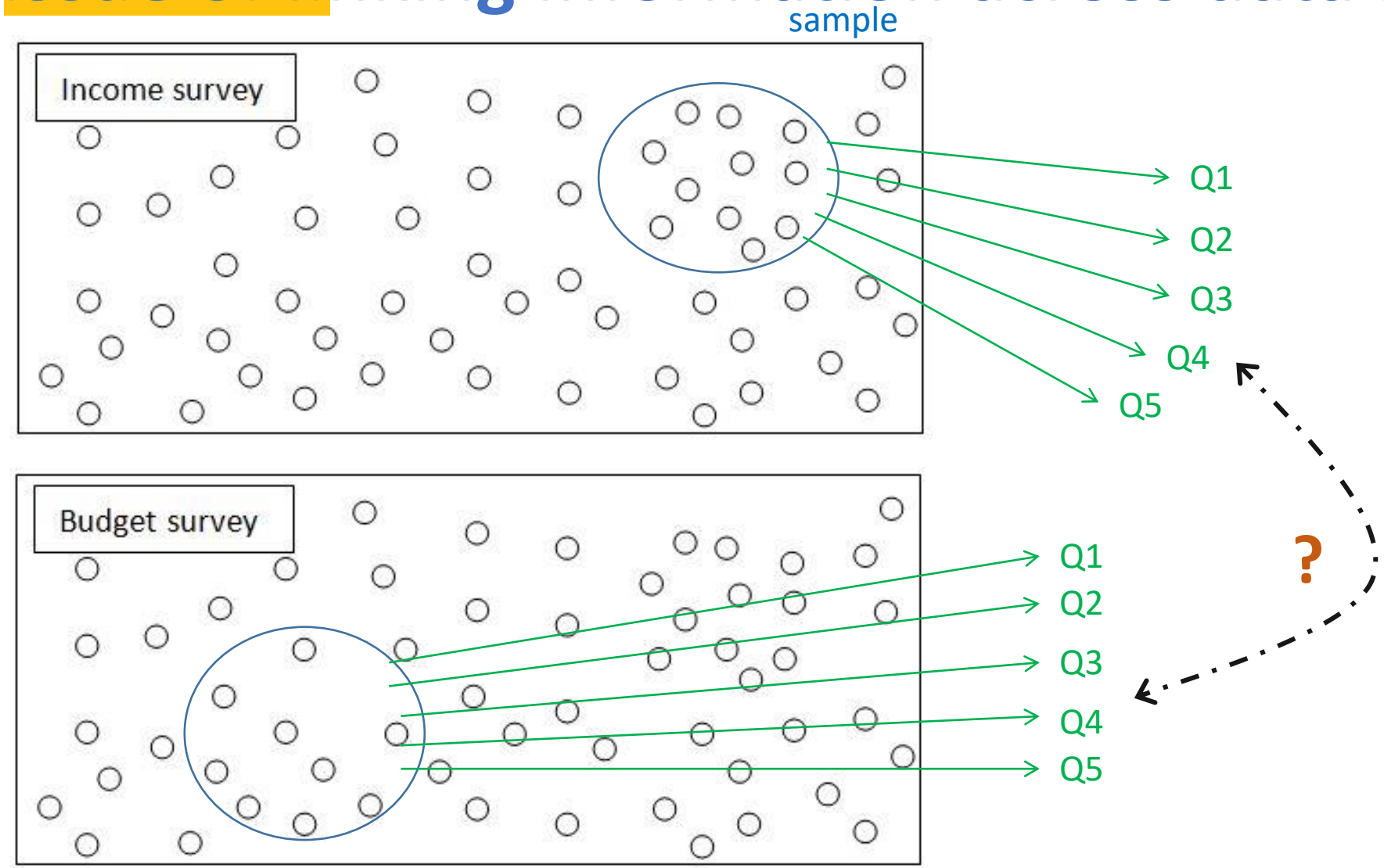
Step 5 – Derive relevant indicators for the household groups



Data need to be linked across items/data sources

How to best link data across different surveys?

Issue of linking information across data sources (2)



Possible methods to link data

1. On the basis of micro characteristics: At the start of the process on the basis of unique identifiers or common characteristics
   - Pros: Provides opportunity to analyse (and possibly edit) combined results at start of the process
   - Cons: Requires identical information in terms of concepts and reporting; complex and resource intensive
2. On the basis of an imputed income variable: Imputation of NA aligned disposable income on basis of common characteristics
   - Pros: Households with similar characteristics will be assigned similar income levels; no need for exact matches
   - Cons: Requires identical information in terms of concepts and reporting; complex and resource intensive
3. On the basis of reported information: E.g., allocate records on basis of income variable available in various data sets
   - Pros: Less complicated and time-consuming
   - Cons: Plausibility can only be checked at the aggregated level; imputations and alignments may lead to incorrect linking

Step 5
Derive relevant indicators

Possible indicators

- Ratio to the average: Result for each household group relative to that for all households:

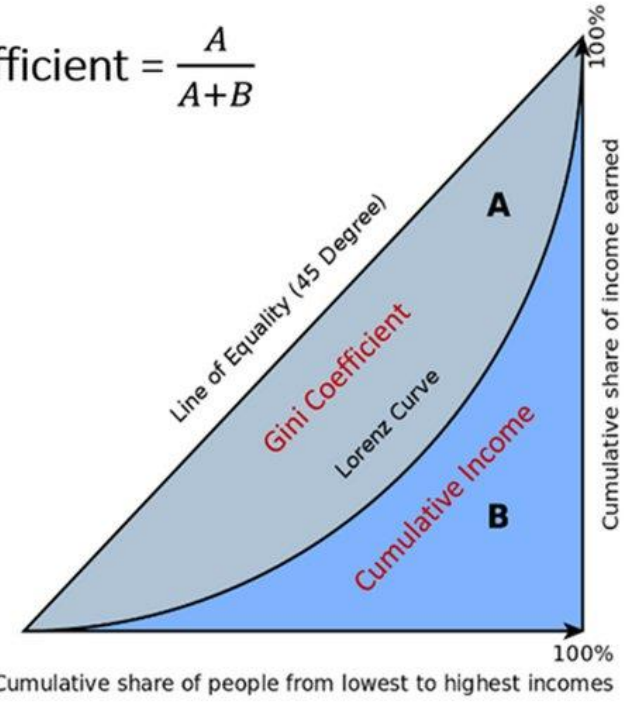
$$Ratio\ to\ average_i = \frac{\bar{X}_i^{NA\_adj}}{\bar{X}^{NA\_adj}}$$

- Ratio of highest to lowest: Result for highest household group compared to that of lowest household group :

$$Ratio\ highest\ to\ lowest_z = \frac{Max_{i\epsilon z}\{\bar{X}_i^{NA\_adj}\}}{Min_{i\epsilon z}\{\bar{X}_i^{NA\_adj}\}}$$

- Gini-coefficient
- Share of each group in total income, consumption and wealth
- Composition of income, consumption and wealth for each group
- Impact of redistribution measures for each household group
- Indicators like debt-to-income ratio and debt-to-financial assets
- …

$$\text{Gini Coefficient} = \frac{A}{A+B}$$

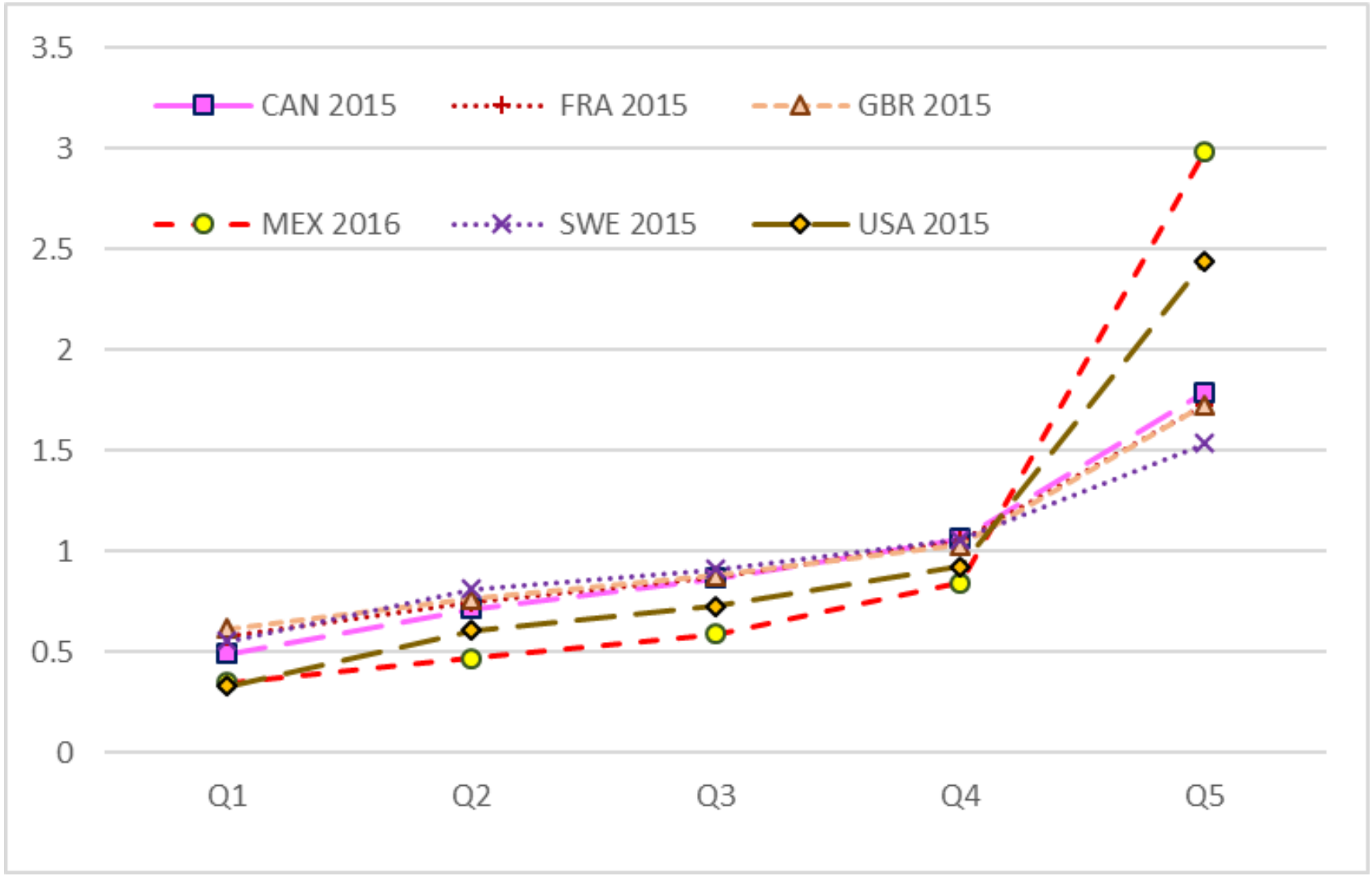


Results of EG DNA exercise

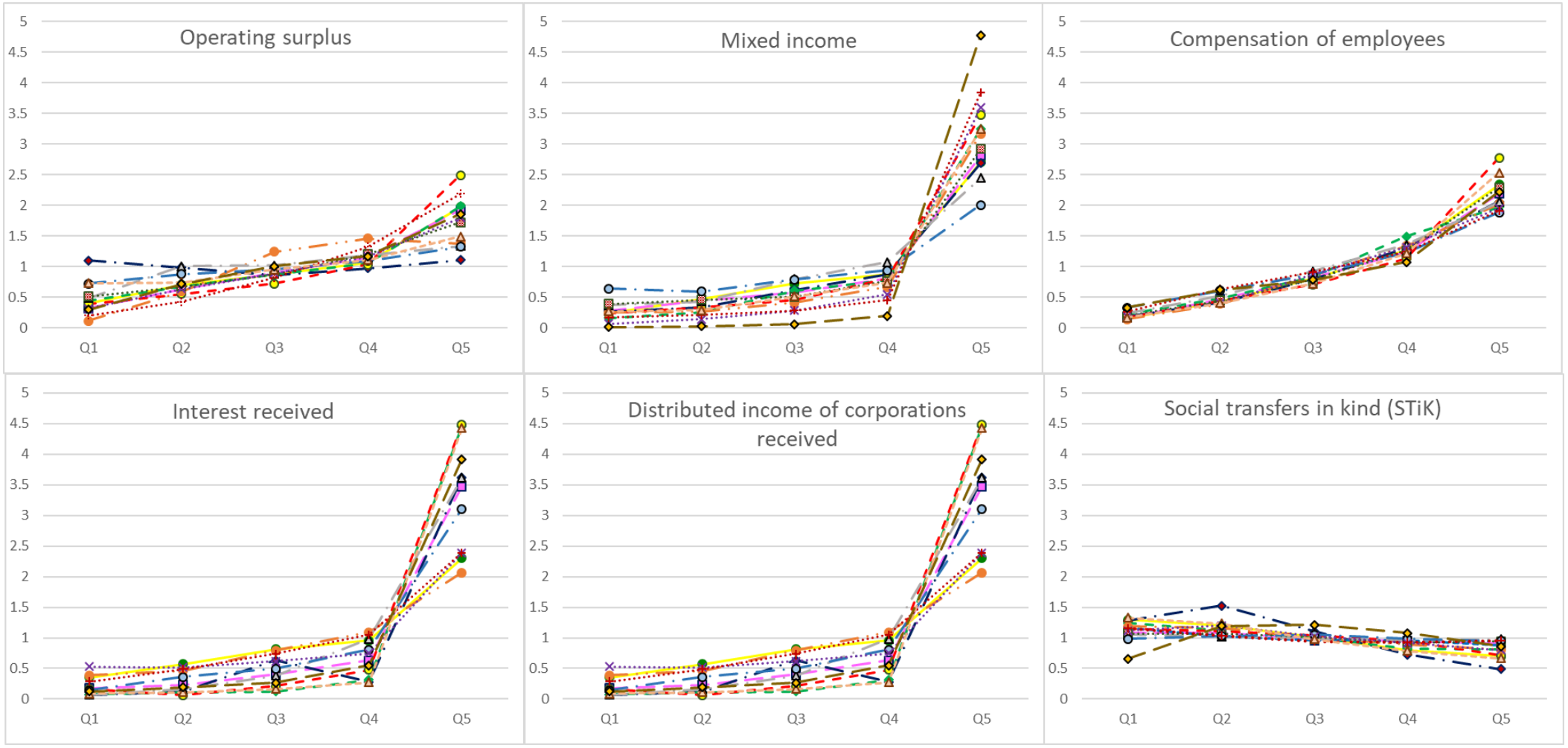
Countries participating in the exercises

Country	2020 exercise	2015 exercise	2012 exercise
Australia[1] (AUS)	2003, 2005, 2007, 2009, 2011, 2013, 2015, 2017	2003, 2005, 2007, 2009, 2011	2009
Austria (AUT)	-	2012	-
Belgium	2014, 2015		
Canada (CAN)	1999 to 2019	-	-
Czech Republic (CZE)	2017	-	-
France (FRA)	2011 to 2016	2003, 2011	2003
Germany (DEU)	-	-	2008
Ireland (IRL)	2015, 2016	-	-
Israel (ISR)	2015 to 2017	2012	2009
Italy (ITA)	2015, 2016	-	2008
Japan (JPN)	-	2009	2009
Korea (KOR)	-	-	2009
Mexico (MEX)	2008, 2010, 2012, 2014, 2016, 2018	2008, 2010, 2012	2008, 2010
Netherlands (NLD)	2017	2008, 2001	2008
New Zealand[1] (NZL)	2006, 2009, 2012, 2015	-	2007
Portugal (PRT)	2016, 2017	2006, 2011	2006, 2009
Slovenia (SVN)	2012, 2015	2012	2008
Sweden (SWE)	2012, 2015	2012	2008
Switzerland (CHE)	-	2008, 2011	2008
United Kingdom (GBR)	2003 to 2017	2008, 2012, 2013	-
United States (USA)	2015, 2016	2010, 2012	2010

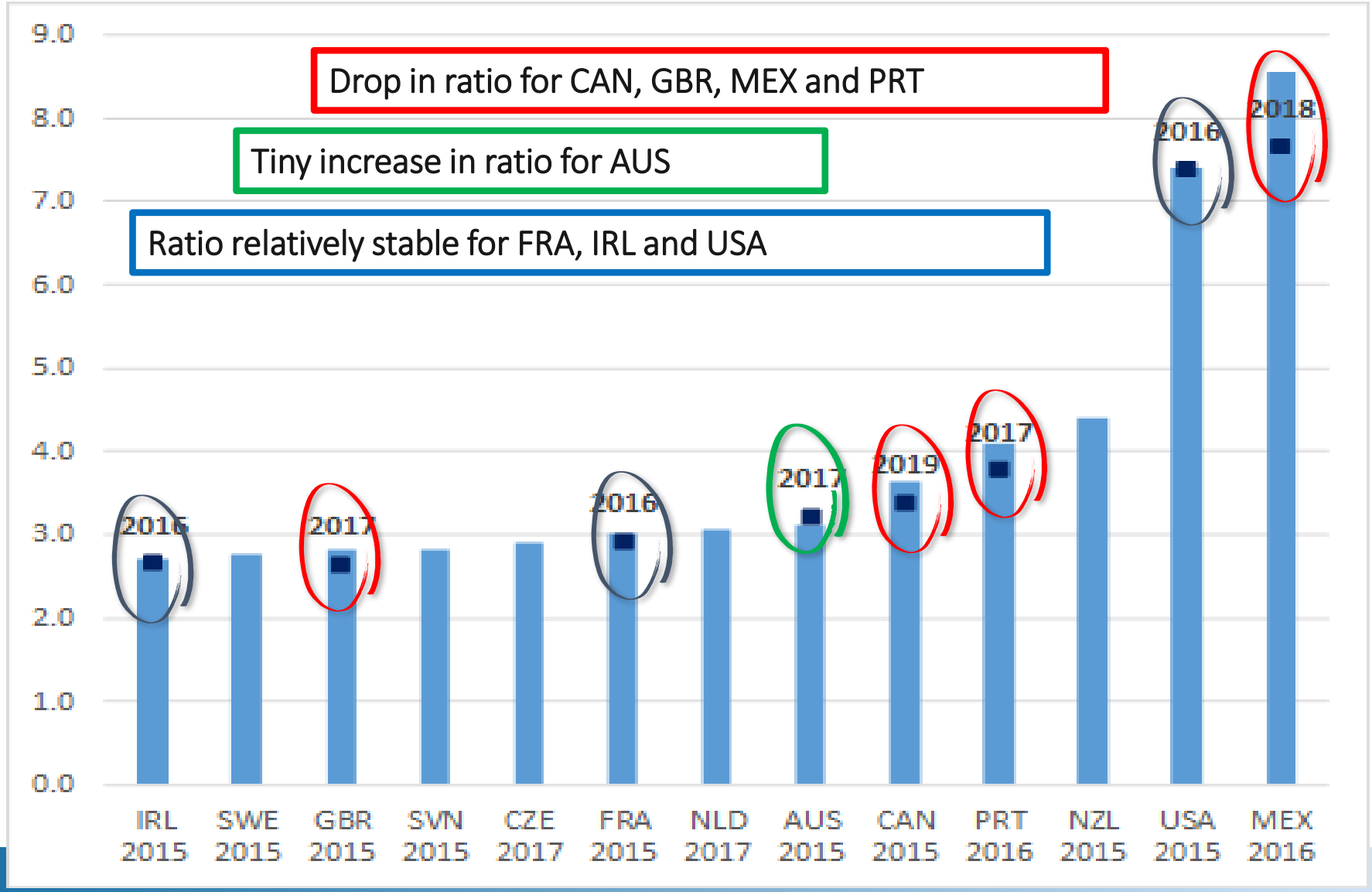
Ratio to the average - Adjusted disposable income



Ratio to the average – Income items

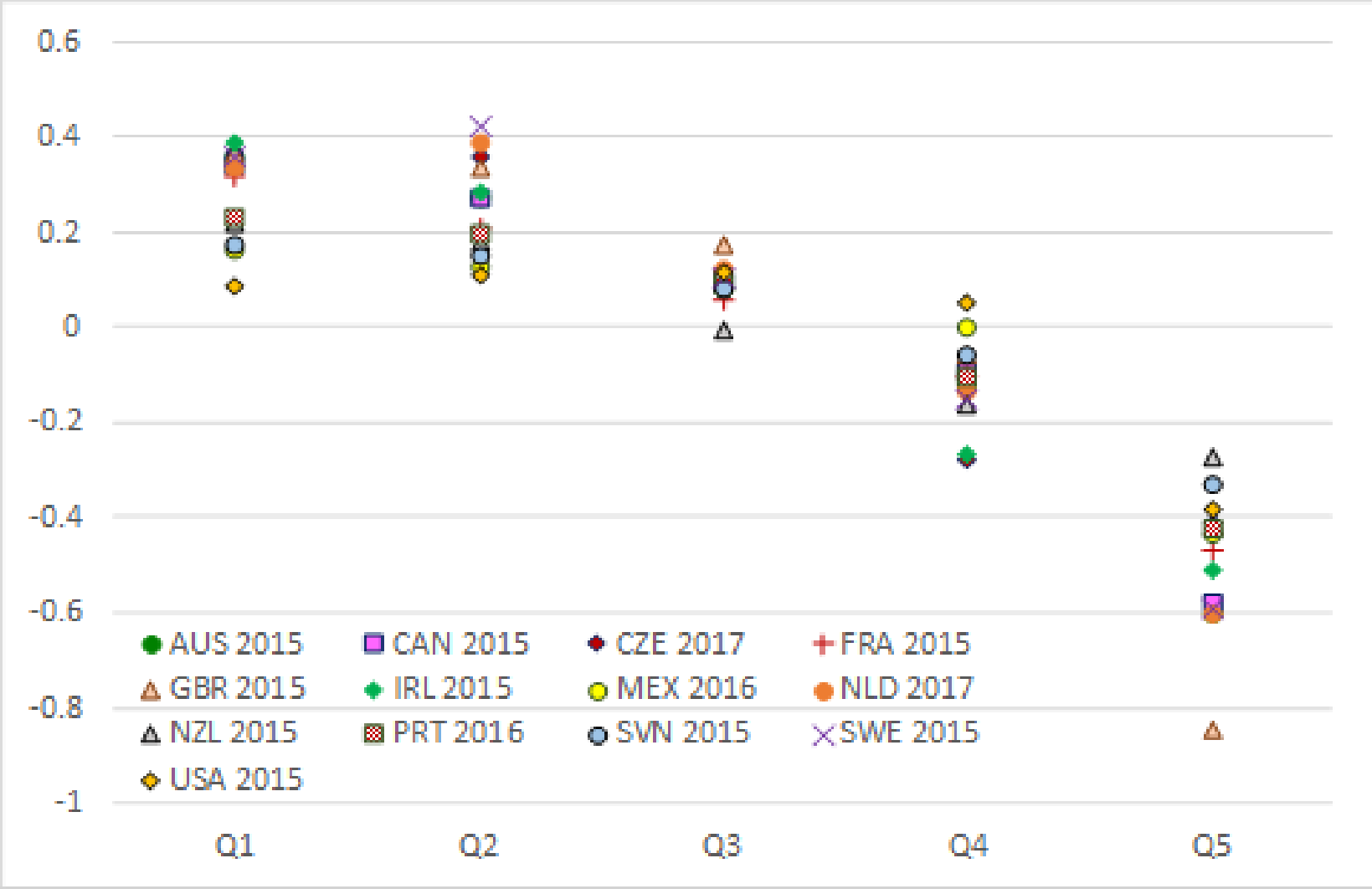


Ratio highest to lowest (Q5/Q1) - Adjusted disposable income

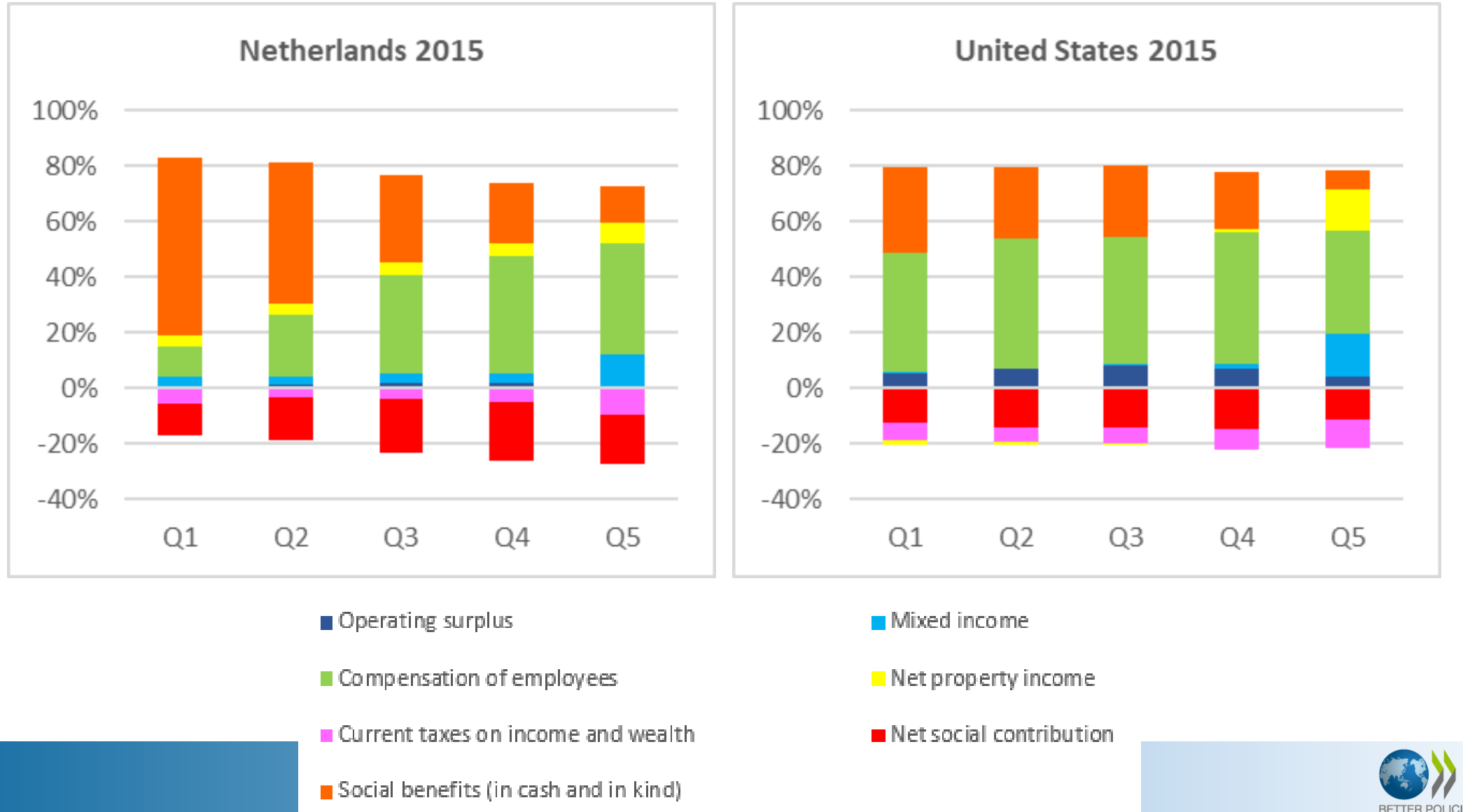


Impact of net current transfers

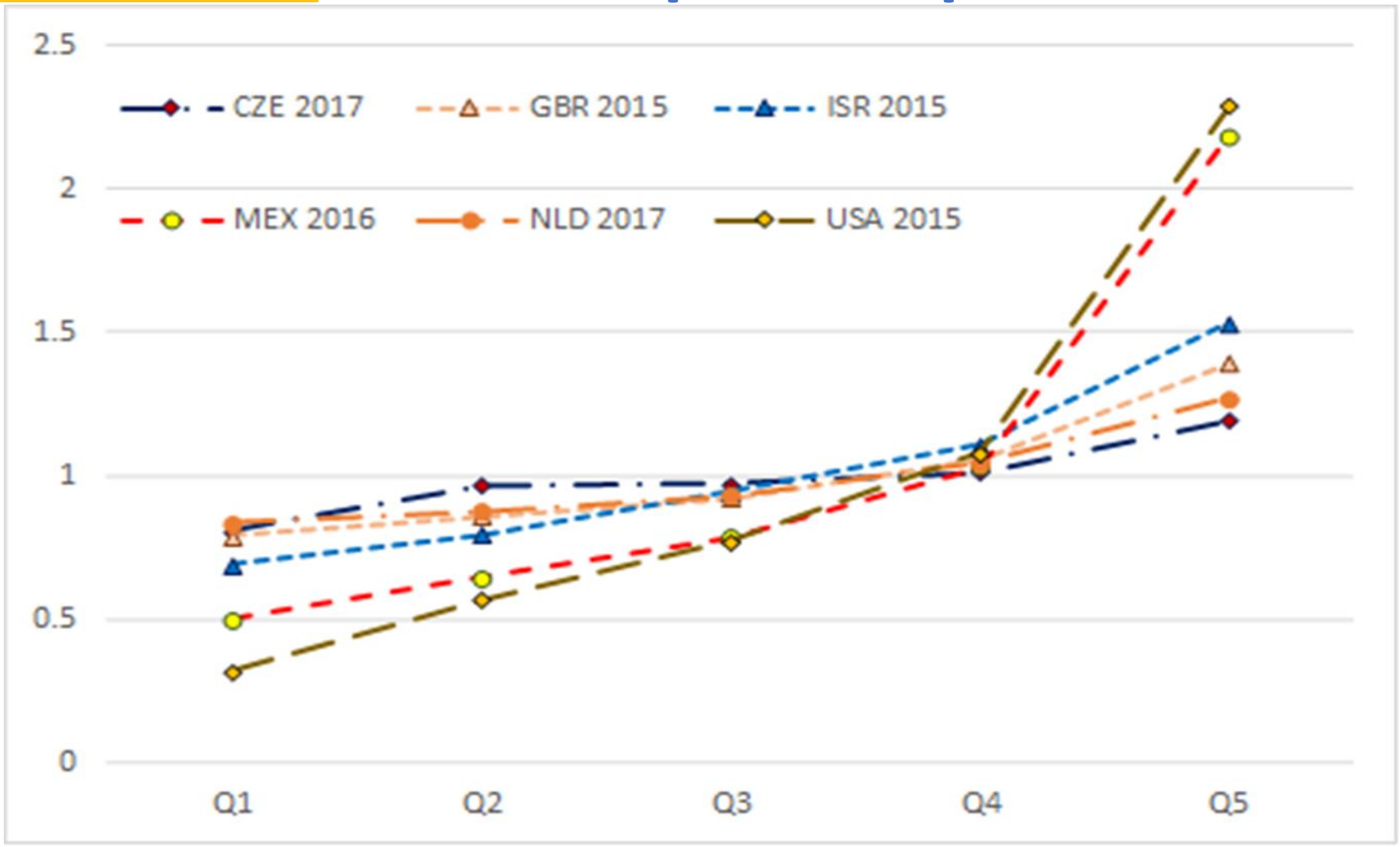
Impact on the relative position of each household group compared to the average



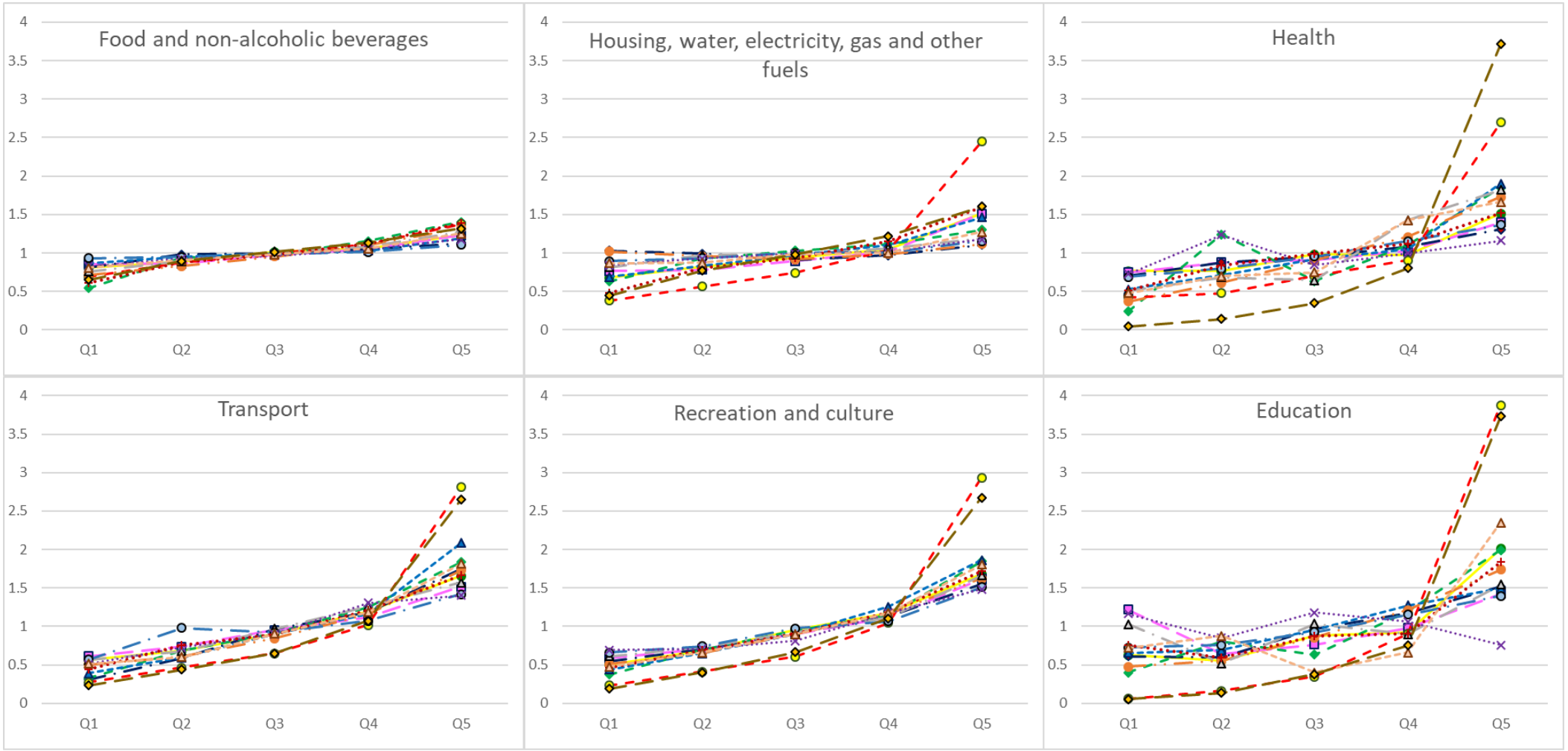
Composition of income per quintile



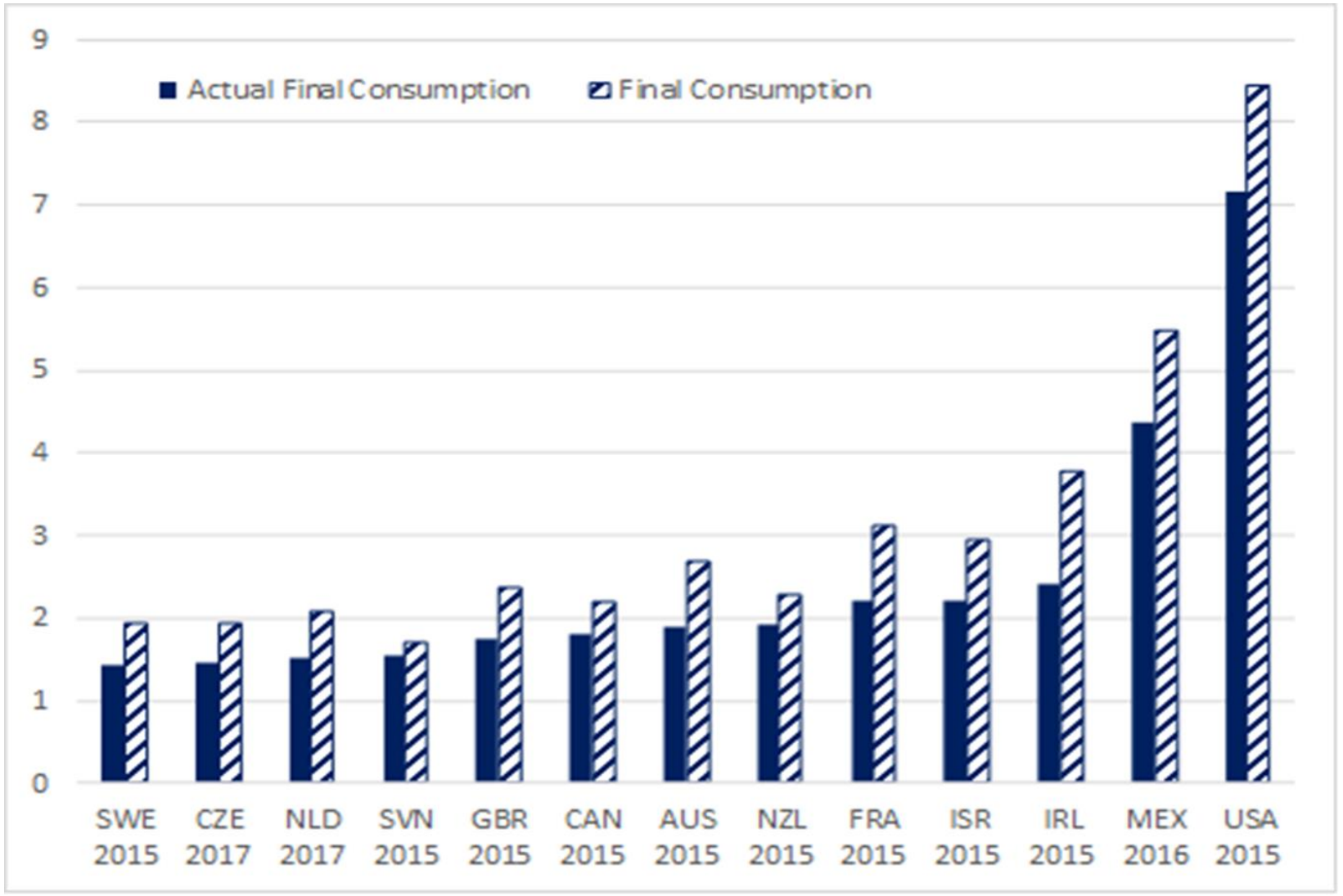
Ratio to the average - Actual final consumption expenditure



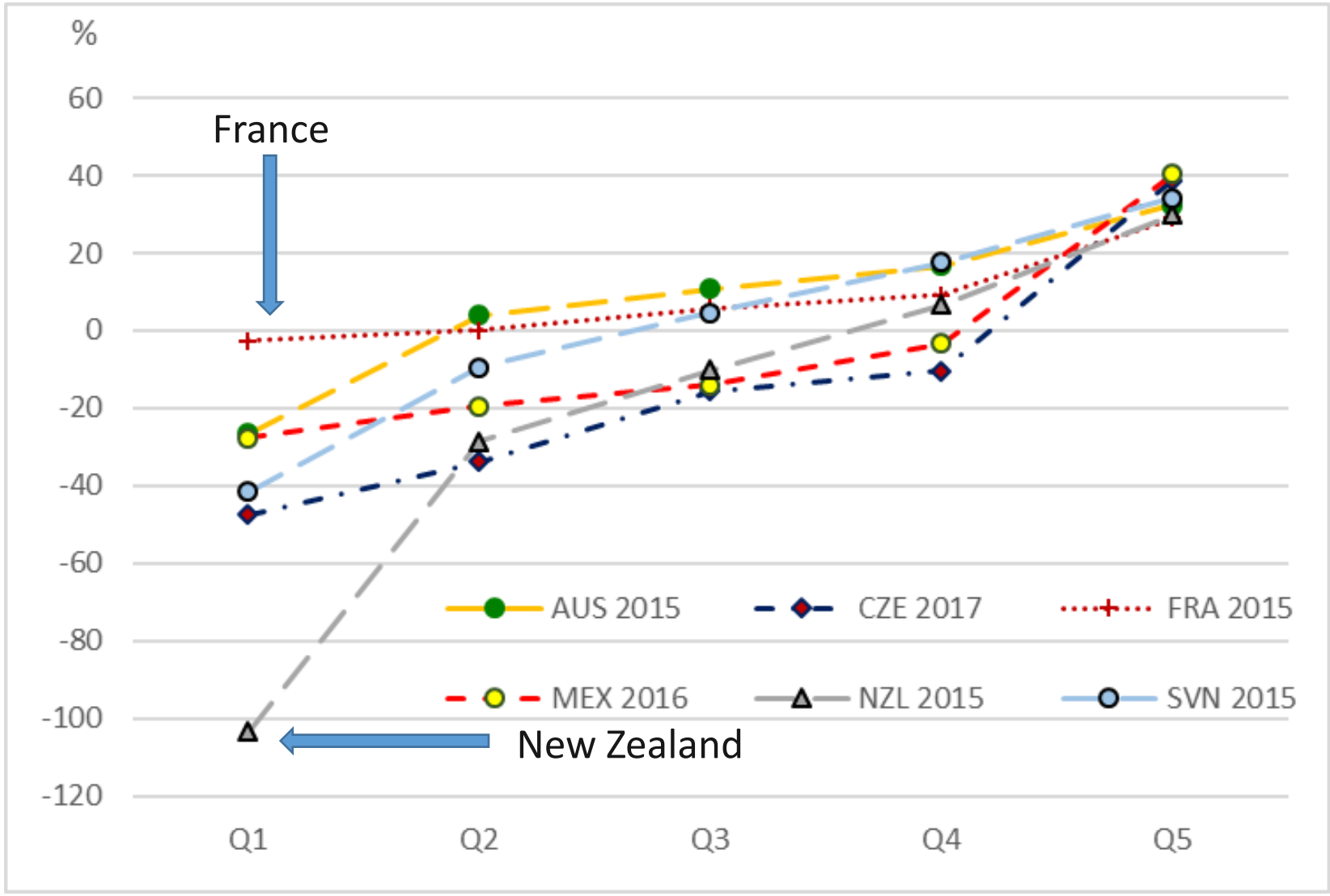
Ratio to the average – Consumption items



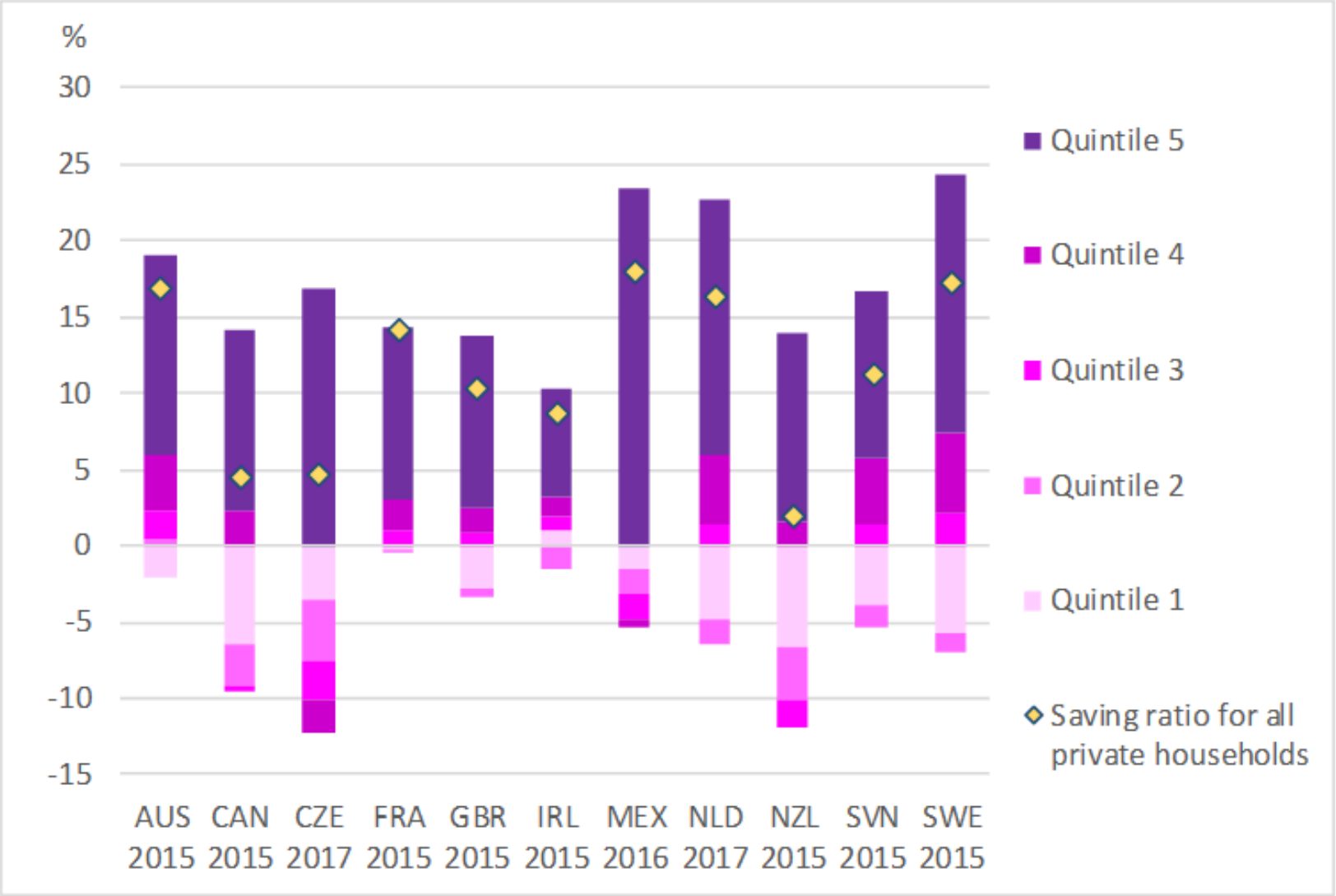
Ratio highest to lowest (Q5/Q1) - Consumption expenditure



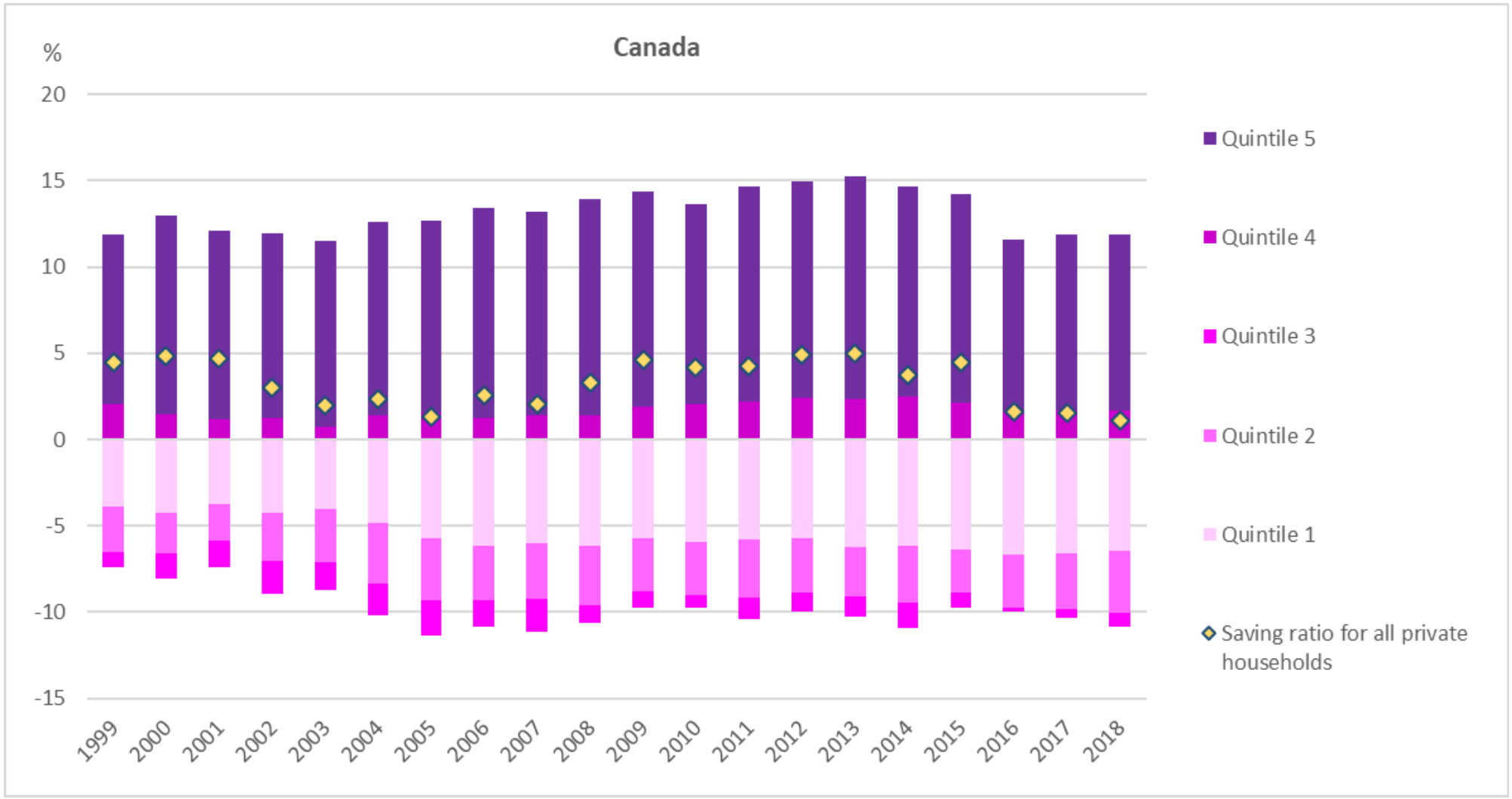
Saving ratio (as % of disposable income per group)



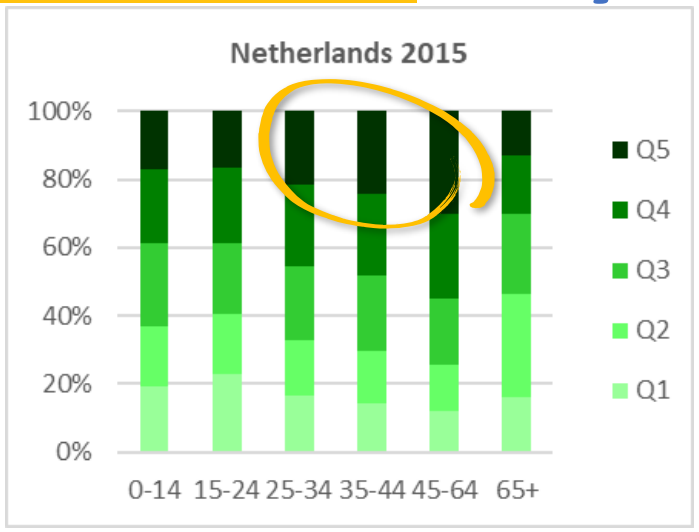
Composition of saving ratio (as % of total saving)

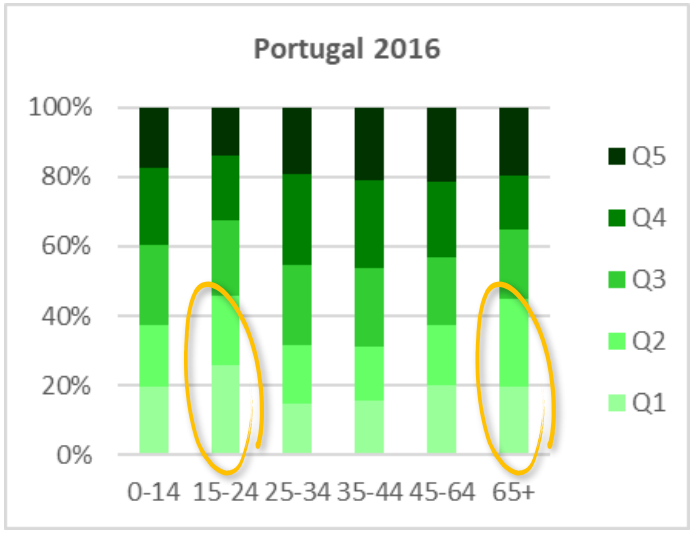


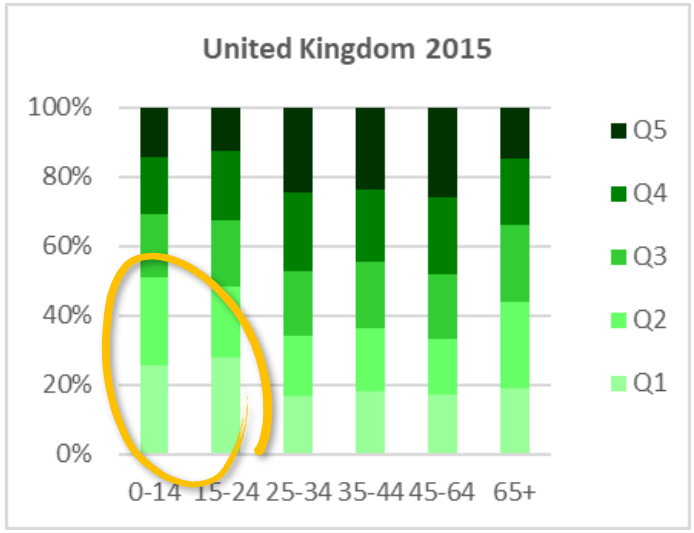
Composition of household saving ratio over time

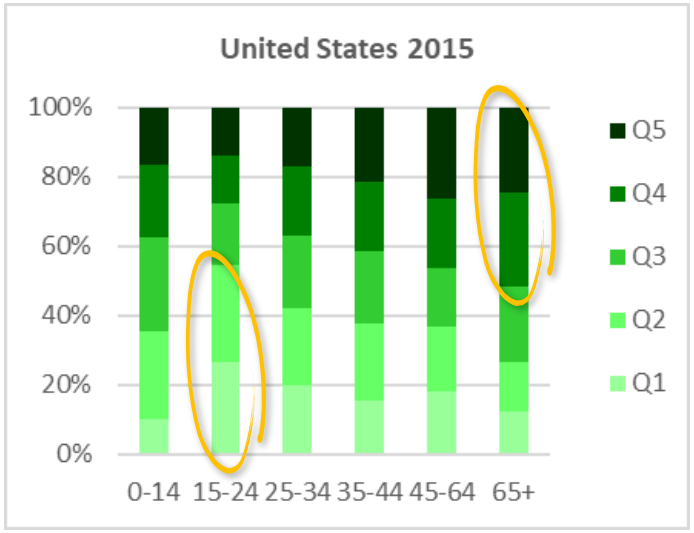


Socio-demographic information - Breakdown by age









Younger persons more concentrated in lower income quintiles in GBR

In US group 15-24 tends to be in lowest income quintiles

Relatively strong concentration of 65+ in higher income quintiles in US

Persons in middle age groups have highest income in NLD

Homogenous composition in PRT, with slightly larger concentration of 15-24 and 65+ in lower quintiles

Comparison with with other distributional data

A. Comparison with micro data

Main conceptual differences (1)

- Micro statistics focus on net measures (net of depreciation); EG DNA concerns gross measures
- Income from self-employment
  - SNA makes explicit adjustment to account for underground production
- Compensation of employees/Employment income:
  - SNA includes imputed employers' social insurance contributions (which are also recorded in redistribution accounts as paid in by households, so no impact on disposable income)
- Property income:
  - SNA includes imputed investment income items, i.e. (i) attributed to insurance policy holders; (ii) payable on pension entitlements; and (iii) attributed to inv. fund shareholders
  - Interest received and paid in SNA are corrected for service fee implicitly paid to financial institutions as part of interest flow (these amounts are then recorded as (intermediate and final) consumption)
  - Property income in micro statistics is recorded net of explicit expenses whereas these are recorded as separate items in the SNA

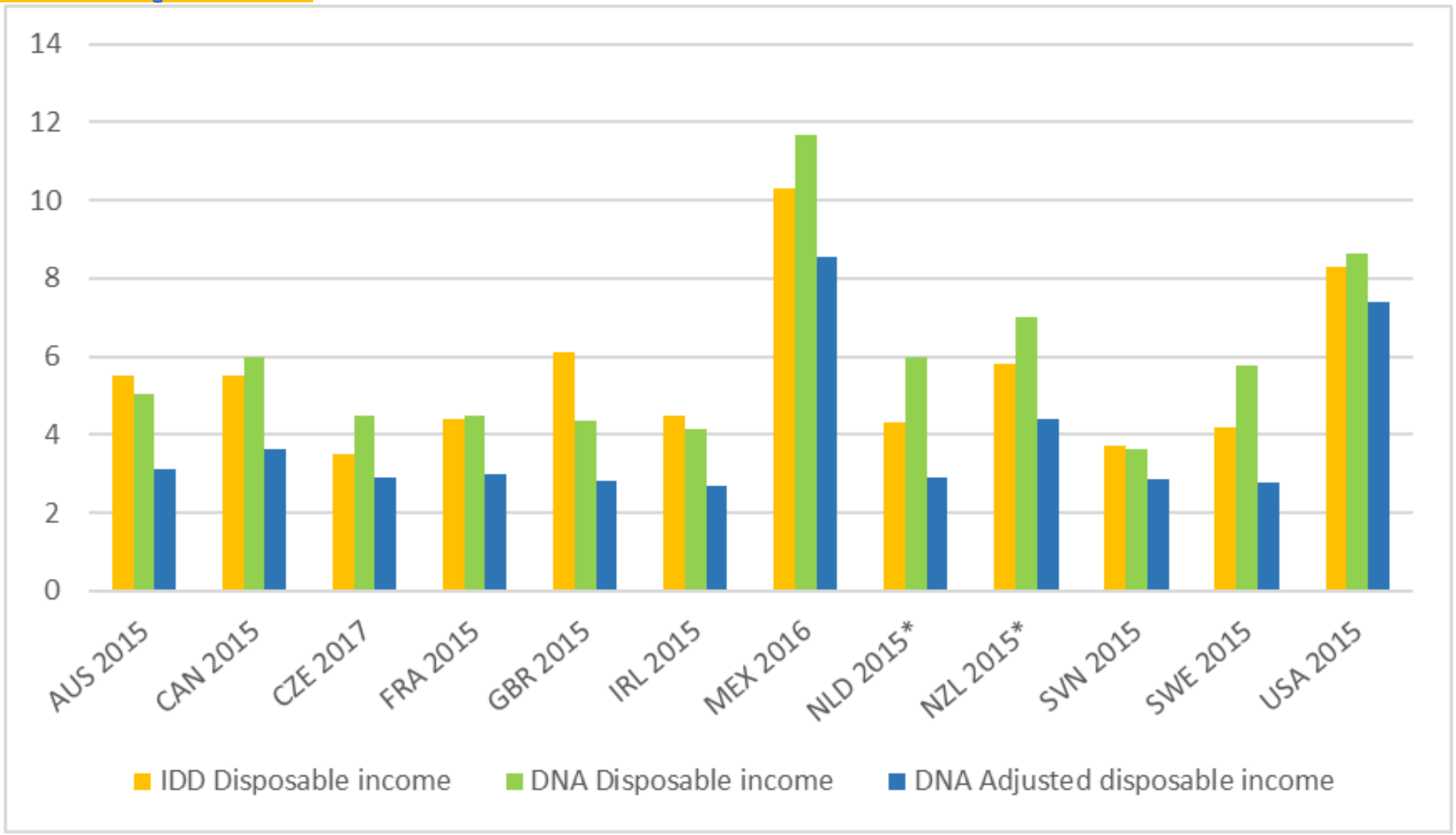
Main conceptual differences (2)

- Social contributions:
  - SNA includes imputed employers' social insurance contributions and households' social contributions supplements (related to income on pension entitlements)
  - SNA deducts social insurance scheme service charges (recorded as consumption)
- Social transfers in kind:
  - Included in SNA but normally excluded from micro statistics

Other possible differences

- Time of recording may differ: National accounts apply accrual recording whereas micro data may rely on cash recording
- Population differences: Survey results often focus on a specific point in time, whereas national accounts try to capture all economic activity over a specific period of time
- National accounts relies on a wide range of data sources that are carefully confronted and balanced to arrive at consistent information within the framework
- …

Results: Ratio highest to lowest (Q5/Q1)
Comparison with micro data results



B. Comparison with WID.world

Comparison with WID.world (DINA)

- Both projects target distributional data in line with national accounts
- However, they use slightly different concepts and methods, e.g.:
  - Income concept: EG DNA focuses on adjusted household disposable income, WID.world on national income, i.e. also including income of other sectors in the economy
  - Target population: EG DNA targets private households, WID.world adult individuals
  - Methodology: Different data sources and assumptions may be applied with regard to micro-macro gaps and imputations
- Differences may give rise to different outcomes
- Good understanding is key to assist users in assessing which measure best suits their purpose

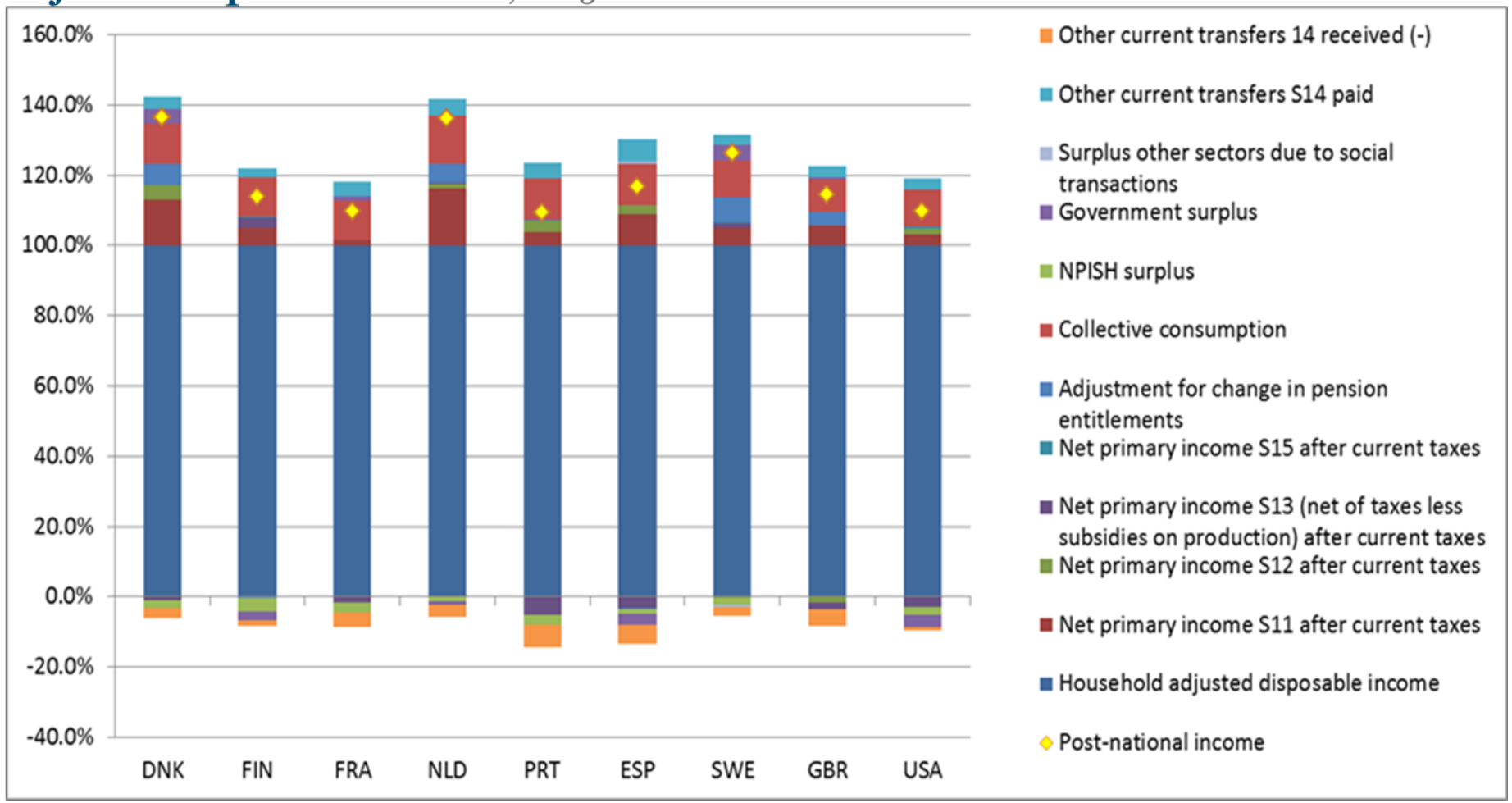
Main differences on income side

Comparable SNA measure	Pre-tax factor income	Pre-tax national income	Post-tax disposable income	Post-tax national income
Primary income of HH sector	X	X		
HH disposable income			X	
HH adjusted disposable income				X
Differences with SNA measure				
Taxes less subsidies on production	+	+		
Primary income of corporations	+	+	+*	+*
Primary income of government (net of taxes less subsidies on production)	+	+	+	+
Gap between pension contributions and benefits		+	+	+
Net other current transfers			-	-
Collective consumption				+
Government surplus				+

* Net of current taxes paid

Example of post-tax national income

Composition of **post-tax national income** (DINA) in percentages of **net household adjusted disposable income**, 2015



Considerations on difference in income concept

- Inclusion of primary income (undistributed profits) of corporations:
  - Not all domestic portfolio equity is held by domestic households + they will also own portfolio equity in foreign corporations
  - How to allocate the amount to relevant individuals?
  - Alternative: focus on holding gains (derived from the revaluation account)
- Inclusion of primary income of general government (and other government surplus/deficit):
  - Can the full amount be attributed to the current population?
  - How to allocate the amount to relevant individuals (avoiding double counting over time)?
- Inclusion of collective consumption:
  - It concerns consumption that benefits the community as a whole, so questionable whether it should be included in individual income measures
  - How to allocate the amount to relevant individuals?

Considerations on difference in income concept

- Treatment of pension transactions:
  - Alignment to national income also implies allocating any gap between the pension contributions and pension benefits within a reference year
  - However, pensions often concern re-distribution in time at individual level, so allocating the gap to individuals would often imply offsetting the initial transactions
  - The only redistribution which may make sense to show is when there is a gap between the pension contribution and the accrual of an entitlement at the individual level
- What would alternative income concept imply for consumption and wealth concept?
  - Inclusion of collective consumption in income would imply also including this in the consumption concept
  - Allocating government deficit and any gaps between pension contributions and benefits would also affect savings and wealth measures

Differences in methodology

Differences may arise due to use of different data sources. However, the input data may often be the same:

- WID.world relies on tax data, supplemented with survey data and rich lists
- EG DNA relies on survey and administrative data, depending on the country

Furthermore, differences may arise due to:

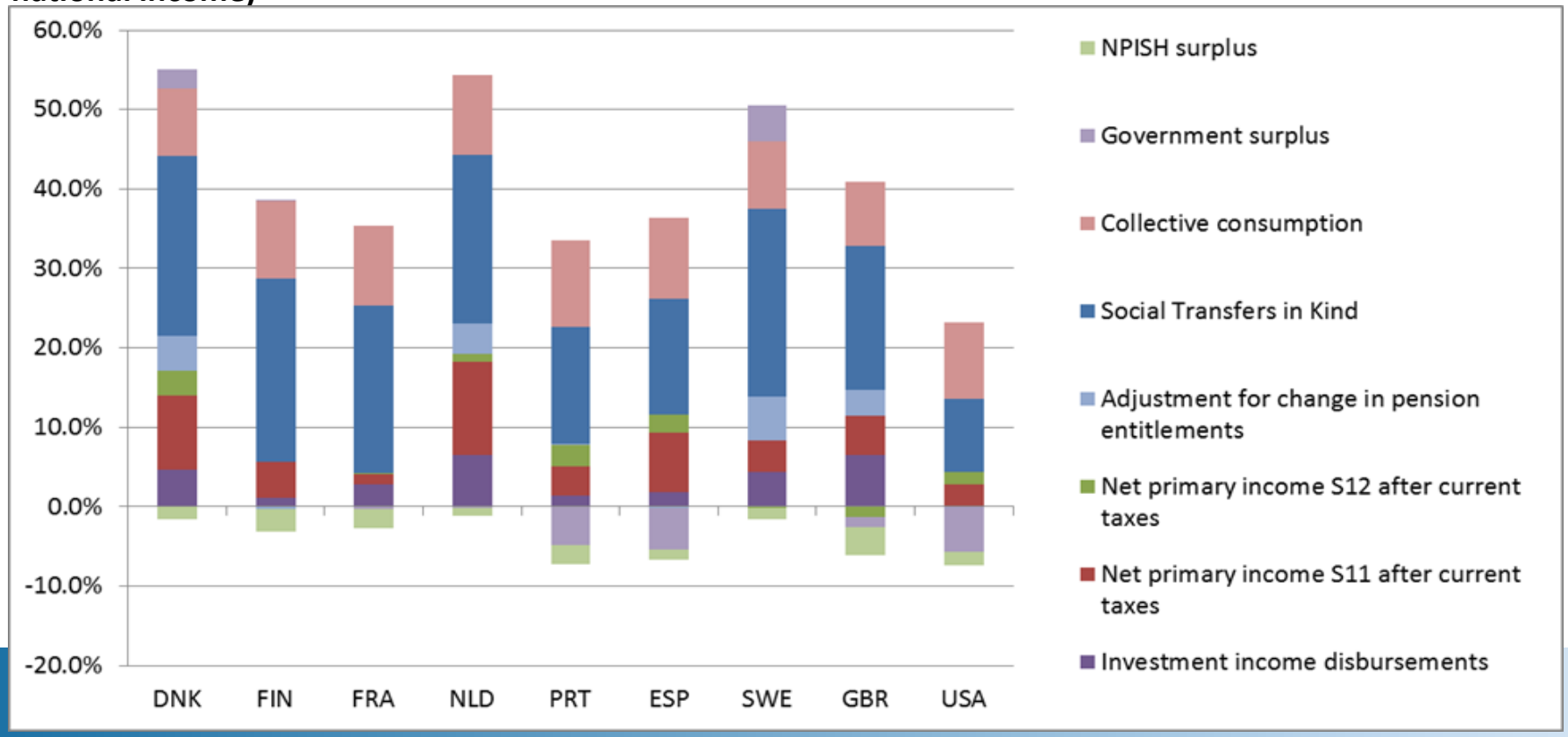
- Different adjustments to correct for conceptual and classification differences
- Different corrections to micro data to correct for measurement and estimation errors

- A lot will depend on the number of items for which imputations may be needed and the size of the micro-macro gaps and the information to properly allocate them to households
- Any assumptions may significantly affect the results and margins of error surrounding the results. This is one of the main reasons why the granularity in EG DNA is still limited

Impact of imputations and alignment in WID.world

- Uncertainty about specific micro-macro gaps in WID.world
- DINA contains more imputed items than EG DNA

Size of components of post-tax national income for which micro-information is assumed to be missing (in % of post-tax national income)



Conclusions

- Differences in scope, concepts and methodology may give rise to different outcomes
- A good understanding of these differences is important to assist users in assessing which measure(s) will best suit their purpose and in understanding any differences in outcomes
- Furthermore, metadata will be useful to better assess the robustness of the results, especially in relation to the possible impact of micro-macro gaps and imputations
- Discussion on pros and cons of choices and assumptions in compiling distributional results will help in further improving the work of both projects

Next steps

Next steps

- Broaden the range of countries: Encourage more countries to join the work and develop centralized approach results
- Lengthen the time series: Encourage countries to compile results for older years and develop interpolation techniques for years with missing micro data
- Increase the granularity of the results: Improve methodology (mainly focusing on micro-macro gaps) to decrease margins of error surrounding the results
- Improve the timeliness of the results: Explore nowcasting techniques in collaboration with micro experts
- Increase frequency of the results: Explore feasibility of nowcasting and interpolation techniques
- Develop internally harmonized methodology for compilation of distributional wealth results
- Present results on income, consumption and wealth in coherence
- Optional: Explore possibility of developing price indices per household group

THANK YOU

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