

The distributive impact of publicly provided social services

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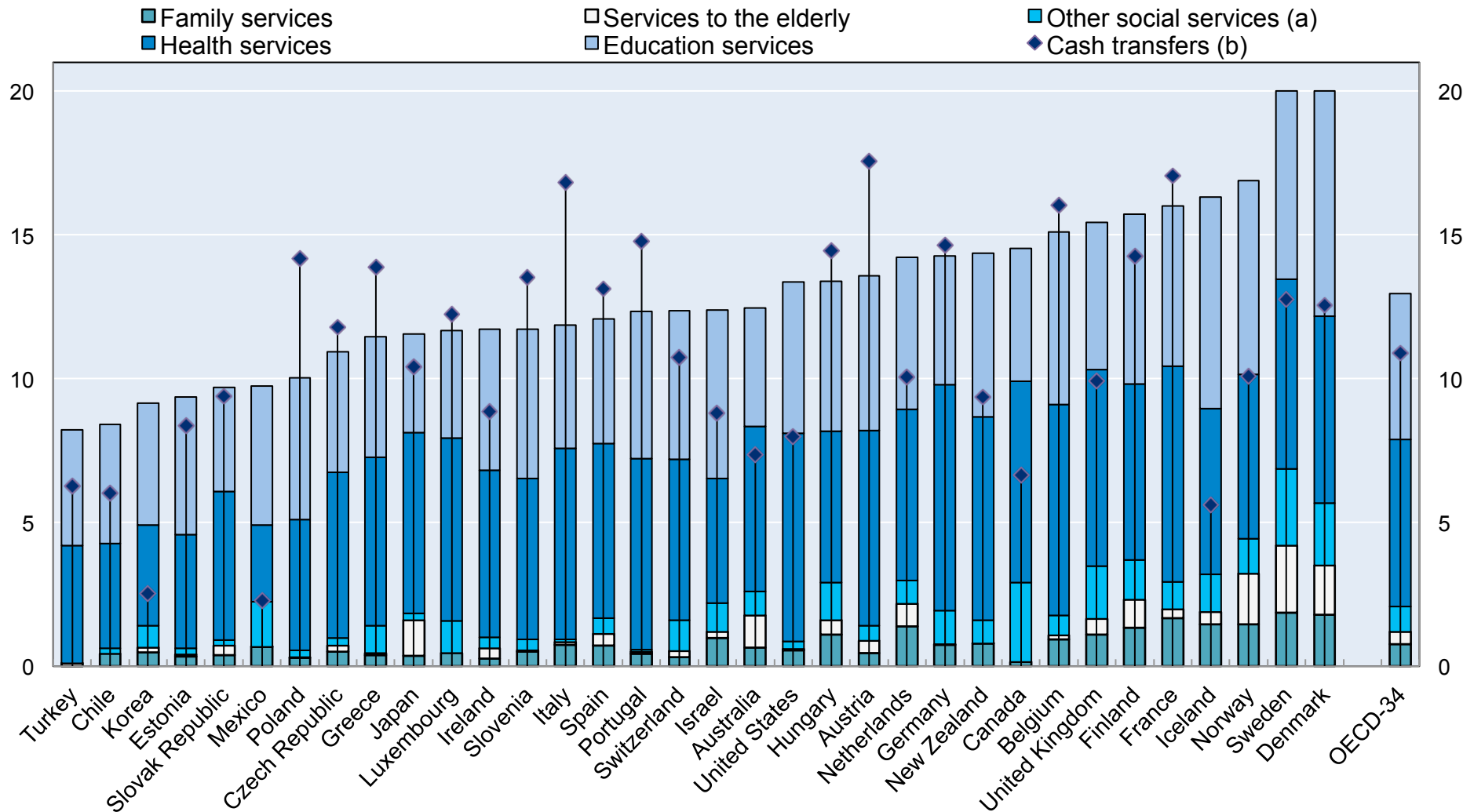
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&

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Public expenditure for in-kind and cash transfers, percentage of GDP, 2007



Source: OECD Social Expenditure database, OECD Education database, OECD Health database. See also **Chapter 8 in OECD (2011)**

Divided we stand: Why Inequality Keeps Rising.

Context

- Household income should reflect social services provided by the government , such as subsidized health care and education services (www.stiglitz-sen-fitoussi.fr).
- On average, the size of these services is slightly more important than that of all cash transfers taken together.
- But some countries rely on social services rather than cash transfers much more than others
- How to measure distributive consequences?
- See Verbist, G., Förster M. and Vaalavuo M. (2012), *The impact of Publicly Provided Services on the Distribution of Resources: A Review of New Results and Methods*, OECD Social, Employment and Migration Working Paper / GINI DP & **Chapter 8 in OECD (2011) *Divided we stand: Why Inequality Keeps Rising***. (as part of OECD - European Commission Joint Project, extended with non-EU countries; results refer to 2007).

Methodological choices

- ***Which services?***

Those which benefit households individually rather than the whole population indivisibly

Here: health care, education, early childhood education and care, social housing, long-term elderly care

- ***How to value them?***

Average cost of producing the public service /cost of the provision

- ***How to allocate them to individuals/households?***

Actual use or insurance value ?

- ***What equivalence scale to use in distributive analysis?***

Cash income equivalence scale or different approach?

Valuation

- Production cost (except for social housing)
- But:
 - What is user's value for beneficiaries?
 - Quality and efficiency of services
 - Life cycle perspective
 - Externalities (e.g. better educated workforce)

Allocation method: actual consumption (AC) or insurance value (IV)

Public service	Allocation method	Beneficiaries
Education	AC	Pupils and students
Health care	IV	All individuals covered by public health
Social housing	AC	Residents of social housing unit
Early childhood education and care (ECEC)	AC	Young children in public childcare and pre-primary education
Long-term elderly care (LTC)	IV	All elderly people covered by the system
Incapacity-related	AC	Individuals that suffer from incapacity and use related publicly provided services
Active labour market programmes (ALM)	AC	Individuals participating in ALM programmes
Public transport	AC	Passengers of public transport
Public utilities, e.g. energy, communication	AC	Users of public utilities

How to account for differences in needs?

- The “consistency” problem: some types of non-cash income may have needs associated with them that are unmeasured in usual equivalence scales.
- So use of cash income equivalence scale may not be appropriate.
- Aaberge et al. (2010) derive a theoretically based equivalence scale that is a combination of cash and non-cash income needs (derived from government expenditures)
- Paulus et al. (2010) apply a sensitivity analysis that takes account of different public spending levels across countries

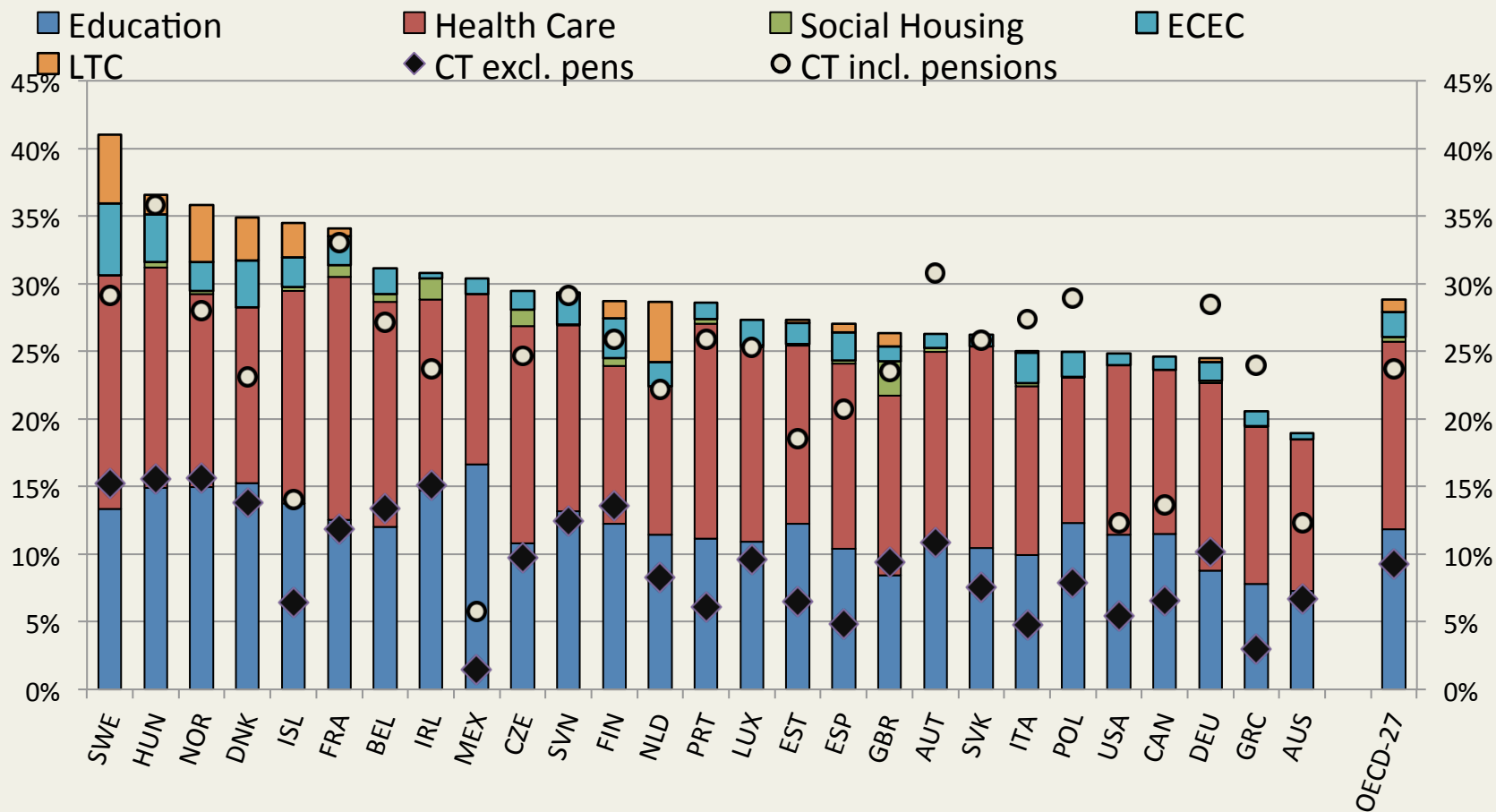
Data for empirical analysis

- Microdata (surveys):
 - EU-SILC 2007: 24 EU-countries + ISL & NOR:
 - HILDA 2007: AUS
 - LIS 2004: CAN (SLID), MEX (ENIGH), USA (CPS)
- Imputation data: amounts per beneficiary
 - Education: OECD Education Database
 - Health care: derived from age profiles (European Commission and the Economic Policy Committee (2009) and OECD (2006))
 - ECEC: OECD Education Database & National sources
 - Elderly care: national sources
 - Social housing: imputed rent estimation

Distributive outcomes

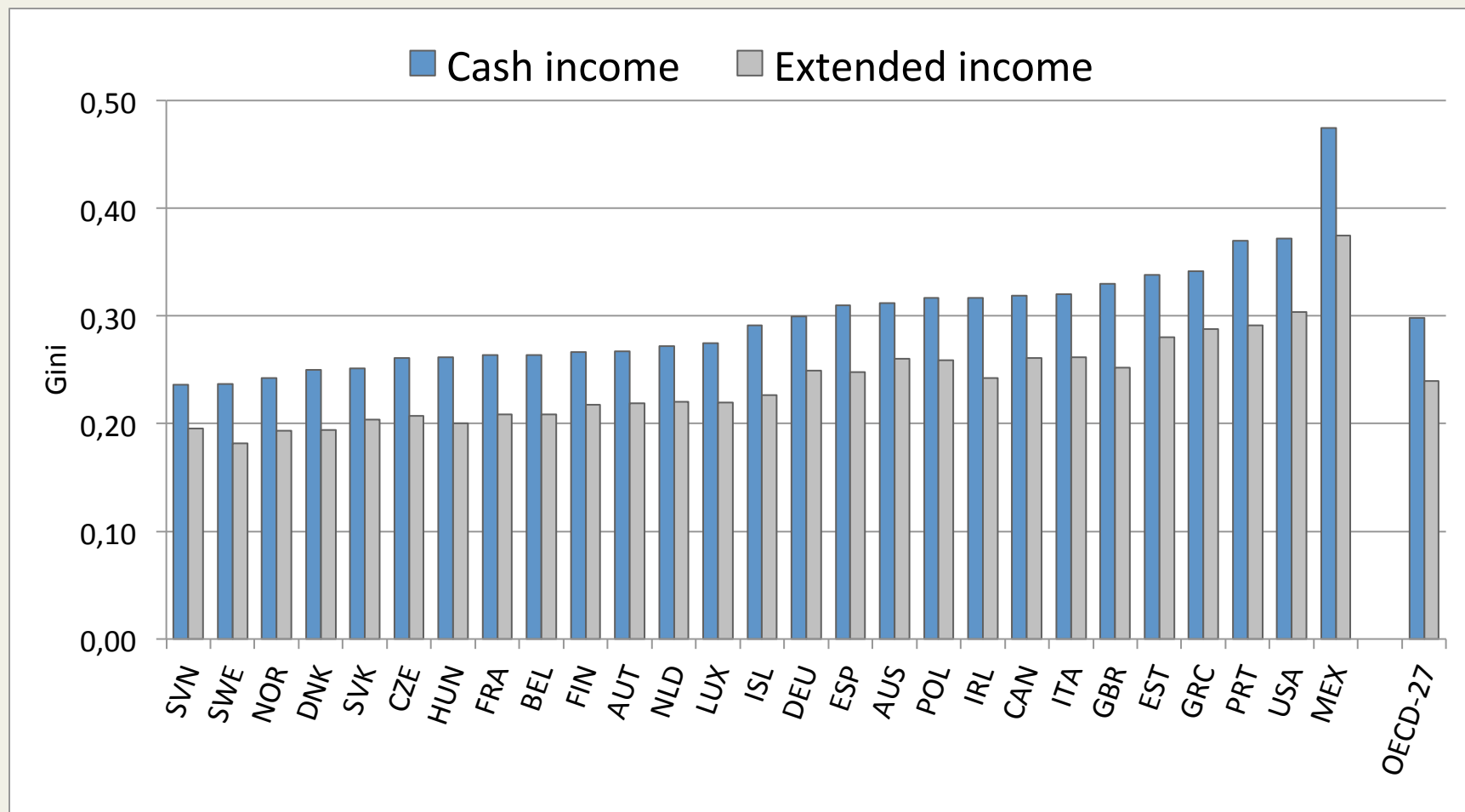
- Size: social services as a % of cash disposable income
- Incidence: Quintile distribution (quintiles constructed on the basis of equivalent cash income, modified OECD-scale)
- Inequality: Gini coefficient of cash and extended income (extended income = cash + imputed value of social services)

In-kind benefit from public services as a share of disposable income, 2007



Source: Verbist et al. (2013)

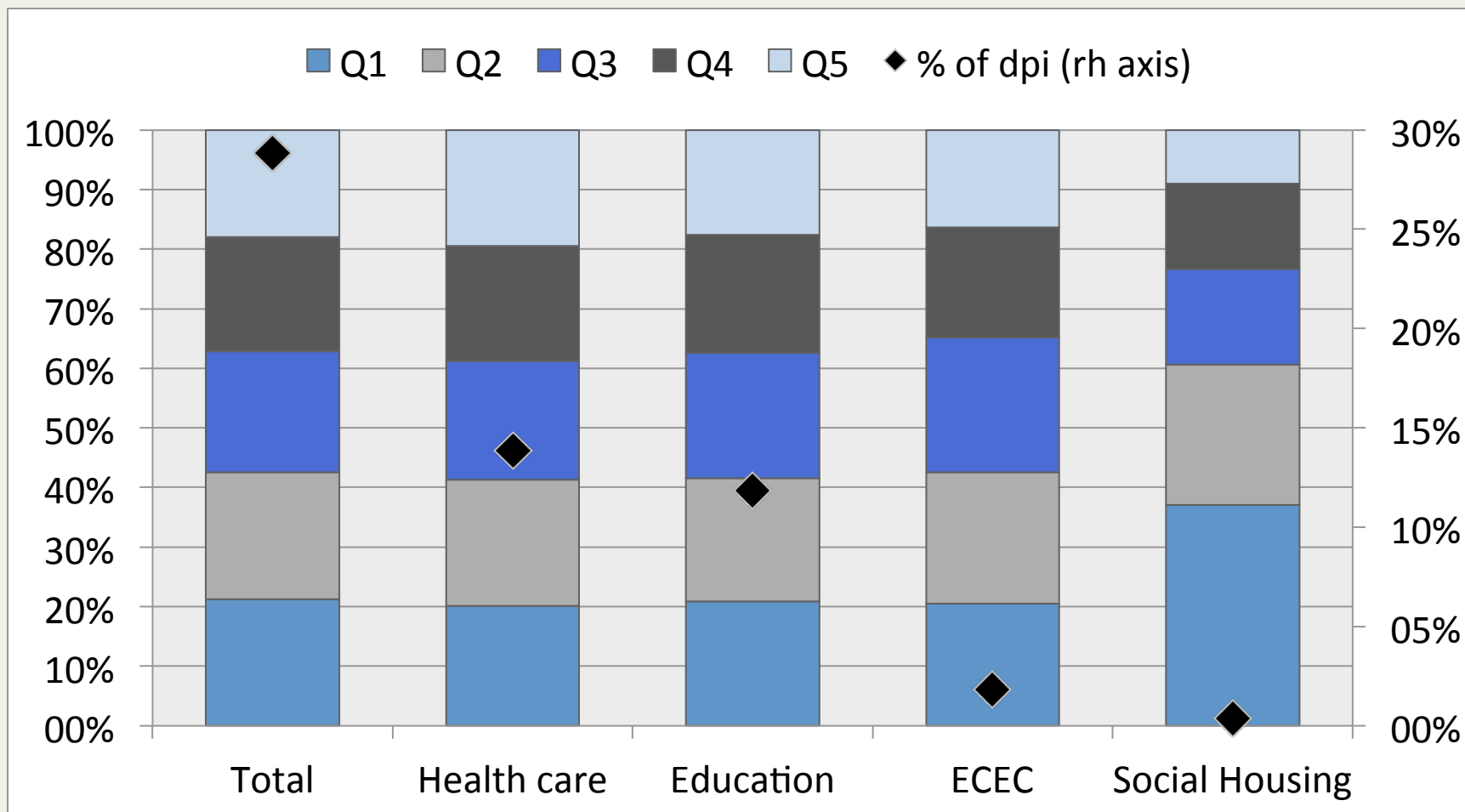
Gini coefficient before and after inclusion of all types of public services, 2007



Source: OECD-EU Database on public services, see Chapter 8 in OECD (2011) *Divided we stand: Why Inequality Keeps Rising*, & Verbist et al. (2012).

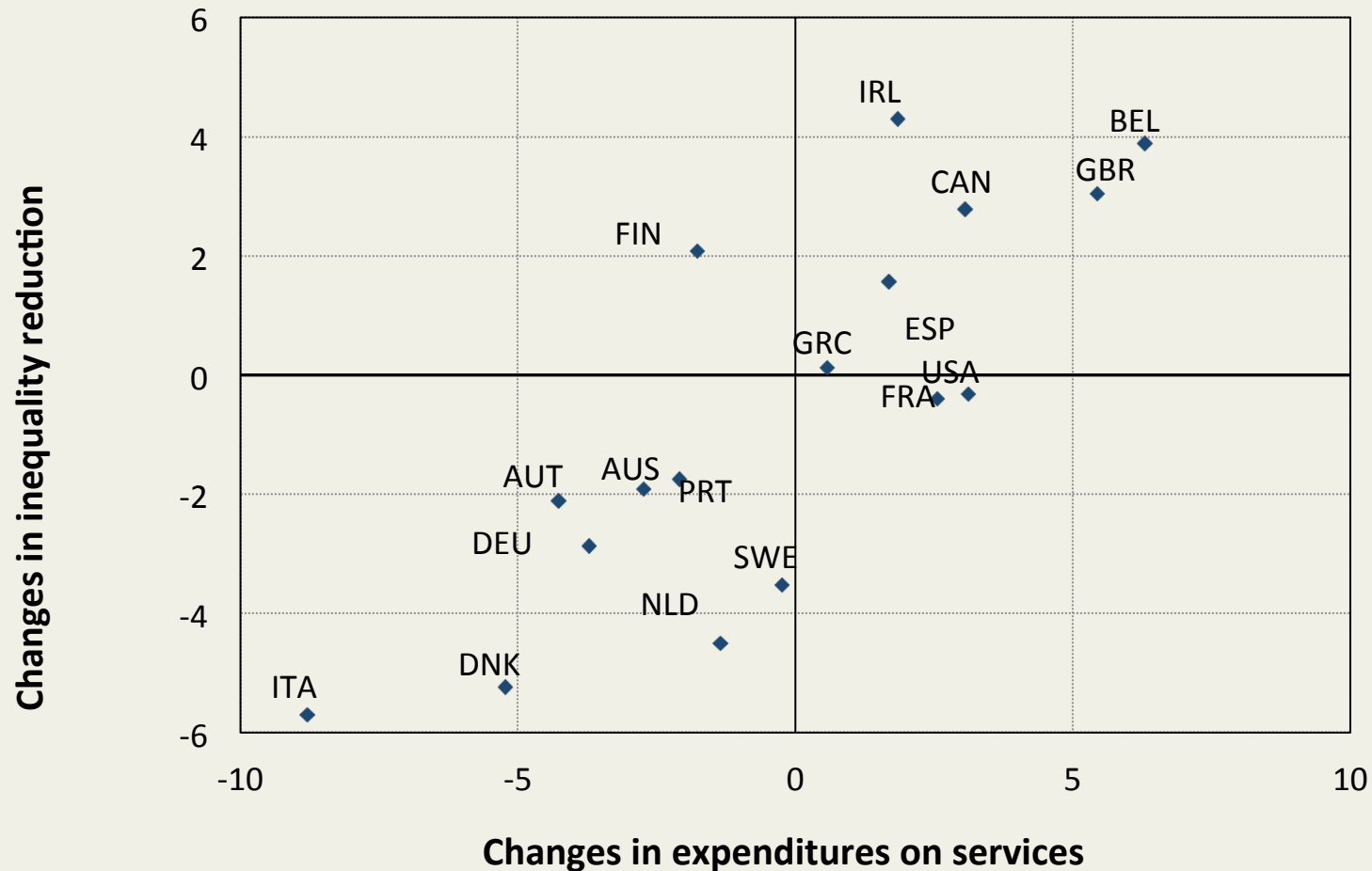
Note: Countries are ranked according to Gini of cash income (from low to high)

Distribution of value of public services over quintiles, 2007



Source: OECD-EU Database on public services, see Chapter 8 in OECD (2011) *Divided we stand: Why Inequality Keeps Rising*, & Verbist et al. (2012).

Association between trends in size of expenditures on public services (as a share of disposable income) and changes in inequality reduction, 2000 - 2007



Source: OECD-EU Database on public services, see **Chapter 8** in OECD (2011) *Divided we stand: Why Inequality Keeps Rising*.

Conclusions

- Important conceptual and methodological challenges when including public services in distributional analyses, e.g.
 - Valuation
 - Allocation
 - Equivalence scales
- Large redistributive potential of publicly provided social services: 29% of household income (cash transfers 10%)
- Strong inequality impact: reduction with one third (Gini; stronger effect with other inequality measures)
 - Especially due to education and health care (size)
 - ECEC: smaller size but important for groups concerned
 - Social housing most targeted at bottom of income distribution
- Inequality reduction of services has remained stable over time
- For more details, see “The Distributive Impact of Publicly Provided Services” in OECD (2011) *Divided we stand: Why Inequality Keeps Rising*, OECD Publishing, pp.309-341, & Verbist, G., Förster M. and Vaalavuo M. (2012), *The impact of Publicly Provided Services on the Distribution of Resources: A Review of New Results and Methods*

Imputing the value of education: actual use approach

1. Identify beneficiaries: pupils/students
 - Survey information on education enrolment (e.g. in EU-SILC: 16 year and older, younger than 6)
 - Age if no information (below 16 year)
2. Impute to each beneficiary average education expenditure for corresponding education level (from OECD Education Database, ISCED levels).
3. Add imputed value to household income. Issue:
4. Issues:
 - Use of privately or publicly funded education institution?
 - Can fees be taken into account (if applicable)?
 - Detail of education type breakdown?
 - Tertiary education students as separate household?

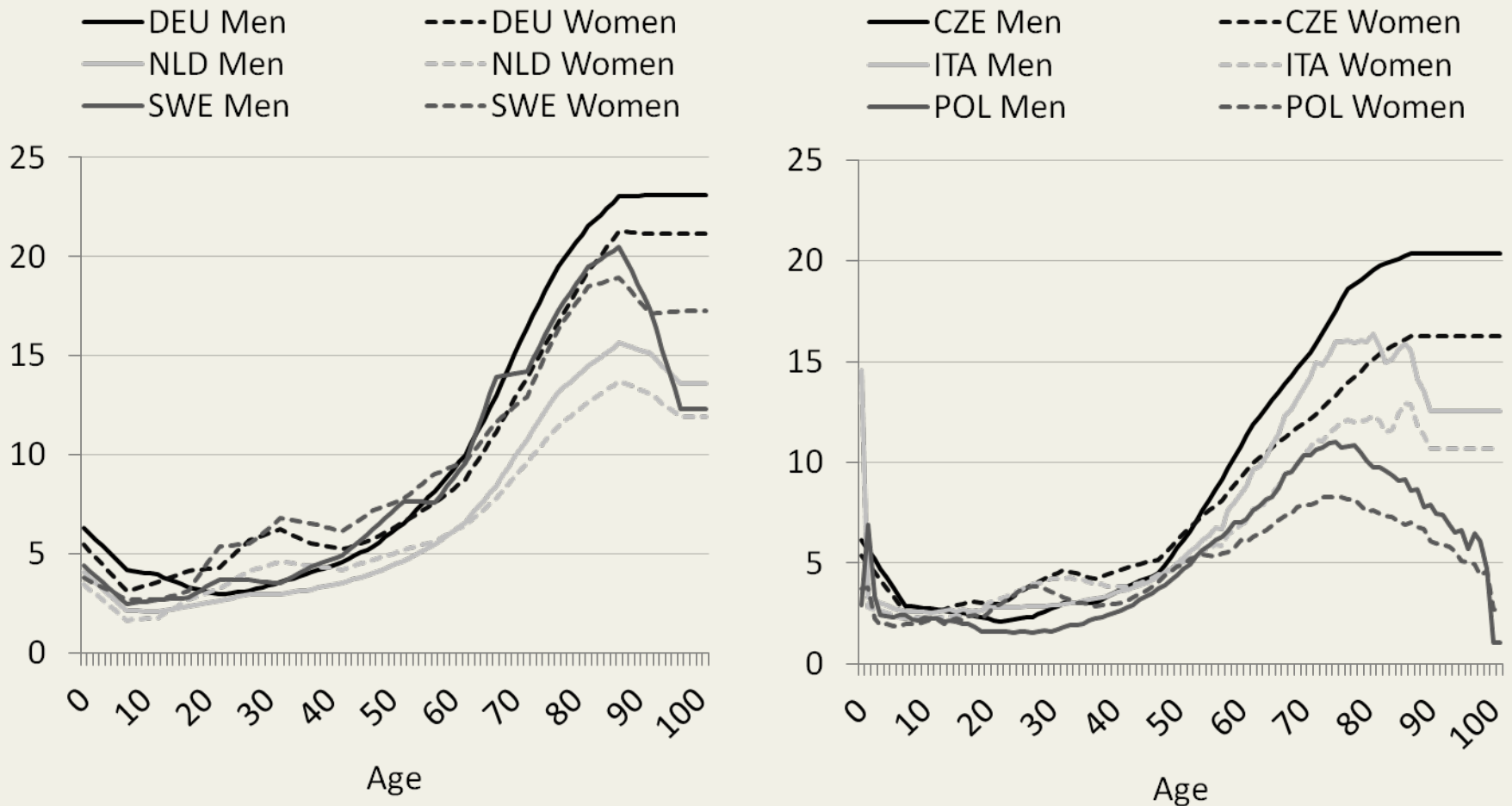
Imputing the value of health care:

insurance value approach (>< actual consumption)

Insurance value: every individual is assumed to receive a public benefit determined by the average spending on his/her group, irrespective of whether actual use of health care services was made.

1. Identify beneficiaries: everybody
2. Impute to each individual average health care expenditure for corresponding age (from OECD-SOCX/ EUROSTAT/European Commission - EPC)
3. Add imputed value to household income
4. Issues:
 - Not only age and gender determine health expenditures
 - How to take account of differences in health care needs?

Age-related expenditure profiles of health care provision (spending per capita as % of GDP per capita)



Imputing the value of social housing: actual use approach & valuation

1. Identify beneficiaries: tenants living in below-market rent accommodation
2. Impute to each beneficiary value of estimated imputed rent (see Frick & Grabka, 2003)
 - Regression of $\log(\text{rent})$ for private market tenants (with Heckman selection bias correction)
 - Apply coefficients to otherwise similar reduced-rent tenants
 - Introduction of random error term to maintain variation
3. Add imputed value to household income
4. Only possible for selection of countries

Incidence of social housing

Comparison of EU-SILC with other sources

Country	EU-SILC (% of households with reduced rent)	CECODHAS (% social rent housing stock)	Scanlon & Whitehead (social housing as % of housing units)
AT	8	21	25
BE	8	7	-
CZ	19	20	-
DE	6	6	6
DK	-	20	21
FI	19	18	-
FR	16	19	17
HU	4	4	4
IE	12	9	8
NL	-	35	35
PL	1	12	-
SE	3	21	20
UK	19	21	18

Imputing the value of Early Childhood Education and Care (ECEC): actual use approach

1. Identify beneficiaries: users of ECEC
 - Survey information on use of childcare or pre-primary education (in EU-SILC: number of hours; no information on subsidized or not, nor fees)
2. Impute to each beneficiary average expenditure (for PREP from OECD Education Database, and for CC from national sources)
3. Add imputed value to household income
4. Issues: similar to “Education”

Imputing the value of elderly care:

insurance value approach

See health care, though with extra caveats:

- In general people living in institutions not included in survey
- Obtaining data on long-term elderly care expenditures by age group

How to account for differences in needs? (2)

- Paulus et al. (2010) basic assumptions
 - Cash income equivalence scales are “conditional” upon the existence of free public social services: hence, they do not take account for the associated needs (e.g. health care)
 - Needs of recipients = amount of money
 - Public spending adequately reflects corresponding needs of specific groups (e.g. age groups for HC)
- Hence: $y/e = (y + k) / e'$ y = disposable cash income
 e = cash income eq. scale
 k = value of services
- Consequently, $e' = e.(y+k)/y$
(e.g. with k based on EU-average per target group)

Example equivalence scales

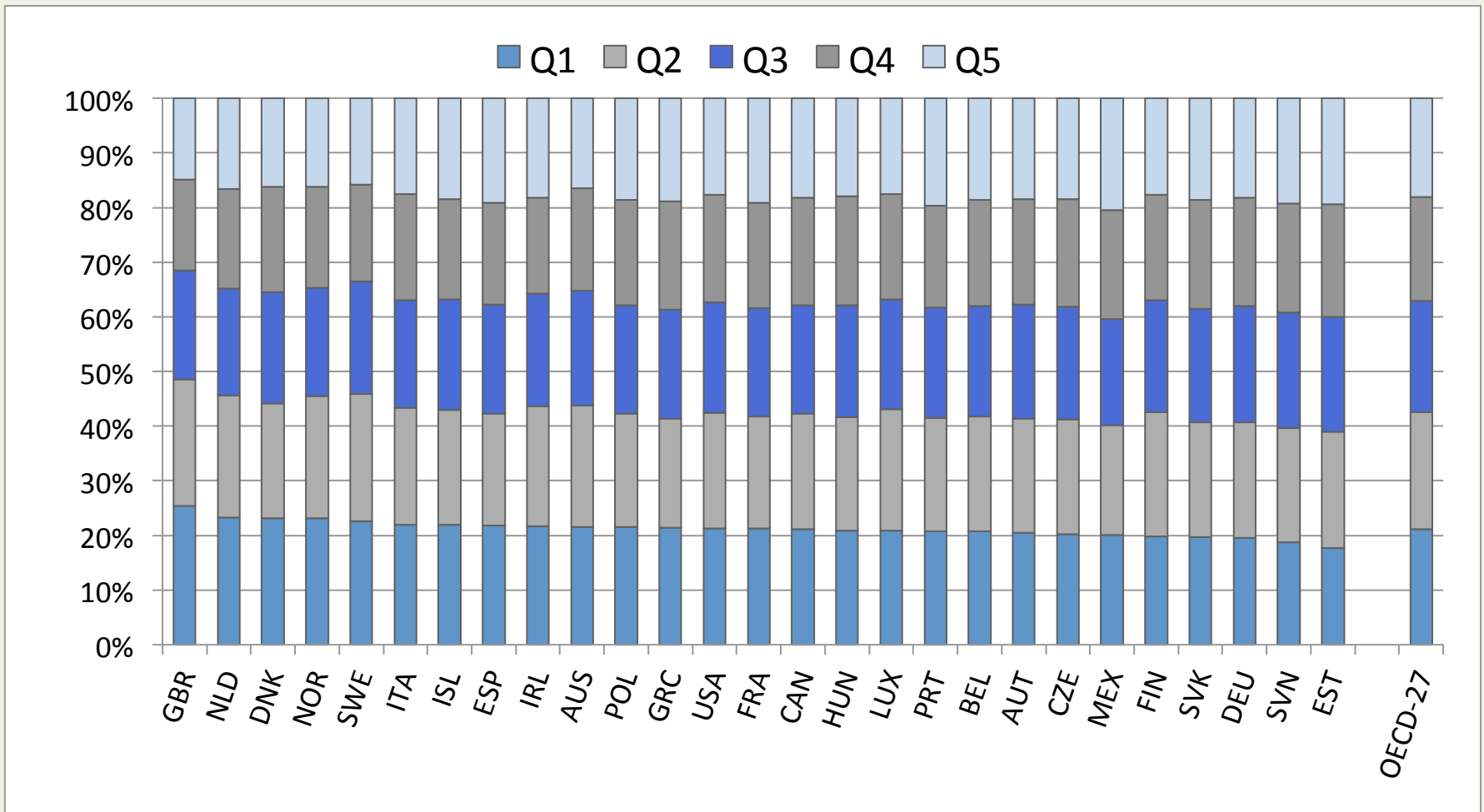
	y	e	k (Health care)	y/e	$(y+k)/e$	e'	y/e'	$(y+k)/e'$
Single, age 30	200	1	20	200	220	1.1	181	200
Couple, age 40	240	1.5	45	160	190	1.8	135	160
Couple, age 40, 1 child age 6	360	1.8	60	200	233	2.1	171	200
Single, age 75	200	1	75	200	275	1.375	145	200

y = disposable cash income

e = cash income eq. scale

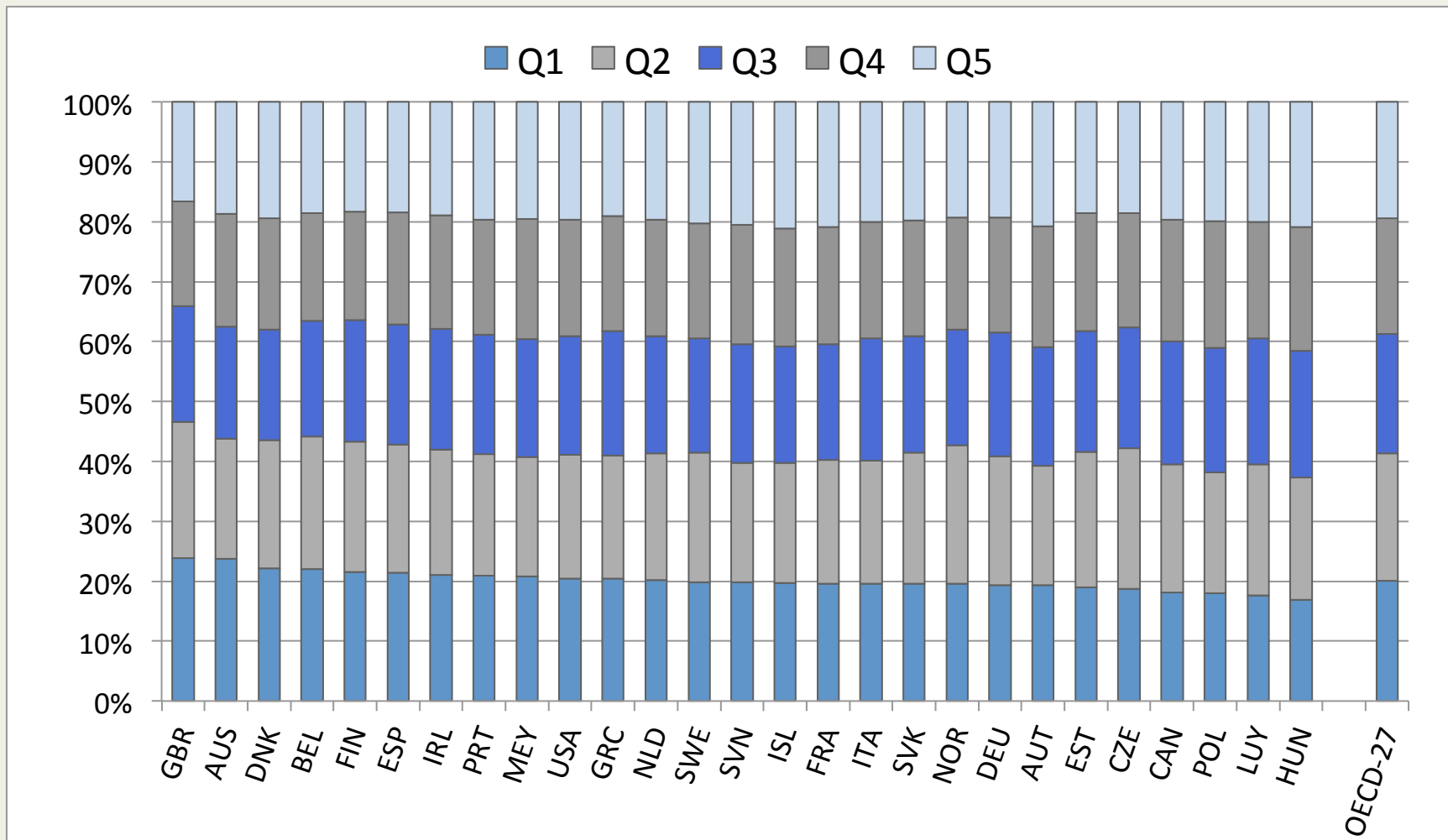
k = value of services

Distribution of value of total public services over quintiles, 2007



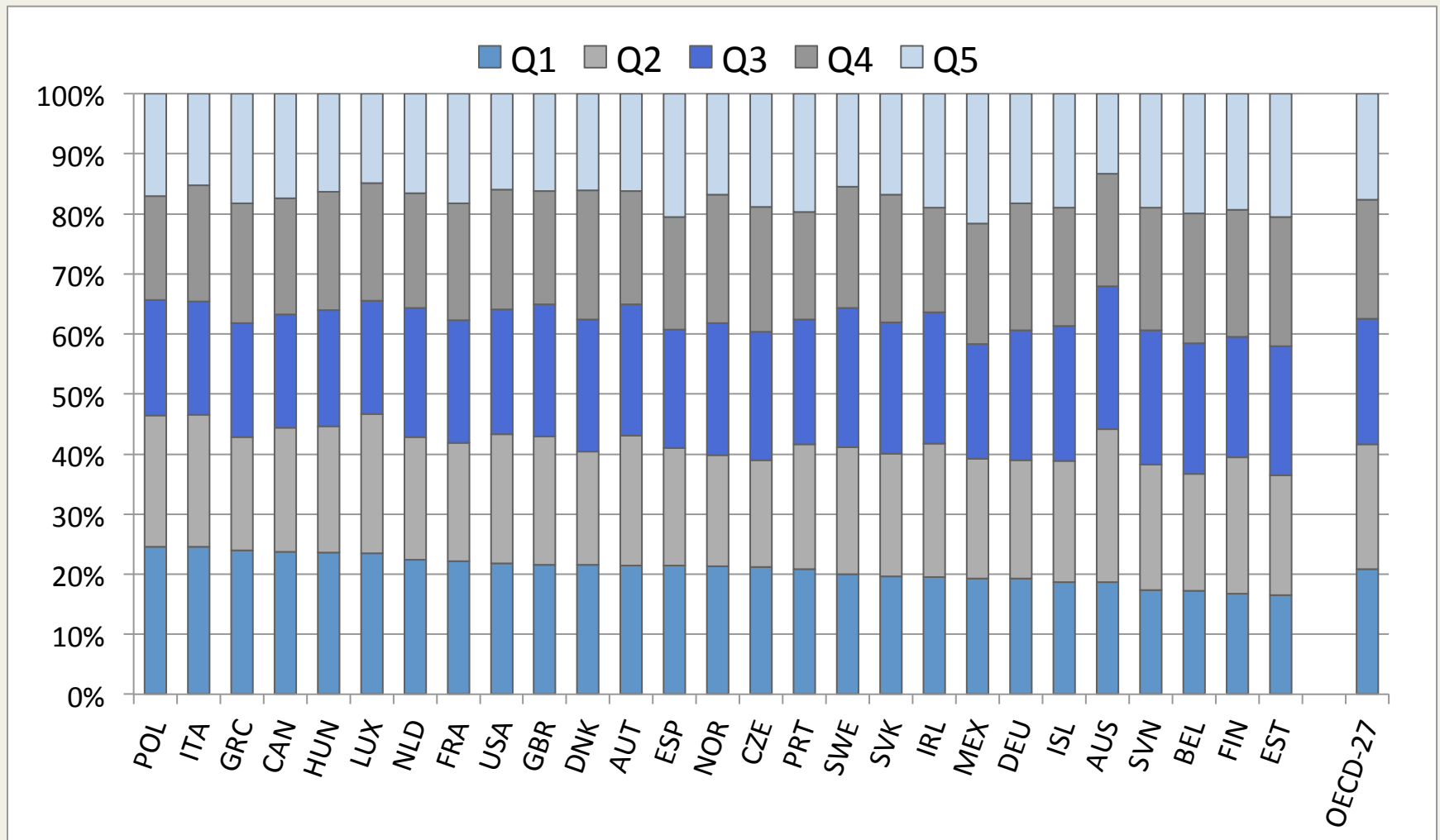
Source: OECD-EU Database on public services, see **Chapter 8** in OECD (2011) *Divided we stand: Why Inequality Keeps Rising*.

Distribution of health care in-kind benefits over quintiles, 2007



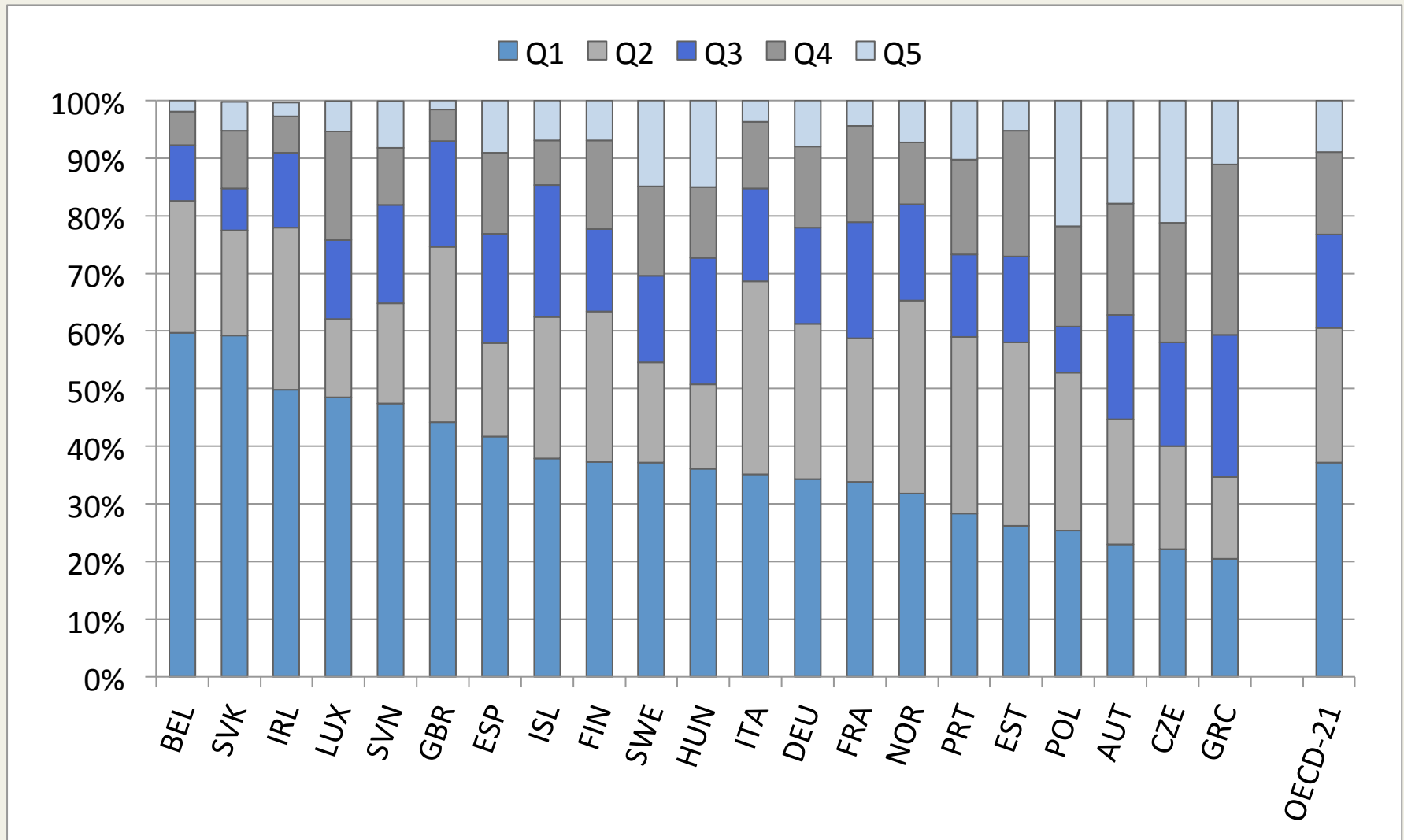
Source: OECD-EU Database on public services, see Chapter 8 in OECD (2011) *Divided we stand: Why Inequality Keeps Rising* & Verbist et al. (2012). Note: Countries are ranked according to Q1 share (from high to low).

Distribution of education in-kind benefits over quintiles, 2007



Source: OECD-EU Database on public services, see Chapter 8 in OECD (2011) *Divided we stand: Why Inequality Keeps Rising* & Verbist et al. (2012). Note: Countries are ranked according to Q1 share (from high to low).

Distribution of social housing benefit over quintiles, 2007



Source: OECD-EU Database on public services, see Chapter 8 in OECD (2011) *Divided we stand: Why Inequality Keeps Rising* & Verbist et al. (2012). Note: Countries are ranked according to Q1 share (from high to low).