Inkomensongelijkheid en inkomens(her)verdeling

Trends en internationale positiebepaling

Koen Caminada

LWEO Conferentie
Landelijke Werkgroep Economie Onderwijs
2 juni 2022, Vught

Discover the world at Leiden University

Even voorstellen

Koen Caminada, hoogleraar Empirische analyse van sociale en fiscale regelgeving, Universiteit Leiden

Vice-decaan Faculteit Governance & Global Affairs (Den Haag)

Relatie onderzoek / beleid
- Lid Cie's Inkomstenbelasting & Toeslagen / Belastingramingen
- SER (werkgroep Belastinghervorming)
- Academic Partner Centraal Planbureau
- Governor Foundation of International Studies on Social Security

Onderzoek: internationale vergelijking verdelingsvraagstukken o.b.v. grote datasets (teamverband)
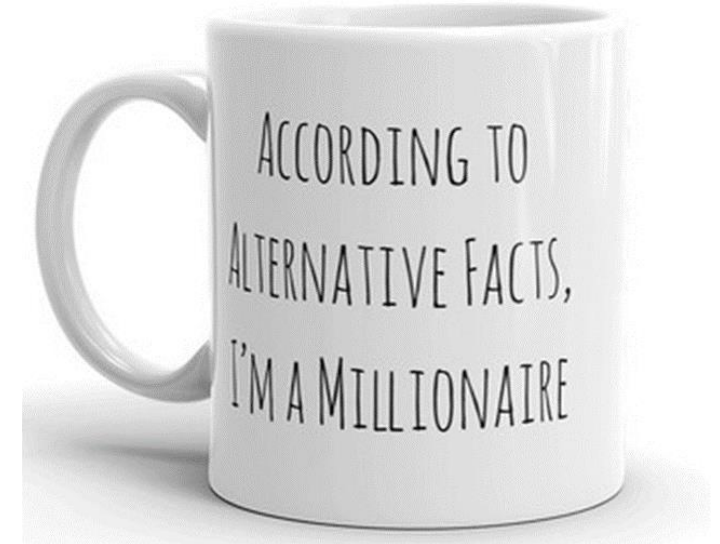
Opleidingen van FGGA – Den Haag - UnvLeiden

Bachelor programma's:

- Bestuurskunde (2 tracks)

- Leiden University College (Liberal Arts and Sciences)

- Security Studies

Honours Programma: Tackling Global Challenges

Leiden Leadership Programme: diverse programma's

> 4 duizend studenten, > 360 medewerkers, omzet 35 miljoen euro, 4 gebouwen in centrum Den Haag

Minoren:

- Bestuurskunde: Openbaar Bestuur, Beleid en Management

- Bestuurskunde: Multi-level governance

- ISGA: Global Affairs

- ISGA: Intelligence Studies

- ISGA: Security, Safety and Justice

Masters:

- Public Administration (3 tracks)

- Management van de Publieke Sector (2 tracks)

- Governance of Sustainability

- Crisis and Security Management(6 tracks)

- Advanced Master International Relations and Diplomacy

- Executive Master Cyber Security

Empirics: global research team & data

Kees Goudswaard	Marike Knoef	Olaf van Vliet	Jim Been	Jinxian Wang	Chen Wang	Heike Vethaak	Koen Caminada
Leiden	Leiden	Leiden	Leiden	Beijing	Shanghai	Leiden	Leiden

Assembled Datasets (URL: **www.economie.leidenuniv.nl)**

• Budget Incidence Fiscal Redistribution Dataset on Income Inequality (2017)

• Idem, on Relative Income Poverty Rates (2019)

• Social Assistance and Replacement Rates Dataset

• Unemployment Replacement Rates Dataset

• Sectoral Income Inequality Dataset

Luxembourg Income Study
World Wealth & Income Database
ECHP-EU-Silc
Dutch Income Statistics

Team CBS -UnivLeiden

- Repair breaks time-series Dutch Income Statistics since 1977

- Massive project

- Research team from Statistics Netherlands (7) & LeidenUniv (5)

- Populaire publication - release 14th of October 2021

Wim Bos

Egbert Jongen

Ferdy Otten

Koen Caminada

Marion van den Brakel

Heike Vethaak

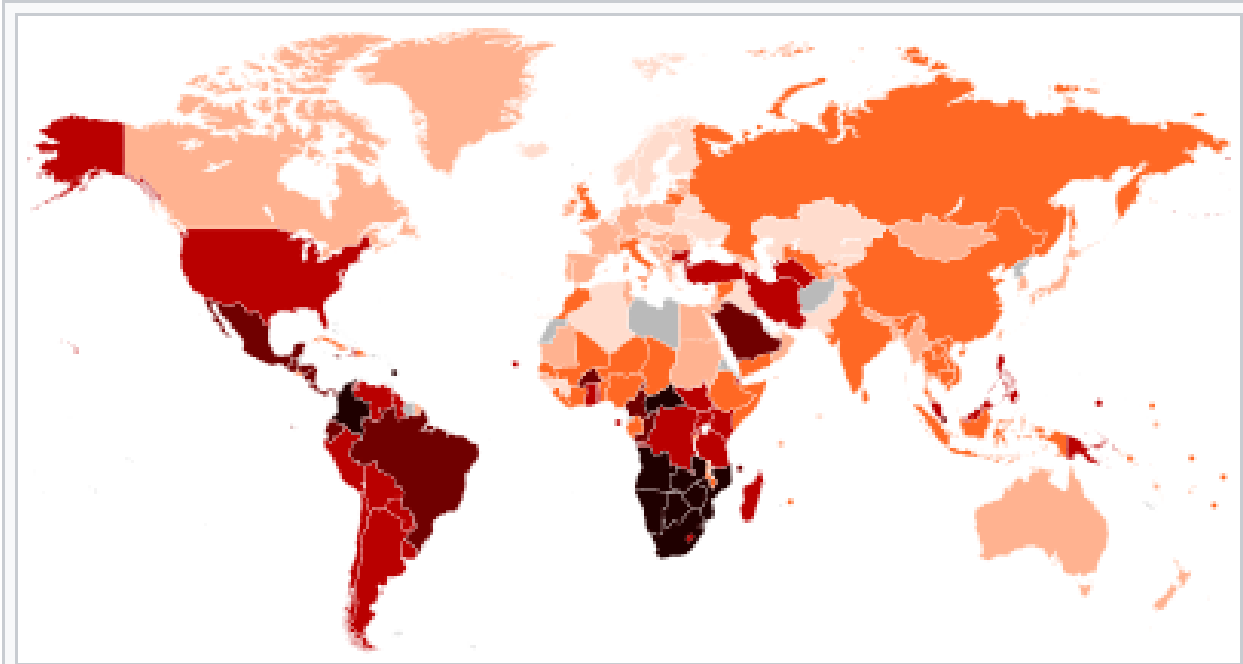Kai Gidding

Koos Arts

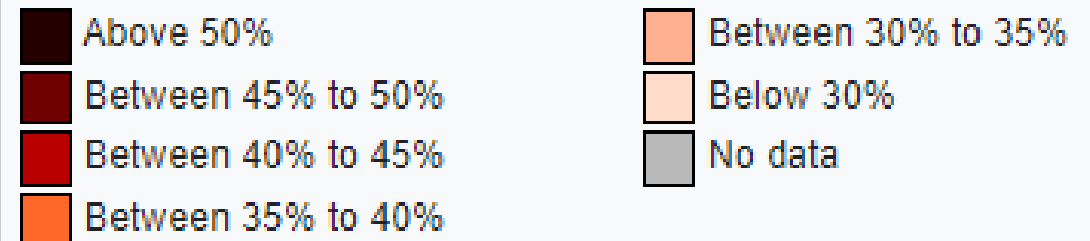Jim Been

Kees Goudswaard

Jeroen Nieuweboer

Noortje Pouwels-Urlings

Agenda

1. Setting the scene

2. Research Design & Reading

3. Measuring issues

4. Results

   a) Income inequality & Redistribution

   b) Relative poverty & Lifted out of poverty

   c) Top incomes

World map of income inequality Gini coefficients by country. Based on World Bank data ranging from 1992 to 2020.[1]

■ Above 50%	■ Between 30% to 35%
■ Between 45% to 50%	■ Below 30%
■ Between 40% to 45%	■ No data
■ Between 35% to 40%	

1 Setting the scene

WE CAN **END POVERTY** 2015 MILLENNIUM DEVELOPMENT GOALS

1 ERADICATE EXTREME POVERTY AND HUNGER

2 ACHIEVE UNIVERSAL PRIMARY EDUCATION

3 PROMOTE GENDER EQUALITY AND EMPOWER WOMEN

4 REDUCE CHILD MORTALITY

5 IMPROVE MATERNAL HEALTH

6 COMBAT HIV/AIDS, MALARIA AND OTHER DISEASES

7 ENSURE ENVIRONMENTAL SUSTAINABILITY

8 GLOBAL PARTNERSHIP FOR DEVELOPMENT

... while superrich (income & wealth)

Superrich

Donald Trump

Jacky May

John de Mol

Bill Gates

Joop vd Ende

Similarities

Top incomes

Male (gender)

Family (inheritance)

Mediocratic

Political power?

Influence tax policy?

Social cohesion versus Social tension / unrest

Alberto Alesina & Edward Glaeser, Richard Wilkinson, Dani Rodrik

• White America lives a largely segregated life

• Brexit / Catalonia

• Migration

• Ageing of the population

• Welfare states under solidarity constraints

POPULISM VS DEMOCRACY

2 Research design & Reading

The distribution of *what?*

- Rich or poor: income or wealth?

- Pre-tax-pre-transfer-income or after T/B-systems?

- Individuals, households or equivalence scales?

- Top and bottom coding

- One moment in time or trends?

- What about poverty: absolute, relative, thresholds?

- Areas: global, within or between country differences?

- Global or local measurement?

- What if Lorenz curves intersect (no LD) ?
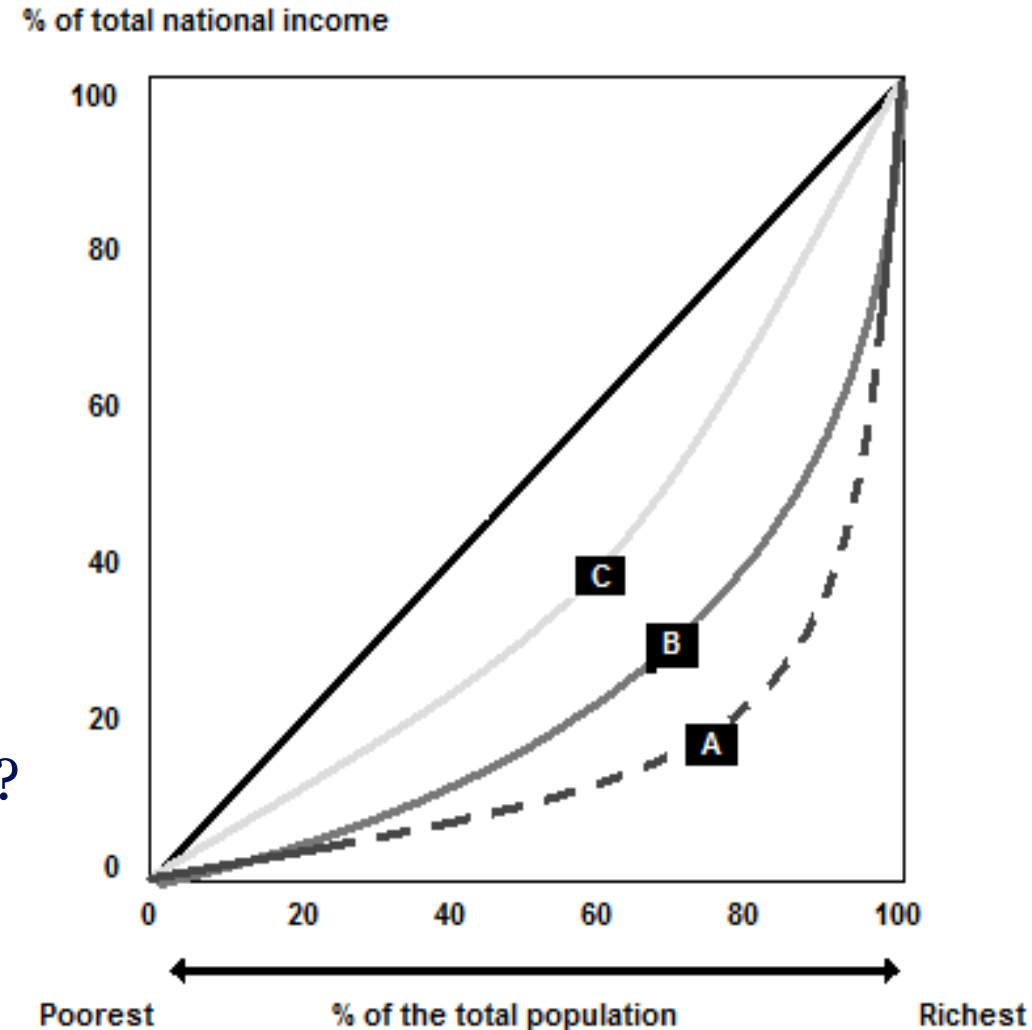
Income (re-)distribution and inequality

Past decades:

• Much more and higher-quality of data

• Growing knowledge on trends and causes (in an
  international comparative perspective)

Research:

Income distribution (and changes) caused by many factors.

Each individual decision influences the distribution of
income.

Why inequality rises? (1)

Many possible factors, including:

- Technological progress and a resulting rise in the skill premium for labor

- Globalization: highly educated workers profit, low skilled labor not (as much)

- Good education may not be reachable for lower income groups

- Demographic factors: ageing (more pensioners who have relatively low incomes)

- Several institutional factors, which vary from country to country, are important. E.g. for China the urban-rural gap is important.

- Developments at the sectoral level

- Reduced government redistribution - became T/B-systems less redistributive?

Why inequality matters? (2)

- A perfectly equal society is not desirable (no incentives). However, high inequality may undermine social stability.

- It deprives people of educational opportunities, human and physical capital accumulation.

- It may harm labor supply and productivity. Research shows that high and rising inequality is detrimental to economic growth and development.

Why inequality matters? (3)

IMF (2015)

- If the income share of the top 20 percent increases by 1 percentage point, GDP growth is 0.08 percentage points lower.

- A 1 percentage point increase in the share of the bottom 20 percent is associated with 0.38 percentage point *higher* growth.

OECD (2014)

Rising inequality is estimated to have knocked down growth since 1990 by 9 points in the UK and by 6-7 points in the US, Italy and Sweden.

Rising income inequality and top incomes: big issue *in international perspective?*

Joseph Stiglitz
Rewriting the Rules of the American Economy. An Agenda for Growth and Shared Prosperity (2015)


Angus Deaton
Inequality is often a consequence of progress. On the one hand: many people escaped from poverty in lower income countries. Many lower income countries have been catching up with richer countries, because of higher growth. On the other hand: many people are left behind, not everyone profits from progress. (*The Great Escape*, 2013)

International perspective

Anthony Atkinson
Inequality is one of the most urgent social problems. But: we can do something about it (*Inequality; What can be done?* 2015)

Branko Milanovic
Global inequality: A New Approach for the Age of Globalization (2016)
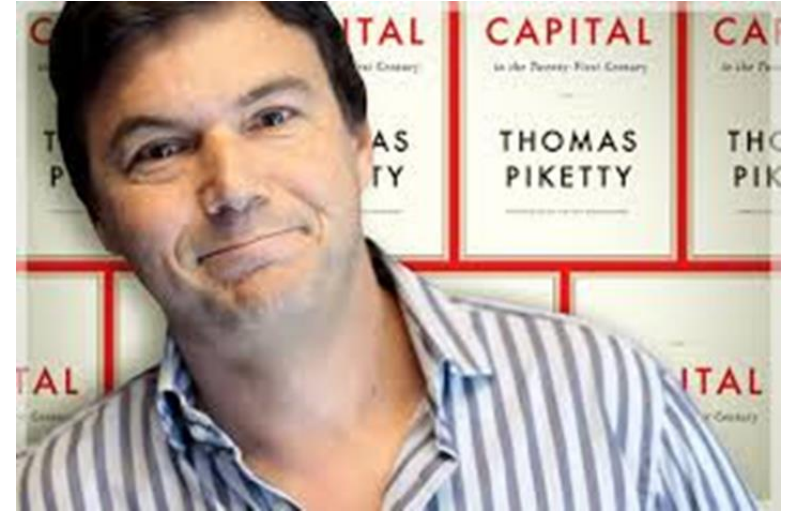
Thomas Piketty
Tendency of returns on capital to exceed rate of growth threatens to generate extreme inequalities that undermine social values (*Capital in the Twenty-First Century*, 2014)) (***video*** 3:11)

OECD – massive studies

- 2008: Growing Unequal?

- 2011: Divided We Stand: Why Inequality Keeps Rising

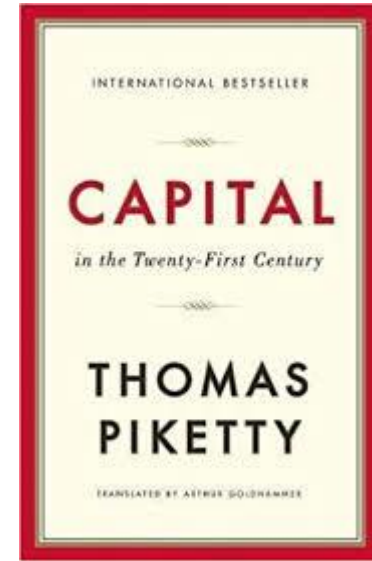- 2015: In It Together: Why Less Inequality Benefits All

Debate

Societal debate = normative → use best available data → fact finding → research team Leiden University
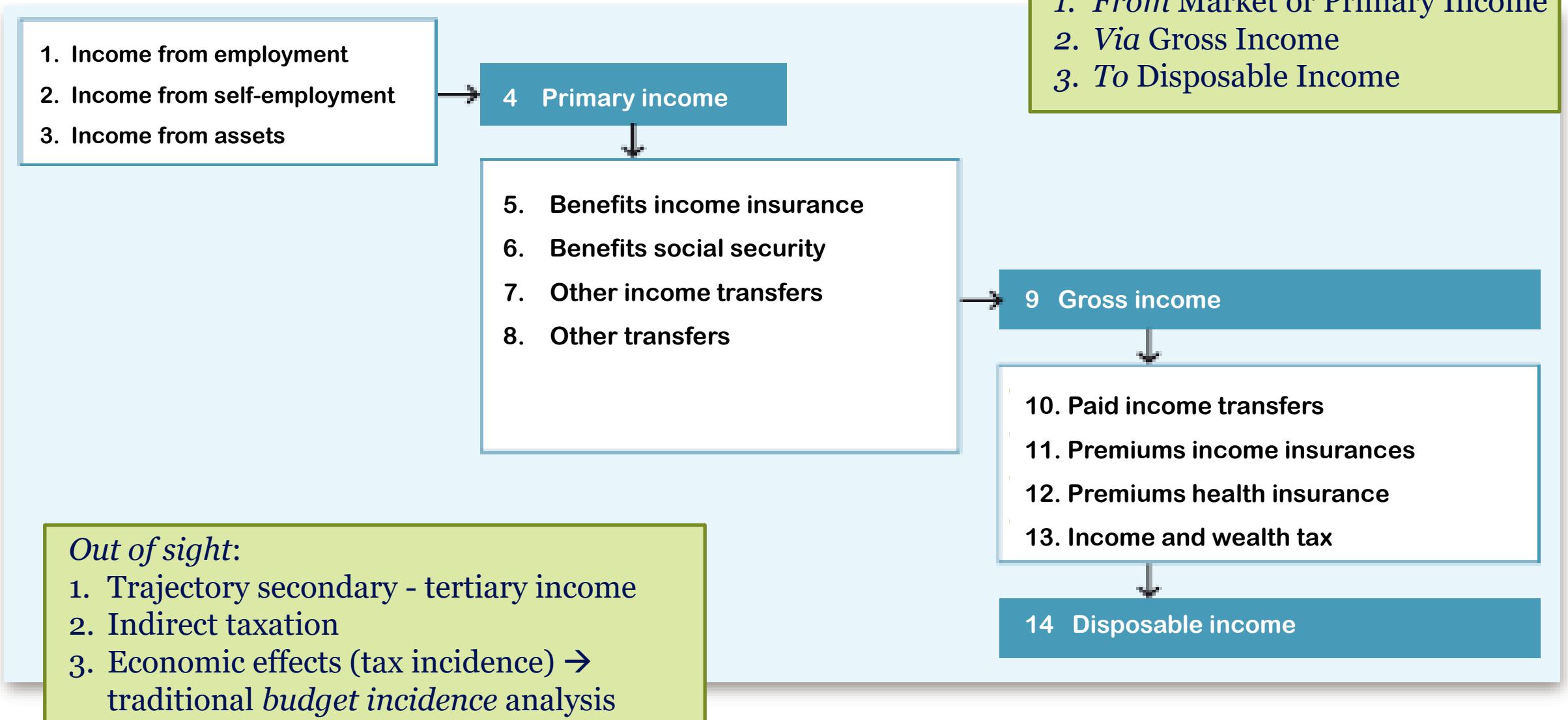
Notes:

- Piketty (2014) did *not* include the Netherlands and may other countries as China in his book.

- Great data collection – well-documented ☺ and he published in top journals ☺, but his explanation is based on interpretation ☹, expectations / forecasts ☹, policy recommendation ☹.

3 Measuring issues

Setting the scene
Composition of household income & T/B-system

Income box:
1. Income from employment
2. Income from self-employment
3. Income from assets

4 Primary income

5. Benefits income insurance
6. Benefits social security
7. Other income transfers
8. Other transfers

9 Gross income

10. Paid income transfers
11. Premiums income insurances
12. Premiums health insurance
13. Income and wealth tax

14 Disposable income

Out of sight:
1. Trajectory secondary - tertiary income
2. Indirect taxation
3. Economic effects (tax incidence) →
   traditional *budget incidence* analysis

Budget incidence approach

- Redistribution: pre-transfer-pre-tax inequality is compared to the post-transfer-post-tax inequality *keeping all other things equal*.

- Assumptions: unchanged household and labor market structures, disregarding any possible behavioral changes that the situation of absence of social transfers would involve.

- Despite this problem, analyses on statutory and budget incidence can be found for decades in literature.

Measuring income inequality
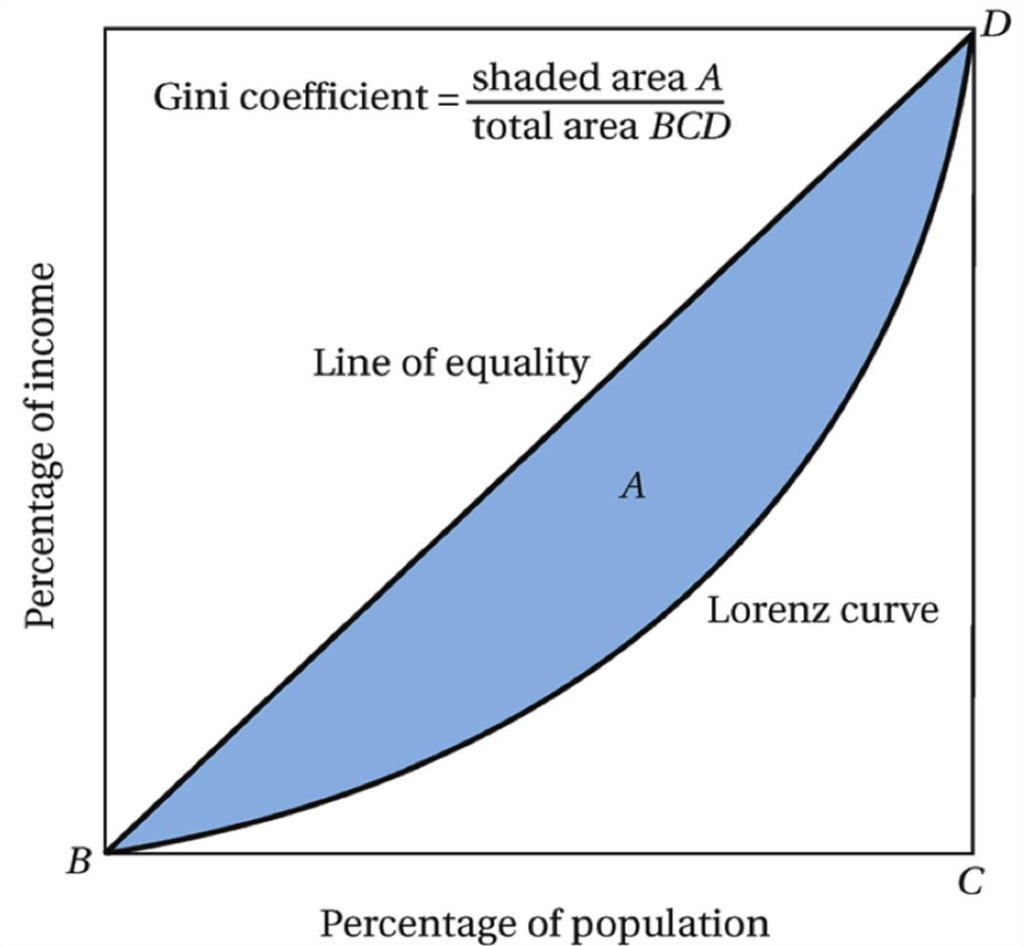
Global indices of inequality

- Gini index
- Theil / Mean Log Deviation
- Atkinson index ($\alpha=0$, $\alpha=1$)

Local measures

- Deciles(10)
- Quartiles (4)
- Quintiles (5)
- Percentiles (100)
- Top-1%

Other

- S80/S20, mean, median

Gini coefficient = $\dfrac{\text{shaded area } A}{\text{total area } BCD}$

Line of equality

Lorenz curve

Percentage of income

Percentage of population

- Gini → value between 0 (all equal income) and 1 (all income goes to only one person)

- Calculation of Gini's for both pre-tax-pre-transfer income and post-tax-post-transfer income (effect of redistribution by T/B-system)

4 Results

(a) Income inequality & Redistribution

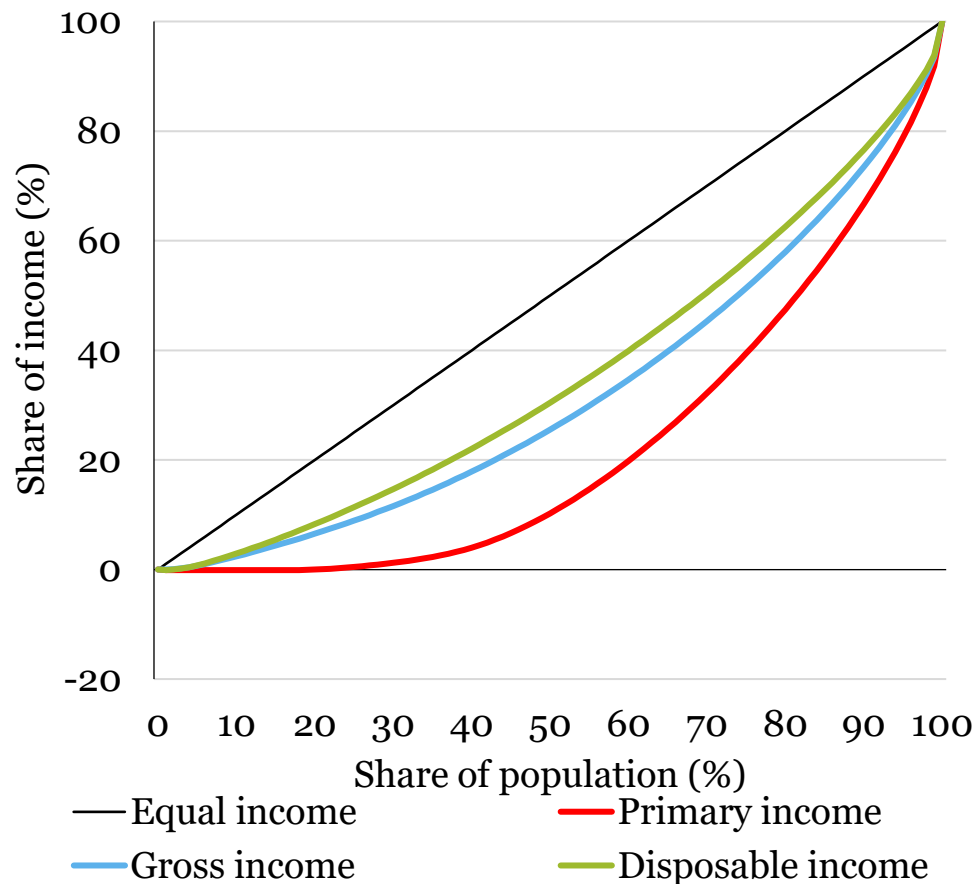(b) Relative poverty & Lifted out of poverty

(c) Top incomes

Data and method income inequality

- Income inequality: Gini's
  - Gini primary income = Gini(pri)
  - Gini disposable income = Gini(dhi)

- Redistribution:

  - Overall redistribution = Gini(pri) – Gini(dhi)

  - Decomposition redistribution by transfers and taxes.

  - Decomposition redistribution by social programs: old-age benefits, disability benefits, sickness benefits, child benefits, unemployment benefits, housing benefits, other benefits and income taxes and social security contributions.

- Equivalence scale CBS / LIS

- LIS Top-and-Bottom-coding

- Target groups: total population, working-age population

Dutch Lorenz curve equivalized income, 2019*

Legend:
— Equal income
— Primary income
— Gross income
— Disposable income

X-axis: Share of population (%)
Y-axis: Share of income (%)

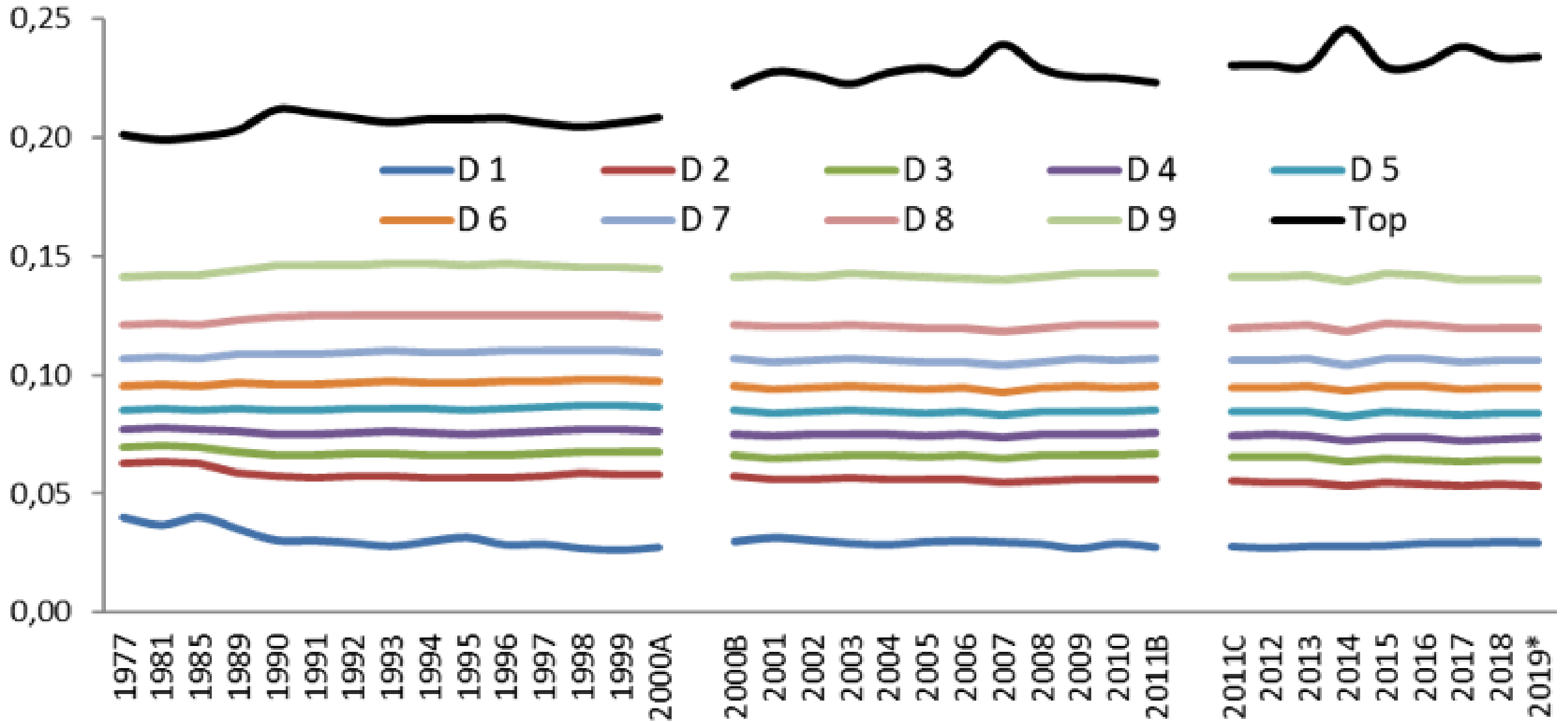# Income inequality and redistribution 2019*

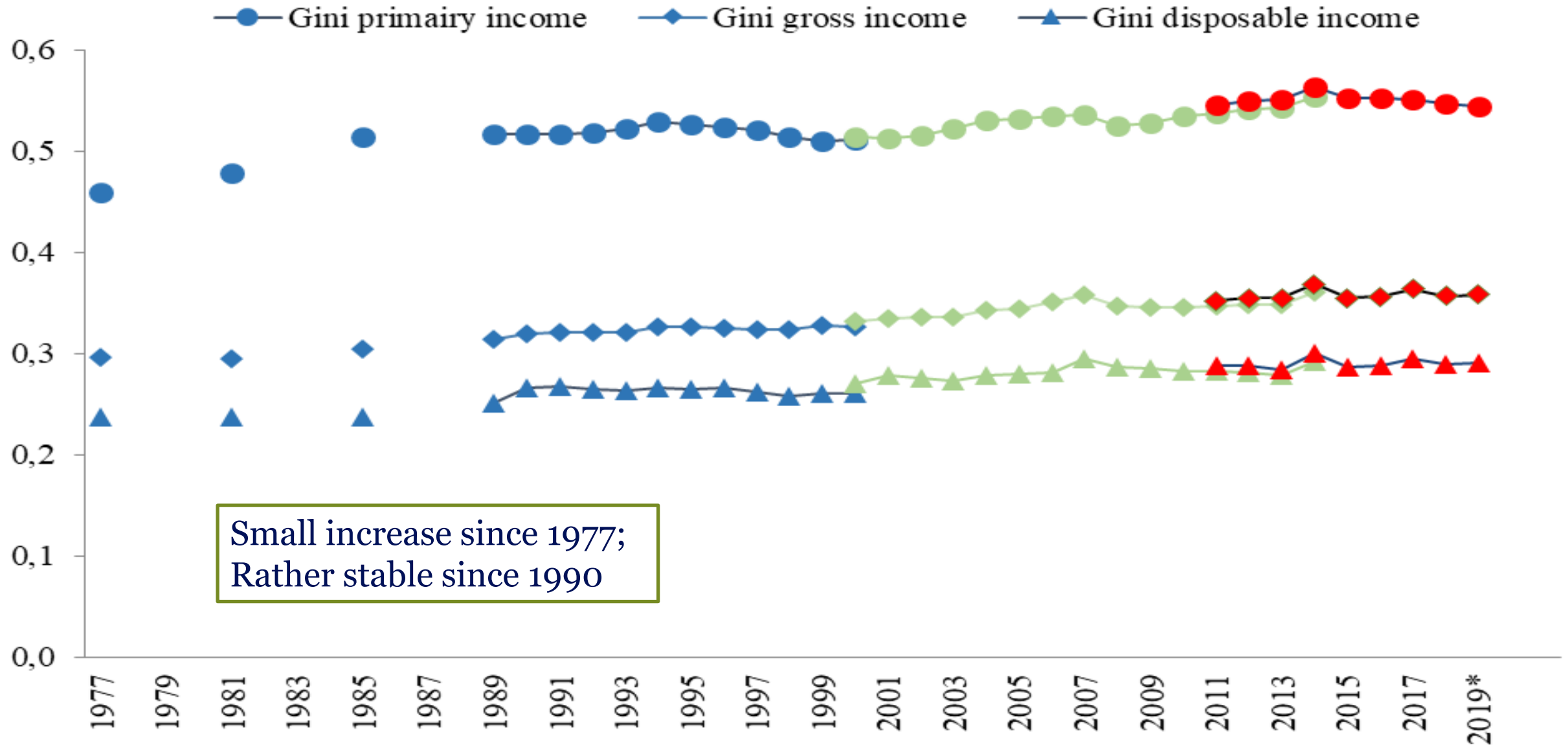|	
Gini primary income (a)	0,544
-/- redistribution via social benefits (B1)	0,186
-/- redistribution via income tax (b2)	0,067
Gini disposable income (a-b1-b2)	0,291
Gini gross income (a-b1)	0,358
Absolute redistribution (b1+b2)	0,253
Relative distribution (b1+b2/a*100	47%

Components redistribution (share %)

Public Old-Age pension benefits (AOW)	35%
Supplementary pension benefits	26%
Wage tax and income tax	16%
Disability benefits	6%
Welfare benefits	8%
Unemployment benefits	2%
Rent subsidy/benefit/government contribution own home	4%
Scholarship benefits and compensation study costs	1%
Illness benefits (ZW)	1%
Child benefits (kinderbijslag)	1%
AWW/ANW	0%
Other (premiums incl.)	2%

Share Dutch equivalized disposable income per decile group, 1977-2019*
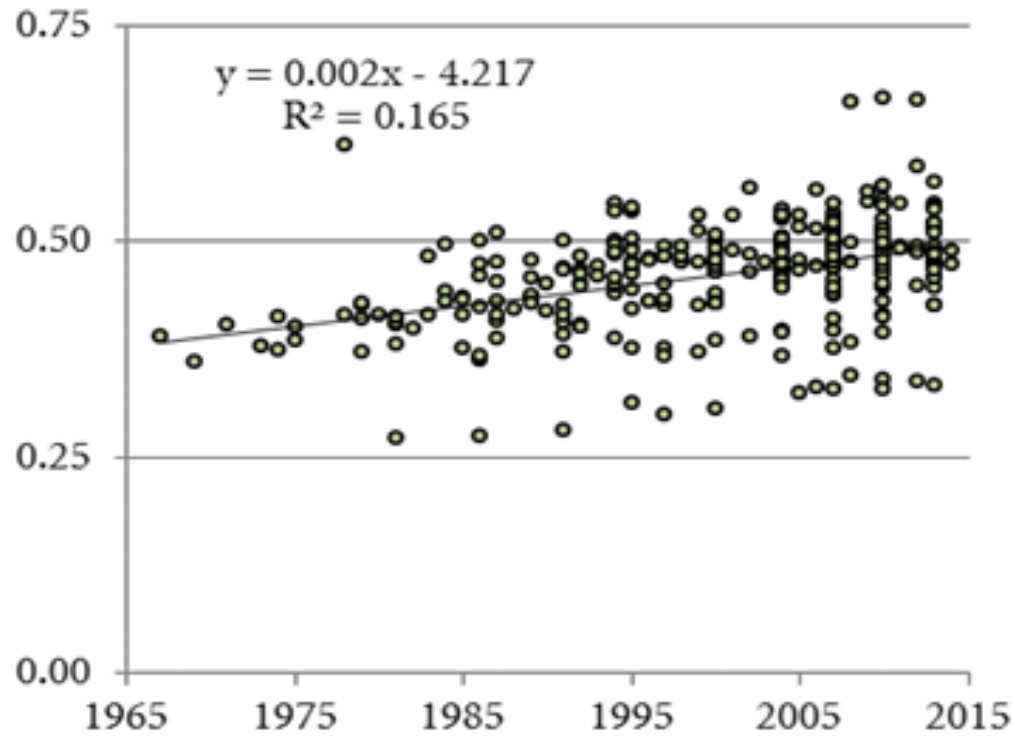
Dutch Income inequality and redistribution, 1977-2019*

Legend: Gini primairy income · Gini gross income · Gini disposable income

Small increase since 1977;
Rather stable since 1990

Dutch income inequality and redistribution of T/B-system→ decomposition

	1985	2000	2019	Change 2001-2019
Gini primary income	0.514	0.514	0.544	0.030
reduction via social transfers	0.210	0.198	0.186	
reduction via income taxes and social contributions	0.067	0.052	0.067	
Gini disposable income	0.237	0.270	0.291	0.021
Redistribution T/B-system (Gini PI -/- Gini Dpi)	54%	48%	47%	
Shares (programs)				
Public old-age pensions	28%	30%	35%	
Supplementary pensions	17%	24%	26%	
Income taxes and social contributions	10%	12%	16%	
Welfare (safety net)	16%	8%	8%	

Source: Caminada, Goudswaard & Been (2017)

Across time and space

Trend Gini primary income (N*T=291)

$y = 0.002x - 4.217$
$R^2 = 0.165$

Trend Gini disposable income (N*T = 293)

$y = 0.003x - 4.692$
$R^2 = 0.111$
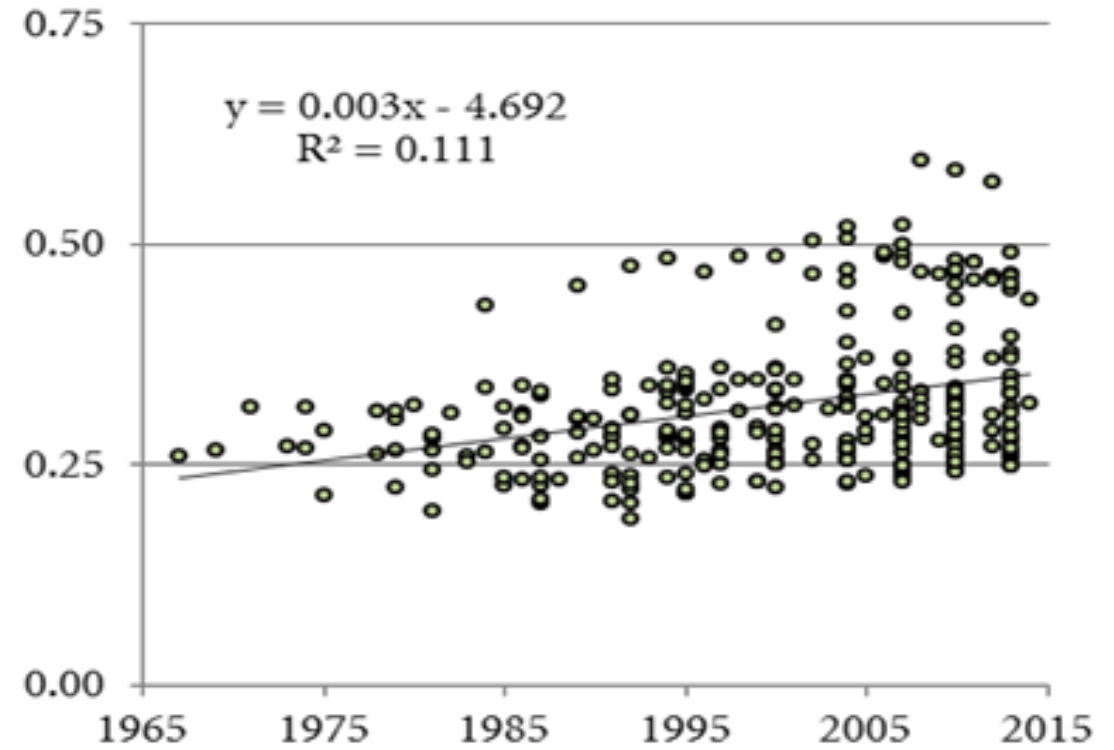
- Primary income inequality (endowments) rose
- Disposable income inequality rose, although at a lower rate
- Redistribution of income by T/B-systems: no significant change (N*T = 291)

Trend Gini indices of primary income and disposable income and fiscal redistribution, 1983-2013

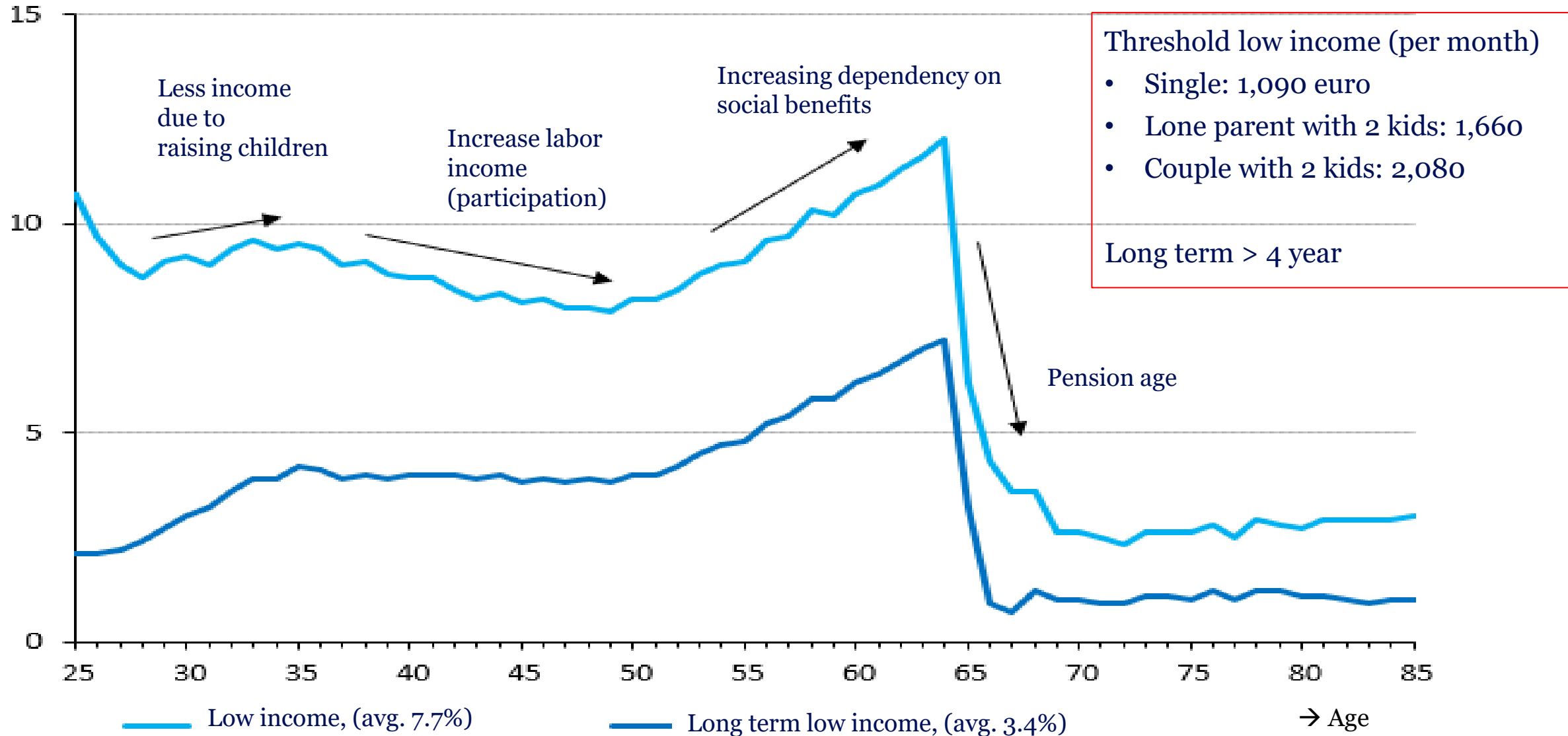|	Gini primary income				Gini disposable income				Fiscal redistribution			
	around 1985	around 2012	change 85-12	%	around 1985	around 2012	change 85-12	%	around 1985	around 2012	change 85-12	%
Australia (85-95-10)	0.434	0.477	0.043	10%	0.292	0.330	0.039	13%	0.143	0.147	0.004	3%
Canada (87-97-10)	0.407	0.481	0.074	18%	0.283	0.317	0.034	12%	0.124	0.164	0.040	33%
Denmark (87-95-13)	0.416	0.476	0.060	14%	0.255	0.249	-0.005	-2%	0.161	0.226	0.065	41%
Finland (87-95-13)	0.388	0.487	0.099	26%	0.207	0.259	0.052	25%	0.181	0.228	0.047	26%
France (84-94-10)	0.496	0.494	-0.002	0%	0.338	0.289	-0.049	-14%	0.158	0.204	0.047	30%
Germany (84-94-13)	0.442	0.520	0.079	18%	0.265	0.291	0.026	10%	0.177	0.229	0.052	30%
Ireland (87-96-10)	0.510	0.564	0.055	11%	0.328	0.294	-0.034	-10%	0.181	0.270	0.089	49%
Israel (86-97-12)	0.473	0.494	0.021	4%	0.309	0.371	0.063	20%	0.165	0.123	-0.042	-26%
Netherlands (83-99-13)	0.483	0.475	-0.008	-2%	0.252	0.264	0.011	5%	0.231	0.212	-0.019	-8%
Norway (86-95-13)	0.362	0.446	0.085	23%	0.234	0.248	0.015	6%	0.128	0.198	0.070	55%
Sweden (87-95-05)	0.429	0.466	0.036	8%	0.212	0.237	0.025	12%	0.218	0.229	0.011	5%
Switzerland (82-00-13)	0.398	0.425	0.027	7%	0.309	0.295	-0.014	-5%	0.089	0.130	0.041	46%
Taiwan (86-97-13)	0.275	0.333	0.058	21%	0.269	0.308	0.039	15%	0.007	0.025	0.019	285%
UK (86-99-13)	0.500	0.537	0.037	7%	0.303	0.330	0.027	9%	0.196	0.207	0.010	5%
USA (86-97-13)	0.459	0.509	0.050	11%	0.340	0.377	0.037	11%	0.118	0.132	0.014	12%
Mean-15	0.431	0.479	0.048	11%	0.280	0.297	0.018	6%	0.152	0.182	0.030	20%

On average: - Increase in both primary and disposable income inequality;
- T/B-systems offset **63%** of this increase.
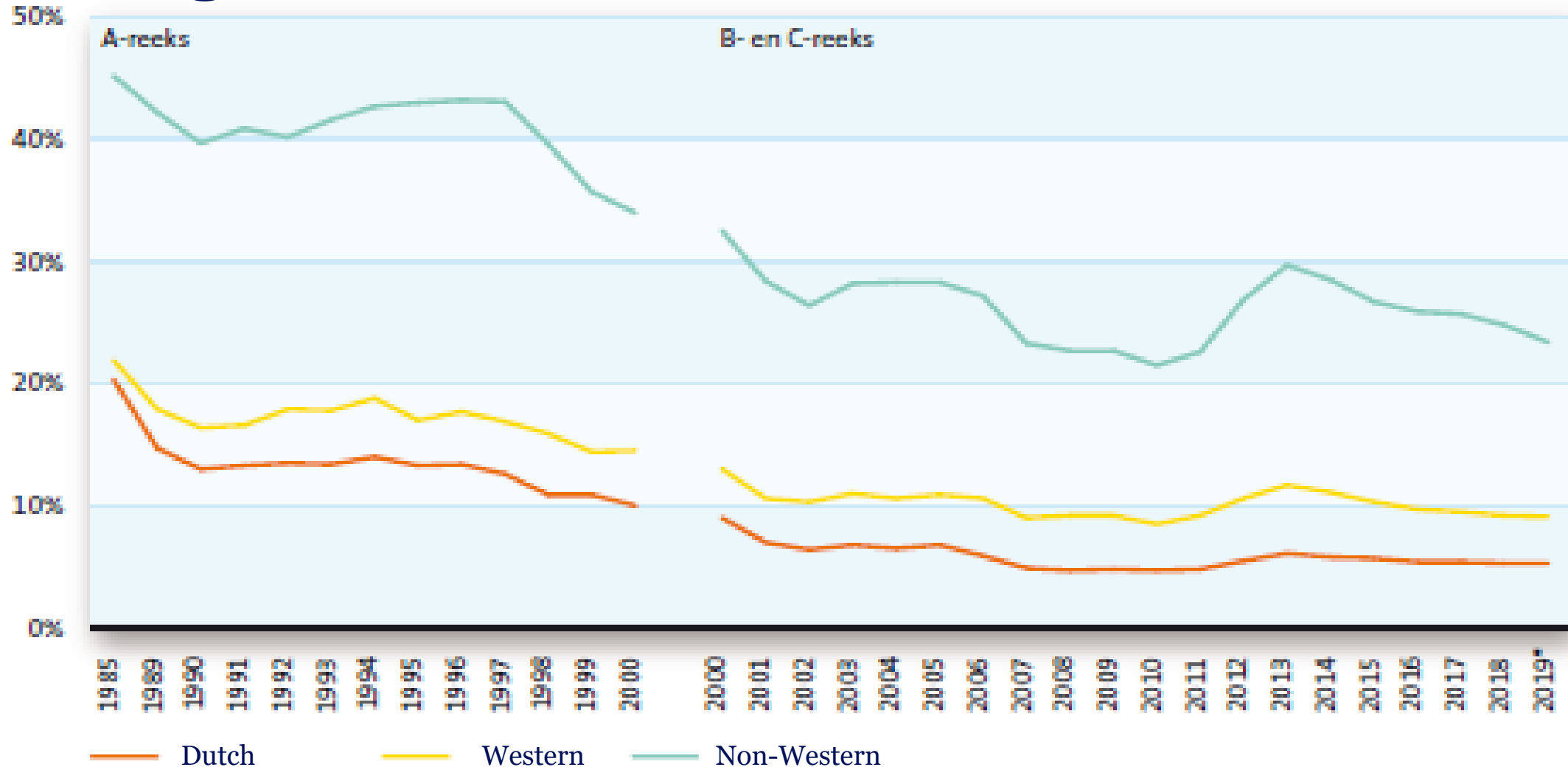
Data and method relative income poverty rates

- Poverty rates — Relative poverty rate primary income = Pov(pri)

  Relative poverty rate disposable income = Pov(dhi)

- Redistribution = % of people lifted out of poverty

  - Overall redistribution = Pov(pri) − Pov(dhi)

  - Decomposition redistribution by transfers and taxes.

  - Decomposition redistribution by social programs: old-age benefits, disability benefits, sickness benefits, child benefits, unemployment benefits, housing benefits, other benefits and income taxes and social security contributions.

- Equivalence scale CBS / LIS

- LIS Top-and-Bottom-coding

- Target groups: total population, working-age population, children & elderly

INKOMEN VERDEELD
TRENDS 1977−2019
ONDER REDACTIE VAN
Koen Caminada, Egbert Jongen (UNIVERSITEIT LEIDEN)
Wim Bos, Marion van den Brakel, Ferdy Otten (CBS)

LIS CROSS-NATIONAL DATA CENTER in Luxembourg

6.2.2 Households with (long term) low income, by age of sole earner, 2019*

Less income due to raising children

Increase labor income (participation)

Increasing dependency on social benefits

Pension age

Threshold low income (per month)
- Single: 1,090 euro
- Lone parent with 2 kids: 1,660
- Couple with 2 kids: 2,080

Long term > 4 year

Low income, (avg. 7.7%) Long term low income, (avg. 3.4%) → Age

Dutch Households with low income by migration background, 1995-2019*

Dutch minors < 18 years at risk of poverty by migration background, 1995-2019* (%)
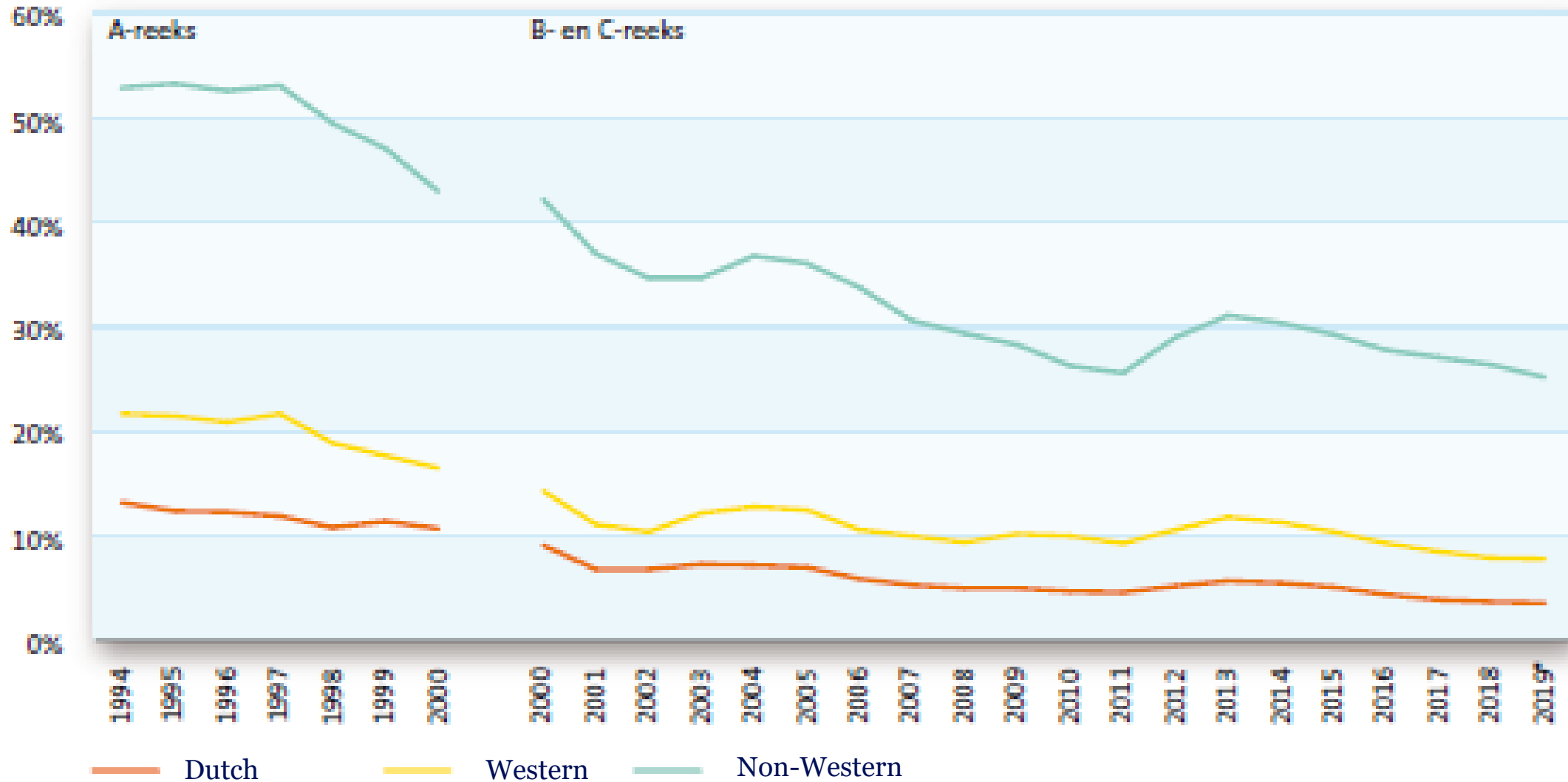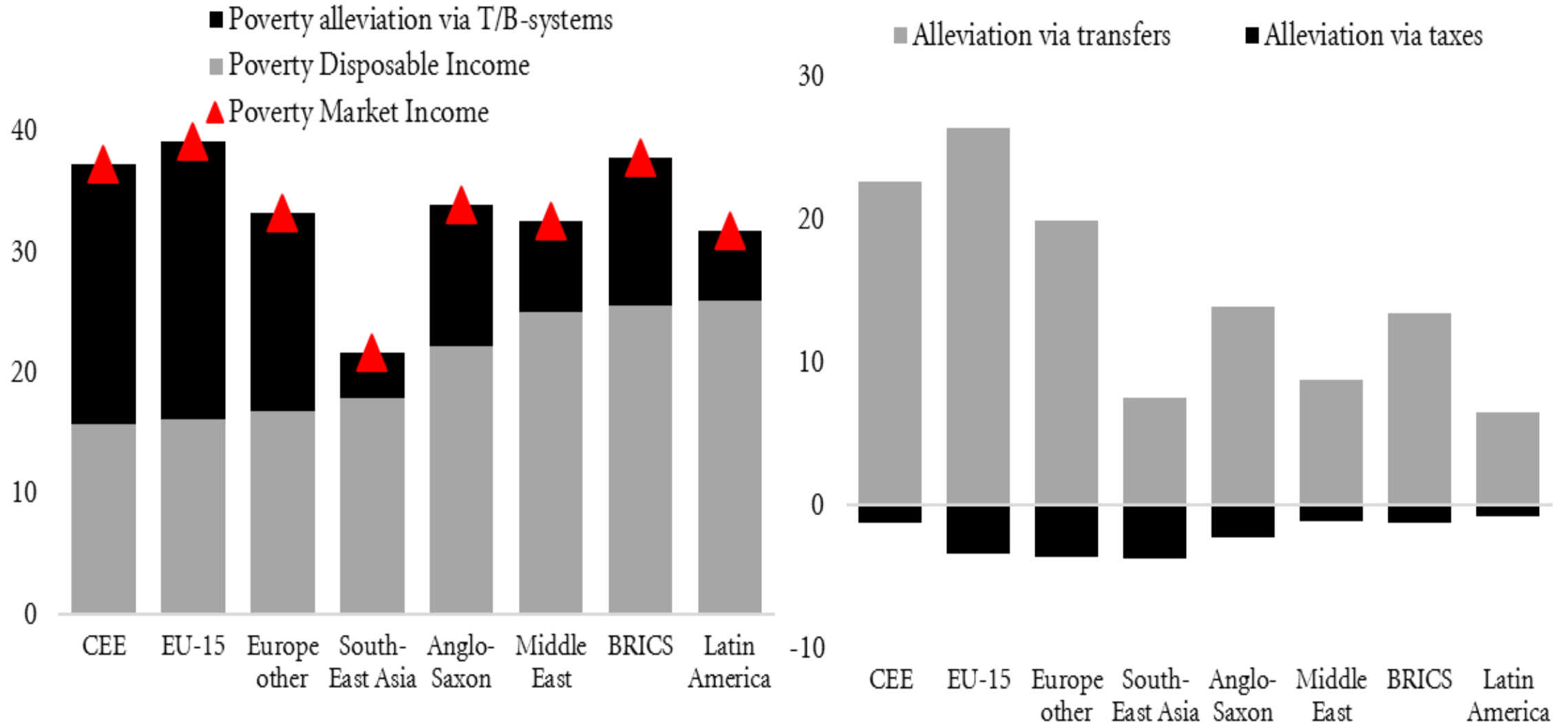
Poverty alleviation in LIS countries

Lift out of poverty = Poverty primary income -/- Poverty disposable income

= Fiscal redistribution social benefits and income taxes = Lift out of poverty by T/B-system

	China 2013	India 2011	USA 2016	Netherlands 2013	Mean 49 countries
Poverty pri	36%	31%	34%	32%	35%
Poverty dpi	27%	27%	24%	12%	20%
Reduction	9%-p	4%-p	10%-p	20%-p	15%-p
Partial effects					
Social benefits	-	4.3	12.6	25.5	17.3
Income taxes	-	-	-3.0	-6.1	-2.1

Source: Caminada, Goudsward, Wang & Wang (2019)

Poverty rates and poverty alleviation via social transfers and income taxes across regions (most recent data year)

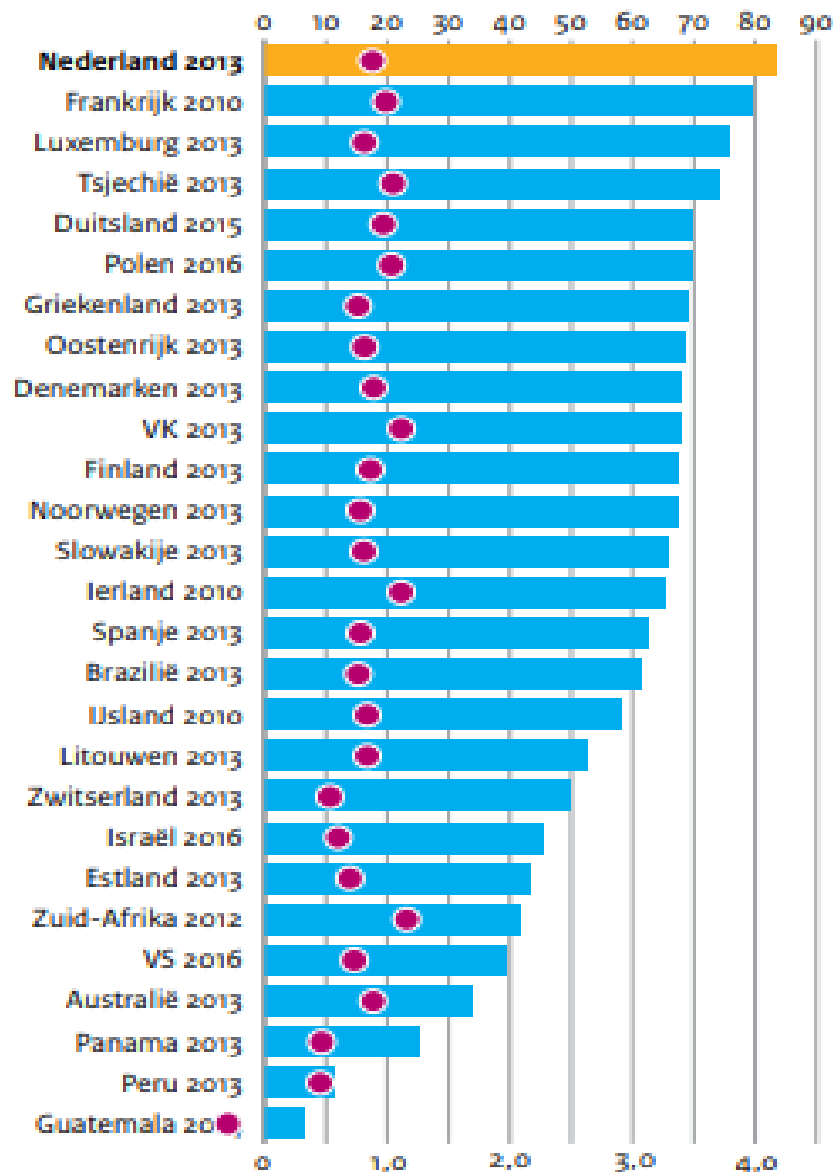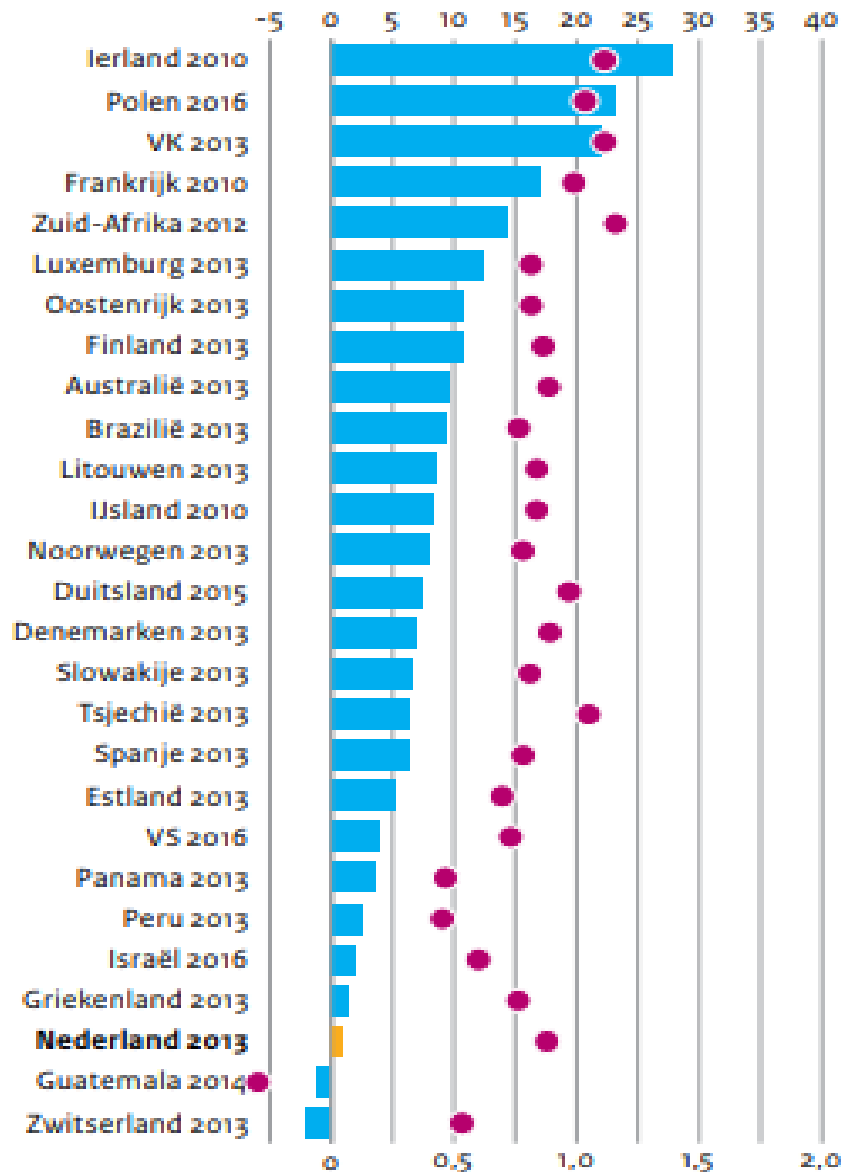Source: Caminada, Goudsward, Wang & Wang (2019)

Poverty alleviation in LIS countries

Lift out of poverty by T/B-system

	China 2013	India 2011	USA 2016	Netherlands 2013	Mean 49 countries
Total population	9%	4%	10%	20%	15%
WA population	7%	4%	4%	9%	9%
Children	5%	4%	4%	1%	9%
Elderly	31%	8%	39%	84%	48%

Kansrijk armoedebeleid SCP/CPB (bron: Caminada)

Aandeel bevolking dat via T/B-systems uit de armoede blijft én de mate van gerichtheid sociale uitgaven per groep

Kinderen (links) versus senioren (rechts)

Rijk en egaal land met toch (veel) kinderarmoede
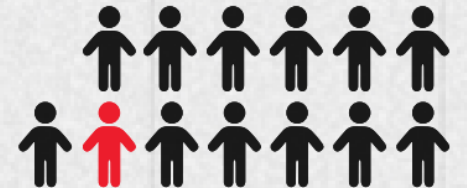
Dutch top income shares 2019*: different definitions

Top 10%
- Personal primary income: 29,9
- Personal gross income: 30,7
- Standardised disposable income: 28,6

Top 5%
- Personal primary income: 18,8
- Personal gross income: 19,3
- Standardised disposable income: 18,0

Top 1%
- Personal primary income: 6,5
- Personal gross income: 6,7
- Standardised disposable income: 6,3

Legend:
- Personal primary income
- Personal gross income
- Standardised disposable income

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Share top incomes by gender 2019*
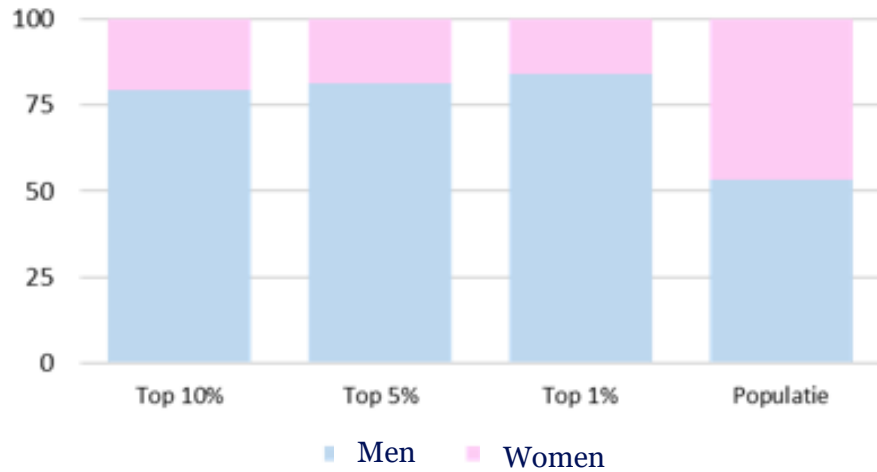
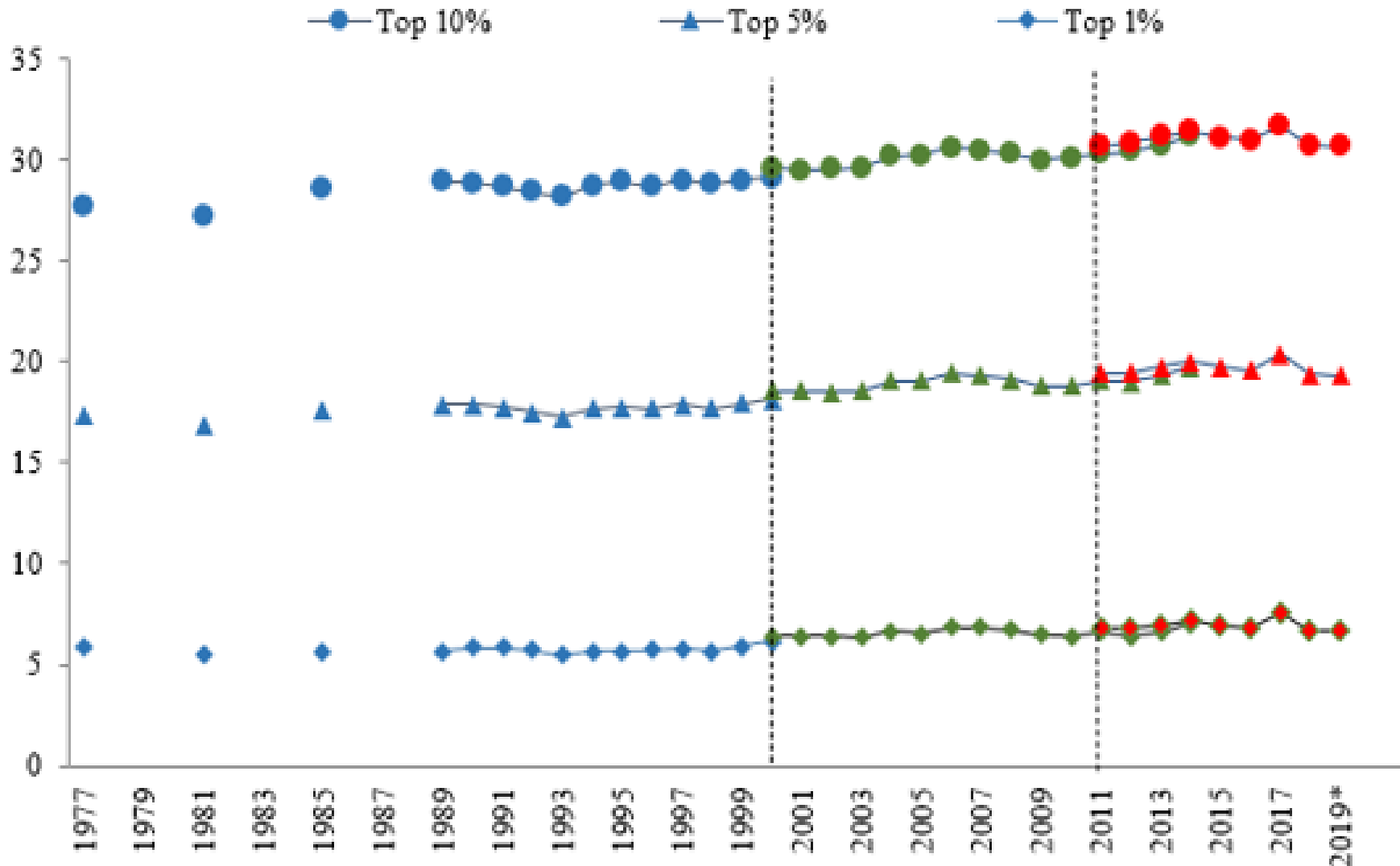# Share top incomes by age 2019*
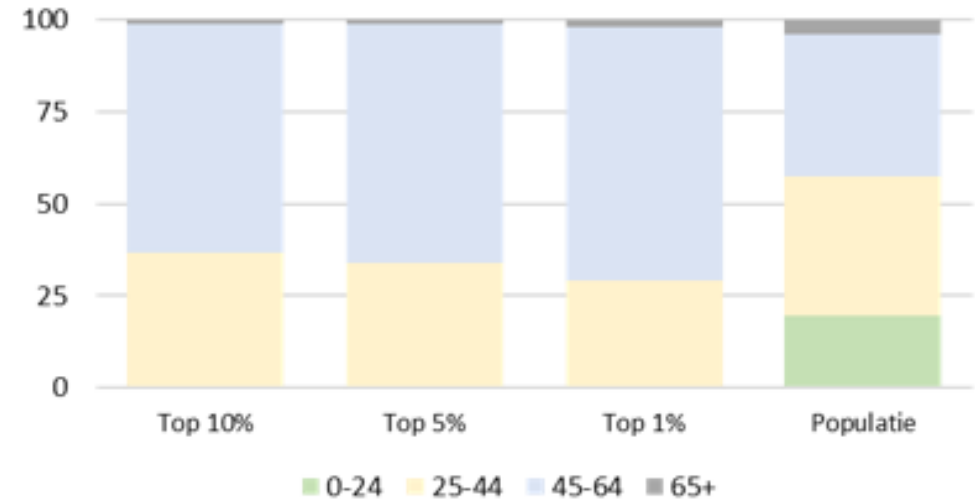
Share top incomes by socio-economic category 2019*
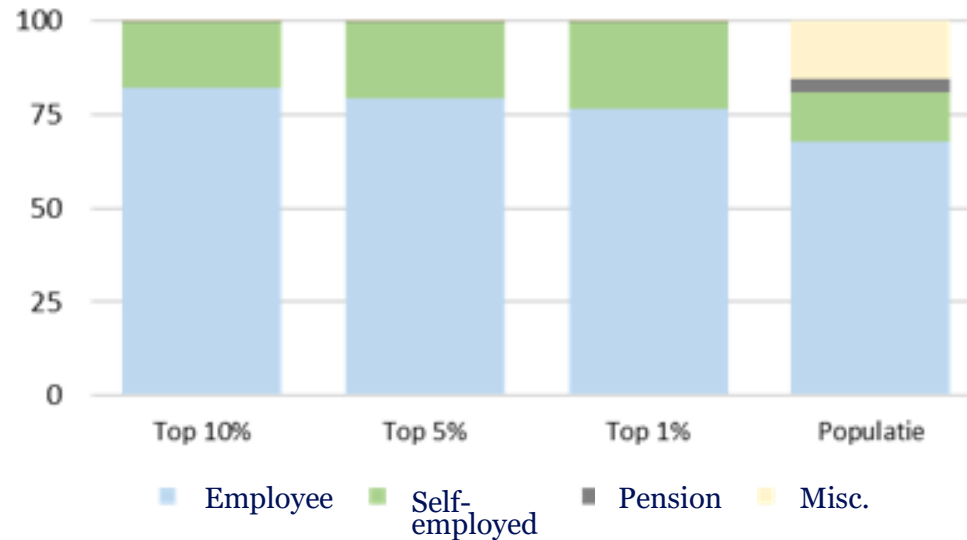
# Share Dutch top incomes 1977-2019*: personal primary income

- Share top incomes rather stable over time (top 10%, top 5% & top 1%)

- Independent of definition of income, such as personal gross income and standardized disposable income

- OLS regression: no increased concentration of income in top 1% since 1977

How strong are Piketty's trends? Income shares top 1%

Country	Data availability	Levels			Change		
		1970	1990	2010's	1970-1990	1990-2010's	1970-2010's
Netherlands	1970-2012	8.6	5.6	6.3	-3.1	0.8	-2,3
Denmark	1970-2010	9.2	5.2	6.4	-4.0	1.2	-2,8
Sweden	1970-2012	6.2	4.4	7.1	-1.8	2.8	1,0
France	1970-2009	8.3	8.2	8.1	-0.1	-0.2	-0,3
New Zealand	1970-2011	6.6	8.2	8.1	1.6	-0.1	1,5
Singapore	1970-2012	10.8	8.4	8.2	-2.4	-0.2	-2,6
Australia	1970-2010	5.9	6.3	9.2	0.4	2.8	3,3
Japan	1970-2010	8.2	8.1	9.5	-0.1	1.5	1,3
Switzerland	1971-2009	10.8	8.6	10.5	-2.2	1.9	-0,3
UK	1970-2011	7.1	9.8	12.9	2.8	3.1	5,9
USA	1970-2012	7.8	13.0	19.3	5.2	6.4	11,5
Mean 11 countries		8.1	7.8	9.6	-0.3	1.8	1.5

Source: Caminada (2014), World Top Income Database (Piketty and others)

7.4.2 Share of income top 1% in selected countries: 1980-2019
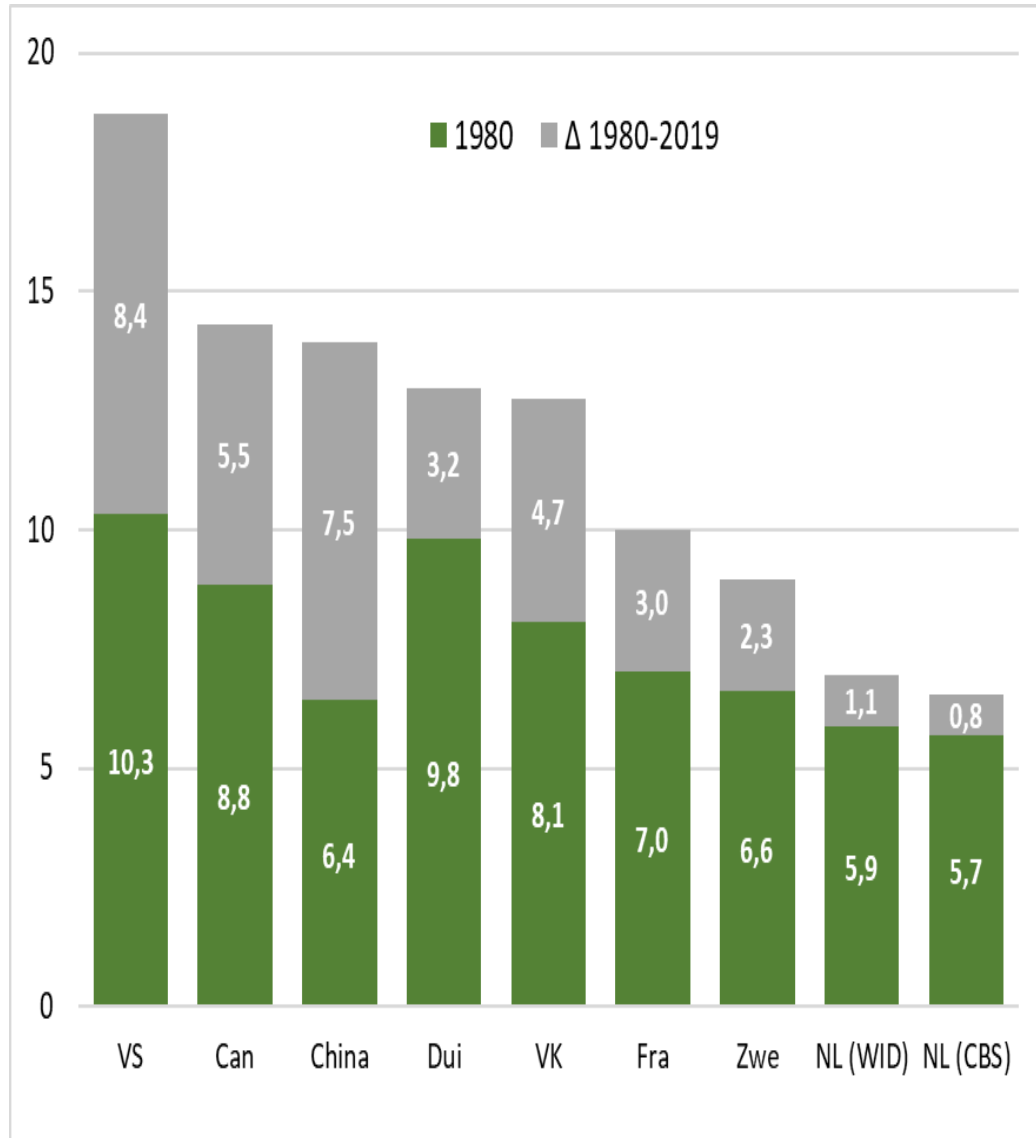
7.4.1 International comparison income share top 1% in 2019

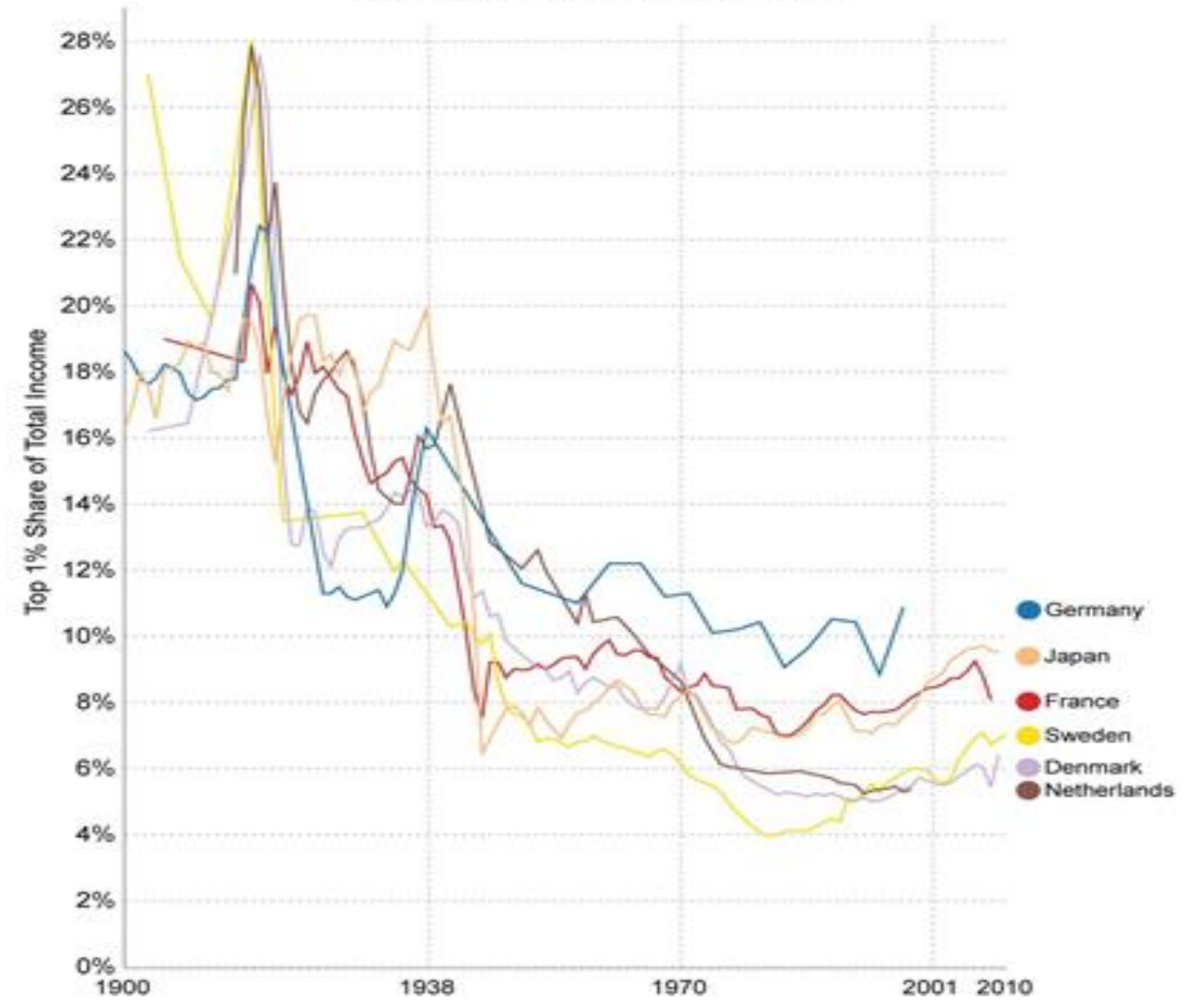|					
USA	18,7	Hungary	12,4	Cyprus	9,8
Bulgaria	18,3	Spain	12,2	Austria	9,2
Turkey	18,0	Litouania	12,2	Luxembourgh	9,2
Poland	14,6	Portugal	11,6	Letland	9,0
Israel	14,4	Ireland	11,6	Sweden	9,0
Canada	14,3	New Zealand	11,4	Cratia	9,0
Korea	14,1	Denmark	11,2	Italy	8,8
China	13,9	Sebia	11,2	Bosnia Herzegovina	8,6
Estland	13,9	Switzerland	10,9	Kosovo	8,6
Romenia	13,2	Slavakia	10,6	Belgium	8,5
Germany	13,0	Norway	10,4	Slovenia	8,3
Greece	12,9	Malta	10,3	Iceland	8,1
UK	12,7	Czech Republic	10,0	Macedonia	7,9
Australia	12,4	France	10,0	*Netherlands (WID)*	*7,0*
Japan	12,4	Finland	10,0	*Netherlands (CBS)*	*6,5*

Ranking 177 countries World Inequality Database:
No 1: USA - 18.7%
No 177: Netherlands - 7.0%

Share of Total Income going to the Top 1%, 1900-2010

The evolution of inequality in English speaking countries followed a U-shape

The evolution of inequality in continental Europe and Japan followed an L-shape

Legend (left): USA, UK, Canada, Ireland, Australia

Legend (right): Germany, Japan, France, Sweden, Denmark, Netherlands

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Research project

Dutch Income (Re)Distribution, trends 1977-2019

The book 'Dutch Income (Re)Distribution, trends 1977-2019' was published on the 14th of October. Files related to the project can be downloaded via this website.

Contact   Koen Caminada   >

Revision Dutch Income Statistics, time series 1977-2019

- Book *Dutch Income (Re) Distribution, trends 1977-2019 (in Dutch)* (🗎 link)
- Supplement Figures and Tables (xls.)
- Presentation Main Findings (🗎 ppt.)
- CBS Web publication (in Dutch) (🔗 link)
- Initiators: Koen Caminada (Universiteit Leiden), Egbert Jongen (Universiteit Leiden), 🔗 Wim Bos (CBS), 🔗 Marion van den Brakel (CBS), 🔗 Ferdy Otten (CBS)
- More information (in Dutch): click here

INKOMEN VERDEELD
TRENDS 1977–2019

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Databases & codebooks

1. [Leiden LIS Budget Incidence Fiscal Redistribution Dataset on Income Inequality](#)

2. [Idem, on Relative Income Poverty Rates](#)

3. [Social Assistance and Minimum Income Levels and Replacement Rates Dataset](#)

4. [Unemployment Replacement Rates Dataset](#)

5. [Sectoral Income Inequality Dataset](#)

Website: [Leiden Law School / Economics / Data](#)