Dimensions of (Global) Inequality

Wealth, Income & Relative Income Poverty Rates

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instituut gak

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Erasmus University Rotterdam
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Introduction

Koen Caminada, professor Empirical analysis of social and tax policy, Leiden University

Vice-dean Faculty Governance & Global Affairs (LU The Hague)

Other / policy
- Member Committee Income Tax & Allowances
- Member Committee Forecast Tax Revenue
- Socio Economic Counsel (workgroup Tax Reform)
- Academic Partner Netherlands Bureau of Economic Argumentation
- Governor Foundation of International Studies on Social Security

Topics
- ❑ Distribution tax-benefits social security and pensions
- ❑ Tax policy
- ❑ Reform social and tax regulations
- ❑ Poverty EU / OECD / LIS

Outline

1. Introduction – setting the scene - must reads – research design - theory

   - Why income inequality and poverty matter?

   - Stiglitz, Deaton, Atkinson, Milanovic, Ravallion, Piketty & OECD

   - Testing scholarly claims & policy recommendations

2. Measuring issues – getting into empirics

3. Distribution of wealth

4. Distribution of (top) income

5. Levels and trends in poverty rates

6. Heterogeneity income tax ratios in NL (tax discrimination)

7. Getting to work

   - Some related work – further reading

   - Databases & codebooks

Students may opt-in for 2 topics from 3-6

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Empirics: global research team & data

| Kees Goudswaard | Marike Knoef | Olaf van Vliet | Jim Been | Jinxian Wang | Chen Wang | Stefan Thewissen | Koen Caminada |
| Leiden | Leiden | Leiden | Leiden | Beijing | Shanghai | Oxford | Leiden |

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

- Budget Incidence Fiscal Redistribution Dataset on Income Inequality (2018)
- 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

Megan Martin
USA

Ferry Koster
EUR

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Leiden LIS Budget Incidence Fiscal Redistribution Dataset

LIS information is still expanding!

- Countries: 49

- Time-series: 1967-2016

- We provide data and codebooks on:

  o Income inequality & Poverty rates (by age groups et cetera)

  o Fiscal redistribution (social benefits + income taxes and social contributions)

  o Budget size and target efficiency (decomposition transfers and taxes)

  o Decomposition income inequality & poverty (by income source)
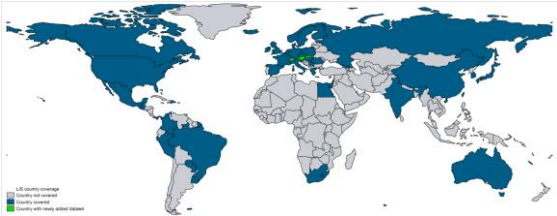
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Overview micro-data: 49 countries - 1967-2016

	Gross incomes		Mixed		Net incomes		Total	
	# obs	# datasets	# obs	# datasets	# obs	# datasets	# obs	# datasets
Anglo-Saxon	1,169,111	35	-	-	-	-	1,169,111	35
EU15	1,483,386	92	108,439	9	226,025	37	1,817,850	138
Europe - other	792,132	20	-	-	30,946	7	823,078	27
BRICS	490,020	8	17,112	1	104,349	7	611,481	16
Latin America	185,378	12	53,205	4	1,086,663	34	1,325,246	50
CEE	215,795	20	250,184	8	71,692	17	537,671	45
Middle East	68,219	11	-	-	11,849	1	80,068	12
South-East Asia	223,886	16	-	-	-	-	223,886	16
Total	4,627,927	214	428,940	22	1,531,524	106	6,588,391	339

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3

1 Setting the scene - must reads – research design - theory

... while superrich (income & wealth)

Superrich	Similarities
Donald Trump	Top incomes
Jacky May	Male (gender)
John de Mol	Family (inheritance)
Bill Gates	Mediocratic
Joop vd Ende	Political power?
	Influence tax policy?

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Tax race to the bottom: CIT rates over time across the globe

Figure 2: Corporate income tax rates, 1980–2013
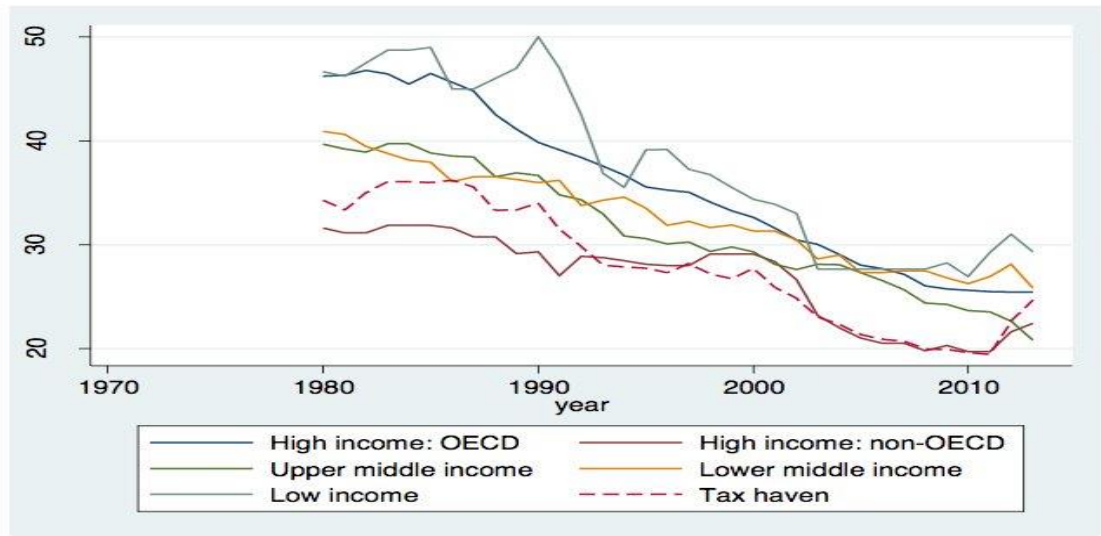
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Social cohesion versus Social tension / unrest

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

Research design

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) ?
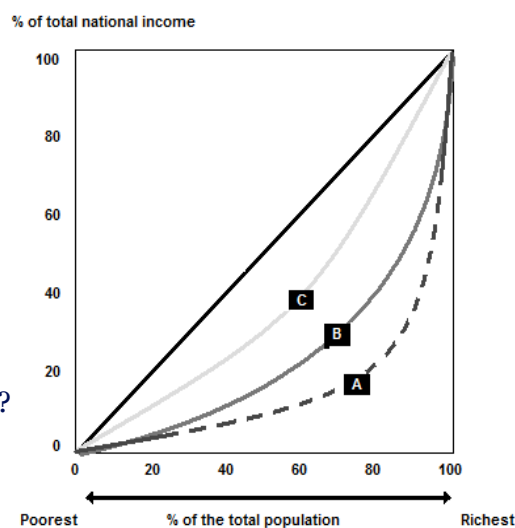
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Income (re-)distribution and inequality

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.

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Readings

Must read (most based on massive data collection)

❖Anthony Atkinson (2015), Inequality; What can be done?

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

❖Angus Deaton (2013), The Great Escape

Testing claims

❖*Branko Milanovic (2016), Global inequality: A New Approach for the Age of Globalization*

❖*Thomas Piketty (2014), Capital in the Twenty-First Century*

❖*OECD (2008), Growing Unequal?*

❖*OECD (2011), Divided We Stand: Why Inequality Keeps Rising*

❖*OECD (2015), In It Together: Why Less Inequality Benefits All*

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Literature on redistribution of income by taxes and transfers in a comparative setting

- Atkinson (2003)
- Atkinson & Brandolini (2001)
- Brady (2004)
- Brandolini & Smeeding (2007)
- Ervik (1998)
- Gottschalk & Smeeding (1997, 1998 and 2000)
- Kenworthy & Pontusson (2005)
- Kopi & Palme (1998)

- Lambert et al (2010)
- Mahler & Jesuit (2006 and 2017)
- Morillas (2009)
- O'Higinis et al (1990)
- Smeeding (2000, 2004 and 2008)
- OECD (2008, 2011 and 2015)
- Immervoll & Richardson (2011)
- Research team Reform of Social Legislation, Leiden University

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Our (new) findings

- Tax-benefit systems have ***NOT*** become less effective in redistribution since the mid-1990s.

- The claim that reduced redistribution is a main driver of widening income gaps since the mid-1990's must be toned down.

Based on:

Budget Incidence Fiscal Redistribution Database of Caminada & Wang (2017)
http://www.lisdatacenter.org/resources/other-databases

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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?

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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.

OECD: In It Together - Why Less Inequality Benefits All?

• Overview of inequality trends, key findings and policy directions.

• Lowest incomes were increasingly left behind since 1985.

• Taxes and benefits cushioned the effect of the crisis.

• Risk income poverty shifted from the elderly to the young.

• Higher inequality drags down economic growth.

• Over half of jobs created since '95 were non-standard jobs.

• T/B- systems for efficient redistribution. In many countries the effectiveness of T/B- systems to redistribute market income declined → focus on T/B-systems for efficient redistribution.

Trends real household incomes OECD average, 1985 = 1
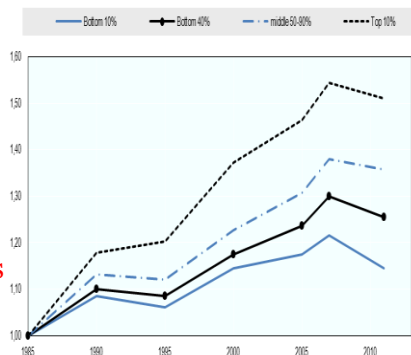
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Rising income inequality and top incomes: big issue *in international perspective?*

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)

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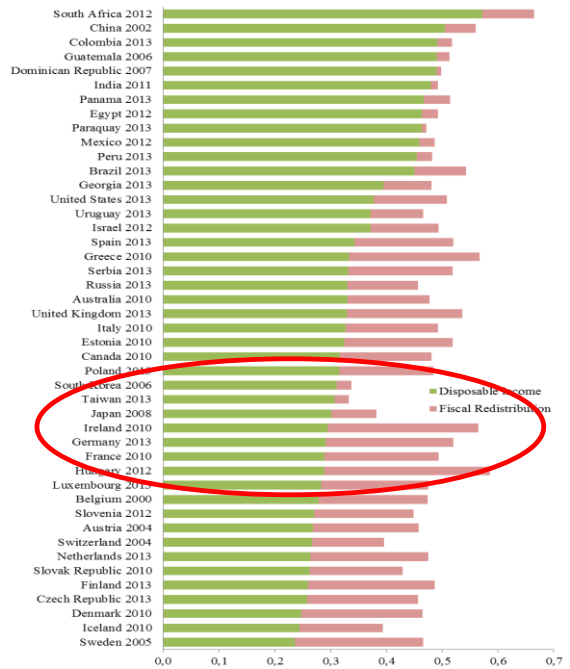
International perspective (LIS)

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
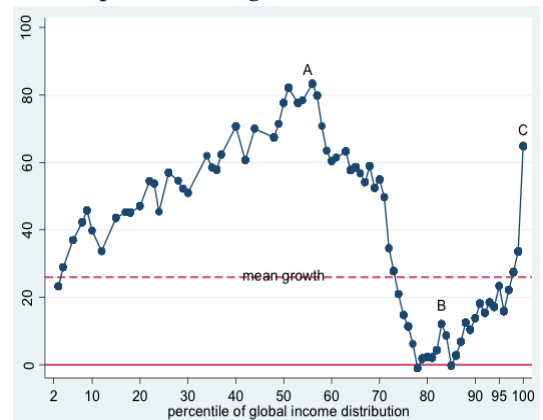Global inequality: A New Approach for the Age of Globalization (2016)

Gini's equivalized income based on LIS

Lakner & Milanovic (2016): The Elephant

- Chart reveals most dramatic change in incomes.

- Real income gains realized at different percentiles of the global income distribution, 1988-2008.

- Income measured in 2005 international dollars

- Individuals ranked by real household per capita income.

- Result: large income gains by people around global median (point A) and the global top 1% (point C). However, absence of real income growth around 80-85th percentile of the global distribution (point B). The squeezed middle.

Cumulative real income growth 1988-2008 at various percentiles of global income distribution
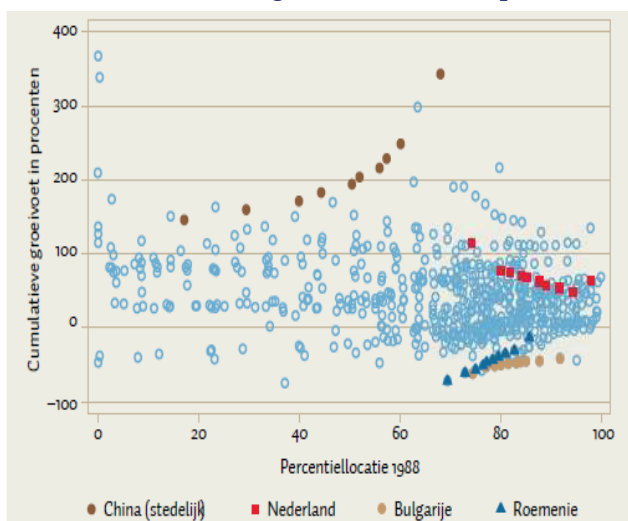
The Elephant: Who are the people at these three key points?

- Point A = median: 9 out of 10 around global median are from China and India → Asian GDP per capita increased. People around global median are still poor by Western standards (per capita income: 5 to 15 international dollars per day).

- Point C = global top 1%: people from advanced economies. Threshold top 1% = 45,000 international dollars per person → translated into two partners and two children = after-tax income of $180,000 (= before-tax > $300,000).

- Point B: 7 out of 10 are from the 'old rich' OECD countries → lower halves of their countries' income distributions. Rich countries' income distributions start around 70th percentile (Denmark around 80th global percentile).

- Open to debate: success people at point A versus point B → effect of globalization? → 'losses' of European working class related to gains of Chinese?
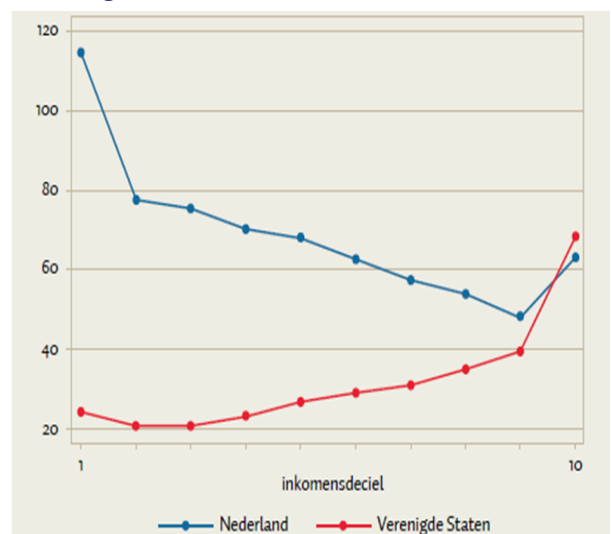
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The Elephant: Where are the Dutch in global inequality?

Cumulative income growth 1988-2008 per decile   Change income 1988-2008 NL and USA

Discover the world at Leiden University   Source: Van Dijk & Van der Linde (2017: ESB)

However ... Martin Ravallion (2017)

- Global inequality: falling inequality *between* countries alongside rising average inequality *within* countries.

- The fact that growth is positive for many is good news from the point of view of absolute *poverty*.

- Fundamental question: why should we care about global inequality?

- Instead: most citizens of the world care about *poverty*.

Figure 1: Global inequality and its between- and within-country components
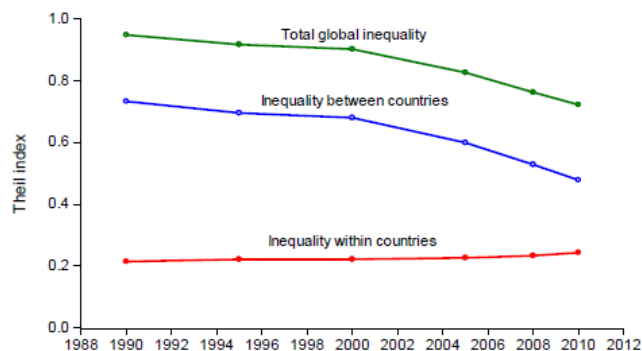
However ... Martin Ravallion (2017)

- Global Lorenz curves intersect (no LD).

- No LD implies that the claim global inequality is changing is <u>not</u> robust to the choice of index.

Figure 3: Lorenz curves for global income 1988 and 2008
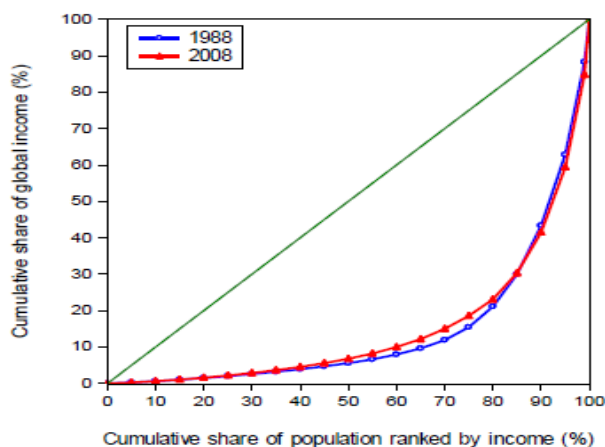
Source: Based on estimates in Lakner and Milanovic (2016a).

However, global percentile location deciles NL and USA

- 1988: position first decile both NL and USA at 74th global percentile

- 2008: Dutch first decile at 82nd global percentile, while USA at 76th

- Income growth 1988-2008

  1st decile: NL = +114%   USA = +25%

  2nd decile: NL = +77%   USA = +20%

  9th decile: NL = +50%   USA = +40%

  10th decile: NL = +63%   USA = +70%

Deciles	Netherlands		USA	
	1988	2008	1988	2008
1	74,3	81,9	74,3	75,7
2	80,1	86,5	82,6	85,0
3	82,0	88,5	86,6	88,5
4	84,2	89,8	90,2	91,2
5	85,3	90,7	92,5	93,6
6	87,8	91,9	94,3	95,8
7	89,2	93,6	96,2	96,9
8	91,7	94,7	97,7	98,0
9	94,4	96,4	99,1	99,2
10	98,0	98,6	100,0	100,0

Discover the world at Leiden University   Source: Van Dijk & Van der Linde (2017: ESB)

Other claims Branko Milanovic

20th century tools can (not) be used to address 21st century income inequality

1945-1980: reduced income inequality in rich countries

1. Strong trade unions
2. Mass education
3. High taxes
4. Large government transfers

Claim Branko Milanovic: None of them will do the job in the 21st century.

High taxes and high social transfers were crucial to reduce income inequality; still are.

Test: LIS data, 47 countries, 1967-2013, 277 datasets → a global view

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The citizenship premium

Branco Milanovic: Over two-thirds of the variability in incomes across country-percentiles → the country where people live in.

Most studies addressing (earning) inequality → country-level developments.

What about developments at the sectoral level?
• Due to larger wage differences between or within sectors?
• Sectoral employment loss?
• Differences across sectors, countries, and time?

Relevance
Identification of heterogeneity of drivers market income inequality
• Globalization / international trade
• Skill-biased technological change

Sectoral dimension important for understanding earnings inequality at the country level.

Earnings inequality at the country level is a consequence of dispersion within sectors rather than differences in mean earnings between sectors. Within-sector inequality increased over time.

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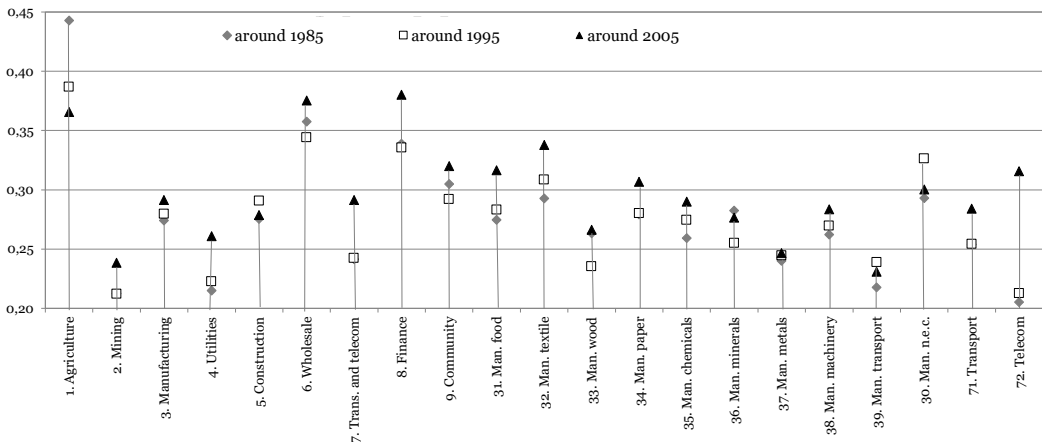# Inequality within industries (Czech Rep, Den, Fin, Ger, Ire, Swe, UK and USA based on LIS)

High unequal earnings
Agriculture, wholesale, finance

Low levels of earnings dispersion
Mining, utilities, manufacturing of metals, transport

Discover the world at Leiden University   Source: Thewissen, Wang & Van Vliet (2013)

What about developments at the sectoral level?

- Share of within-sector inequality dominates
- Inequality has increased in most sectors, levels differ
- Shift from manufacturing towards financial services
- Stable median earnings
- No clear country-level differences

What about regions and institutions? China

	West	Middle	East
Mean income (yuan)	5,880	6,282	10,571
Gini	0.495	0.450	0.498
PL50	33%	25%	19%
PL60	41%	32%	24%

	Urban	Rural	All
Gini	0.319	0.415	0.505
PL50	0.3%	39%	25%
PL60	0.5%	49%	31%

Big issue in international perspective?

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)
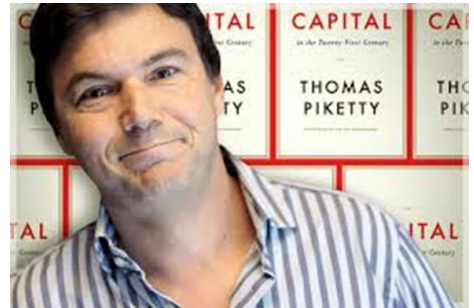
Debate

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 ☹.
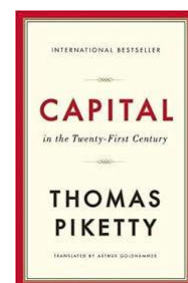
2 Measuring issues

Decomposition income inequality

Income inequality and redistribution accounting framework

Income components	Income inequality and redistributive effect
Labor income + capital income + private transfers = **Market income or Primary income**	**Income inequality before social transfers and taxes**
+ Social security transfers	-/- Redistributive effect of social transfers
= Gross income	**= Income inequality before taxes**
-/- Income taxes and social security contributions	-/- Redistributive effect of taxes
= Disposable income	**= Income inequality after social transfers and taxes**

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
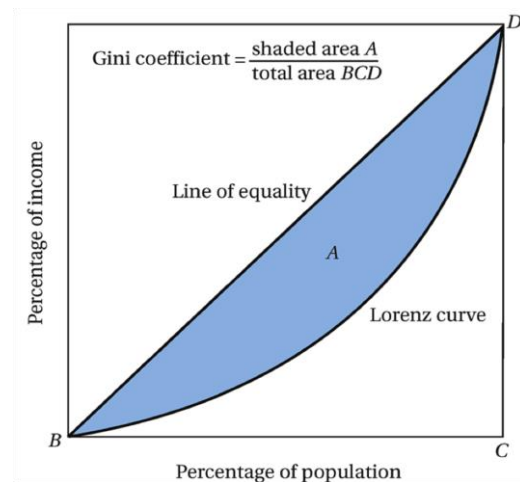- Theil / Mean Log Deviation
- Atkinson index (α=0, α=1)

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

Other
- S80/S20, mean, median

- 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)

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, survivor benefits, sickness benefits, family/children benefits, education benefits, unemployment benefits, housing benefits, other benefits and income taxes and social security contributions.

- Equivalence scale LIS

- LIS Top-and-Bottom-coding

- Target groups: total population, working-age population

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Trend fiscal redistribution total population (15 countries)

	Gini PI	Gini Dhi	Fiscal Red
Around 1985	0.431	0.280	0.152
Around 1997	0.453	0.281	0.172
Around 2012	0.479	0.297	0.182
Change 1985-2012	0.048	0.018	+0.030
Change 1985-1997	0.022	0.002	+0.020
Change 1997-2012	0.026	0.016	+0.010
	Share rise inequality offset by Fiscal Redistribution		
1985-2012	63%		
1985-1997	93%		
1997-2012	37%		

Tax-benefit systems *effective at reducing inequality over time*. However, share of the rise in primary income inequality *offset* by fiscal redistribution *decreased over time.*

Discover the world at Leiden University   Source: Caminada et al (2017)

Measuring monetary poverty in international perspective

No agreed-upon definition of (income) poverty

Poverty lines

• World Bank: $ 1 dollar a day ($1.90)

• USA: Absolute – Orshansky (basket)

• EU: Relative → poverty line (PL) 60 percent of median income (AROP)

International comparative research → apply poverty lines – % median income

How to measure poverty?

Monetary poverty in an international setting → no agreed-upon definition how to measure poverty
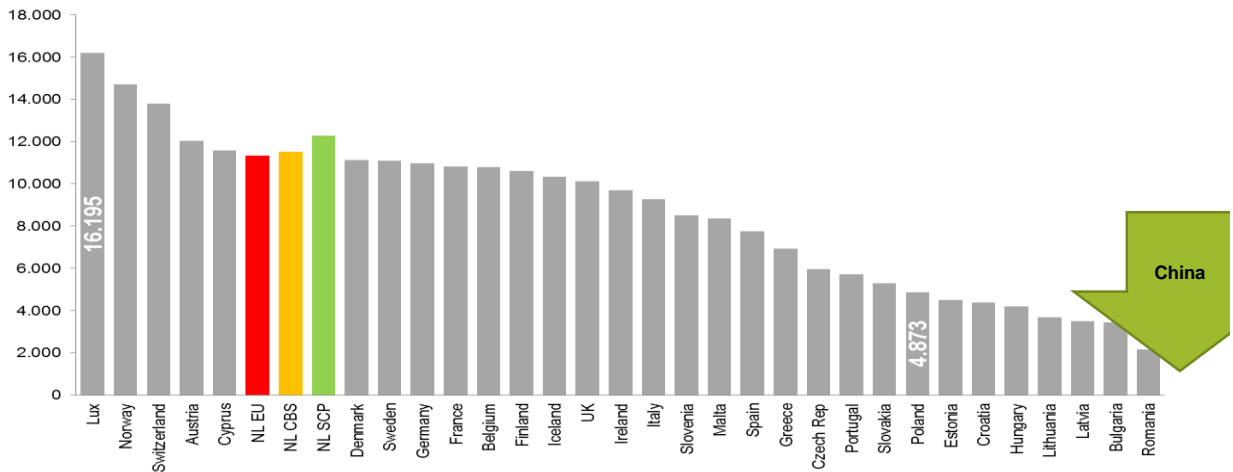
Research → apply poverty lines – % median income

How many people are at risk of poverty = below 60% of median income?

- China (PL60: 2.840 yuan) → 31% of population

- Netherlands (PL60: €11.326) → 11% of population

Thresholds Monetary Poverty

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 social benefits and income taxes.
  - Decomposition redistribution by social programs: old-age benefits, disability benefits, survivor benefits, sickness benefits, family/children benefits, education benefits, unemployment benefits, housing benefits, other benefits and income taxes and social security contributions.

- Equivalence scale LIS
- LIS Top-and-Bottom-coding
- Target groups: total population, working-age population, children & elderly

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

Discover the world at Leiden University   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%

Discover the world at Leiden University   Source: Caminada, Goudsward, Wang & Wang (2019)

Poverty rates and poverty alleviation via social transfers and income taxes across regions (most recent data year)
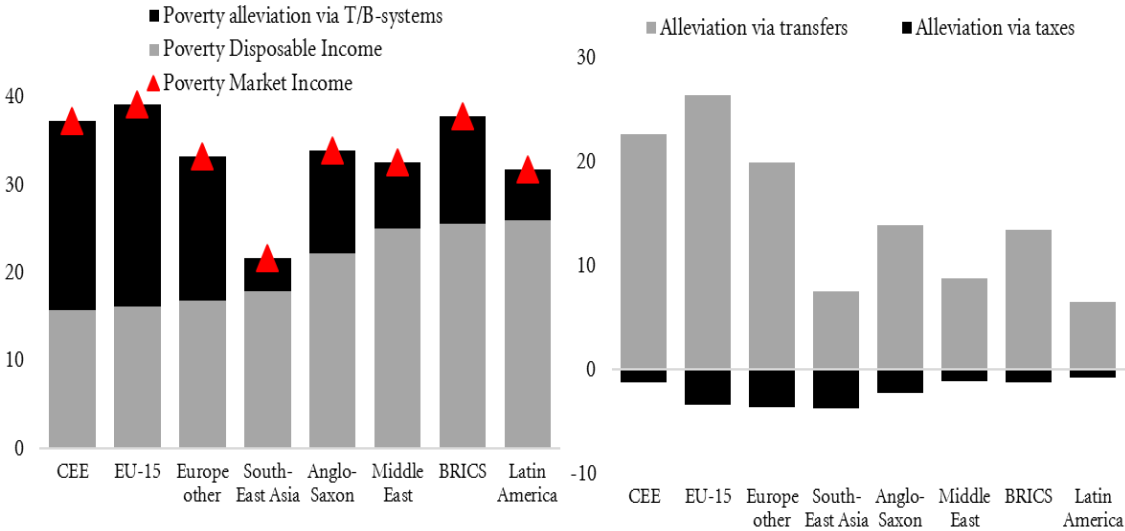
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Source: Caminada, Goudsward, Wang & Wang (2019)

Poverty rates for three poverty lines and for different age-groups across regions (most recent data year)

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

At-risk-of-poverty rate after social transfers 2015 (PL 60)
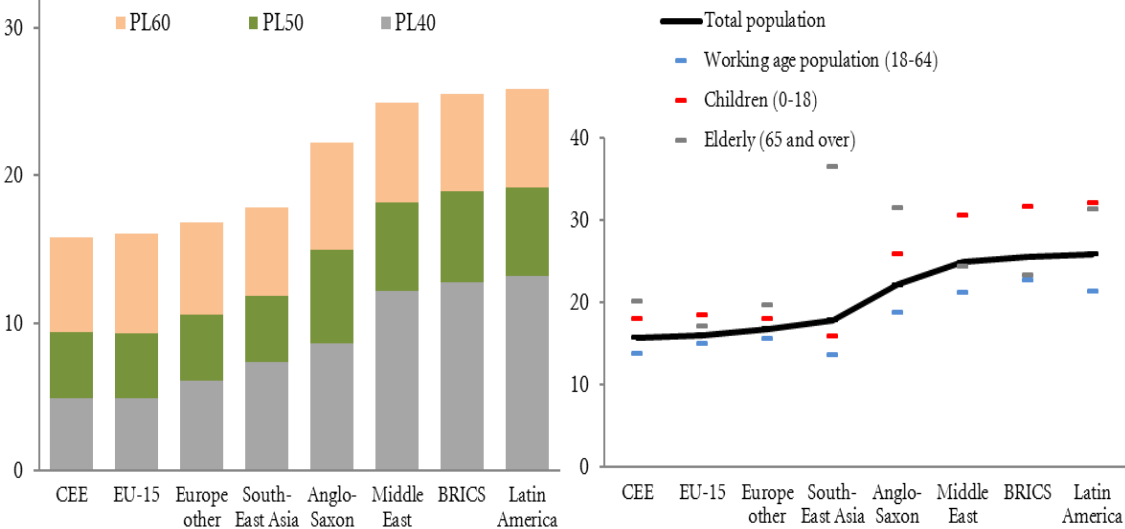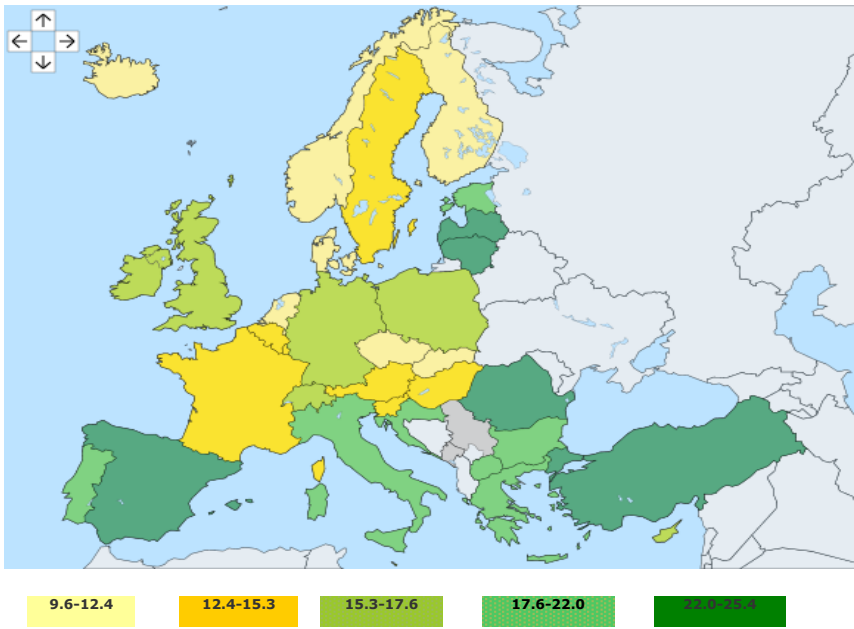

Poverty rate EU28:
PL 40 = 6
PL 50 = 11
PL 60 = 17

PL EU60 = 23

Poverty line:
PL EU = 60
PL USA = 30
PL China = ??

Poverty rate USA 2013 (LIS):
PL 40 = 11
PL 50 = 17
PL 60 = 24

China PL60 = 32

| 9.6-12.4 | 12.4-15.3 | 15.3-17.6 | 17.6-22.0 | 22.0–25.4 |

Source: Eurostat, ECHP, EU-SILC

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Country-grouping and indices: trends in several social indicators Europe-wide, 2005-2012

	EU-wide				Country-average		
	Level social indicator		Change		Level social indicator		Change
	2005	2012			2005	2012	
Polarization Indicator							
West-EU15 (10)	0.197	0.198	0%		0.190	0.188	-1%
CEE NMS-13 (8)	0.230	0.210	-8%**		0.197	0.193	-2%
West-EU15 + CEE NMS	0.219	0.212	-3%*		0.193	0.190	-1%**
European Countries (20)	0.219	0.212	-3%*		0.192	0.188	-2%**
Gini coefficient							
West-EU15 (10)	0.295	0.296	0%		0.274	0.276	1%
CEE NMS-13 (8)	0.384	0.328	-14%**		0.298	0.286	-4%
West-EU15 + CEE NMS	0.357	0.333	-7%**		0.284	0.280	-1%*
European Countries (20)	0.357	0.333	-7%**		0.283	0.275	-3%**
Poverty rate (PL60)							
West-EU15 (10)	0.151	0.172	14%**		0.136	0.143	5%**
CEE NMS-13 (8)	0.202	0.180	-11%		0.156	0.148	-5%
West-EU15 + CEE NMS	0.249	0.217	-13%**		0.145	0.145	0%
European Countries (20)	0.248	0.217	-12%**		0.141	0.140	-1%

Discover the world at Leiden University   Source: Wang, Caminada, Goudswaard Wang (2017)

3 Distribution of wealth

Wealth concentration - international perspective

Taxing the Wealthy
A Global Wealth Tax above one million euro?

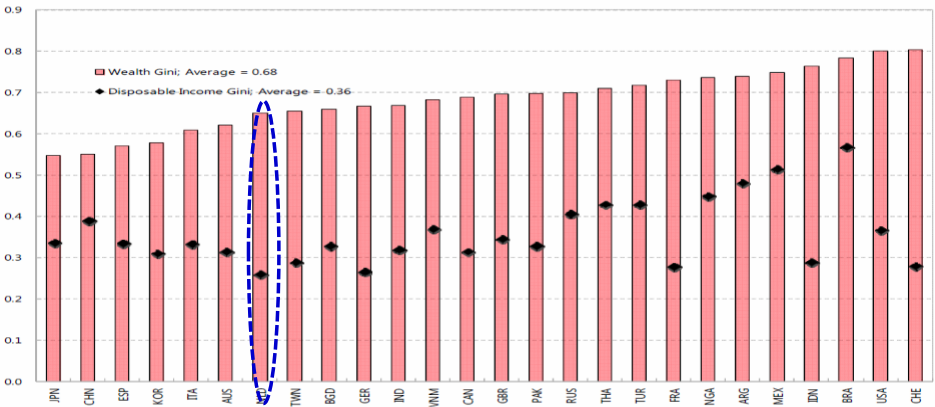# Wealth distribution in international perspective (1)

• Hardly comparable data on private wealth inequality.

• IMF: Netherlands below-average; USA above-average.

Figure 4. Inequality of Wealth and Incomes in Selected Economies, early-2000s

Sources: Davies and others (2008); OECD; Luxembourg Income Study Database; Socio-Economic Database for Latin America and the Caribbean (SEDLAC); World Bank; Eurostat.

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Wealth Distribution in international perspective (2)

• SHARE-data; used by Van Bavel → Dutch on top wealth inequality

• Netherlands → N=1.846 ; population aged 50 years and above

Table 4: Gini for net income (NI) & net worth (NW) (in 1.000 Euros, ppp-adjusted, weighted)

	$G(\text{NI})$	$G(\text{NW})$	$\frac{G_{NW}}{G_{NI}}$
AT	.36	.56	1.57
DE	.44	.63	1.44
SE	.36	.67	1.85
NL	.42	.69	1.57
ES	.51	.59	1.16
IT	.42	.56	1.32
FR	.45	.61	1.35
DK	.37	.63	1.71
GR	.47	.55	1.17
CH	.41	.69	1.67
BE	.45	.51	1.13
CZ	.38	.54	1.42
PL	.43	.75	1.71

Source: Skopek, Buchholz & Blossfeld (2011)

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Distribution financial wealth 2013

Source: Pension at A Glance 2013 (Figure 2.2.2), and authors' calculations based on data from first wave Eurosystem Household Finance and Consumption Survey in 2013.

NL

Legend: Austria, Belgium, Cyprus, Germany, Spain, Finland, France, Greece, Italy, Lux, Malta, NL, Por, Slov, Slovak
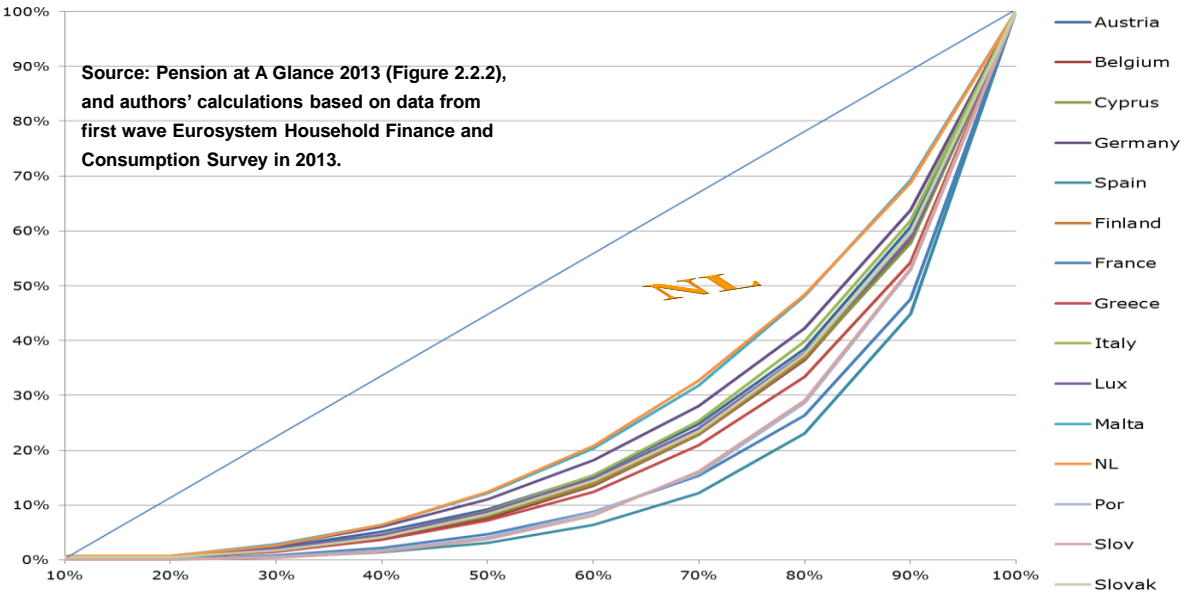
Corresponding Gini's (Piketty's synthetic inequality index)

Austria	Belgium	Cyprus	Germany	Spain	Finland	France	Greece	Italy	Lux	Malta	NL	Por	Slov	Slovak
0,51	0,54	0,54	0,48	0,65	0,53	0,62	0,56	0,51	0,53	0,44	0,44	0,60	0,60	0,53
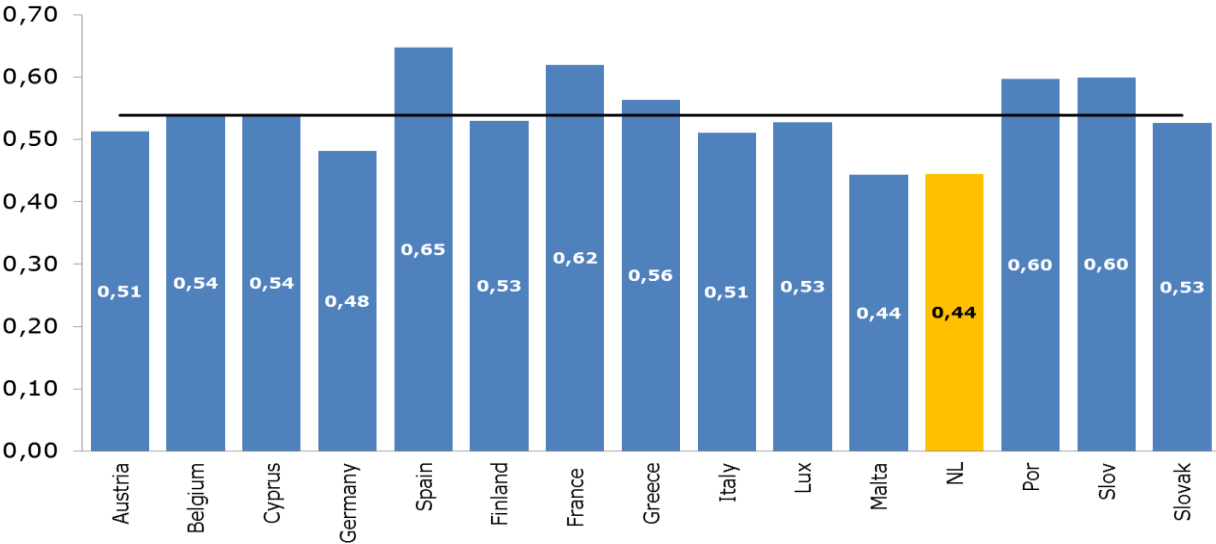
Distribution of wealth in the Netherlands

Private wealth (Dutch Statistics)

- Private wealth = balance of assets and debts (= 1.120 billion in 2014)

- Assets: bank deposits, stocks, real estate and business assets

- Debts: mortgages and consumer credit

Not (yet) included:

- Built-up pension rights (> 1.200 billion)

- Built-up credit savings and life mortgages (≈ 80 mld)

- Cash money, durables, jewelry and antique

- Debts to mail order companies

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Growing wealth concentration in the Netherlands?

Private wealth distribution; share top percentile, 1894-2011
(Piketty's Dominant Class)
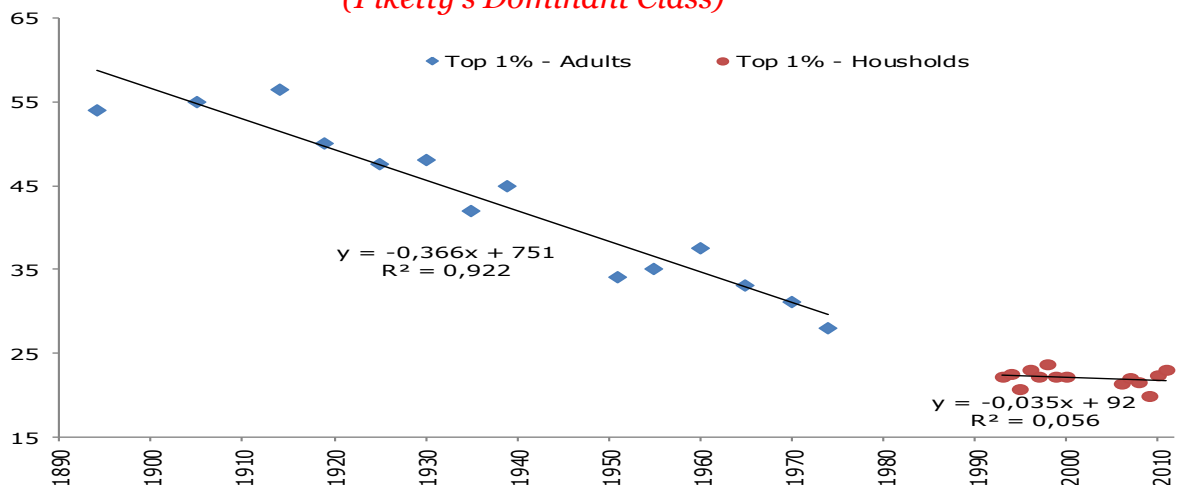
Discover the world at Leiden University   Source: Roine & Waldenström (2014); own calculations

Shares of private wealth per decile and Lorenz curve of private wealth, 2012
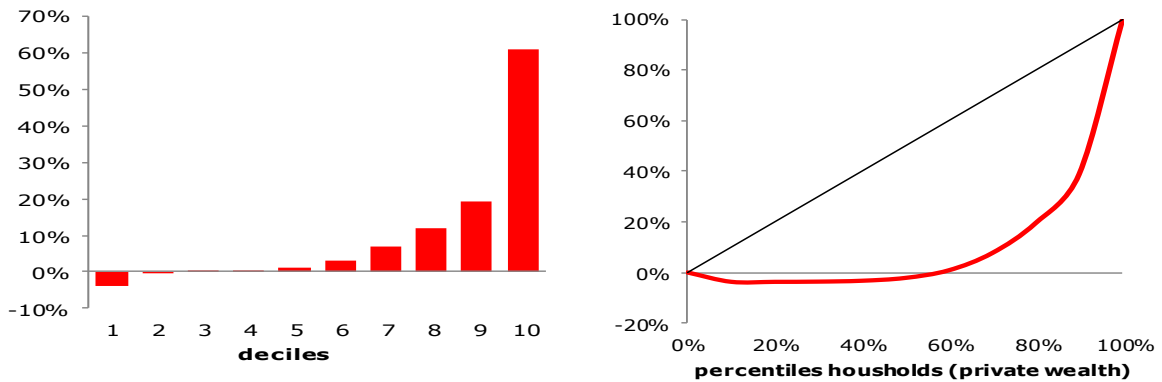
Source: Caminada, Goudswaard & Knoef (2015)

How unequal is private wealth distributed?

• Top 1% households: 23% of total private wealth

• Top 10% → 61%; mainly pensioners (36%) and self-employed (29%)

• Bottom 60% of all households holds a cumulated private wealth of € 0.

• Lowest decile private wealth: especially employees and civil servants (76%). Negative net wealth of housing.

Private wealth unequally distributed → Gini of private wealth = 0.80.

Effect of built-up pension rights

- Important for an international comparison

- Are pension savings comparable with private wealth → transfer, sell / salable and heritable?

- However: in both cases (delayed) consumption

Our approach: presentation of the distribution of wealth *with* and *without* pension savings

Concentration of Dutch Wealth

Wealth distribution in the Netherlands (with and without pension savings): 50/50

	Full distribution	Top		Bottom
	Gini coëfficiënt	Share top 1%	Share top 10%	Positive cumulative wealth from
Private wealth	0.80	25%	61%	60 percentile
Idem + pension savings	0.68	17%	50%	35 percentile

Built-up pension rights mitigate inequality. Dutch total wealth inequality is smaller compared to inequality of private wealth.

Dutch Lorenz curves of wealth distribution, *with* and *without* built-up pension rights
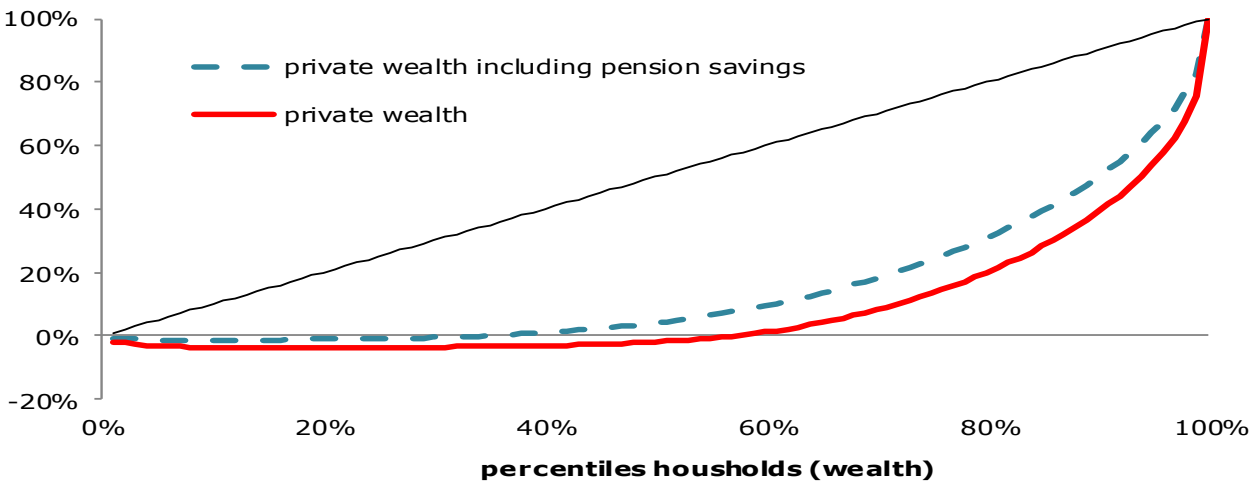
Source: Caminada, Goudswaard & Knoef (2015)

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Thesis Thomas Piketty and The Netherlands

TABLE 7.2 Inequality of capital ownership across time and space

Share of different groups in total capital	Low inequality (never observed: ideal society?)	Medium inequality (= Scandinavia, 1970s-1980s)	Medium-high inequality (= Europe 2010)	High inequality (= US 2010)	Very high inequality (= Europe 1910)	Netherlands Caminada et al (2014)	Idem, including pension savings
Top 10% "upper class"	30%	50%	60%	70%	90%	61%	50%
- top 1%	10%	20%	25%	35%	50%	25%	17%
- next 9%	20%	30%	35%	35%	40%	37%	33%
The middle 40%	45%	40%	35%	25%	5%	41%	46%
The bottom 50%	25%	10%	5%	5%	5%	-2%	4%
Corresponding Gini (synthetic inequality index)	0,33	0,58	0,67	0,73	0,85	0,74	0,63

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Piketty and The Netherlands

• Data Dutch distribution of private wealth in line with data Piketty for Continental Europe.

• However, pension savings blur the picture. Including pension saving → The Netherlands is a look-alike of Nordic Countries.

• Dutch Wealth Tax: 1.2% above 25,000 euro

Increasing capital income share and its effect on personal income inequality

What happens to equality if capital income rises?

Milanovic: Three kinds of societies

1. Socialist, where there is an equal per capita distribution of capital assets
2. Classical capitalist, where workers draw their entire income from labor and capitalists derive their entire income from capital
3. "New" capitalist, where every one receives income from both labor and capital

In the real (Dutch) world we are all new capitalists. Institutional setup matters to a large extent → pension 'capital' or 'wealth'

4 Distribution of (top) income

How strong are Piketty's trends?

Income shares top 1%

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

Share of top incomes increased in many countries, but not in the Netherlands

Pre and Post-Tax Top 1 Percent Shares for Selected Countries
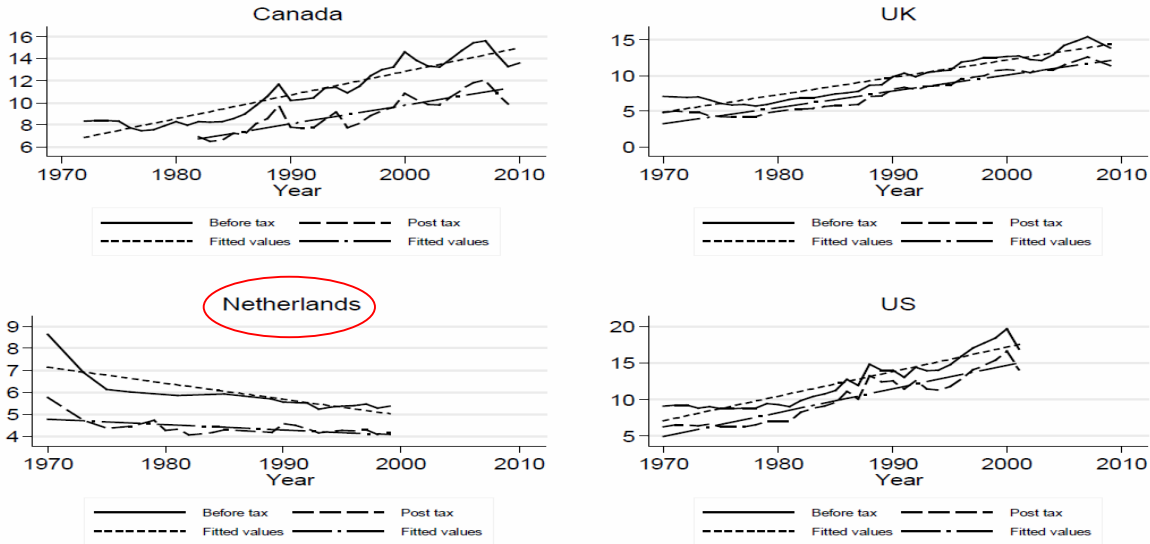
Source: Morelli, Smeeding & Thompson (2014: p. 97)

Dutch share top incomes 1990-2012

Top shares remarkable stable over time → no increasing income concentration

Source: Caminada, Goudswaard & Knoef (2015)

Dutch share of taxes of top incomes 1990-2012

Income shares top 1%

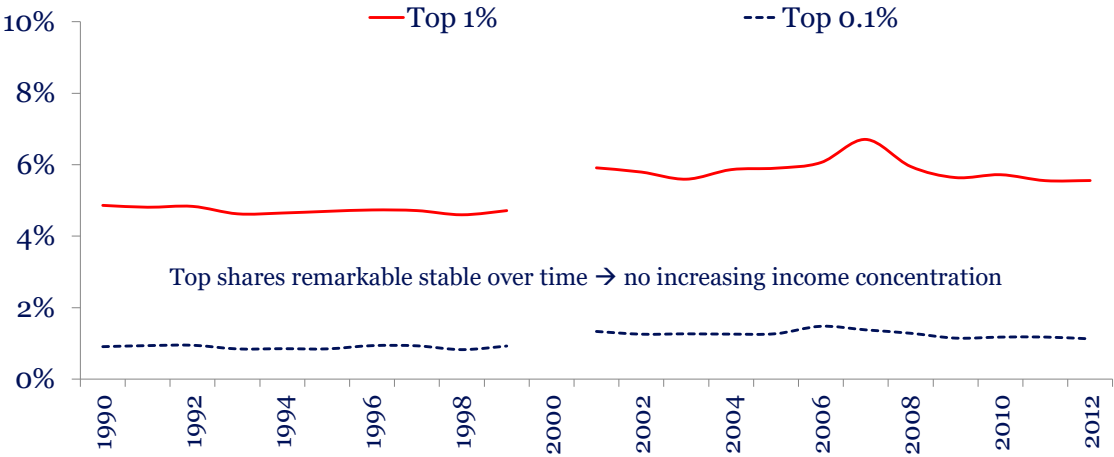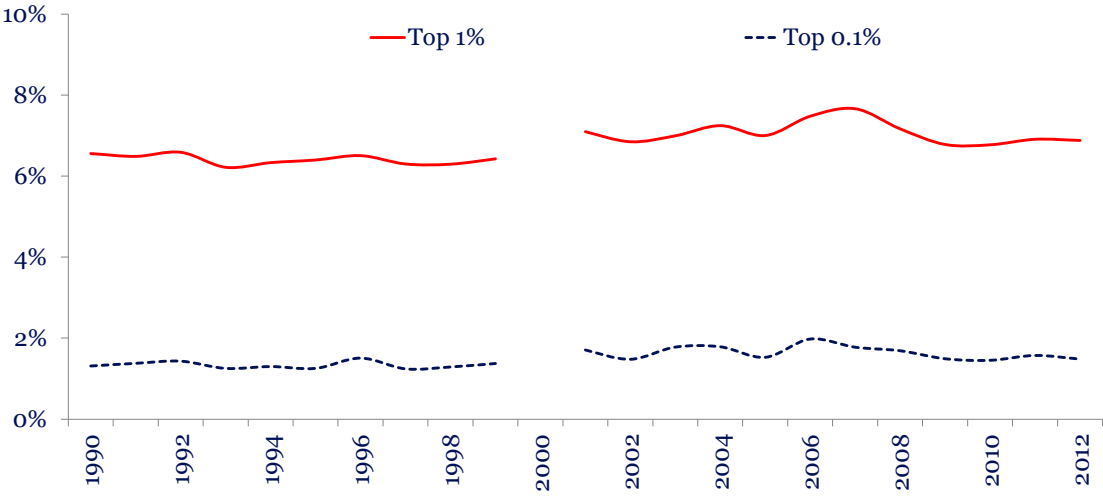| Country	Data availability	Levels			Change		1970-2010's
		1970	1990	2010's	1970-1990	1990-2010's	
Netherlands	1970-2012	8.6	5.6	6.3	-3.1	0.8	-2,3
Denmark	1970-2010	9.2	5.2	6.4	-4.0	1.2	-2,8
Sweden	1970-2012	6.2	4.4	7.1	-1.8	2.8	1,0
France	1970-2009	8.3	8.2	8.1	-0.1	-0.2	-0,3
New Zealand	1970-2011	6.6	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

Trend coefficients 1970-2012 from a simple OLS regression

Rank	Country	Data	# Obs.	Intercept	Coefficient	Adj R²
1	USA	1970-2012	43	-586.3** (0.000)	0.301** (0.000)	0.937
2	UK	1970-2011	40	-457.3** (0.000)	0.235** (0.000)	0.878
3	Australia	1970-2010	41	-245.6** (0.000)	0.127** (0.000)	0.765
4	Singapore	1970-2012	41	-191.7** (0.000)	0.102** (0.000)	0.553
5	New Zealand	1970-2011	42	-143.6** (0.000)	0.076** (0.000)	0.296
6	Japan	1970-2010	41	-98.9** (0.000)	0.054** (0.0000)	0.461
7	Sweden	1970-2012	43	-94.1** (0.000)	0.050** (0.000)	0.406
8	Switzerland	1971-2009	27	-59.8* (0.029)	0.035* (0.013)	0.192
9	France	1970-2009	40	-17.9 (0.226)	0.013 (0.082)	0.053
10	Netherlands	1970-2012	30	6.9 (0.7839)	0.000 (0.977)	-0.036
11	Denmark	1970-2010	40	80.5** (0.0013)	-0.038** (0.003)	0.194
	Mean 11	1970-2012	43	-175.2** (0.000)	0.092** (0.000)	0.753

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How strong are Piketty's trends?

- USA and UK: top income shares rose sharply → over 0.23 percent each year in the period 1970-2012

- AUS, Singapore and NZ: significant positive trend more concentration at the top (< 0.13)

- Jap, Swe and Suisse: modest rise top income share (0.05)

- France and the Netherlands: neglectable

- Denmark: significant decline top income share!

Mean 11 countries: significant positive trend at rate 0.09 percent per year → At this rate it will take over 980 years before total income will be earned by the top 1% earners!

Gimmick: it might be wrong to think about a worldwide increase in income concentration among the top 1%

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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
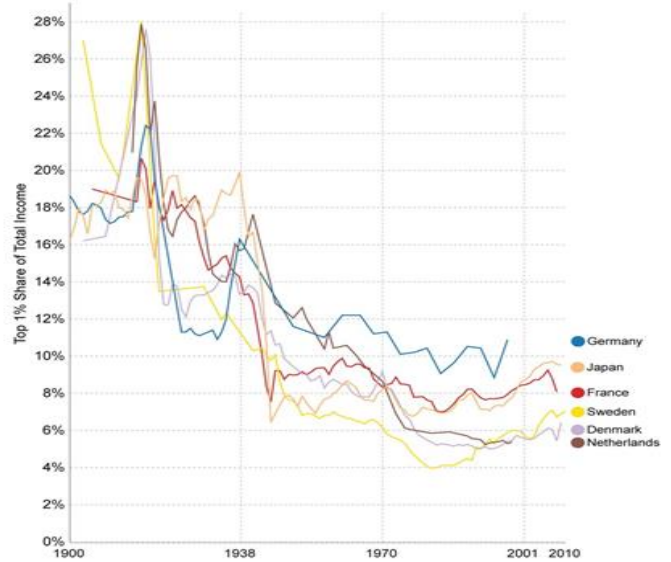
Data source: The World Top Incomes Database.
The interactive data visualisation is available at OurWorldinData.org. There you find the raw data and more visualisations on this topic.

Licensed under CC-BY-SA by the author Max Roser.

Rather stable Dutch income distribution, 1990-2014

Shares deciles equivalized disposable income

Deciles equivalized primary income, 2001-2014

Panel (a) Primair inkomen - totaal
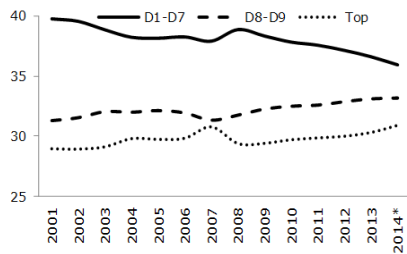
Panel (b) Primair inkomen uit arbeid

Panel (c) Primair inkomen uit onderneming
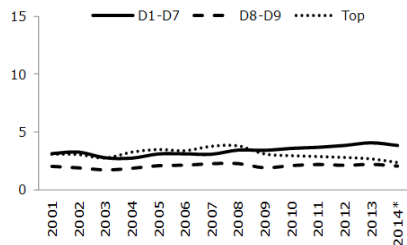
Panel (d) Primair inkomen uit vermogen
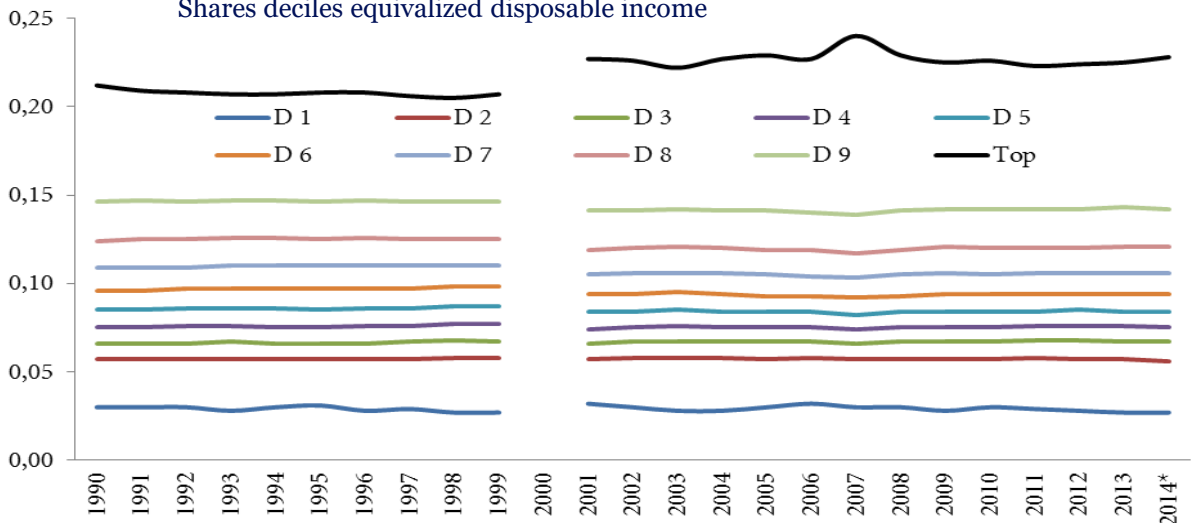
Primary income:
- Share deciles 1-7 lower
- Share deciles 8–10 higher

Cause:
- More unequal distribution of wages (panel b)
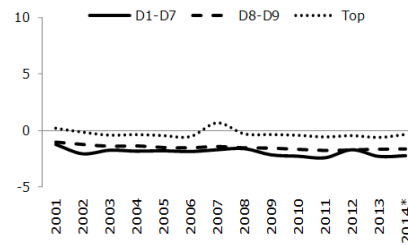
Hardly an effect of:
- Income from profits (panel c)
- Income from wealth (panel d)

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Source: Caminada, Goudswaard & Been (2017)

Empirics: Dutch income inequality and redistribution
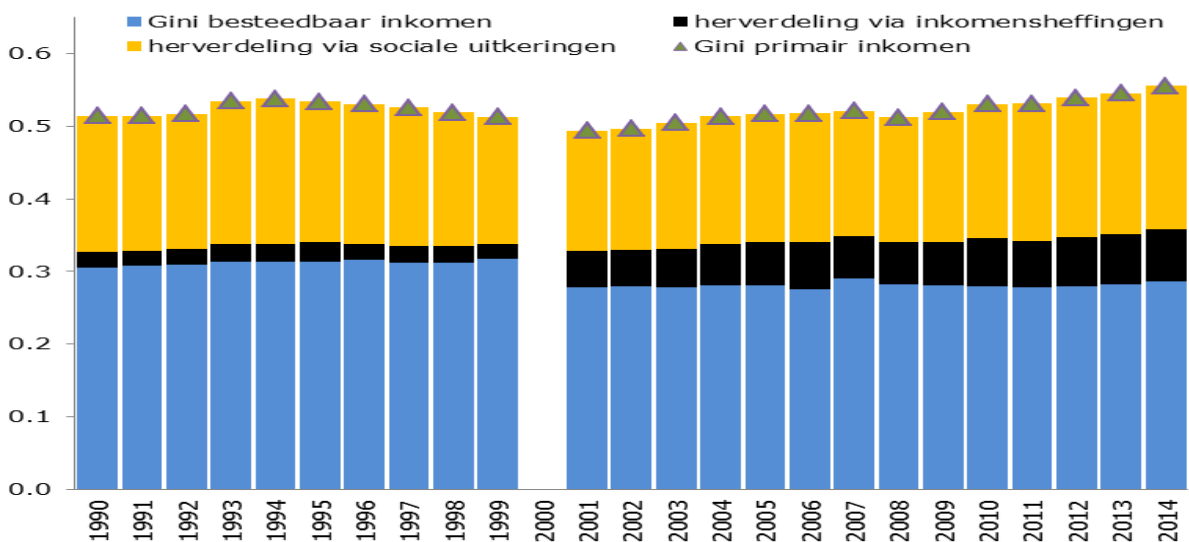
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Source: Caminada, Goudswaard & Been (2017)

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

	1990	2001	2014	Change 2001-2014
Gini primary income	0.514	0.494	0.556	0.062
reduction via social transfers	0.187	0.166	0.197	0.031
reduction via income taxes and social contributions	0.022	0.050	0.072	0.022
Gini disposable income	0.306	0.278	0.286	0.008
Redistribution T/B-system (Gini PI -/- Gini Dpi)	41%	44%	49%	5%-p
Shares (programs)				
Public old-age pensions	32%	29%	33%	
Supplementary pensions	20%	24%	25%	
Income taxes and social contributions	8%	17%	18%	
Welfare (safety net)	13%	7%	5%	

Discover the world at Leiden University   Source: Caminada, Goudswaard & Been (2017)

Redistribution of income via T/B-systems→ international

Income inequality before and after the Great Recession: 23-country-averages

|	Around 2007	Around 2013	Change
Gini primary income (a)	0.472	0.477	0.005
Gini disposable income (b)	0.329	0.326	-0.003
Fiscal redistribution (a-b)	0.144	0.151	0.007

- Gini dhi decreased slightly and fiscal redistribution rose since 2007
- OECD (2016) : the economic recovery has *not* reduced income inequality, because redistribution *decreased* recently.
- Both: fiscal redistribution dampened the increase in market income inequality.

Discover the world at Leiden University   Source: Caminada, Wang, Goudswaard & Wang (2017)

Gini's eq. Dpi before and after the Great Recession
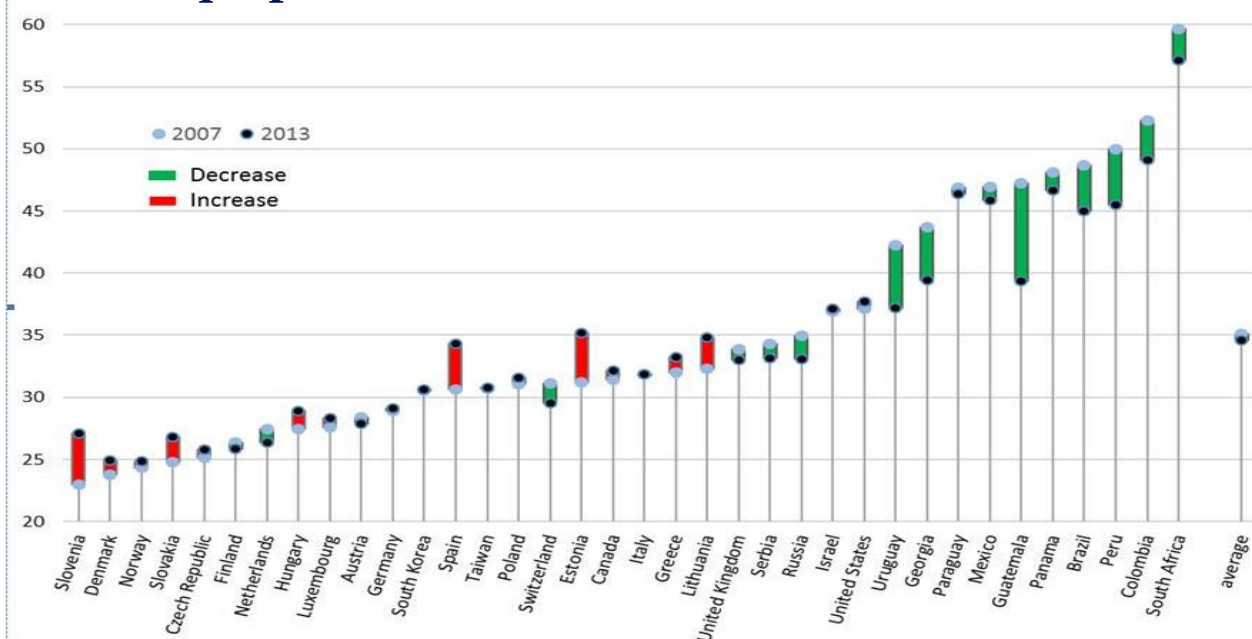
Do rising shares in top incomes affect income inequality as a whole?

Just for fun! → This blog fills a small gap in the literature.

Piketty (2014) and Atkinson (2007) claim: rise in top income shares main factor in increase overall income inequality over the decades in affluent counties.

However, by calculating overall income inequality (Gini's) top incomes are usually neglected → data do not allow for inclusion of very high top incomes.

Top-and-bottom coding

Linking trend top income shares and Gini's for 19 affluent countries, 1970-2012

Did most countries witnessed similar trends in rising top income shares and income inequality as a whole?

Has this rise in income inequality among the total population been driven over the decades by (or positively related to) the rise in shares in top incomes?

Data:

❑World Top Income Database assembled by Thomas Piketty, Tony Atkinson and others

❑Gini coefficient from OECD Income Distribution Database

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Trends top 1% income shares and Gini's

Graphs by Country
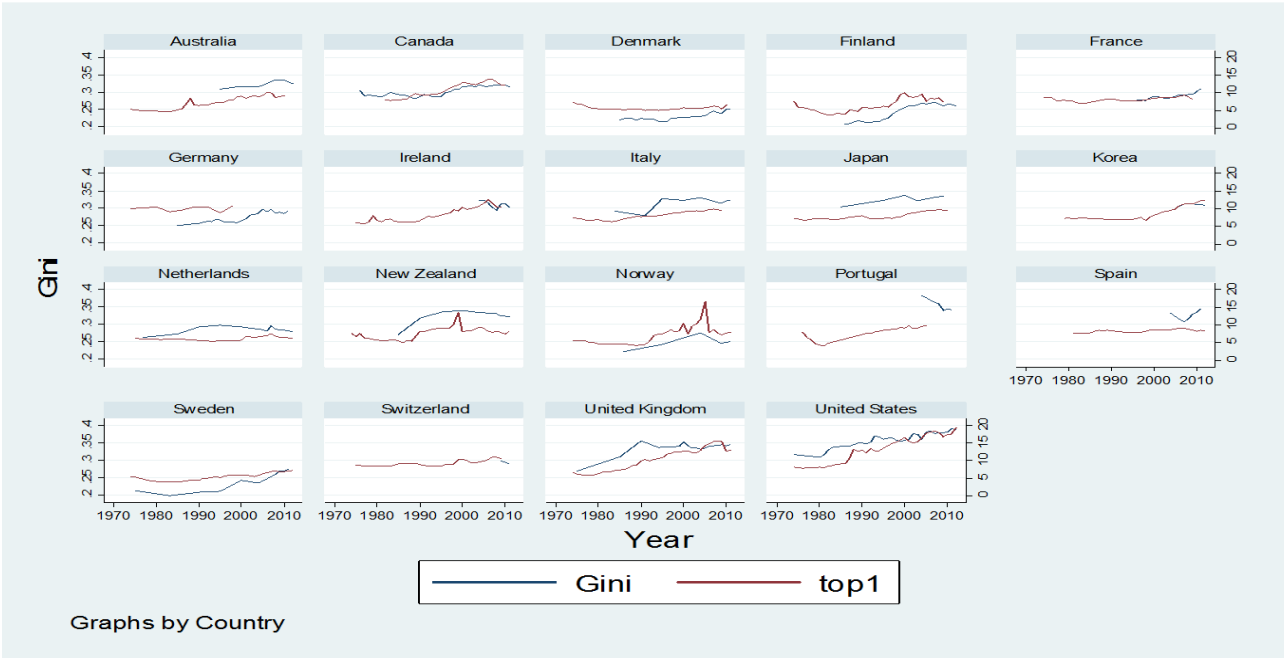
Correlation top income shares and Gini's
(all observations across countries and years are pooled together)
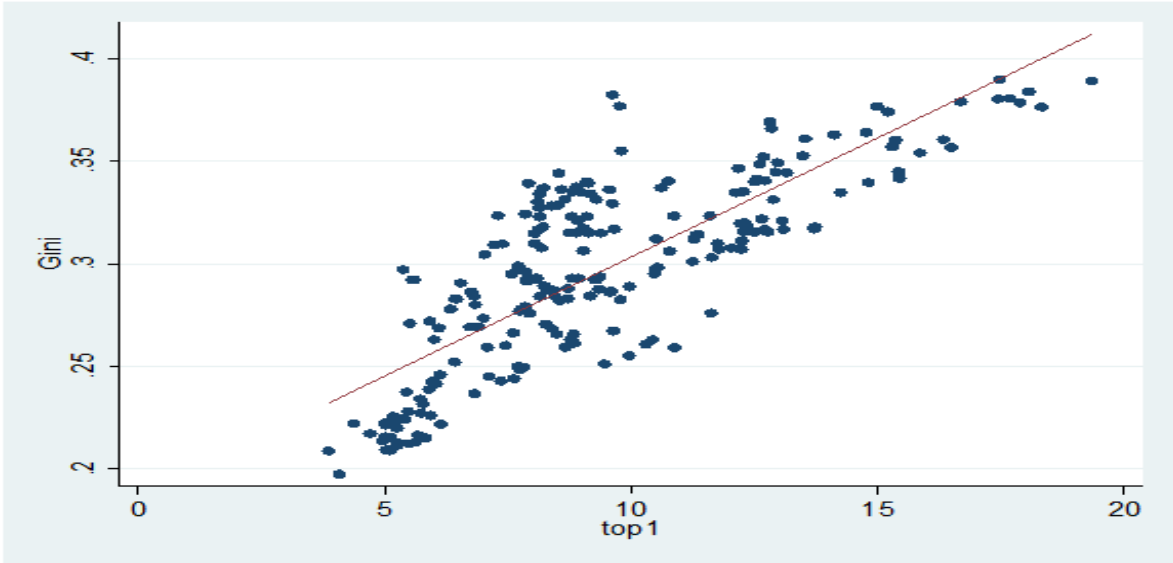
Simple ordinary least square estimation

Table 1 The relationship between top income shares (1% and 5%) and the Gini coefficient of total population from a simple OLS regression

	OLS Gini	OLS Gini	OLS Fixed effect Gini	OLS Fixed effect Gini
top1	0.012*** [0.000]		0.007*** [0.000]	
top5		0.008*** [0.000]		0.005*** [0.000]
Constant	0.188*** [0.000]	0.114*** [0.000]	0.232*** [0.000]	0.177*** [0.000]
No. of observations	223	217	223	217
Adjusted R-sq	0.658	0.711	0.549	0.572

Notes: OLS regression; p values in parentheses. ** Significant at 0.01 level; * significant at 0.05 level

Conclusion

❑Strong positive relationship between top income shares and income inequality.

❑Interestingly, overall income inequality is more sensitive to top 1 percent income shares, compared to top 5 percent income shares.

❑However, this positive relationship represents an average or general pattern →

❑Exceptions such as Denmark and the Netherlands where the rise in top income shares did not lead to higher income inequality among the whole population.

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Disposable and primary income inequality across LIS countries around 2011-2013
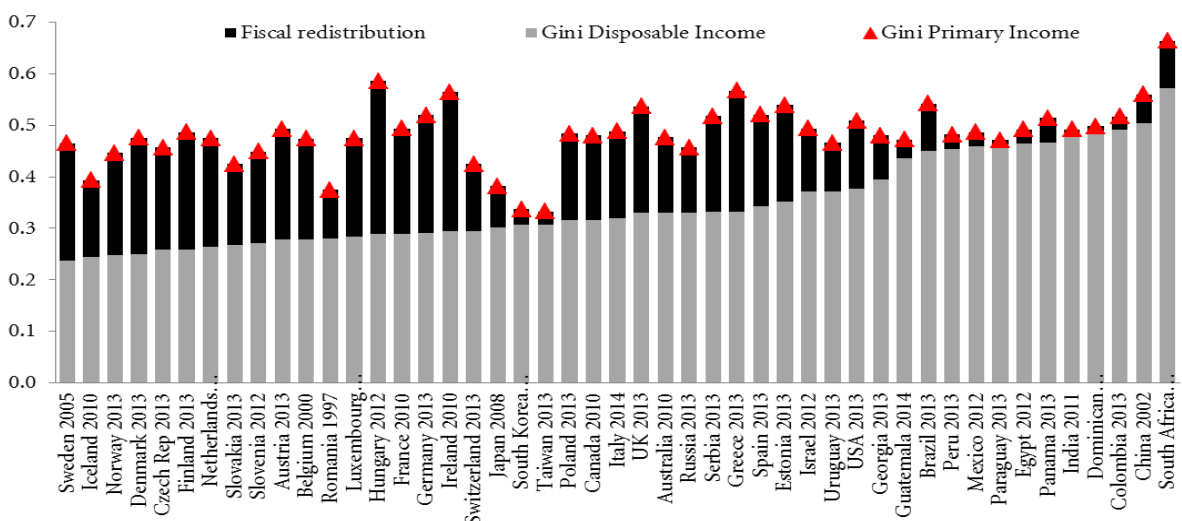
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Fiscal redistribution across LIS countries around 2011-2013
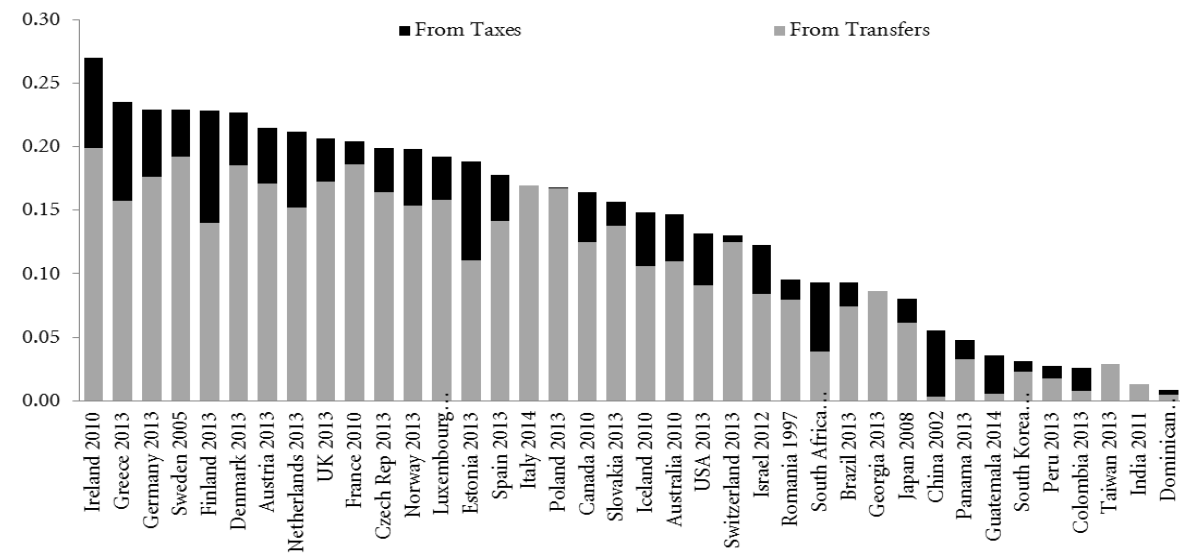
Relative redistributive effect of taxes and transfers across countries around 2011-2013

Further decomposition fiscal redistribution

+/+ Transfers

- Old-age/disability/survivor transfers
- Sickness transfers
- Family/children transfers
- Education transfers
- Unemployment transfers
- Housing transfers
- General/food/medical assistance transfers
- Other transfers

$$G = 2 \int_0^1 \left[x - L(x) \right] \, dx$$

-/-Taxes

- Income taxes and social security contributions

Database:

- 47 countries
- 9 waves: 1967-2014
- 293 datasets

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Disentangling approach

Sequential accounting decomposition

- The total redistributive effect can be disentangled in several partial effects:

$$\mathbf{L}_{Bk} = G_{pri} - G_{pri+B_k} \qquad \mathbf{L}_{Tl} = G_{pri+B} - G_{pri+B-T_l}$$

- L_{Bk}: partial redistributive effect of transfer B_k
- L_{Tl}: partial redistributive effect of tax T_l.
- Transfers are by far the most important contributors to income inequality reduction (across time and space).

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Partial effects of social programs in reducing income inequality (Gini's)

Order: A partial redistributive effect of a specific social transfer is highest (smallest) when added as the first (last) social program to pre-transfer-pre-tax income distribution.

We first consider every specific social transfer as the first program to be added to primary income and then the last program following all other transfer programs. Consequently, we can get two Ginis: $Gini_{pri+Bk}$ $Gini_{gross-Bk}$. The redistributive effect of specific transfer programs can be presentedas:

$$LG_{BK} = ((Gini_{pri} - Gini_{pri+Bk}) + (Gini_{gross-Bk} - Gini_{gross}))/2$$

Residual is rather small in most cases (<1 or 2%)

Decomposition fiscal redistribution around 2013 (country-average-26)

	Gini	Share
(a) Gini primary income	0.496	
(b) Gini disposable income	0.331	
Overall redistribution (a-b)	0.165 (=33%)	100%
Transfers	*0.128*	*78%*
Old-age/Disability/Survivor transfers	0.089	54%
Sickness transfers	0.002	1%
Family/Children transfers	0.013	8%
Education transfers	0.002	1%
Unemployment transfers	0.010	6%
Housing transfers	0.004	3%
General/food/medical assistance transfers	0.005	3%
Other transfers	0.003	2%
Income taxes and social security contributions	0.038	23%
Residual	-0.001	-1%

Decomposition of disposable income inequality for 8 countries 1985-2013: averages by periods

	Gini 1985	Gini 1995	Gini 2013	Change 1985-2013
(a) Gini primary income	0.447	0.460	0.485	0.039
(b) Gini disposable income	0.289	0.286	0.310	0.021
Overall redistribution (a-b)	0.158	0.174	0.176	0.018
Transfers	*75%*	*78%*	*78%*	*3%*
Old-age/Disability/Survivor transfers	47%	52%	56%	9%
Sickness transfers	1%	1%	0%	-1%
Family/Children transfers	7%	8%	7%	0%
Education transfers	6%	2%	1%	-5%
Unemployment transfers	5%	7%	6%	1%
Housing transfers	1%	3%	2%	2%
General/food/medical assistance transfers	2%	3%	3%	0%
Other transfers	7%	3%	2%	-5%
Income taxes and social security contributions	25%	22%	24%	-1%
Residual	0%	0%	-2%	-2%

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5 Levels and trends in poverty rates

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Disposable and primary income poverty rates (PL60) across LIS countries (most recent data year)
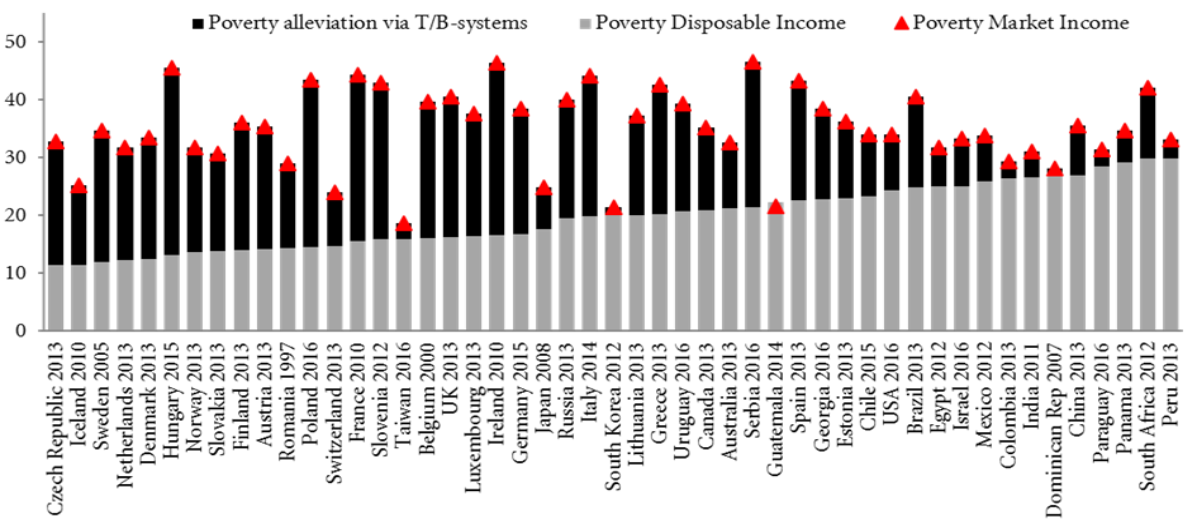
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Poverty alleviation across LIS countries (most recent data year)
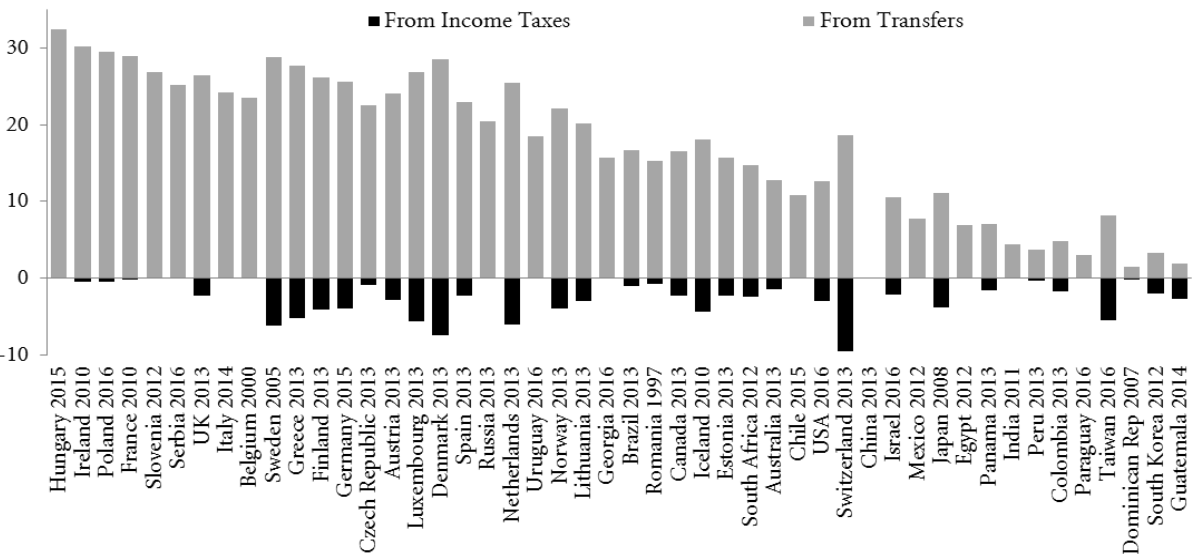
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And the winner is …?

Indicator of Public Policy Effectiveness on Poverty Alleviation: poverty reduction per percentage point social spending of gross income
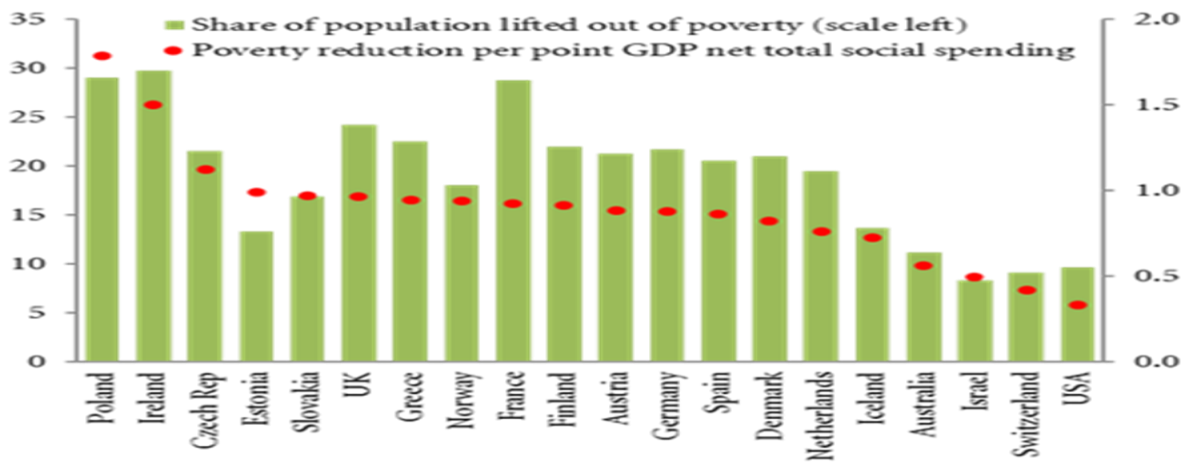
■ Share of population lifted out of poverty (scale left)
● Poverty reduction per point GDP net total social spending

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Poverty alleviation via T/B-systems and social spending across 21 LIS/OECD-countries around 2013

■ Share of population lifted out of poverty (scale left)
● Poverty reduction per point GDP net total social spending

■ Share of WA-population lifted out of poverty (scale left)
● Poverty reduction per point GDP gross public social spending to WA-population
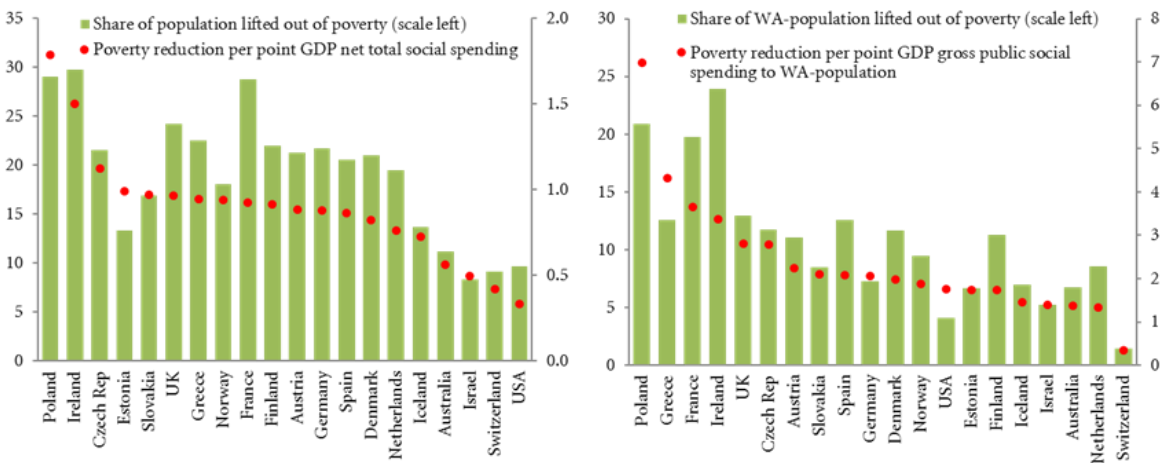
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Poverty alleviation via T/B-systems and social spending across 21 LIS/OECD-countries around 2013

Disposable income poverty (PL60) across 49 LIS countries among different age groups (most recent data year)
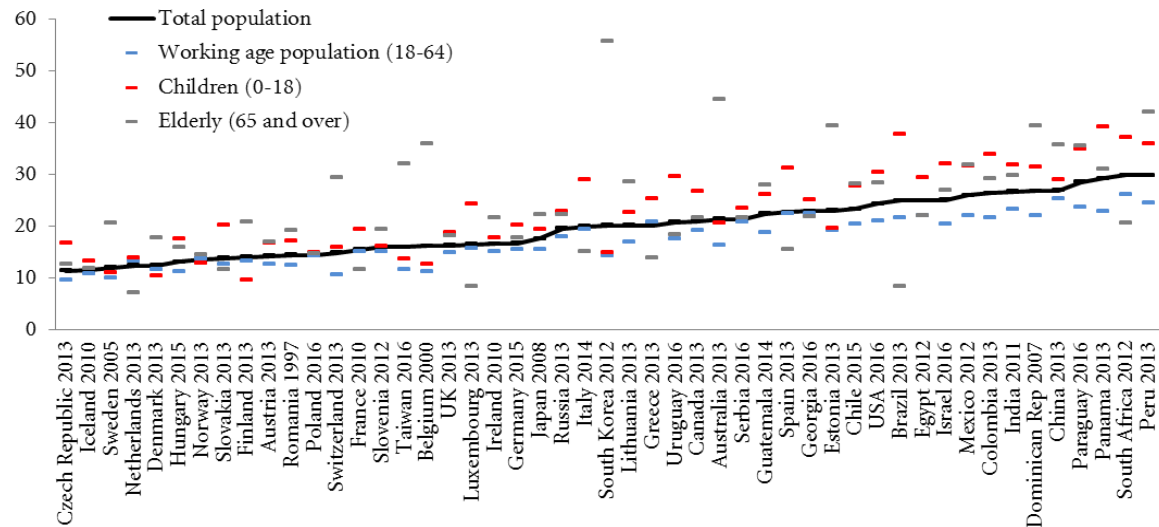
Higher relative poverty rates (PL60) of disposable income among females across 49 LIS countries (most recent data year)

Poverty rate females minus poverty rate males
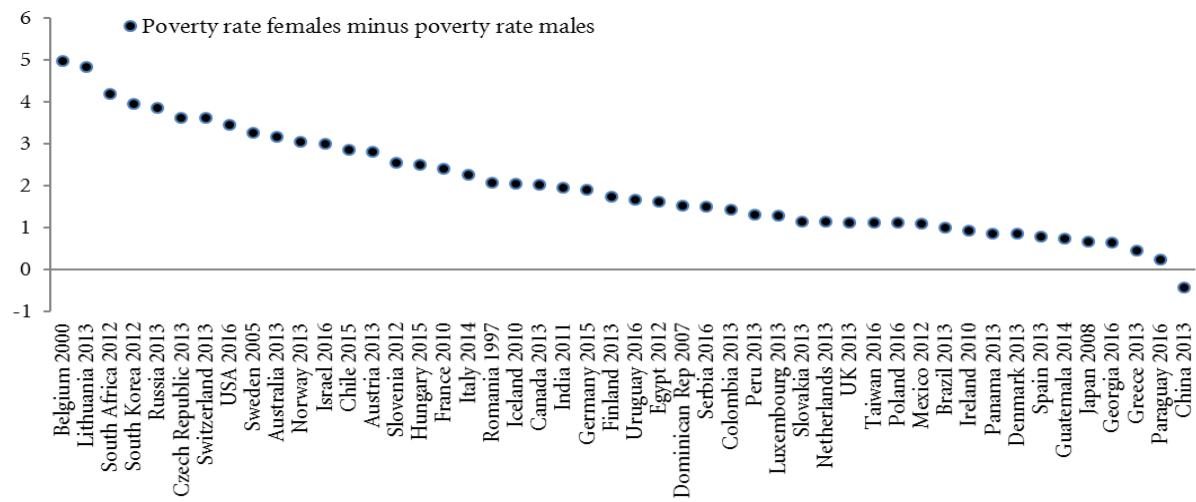
Trend poverty alleviation among working-age and total population in 15 countries

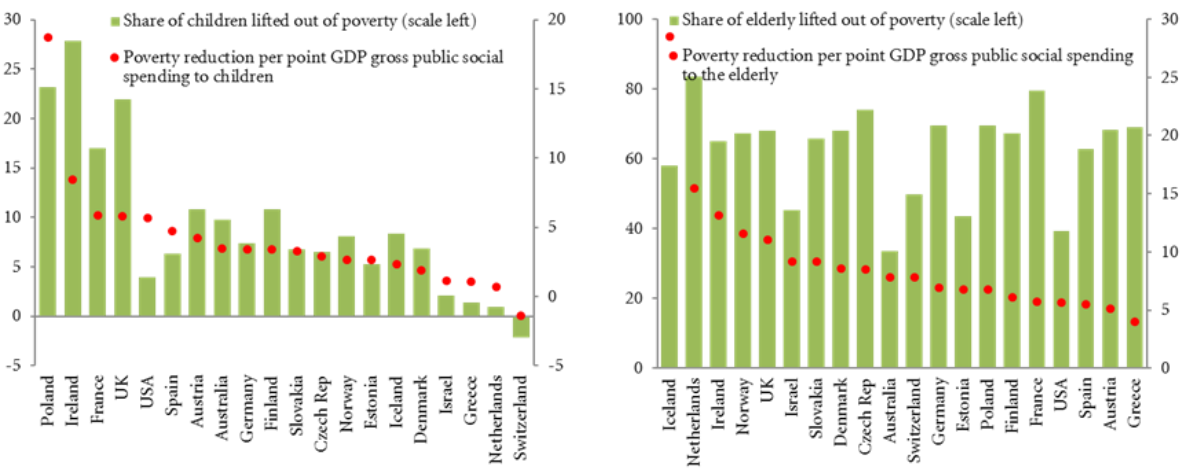|	Total population			Working-age population		
	Poverty Pri	Poverty Dhi	Reduction	Poverty Pri	Poverty Dhi	Reduction
Around 1985	28.5	15.7	12.7	20.7	12.7	8.0
Around 2013	34.3	16.8	17.5	24.3	14.8	9.6
Change 1985-2013	5.8	1.0	4.8	3.6	2.0	1.6
	Share rise poverty offset by Fiscal Red			*Share rise poverty offset by Fiscal Red*		
1985-2013	82%			44%		

Tax-benefit systems *increasingly effective at reducing income poverty over time*. Share of the rise in primary income poverty *offset* by fiscal redistribution *rather high.*

Poverty of primary income and disposable income (PL60) and poverty alleviation, before and after the Great Recession (mean 23 countries)

	Total population			Working-age population			Children			Elderly		
	Pov Pri	Pov Dhi	Allevia tion	Pov Pri	Pov Dhi	Allevia tion	Pov Pri	Pov Dhi	Allevia tion	Pov Pri	Pov Dhi	Allevia tion
Around 2007	32.0	19.1	12.9	23.2	15.7	7.5	27.0	22.2	4.8	75.5	26.8	48.7
Around 2013	33.7	18.8	14.9	24.4	16.4	8.0	27.9	22.1	5.8	74.9	22.1	52.8
Change	1.6	-0.4	2.0	1.2	0.7	0.5	0.9	-0.2	1.1	-0.6	-4.7	4.1
- from social transfers			1.8			0.5			0.9			3.1
- from income taxes			0.2			0.0			0.2			0.9

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Further decomposition poverty alleviation

+/+ Transfers

- Old-age/disability/survivor transfers
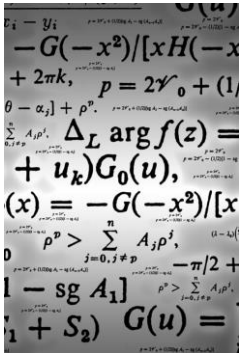- Sickness transfers
- Family/children transfers
- Education transfers
- Unemployment transfers
- Housing transfers
- General/food/medical assistance transfers
- Other transfers

$$G = 2\int_0^1 \left[x - L(x) \right] dx$$

-/-Taxes

- Income taxes and social security contributions

Database:
- 49 countries
- 10 waves: 1967-2016
- 339 datasets

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Disentangling approach

Sequential accounting decomposition
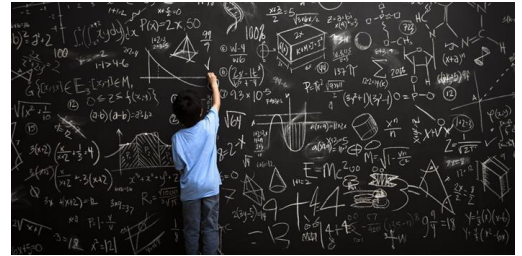
- Total poverty alleviation can be disentangled in several partial effects:

$$\mathbf{L}_{Bk} = pov_{pri} - pov_{pri+B_k} \qquad \mathbf{L}_{Tl} = pov_{pri+B} - pov_{pri+B-T_l}$$

- L_{Bk}: partial redistributive effect of transfer B_k
- L_{Tl}: partial redistributive effect of tax T_l.
- Transfers are by far the most important contributors to income poverty reduction (across time and space).

Partial effects of social programs in reducing income poverty rates

Order: It should be noted that the results to be obtained will be affected by the ordering effect. For example, the partial redistributive effect of a specific social transfer will not be the same when computed as the first (last) social program.

We first consider every specific social transfer as the first program to be added to primary income and then the last program following all other transfer programs. Consequently, we can get two poverty rates. The redistributive effect of specific transfer programs can be presented as:

$$LG_{BK} = ((Pov_{pri} - Pov_{pri+Bk}) + (Pov_{gross\text{-}Bk} - Pov_{gross}))/2$$

Residual is rather small in most cases (<2%)

Decomposition fiscal redistribution around 2013 (country-average-26)

	Poverty (PL60)	Share
(a) Poverty primary income	35.7	
(b) Poverty disposable income	18.8	
Overall poverty alleviation (a-b)	16.9 (=47%)	100%
Transfers	19.8	117%
Old-age/Disability/Survivor transfers	13.6	81%
Sickness transfers	0.3	2%
Family/Children transfers	2.4	14%
Education transfers	0.3	2%
Unemployment transfers	1.4	9%
Housing transfers	0.6	3%
General/food/medical assistance transfers	0.7	4%
Other transfers	0.5	3%
Income taxes and social security contributions	-2.9	-17%
Residual	0.0	0%

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Decomposition of poverty and poverty alleviation of social transfers and income taxes (around 2013)

LIS Dataset	Gross / net	Poverty rates (PL60)				Redistribution		Absolute Fiscal Redistribution via Programs										
		Primary income (a)	Gross income (b)	Gross income (b)	Disposable income (c)	Absolute (a-c)	Relative (a-c)/a*100	Old-age/ Disability/ Survivor	Sickness	Family/ Children	Education	Unemployment	Housing	General/food/ medical assistance	Other transfers	Income taxes	Residual
panel a: LIS English speaking countries																	
Australia 2016	Gross	32,5	19,8		21,3	11,2	34%	6,9	0,0	4,1	0,2	0,7	0,4	0,0	0,3	-1,5	0,1
Ireland 2010	Gross	46,4	16,1		16,6	29,8	64%	11,9	1,0	6,5	0,3	7,5	1,5	0,4	0,8	-0,4	0,4
United Kingdom 2013	Gross	40,5	14,0		16,3	24,2	60%	14,8	0,0	5,5	0,1	0,4	3,1	1,6	1,3	-2,3	-0,4
United States 2016	Gross	33,9	21,3		24,3	9,7	28%	9,6	0,1	1,8	0,4	0,2	0,1	0,6	-0,3	-3,0	0,0
panel b: LIS Continental European countries																	
Austria 2013	Gross	35,4	11,4		14,2	21,2	60%	18,6	0,4	2,7	0,2	2,0	0,2	0,3	0,0	-2,8	-0,2
France 2010	Mix	44,3	15,3		15,5	28,8	65%	20,4		3,6	0,0	2,6	1,8		0,6	-0,2	0,0
Germany 2015	Gross	38,4	12,7		16,7	21,7	57%	20,7		2,2	0,2	2,1	0,2	0,2	0,0	-4,0	0,0
Luxembourg 2013	Gross	37,6	10,7		16,4	21,1	56%	17,8	0,1	5,8	0,2	1,5	0,2	0,6	0,4	-5,7	0,3
Switzerland 2013	Gross	23,9	5,3		14,8	9,1	38%	15,0	0,0	1,0		0,8	0,1		1,8	-9,5	0,0
panel c: LIS Nordic countries																	
Denmark 2013	Gross	33,4	4,9		12,4	21,0	63%	20,7		0,9	1,6	1,3	0,6	2,6	0,7	-7,5	0,2
Finland 2013	Gross	36,0	9,9		14,0	22,0	61%	17,8	0,0	2,0	0,7	3,0	1,2	0,5	1,0	-4,1	0,0
Iceland 2010	Gross	25,2	7,1		11,5	13,7	54%	12,2	0,1	2,1	0,0	2,1	1,4	0,1	0,0	-4,4	0,1
Netherlands 2013	Gross	31,8	6,3		12,4	19,5	61%	19,0	0,4	1,0	0,5	1,7	1,2	1,7	0,7	-6,1	-0,7
Norway 2013	Gross	31,7	9,6		13,6	18,1	57%	17,1	1,3	1,6	0,3	0,6	0,2	0,3	0,6	-4,0	-0,1
panel d: LIS Southern European countries																	
Greece 2013	Gross	42,7	14,9		20,1	22,5	53%	25,5	0,0	1,2	0,0	0,7	0,0		0,3	-5,2	0,1
Spain 2013	Gross	43,3	20,3		22,7	20,6	48%	17,1	0,3	0,2	0,2	4,7	0,0		0,3	-2,4	0,0

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Decomposition of poverty and poverty alleviation of social transfers and income taxes (around 2013)

| LIS Dataset	Gross / net	Poverty rates (PL60)			Redistribution		Absolute Fiscal Redistribution via Programs									
		Primary income (a)	Gross income (b)	Disposable income (c)	Absolute (a-c)	Relative (a-c)/a*100	Old-age/ Disability/ Survivor	Sickness	Family/ Children	Education	Unemployment	Housing	General/food/ medical assistance	Other transfers	Income taxes	Residual
panel e: LIS Central Eastern European countries																
Czech Republic 2013	Gross	32,9	10,4	11,3	21,5	65%	19,6		1,4		0,3	0,3	0,2	0,8	-1,0	-0,1
Lithuania 2013	Gross	37,3	17,1	20,1	17,2	46%	16,0	0,3	1,8	0,1	0,8	0,0		1,2	-3,0	-0,1
Estonia 2013	Gross	36,3	20,6	23,0	13,3	37%	13,1	0,2	1,6	0,1	0,5		0,0	0,0	-2,4	0,1
Poland 2016	Mix	43,5	14,0	14,5	29,0	67%	21,5		6,1	0,1	0,3	0,1	0,8	0,6	-0,5	0,1
Slovakia 2013	Gross	30,7	11,5	13,8	16,9	55%	15,8	0,2	2,3	0,0	0,2			0,7	-2,3	0,1
panel f: LIS BRICS																
Brazil 2013	Gross	40,5	23,8	24,9	15,6	39%	13,9				0,7		1,6	0,5	-1,1	0,0
South Africa 2012	Gross	42,1	27,4	29,8	12,3	29%	8,1		6,4					0,2	-2,5	0,0
panel g: Latin America																
Guatemala 2014	Gross	21,5	19,6	22,3	-0,8	-4%	0,6			0,0			0,6	0,6	-2,7	0,0
Panama 2013	Gross	34,6	27,6	29,2	5,4	16%	4,3		0,3	1,9		0,0	0,5	0,0	-1,6	0,0
Peru 2013	Gross	33,2	29,5	29,9	3,3	10%	1,8		0,3	0,1		0,0	1,3	0,0	-0,4	0,0
panel g: LIS others																
Israel 2016	Gross	33,4	22,8	25,0	8,4	25%	8,2		0,8		0,3		0,2	1,1	-2,2	0,0
Mean (rescaling)		35,7	15,7	18,8	16,9	47%	13,6	0,3	2,4	0,3	1,4	0,6	0,7	0,5	-2,9	0,0

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Decomposition of disposable income poverty (PL60) for 8 countries 1985-2013 (averages by periods)

	Poverty 1985	Poverty 1995	Poverty 2013	Change 1985-2013
(a) Poverty primary income	29.1	31.9	34.2	5.1
(b) Poverty disposable income	16.1	15.7	17.5	1.4
Overall poverty alleviation (a-b)	13.1 **(45%)**	16.1	16.7 **(51%)**	3.6
Transfers	15.6	19.5	20.4	4.8
Old-age/Disability/Survivor transfers	9.9	13.0	14.3	4.3
Sickness transfers	0.2	0.3	0.1	-0.1
Family/Children transfers	1.9	2.3	2.4	0.5
Education transfers	0.6	0.4	0.3	-0.3
Unemployment transfers	1.0	1.7	1.5	0.5
Housing transfers	0.1	0.7	0.6	0.5
General/food/medical assistance transfers	0.2	0.4	0.5	0.3
Other transfers	1.6	0.6	0.7	-0.9
Income taxes and social security contributions	-2.6	-3.4	-3.6	-1.0
Residual	0.1	0.1	-0.1	-0.2

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Decomposition of anti-poverty effect T/B-systems for 8 countries around 1985 and around 2013
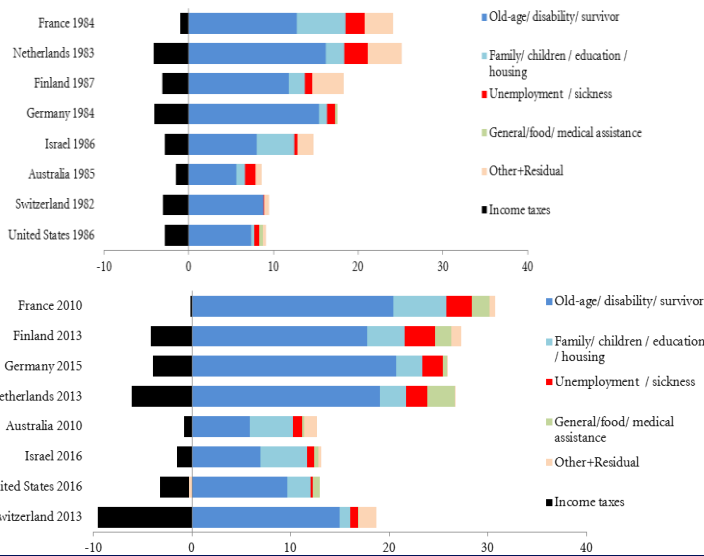
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6 Heterogeneity income tax ratios

Causes, dimensions and development

of tax discrimination

in the Netherlands

## Outline

Intended tax policy - looking ahead. Today: looking back

Assessment framework for income tax policy
   a) Distribution of income tax ratios in the Netherlands
   b) Perspective income (re) distribution
   c) Results 1990-2014

Tax policy: results since 2001

Tax legislator discriminates ... Increasingly - empirics

Final: from the 50th percentile onwards a 'marginal tax rate'
         ≥ 100% since 2001
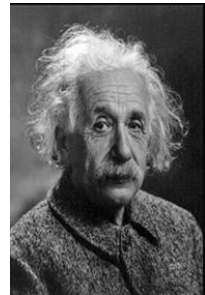
"The hardest thing to understand in the world is the income tax."

Albert Einstein

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Assessment Dutch tax policy since 2001

Main goals

✓ Incentives: promoting labor participation and economic growth (CPB, 2018)

✓ Income tax policy: stable income distribution (Caminada et al, 2017)

How? Via instrumentalism - fiscal discrimination ...

• Tax regulation: in many places deviation from *ability to pay*

• Contradistinction between en within social groups:
  tenants vs. owners, self-employed vs. employees, single
  earners vs. dual earners, households with vs. without (young)
  children, wealthy vs. non-wealty.

• Tax policy had to adjust annually (increasingly) to present
  "balanced" income effects of public policy.

"It's a simple recipe. Add politics to economics, you get tax law."

Discover the world at Leiden University   Bron: Caminada & Stevens (2017a)

Nomenclature

Disposable income =

Market income from labor, business and wealth

+/+ social benefits

-/- income taxes, social contributions

- Gross income = market income +/+ social benefits

- Disposable income = gross income -/- income taxes, social contributions

Tax ratio $= \frac{Gross\ income\ -disposable\ income}{Gross\ income} * 100$

Equivalence scales: correction for size and composition of households

Statistics Netherlands
- Administrative data
- Integral – micro data
- International conventions
- Top quality

Very Good

Fiscal redistribution *machine* was running at full speed to maintain existing income distribution.

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Result: stable income distribution, 1990-2014

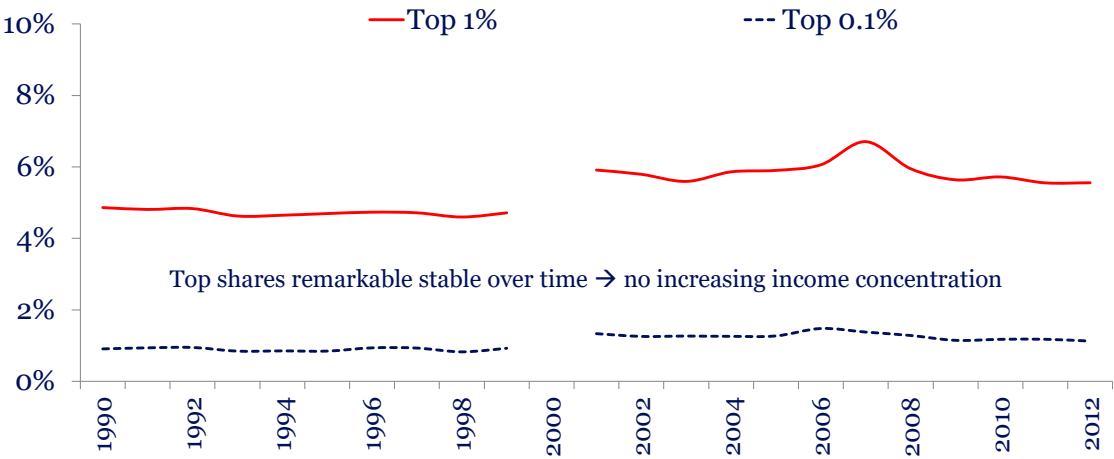Shares income deciles equivalized disposable income

Idem, top shares (1% of 0,1%) remarkably stable: no trend income concentration

Legend: D 1, D 2, D 3, D 4, D 5, D 6, D 7, D 8, D 9, Top
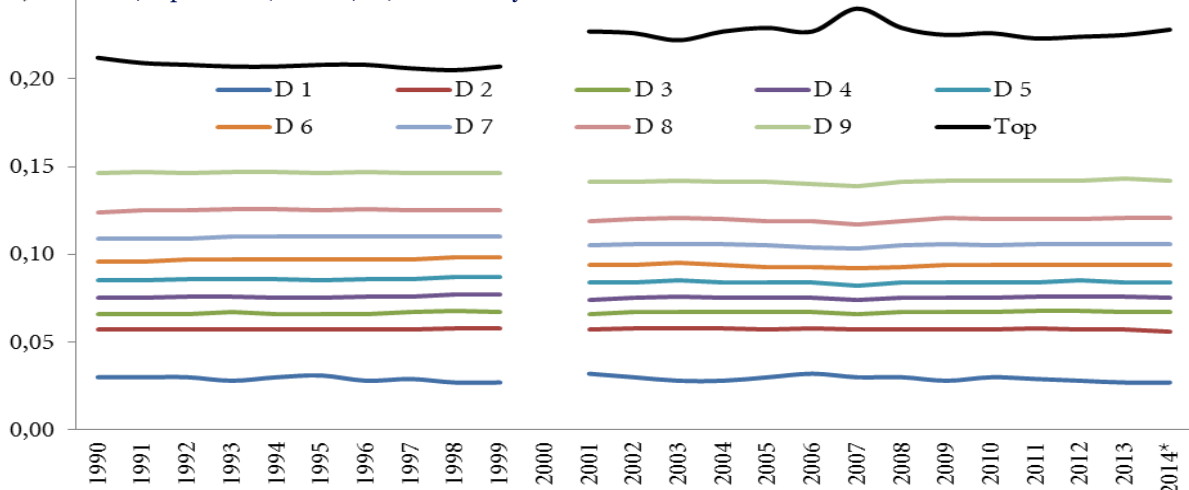
Discover the world at Leiden University   Source: Caminada, Goudswaard & Been (2017)

Share Dutch top incomes 1990-2012

Top shares remarkable stable over time → no increasing income concentration

Source: Caminada, Goudswaard & Knoef (2015)

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Rather stable Dutch distribution Dhi 1990-2014, while increasing redistribution via T/B-system→ decomposition

	1990	2001	2014	Change 2001-2014
Gini primary income	0.51	0.49	0.56	0.06
reduction via social transfers	0.19	0.17	0.20	0.03
reduction via income taxes and social contributions	0.02	0.05	0.07	0.02
Gini disposable income	0.31	0.28	0.29	0.01
Redistribution T/B-system (Gini PI -/- Gini Dpi)	41%	44%	49%	5%-p
Shares (programs)				
Public old-age pensions	32%	29%	33%	
Supplementary pensions	20%	24%	25%	
Income taxes and social contributions	8%	17%	18%	
Welfare (safety net)	13%	7%	5%	

Discover the world at Leiden University   Source: Caminada, Goudswaard & Been (2017)

Dutch phenomena?

	Total population			Working-age population		
	Gini MI	Gini Dhi	Fiscal Red	Gini MI	Gini Dhi	Fiscal Red
Around 1985	0.431	0.280	0.152	0.384	0.275	0.109
Around 2012	0.479	0.297	0.182	0.417	0.296	0.121
Change 1985-2012	0.048	0.018	+0.030	0.033	0.021	+0.012
	Share rise inequality offset by Fiscal Redistribution			*Share rise inequality offset by Fiscal Redistribution*		
1985-2012	63%			37%		

- Sizeable increase market income inequality in most LIS countries over the last 25 years.

- Fiscal redistribution via T/B-system increased too.

Study / database Caminada & Wang (2017)
- 47 LIS countries, 1967-2014 (N*T = 291 micro data sets)
- Above: 15 countries, 1983-2014

Vast literature on redistribution of income by T/B-systems in a comparative setting via budget incidence analyses

Did T/B- systems became less effective in redistribution since mid-1990s?

Claim OECD: *reduced* redistribution is a main driver of widening income gaps *must be toned down*.

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Key figures Dutch income (re)distribution and tax policy 2001-2014

|	2001	2005	2010	2014	Change 2001-2014
Income inequality					
Gini gross equivalent income	0.33	0.34	0.35	0.36	0.03
-/- redistribution via income taxes + ssc	0.05	0.06	0.07	0.07	0.02
Gini equivalent disposable income	0.28	0.28	0.28	0.29	0.01
Redistribution, %	15%	18%	19%	20%	5%-p
Income taxes + social security contributions					
Taxes, total as % gross income	38.8%	41.0%	40.8%	41.3%	2.5%-p
- Social security contributions	20.0%			18.5%	-1.5%-p
- Contributions health care	9.1%			11.7%	2.6%-p
- Income taxes + taxes on wealth	9.5%			11.0%	1.4%-p
Mean (real) disposable household income	€35,000	€34,400	€36,000	€35,000	€0

Discover the world at Leiden University   Source: Caminada & Stevens (2017)

Heterogeneity tax ratios (1) - open to debate

Level 2001 and 2014

Change 2001-2014

Discover the world at Leiden University   Source: Caminada & Stevens (2017)
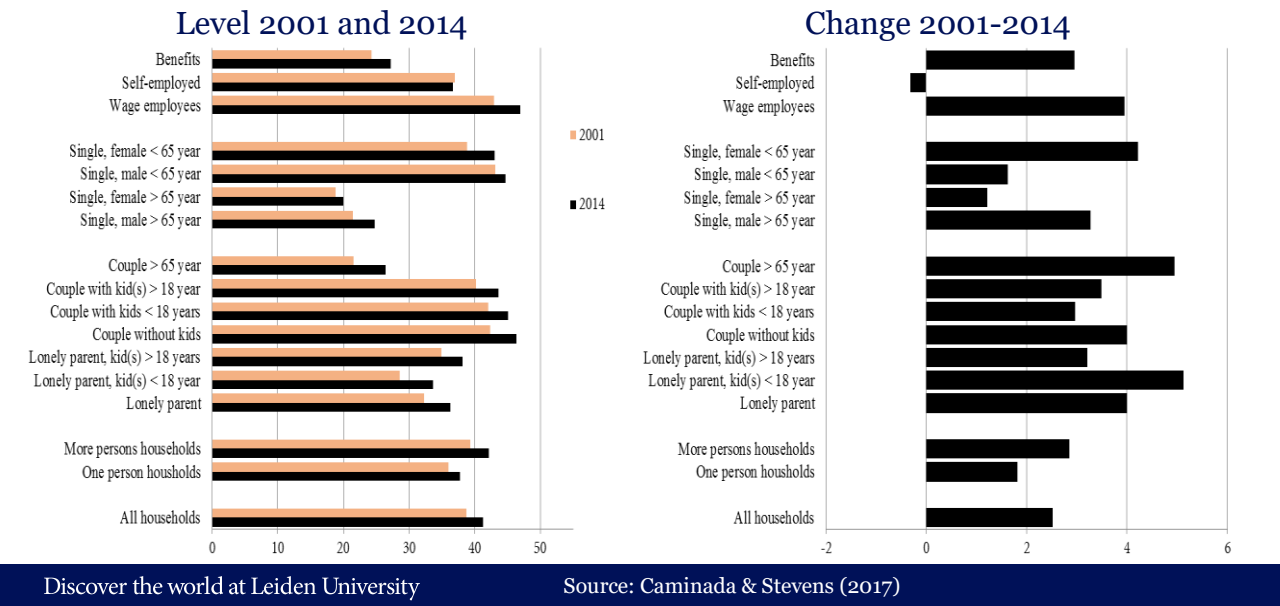
Change Dhi (mean, %) per socio-economic group 2001-2014

Discover the world at Leiden University   Source: Caminada & Stevens (2017)
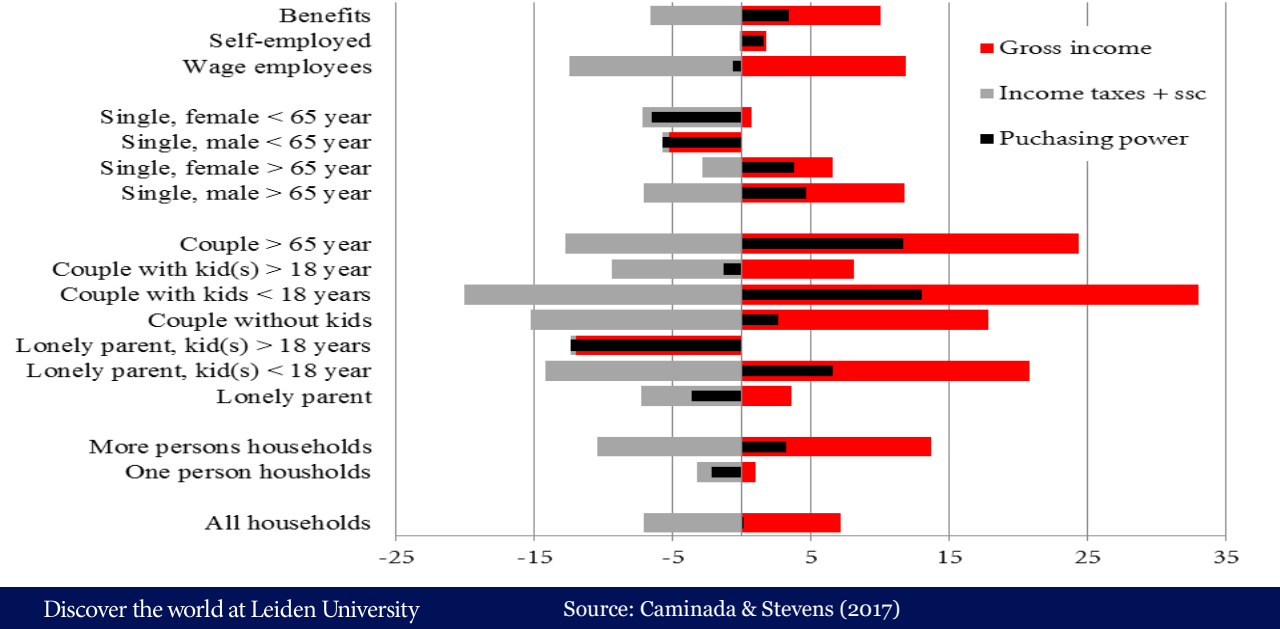
Tax Law may or may not discriminate? Unexpected difference in tax ratios

Differences in tax ratios *hardly* depend on income levels, but:

- Household composition (alone / cohabitants / kids)
- Division of income between partners
- Preference raising kids (kindergarten)
- Preference home ownership (mortgage interest)
- Labor market status
- Age (65- versus 65+)
- Patterns of labor (sole earner, two earner couples, self-employed)
- Interest debts deductible; income from saving taxed

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Heterogeneity tax ratios (2) = results fiscal discrimination

$$\text{Tax ratio} = \frac{Gross\ income - disposable\ income}{Gross\ income} * 100$$

Gross equivalized income (percentiles)
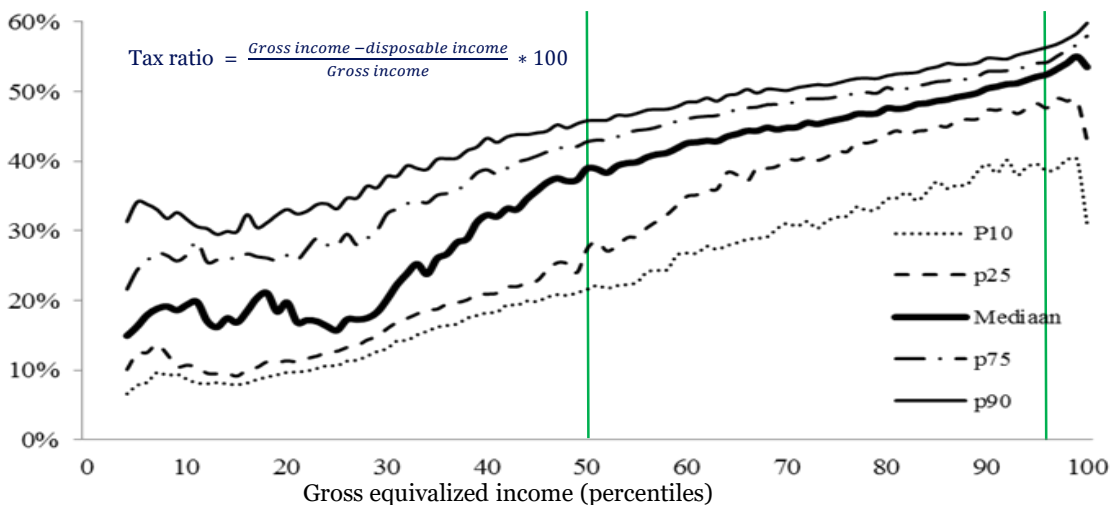
Policy: To what extent will society take differences in income and other factors into account by determining tax ratios?

€ 33.551 →
P10=22%
P50=39%
P90= 50%

€ 88.865 →
P10=39%
P50=52%
P90= 56%

Discover the world at Leiden University   Source: Caminada, Goudswaard & Knoef (2018)

How? Income related tax credits + allowances!

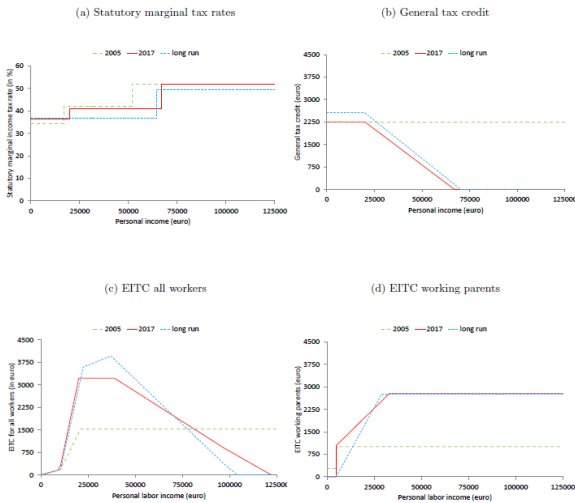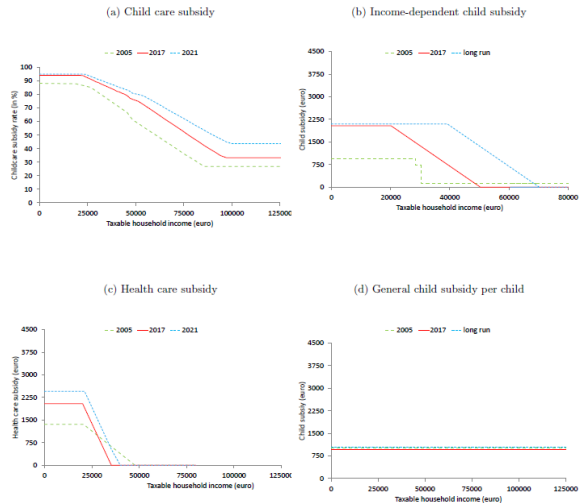Figure 1: Tax-benefit system 2005, 2017 and long run (1)

(a) Statutory marginal tax rates

(b) General tax credit

Figure 2: Tax-benefit system 2005 and 2017 (2)

(a) Child care subsidy

(b) Income-dependent child subsidy

(c) EITC all workers

(d) EITC working parents

(c) Health care subsidy

(d) General child subsidy per child

Discover the world at Leiden University   Source: De Boer, Jongenz & Koot (2018)

Illustration 1: income loss when a lone parent with modal income will cohabitate with …
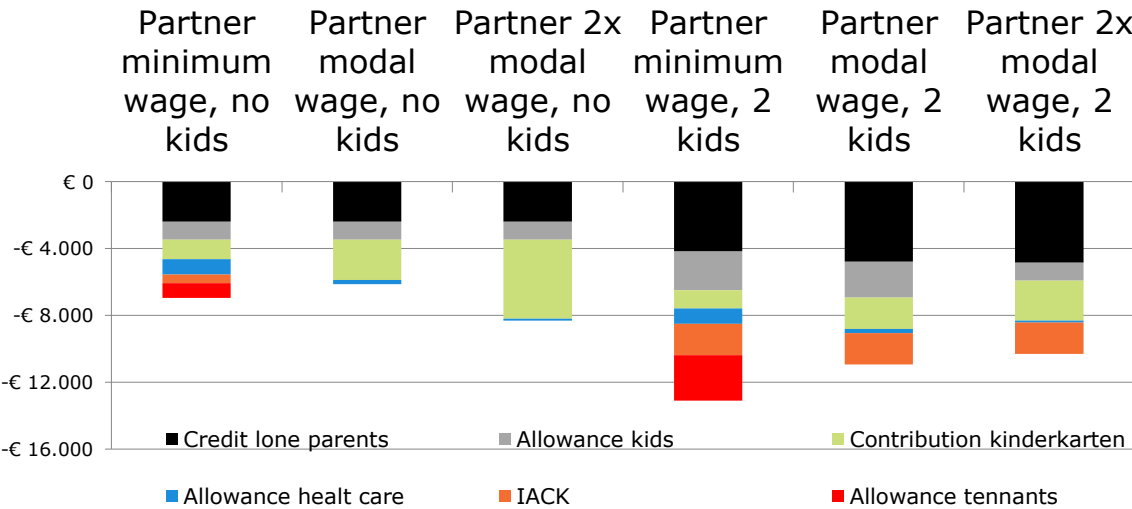
Discover the world at Leiden University   Source: Caminada & Den Boogert (2014)

Illustration 2: sole earner couple under pressure

✓ promote labor participation + economic independency of partners

- Lower taxes two earner couples via higher tax credits (AK, IACK)
- Higher taxes one earner couple: phasing out credits (AHK, *aanrechtsubsidie*)
- Income related schemes, credits, et cetera

Result: divergence difference tax ratio one and dual earners couples

International comparison:
- Netherlands at the forefront of the difference in tax burden between one and dual earner households (with an equal gross household income).
- Tax ratio difference is far above other countries
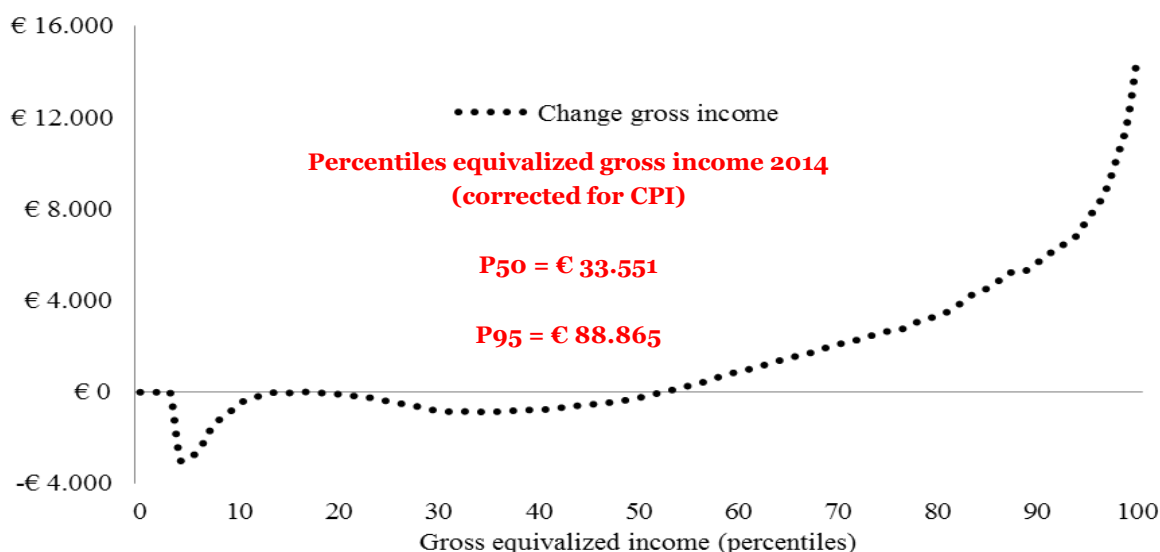
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Causes differences tax ratio sole earner – dual earner couple (50%-50%), euro's 2018
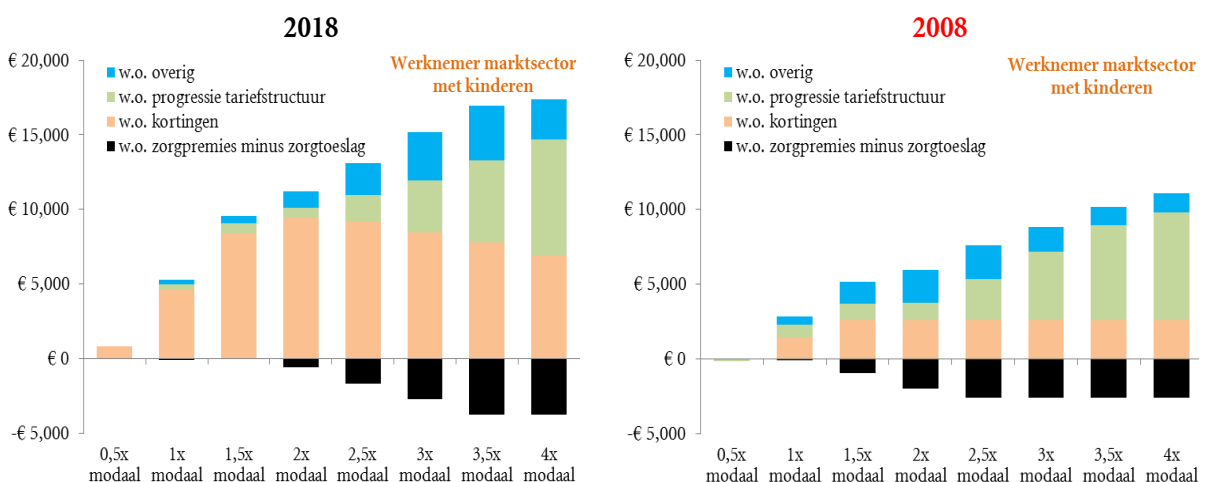
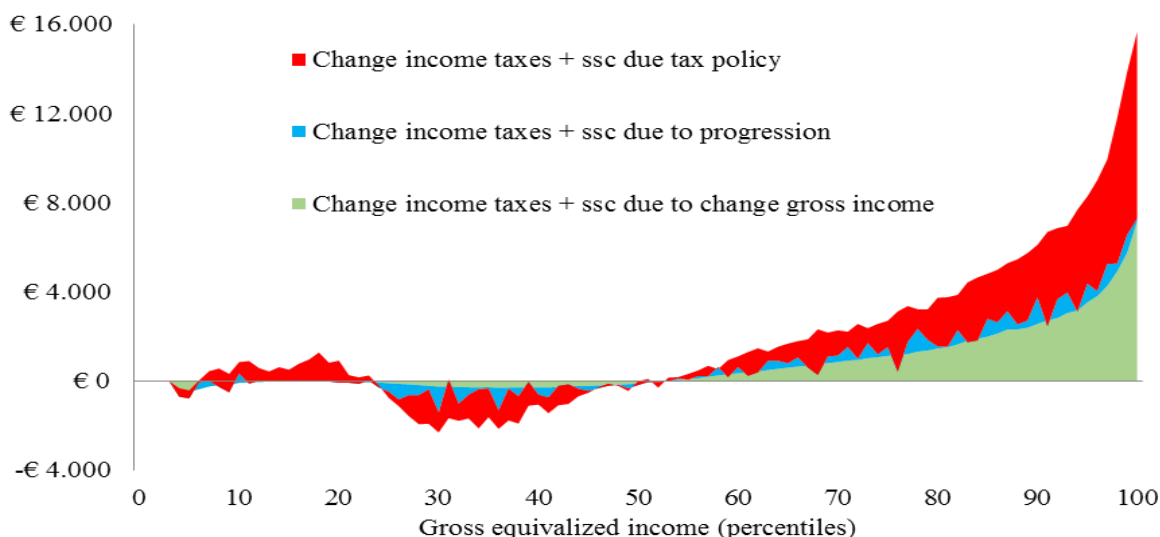Discover the world at Leiden University

Source: Caminada (2018)

Changes gross income 2001-2014 unequally distributed

Source: Caminada, Goudswaard & Knoef (2018)

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Changes income taxes + ssc 2001-2014 unequally distributed

Source: Caminada, Goudswaard & Knoef (2018)

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Increasing redistribution ... (changes 2001-2014, euro)

From the 50th percentile onwards: *'marginal tax rate' ≥ 100%*
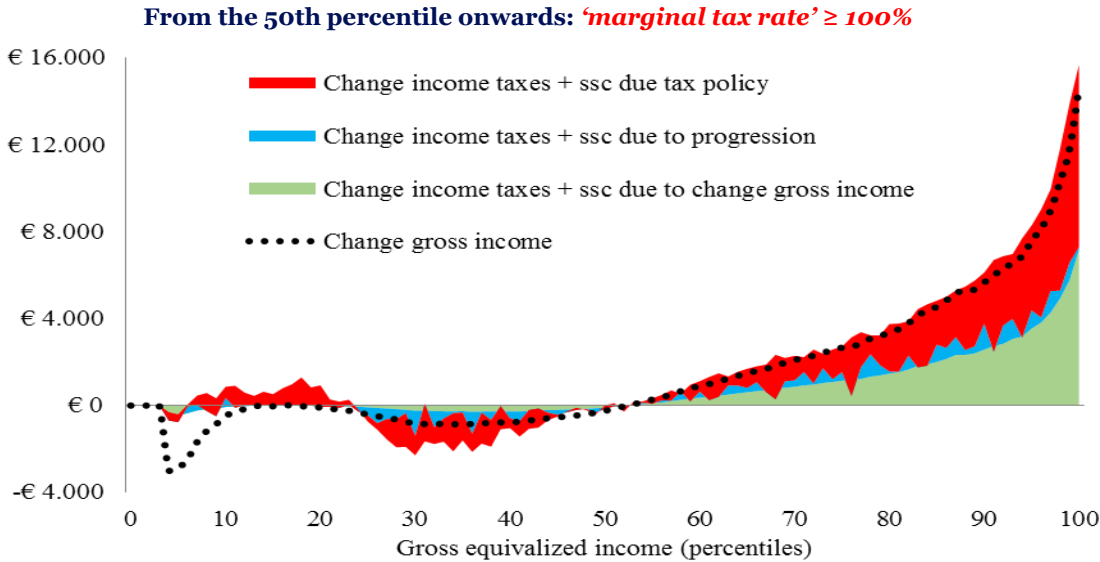
Discover the world at Leiden University   Source: Caminada, Goudswaard & Knoef (2018)
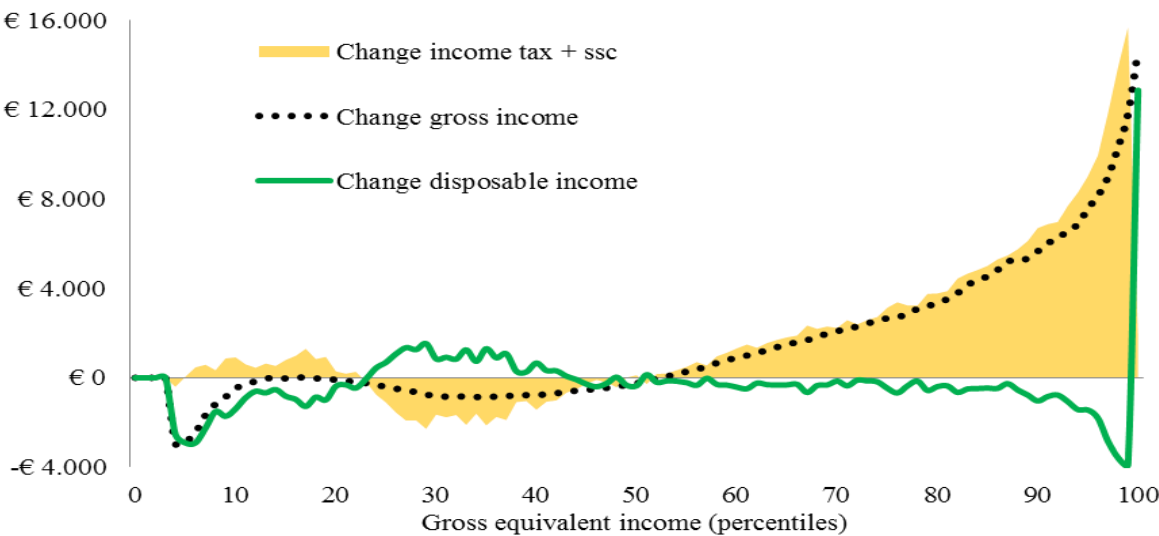
... but in the end not that much changed in the distribution of disposable income (changes 2001-2014, euro)

Discover the world at Leiden University   Source: Caminada, Goudswaard & Knoef (2018)

Concluding remarks

Policy commitment since 2001
- ✓ Stable income distribution (implicit)
- ✓ Promoting labor participation and economic independency

How? Via higher taxes + tax incentives + an increase in fiscal redistribution.
- o The system of taxes, credits and allowances became complex.
- o Tax policy increasingly had to adjust to redress changes in gross incomes in such a way that a "balanced" income pattern remained.
- o To that end, the tax legislator discriminates ... fully and increasingly.
- o Increases of gross incomes have been fully or almost fully taxed away since 2001.
- o Purchasing power of many Dutch households is equal or lower in 2014 than in 2001. From the 50th percentile onwards: 'marginal tax rate' ≥ 100%.

Towards welfare enhancing policy? Urgency is still missing although much room for improvement!

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7 Getting to work

Many issues to be solved

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Future research – UN Millennium Goals

❑ The distribution of *what*?

❑ Global inequality – it is all about China (and India), isn't?

❑ The Elephant and the squeezed middle revisited.

❑ Wealth inequality in an international perspective – a lot to be done.

❑ Income distribution: English speaking countries versus Europe.

❑ Reduced redistribution as main driver of widening income gaps?

❑ Key-figures versus micro data sets and Lorenz Dominance.

❑ Why should we care about global inequality? Poverty!

- Measuring
- Explanations (hypotheses)
- Testing - empirics

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Some recent work – downloads via   www.economie.leidenuniv.nl

1. Caminada , Goudswaard, Wang & Wang (2019), Has the redistributive effect of social transfers and taxes changed over time across countries?, *Int. Social Security Review* 72(1): 3-31.

2. Caminada, Wang, Goudswaard & Wang (2019), Relative income poverty rates and poverty alleviation via tax/benefit systems in 49 LIS-countries, 1967-2016, *LIS WP Series # 761.*

3. Caminada, Goudswaard, Wang & Wang (2018), Income inequality and fiscal redistribution in 31 countries after the crisis, *Comparative Economic Studies*: 1-30.

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Other related work – downloads via www.economie.leidenuniv.nl

4. Caminada & Goudswaard (2019), Fiscaal beleid leidt tot grote verschillen in lastendruk, in: S Cnossen & B Jacobs (red.) Ontwerp voor een beter belastingstelsel, Amsterdam: 215-224 (Dutch tax policy creates heterogeneity in tax burdens).

5. Caminada et al (2017), Income inequality and fiscal redistribution in 47 LIS-countries, 1967-2014, *LIS WP Series #724*.

6. Wang et al (2017), Income polarization in 31 European countries and Europe wide, 2004-2012, *Cambridge Journal of Economics*. doi: 10.1093/cje/bex065

7. Caminada & Martin (2016), A cross-Atlantic descriptive policy analysis of differences in anti-poverty approaches in Europe and the United States, in: Skidmore (red.), *Poverty in America,* Westphalia Press.

8. Knoef et al (2016), Measuring retirement savings adequacy: developing a multi-pillar approach in the Netherlands, *Journal of Pension Economics and Finance*.

9. Wang et al (2014), Income redistribution in 20 countries over time, *Int. Journal of Social Welfare* 23(3).

10. Wang et al (2012), The redistributive effect of social transfer programs and taxes, *Int. Social Security Review* 65(3).

11. Caminada et al (2012), Social income transfers and poverty, *Int. Journal of Social Welfare* 21(2).

12. Caminada et al (2010), Patterns of welfare state indicators in the EU, *Journal of Common Market Studies* 48(3).

13. Caminada & Goudswaard (2001), International trends in income inequality and social policy, *Int. Tax and Public Finance* 8(4).

14. Leiden Law Blog
    - Wang & Caminada (2015), Do rising shares in top incomes affect income inequality as a whole?
    - Caminada (2015), How strong are Piketty's trends?
    - Caminada (2014), Facts & Figures: Income inequality and fiscal redistribution in 29 countries.

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Databases & codebooks

1. Leiden LIS Budget Incidence Fiscal Redistribution Dataset on Income Inequality (2018)

2. Idem, on Relative Income Poverty Rates (2019)

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

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