

Cleveringa Lecture

**Income inequality, poverty and redistribution
in 20 OECD countries and China over time**

Koen Caminada



Universiteit Leiden
The Netherlands

Invited Guest Lecture
Dutch Embassy
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Beijing China

Introduction

- Koen Caminada, professor Empirical analysis of social and tax policy, Leiden University
- Scientific Director Institute of Tax Law and Economics
- Scientific director Research Program Reforming Social Security
- Topics
 - Distribution tax-benefits social security and pensions
 - Tax policy / progression tax system
 - Reforming social an tax regulations
 - Poverty EU and OECD / Lisbon Agenda / Europe 2020

Cleveringa's protest

Every year Leiden University honours Cleveringa with meetings throughout the world. Why?

- German forces marched into the Netherlands on 10 May 1940.
- A few months later: Nazis announced anti-Jewish measures.
- November, 26th 1940: Professor Cleveringa held his courageous speech.
- Protest against dismissal of his Jewish colleague (refusal of attestation based on race), Professor Meijers – an internationally renowned professor of Private Law. Meijers was Cleveringa's mentor and close friend.



Suitcase packed and ready

- Protest address in Leiden Academy Building.
- Clear legal language against anti-Jewish measures.
- The speech was followed by a strike among students.
- Cleveringa was arrested.
- University was closed.

Today at Leiden Law School:

- Meijers Institute
- Cleveringa Institute



Outline

1. Income inequality and poverty: why it is important
2. How to measure income inequality?
China, India, USA and the Netherlands
3. How to measure poverty?
China, India, USA and the Netherlands
4. Why inequality rises?
5. Our research: impact of taxes and transfers on income inequality across *36 countries (over time)*
6. Policy conclusions

1 Income inequality: a big issue

- Rising inequality is a widespread concern in the Western world, but also in Asia
- **Thomas Piketty**: the tendency of returns on capital to exceed the rate of growth threatens to generate extreme inequalities that stir discontent and undermine social values (Capital in the Twenty-First Century, 2014) ([video](#) 3:11)
- **Anthony Atkinson**: inequality is one of the most urgent social problems. But: we can do something about it (Inequality; What can be done? 2015)

Income inequality: a big issue

- **Joseph Stiglitz** (Nobel Prize winner 2001):
Rewriting the Rules of the American Economy. An Agenda for Growth and Shared Prosperity (2015)
- **Angus Deaton** (Nobel Prize winner 2015):
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 (China, Korea, India).
On the other hand: many people are left behind, not everyone profits from progress.
(The Great Escape, 2013)

Why inequality matters?

- A perfectly equal society is not desirable (no incentives)
- However, high inequality can undermine social stability
- It deprives people of educational opportunities, human and physical capital accumulation
- It may harm labour supply and productivity
- Research shows that high and rising inequality is detrimental to economic growth and development

Inequality and growth

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

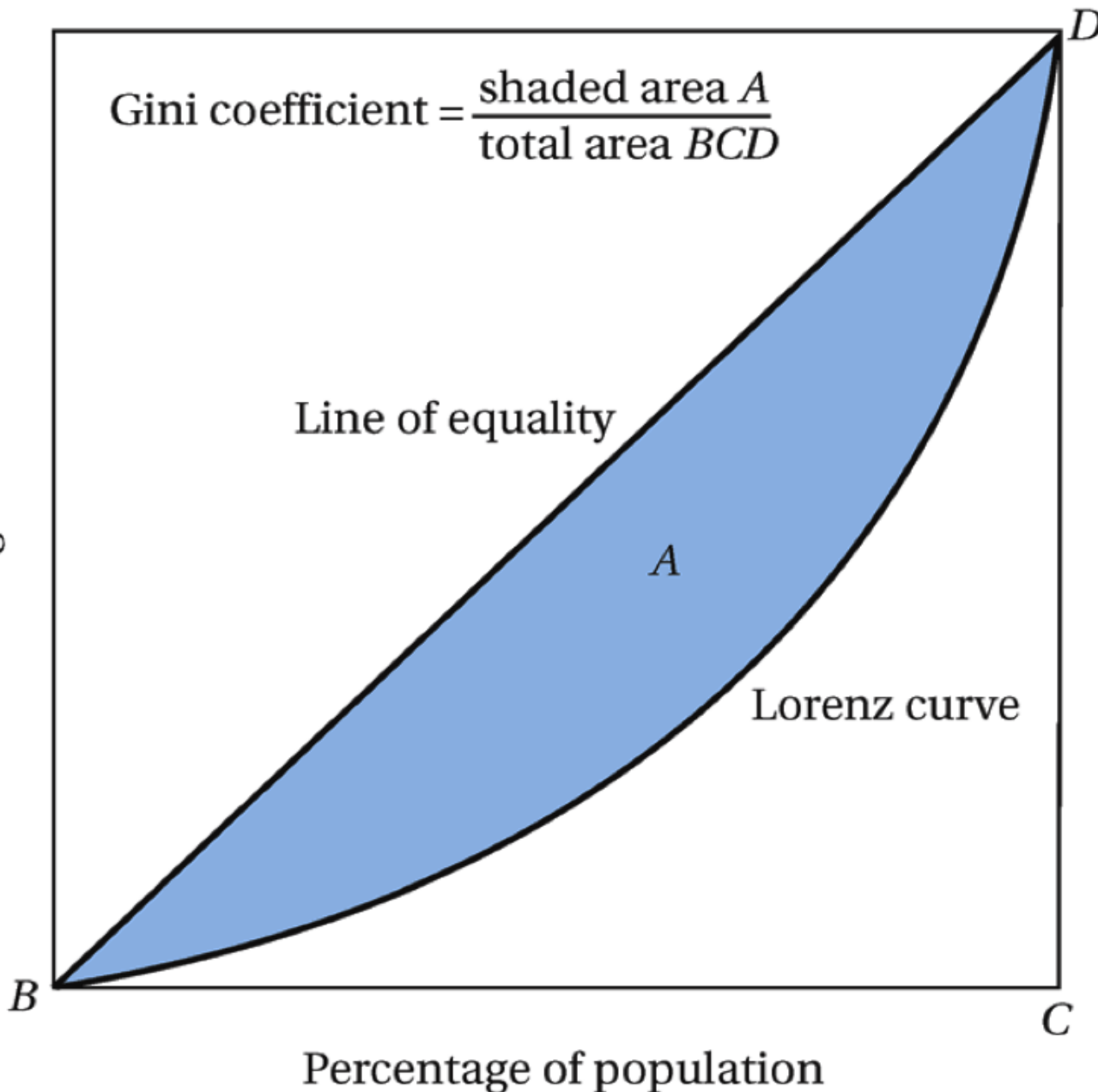
OECD (2014):

- 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

2 How to measure inequality?

- Several indicators, for example interdecile ratio, mean log deviation, Atkinson index, PL60 : less than 60% of median income = definition of poverty in Europe
- Most frequently used: the Gini index; the Gini index ranges between 0 (all persons have the same income) and 1 (one person has all income)
- The Gini can be calculated for primary incomes (wages, capital income) and for disposable incomes (after taxes and social transfers)

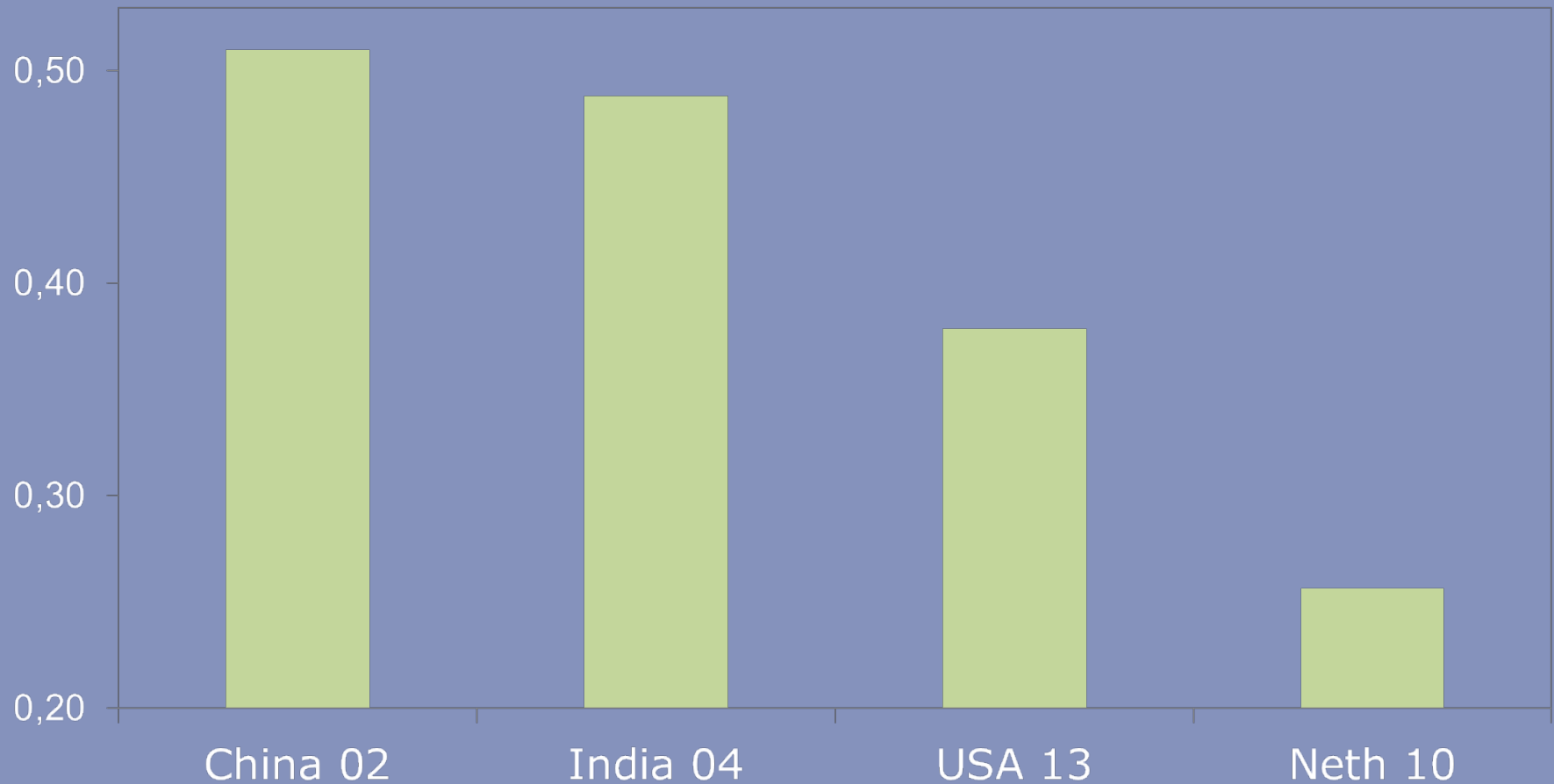
Percentage of income



Income inequality index – Gini coefficient DPI eq

G=0: all recipients receive exactly the same income

G=1: one recipient receives all income



Ranking countries by Gini coefficient

Netherlands 2010	0.257
France 2005	0.280
Germany 2010	0.286
Japan 2008	0.302
Taiwan 2005 / AP of PRC	0.305
Australia 2003	0.312
Canada 2007	0.313
Russia 2010	0.354
United Kingdom 2010	0.357
United States 2010	0.373
Mexico 2004	0.457
Brazil 2006	0.486
India 2004	0.491
China 2002	0.505
South Africa 2010	0.594

Redistribution in China, India, USA and Netherlands

Redistribution = Gini primary income -/- Gini disposable income

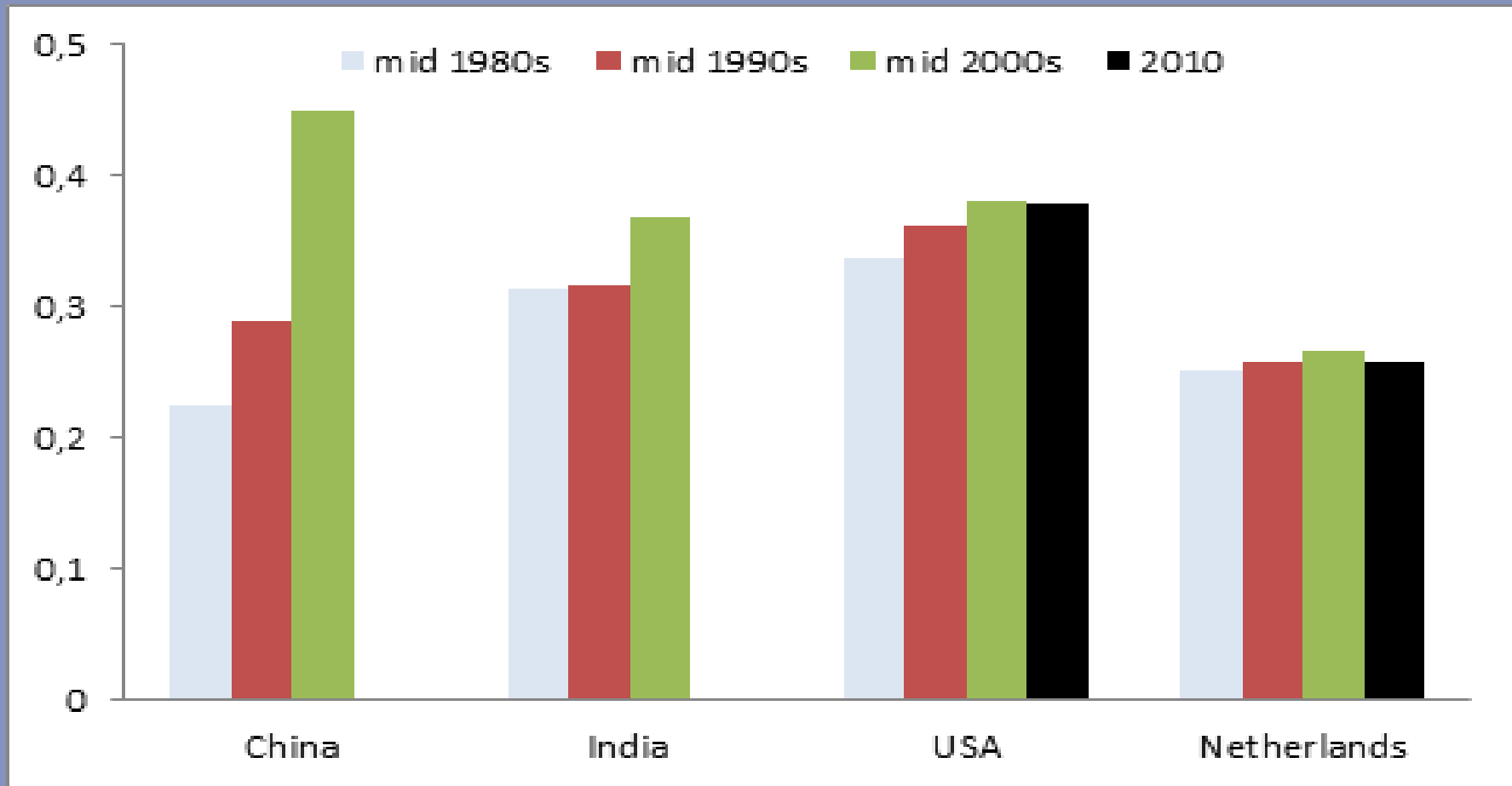
= Redistribution by social transfers and taxes

	China	India	USA	Neth
Gini pri	0.515	0.492	0.508	0.461
Gini dpi	0.510	0.488	0.379	0.256
Redistribution	0.005	0.004	0.129	0.204
Idem. %	1%	1%	25%	44%

Income inequality over time

G=0: all recipients receive exactly the same income

G=1: one recipient receives all income



3 How to measure poverty?

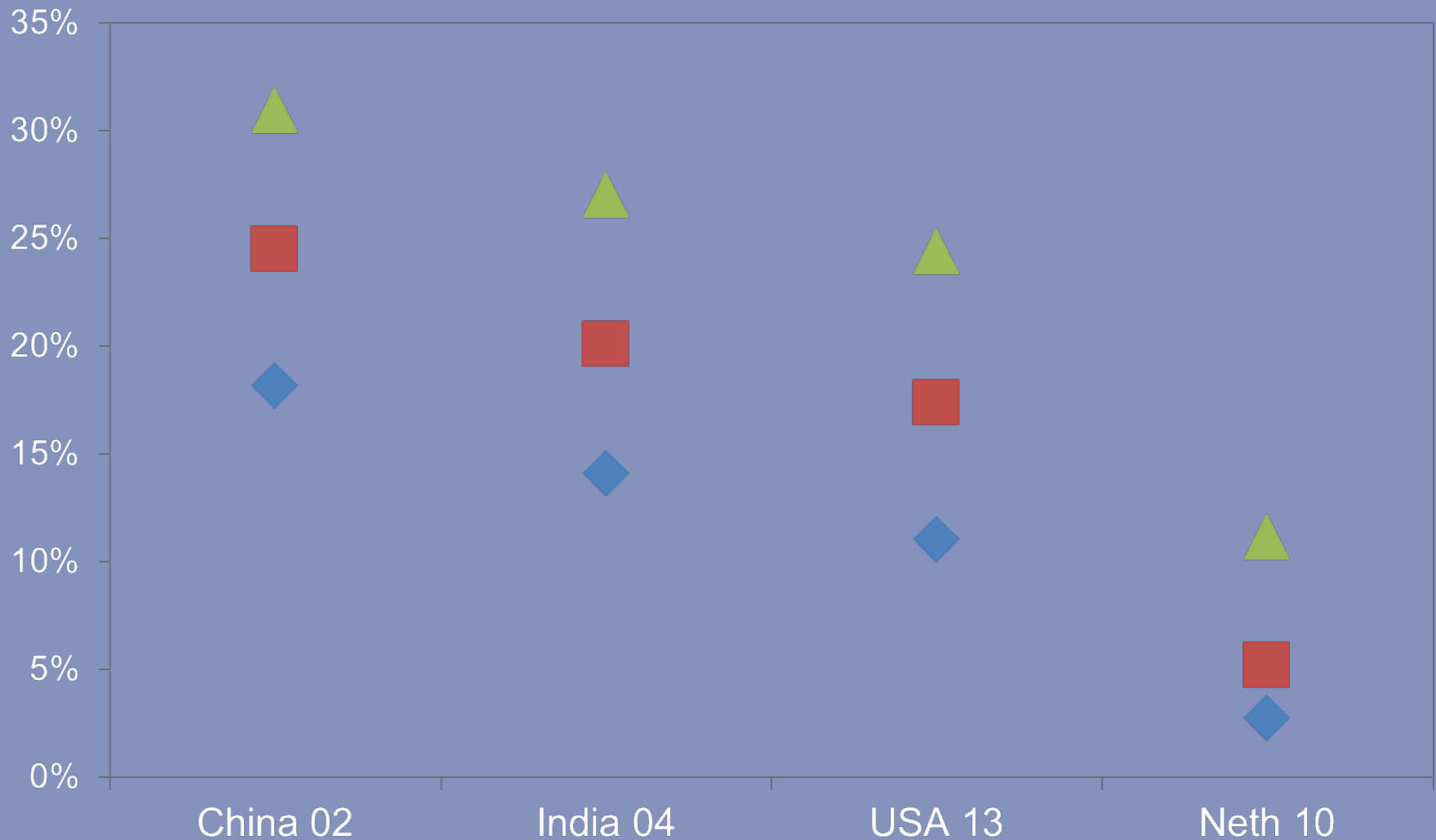
Monetary poverty in an international setting → no agreed-upon definition how to measure poverty

Research → apply poverty lines – % median income

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

- China 2002 (PL60: 2.840 yuan) → 31% of population
- Netherlands 2010 (PL60: €11.326) → 11% of population

Poverty – thresholds PL40, PL50 and PL60



Poverty alleviation in China, India, USA and the Netherlands

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

= Lift out of poverty by social transfers and taxes

	China	India	USA	Neth
Poverty pri	35%	29%	34%	34%
Poverty dpi	31%	27%	24%	11%
Reduction	4%-p	2%-p	10%-p	23%-p

Ranking countries by poverty rate (PL60)

	Population	Children	Elderly
Netherlands 2010	11	14	7
France 2005	15	18	15
Finland 2010	15	12	24
Taiwan 2005 / AP of PRC	16	15	38
Germany 2010	16	18	20
Japan 2008	18	19	22
Canada 2007	19	23	21
Russia 2010	20	26	17
Australia 2003	20	22	45
United Kingdom 2010	22	26	26
United States 2010	25	31	29
Mexico 2004	25	30	36
Brazil 2006	27	39	8
India 2004	27	31	28
South Africa 2010	31	38	19
China 2002	31	36	28

Childpoverty - living in single-mother families

	Poverty Children (PL60)	% Children Living in Single-Mother Families
Finland 2010	12	10
Netherlands 2010	14	11
Taiwan 2005 / AP of PRC	15	7
Germany 2010	18	16
France 2005	18	12
Japan 2008	19	6
Australia 2003	22	16
Canada 2007	23	14
United Kingdom 2010	26	21
Russia 2010	26	25
Mexico 2004	30	17
United States 2010	31	21
India 2004	31	7
China 2002	36	2
South Africa 2010	38	49
Brazil 2006	39	18

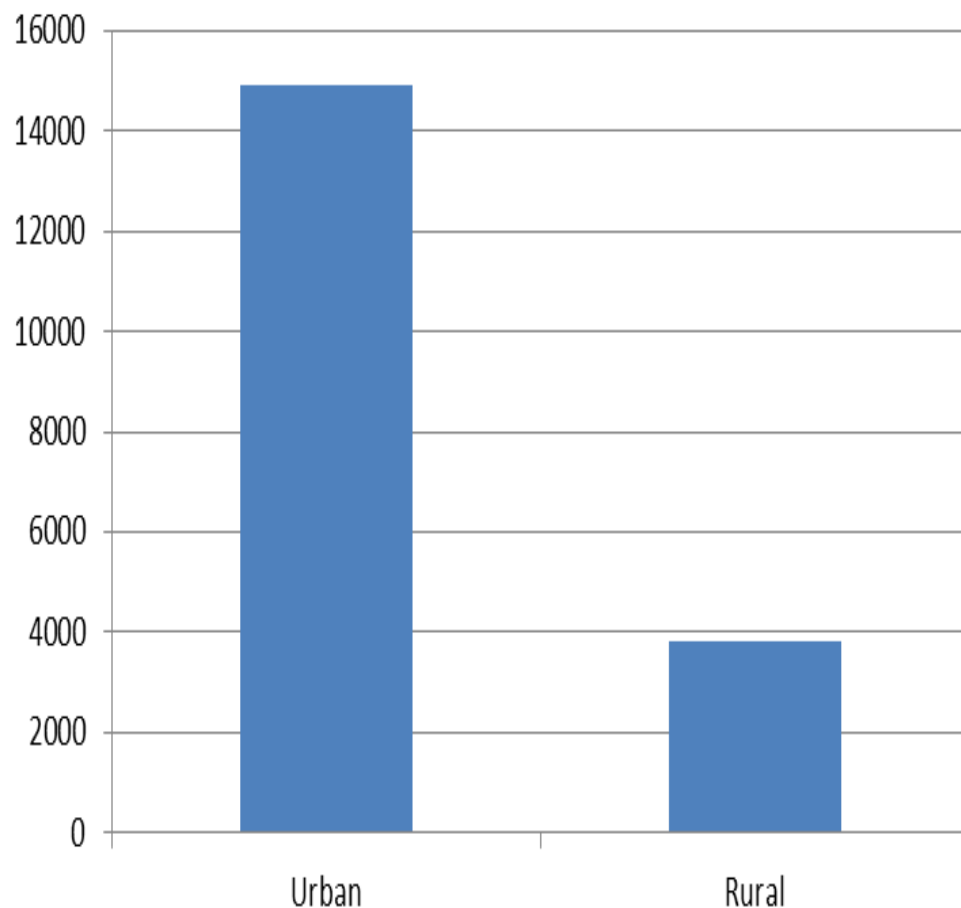
Poverty and income inequality in East, Middle and West China, 2002



	West	Middle	East
Average income (yuan)	5.880	6.282	10.571
Gini	0.495	0.450	0.498
PL40	24%	18%	15%
PL50	33%	25%	19%
PL60	41%	32%	24%

Poverty and income inequality in urban and rural China, 2002

Average income in urban and rural China, 2002



	Urban	Rural	All
Gini	0.319	0.415	0.505
PL40	0.1%	29%	19%
PL50	0.3%	39%	25%
PL60	0.5%	49%	31%

4 Why inequality rises?

Many possible factors, including:

- Technological progress and a resulting rise in the skill premium for labour
- Globalization: highly educated workers profit, low skilled labour not
- Good education may not be reachable for lower income groups
- Demographic factors: ageing (more pensioners who have relatively low incomes)

Why inequality rises?

- Several institutional factors, which vary from country to country, may be important
- For example: for China the urban-rural gap is important (Wang, Wan and Yang, 2014)
- **Claim: reduced government redistribution is a main driver (OECD, 2011)**
 - o Welfare state cuts (as a consequence of budgetary problems) may have made social programs less generous
 - o Tax systems may have become less progressive

5 Leiden Global Research Team



- Kees Goudswaard, Professor of Economics, Leiden University
- Chen Wang PhD, Shanghai University of Economics and Finance
- Janet Wang, China Scholarship Council, Leiden University
- Megan Martin, Senior Policy Associate Center for the Study of Social Policy, Washington
- Ferry Koster, Distinguished Professor of Innovative Collaboration, Erasmus University Rotterdam

Content

We provide:

1. An accurate, detailed picture of redistribution of incomes through taxes and transfers across 36 social welfare states.
2. Trends of primary and disposable income inequality, overall and disaggregated redistribution by 13 social programs in a comparative way.
3. Database and codebook.

Data Luxembourg Income Study: 36 countries

- **LIS English-speaking countries**

Australia (2003), Canada (2004), Ireland (2004), the United Kingdom (2004), the United States (2004),

- **LIS Continental European countries**

Austria (2004), Belgium (2000), France (2005), Germany (2004), Luxembourg (2004), Switzerland (2004)

- **LIS Nordic countries**

Denmark (2004), Finland (2004), Netherlands (2004), Norway (2004), Sweden (2005)

- **LIS Southern European countries**

Greece (2004), Italy (2004), Spain (2004)

- **LIS Central Eastern European countries**

Czech Republic (2004), Estonia (2004), Hungary (2004), Poland (2004), Romania (1997), Slovak Republic (1996), Slovenia (2004)

- **Other LIS countries**

Brazil (2006), Colombia (2004), Guatemala (2006), Israel (2005), Korea (2006), Mexico (2004), Peru (2004), Russia (2000), Taiwan (2005), Uruguay (2004)

Income unit

- We use equivalized household income: household income is divided by the number of household members with different weightings (because of economies of scale)
- 1.0 for first adult, 0.7 for second adult, 0.5 for a child
- In recent research household income is often divided by the square root of household size

Budget-incidence approach

- Redistribution: pre-tax-pre-transfer 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.
- LIS Top-and-Bottom-coding : effect top-1% outside our scope (main driver widening income gaps USA)

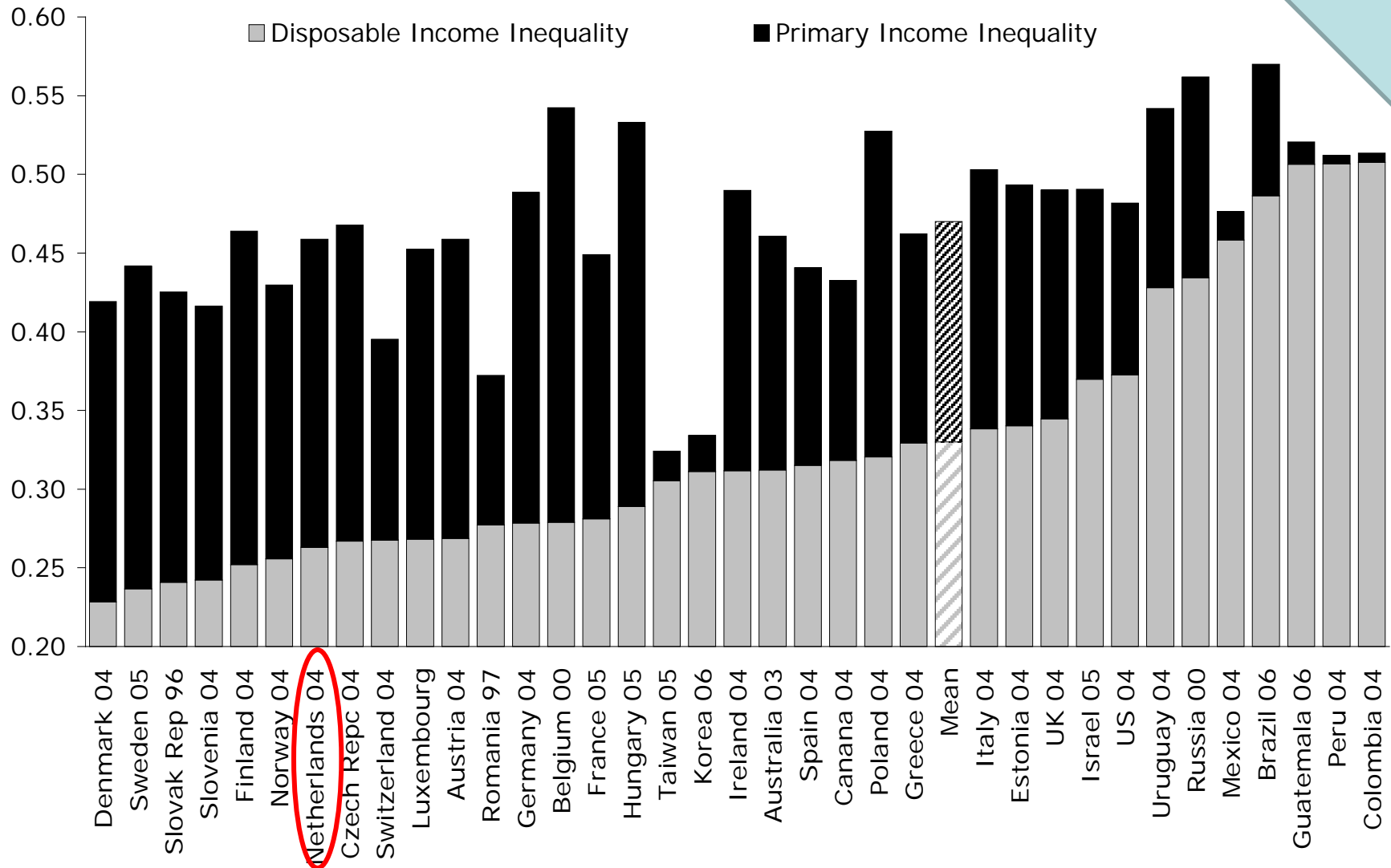
Decomposition-technique: 'sequential'

Income inequality and redistribution accounting framework

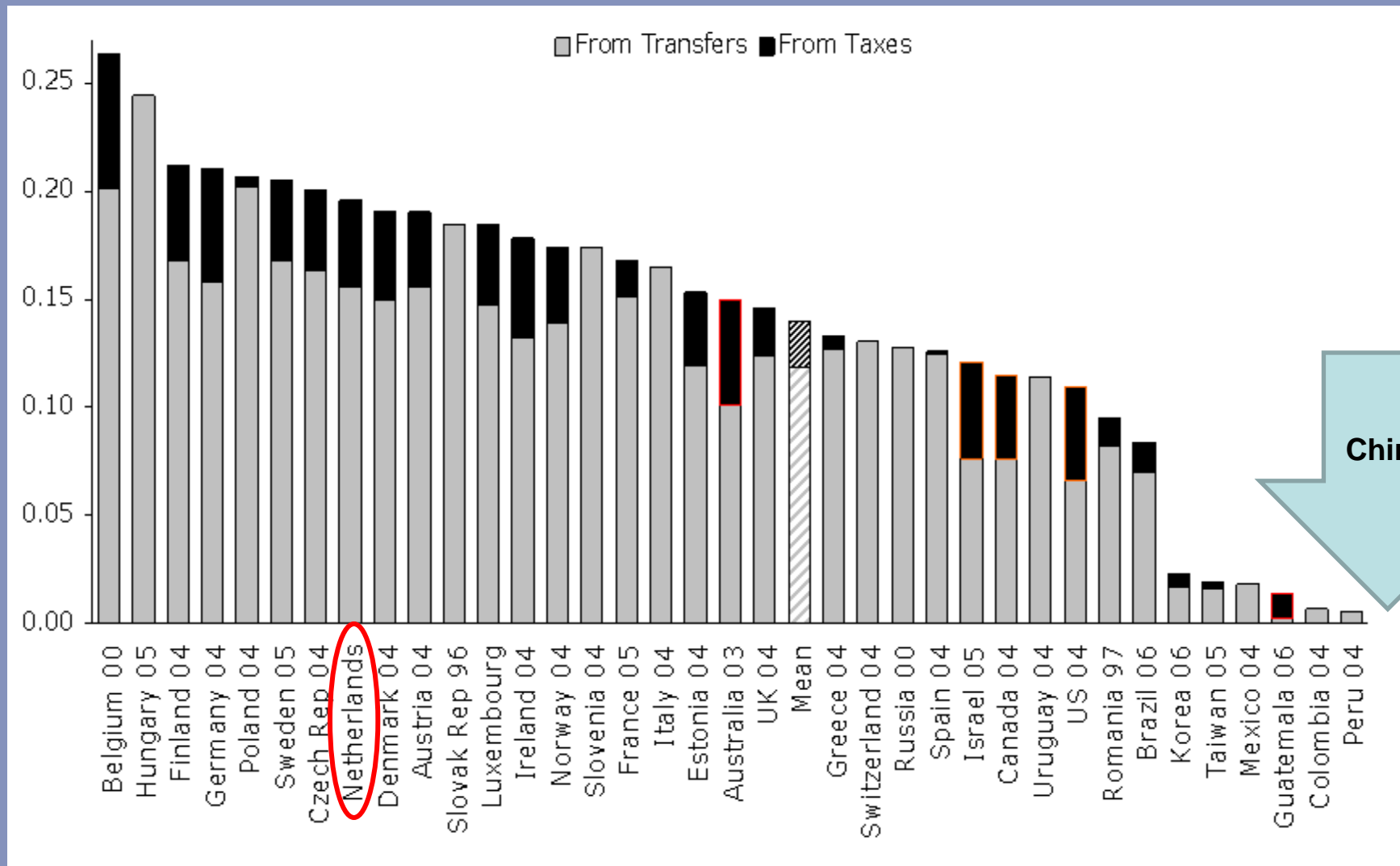
Income components	Income inequality and redistributive effect
Gross wages and salaries + Self-employment income + cash property income + Occupational and private pensions + Private transfers + Other cash income = Primary income	Income inequality before social transfers and taxes
+ Social security cash benefits = Gross income	-/- Redistributive effect of social transfers = Income inequality before taxes
-/- Pay Roll (Mandatory payroll taxes) -/- Income taxes = Disposable income	-/- Redistributive effect of taxes = Income inequality after social transfers and taxes

Disposable and primary income inequality across LIS countries around 2004

China



Redistribution of taxes and transfers, 2004



Note: For Hungary, Italy, Mexico, Peru, Russia, Slovak Republic, Slovenia and Uruguay data for taxes are not available.

Further decomposition: 13 programs

+/+ Transfers

- Sickness benefits
- Occupational injury and disease benefits
- Disability benefits
- State old-age and survivors benefits
- Child/family benefits
- Unemployment compensation benefits
- Maternity and other family leave benefits
- Military/veterans/war benefits
- Other social insurance benefits
- Social assistance cash benefits
- Near-cash benefits

-/-Taxes

- Mandatory payroll taxes
- Income taxes

Database:

- 36 countries
- 6 Waves: 1979-2006
- 171 datasets

Results (average 36 LIS countries)

	Gini	
(a) Gini primary income	0.468	
(b) Gini disposable income	0.328	
Overall redistribution (a-b)	0.140	
<i>Partial effects</i>		
		<i>share</i>
<i>Transfers</i>	<i>0.118</i>	<i>85%</i>
Sickness benefits	0.003	2%
Occupational injury and disease benefits	0.001	1%
Disability benefits	0.012	9%
State old-age and survivors benefits	0.064	46%
Child/family benefits	0.010	7%
Unemployment compensation benefits	0.006	5%
Maternity and other family leave benefits	0.004	3%
Military/veterans/war benefits	0.001	1%
Other social insurance benefits	0.003	2%
Social assistance cash benefits	0.010	7%
Near-cash benefits	0.004	3%
<i>Taxes</i>	<i>0.021</i>	<i>15%</i>
Mandatory payroll taxes	0.001	1%
Income taxes	0.021	15%
<i>Overall redistribution</i>	<i>0.140</i>	<i>100%</i>

Grouping decomposition results

	Overall redistribution	Disability benefits	State old-age and survivors benefits	Child/family benefits	Social assistance cash benefits	Income taxes
English-Speaking countries	0.109-0.178	4-12%	20-34%	6-13%	9-28%	above 30%
Continental European countries	0.128-0.210	2-8%	47-57%	4-12%	1-7%	6-22%
Nordic countries	0.175-0.212	9-15%	31-48%	3-7%	3-10%	15-21%
Southern European countries	0.126-0.165	4-7%	over 80%	3%	2-6%	1-5%
Central Eastern European countries	0.095-0.244	1-21%	54-70%	5-12%	1-7%	2-20%
Mean-36	0.140	9%	46%	7%	7%	15%

Netherlands

0.196 (=43%)

10%

48%

3%

10%

20%

Main results

- European countries achieve lower levels of income *inequality* than other countries around 2004
- Nordic and Continental European countries achieve the highest level of *redistribution* around 2004
- Dominant components in total redistribution:
 - Transfers (85%)
 - Public old age pensions
 - Disability benefits in Nordic countries
 - Taxes (15%)
 - English-Speaking Countries

Trends in redistribution

- Measurement of redistribution around 1985, 1995 and 2005
- 20 countries with data from LIS
- Same methodology (sequential budget incidence analysis)

Country	Redistribution				Partial effects: change 1985-2005	
	around 1985	around 1995	around 2005	Change 1985-2005	from transfers	from taxes
Australia (85-95-03)	0.126	0.156	0.149	0.023	0.030	-0.007
<i>Belgium (85-95-00)</i>	0.187	0.195	0.263	0.076	0.014	0.063
Canada (87-94-04)	0.105	0.136	0.114	0.010	0.007	0.003
Denmark (87-95-04)	0.144	0.203	0.191	0.047	0.033	0.014
Finland (87-95-04)	0.123	0.168	0.212	0.089	0.098	-0.009
<i>France (81-94-05)</i>	0.076	0.199	0.168	0.092	0.075	0.017
Germany (84-94-04)	0.179	0.180	0.210	0.031	0.023	0.008
<i>Ireland (87-95-04)</i>	0.172	0.157	0.178	0.006	0.005	0.002
Israel (86-97-05)	0.142	0.139	0.121	-0.021	0.000	-0.021
<i>Italy (86-95-04)</i>	0.119	0.116	0.165	0.046	0.046	0.000
<i>Luxembourg (85-94-04)</i>	0.140	0.153	0.184	0.044	0.007	0.037
<i>Mexico (84-96-04)</i>	0.001	0.010	0.018	0.017	0.017	0.000
Netherlands (83-94-04)	0.176	0.162	0.196	0.020	0.020	0.000
Norway (86-95-04)	0.119	0.162	0.174	0.055	0.051	0.004
<i>Poland (86-95-04)</i>	0.094	0.208	0.207	0.113	0.108	0.005
<i>Spain (80-95-04)</i>	0.098	0.148	0.126	0.028	0.026	0.001
Sweden (87-95-05)	0.211	0.239	0.205	-0.006	-0.003	-0.002
<i>Switzerland (82-92-04)</i>	0.071	0.068	0.128	0.056	0.077	-0.021
UK (86-95-04)	0.173	0.158	0.145	-0.028	-0.012	-0.015
USA (86-94-04)	0.096	0.108	0.109	0.013	0.013	0.000
Mean-20	0.128	0.153	0.163	0.036	0.032	0.004
Mean-12	0.139	0.157	0.163	0.024	0.028	-0.004
Mean-8	0.111	0.148	0.164	0.053	0.037	0.016

Note: For 12 countries full tax and benefit information is available in LIS. For other 8 countries (marked *italic*) net wages and salaries are used because gross variables are not available for all data years in LIS.

Source: Database Wang and Caminada (2011), and own calculations

Redistribution 1985-2005

decomposition among 12 countries

- Sweden: falls from the first to the third place
- Switzerland: climbs from the bottom to the ninth place
- United States: lowest redistribution in 2004
- Finland: fast mover to the top

Components of change in disposable income inequality from the mid-1980s to the mid-2000s

	12 country-average			
	Gini 1985	Gini 2005	Change 85-05	
(a) Primary income	0.412	0.454	+0.043	
(b) Disposable income	0.273	0.292	+0.018	
Redistribution (a-b)	0.139	0.163	+0.024	= 100
○ State old-age and survivors benefits			+0.015	60
○ Social assistance			+0.005	20
○ Benefits for sickness and diseases			+0.003	13
○ Unemployment benefits			+0.001	2
○ Other transfers			+0.005	22
○ Taxes			-0.004	-17

Main results 1985-2005

- Sizeable increase primary inequality in all countries (except Ireland)
- Tax-benefit systems offset two-third of this increase
- T/B-systems are more effective in reducing inequality in 2005 compared to 1985
- Due to: public old age pensions + social assistance
- However, on average taxes slowed down redistribution (tax reforms?)
- The claim that reduced redistribution is a main driver of widening income gaps since the mid-1990's (OECD, 2011) must be toned down.

Policy conclusions

- Gap between rich and poor has widened in many countries → negative impact on social and economic development
- T/B systems are an important instrument to reduce inequality; especially *good* pensions schemes
- Taxes are a less effective to reduce income inequality
- Other instruments: e.g. education for entire population
- Ultimately, what income distribution you want is a normative choice

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Leiden Global Research Team

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Database and codebook

www.hsz.leidenuniv.nl

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