

## Income inequality and fiscal redistribution in 39 countries, around 2004-2010



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The growing interest in national and cross-national differences in earnings and income inequality has produced a wide range of studies lately. Economists are increasingly focusing on the links between rising inequality and the fragility of economic growth. The International Monetary Fund (2014: 9) stated that rising income inequality in advanced and developing economies has coincided with growing public support for income redistribution. Moreover, lower inequality of disposable income is robustly correlated with faster and more durable economic growth, for a given level of fiscal redistribution (Ostry, Berg & Tsangarides, 2014).

Different social policies bring different types of welfare systems, leading to various outcomes in the income distribution. Since one of the functions of many national social protection systems is to reduce income inequality, this blog may provide relevant information for policy makers. We updated our [Leiden Budget Incidence Fiscal Redistribution Database](#), based on the the Luxembourg Income Study (LIS) in which microdatasets from nearly forty countries have been harmonised. Consequently it is possible to study income inequality and fiscal redistribution across countries.

A standard analysis of fiscal redistribution is to compare pre-tax-transfer income inequality and post-tax-transfer income inequality. Primary income inequality is given by a summary statistic of pre-tax, pre-transfer incomes and disposable income inequality is given by the same summary statistic of disposable equivalent incomes. Inequality is measured by the Gini coefficient which ranges from 0 (all households have equal incomes) to 1.0 (the richest household receives all income). Table 1 presents the framework for accounting income inequality and redistribution through various income sources.

Table 1	Income components	Income inequality and fiscal redistribution
	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	-/- Redistributive effect of social transfers
	= Gross income	= Income inequality before direct taxes
	-/- Pay Roll (Mandatory payroll taxes)	-/- Redistributive effect of direct taxes
	-/- Income taxes	
	= Disposable income	= Income inequality after social transfers and taxes

From nearly 300 variables in the dataset, we chose those related to household income (all kinds of income sources), total number of persons in a household and household weight (in order to correct sample bias or non-sampling errors) to measure income inequality and fiscal redistribution across countries.

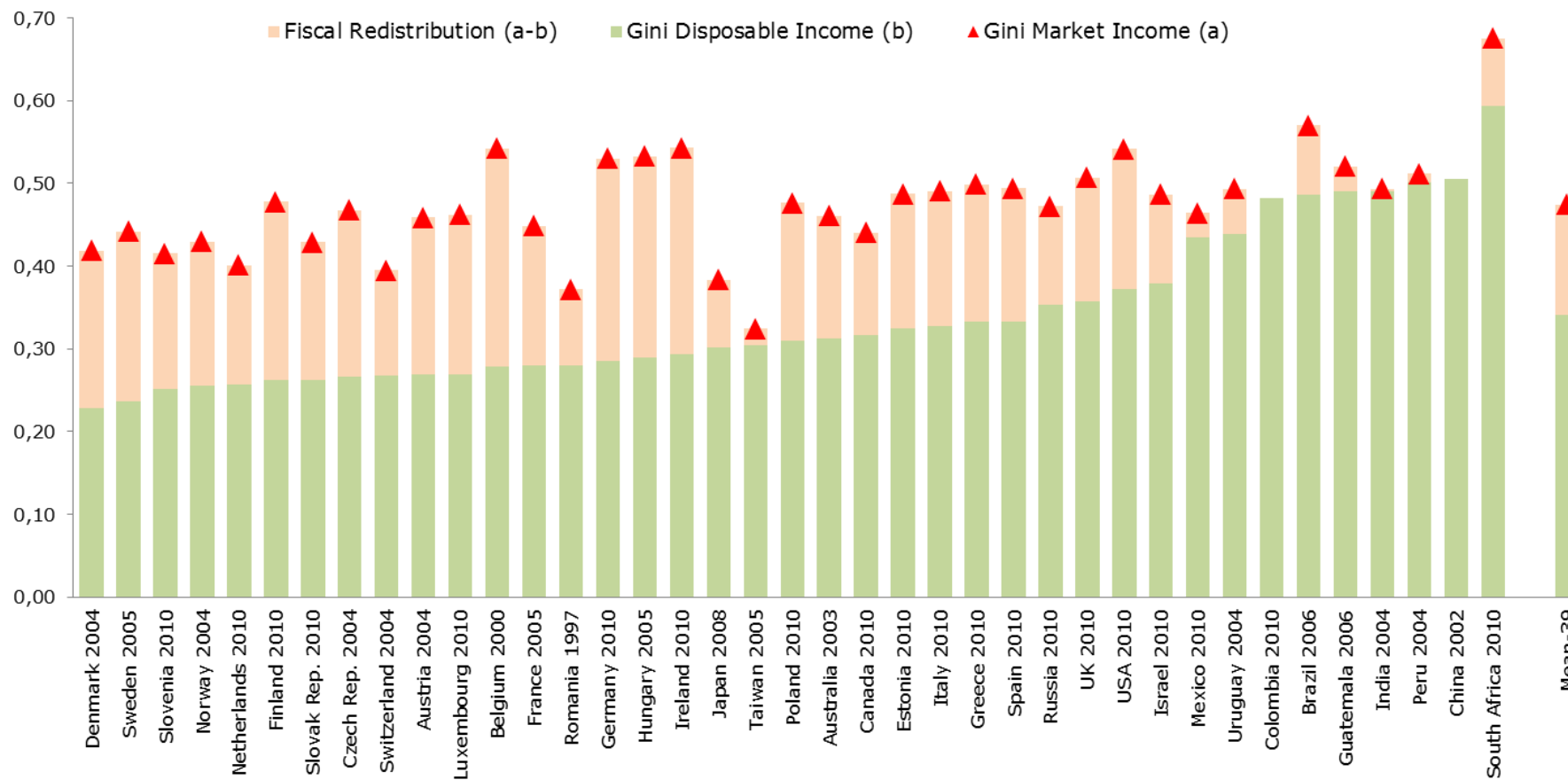
Figure 1 and Table 2 show our estimates for all 39 countries. Countries are listed in order of their Gini of disposable income from smallest to largest. A wide range of inequality exists across the countries. The lowest disposable income inequality is found in the Nordic countries, Slovenia and the Netherlands, while Brazil, Guatemala, India, Peru, China, and South Africa are the most unequal nations. Twelve countries have rather low values around 0.24-0.28: Denmark, Sweden, Slovenia, Norway, the Netherlands, Finland, Slovak Republic, Czech Republic, Switzerland, Luxembourg, Austria and Belgium. These countries are followed by fourteen countries (France, Romania, Germany, Hungary, Ireland, Japan, Taiwan, Poland, Australia, Canada, Estonia, Italy, Greece, and Spain) with below-average Gini coefficients. Thirteen countries face above-average inequality, among others Russia, the United Kingdom and the United States of America. The most unequal countries face Gini coefficients of disposable equivalent income above 0.5.

The pattern of primary income inequality (before social transfers and taxes) is quite different from disposable income inequality. Belgium, Germany, Ireland, and Hungary have below average levels of inequality of disposable income, but the highest level of primary income inequality, with values around 0.55. Taiwan and Japan have very low levels of primary income inequality, but around average inequality of disposable income. With respect to fiscal redistribution, our budget incidence analysis indicates that the pattern is diverse across countries. Direct income taxes on labour income and social benefits decrease inequality by an average of 30 percent. For instance, the average Gini coefficient for disposable income was 14 percentage points below that of the average primary income Gini (0.341 versus 0.475). The largest redistribution is found for Belgium, Ireland, Hungary, Germany, Finland, Sweden, Czech Republic, and Sweden, while India, Peru, Taiwan, Mexico, and Guatemala show hardly any fiscal redistribution. Note that fiscal redistribution in the United States of America is higher compared to several European countries such as Greece, Italy, Spain, the United Kingdom, and the Netherlands.

Finally, we observed a sizeable increase in primary or market household inequality in a subsample of 20 most affluent countries over the last 25 years (Wang, Caminada & Goudswaard, 2013; see Caminada, Goudswaard & Wang, 2012 for details). In most countries, the extent of fiscal redistribution had increased as a whole, too. Tax-benefit systems have offset two-thirds of the increase in primary income inequality. This is the case because a progressive tax and benefit system tends to redistribute income even more when market inequality rises (e.g., due to unemployment or rising incomes of top earners).

More on this: Morelli, Smeeding & Thompson (2014) examine the literature on post-1970 trends in income inequality and redistribution, up to 2010 or 2011 in most countries. They provide measures of the levels and trends in each of these areas, as well as an integrated discussion of empirical choices made in the measurement of overall income inequality, and inequality amongst those with top incomes.

Figure 1 Income inequality and fiscal redistribution in 39 LIS countries



Source: [Leiden Budget Incidence Fiscal Redistribution Database](#), assembled by Wang & Caminada. Notes: see below Table 2

Table 2 Income inequality and fiscal redistribution in 39 LIS countries <sup>a</sup>

Country	Wave	Gini Market	Gini Disposable	Fiscal	Relative Fiscal
		Income	Income	Redistribution	Redistribution
		(a)	(b)	(a-b)	(a-b)/a*100
Denmark 2004	Wave VI	0.419	0.228	0,191	46%
Sweden 2005	Wave VI	0.442	0.237	0,205	46%
Slovenia 2010 <sup>b</sup>	Wave VIII	0.415	0.252	0,163	39%
Norway 2004	Wave VI	0.430	0.256	0,174	40%
Netherlands 2010	Wave VIII	0.401	0.257	0,144	36%
Finland 2010 <sup>b</sup>	Wave VIII	0.478	0.263	0,215	45%
Slovak Rep. 2010 <sup>b</sup>	Wave VIII	0.429	0.263	0,166	39%
Czech Rep. 2004	Wave VI	0.468	0.266	0,202	43%
Switzerland 2004	Wave VI	0.395	0.268	0,127	32%
Austria 2004	Wave VI	0.459	0.269	0,190	41%
Luxembourg 2010	Wave VIII	0.462	0.269	0,193	42%
Belgium 2000	Wave V	0.542	0.279	0,263	49%
France 2005	Wave VI	0.449	0.280	0,169	38%
Romania 1997	Wave IV	0.372	0.280	0,092	25%
Germany 2010	Wave VIII	0.530	0.286	0,244	46%
Hungary 2005	Wave VI	0.533	0.289	0,244	46%
Ireland 2010	Wave VIII	0.543	0.294	0,249	46%
Japan 2008	Wave VII	0.384	0.302	0,082	21%
Taiwan 2005	Wave VI	0.324	0.305	0,019	6%
Poland 2010 <sup>b</sup>	Wave VIII	0.477	0.310	0,167	35%
Australia 2003	Wave VI	0.461	0.312	0,149	32%
Canada 2010	Wave VIII	0.440	0.317	0,123	28%
Estonia 2010 <sup>b</sup>	Wave VIII	0.487	0.325	0,162	33%
Italy 2010	Wave VIII	0.491	0.327	0,164	33%
Greece 2010	Wave VIII	0.499	0.333	0,166	33%
Spain 2010	Wave VIII	0.494	0.333	0,161	33%
Russia 2010 <sup>b</sup>	Wave VIII	0.472	0.354	0,118	25%
UK 2010	Wave VIII	0.507	0.357	0,150	30%
USA 2010	Wave VIII	0.542	0.373	0,169	31%
Israel 2010	Wave VIII	0.487	0.379	0,108	22%
Mexico 2010 <sup>b</sup>	Wave VIII	0.465	0.435	0,030	6%
Uruguay 2004	Wave VI	0.493	0.439	0,054	11%
Colombia 2010 <sup>c</sup>	Wave VIII	.	0.483		
Brazil 2006	Wave VI	0.570	0.486	0,084	15%
Guatemala 2006	Wave VI	0.521	0.490	0,031	6%
India 2004	Wave VI	0.493	0.491	0,002	0%
Peru 2004	Wave VI	0.512	0.502	0,010	2%
China 2002 <sup>c</sup>	Wave V	.	0.505		
South Africa 2010	Wave VIII	0.675	0.594	0,081	12%
Mean-39		0.475	0.341	0,134	28%
Idem, excluding China and Colombia		0.475	0.332	0.142	30%

## Notes

- a According to LIS 'pre-new-variables-mapping' information, we calculated Gini of primary income based on the new template (pri=hil+hic+hitsilo+hitp), meaning primary income is the sum of factor income, occupational pensions and private transfers (with the income variables close to the old template).

Fiscal redistribution: difference between the Gini indexes of pre-tax-transfer market income and post-tax-transfer equivalized disposable income. Equivalence scales are applied (household size is divided by the square root of the number of household members, weighting households by the number of members they include). Households which report no market income are included (i.e., all of their income is derived from social transfers), however, households with no disposable income are excluded. Standard LIS top- and bottom-coding conventions are applied.

- b Countries with no information for occupational pensions (this income source is excluded)
- c No Gini primary income for China and Columbia. There are too many missing values for China, and data for Colombia seem problematic too.

Source: [Leiden Budget Incidence Fiscal Redistribution Database](#), assembled by Wang & Caminada

#### *References and background material*

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