

## How strong are Piketty's trends?

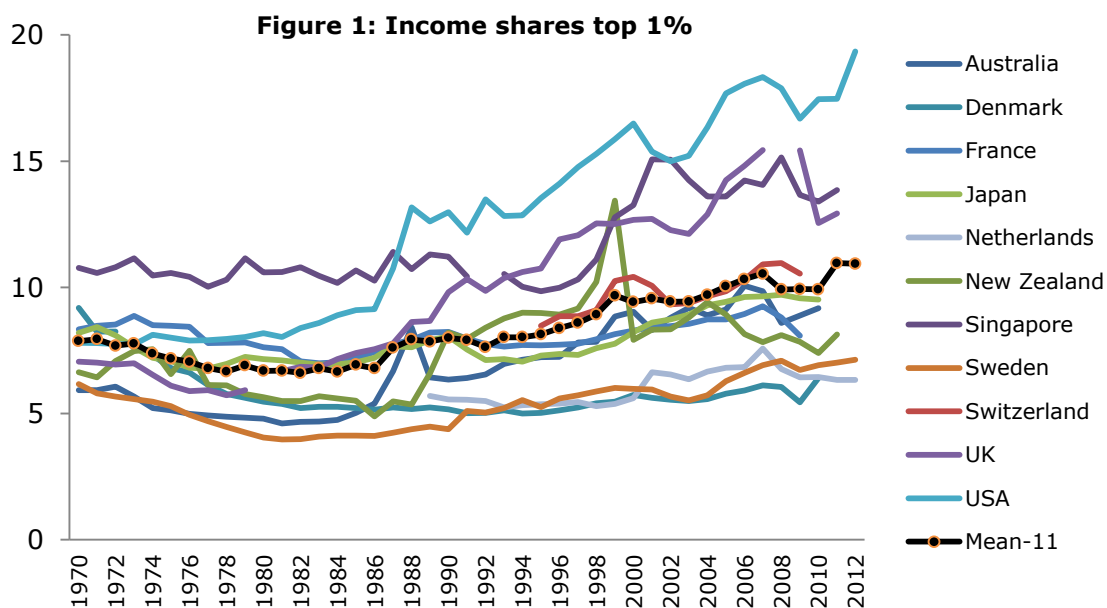


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The national and cross-national differences in top income earnings and income inequality have produced a wide range of opinions lately. Well-known studies from Atkinson and Piketty (2010) and Piketty (2014) have shown that the share of the total income accruing to the top 1% high earners has increased *dramatically* in a number of OECD countries over the last decades. This blog contributes to the discussion by measuring these changes across 11 affluent countries where data is available for the top 1% income shares in the period 1970-2012. I make use of the data collected by the [World Top Income Database](#) (WTID) assembled by Thomas Piketty and others.

Figure 1 shows that the shares of top income recipients in total pre-tax income have increased in many (but not all) countries in the past four decades. The top 1% shares increased most in the United States and to a lesser extent in the United Kingdom, Australia and New Zealand. However, from Figure 1 it is hard to see an upward trend, if any, in other countries, although the mean of all 11 countries is ascending. Let's analyse this in more detail.



There is wide cross-country variation in the share of the total income going to the top 1% of earners. Table 1 ranks countries to the level of their income share of the top 1% earners from lowest to highest for the latest data available (around 2012). Care is needed when comparing top income share levels across countries, but some clear-cut differences can be observed. Top earners nowadays capture a larger fraction of total pre-tax income in most English-speaking countries than in continental Europe and the Nordic countries. Today, the richest one percent receives between 6 percent of all pre-tax income in the Netherlands and Denmark and up to almost 20 percent in the United States.

In the early 1990s the share of total income accruing to the top 1% of earners was below ten percent in all countries except the United States. This was the result of a long-term trend towards declining inequality during the post-war period. As a result of this worldwide trend, the cross-country variation in top income shares was relatively low in the 1970s and 1980s.

**Table 1: Income shares top 1%**

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

Source: World Top Incomes Database (last accessed 29-12-2014); own calculations

Note that the evolution in top income shares has been quite diverse across countries. It seems hard to observe an overall trend. In the United States and the United Kingdom top income shares rose sharply, both from 1970 to 1990 and from 1990 to 2010. In some other countries, there is also a tendency for more concentration in income at the top, though less marked, as in Australia, New Zealand and Sweden. However, Table 1 shows that the top percentile group's share for Denmark, the Netherlands, Singapore, Switzerland and France dropped when data for 1970 and 2012 (or closest year) are compared. In contrast to the United States, the United Kingdom and Australia, there is no clear constant upward trend over both sub-periods (1970-1990 and 1990-2012) in 8 of our 11 countries. This may contradict society's view on rising top incomes and inequality in all affluent countries – a picture heavily influenced by the bestseller *Capital in the 21<sup>st</sup> century* by Thomas Piketty!

Trend lines could simply be drawn by eye through a set of data points (see Figure 1 or Table 1), but their position and slope can be better calculated using statistical techniques like linear regression. Linear regression is an approach for modelling the relationship between a scalar dependent variable (e.g. top 1% income share) and one or more explanatory variables (e.g. time). Trend lines are typically straight lines, and indicate whether particular data sets (e.g. top 1% income shares) have increased or decreased over the period of time. So, I tested the claim of the rising shares of the top 1% for each country, just by running simple statistical OLS regressions for the countries under study to measure whether the income shares of the top 1% income earners changed *dramatically* over time in the period 1970-2012. *Dramatically* is defined as a significant trend coefficient (p value < 0.05). The results are presented in Table 2.

**Table 2: Trend coefficients 1970-2012 from a simple OLS regression**

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

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

Source: World Top Incomes Database (last accessed 29-12-2014); own calculations

As expected, in the United States and the United Kingdom top income shares rose sharply. I found significant trend coefficients above 0.23 for both countries, implying that the share of total income earned by the top 1% rose over 0.23 percent each year in the period 1970-2012. In Australia, Singapore and New Zealand there is also a significant positive trend for more concentration in income at the top, although this rise was less pronounced (coefficients below 0.13). The rise in the top income share is significant, but rather modest in Japan and Sweden (coefficients around 0.05). The

change is neglectable or insignificant in Switzerland, France and the Netherlands. Finally, a significant decline in the income shares of the top 1% earners was found in Denmark. On average among these 11 countries I find a significant positive trend: the share of the total income earned by the top 1% rose at a rate of 0.09 percent per year in the period 1970-2012. At this rate it will take over 980 years before the total income will be earned by the top 1% of earners!

This gimmick is just to illustrate that it might be wrong to think about a worldwide increase in income concentration among the top 1%. Such a claim cannot be based on the fascinating World Top Income Database assembled by Thomas Piketty and others.

#### *Futher reading*

- F. Alvaredo, A.B. Atkinson, T. Piketty and Emmanuel Saez (2014), [The World Top Incomes Database](http://topincomes.g-mond.parisschoolofeconomics.eu/) at <http://topincomes.g-mond.parisschoolofeconomics.eu/>
- M. Förster, A. Llana-Nozal and V. Nafilyan (2014), [Trends in Top Incomes and their Taxation in OECD Countries](#), OECD Social, Employment and Migration Working Papers, No. 159, OECD Publishing.
- S. Morelli, T. Smeeding and J. Thompson (2014), [Post-1970 Trends in Within-Country Inequality and Poverty: Rich and Middle Income Countries](#), *IRP Discussion Paper* No. 1419-14.